

GT Designer2

Reference Manual
(Graphic Software for GOT900 Series)

SW2D5C-GTWK2-E
SW2D5C-GTD2-E

● SAFETY PRECAUTIONS ●

(Be sure to read these instructions before using the product)

Before using this product, read this manual and the relevant manuals introduced in this manual carefully and handle the product correctly with full attention to safety.

Note that these precautions apply only to this product.


In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



CAUTION Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Note that failure to observe the  CAUTION level instructions may also lead to serious results depending on the circumstances.

Be sure to observe the instructions of both levels to ensure personal safety.

Please keep this manual in accessible place and be sure to forward it to the end user.

[Test operation precautions]

DANGER

- When testing the operation (e.g. turning bit devices ON/OFF or changing a current word device value, a current or set timer/counter value, or a current buffer memory value), thoroughly read the relevant manual to fully understand the operating procedures. When testing, never change the data of the devices that control the operation essential for the system.
Faulty output and malfunction may result in an accident.

Cautions for using this software

1. Required PC memory

The processing may be terminated by Microsoft® Windows® on a personal computer of which main memory capacity is less than 64M bytes. Make sure to secure the capacity of 64 M bytes or more.

2. Free capacity of hard disk (virtual memory)

At least 100M bytes of free capacity of virtual memory should be secured within hard disk to run this software. The processing may be terminated by Windows®, if 100M bytes or more of free space cannot be secured within hard disk while running GT Designer2.

Secure enough free capacity of virtual memory within hard disk space in order to run the software.

When enough free capacity cannot be secured, make sure to save projects frequently.

3. Error messages displayed while starting and editing

"Operation will be terminated because of insufficient memory. Would you like to stop?"

If the above message appears, close other running application software or reboot Windows in order to secure at least 50M bytes of free hard disk space.

4. GT Designer2 and GOT display

(a) Cautions for displaying straight line other than full line (dotted line, for example) in bold.

When straight line other than full line is drawn in bold, the line may not be displayed with its actual line width on a personal computer. However, it will be displayed correctly on GOT. This phenomenon does not mean data problem.

(b) Display of end points of straight line/line freeform/polygon

As shown below, the end points of straight line/line freeform/polygon are displayed differently between GT Designer2 and GOT.

On GT Designer2



On GOT



(c) Start position for filling patterns

Some filling patterns may be differently displayed. For example, the start position may be different between GT Designer2 and GOT.

(d) Drawing of different type lines

The length of the dots varies in different dotted lines (for example: the chain lines).

(e) Display of object

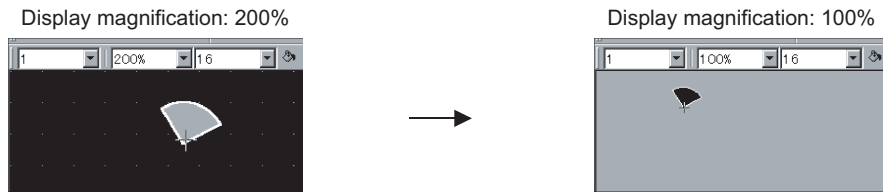
- The display position of the memory data display in graph function is different between GT Designer2 and GOT.
- Even if the display-start-line of a comment has been set, the comment will be displayed from the first line on GT Designer2.

(f) Display magnification

When display magnification is changed, the connected lines or figures may be separated or the filled-paint may be out of outline of the figure.

However, if they are displayed correctly on the preview screen, they will appear correctly on GOT as well.

(Example): When filled-paint is out of the outline.



Position of Paint mark may be shifted and the filled-paint may exceed the outline of the figure.

5. Restrictions when the color setting is changed to the setting of less colors in the system environment (256 colors → 2 colors)
 - The color palette for setting color will be changed according to the new settings.
 - The color on the drawing screen will be kept the same as prior to the change.
If the color setting for a [red] rectangle-figure is changed to the 2 colors (B/W), the [red] color will remain.
 - The colors of the image data (BMP format file) will be reduced when the project is stored, the screen is closed and that image data is double-clicked.
6. Object function and device type
The object (bit lamp or word lamp), for which bit device setting and word device setting are separated, cannot be converted between bit device and word device.
7. When device type is changed
Confirm the device type when the set bit device is changed from bit device into word device.
The device flag may be represented as "??", depending on the settings .
Example) D0. b0 → D0 D0.b5 → ??
8. OS setting
Set the font size as "Small Font" when setting OS (Windows®) screen.
The GT designer2 dialog box cannot be displayed correctly if the font size is set as "Large font".
9. When the toolbar icon appears in smaller size after startup of GT Desinger2
The toolbar icon may appear in smaller size right after GT Deseiger2 is started up.
To correctly display the icon, initialize it as instructed below.
(Click on [Project] → [References] from the menu, and select the toolbar tab. Click on Reset All button in that tab.)



10. When using GT Designer2 in the PC in which the OS other than applicable language version
The text may not be displayed correctly depending on the OS versions; some version include the fonts incompatible with GT Designer2 or GOT.
11. When using Microsoft® Narrator
GT Designer2 cannot be used with Microsoft® Narrator.
When using GT Designer2, do not use Microsoft® Narrator.

REVISIONS

* The manual number is given on the left bottom of the back cover.

Print Date	Manual Number	Revision
Oct., 2004	SH(NA)-080522ENG-A	First Printing
Mar., 2005	SH(NA)-080522ENG-B	<p>Compatible with the GT Designer2 Version 2.09K</p> <p>Partial corrections Chapter 1, Section 2.2.1, Section 4.3, 4.3.1, 4.3.2, 4.3.3, 8.3.3, Section 9.1, 9.2, 9.2.5, Section 12.4.3, 12.4.4</p> <p>Partial additions Section 2.2.2, Section 4.1.2, Section 7.1.2, 7.1.3, 7.3.4, Section 8.1.5, 8.3.5, Appendix 7</p> <p>Additions Section 9.1.1, 9.2.1, Section 12.4.1</p> <p>Section 4.3.3 → Section 9.1.1 Section 9.1.1 to 9.1.5 → Section 9.1.2 to 9.1.6 Section 9.2.1 to 9.2.6 → Section 9.2.2 to 9.2.7 Section 12.4.1 to 12.4.3 → Section 12.4.2 to 12.4.4</p>
Apr., 2005	SH(NA)-080522ENG-C	<p>Compatible with the GT Designer2 Version 2.11M</p> <p>Partial corrections Section 4.5.2, Section 11.2.2</p> <p>Partial additions Section 2.6.2, Section 10.3.1, 10.3.3, 10.4.3, 10.7.1, 10.7.3</p>
Oct., 2005	SH(NA)-080522ENG-D	<p>Compatible with GT Designer2 Version 2.17T</p> <p>Partial corrections Section 3.1.1, Section 6.1.2, 6.2.2, Section 7.5.2, Section 10.3.3, 10.7.3, Section 12.2.2, 12.2.3, Section 14.1.1, 14.2.3</p> <p>Partial additions Section 2.6.2, Section 4.1.8, Section 5.3.1, 5.5, Section 7.1.4, 7.3.4, Section 8.3.3, Section 9.2.1, Section 11.2.2, Section 14.4.2, Appendix 7</p> <p>Additions Section 5.2</p> <p>Section 5.2 to 5.7 → Section 5.3 to 5.8</p>
Jan., 2006	SH(NA)-080522ENG-E	<p>Compatible with the GT Designer2 Version 2.27D</p> <p>Partial corrections Section 2.6.1, Section 3.6.3, Section 4.5, 4.5.2, 4.5.3, Section 6.2.2, 6.2.5, 6.2.6, Section 11.3.2</p> <p>Partial additions Manuals, Section 2.1.1, 2.3.1, Section 3.5.3, Section 6.1.6, Section 12.1.2, 12.1.4, 12.1.5</p>

* The manual number is given on the left bottom of the back cover.

Print Date	Manual Number	Revision
Jun., 2006	SH(NA)-080522ENG-F	Compatible with the GT Designer2 Version 2.32J <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 3.5.3, 4.5.2, 6.2.2, 12.2.2, 12.6, 12.6.3 <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Section 7.3.4
Nov., 2006	SH(NA)-080522ENG-G	Compatible with the GT Designer2 Version 2.43V <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 8.3.3 <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Section 2.1.1, 2.1.2, 3.2, 4.5.2, 8.3.5, 13.1.1, Appendix7
Feb., 2007	SH(NA)-080522ENG-H	Compatible with the GT Designer2 Version 2.47Z <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Section 2.1.2, 4.5.2, Appendix7
May, 2007	SH(NA)-080522ENG-I	Compatible with GT Designer2 Version 2.58L <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 4.6.4, 7.3, 11.3.2, 12.5, 12.5.2, 13.1.1 <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Section 3.4.2, 4.5, 5.3.2, 5.3.3, 6.2.12, 11.1.2, 11.1.3
Aug., 2007	SH(NA)-080522ENG-J	Compatible with GT Designer2 Version 2.63R <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 4.5.2, 5.3.1
Dec., 2007	SH(NA)-080522ENG-K	Compatible with GT Designer2 Version 2.73B <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 3.1.3, 5.3.3, 6.2.12, 7.1.1, 7.2.2, 7.3.2, 7.4.1, 7.5.1, 8.1.2, 8.2.2, 8.3.2, 10.1.2, 10.2.2, 10.3.2, 10.4.2, 10.5.2, 10.6.2, 10.7.2, Appendix6, Appendix7
Feb., 2008	SH(NA)-080522ENG-L	Compatible with the GT Designer2 Version 2.77F <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 2.2, 8.3.3, 14.2, Appendix7
Oct., 2008	SH(NA)-080522ENG-M	Compatible with the GT Designer2 Version 2.90U <div style="border: 1px solid black; padding: 2px;">Partial corrections</div> Section 4.2.1, 5.3.3, 7.1.4, 7.3.4, 10.2.2 <div style="border: 1px solid black; padding: 2px;">Partial additions</div> Appendix7

* The manual number is given on the left bottom of the back cover

Print Date	Manual Number	Revision
Mar., 2009	SH(NA)-080522ENG-N	Compatible with the GT Designer2 Version 2.96A Partial corrections Section 3.1.3 Partial additions Appendix7

Japanese Manual Version SH-080515-Q

This manual confers no industrial property rights or any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

© 2004 MITSUBISHI ELECTRIC CORPORATION

INTRODUCTION

Thank you for choosing Mitsubishi Graphic Operation Terminal (Mitsubishi GOT).

Read this manual and make sure you understand the functions and performance of the GOT thoroughly in advance to ensure correct use.

CONTENTS

SAFETY PRECAUTIONS	A - 1
Cautions for using this software	A - 2
REVISIONS.....	A - 4
INTRODUCTION.....	A - 7
CONTENTS	A - 7
Function Quick Reference.....	A - 15
Manuals.....	A - 24
Abbreviations and Generic Terms.....	A - 25
How to Use This Manual	A - 30

1. OVERVIEW **1 - 1 to 1 - 2**

1.1 Overview	1 - 1
--------------------	-------

2. SPECIFICATIONS **2 - 1 to 2 - 74**

2.1 Type/Number of Creatable Screens	2 - 1
2.1.1 Base screen specifications	2 - 2
2.1.2 Window screen specifications	2 - 2
2.1.3 Whole screen specifications	2 - 6
2.1.4 Data size of screen and project	2 - 8
2.2 Figures and Data Capacity	2 - 9
2.2.1 In the case of GOT-A900 series	2 - 9
2.2.2 In the case of GOT-F900 series	2 - 15
2.3 Specifications of Available Object Functions	2 - 18
2.3.1 In the case of GOT-A900 series	2 - 18
2.3.2 In the case of GOT-F900 series	2 - 30
2.4 Clock Function	2 - 36
2.4.1 Clock function for monitoring by GOT	2 - 36
2.4.2 PLC CPU with clock function (GOT-A900 series only)	2 - 38
2.5 Overlap Setting	2 - 40
2.5.1 Overlap between figure and object	2 - 40
2.5.2 Overlap between objects	2 - 40
2.6 Supported Devices	2 - 42
2.6.1 GOT internal devices	2 - 42
2.6.2 Device range available for GOT-A900 series	2 - 49
2.6.3 Device range available for GOT-F900 series	2 - 64
2.7 Precautions for Object Setting	2 - 74

3. COMMON SETTING		3 - 1 to 3 - 52
3.1	GOT/ PLC Type Setting	3 - 1
3.1.1	Settings.....	3 - 1
3.1.2	Setting items	3 - 2
3.1.3	Precautions.....	3 - 3
3.2	Switching Screen Device Setting	3 - 7
3.2.1	Settings.....	3 - 10
3.2.2	Setting items	3 - 11
3.2.3	Precautions.....	3 - 13
3.3	Switching Station No. Device Setting	3 - 14
3.3.1	Methods of switching station No.	3 - 14
3.3.2	Settings.....	3 - 17
3.3.3	Setting items	3 - 18
3.3.4	Precautions.....	3 - 20
3.4	Password Setting	3 - 21
3.4.1	Settings.....	3 - 22
3.4.2	Password setting items	3 - 23
3.4.3	Precautions.....	3 - 27
3.5	System Information Setting	3 - 28
3.5.1	Setting methods.....	3 - 31
3.5.2	Setting items	3 - 31
3.5.3	Application example.....	3 - 40
3.5.4	Precautions.....	3 - 48
3.6	Print Format Setting	3 - 49
3.6.1	Settings.....	3 - 49
3.6.2	Setting items	3 - 50
3.6.3	Precautions.....	3 - 51
4. PREPARATORY OPERATION FOR OBJECT SETTING		4 - 1 to 4 - 72
4.1	Comment Registration	4 - 1
4.1.1	Required knowledge for comment registration	4 - 1
4.1.2	Basic operation for comment registration	4 - 3
4.1.3	Registering a comment.....	4 - 8
4.1.4	Copying or cutting a comment registered	4 - 10
4.1.5	Deleting/clearing the text of a comment registered	4 - 13
4.1.6	Changing the registered comment's settings.....	4 - 15
4.1.7	Saving/reading a comment as file.....	4 - 16
4.1.8	Editing the comment as text/csv file	4 - 19
4.1.9	Precautions for comment registration	4 - 23
4.2	Parts Registration	4 - 24
4.2.1	Required knowledge for parts registration	4 - 24
4.2.2	Basic operation for parts registration	4 - 26
4.2.3	Registering parts.....	4 - 28
4.2.4	Copying the registered parts.....	4 - 31
4.2.5	Deleting the registered parts.....	4 - 32
4.2.6	Changing the registered parts settings	4 - 33
4.2.7	Changing property of the registered parts	4 - 34

4.2.8	Precautions.....	4 - 35
4.3	Storing a BMP file part in the PC card	4 - 37
4.3.1	Before using the BMP image parts.....	4 - 39
4.3.2	Storing the BMP file parts into the PC card	4 - 40
4.3.3	Precautions.....	4 - 41
4.4	Registering Gajji	4 - 42
4.4.1	What are external characters	4 - 42
4.4.2	Setting	4 - 42
4.4.3	Setting items.....	4 - 42
4.4.4	Precautions.....	4 - 44
4.5	Auxiliary Settings	4 - 45
4.5.1	Settings.....	4 - 51
4.5.2	Setting items.....	4 - 52
4.5.3	Precautions.....	4 - 59
4.6	Key Window	4 - 61
4.6.1	Key window type.....	4 - 61
4.6.2	Keys on default key window and display items	4 - 62
4.6.3	How to operate key window.....	4 - 63
4.6.4	How to create user-created key window.....	4 - 65
4.6.5	Precautions.....	4 - 72

5. COMMON SETTINGS FOR OBJECTS 5 - 1 to 5 - 64

5.1	Device Setting	5 - 1
5.1.1	Device setting	5 - 1
5.1.2	Settings.....	5 - 2
5.1.3	Setting items.....	5 - 3
5.2	Numeric Data that can be Handled with GOT	5 - 19
5.3	Object Arrangement and Display Image Setting	5 - 20
5.3.1	Object arrangement.....	5 - 20
5.3.2	Object shape setting.....	5 - 22
5.3.3	Object size change	5 - 25
5.4	State Setting	5 - 28
5.4.1	Display priority	5 - 29
5.4.2	Arrangement and settings	5 - 29
5.4.3	Setting items.....	5 - 30
5.4.4	Example of state setting operation	5 - 33
5.4.5	Precautions.....	5 - 34
5.5	Trigger Setting	5 - 35
5.5.1	Arrangement and settings	5 - 41
5.5.2	Setting items.....	5 - 41
5.5.3	Precautions.....	5 - 43
5.6	Data Operation Function	5 - 45
5.6.1	Arrangement and settings	5 - 48
5.6.2	Setting items.....	5 - 49
5.6.3	Precautions.....	5 - 51
5.7	Offset Function	5 - 52
5.7.1	Arrangement and settings	5 - 54

5.7.2	Setting items	5 - 54
5.7.3	Precautions	5 - 54
5.8	Security Function	5 - 56
5.8.1	Security function setting	5 - 63
5.8.2	Precautions	5 - 64

6. LAMP, SWITCH 6 - 1 to 6 - 83

6.1	Lamp Display	6 - 1
6.1.1	Arrangement and settings	6 - 2
6.1.2	Setting items of bit lamp	6 - 3
6.1.3	Setting items of word lamp (for GOT-A900 series only)	6 - 6
6.1.4	Setting items of bit lamp area (for GOT-F900 series only)	6 - 13
6.1.5	Setting items of screen lamp (for GOT-F900 series only)	6 - 13
6.1.6	Setting items of external lamp (for GOT-F900 series only)	6 - 14
6.1.7	Precautions	6 - 14
6.2	Touch Switch	6 - 15
6.2.1	Arrangement and settings	6 - 18
6.2.2	Setting items of bit switch	6 - 19
6.2.3	Setting items of data set switch	6 - 36
6.2.4	Setting items of special function switch	6 - 41
6.2.5	Setting items of go to screen switch	6 - 49
6.2.6	Setting items of change station No. switch (specific for GOT-A900 series)	6 - 59
6.2.7	Setting items of key code switch	6 - 65
6.2.8	Setting items of data change switch (specific for GOT-F900 series)	6 - 68
6.2.9	Setting items of recipe transfer switch (specific for GOT-F900 series)	6 - 71
6.2.10	Setting items of multi action switch	6 - 73
6.2.11	Keyboard function	6 - 78
6.2.12	Precautions	6 - 80

7. NUMERICAL/CHARACTER DISPLAY 7 - 1 to 7 - 83

7.1	Numerical Display/Numerical Input	7 - 1
7.1.1	Arrangement and settings	7 - 3
7.1.2	Setting items of numerical display	7 - 4
7.1.3	Setting items of numerical input	7 - 13
7.1.4	Precautions	7 - 24
7.2	Data List	7 - 28
7.2.1	Required knowledge for data list setting	7 - 29
7.2.2	Arrangement and settings	7 - 31
7.2.3	Setting items	7 - 32
7.2.4	Precautions	7 - 43
7.3	ASCII Display/Input	7 - 44
7.3.1	Before setting ASCII display/input	7 - 46
7.3.2	Arrangement and settings	7 - 47
7.3.3	Setting items	7 - 48
7.3.4	Precautions	7 - 55
7.4	Clock Display	7 - 57
7.4.1	Arrangement and Settings	7 - 58
7.4.2	Setting items	7 - 59

7.4.3	Precautions.....	7 - 62
7.5	Comment Display	7 - 63
7.5.1	Arrangement and settings	7 - 64
7.5.2	Setting items of bit comment	7 - 65
7.5.3	Setting items of word comment	7 - 72
7.5.4	Precautions.....	7 - 83

8. ALARM 8 - 1 to 8 - 71

8.1	User Alarm Display	8 - 1
8.1.1	Before setting user alarm	8 - 2
8.1.2	Placement and settings	8 - 9
8.1.3	Setting items.....	8 - 10
8.1.4	Touch switch for displaying user alarm	8 - 19
8.1.5	Precautions.....	8 - 20
8.2	System Alarm Display	8 - 23
8.2.1	Before setting system alarm	8 - 24
8.2.2	Placement and settings	8 - 27
8.2.3	Setting items	8 - 28
8.2.4	Precaution	8 - 30
8.3	Alarm History Display	8 - 31
8.3.1	Before setting alarm history display.....	8 - 33
8.3.2	Placement and setting	8 - 39
8.3.3	Setting items.....	8 - 41
8.3.4	Description on touch switches for alarm history display	8 - 62
8.3.5	Precautions.....	8 - 64
8.4	Floating Alarm	8 - 67
8.4.1	Settings.....	8 - 68
8.4.2	Setting items of floating alarm	8 - 69
8.4.3	Precautions.....	8 - 71

9. PARTS 9 - 1 to 9 - 62

9.1	Parts Display	9 - 1
9.1.1	Parts displaying method	9 - 3
9.1.2	Arrangement and settings	9 - 7
9.1.3	Setting items of bit parts display	9 - 8
9.1.4	Setting items of word parts display	9 - 13
9.1.5	Setting items of fixed parts display	9 - 23
9.1.6	Precautions.....	9 - 26
9.2	Parts Movement	9 - 28
9.2.1	Moving and displaying parts	9 - 29
9.2.2	Setting of parts move route (common setting for each screen).....	9 - 37
9.2.3	Arrangement and setting	9 - 39
9.2.4	Setting items of bit parts movement	9 - 40
9.2.5	Setting items of word parts movement	9 - 46
9.2.6	Setting items of fixed parts movement	9 - 57
9.2.7	Precautions.....	9 - 62

10. GRAPH, METER **10 - 1 to 10 - 104**

10.1	Panelmeter	10 - 1
10.1.1	Required knowledge for panelmeter setting	10 - 1
10.1.2	Arrangement and settings.....	10 - 3
10.1.3	Setting items	10 - 4
10.1.4	Precautions.....	10 - 13
10.2	Level	10 - 14
10.2.1	Required knowledge for level setting.....	10 - 15
10.2.2	Arrangement and settings.....	10 - 17
10.2.3	Setting items	10 - 19
10.2.4	Precautions.....	10 - 26
10.3	Trend Graph	10 - 28
10.3.1	Required knowledge for trend graph setting	10 - 28
10.3.2	Arrangement and settings.....	10 - 31
10.3.3	Setting items	10 - 32
10.3.4	Precautions.....	10 - 43
10.4	Line Graph	10 - 44
10.4.1	Required knowledge for line graph setting	10 - 44
10.4.2	Arrangement and settings.....	10 - 46
10.4.3	Setting items	10 - 47
10.4.4	Precautions.....	10 - 58
10.5	Bar Graph	10 - 59
10.5.1	Required knowledge for bar graph setting.....	10 - 59
10.5.2	Arrangement and settings.....	10 - 61
10.5.3	Setting items	10 - 62
10.5.4	Precautions.....	10 - 70
10.6	Statistics Graph	10 - 71
10.6.1	Required knowledge for statistics graph setting	10 - 72
10.6.2	Arrangement and settings.....	10 - 73
10.6.3	Setting items	10 - 74
10.6.4	Precautions.....	10 - 80
10.7	Scatter Graph	10 - 81
10.7.1	Required knowledge for scatter graph setting	10 - 82
10.7.2	Arrangement and settings.....	10 - 88
10.7.3	Setting items	10 - 89
10.7.4	Precautions.....	10 - 101
10.8	Sampling	10 - 102
10.8.1	Settings.....	10 - 102
10.8.2	Setting items	10 - 103
10.8.3	Precautions.....	10 - 104

11. TRIGGER ACTIONS **11 - 1 to 11 - 28**

11.1	Status Observation Function	11 - 1
11.1.1	Settings.....	11 - 2
11.1.2	Setting items	11 - 3
11.1.3	Precautions.....	11 - 10

11.2	Recipe Function	11 - 12
11.2.1	Settings.....	11 - 13
11.2.2	Setting items.....	11 - 14
11.2.3	Precautions.....	11 - 20
11.3	Time Action Function	11 - 22
11.3.1	Settings.....	11 - 23
11.3.2	Setting items.....	11 - 24
11.3.3	Precautions.....	11 - 27

12. EXTERNAL INPUT/OUTPUT 12 - 1 to 12 - 73

12.1	Report Function	12 - 1
12.1.1	Arrangement and settings	12 - 3
12.1.2	Report screen creation (screen property).....	12 - 5
12.1.3	Setting common to each report (report setting).....	12 - 8
12.1.4	Print layout setting	12 - 13
12.1.5	Precautions.....	12 - 23
12.2	Hard Copy	12 - 25
12.2.1	Settings.....	12 - 26
12.2.2	Setting items.....	12 - 27
12.2.3	Precautions.....	12 - 29
12.3	Operation Panel	12 - 31
12.3.1	Required knowledge for operation panel setting	12 - 32
12.3.2	Settings.....	12 - 33
12.3.3	Setting items.....	12 - 34
12.3.4	Precautions.....	12 - 38
12.4	Bar Code Function	12 - 39
12.4.1	Arrangement and settings	12 - 39
12.4.2	Settings.....	12 - 40
12.4.3	Setting items of bar code function	12 - 41
12.4.4	Precautions.....	12 - 42
12.5	Sound	12 - 46
12.5.1	Settings.....	12 - 46
12.5.2	Setting items.....	12 - 47
12.5.3	Precautions	12 - 48
12.6	Video	12 - 50
12.6.1	Settings.....	12 - 63
12.6.2	Setting items of video	12 - 64
12.6.3	Precautions.....	12 - 67
12.7	RGB	12 - 68
12.7.1	Settings.....	12 - 71
12.7.2	Setting items of RGB	12 - 72
12.7.3	Precautions.....	12 - 73

13. OTHERS 13 - 1 to 13 - 12

13.1	Set Overlay Screen Function	13 - 1
13.1.1	Arrangement and settings	13 - 2
13.1.2	Check of the settings	13 - 4

13.1.3	Precautions	13 - 5
13.2	Test Function	13 - 10
13.2.1	Arrangement and settings.....	13 - 11
13.2.2	Setting items	13 - 11
13.2.3	Precautions.....	13 - 12

14. SCRIPT FUNCTION **14 - 1 to 14 - 56**

14.1	Overview	14 - 1
14.1.1	Features.....	14 - 1
14.1.2	Precautions for Use	14 - 3
14.2	Specifications	14 - 6
14.2.1	Type.....	14 - 6
14.2.2	Control structure	14 - 7
14.2.3	Applicable data and representation methods	14 - 11
14.2.4	Script execution	14 - 20
14.3	Settings and Procedure for Execution	14 - 23
14.4	GT Designer2 Settings	14 - 24
14.4.1	Settings.....	14 - 24
14.4.2	Setting items	14 - 25
14.4.3	Precautions.....	14 - 41
14.4.4	Message displayed during syntax check	14 - 41
14.5	Program Examples	14 - 43
14.5.1	Touch switches with interlock function.....	14 - 43
14.5.2	Lamps which change the display attributes under multiple conditions	14 - 44
14.5.3	Password input screen with time limit function	14 - 46
14.6	Precautions for using BMOV	14 - 48
14.7	Troubleshooting	14 - 51
14.7.1	Simulation using general C language compiler or debugger	14 - 51
14.7.2	Errors and corrective actions for script execution on GOT	14 - 54

APPENDICES **App - 1 to App - 18**

App.1	Object Display Speed (Reference Value)	App - 1
App.2	Key Code List	App - 3
App.3	Drawing Sheet	App - 6
App.4	Printing Time of Hard Copy Function (Reference Value)	App - 12
App.5	Synthesized Colors Available for XOR	App - 13
App.6	Comparison between GT Designer terms and GT Designer2 terms	App - 16
App.7	List of Functions Added by GT Designer2 Version Upgrade (For GOT900 Series)	App - 17

INDEX **Index - 1 to Index - 6**

Function Quick Reference

Edit Operation (GT Designer2 Version □ Operating Manual)

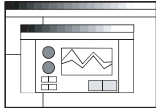


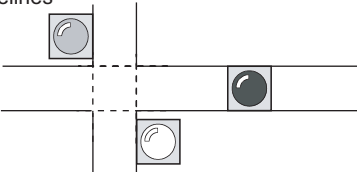



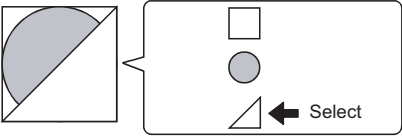
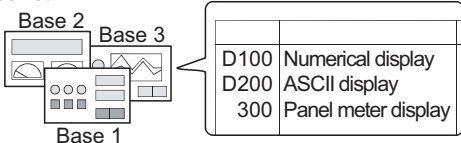
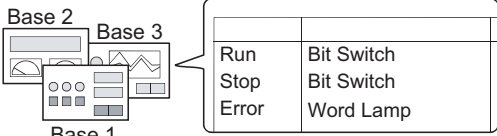

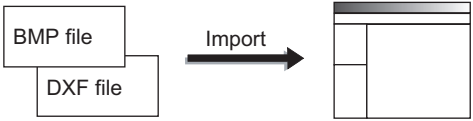
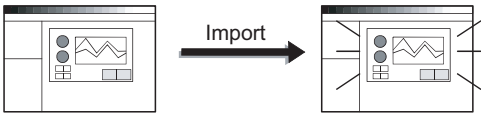
Image	Function	Page						
<p>Preview</p> 	<p>Shows the preview of screen image of GOT.</p>	<p>Page 4-43</p>						
<p>Align</p> 	<p>Aligns objects or images</p>	<p>Page 8-22</p>						
<p>Property sheet</p> 	<p>Sets same attributes to objects or images in the same screen</p>	<p>Page 9-1</p>						
<p>Guidelines</p> 	<p>Displays lines to align figures and objects when arranging a placed figure or object.</p>	<p>Page 8-25</p>						
<p>Replace colors</p> 	<p>Changes the color(s) of the objects and figures arranged on plural screens at the same time</p>	<p>Page 9-12</p>						
<p>Replace shapes</p> 	<p>Changes the switch/lamp figures at the same time</p>	<p>Page 9-12</p>						
<p>Replace devices</p> 	<p>Changes the preset devices at the same time</p>	<p>Page 9-12</p>						
<p>Data View</p> 	<p>Overlapping images or objects</p>	<p>Page 9-16</p>						
<p>Device list</p>  <table border="1"> <tr> <td>D100</td> <td>Numerical display</td> </tr> <tr> <td>D200</td> <td>ASCII display</td> </tr> <tr> <td>300</td> <td>Panel meter display</td> </tr> </table>	D100	Numerical display	D200	ASCII display	300	Panel meter display	<p>Display the set device in list</p>	<p>Page 9-17</p>
D100	Numerical display							
D200	ASCII display							
300	Panel meter display							

Image	Function	Page
<p>Text list</p> 	<p>Displays the direct input texts in a list.</p>	<p>Page 9-19</p>
<p>Multiple language input</p> 	<p>Input characters or comments in other language.</p>	<p>Page 9-26</p>
<p>Import BMP/DXF file</p> 	<p>Imports BMP/DXF files</p>	<p>Page 8-13</p>
<p>Import Project</p> 	<p>Utilizes other project data</p>	<p>Page 9-35</p>

Object Functions (GT Designer2 Version □ Reference Manual)

1 Lamp/Switch

Image	Function	Page
<p>Lamp display</p>	Displays device value via lamp color changing	Page 6-1
<p>Bit switch</p>	Touch it to switch device ON/OFF	Page 6-19
<p>Data set switch</p>	Touch it to change bit device value	Page 6-36
<p>Special function switch</p>	Touch it to switch the screen to such as Utility screen.	Page 6-41
<p>Go to screen switch</p>	Touch it to switch between the base and window screen	Page 6-49
<p>Change station No. switch</p>	Touch it to switch the monitored PLC station No.	Page 6-59
<p>Key code switch</p>	Used as the key for inputting numerical value/ASCII	Page 6-65

2 Digit/font display

Image	Function	Page
<p>Numerical display</p>	Displays device value in numerical value	Page 7-1
<p>Numerical input</p>	Write value on device	Page 7-1

Image	Function	Page
<p>Data list</p>	Display multiple device value in list	Page 7-28
<p>ASCII display</p>	Displays device value in text	Page 7-44
<p>ASCII input</p>	Inputs text code device	Page 7-44
<p>Clock display</p>	Displays hour/minutes, year/month/date	Page 7-57
<p>Comment display</p>	Displays command	Page 7-63



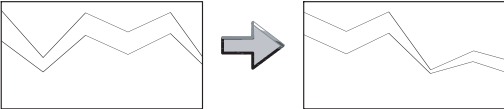
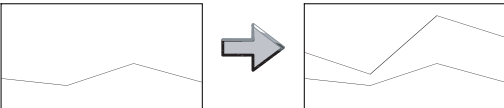


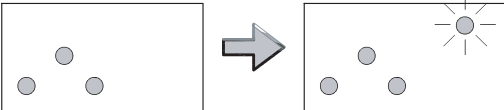
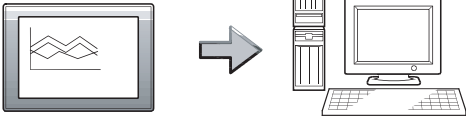
3 Alarm

Image	Function	Page
<p>Alarm list</p>	Displays message at alarm occurrence	Page 8-1
<p>Alarm history display</p>	Displays alarm history	Page 8-31
<p>Alarm flow display</p>	Displays alarm in floating	Page 8-67

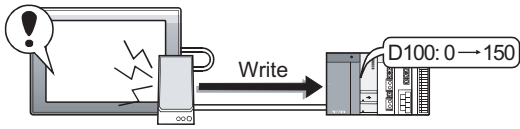
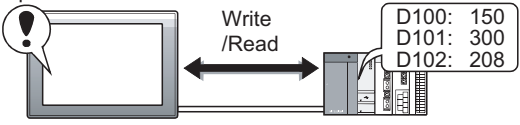
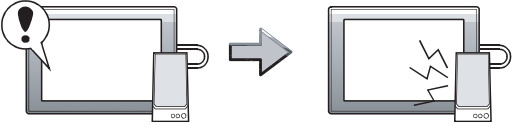
4 Parts

Image	Function	Page
<p>Parts display</p>	Display entered device	Page 9-1
<p>Parts movement display</p>	Displays moving parts	Page 9-28

5 Graph/Meter

Image	Function	Page
<p>Panel meter display</p>  <p>The image shows a semi-circular panel meter with a needle. An arrow points to a second, identical panel meter, indicating a function or setting that affects the display.</p>	<p>Displays device data on panel meter</p>	<p>Page 10-1</p>
<p>Level display</p>  <p>The image shows a vertical rectangular level display. An arrow points to a second, identical level display, indicating a function or setting that affects the display.</p>	<p>Displays device data in proportional level</p>	<p>Page 10-14</p>
<p>Trend graph display</p>  <p>The image shows a trend graph with a jagged line. An arrow points to a second, identical trend graph, indicating a function or setting that affects the display.</p>	<p>Displays device data in trend graph</p>	<p>Page 10-28</p>
<p>Line graph display</p>  <p>The image shows a line graph with a smooth curve. An arrow points to a second, identical line graph, indicating a function or setting that affects the display.</p>	<p>Displays device data in line graph</p>	<p>Page 10-44</p>
<p>Bar graph display</p>  <p>The image shows a bar graph with three bars of different heights. An arrow points to a second, identical bar graph, indicating a function or setting that affects the display.</p>	<p>Displays device data in bar graph</p>	<p>Page 10-59</p>
<p>Statistics graph display Circle graph</p>  <p>The image shows a circle graph (pie chart) on the left and a horizontal bar graph on the right. An arrow points from the circle graph to the bar graph, indicating a function or setting that converts the data display format.</p>	<p>Displays device data in statistics graph</p>	<p>Page 10-71</p>
<p>Scatter graph display</p>  <p>The image shows a scatter graph with three data points. An arrow points to a second, identical scatter graph, indicating a function or setting that affects the display.</p>	<p>Displays device data in scatter grap</p>	<p>Page 10-81</p>
<p>Sampling</p>  <p>The image shows a computer monitor displaying a line graph on the left. An arrow points to a desktop computer system (tower, monitor, keyboard) on the right, indicating a function or setting that involves data collection and editing on a PC.</p>	<p>Collect the device value and edit collected data on PC</p>	<p>Page 10-102</p>

6 Trigger → action

Image	Function	Page
<p>Status observation function</p> 	Monitors status of device and write value to device or operates GOT when condition meets	Page 11-1
<p>Recipe function</p> 	Monitors status of device and write/read device data when condition meets	Page 11-12
<p>Time action function</p> 	Outputs the device writing and sound at specified time.	Page 11-22

7 External input/output

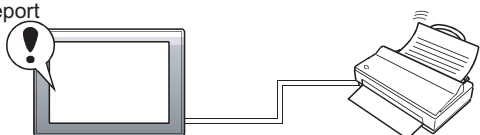
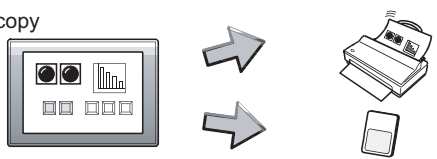
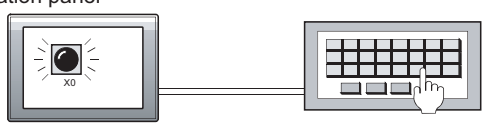
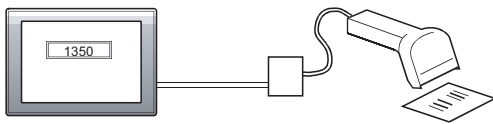

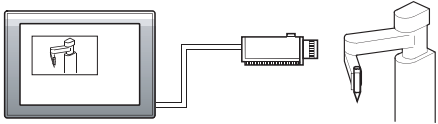
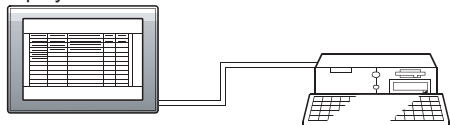

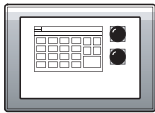
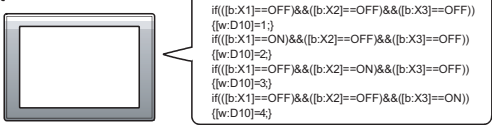
Image	Function	Page
<p>Report</p> 	Collects numerical data when condition meets and prints the numerical data and corresponding code.	Page 12-1
<p>Hardcopy</p> 	Outputs the GOT monitor screen to printer or PC card	Page 12-25
<p>Operation panel</p> 	Uses operation panel to execute device writing	Page 12-31
<p>Bar code</p> 	Writes data read by bar code reader to device	Page 12-39
<p>Sound</p> 	Outputs sounds	Page 12-46

Image	Function	Page
<p>Video</p> 	Displays video	Page 12-50
<p>RGB display</p> 	Displays PC screens	Page 12-68

8 Others

Image	Function	Page
<p>Set overlay screen</p> 	Set overlay screen from other screens	Page 13-1
<p>Test</p> 	Changes device value via test window in monitor screen	Page 13-10

9 Script function

Image	Function	Page
<p>Script</p>  <pre> if((b:X1==OFF)&&(b:X2==OFF)&&(b:X3==OFF)) {w:D10}=1; if((b:X1==ON)&&(b:X2==OFF)&&(b:X3==OFF)) {w:D10}=2; if((b:X1==OFF)&&(b:X2==ON)&&(b:X3==OFF)) {w:D10}=3; if((b:X1==OFF)&&(b:X2==OFF)&&(b:X3==ON)) {w:D10}=4; </pre>	Controls GOT display by scripts	Page 14-1

10 Object setting

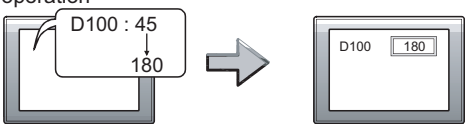
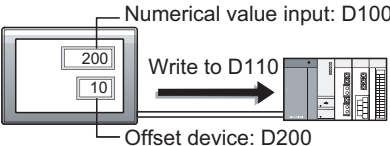


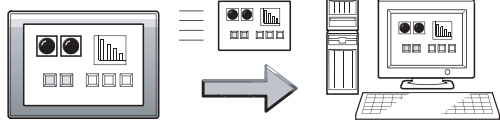
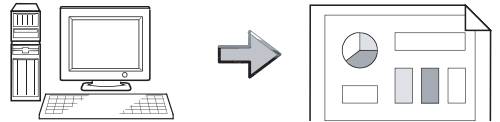
Image	Function	Page
<p>Data operation</p> 	Operates device values by expression and enables objects using the operated value	Page 5-45
<p>Offset</p> 	Accumulates the offset device value in monitor device address and monitor.	Page 5-52

Image	Function	Page
Security 	Restricts the password users	Page 5-56

Data Transmission (GT Designer2 Version □ Operating Manual)

Image	Function	Page
<p>Download</p> 	<p>Transmits monitor screen data from PC to GOT</p>	<p>Page 5-1</p>
<p>Upload</p> 	<p>Transmits monitor screen data from GOT to PC</p>	<p>Page 5-20</p>

Print (GT Designer2 Version □ Operating Manual)

Image	Function	Page
<p>Print screen</p> 	<p>Prints the project information (screen image, title list, etc.).</p>	<p>Page 6-1</p>

Manuals

The following table lists the manual relevant to this product.
You can order it as necessary.

Related Manuals

Manual Name	Manual Number (Type code)
GT Designer2 Version2 Operating Manual (Startup • Introductory Manual) Describes methods of installing GT Designer2 and introductory drawing methods (Sold separately) (Sold separately)	SH-080520ENG (1DM215)
GT Designer2 Version2 Operating Manual Describes methods of operating GT Designer2 and transmitting data to GOT (Sold separately)	SH-080521ENG (1DM216)
GOT-A900 Series Operating Manual (GT Designer2 Version2 compatible Extended • Option Functions Manual) Describes the following extended functions and optional functions applicable to GOT Extended and optional function of GOT are as follows: <ul style="list-style-type: none"> • Utility • Ladder monitor • System monitor • Special module monitor • Network monitor • List editing • Module monitor • Servo amplifier monitor • CNC monitor • Font change • System dialog language switching (Sold separately)	SH-080523ENG (1DM218)
GOT-A900 Series User's Manual (GT Designer2 Version2 compatible Connection System Manual) Describes the system configuration of which connection method is compatible with GOT-A900 series as well as processing cables (Sold separately)	SH-080524ENG (1DM219)
GOT-A900 Series Operating Manual (GT Designer2 Version2 compatible Gateway Functions Manual) Describes the gateway function specifications, system configuration and methods of setting GOT-A900 series (Sold separately)	SH-080525ENG (1DM220)
A985GOT/A975GOT/A970GOT/A960GOT User's Manual Provides performance specification, setting method, and communication board/communication module installation method of each GOT (Sold separately)	SH-4005 (1DM099)
A950GOT/A951GOT/A953GOT/A956GOT User's Manual Provides performance specification, setting method, and communication board/communication module installation method of each GOT (Sold separately)	SH-080018 (1DM103)
GOT-F900 Series HARDWARE Manual [CONNECTION] Explains the specifications, system configuration and connection diagram of each connection form available for the GOT-F900 series. (Sold separately)	JY992D94801 (09R805)
GOT-F900 Series OPERATION Manual [GT Designer2 Version] Explains the drawing specifications, utility function/HPP mode/special function unit monitoring function specifications, and dedicated monitor screen operation methods available for the GOT-F900 series. (Sold separately)	JY997D09101 (09R813)

Abbreviations and Generic Terms

Abbreviations and generic terms used in this manual are as follows:

■ GOT

Abbreviations and generic terms		Description		
GOT-A900 series	A985GOT-V	A985GOT-TBA-V,	A985GOT-TBD-V	
	A985GOT	A985GOT-TBA,	A985GOT-TBD,	A985GOT-TBA-EU
	A975GOT	A975GOT-TBA-B, A975GOT-TBD,	A975GOT-TBD-B, A975GOT-TBA-EU	A975GOT-TBA,
	A970GOT	A970GOT-TBA-B, A970GOT-TBD, A970GOT-LBA, A970GOT-SBA-EU,	A970GOT-TBD-B, A970GOT-SBA, A970GOT-LBD, A970GOT-LBA-EU	A970GOT-TBA, A970GOT-SBD, A970GOT-TBA-EU,
	A97*GOT	A975GOT,	A970GOT	
	A960GOT	A960GOT-EBA,	A960GOT-EBD,	A960GOT-EBA-EU
	A956WGOT	A956WGOT-TBD		
	A956GOT	A956GOT-TBD, A956GOT-TBD-M3, A956GOT-SBD-B,	A956GOT-SBD, A956GOT-SBD-M3, A956GOT-SBD-M3-B	A956GOT-LBD, A956GOT-LBD-M3
	A953GOT	A953GOT-TBD, A953GOT-TBD-M3, A953GOT-SBD-B,	A953GOT-SBD, A953GOT-SBD-M3, A953GOT-SBD-M3-B	A953GOT-LBD, A953GOT-LBD-M3
	A951GOT	A951GOT-TBD, A951GOT-TBD-M3, A951GOT-SBD-B,	A951GOT-SBD, A951GOT-SBD-M3, A951GOT-SBD-M3-B	A951GOT-LBD, A951GOT-LBD-M3
	A951GOT-Q	A951GOT-QTBD, A951GOT-QTBD-M3, A951GOT-QSBD-B,	A951GOT-QSBD, A951GOT-QSBD-M3, A951GOT-QSBD-M3-B	A951GOT-QLBD, A951GOT-QLBD-M3
	A950GOT	A950GOT-TBD, A950GOT-TBD-M3, A950GOT-SBD-B,	A950GOT-SBD, A950GOT-SBD-M3, A950GOT-SBD-M3-B	A950GOT-LBD, A950GOT-LBD-M3
	A95*handy GOT	A950GOT-SBD-M3-H, A953GOT-LBD-M3-H	A950GOT-LBD-M3-H,	A953GOT-SBD-M3-H,
	A95*GOT	A956GOT, A950GOT	A953GOT,	A951GOT, A951GOT-Q,
GOT-F900 series	F940GOT	F940GOT-SWD, ET-940PH(-L)	F940GOT-LWD,	ET-940BH(-L),
	F930GOT-K	F930GOT-BBD-K		
	F930GOT	F930GOT-BWD,	F933GOT-BWD	
	F920GOT-K	F920GOT-BBD5-K,	F920GOT-BBD-K	
	F940 handy GOT	F940GOT-SBD-H, F940GOT-LBD-RH, F943GOT-SBD-RH,	F940GOT-LBD-H, F943GOT-SBD-H, F943GOT-LBD-RH	F940GOT-SBD-RH, F943GOT-LBD-H,
	F940WGOT	F940WGOT-TWD		

■ Communication board/communication module

Abbreviations and generic terms		Description			
Communication board	Bus connection board	A9GT-QBUSS, A9GT-50WQBUSS,	A9GT-QBUS2S, A9GT-50WBUSS	A9GT-BUSS,	A9GT-BUS2S,
	Serial communication board	A9GT-RS4, A9GT-50WRS4	A9GT-RS2,	A9GT-RS2T,	A9GT-50WRS2,
Communication module	Bus connection module	A9GT-QBUS2SU, A7GT-BUS2S	A9GT-BUSSU,	A9GT-BUS2SU,	A7GT-BUSS,
	Data link module	A7GT-J71AP23,	A7GT-J71AR23,	A7GT-J71AT23B	
	Network module	A9GT-QJ71LP23,	A9GT-QJ71BR13,	A7GT-J71LP23,	A7GT-J71BR13
	CC-Link communication module	A8GT-J61BT13,	A8GT-J61BT15		
	Ethernet communication module	A9GT-J71E71-T			

■ Option Module

Abbreviations and generic terms		Description	
Option Module	External I/O module	A9GT-70KBF,	A8GT-50KBF
	Printer interface module	A9GT-50PRF type	
	Memory card interface module	A1SD59J-MIF	
	Video/RGB mixed input interface module	A9GT-80V4R1	
	Video input interface module	A9GT-80V4	
	RGB input interface module	A9GT-80R1	

■ Option

Abbreviations and generic terms		Description			
Option	Backlight	A9GT-80LTT, A9GT-50LT,	A9GT-70LTTB, F9GT-40LTS,	A9GT-70LTT, F9GT-30LTB	A9GT-70LTS,
	Debug stand	A9GT-80STAND,	A9GT-70STAND,	A9GT-50WSTAND,	A9GT-50STAND
	Memory board	A9GT-FNB, A9GT-FNB8M, F9GT-40FMB,	A9GT-FNB1M, A9GT-QFNB, F9GT-40UMB	A9GT-FNB2M, A9GT-QFNB4M,	A9GT-FNB4M, A9GT-QFNB8M,
	Ten-key panel	A8GT-TK			
	Bus connector conversion box	A7GT-CNB			
	Bus distance connector box	A9GT-QCNB			
	Protective sheet	A9GT-80PSC, A9GT-50PSC,	A9GT-70PSC, F9WGT-40PSC,	A9GT-60PSC, F9GT-40PSC,	A9GT-50WPSC, F9GT-30PSC
	Attachment	A77GT-96ATT,	A85GT-95ATT,	A87GT-96ATT,	A87GT-97ATT
	PC card (memory card)	Flash PC card/Commercially available flash PC card/SRAM type PC card			
	Flash PC card	A9GTMEM-10MF,	A9GTMEM-20MF,	A9GTMEM-40MF	
	Compact Flash PC card	Commercially available flash PC card			
	Connector conversion box	Abbreviation of F9GT-HCNB			

■ Software

Abbreviations and generic terms		Description
Software	GT Works2 Version□	SW□D5C-GTWK2-E, SW□D5C-GTWK2-EV
	GT Designer2 Version□	SW□D5C-GTD2-E, SW□D5C-GTD2-EV
	GT Designer2	Abbreviation of GOT900 series graphic software-GT Designer2
	GT Simulator2	Abbreviation of screen simulator GT Simulator2 for GOT1000/GOT900 series
	GT SoftGOT2	Abbreviation of monitoring software-GT SoftGOT2
	GT Converter	Abbreviation of GOT900 series data conversion software-GT Converter
	GX Developer	Abbreviation of SW□D5C-GPPW(-V)/SW□D5F-GPPW(-V) type software package
	GX Simulator	Abbreviation of SW□D5C-LLT(-V) type download test tool function software package (SW5D5C-LLT(-V) or later)
	DU/WIN	Abbreviation of FX-PCS-DU/WIN

■ License key (for GT SoftGOT, GT SoftGOT2)

Abbreviations and generic terms	Description
License key	A9GTSOFT-LKEY-P (for DOS/VPC)
License key FD	SW5D5F-SGLKEY-J (for PC CPU module)

■ CPU

Abbreviations and generic terms		Description			
QCPU	QCPU (Q Mode)	Q00JCPU, Q02HCPU, Q12PHCPU,	Q00CPU, Q06HCPU, Q25PHCPU	Q01CPU, Q12HCPU,	Q02CPU, Q25HCPU,
	QCPU (A Mode)	Q02CPU-A,	Q02HCPU-A,	Q06HCPU-A	
	Remote I/O station	Network module for MELSECNET/H network system remote I/O station (QJ72LP25-25, QJ72LP25G, QJ72BR15)			
QnACPU	QnACPU type	Q2ACPU, Q3ACPU,	Q2ACPU-S1, Q4ACPU,	Q2AHCPU, Q4ARCPU	Q2AHCPU-S1,
	QnASCPU type	Q2ASCPU,	Q2ASCPU-S1,	Q2ASHCPU,	Q2ASHCPU-S1
ACPU	AnUCPU	A2UCPU,	A2UCPU-S1,	A3UCPU,	A4UCPU
	AnACPU	A2ACPU,	A2ACPU-S1,	A3ACPU	
	AnNCPU	A1NCPU,	A2NCPU,	A2NCPU-S1,	A3NCPU
	AnCPU type	AnUCPU,	AnACPU,	AnNCPU	
	AnUS (H) CPU	A2USCPU,	A2USCPU-S1,	A2USHCPU-S1,	A3USCPU
	AnS (H) CPU	A1SCPU, A1SHCPU,	A1SCPUC24-R2, A2SHCPU,	A2SCPU, A2SHCPU-S1	A2SCPU-S1,
	A1SJ (H) CPU	A1SJCPU,	A1SJCPU-S3,	A1SJHCPU	
	AnSCPU type	AnUS(H)CPU,	AnS(H)CPU,	A1SJ(H)CPU	
	A1FXCPU	A1FXCPU			
		A0J2HCPU,	A2CCPU,	A2CCPUC24,	A2CJCPU
FXCPU		FX ₀ series, FX _{1N} series, FX _{2C} series, FX _(2N) -10GM/20GM series	FX _{0N} series, FX _{1NC} series, FX _{2N} series,	FX _{0S} series, FX _{1S} series, FX _{2NC} series, FX _{3UC} series,	FX ₁ series, FX ₂ series,
Motion controller CPU	Motion controller CPU (Q series)	Q172CPU,	Q173CPU		
	Motion controller CPU (A series)	A273UCPU, A373CPU, A171SCPU, A171SHCPU, A172SHCPUN,	A273UHCPU, A373UCPU, A171SCPU-S3, A171SHCPUN, A173UHCPU,	A273UHCPU-S3, A373UCPU-S3, A171SCPU-S3N, A172SHCPU, A173UHCPU-S1	
FA controller		LM610,	LM7600,	LM8000	
MELDAS C6/C64		FCA C6,	FCA C64		

■ Inverter

Abbreviations and generic terms	Description		
FREQROL series	A500 series,	E500 series,	F500 series

■ Other PLC

Abbreviations and generic terms		Description			
Omron PLC		C200HS, C200HE), CV500, CVM1-CPU01, CS1D, CPM1, CQM1H	C200H, CQM1, CV1000, CVM1-CPU11, CJ1H, CPM1A,	C200H α series (C200HX, C200HG, C1000H, C2000H, CV2000, CVM1-CPU21, CJ1G, CPM2A,	CS1, CJ1M, CPM2C,
Yaskawa PLC		GL60S, GL130, MP-930,	GL60H, CP-9200SH, MP-940,	GL70H, CP-9300MS, MP-9200(H),	GL120, MP-920, PROGIC-8
Allen-Bradley PLC	SLC500 series	SLC500-20, SLC5/02,	SLC500-30, SLC5/03,	SLC500-40, SLC5/04,	SLC5/01, SLC5/05
	MicroLogix1000 series	1761-L10BWA, 1761-L16BWA, 1761-L32AWA, 1761-L32BBB, 1761-L20BWA-5A,	1761-L10BWB, 1761-L16BWB, 1761-L32BWA, 1761-L32AAA, 1761-L20BWB-5A	1761-L16AWA, 1761-L16BBB, 1761-L32BWB, 1761-L20AWA-5A,	
	MicroLogix1500 series	1764-LSP			
Sharp PLC		JW-21CU, JW-33CUH, JW-100CUH,	JW-22CU, JW-50CUH, Z-512J	JW-31CUH, JW-70CUH,	JW-32CUH, JW-100CU,
Toshiba PLC	PROSEC T series	T3,	T3H,	T2E,	T2N
	PROSEC V series	Model3000,	S2T		
SIEMENS PLC		SIMATIC S7-200 series, SIMATIC S7-400 series		SIMATIC S7-300series,	
HITACHI PLC (HIDEC H series)	Large-sized H series	H-302(CPU2-03H), H-2002(CPU2-20H), H-700(CPU-07Ha),	H-702(CPU2-07H), H-4010(CPU3-40H), H-2000(CPU-20Ha)	H-1002(CPU2-10H), H-300(CPU-03Ha),	
	H-200 252 series	H-200(CPU-02H,CPE-02H), H-252(CPU22-02H), H-252C(CPU22-02HC, CPE22-02HC)		H-250(CPU21-02H), H-252B(CPU22-02HB),	
	H series board type	H-20DR, H-20DT, HL-40DR,	H-28DR, H-28DT, HL-64DR	H-40DR, H-40DT,	H-64DR, H-64DT,
	EH-150 series	EH-CPU104,	EH-CPU208,	EH-CPU308,	EH-CPU316
Matsushita Electric Works PLC		FP0-C16CT, FP2, FP5, FP-M(C20TC),	FP0-C32CT, FP2SH, FP10 (S), FP-M (C32TC)	FP1-C24C, FP2-CCU, FP10SH,	FP1-C40C, FP3,

How to Use This Manual

Following symbols are used in this manual

12.5 Sound

This section explains the function to output sound from the speaker connected to GOT.
Sound output is available for the following functions

- Touch switch function
- Status observation function
- Time action function

To output sounds from GOT, it is required to specify the output sound file in the setting.

Example

If the set conditions are satisfied, sounds are output

If the set conditions are enabled, (M0 changes from OFF to ON), output the specified sound file.

12.5.1 Settings

- 1 Select [Common] → [Sound Files] from the menu.
- 2 As the setting dialog box will appear, make the settings with reference to the following explanation.

Remark When making the settings in the project workplace
The setting dialog box can be displayed by double-clicking on in the project

Shows functions applicable to GOT-A900 series (GOT-A900) GOT-F900 series (GOT-F900).
"○", Applicable
"×", N/A

Shows the items including detailed explanation (manual and the chapter, section, item).

1 → 2 → 3

Indicates the operation steps.

Brackets used for the menu and items differ.

[] : Refers to menu in menu bar.

: Refers to dialog box item or GOT utility menu.

: Refers to dialog box buttons or PC keyboard.

Point

Refers to information required for operation.

Hint!

Refers to information useful for operation.

Remark

Refers to supplementary explanations.

12.5.2 Setting items

Set the sound files to be output from GOT.

Items	Description	A	F
Sound Files	Click on the column of file names to select a sound file to be output. Up to 100 sound files can be set.	○	×
Delete	Deletes the selected sound file.	○	×

Shows functions applicable to GOT-A900 series (A) GOT-F900 series (F).
"○", Applicable
"×", N/A

* The above is user for explanation only and differs from the actual page.

1. OVERVIEW

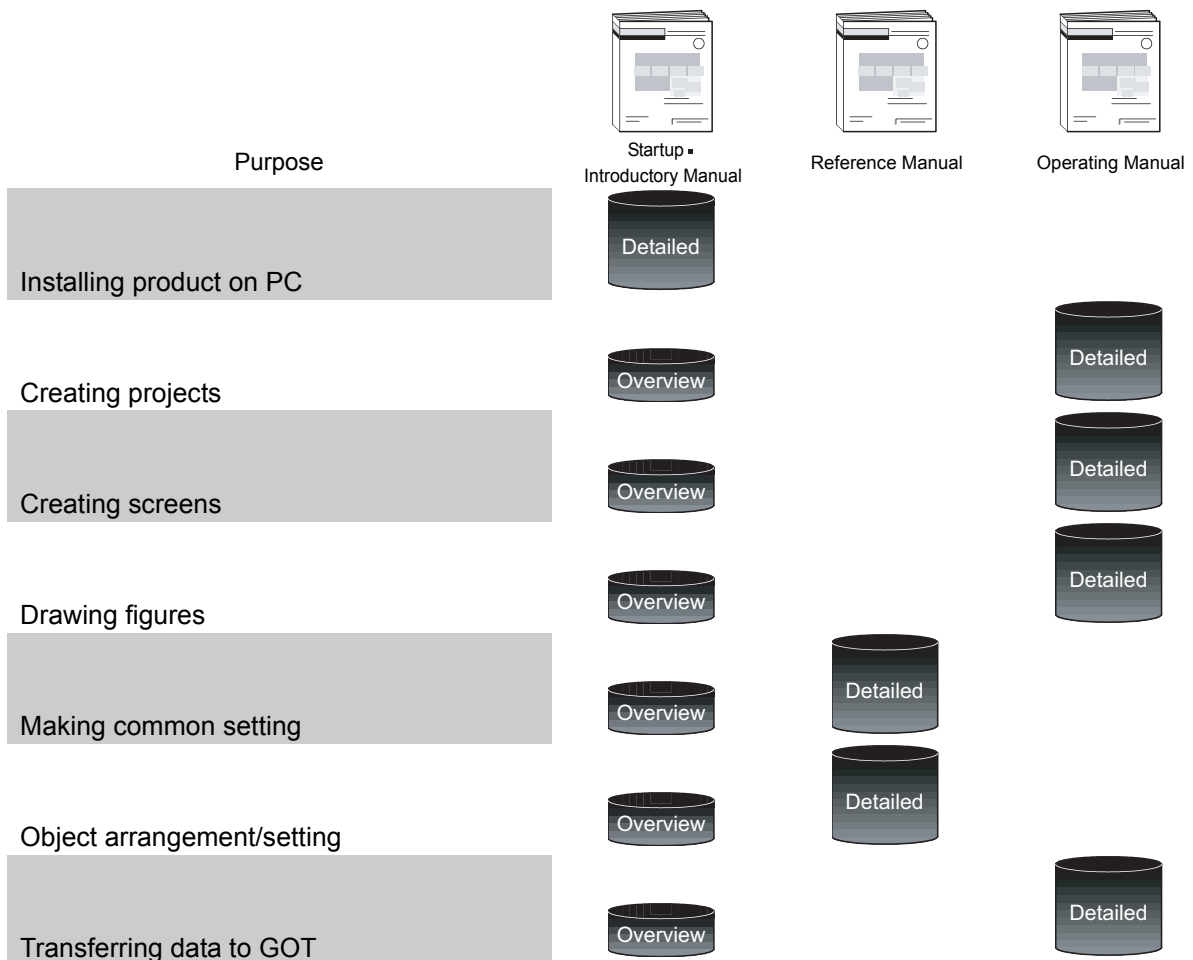
1.1 Overview

This manual explains the GT Designer2 common setting, object function specifications, object setting/arrangement.

When applying any of the program examples introduced in this manual to the actual system, verify the applicability and confirm that no problems will occur in the system control.

1 GT Designer2-relevant manuals

The following manuals are relevant to the GT Designer2.
Refer to the corresponding manual according to needs.



■ Startup and Introduction

Describes the installation methods of the product, and explains the series of operations from creating simple screens to using them on GOT with example.

■ Reference manual

Provides specifications of object/figure/screen and setting methods of object

■ Operating manual

Describes GT Designer2 screen configuration, screen customizing methods and the series of operations from object creation to data transfer.


2. SPECIFICATIONS

2.1 Type/Number of Creatable Screens

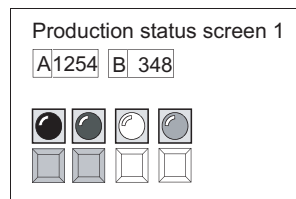
Type and number of creatable screens differ in GOT-A900 series and GOT-F900 series.


GOT-A900 series... Base screen, window screen (overlap window, superimpose window, key window), and report screen.

GOT-F900 series... Base screen, key window screen (the displaying method is overlap window).

Base screen ( Section 2.1.1 Base screen specifications)

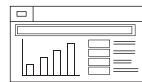
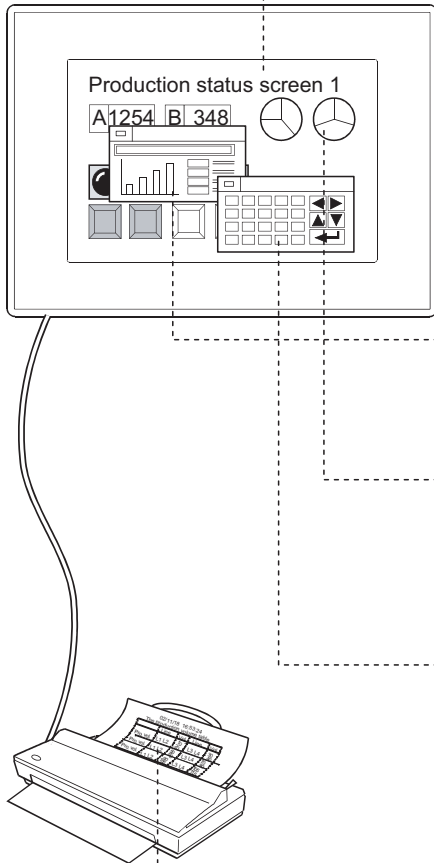
The basic screen for screen display on GOT.



Window screen ( Section 2.1.2 Window screen specifications)

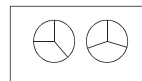
A screen displayed over the base screen.

The created window screen can be displayed using either of the following methods.



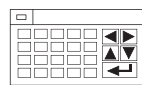
Overlap window

A pop-up window that appears over the base screen. This type of window can be moved and closed manually. Up to two windows can be displayed simultaneously.




Superimposed window

A window composited on the base screen. If superimposed window is switched, the corresponding part of the base screen will be changed.



Key window

A pop-up window displayed over the base screen when inputting (e.g. Numerical input). There are two types of key window: default key window and user-created key window.

Report screen ( Section 12.1 Report Function)

A screen for data output and format creation using report function.

02/11/18 16:53:24 The production volume table					
	Line	Vol.	Line	Vol.	
Pro.vol.	L1 L2	10 20	L3 L4	30 40	
Pro.vol.	L1 L2	50 60	L3 L4	70 80	
Pro.vol.	L1 L2	90 100	L3 L4	105 115	

2.1.1 Base screen specifications

The following table describes the base screen specifications.

GOT type	Screen size (W × H dots)	Number of screens can be set	Number of screens can be registered
GT SoftGOT	1280 × 1024, 1024 × 768	4096	1 to 32767
A985GOT/GT SoftGOT	800 × 600		
A97*GOT/GT SoftGOT	640 × 480		
A960GOT	640 × 400		
A956WGOT	480 × 234		
A95*GOT	320 × 240		
F940WGOT	480 × 234	500	1 to 500
F94*GOT, CF94* handy GOT	320 × 240		
F93*GOT(-K)	240 × 80		
F920GOT-K	128 × 64		

2.1.2 Window screen specifications

The following table describes the window screen specifications.

GOT type	Screen size (W × H dots)		Number of screens can be set	Number of screens can be registered	Initial value (W × H dots)
	Maximum*1	Minimum			
GT SoftGOT	800 × 480	94 × 81	1024	1 to 32767	318 × 176
A985GOT/GT SoftGOT	"798 × 463"				
A97*GOT/GT SoftGOT	640 × 400				
A960GOT	"638 × 383"*2				
A956WGOT	480 × 234 "478 × 217"				
A95*GOT	320 × 240 "318 × 223"				
F940WGOT	"480 × 214"	16 × 20	3	1 to 500	182 × 120
F94*GOT, F94* handy GOT	"318 × 220"				182 × 120
F93*GOT(-K)	"240 × 80"				182 × 80
F920GOT-K	-	-	-	-	-

*1 The values in " " (quotation marks) in the above table indicates the screen sizes when a close key and a movement bar are displayed on the overlap window.

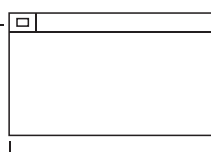
For F94WGOT and F94*GOT, the close key and movement bar are additionally displayed on GOT side. (See below)

The close key and movement bar are not displayed on F93*GOT(-K).

GOT-A900 series: 17 dots are used.
GOT-F900 series: 20 dots are used.

1 dot is used.
(For GOT-A900 series only)

Close key and move bar provided Close key and move bar not provided



*2 Create the screen of 638 × 322 dots or less for the usage of user-created key window.

If the screen of more than 638 × 322 dots is created, the user-created key window may not be displayed.

1 Methods of displaying window screen

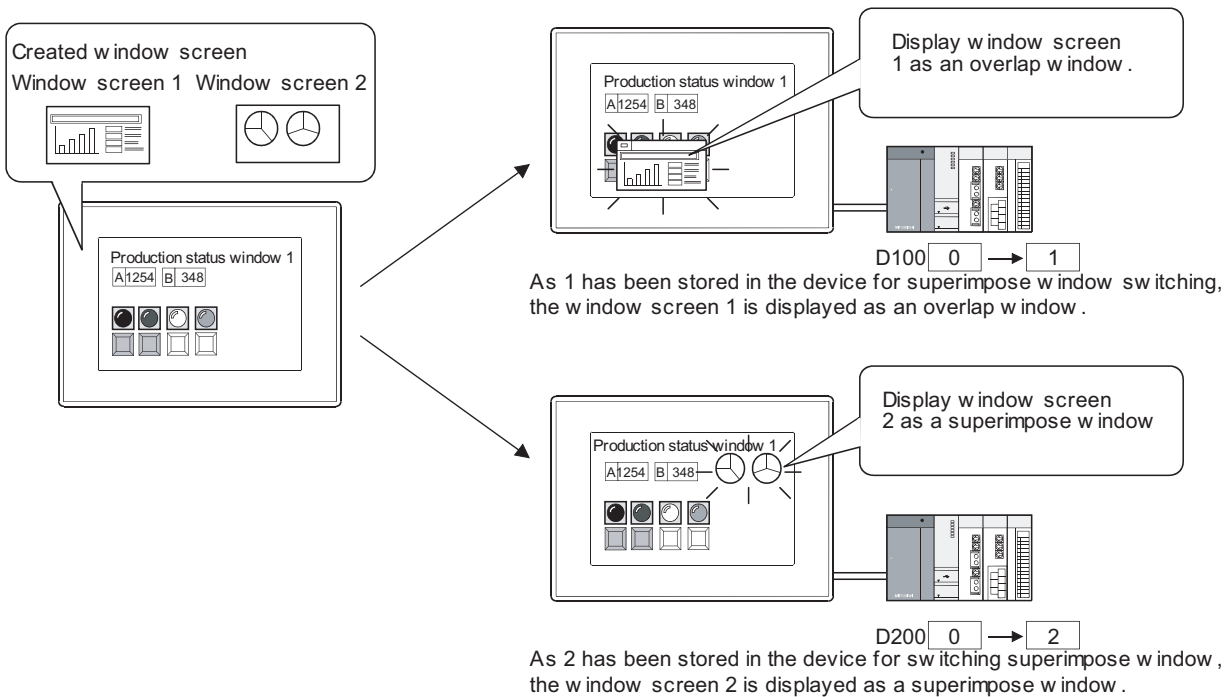
(1) Methods of displaying window screens and superimpose screens

The created window screens will be displayed when the corresponding window screen No. is stored in the screen switching device for the window screen (overlap window, superimposed window).

Example: Relation between created window screen and device for switching window screen.

Screen switching device for overlap window 1 : D100

Screen switching device for superimposed window : D200



When erasing a window screen, store 0 to the device for screen switching. An overlap window can be erased by touching the close key, if it is displayed there. (0 will be stored to the device for screen switching.)

☞ Section 3.2 Switching Screen Device Setting

(2) Methods of displaying key window

A key window is displayed by touching the numerical/ASCII input function objects.

☞ Section 4.6 Key Window

2 Display position of window screen

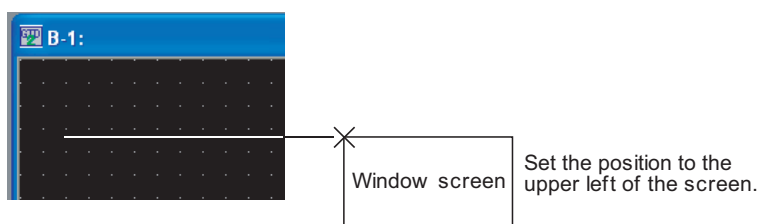
Set the display position using GT Designer2.

A window screen is displayed in the center of a base screen if its display position has not been set.

1 Select [Object] → [Window Position] → [Overlap Window 1]/[Overlap Window 2]/[Superimposed window]/[Key Window] from the menu.

2 Click the display position of each window.

(Specify multiples of 16 for the X and Y coordinates of the overlap window. If a non-multiple of 16 is specified for the coordinate, the overlap window is placed on the coordinate of the rounded down number when the remainder is 7 or less, or on the coordinate of the rounded up number when the remainder is 8 or more.)



Display position of overlap window

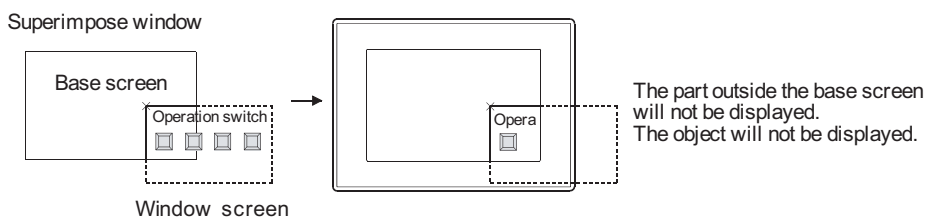
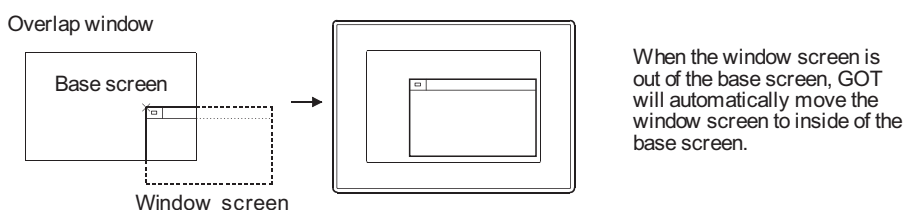
The display position of an overlap window can be controlled using device.

➔ Section 3.2 Switching Screen Device Setting



When a window screen has been set to be out of the base screen

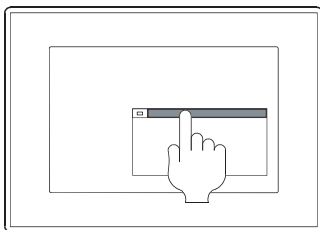
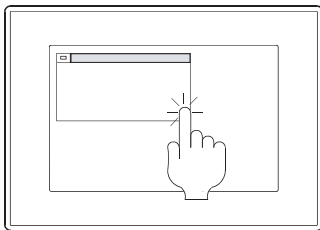
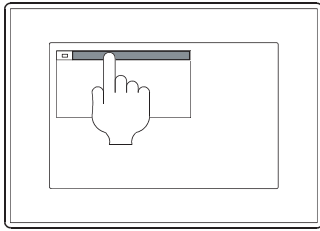
The window screen size will not be checked when setting its display position. Make sure to set the display position of a window screen while considering its screen size.



3 Methods of moving window screen

The window screens that can be moved are window 1, 2 and key windows only.

Move the window screen as explained below.



- 1 Touch the Move key at top of the window to replace the window.
During the Move key is highlighted, the GOT is the window move mode with beeping the buzzer.
- 2 Touch the replaced position within three seconds.
The GOT leaves the move mode (Highlighted Move key) without touching for three or more seconds.
The touched objects is not operated within three seconds.
- 3 The window will move to the specified position.



Methods of checking window move mode (for GOT-A900 series only)

When setting up GOT security set the alarm sound to [LONG] or [Short]. With this setting, the alarm will activate while the window is in move mode.

This function is not available if the alarm sound has been set to [None].

☞ GOT-A900 Series Operating Manual (Extended • Option Function Manual)



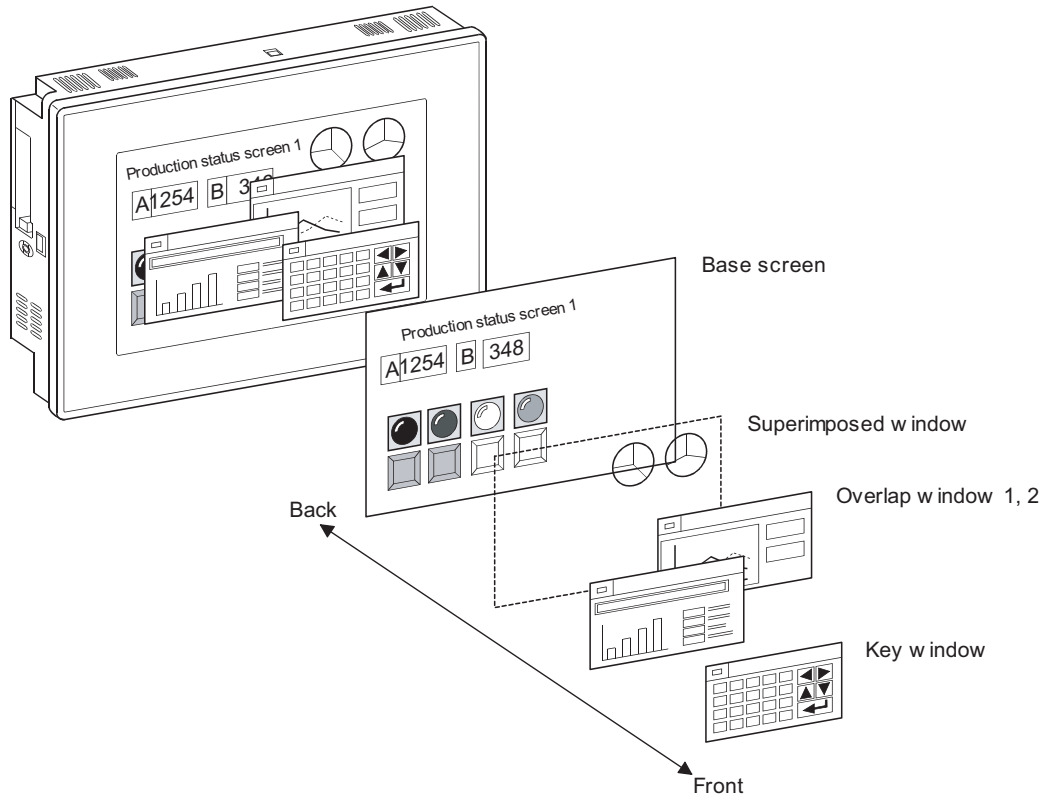
Closing the window after movement.

If a window has been moved and then closed, it will appear at the new position when opened again.

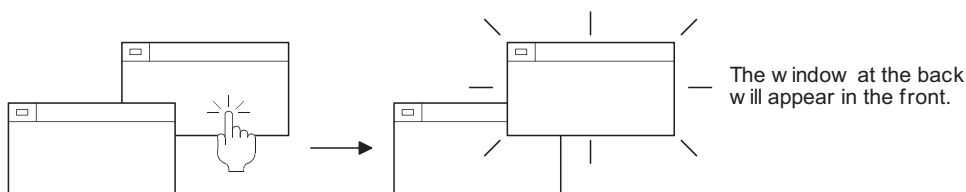
2.1.3 Whole screen specifications

1 Screen laying

The screens are layered by type and displayed as shown below.



- (1) Base screen
Located at the back.
- (2) Superimposed window (for GOT-A900 only)
Superimposed window overlaid in front of the base screen is displayed as a base screen. The superimposed window including the figures and objects are arranged in the free area of the base screen.
- (3) Overlap window 1, 2 (for GOT-A900 only)
The overlap window including the figures and objects can be displayed in front of the base screen and superimposed window. The later appeared Overlap window is displayed in the front. The objects of the base screen arranged in the rear of the overlap window are not displayed. To confirm or operate the rear objects, close or move the overlap window. Touch the rear overlap window to display it in the front.



* In case of GOT-F900 series, overlap window 1, 2 can be displayed overlapping each other on the base screen.

- (4) Key window
Located in the front.

2 Overlap-display of figures and objects

Overlapping figures and objects are displayed according to the order of layer.

On the base screen and superimposed window, the object being changed is brought to the front.

3 Input object operation

(1) In the case of GOT-A900 series

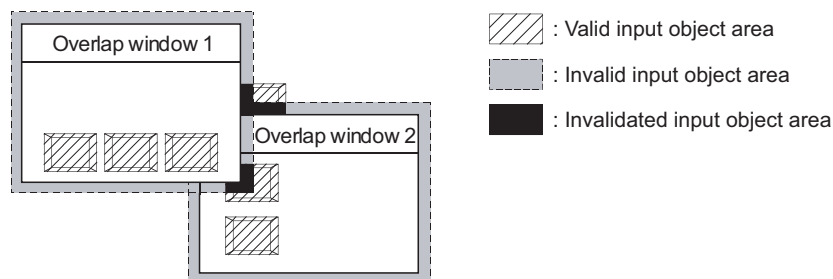
The input objects at the back of the superimposed window can be used.

If the input objects of the superimposed window and base window overlap, both switches can be used.

(If the touch time is not long enough, only the input objects of the superimposed window may operate.)

The input objects at the back of an overlapped window will not operate.

Input object areas arranged within 16 dots from the peripheries of overlap windows are invalidated and inoperable.



(2) In the case of GOT-F900 series

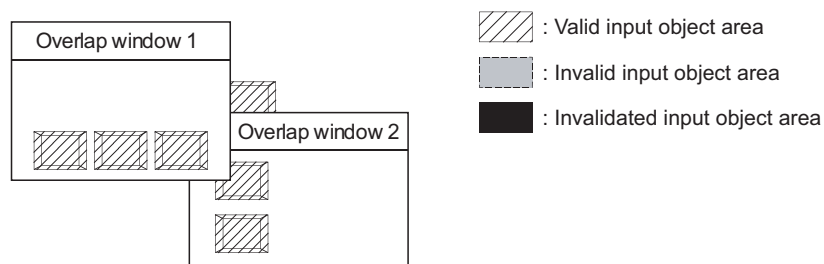
The input objects at the back of overlap window are operable (screen overlaying).



To make overlap window without the invalid input object area

Set close key and move bar as "Non" and the 16 dot times size of the window.*1

The above setting window has no invalid input object area, as shown below.



*1 In the case of GOT-F900 series, the length and height should be multiples of 16 and 20 respectively due to the mesh of L16 x H20 dots (side by side arrangement).

The mesh setting is recommended for setting the touch switch size.

To make the above setting, click [Project]→[Drawing Environment] display tabs.

4 Overlapping the quota objects

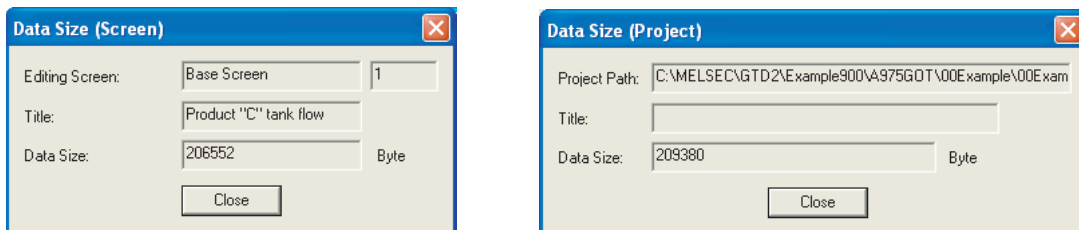
Make sure to set in order that more than two system alarms (alarm list display) in one screen by using overlap window or superimposed window.

* In one screen, only one of this type object can be set.


2.1.4 Data size of screen and project


Data size of screen and project differs by the set objects.
It is recommended to confirm the sizes before downloading a project to the GOT.
The following provides how to confirm the sizes on GT Designer2.

- 1 Select [Tools] → [Data Size] → [Screen] or [Project] from the menu.
- 2 The used data size can be confirmed on the displayed screen.



Refer to the following sections for the used memory size of each object.

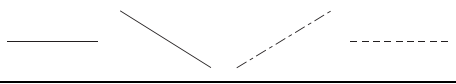
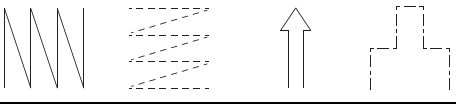
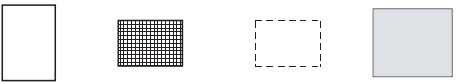
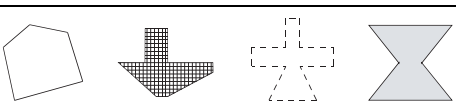
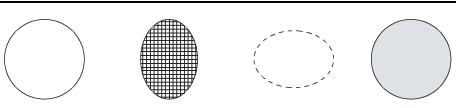
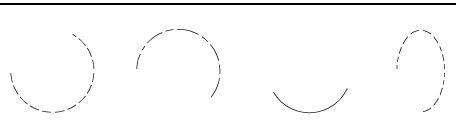
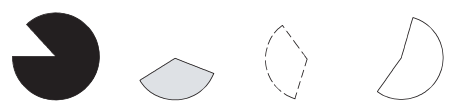

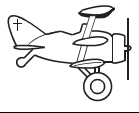
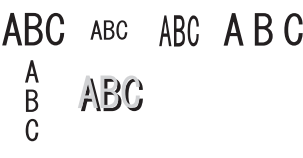
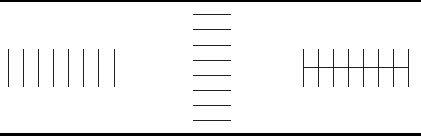
 Section 2.2 Figures and Data Capacity

 Section 2.3 Specifications of Available Object Functions

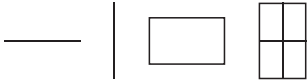
2.2 Figures and Data Capacity

2.2.1 In the case of GOT-A900 series


The following table shows figures, text type, attributes and data capacity of GOT-A900 series. The data capacity is defined by the shape. The attributes and size are not relevant.

Figure	Drawing examples	Attributes	Data capacity (byte)
Line			20
Line Freeform		Style, Color	Width, 16 + 4 × number of vertexes
Rectangle			24
Polygon		Style, Color, Pattern color,	Width, Pattern, Background 16 + 4 × number of vertexes (Start point and end point counted as one vertex)
Circle			24
Arc		Style, Color	Width, 32
Sector		Style, Color, Foreground,	Width, Pattern, Background 36
Paint		Boundary, Foreground	Pattern Background 16
Import Bitmap			20 + data capacity of bit map file
Import DXF			Varies according to the contents of an image.
Text		Text Style, Text Solid Color, Interval, Alignment, High Quality Font (High quality font is used when the zoom rate of fonts are 2, 4, 6, and 8)	Text color, Size, Direction, 28 + 2 (No. of characters + 1) 128 × number. of characters
Scale		Scale points, Center line, Width,	Direction, Style, Color 24

(Continued to next page)

Figure	Drawing examples	Attributes	Data capacity (byte)
Report Line		-	*1
Report Text	ABC		

*1 Data size of report figure is included in the report setting capacity. For the report setting capacity, refer to the following.

 Section 2.3.1 In the case of GOT-A900 series

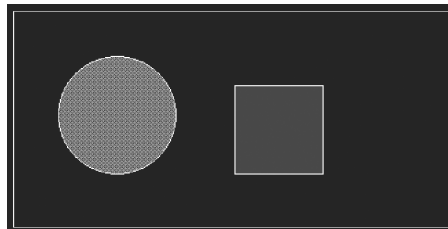


When using A956WGOT

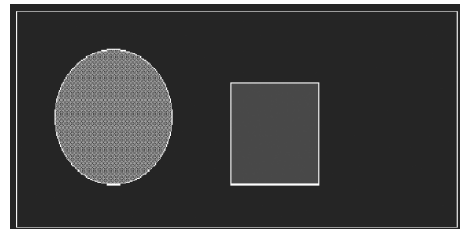
In wide display, the length of the actual screen display is 1.15 longer compared to the screen drawn with GT Designer2.

The actual screen display can be checked using the Preview of GT Designer2.

GT Designer2 screen



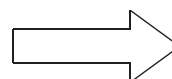
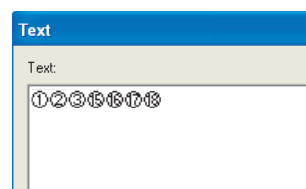
A956WGOT screen



(1) GOT-compatible text

Text supported by the GT Designer2 is also supported by GOT.


However, those texts that would be changed into [?] or its size would be changed on the drawing screen after being input and defined, will not be displayed in GOT.



(2) About 1) to 15)

In the DATE area of the rated plate, the rounding frame of 1 to 15 will be displayed almost like round circle if using GOT units later than [0212*T]. (The use of [*] is different with the GOT versions.)

1 Selectable attributes

Attribute	Drawing examples
Line style	Full line ————, broken line - - - - - , dotted line , one dot chain line, - - - - - , two dots chain line - - - - -
Line width	1 Dot ———— 2 Dot ———— 3 Dot ———— 4 Dot ———— 5 Dot ———— 7 Dot ————
Line color, text color, text solid color	Maximum 256 colors (Displayed colors are reduced to the colors supported by the used GOT.) The text solid color can be set to "Solid" or "Carve" text style.
Screen pattern	
Pattern color, pattern background color, boundary color	Maximum 256 colors (Displayed colors are reduced to the colors supported by the used GOT.)
Text style	Standard ABC , Thick ABC , Solid ABC , Carve ABC
Direction	Horizontal ABC , Vertical A B C
Alignment	Left ABC , Center ABC , Right ABC , Can be specified to "Horizontal" only.
Size	Horizontal 0.5, 1 to 8; Vertical 0.5, 1 to 8
Between lines	0 to 16 dots
Scale points	2 to 255 points | | | | | | | |
Center line	None | | | | | | | | , With | | | | | | | |

Screen flickering when A956WGOT is used

Several types of objects or graphic patterns, which are used when creating images, may cause the screen to flicker. This is due to the characteristics of the liquid display crystal panel.

Confirm the combination of patterns and color types on an actual machine before using.

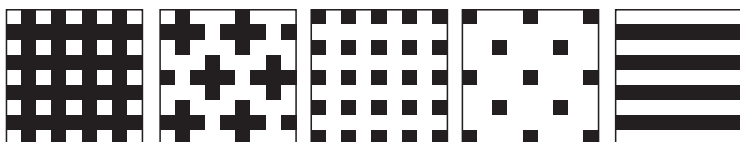
(1) Example of patterns that can cause screen flickering

Pattern of lines, points or similar of which colors change line-by-line (horizontal pattern) particularly tends to cause a screen to flicker. (A basic figure that uses a horizontal pattern may also cause screen flickering)

Also, a graphic pattern with high contrast is likely to flicker.

(When "Background: Black", "Foreground: White" is selected.)

< Example of patterns that can cause screen flickering >



(2) Methods of preventing screen flickering.

Selecting a solid color pattern reduces screen flickering.

Selecting similar colors for foreground and background reduces screen flickering.

Example 1: Select a filled color for [Pattern].

- Pattern: Filled color

Fill Pattern:	<input type="checkbox"/>	▼
Pattern Fg Color:	<input type="text"/>	▼
Pattern Bg Color:	<input type="text"/>	▼

Example 2: Select similar colors for [Foreground] and [Background].

- Foreground: Blue
- Background: None

Fill Pattern:	<input checked="" type="checkbox"/>	▼
Pattern Fg Color:	<input type="text"/>	▼
Pattern Bg Color:	<input type="text"/>	▼

2 Figures in BMP/DXF file format

The BMP/DXF file described below can be displayed.

If any color non-displayable for the GOT are used for a BMP file, the color will be subtracted when displayed.

(1) BMP file

The BMP data specified below can be used.

Item	Description
BMP data	256 colors, 16 colors or monochrome
Resolution*1	<ul style="list-style-type: none">• 2000 × 1600 or more: Display the BMP data reduced to a resolution of 2000 × 1600 or less on GT Designer2. When the data is reduced, the resolution for vertical and horizontal is the same ratio.• 2000 × 1600 or less: Display without changing the resolution.

*1 Errors may occur when a personal computer has insufficient memory for reading the BMP data. When errors occur, the BMP data is not displayed on a screen for GT Designer2.

(2) DXF file

The DXF data described below can be used.

Item	Description
DXF data	Release 12, Release 13, Release 14
Resolution	2048 × 1536 or less

Point

Difference between data available for BMP file parts and registered parts

The BMP file that can be stored in the PC card (BMP file parts) differs with the BMP file that can be used in the GT Designer2 (registered parts).

The data used as a registered part may not be used as a BMP file part.

For the BMP file that can be used as BMP file parts, refer to the following.

 Section 4.3.1 **2** BMP files that can be displayed

Remark

The BMP/DXF format files

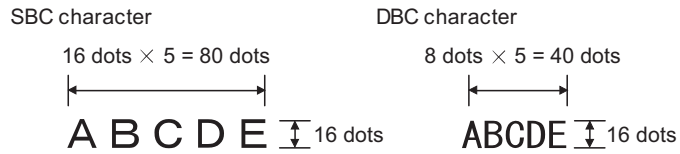
Refer to the following manual for how to read the BMP/DXF format files to the GT Designer2 or precautions for use.

 GT Designer2 Version2 Operating Manual

3 Character size by magnification

The character size is 16 dots (height) × 8 dots (width) when magnified by 1.

Example: When five fonts (magnified by 1) are displayed.



Character size (dots) changes according to the magnification as follows.

Height × Width (dots)

Height magnification	Width magnification								
	0.5	1	2	3	4	5	6	7	8
0.5	8 × 8	8 × 16	8 × 32	8 × 48	8 × 64	8 × 80	8 × 96	8 × 112	8 × 128
1	16 × 8	16 × 16	16 × 32	16 × 48	16 × 64	16 × 80	16 × 96	16 × 112	16 × 128
2	32 × 8	32 × 16	32 × 32	32 × 48	32 × 64	32 × 80	32 × 96	32 × 112	32 × 128
3	48 × 8	48 × 16	48 × 32	48 × 48	48 × 64	48 × 80	48 × 96	48 × 112	48 × 128
4	64 × 8	64 × 16	64 × 32	64 × 48	64 × 64	64 × 80	64 × 96	64 × 112	64 × 128
5	80 × 8	80 × 16	80 × 32	80 × 48	80 × 64	80 × 80	80 × 96	80 × 112	80 × 128
6	96 × 8	96 × 16	96 × 32	96 × 48	96 × 64	96 × 80	96 × 96	96 × 112	96 × 128
7	112 × 8	112 × 16	112 × 32	112 × 48	112 × 64	112 × 80	112 × 96	112 × 112	112 × 128
8	128 × 8	128 × 16	128 × 32	128 × 48	128 × 64	128 × 80	128 × 96	128 × 112	128 × 128

2.2.2 In the case of GOT-F900 series

The following table shows figures, text type, attributes and data capacity in GOT-F900 series. The data capacity is defined by the shape. The attributes and size are not relevant.

Figure	Drawing examples	Attributes	Data capacity (byte)
Line		Style, Color	20
Rectangle		Style, Pattern color:	24
Circle			
Import BMP/ DXF format		-	20 + data capacity of bitmap file
Text		Text color, Alignment, Size,	34 + number of fonts

1 Selectable attributes

Attribute	Drawing examples
Line style	Full line ————, broken line - - - - - , dotted line , one dot chain line, ~~~~~~ , two dots chain line - . - . - .
Line width	1 Dot ————
Display color	Maximum 256 colors (The GOT will choose the nearest color when an incompatible color is specified.)
Pattern	
Pattern color Pattern background	Maximum 256 colors (The GOT will choose the nearest color when an incompatible color is specified.)

2 Figures in BMP/DXF file format

The BMP/DXF file described below can be displayed.

If any color non-displayable for the GOT are used for a BMP file, the color will be subtracted when displayed.

GOT types	Drawing examples
F920GOT(-K) F930GOT(-K)	Bitmap figure of 2 colors (monochrome) or more will be displayed in black and white. (The colors other than black are displayed as white.)
F940GOT	16 colors type : Bitmap figure of 16 colors or more will be displayed in 8 colors.
F940 handy GOT	Monochrome type : Bitmap figure of 2 colors (monochrome) or more will be displayed in 2 colors.
F940WGOT	Bitmap figure of 256 colors or less will be displayed in similar 256 colors.

- (1) BMP file
The BMP data specified below can be used.

Item	Description
BMP data	256 colors, 16 colors or monochrome
Resolution ^{*1}	<ul style="list-style-type: none"> • 2000 × 1600 or more: Display the BMP data reduced to a resolution of 2000 × 1600 or less on GT Designer2. When the data is reduced, the resolution for vertical and horizontal is the same ratio. • 2000 × 1600 or less: Display without changing the resolution.

*1 Errors may occur when a personal computer has insufficient memory for reading the BMP data. When errors occur, the BMP data is not displayed on a screen for GT Designer2.

- (2) DXF file
The DXF data described below can be used.

Item	Description
DXF data	Release 12, Release 13, Release 14
Resolution	2048 × 1536 or less

Point

Difference between data available for BMP file parts and registered parts

The BMP file that can be stored in the PC card (BMP file parts) differs with the BMP file that can be used in the GT Designer2 (registered parts).

The data used as a registered part may not be used as a BMP file part.

For the BMP file that can be used as BMP file parts, refer to the following.

 Section 4.3.1 **2** BMP files that can be displayed

Remark

The BMP/DXF format files

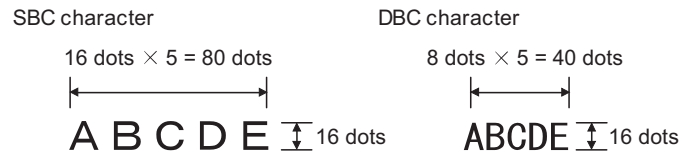
Refer to the following manual for how to read the BMP/DXF format files to the GT Designer2 or precautions for use.

 GT Designer2 Version2 Operating Manual

3 Character size magnification

The character size is 16 dots (height) × 8 dots (width) when magnified by 1.

Example: When five fonts (magnified by 1) are displayed.



Character size (dots) changes according to magnification as follows:

The character (switch, numeric value and ASCII) in objects can be set to 6 × 8 dots.

Height × Width (dots)

Height magnification	Width magnification			
	1	2	3	4
0.5	8 × 16	8 × 32	8 × 48	8 × 64
1	16 × 16	16 × 32	16 × 48	16 × 64
2	32 × 16	32 × 32	32 × 48	32 × 64
3	48 × 16	48 × 32	48 × 48	48 × 64
4	64 × 16	64 × 32	64 × 48	64 × 64

The width size is half of height size

2.3 Specifications of Available Object Functions

2.3.1 In the case of GOT-A900 series

1 Object specifications

This section explains the main object specifications in table.

Refer to the explanation (reference section) of the corresponding object function for details since the specifications and precautions may differ by the used GOT.








Note that max. number of setting objects and memory capacity in the table are based on default value settings.

When the memory capacity is increased by data operation, display methods and other settings, the number of objects may be reduced.



- (1) Max number of objects can be set.
Up to 512 objects can be set in one screen.
513th object or later is invalid. (The object will not operate.)
- (2) Max number of objects in which "Trigger" has been set to "Sampling".
Up to 100 objects can be set in one screen.
101st object or later is invalid. (The object will not operate.)

Numeric value, character display

Function	Max. No. of setting objects in one screen	Display attribute		Trigger							Device			Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)			Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security			Data Operation
 Numerical Display	512	Figure	Frame														
	24	Plate Color	Color	○	○	○	○	○	○	×	×	○	○	○	○	-	Section 7.1
 Numerical Input	256	Figure	Frame														
	32	Plate Color	Color	○	×	○	×	○	○	×	×	○	○	○	○	-	Section 7.1
 Data List	1	Figure	Frame														
	Refer to (1) below	Plate Color	Color	○	○	○	○	○	○	×	×	○	○	○	○	-	Section 7.2
 ASCII Display	256	Figure	Frame														
	8 + No of characters	Plate Color	Color	○	○	○	○	○	○	×	×	○	○	○	○	×	-
 ASCII Input	256	Figure	Frame														
	8 + No of characters	Plate Color	Color	○	×	○	×	○	○	×	×	○	○	○	○	×	-
 Clock Display	2	Figure	Frame														
	8	Plate	Color	○	×	×	×	×	×	×	×	×	×	×	○	×	-
 Comment Display	256	Figure	Frame														
	24	Display Size	Blink	○	○	○	○	○	○	×	○	○	○	○	○	-	Section 7.5
Comment	32767*1	Style	Text Solid														
	Refer to (2) below	Color	Reverse	×	×	×	×	×	×	×	×	×	×	×	×	-	Section 4.1
		Blink	High Quality Font														

*1 Maximum of 32767 comments can be registered in one project.

(1) Memory capacity for data list display function

$$32 + \{12 \times (CN + 1)\} + (6 \times DN)$$

CN: Number of columns DN: Number of devices





(2) Memory capacity of comment

$$16 + (14 \times RC) + (2 \times AT)$$

(Value within a parenthesis will be converted into multiples of 4.)

RC: Number of registered comments AT: Number of all characters

Alarm

Function	Max. No. of setting objects in one screen	Display attribute	Trigger								Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation			
 Alarm List (System Alarm)	1	Figure Plate Color	Frame Display Size	○	×	×	×	×	×	×	×	×	×	×	○	×	Refer to This section 2	Section 8.2
	184																	
 Alarm List (User Alarm)	24 ^{*1}	Figure Plate Color	Frame Display Size	○	○	○	○	○	○	×	○	×	×	○	○	×	Refer to This section 2	Section 8.1
	160 + device points × 24																	
 Alarm History	1)	Figure Plate Color	Frame Title	×	×	×	×	×	×	×	○	○	×	×	○	×	Refer to This section 2	Section 8.3
	Refer to (1) below	Figure Ruled Line																
 Floating Alarm	1 (1 object for each project)	Text	Size	×	×	×	×	○	×	×	○	×	×	×	×	×	-	Section 8.4
	80																	

*1 Up to 16 objects with "Store Memory" setting can be set.

*2 Objects with "Store Memory" setting is unusable.








*3 Operable only during ON.

(1) Memory capacity for alarm history display




$$80 + \{(2 \times TT + 4) \times DI\} + (16 \times DN)$$

TT: Number of title characters DI: Number of display items DN: Number of devices

Animation

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Parts Display	256	Display Mode Positioning Point	○	○	○	○	○	○	×	○	○	○	○	○	-	Section 9.1	
	44	Part Color Blink	○	○	○	○	○	○	○	○	○	○	○	○	-		
 Part Movement	256	Movement Type	○	○	○	○	○	○	×	○	○	○	○	○	-	Section 9.2	
	60	Display Mode Positioning Point Part Color Blink	○	○	○	○	○	○	○	○	○	○	○	○	-		
 Lamp	256	Figure High Quality Font	○	×	×	×	×	×	×	○	○	○	○	○	-	Section 6.1	
	24	Frame Lamp Back Ground Pattern Blink Text Style Text Color Solid Color L × W	○	×	×	×	×	×	×	○	○	○	○	○	-		
 Panel meter	256	Figure Frame Plate Color Needle Color Meter Panel Color	○	×	×	×	×	×	×	×	○	○	○	○	-	Section 10.1	
	40	Text Display Size Text Color High Quality Font Scale Display Scale Points	○	×	×	×	×	×	×	×	○	○	○	○	-		
 Level	256	Boundary Color Level Color Pattern	○	○	○	○	○	○	×	×	○	○	○	○	-	Section 10.2	
	40	Background Graph Color Pattern	○	○	○	○	○	○	×	×	○	○	○	○	-		
 Trend graph	24 ^{*1}	Figure Frame Plate Color Scale Display Scale Points	×	○	×	○	×	×	○	×	○	○	○	○	-	Section 10.3	
	76 + device points × 2	Graph Color Style Width	○	○	○	○	○	○	○	○	○	○	○	○	-		
 Line graph	32 ^{*2}	Figure Frame Plate color Scale Display Scale Points	○	○	○	○	○	○	○	×	○	○	○	○	-	Section 10.4	
	76 + device points × 2	Graph Color Style Width	○	○	○	○	○	○	○	○	○	○	○	○	-		

(Continued to next page)

Function	Max. No. of setting objects in one screen	Display attribute	Trigger								Device			Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Bar graph	256	Figure															
	220	Frame Plate color Graph color Pattern Background	○	○	○	○	○	○	×	×	○	○	○	○		-	Section 10.5
 Statistics Graph	32	Figure															
	444	Frame Plate Color Division Number Direction Scale Display Scale Points Graph Color Pattern BackGround	○	○	○	○	○	○	×	×	○	○	○	○		-	Section 10.6
 Scatter Graph	24 ^{*1}	Figure															
	Refer to (1) below	Frame Plate Color Display mode Graph frame display Graph display format	×	○	×	○	×	×	○	×	○	○	○	○		-	Section 10.7

*1 Up to 16 objects with "Store Memory" settings can be set.

*2 Only one object with "Locus mode" settings can be set to one project.

*3 Objects with "Store Memory" settings is unusable.


*4 Objects with "Locus" settings is unusable.

(1) Memory capacity for scatter graph

$$128 + \{4 \times SN \times (PN + 1)\}$$

SN: Number of stored graphs PN: Number of points




Touch switch

Function	Max. No. of setting objects in one screen	Display attribute	Trigger								Device			Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Touch switch	256 ^{*1*2}	Figure															
	48	Switch Pattern Background Style Text Color Solid Color X × Y Text High Quality Font	○	×	○	×	○	○	×	○	○	○	○	×		-	Section 6.2

*1 Up to 10 touch switches with its max. number of times for operation set can be set in one screen.

*2 Up to 100 touch switches with "ON/OFF delay" settings can be set.

Trigger → Action

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Status Observation	512 (512 objects for each project)	-	x	x	○	x	○	x	x	○	○	○	○	x	x	-	Section 11.1
	Refer to (1) below																
 Recipe	256 (256 objects for each project)	-	x	x	x	○	x	x	x	○	○	x	○	x	x	Refer to This section 2	Section 11.2
	Refer to (2) below																
 Time action	32 (32 objects for each project)	-	x	x	x	x	x	x	○	○	x	x	x	x	x	-	Section 11.3
	1592																

(1) Memory capacity for status observation

$$64 + (36 \times TS) + \{16 \times (AI + AW)\} + (20 \times WT)$$

TS : Number of set triggers

AI : Number of indirect devices and bit ALT devices under all conditions

AW : Total number of write devices under all conditions

WT : Number of conditions of word range

(2) Memory capacity for recipe function



Stored in built-in memory : $8 + (4 \times RD) + (108 \times RF)$

RD : Total number of devices for each recipe

RF : Number of recipe files

Saved in PC card :  This section [3](#) Data capacity available for storage on memory card/hard disk

Auxiliary

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Reset/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
Test	-	-	x	x	x	x	x	x	x	x	x	x	x	x	x	•Not available in A950 Handy GOT, A95*GOT, A956WGOT, GT SoftGOT •Refer to This section 2	Section 13.2
	-																
 Script	256 (256 objects for each project)	-	○	○	x	○	○	x	○	○	○	○	x	x	-	Chapter 14	
	Refer to (1) below																
 Script	2047	-	x	x	x	x	x	x	x	x	x	○	○	x	-	Section 13.1	
	Depending on the object																

(1) Memory capacity for script function (The memory capacity for script function set in each window will be 0 if the window screen is not displayed.)

$$\{36 \times (1 + BC + WC1 + WC2 + SC)\} + \{40 \times (1 + PS + BS + WS1 + WS2 + SS)\}$$

BC : Number of settings for overlaying base screen currently displayed

WC1 : Number of settings for overlaying window screen 1 currently displayed

WC2 : Number of settings for overlaying window screen 2 currently displayed

SC : Number of settings for overlaying superimposed window currently displayed

PS : Number of settings for project scripts






BS : Number of settings for scripts of base screen currently displayed

WS1 : Number of settings for scripts of window screen 1 currently displayed

WS2 : Number of settings for scripts of window screen 2 currently displayed

SS : Number of settings for scripts of superimposed window currently displayed

External input and output

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Report	1 (1 object for each project)	Print Format Print Digits Decimal Point	x	○	x	○	x	x	x	x	○	x	x	x	○	•Not available in A950 handy GOT •Refer to This section 2	Section 12.1
	Refer to (1) below	Print Digits	x	○	x	○	x	x	x	○	○	x	x	x	○		
 Hard copy	1 (1 object for each project)	-	x	x	x	x	x	x	x	○	x	x	x	x	x	•Not available in A950 handy GOT •Refer to This section 2	Section 12.2
	4																
 Operation Panel	1 (1 object for each project)	-	○	x	○	x	○	x	x	○	○	x	○	○	x	•Not available in A950 handy GOT, GT SoftGOT2 •Refer to This section 2	Section 12.3
	128																
 Bar code	32 (32 objects for each project)	Text size	x	x	x	x	x	x	x	x	○	x	○	x	x	•Not available in A950 handy GOT, GT SoftGOT2	Section 12.4
	-																
 Sound	100 (100 objects for each project)	-	x	x	x	x	x	x	x	x	x	x	x	x	x	•Not available in A950 handy GOT, GT SoftGOT2	Section 12.5
	128																
Video	4 (4 objects for each project)	-	x	x	x	x	x	x	x	x	○	x	x	x	x	•Available in A985GOT-V •Refer to This section 2	Section 12.6
	-																
RGB	-	-	x	x	x	x	x	x	x	x	○	x	x	x	x	•Available in A985GOT-V •Refer to This section 2	Section 12.7
	-																

- (1) Memory capacity for report function//shiki
 $136 + 4 \times N_{in} + (2 \times N_{fnv}) + 20 \times N_{obv} + (4 + N_{chv} \times 2) \times N_{clv} + (36 + 8 \times N_{rv})$
 $\times N_{prv} + (44 + 8 \times N_{rv}) \times N_{pcv}$

For the calculation above, convert the values below to a multiple of 4.

(Example: If the value is "10", assume "12" to calculate.)

N_{lin} : Number of lines set in the print format of the report setting

N_{fnv} : Number of characters of file name

N_{obv} : Total number of objects arranged on the report screen

N_{chv} : Number of characters

N_{clv} : Number of lines and characters set

N_{rv} : Number of data items in the expression

N_{prv} : Number of numerical prints set

N_{pcv} : Number of comment prints set

2 Required device

Each object function may require optional modules depending on the GOT used.

(1) In the case of A985GOT (-V)/A97*GOT/A960GOT

Function name	Required device
Recipe	Memory board
Sound output	Memory board and external speaker
Operation panel	External I/O interface module
Video display	Video input interface module Video/RGB hybrid interface module
RGB display	RGB input interface module Video/RGB hybrid interface module

(2) In the case of A956WGOT

Function name	Required device	
Alarm history display	When using PC card	SRAM card: Memory card interface module Compact flash PC card: Optional module not required
	When printing historical data	Printer interface module
Hard copy	When using PC card	SRAM card: Memory card interface module Compact flash PC card: Optional module not required
	When printing	Printer interface module
Report		Printer interface module
	When using PC card	SRAM card: Not available Compact flash PC card: Optional module not required
Recipe		Memory board
	Use PC card	SRAM card: Memory card interface module Compact flash PC card: Optional module not required
Operation panel		External I/O interface module

(3) In the case of A95*GOT

Function name	Required device	
Alarm history display	When using PC card	SRAM card: Memory card interface module Compact flash PC card: N/A
	When printing alarm history	Printer interface module
Hard copy	When using PC card	Printer interface module
	When printing	Memory extension type GOT (A95*GOT-*BD-M3) Printer interface module
Report		Memory extension type GOT (A95*GOT-*BD-M3)
Recipe	When using PC card	SRAM card: Memory card interface module Compact flash PC card: N/A
Operation panel		External I/O interface module



When using an optional module with A956WGOT and A95*GOT

The external I/O interface module, printer interface module and memory board interface module cannot be used simultaneously for A956WGOT and A95*GOT (External input/output, printing and storing data to PC card cannot be executed simultaneously).

Therefore, when using a function such as the alarm history display function by which printing and storing to PC card are simultaneously executed, some function can not be used.

(When using compact flash PC card for A956WGOT, printing and storing to PC card can be performed simultaneously because no interface is required.)

3 Data capacity available for storage on memory card/hard disk

- (1) Data capacity available for storage on memory card (In the case of A985GOT/A97*GOT/A960GOT/A956WGOT/A95*GOT)

Some objects have a function that allows storing data into a memory card.

The data capacity available for a memory card is shown as follows.

Object name	Data capacity																																				
Report function (byte)	$(DN \times 8) + 36 + \{(DN \times 8 + 8) \times CT\}$ DN: Number of devices CT: Number of times for collecting (sampling)																																				
Alarm history function (k byte)	When saving 3072 alarm historical data Cumulation mode (when saved in CSV format) : Approx. 97 (Approx. 400) History mode (when saved in CSV format) : Approx. 72 (Approx. 360)																																				
Hard copy function (k byte)	Data capacity per screen (The following are reference values.) \times Number of screens to be stored																																				
	Data capacity per screen																																				
	<table border="1"> <thead> <tr> <th>Model</th> <th>BMP format</th> <th>JPEG format</th> </tr> </thead> <tbody> <tr> <td>A985GOT-V</td> <td>470.0 (Video window: 1406.3)</td> <td>133.4</td> </tr> <tr> <td>A985GOT</td> <td>470.0</td> <td>113.9</td> </tr> <tr> <td>A975GOT</td> <td>301.0</td> <td>86.6</td> </tr> <tr> <td>A970GOT-TB*</td> <td>150.0</td> <td>86.6</td> </tr> <tr> <td>A970GOT-SB*</td> <td>150.0</td> <td>84.5</td> </tr> <tr> <td>A970GOT-LB*</td> <td>37.6</td> <td>N/A</td> </tr> <tr> <td>A960GOT</td> <td>37.6</td> <td>N/A</td> </tr> <tr> <td>A956WGOT</td> <td>110.0</td> <td>33.2</td> </tr> <tr> <td>A95*GOT-TBD</td> <td>76.1</td> <td>26.8</td> </tr> <tr> <td>A95*GOT-SBD</td> <td>37.6</td> <td>27.6</td> </tr> <tr> <td>A95*GOT-LBD</td> <td>9.4</td> <td>N/A</td> </tr> </tbody> </table>	Model	BMP format	JPEG format	A985GOT-V	470.0 (Video window: 1406.3)	133.4	A985GOT	470.0	113.9	A975GOT	301.0	86.6	A970GOT-TB*	150.0	86.6	A970GOT-SB*	150.0	84.5	A970GOT-LB*	37.6	N/A	A960GOT	37.6	N/A	A956WGOT	110.0	33.2	A95*GOT-TBD	76.1	26.8	A95*GOT-SBD	37.6	27.6	A95*GOT-LBD	9.4	N/A
	Model	BMP format	JPEG format																																		
	A985GOT-V	470.0 (Video window: 1406.3)	133.4																																		
	A985GOT	470.0	113.9																																		
	A975GOT	301.0	86.6																																		
	A970GOT-TB*	150.0	86.6																																		
	A970GOT-SB*	150.0	84.5																																		
	A970GOT-LB*	37.6	N/A																																		
	A960GOT	37.6	N/A																																		
	A956WGOT	110.0	33.2																																		
A95*GOT-TBD	76.1	26.8																																			
A95*GOT-SBD	37.6	27.6																																			
A95*GOT-LBD	9.4	N/A																																			
Recipe function (byte)	$(149 \times F) + (9 \times 16) + (14 \times 2)$ RF : Number of recipe files R16 : Total number of 16-bit devices in each recipe file R32 : R16: Total number of 32-bit devices in each recipe file																																				

(2) Data capacity available for storage on hard disk (When using GT SoftGOT2)

Some objects have a function that allows storing data into a hard disk.

The data capacity available for storage on the hard disk is shown as follows.

Object name	Data capacity																		
Report function (byte)	$\frac{CT + (PCT-1)}{PCT} \times \{(HR+1) \times RD\} + CT \times (RR \times RD)$ <p>CT : Number of times for collecting (sampling) PCT : Sampling number available for 1 printed page RD : Data size of 1 line RR : Repeated line HR : Number of header lines</p>																		
Alarm history function (byte)	<p>Data size per line (See below) × (Number of print (Number of occurrences, restorations, confirmations) + 1)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Mode</th> <th style="text-align: center;">Data capacity</th> </tr> </thead> <tbody> <tr> <td>History mode</td> <td style="text-align: center;">80</td> </tr> <tr> <td>Cumulation mode (Status only)</td> <td style="text-align: center;">79</td> </tr> <tr> <td>Cumulation mode (Cumulation time or occurrence time, status)</td> <td style="text-align: center;">88</td> </tr> <tr> <td>Cumulation mode (Cumulation time, occurrence time, status)</td> <td style="text-align: center;">97</td> </tr> </tbody> </table>	Mode	Data capacity	History mode	80	Cumulation mode (Status only)	79	Cumulation mode (Cumulation time or occurrence time, status)	88	Cumulation mode (Cumulation time, occurrence time, status)	97								
Mode	Data capacity																		
History mode	80																		
Cumulation mode (Status only)	79																		
Cumulation mode (Cumulation time or occurrence time, status)	88																		
Cumulation mode (Cumulation time, occurrence time, status)	97																		
Hard copy function (k byte)	<p>Data capacity per screen (The following are reference values.) × Number of screens to be stored</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">Data capacity per screen</th> </tr> <tr> <th style="text-align: center;">Model</th> <th style="text-align: center;">BMP format</th> <th style="text-align: center;">JPEG format</th> </tr> </thead> <tbody> <tr> <td>SoftGOT2 (1280 × 1024)</td> <td style="text-align: center;">1281.0</td> <td style="text-align: center;">107.0</td> </tr> <tr> <td>SoftGOT2 (1024 × 768)</td> <td style="text-align: center;">767.0</td> <td style="text-align: center;">93.6</td> </tr> <tr> <td>SoftGOT2 (800 × 600)</td> <td style="text-align: center;">469.8</td> <td style="text-align: center;">84.6</td> </tr> <tr> <td>SoftGOT2 (640 × 480)</td> <td style="text-align: center;">301.0</td> <td style="text-align: center;">64.8</td> </tr> </tbody> </table>	Data capacity per screen			Model	BMP format	JPEG format	SoftGOT2 (1280 × 1024)	1281.0	107.0	SoftGOT2 (1024 × 768)	767.0	93.6	SoftGOT2 (800 × 600)	469.8	84.6	SoftGOT2 (640 × 480)	301.0	64.8
Data capacity per screen																			
Model	BMP format	JPEG format																	
SoftGOT2 (1280 × 1024)	1281.0	107.0																	
SoftGOT2 (1024 × 768)	767.0	93.6																	
SoftGOT2 (800 × 600)	469.8	84.6																	
SoftGOT2 (640 × 480)	301.0	64.8																	
Recipe function (byte)	$(149 \times RF) + (9 \times R16) + (14 \times R32)$ <p>RF : Number of recipe files R16 : Total number of 16-bit devices in each recipe file R32 : R16: Total number of 32-bit devices in each recipe file</p>																		

2.3.2 In the case of GOT-F900 series

1 Specifications of individual objects

Specifications for object functions are listed as follows.

For details of the specifications and precautions, refer to the section of the relevant object function.







Maximum number of setting objects and memory capacity in the table are determined assuming all of the setting items are set to the default values.

When the memory capacity is increased by setting data operation or display methods, the number of objects may be reduced.






- (1) The maximum number of setting objects
The maximum number of setting objects per screen may differ depending on the parts.
Refer to the GOT-F900 Operating Manual for the maximum setting number.
- (2) Number of parts that can be actually displayed
The number of parts that can be actually displayed is shown as follows.
 $[\text{Max. No. of settings in table}] = [\text{Base screen}] + [\text{Set overlay screen}]$
- (3) Memory capacity
The memory size may increase or decrease depending on the conditions such as presence or absence of frames.
The memory size shown in the table is the minimum unit of each part.

Numerical or character display

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Numerical display	50	Shape	Frame	x	x	x	x	x	x	x	○	x	x	x	○	-	Section 7.1
	32	Plate	Number color														
 Numerical input	50	Shape	Frame	○	x	x	x	○	x	x	○	x	x	x	○	-	Section 7.1
	48	Plate	Number color														
 ASCII display	10	Shape	Frame	x	x	x	x	x	x	x	○	x	x	x	x	-	Section 7.3
	32	Plate	Text color														
 ASCII input	10	Shape	Frame	○	x	x	x	○	x	x	○	x	x	x	x	-	Section 7.3
	32	Plate	Text color														
 Clock display	10	Shape	Frame	x	x	x	x	x	x	x	x	x	x	x	x	-	Section 7.4
	28	Plate	Display color														
 Comment display	50	Shape	Frame	x	x	x	x	x	x	○	○	○	x	x	x	-	Section 7.5
	Word: 36 Bit: 44	Display size															

Alarm

Function	Max. No. of setting objects in one screen	Display attribute	Trigger								Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation			
 Alarm list (user alarm)	1	Shape Plate	Frame, Display size	x	x	x	x	x	x	x	○	x	x	x	x	-	Section 8.1	
	32			x	x	x	x	x	x	○	x	x	x	x	x	-		
 Alarm history display	1	Shape Plate	Frame Title color	x	x	x	x	x	x	x	○	x	x	x	x	-	Section 8.3	
	48			x	x	x	x	○	x	x	○	x	x	x	x	-		
 Floating alarm	1 (1 object for each project)	Shape Plate	Frame Title color	x	x	x	x	○	x	x	○	x	x	x	x	-	Section 8.4	
	80			x	x	x	x	○	x	x	○	x	x	x	x	-		

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH









7

NUMERICAL/ CHARACTER DISPLAY


8

ALARM




Motion

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Parts display	50	Display mode															
	Word: 32 Bit: 36	Positioning point Parts color	x	x	x	x	x	x	x	○	○	x	x	x	○	-	Section 9.1
 Lamp display	50	Frame Lamp color															
	32	Text Text color, X x Y	x	x	x	x	x	x	x	○	x	x	x	x	x	-	Section 6.1
 Panel meter display	50	Shape Frame Plate Needle color															
	40	Meter panel color Scale	x	x	x	x	x	x	x	○	x	x	x	x	-	Section 10.1	
 Trend graph display	1	Shape Frame Plate Graph color															
	40+2 x No of graphs	Line style Scale	x	○	x	x	x	x	x	x	○	x	x	x	x	•Not available for F920GOT-K	Section 10.3
 Line graph display	1	Shape Frame Plate Graph color															
	36+2 x No of graphs	Line style Scale	x	x	x	x	x	x	x	x	○	x	x	x	x	•Not available for F920GOT-K	Section 10.4
 Bar graph display	50	Shape Frame Plate Graph color															
	44	Scale	x	x	x	x	x	x	x	x	○	x	x	x	x	-	Section 10.5
 Statistics graph display	1	Shape Frame Plate Division number															
	28+No of devices	Direction Graph color, Scale	x	x	x	x	x	x	x	x	○	x	x	x	x	•Not available for F920GOT-K	Section 10.6
 Sampling	4 (4 objects for each project)																
	-	-	x	○	x	○	x	○	x	○	○	x	x	x	x	•Not available for F920GOT-K, F930GOT (-K)	Section 10.8


Touch switch

Function	Max. No. of setting objects in one screen	Display attribute	Trigger								Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation			
 Touch switch	50	Shape Switch	Frame Text color	○	×	×	×	○	×	×	○	○	×	×	×	×	*Not available for F920GOT-K	Section 6.2
	28	H × W	Text															




Trigger → Action

Function	Max. No. of setting objects in one screen	Display attribute	Trigger								Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation			
 Status observation	40 (4 objects for each project)	-	×	×	×	×	○	×	×	○	○	×	×	×	×	-	Section 11.1	
	8+28 × No of set points																	
 Recipe	256 (256 objects for each project)	-	×	×	×	○	×	×	×	○	×	×	×	×	×	-	Section 11.2	
	-																	
 Time action	8 (8 objects for each project)	-	×	×	×	×	×	×	×	○	×	×	×	×	-	Section 11.3		
	-																	

Auxiliary

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Set overlay screen	4	-	x	x	x	x	x	x	x	x	x	x	x	x	x	-	Section 13.1
	Depending on the object																

External input/output

Function	Max. No. of setting objects in one screen	Display attribute	Trigger							Device				Others		Hardware restriction	Reference
	Memory capacity applicable for one object (byte)		Ordinary	Sampling	Range	Rise/Fall	ON/OFF	Bit Trigger	ON Sampling/OFF sampling	Bit device	Word device	Offset specification	Switching Station No	Security	Data Operation		
 Hard copy	1 (1 object for each project)	-	x	x	x	x	x	x	x	x	○	x	x	x	x	•Not available for F930GOT (-K), F920GOT-K	Section 12.2
	24																
 Operation panel	-	-	x	x	x	x	x	x	x	○	○	x	x	x	x	-	Section 12.3
	-																
 Bar code	32 (32 objects for each project)	Text size	x	x	x	x	x	x	x	x	○	x	○	x	x	•Not available for F940 Handy GOT, F920GOT-K	Section 12.4
	-																

2.4 Clock Function

2.4.1 Clock function for monitoring by GOT

The clock function differs depending on the GOT.
This section explains the clock function used by various GOTs.

1 GOT-A900 series

Using the clock function of the PLC CPU (GOT does not have clock data.), the GOT verifies the clock data of the PLC CPU every hour.

The monitoring target depends on the connection type.

Connection type		Location from which time data are read
Bus connection		Connected PLC CPU
CPU direction connection		Connected PLC CPU*1
Computer link connection		
MELSECNET connection	MELSECNET (II)	PLC CPU of master station
	MELSECNET/B	
	MELSECNET/10	When using A9GT-QJ71LP23 or A9GT-QJ71BR13 PLC CPU of control station
CC-Link connection	Intelligent device station	PLC CPU of master station
	Remote device station	Clock function not available
Ethernet connection		PLC CPU set as host in GT Designer2
Microcomputer connection		Clock function not available
Third party PLC connection		Connected PLC CPU

*1 When connecting GOT to a remote I/O station, make sure that the master station is connected to MELSECNET/H network system and powered ON.



(1) Adjusting GOT date/time and PLC CPU date/time.

(a) When adjusting GOT date/time to PLC CPU date/time

When adjusting GOT date/time to PLC CPU date/time

GOT reads clock data of PLC CPU once every hour.

Therefore, if the clock data of PLC CPU has been changed, the time delay of GOT will remain unchanged for up to one hour. However, by turning the GOT ready signal (system signal 2 "b1") OFF, GOT can read the clock data at any timing.


(The GOT ready signal (system signal 2 "b1") returns to ON immediately after turned OFF)

 Section 3.5 System Information Setting

(b) When adjusting PLC CPU date/time to GOT date/time

Set the date/time using "TIME SET" utility.

GOT-A900 Series Operating Manual (Extended Option Functions Manual)

- (2) Using the clock function when connected to QCPU via MELSECNET/10 connection
Place a check-mark to [Use special relay/special register of SM1000/SD1000 or later] in the [PC system setting] of [PC parameter setting] in GX Developer to use the clock function. (Not available for Q00JCPU, Q00CPU, and Q01CPU.)
- (3) Using the clock function when connecting with micorcomputer
- (a) Install the A9GT-RS2T (clock function built-in communication board)to GOT.
(It is not available for the A95*GOT/A956WGOT because the communication board can not be installed to them.)
For specifications of the A9GT-RS2T, refer to the following manual.
 A9GT-RS2T Type Clock Function Built-in Serial Communication Board Users Manual.
- (b) Clock function of the A9GT-RS2T can be used in microcomputer connection only
Clock function of the A9GT-RS2T is not available in any other connection types.

Point

Time/Date setting in remote I/O connection

Time/Date setting cannot be performed using "TIME SET" utility when GOT is connected to a remote I/O station.

In this case, make the time/date setting of the PLC CPU in the master station in the time/date setting of GX Developer.

2 GT SoftGOT

This GOT displays PC clock data.

3 GOT-F900 series

GOT other than F920GOT-K displays the clock data stored in the GOT.

The F920GOT-K reads the clock data of only FXCPU (the model with clock function) among PLC CPU models.

2.4.2 PLC CPU with clock function (GOT-A900 series only)

The following functions require the clock function of the PLC CPU.

These functions are not applicable if the PLC CPU has no clock function.

- Clock display function
- Alarm list display function
- Alarm history display function
- Time action function

1 PLC CPU with clock function

(1) PLC manufactured by Mitsubishi Electric Corporation

Abbreviations/Generic terms		Description			
QCPU	QCPU (Q Mode)	Q00JCPU, Q02HCPU, Q12PHCPU,	Q00CPU, Q06HCPU, Q25PHCPU,	Q01CPU, Q12HCPU, Q12PRHCPU,	Q02CPU, Q25HCPU, Q25PRHCPU
	QCPU (A Mode)	Q02CPU-A,	Q02HCPU-A,	Q06HCPU-A	
QnACPU	QnACPU Type	Q2ACPU, Q4ACPU,	Q2AHCPU, Q4ARCPU	Q2ACPU-S1,	Q3ACPU,
	QnASCPU Type	Q2ASCPU,	Q2ASCPU-S1,	Q2ASHCPU,	Q2ASHCPU-S1
ACPU	AnUCPU	A2UCPU,	A2UCPU-S1,	A3UCPU,	A4UCPU
	AnACPU	A2ACPU,	A2ACPU-S1,	A3ACPU	
	AnNCPU	A1NCPU,	A2NCPU,	A2NCPU-S1,	A3NCPU
	A2US(H)CPU	A2USCPU,	A2USCPU-S1,	A2USHCPU-S1	
	AnS(H)CPU	A1SCPU, A2SHCPU,	A1SHCPU, A2SHCPU-S1,	A2SCPU, A1SCPUC24-R2	A2SCPU-S1,
	A1SJ(H)CPU	A1SJCPU,	A1SJCPU-S3,	A1SJHCPU	
	A2CCPU	A2CJCPU,	A2CCPU,	A2CCPUC24	
	A1FXCPU	A1FXCPU			
FXCPU		FX _{1N} series, FX ₂ series* ¹ , FX _{2NC} series* ¹	FX _{1NC} series, FX _{2C} series* ¹ , FX _{3UC} series* ¹	FX _{1S} series, FX _{2N} series,	
Motion controller CPU	Motion controller CPU (Q Series)	Q172CPU,	Q173CPU,	Q172CPUN,	Q173CPUN
	Motion controller CPU (A Series)	A373UCPU, A273UHCPU-S3, A171SHCPU, A173UHCPU,	A373UCPU-S3, A171SCPU, A171SHCPUN, A173UHCPU-S1	A273UCPU, A171SCPU-S3, A172SHCPU,	A273UHCPU, A171SCPU-S3N, A172SHCPUN,
MELDAS C6/C64		FCA C6,	FCA C64		

*1 A clock function is usable when the real time clock function board or E²PROM memory with real time clock function is mounted.

(2) PLC manufactured by other companies

Abbreviations/Generic terms		Description			
Omron PLC		C200HS,	C200H ^{*1} ,	C200H α series (C200HX, C200HG,	
		C200HE ^{*2}),	CQM1 ^{*3} ,	CV500,	CV1000,
		CV2000,	VM1-CPU01,	CVM1-CPU11,	CVM1-CPU21,
		CS1	CJ1,	CS1D,	CS1M,
		CPM2A,	CPM2C ^{*9} ,	CQM1H ^{*3*10}	
Yaskawa PLC ^{*4}		GL120,	GL130		
Allen-Bradley PLC ^{*5}		SLC5/03,	SLC5/04,	LC5/05	
Sharp PLC		JW-22CU,	JW-32CUH,	JW-33CUH,	JW-70CUH ^{*6} ,
		JW-100CU,J	W-100CUH ^{*6} ,	Z-512J	
Toshiba PLC ^{*5}	PROSEC T series	T3,	T3H,	T2E,	T2N
	PROSEC V series	Model3000(S3),	S2T		
Siemens PLC		SIMATIC S7-300 series,		SIMATIC S7-400 series	
Hitachi PLC (HIDEC H series)	Large-scale H series	H-302(CPU2-03H), H-2002(CPU2-20H),	H-702(CPU2-07H), H-4010(CPU3-40H)	H-1002(CPU2-10H),	
	H-200 to 252 series	H-200(CPU-02H, CPE-02H), H-252(CPU22-02H), H-252C(CPU22-02HC, CPE22-02HC)		H-250(CPU21-02H), H-252B(CPU22-02HB),	
	H series board type	H-20DR, H-20DT, HL-40DR,	H-28DR, H-28DT, HL-64DR	H-40DR, H-40DT,	H-64DR, H-64DT,
	EH-150 series	EH-CPU104,	EH-CPU208,	EH-CPU308,	EH-CPU316
Matsushita Electric Works PLC		FP1-C24C, FP2-CCU ^{*7} , FP10SH,	P1-C40C, FP3 ^{*8} , FP-M(C20TC),	FP2 ^{*7} , FP5, FP-M(C32TC)	FP2SH, FP10(S),

*1 Memory cassette with built-in clock is required when used with C200H-CPU21/CPU22/CPU23. C200H-CPU01/CPU02/CPU023 does not support the clock function.

*2 C200H-CPU11 does not support the clock function.

*3 Memory cassette with built-in clock is required.

*4 Use the default value (409988 to 409995) for the device where the clock data are stored.

*5 Day-of-the-week data are not provided.

*6 The clock function is not available if link module (ZW-10CM) is used in the JW-70CUH/100CUH.

*7 Any of the extension memory module, FP2-EM1, FP2-EM2 or FP2-EM3 is required.

*8 Only AFP3210C-F/AFP3211C-F/AFP3212C-F/AFP3220C-F supports the clock function.

*9 Some models do not include the clock function.

*10 The COM-CPU61 FM device cannot be monitored.

2.5 Overlap Setting

2.5.1 Overlap between figure and object

When a figure and an object are overlapped, the object will be always displayed over the figure.

2.5.2 Overlap between objects



Overlap between objects

Make sure to set in order objects will not overlap each other.

Failure to observe this instruction will cause the overlapping part to appear incorrectly when displayed on GOT.

However, the objects can be set to overlap with each other in the following cases

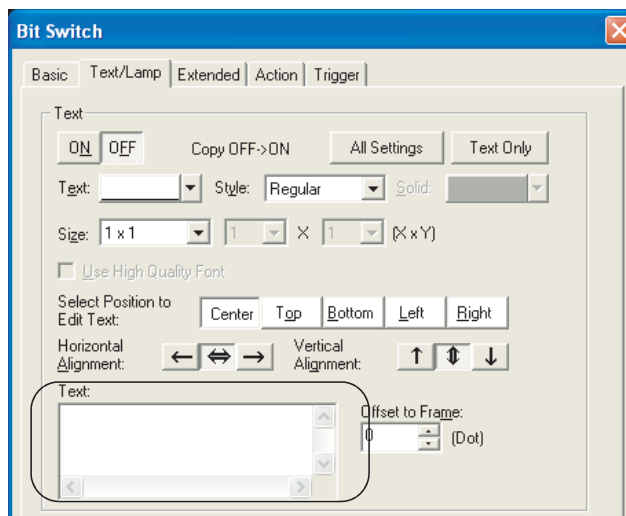
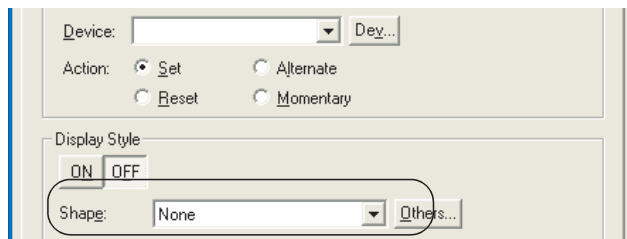
1 and 2 .

1 When using combined with touch switch (GOT-A900 series only)

Touch switch can be set to overlap with objects other than touch switch, numerical input and ASCII input.

Always make sure not to set [Shape] to [None] in touch switch setting, in order to make the touch switch overlap with other object.

In this case, [Text] is not allowed to be set.



2 When using combined with level display

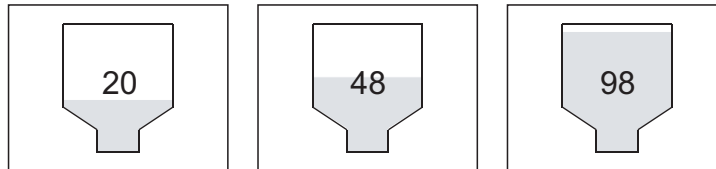
Level display can be set to with Numerical display and Comment display.

(One numerical display or comment display can be set to overlap with one level display.)

Example 1: When "Display mode" is set to "Transparent"

The original color of the numeric or the text can be displayed.

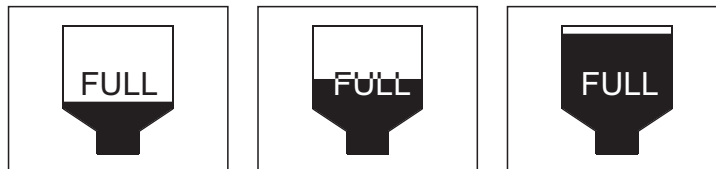
This setting is effective for use of the color-display GOT.




Example 2: When "Display mode" is set to "XOR"

This setting enables the object overlapping with the filled part of Level display to be inversed, which cannot be done in "Transparent" mode.

This setting is effective for use of the monochrome-display GOT.



Make sure to refer to the instructions on Level display when setting overlapping with Level display, Numerical display and Comment display.

 Section 10.2 Level

2.6 Supported Devices

2.6.1 GOT internal devices

They are devices kept in the internal of GOT.
 The internal devices of GOT are classified into the following types.

- GOT bit register (GB) : Bit register located inside the GOT and used as bit devices.
- GOT data register (GD) : Data register located inside the GOT and used as word devices.
- GOT special register (GS) : Special register located inside the GOT, which stores internal information, communication statuses, error information, etc.
 By monitoring GS with the object function, various information of the GOT can be checked.

The usage of GB, GD, and GS has no relation with GOT connection types. (However, they cannot be controlled in sequence programs.)

Valid setting ranges of the devices are as follows.

Device name		Valid setting range	Notation for device number
Bit device	GOT bit register (GB)	GOT-A900 : GB64 to GB16383	Decimal
		GOT-F900 : GB132 to GB255 (For F920GOT-K)	
		: GB132 to GB1023 For other than F920GOT-K)	
Word device	GOT data register (GD)	GOT-A900 : GD64 to GD16383	Decimal
		GOT-F900 : GD100 to GD127 For F920GOT-K)	
	GOT special register (GS)	GOT-A900 : GS0 to GS511	
		GOT-F900 : N/A	



Value in GOT internal device

When the GOT is powered off or reset, "0" is stored in the GOT internal device.
 When project data is downloaded, the value is held.



Application of GB and GD

GB and GD are useful for processing in the areas where the devices do not have to be used in the PLC CPU.

- Device for screen switching
- Work area for the script function
- Storage area for bar code read values

etc

1 GOT bit register

GB devices are listed as follows.

GOT-A900 series

Device	Function
GB0	Must not be used
GB1*1	OUTPUT terminal for external output
GB2 to GB9	Must not be used
GB10	External output Y0 OUT output
GB11	External output Y1 OUT output
GB12	External output Y2 OUT output
GB13	External output Y3 OUT output
GB14	External output Y4 OUT output
GB15	External output Y5 OUT output
GB16	External output Y6 OUT output
GB17	External output Y7 OUT output
GB18	External output Y8 OUT output
GB19	External output Y9 OUT output
GB20	External output YA OUT output
GB21	External output YB OUT output
GB22	External output YC OUT output
GB23	External output YD OUT output
GB24	External output YE OUT output
GB25	External output YF OUT output
GB26 to GB29	Must not be used
GB30	External input X0 Input
GB31	External input X1 Input
GB32	Allowed for external input X2 Input
GB33	Allowed for external input X3 Input
GB34	Allowed for external input X4 Input
GB35	External input X5 Input
GB36	External input X6 Input
GB37	External input X7 Input
GB38	External input Fuse blown
GB39 to GB63	Must not be used
GB64 to GB16383	User area

*1 Turning it ON enables output (Lamp lit, buzzer sounds) from the OUTPUT terminal block of the GOT power supply.

*2 Buzzer is available for the following versions.

GOT-F900 series

Device	Function
GB0 to 12	Must not be used
GB13	Communication error
GB14,GB15	Must not be used
GB16	Buzzer (1 beep)*2
GB17	Buzzer (3 beeps)*2
GB18	Buzzer (continuous beeps)*2
GB19 to GB131	Must not be used
GB132 to 1023	User area

GOT-F900	Version
F940WGOT	Ver.1.40 or later
F940GOT	Ver.6.40 or later
F930GOT	Ver.4.40 or later
F930GOT-K	Ver.4.60 (the first version) or later
F920GOT-K	Ver.1.00 (the first version) and later
F94* Handy GOT	Ver.6.40 and later
ET-900	Ver.6.40 and later

2 GOT data register

GD devices are listed as follows.

GOT-A900 series

Device	Function
GD0 to GD63	Must not be used
GD64 to GD16383	User area




GOT-F900 series

Device	Function
GD0	Current time (Second)
GD1	Current time (Minute)
GD2	Current time (Hour)
GD3	Current time (Day)
GD4	Current time (Month)
GD5	Current time (Year)
GD6	Current time (Day of the week)
GD7	Must not be used
GD8, GD9	Upper limit of numerical input value (32 bits)
GD10, GD11	Lower limit of numerical input value (32 bits)
GD12	Echo display of numerical and ASCII input
GD13 to GD99	Must not be used
GD100 to 1023	User area

3 GOT special register

The GS list and device functions are as follows.

(1) Read device

Device	Function	Reference
GS0	Common information 1	See (a) below
GS1	Base screen information	See (b) below
GS2 to GS5	Must not be used	-
GS6	CC-Link G4 station No.	See (c) below
GS7	1 second binary counter	See (d) below
GS8	Scan time of monitor	See (e) below
GS9	Must not be used	-
GS10	Scan counter of monitor	See (f) below
GS11 to GS13	Must not be used	-
GS14	Script common information	 Section 14.7.2 Errors and corrective actions for script execution on GOT
GS15	Script error pointer	
GS16	Script No.	
GS17	Error code	
⋮	⋮	
⋮	⋮	
GS46	Script No.	
GS47	Error code	
GS48	Script execute pointer	
GS49 to 79	Script execute No.	
GS80 to 199	Must not be used	-
GS200 to 229	Gateway information	 GOT-A900 Series Operating Manual (Gateway Function Manual)
GS230	Number of error stations	See (g) below
GS231 to 238	Error station	See (h) below
GS239 to 251	Must not be used	-
GS252	Error detection common information	See (i) below
GS253 to 259	Must not be used	-
GS260	status	 Section 14.2.3 β Integer \leftrightarrow Real number conversion function
GS261	Error code	
GS262 to 383	Must not be used	

(a) Common information1 (GS0(16bit))

b15 to b6	b5	b4	b3	b2	b1	b0
-----------	----	----	----	----	----	----

- b0 : Repeats turning ON and OFF for every communication cycle*1.
- b1 : Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen setting processing is complete. (It functions in the same way for the station No. switching and security level switching.)
It is used to check (debug) the screen switch settings.
- b2 : Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen object processing of the status observation is complete. (It functions in the same way for the station No. switching and security level switching.)
It is used to activate the status observation for once when switching the screen.
- b3 : Turns ON while the initial screen is displayed at power-on.
It turns off when the base screen is switched over.
- b4 : Always ON.

b5 : Always OFF.

b6 to b15 : Must not be used

*1 A cycle is the elapsed time for GOT to read the objects on the current screen display and the data set in the common settings.

(b) Base screen information (GS1(16bit))

b15 to b3	b2	b1	b0
-----------	----	----	----

b0 : Repeats turning ON and OFF for every communication cycle*¹ while the base screen is displayed.

b1 : Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen setting processing is complete. (It functions in the same way for the station No. switching and security level switching.)
It is used to check (debug) the screen switch settings

b2 : Turns ON when the base/window screen is switched and remains ON until a cycle of the on-screen object processing of the status observation is complete. (It functions in the same way for the station No. switching and security level switching.)
It is used to activate the status observation for once when the screen is switched over.

b3 to b15 : Must not be used.

(c) CC-Link G4 station No. (GS6(16bit))

Stores AJ65BT-G4-S3's station No. when the GOT is connected to the CC-Link network via AJ65BT-G4-S3 and the GOT is powered ON.

(d) 1 second binary counter (GS7(16bit))

Starts counting every second immediately after the power is switched on.

Any given value can be written to this counter to start the count from the written value.

The obtained data are stored as binary data.

This is used to check how long the time has elapsed from specific timing (operation, etc.).

(e) Scan time of monitor (GS8(16bit))

Stores the time (ms) of a complete processing cycle set on the display screen as binary data. Data will be updated when all of the processing set on the display screen is complete.

An error of 10 ms may be produced depending on the processing settings. Also, this does not apply to the objects that have not been processed by the security function.

It is useful for load checking (debugging) of the monitor processing.

(f) Scan time counter of monitor (GS10(16bit))

Counts up the number of cycles every time the processing cycle set on the display screen is complete.

Used to check (debug) the number of scan of monitor.

(g) Number of error stations (GS230(16bit))

Used to detect the stations in which an error has occurred.

For details of the Number of error stations (GS230), refer to the following manual.

 GOT-A900 Series User's Manual (Connection System Manual)

(h) Error station (GS231 to 238(16bit))

Turns ON when an error/communication timeout has occurred in the corresponding station.

Turns OFF when the error is cleared.

For details of the Error station (GS231 to 238), refer to the following manual.





 GOT-A900 Series User's Manual (Connection System Manual)

(i) Error detection common information (GS252(16bit))

b15 to b1	b0
-----------	----

- b0 : Turns ON if an error is detected in the alarm information file to be stored when executing PC card storage function by alarm history display.
The alarm information file is not stored into a PC card while this bit is ON.
Turns OFF when the error detection common control (GS452.b0) is turned ON.
Useful for error detection during file storage.
- b1 to b15 : Must not be used.

(2) Write device


Device	Function	Reference
GS384	Script common control	 Section 14.7.2 Errors and corrective actions for script execution on GOT
GS385	Script monitoring time	
GS386	Screen script initial operation	
GS387 to 399	Must not be used	-
GS400	Gateway common control	 GOT-A900 Series Operating Manual (Gateway Function Manual)
GS401 to 449	Must not be used	-
GS450	Monitor common control	See (a) below
GS451	Auto screen save time	Below (b)
GS452	Error detection common control	See (c) below
GS453 (b15 to b8)	System dialog language switching device	 GOT-A900 Series Operating Manual (Extended Option Functions Manual)
GS453 (b7 to b0)	Font change device	
GS454 to 459	Disabled	-
GS460	Conversion start indication	 Section 14.2.3 8 Integer ↔ Real number conversion function
GS461	Number of conversion devices	
GS462	Conversion source head device No.	
GS463	Conversion destination head device No.	
GS464	Store error value	
GS465 to 499	Disabled	-
GS500	GT SoftGOT2 common information	See (d) below
GS501 to 511	Must not be used	-

(a) Monitor common control (GS450(16bit))

b15	b14	b13	b12	b11 to b9	b8	b7 to b4	b3	b2	b1	b0
-----	-----	-----	-----	-----------	----	----------	----	----	----	----

- b0 : When it is on, displays a confirm message after numerical/ASCII data are input.
- b1 : Controls the displaying methods of the message displayed when an numerical value exceeding the valid range is input.
Turning ON displays a message during input of the numerical value.
Turning OFF displays a message after the numerical value is entered.
- b2 : Turns ON to activate "Numeric Value Input Number", "Cursor Position's Numeric Value Input" and "Numeric Value Input Signal" of the system information function during ASCII input as well.
- b3 : Turns ON to store "0" in the following devices set by system information function, "Cursor Position's Numeric Value Input", "Current Cursor Position" and "Previous Cursor Position" when a cursor is erased.
- b4 to b7 : Must not be used.
- b8 : When it turns ON, BMP files in a PC card can be used as parts in parts display/ parts movement.
- b9 to b11 : Must not be used

b12 : Controls the timing when the screen/station No. changes by touch switch operation.
 This applies when multiple actions including either of the bit Set/Reset/Alternate and either of screen switching/station No. switching have been set for a touch switch.
 For details, refer to the following.

 Section 6.2.12 Precautions

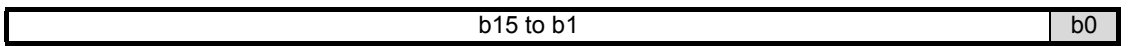
b13 : Storing historical information of the previous touch switch to PC card is enabled when it is turned ON.
 b14 : Set the action of the previous touch switch as history mode when it is turned ON.
 b15 : Disabled

(b) Auto screen save time (GS451(16bit))
 Store the time before close (OFF) the monitor screen in screen save function.
 Store the value by 1 to 60 (Min).
 (To store value higher than 60, store it as 60)
 The changed value is validated after canceling screen save when changing value in screen save.

Point 

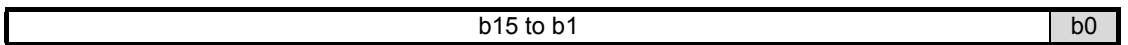
Relationship between GS451 and GOT utility (screen save time)
 If value other than 0 is stored in GS451, the screen save time set in GOT utility will be invalidated.
 To validate the screen save time of utility, store 0 in GS451.

(c) Error detection common control (GS452(16bit))



b0 : Turns ON to turn the error detection common information (GS252.b0) OFF.
 b1 to b15 : Must not be used.

(d) GT SoftGOT2 common information (GS500(16bit))



b0 : Used for GT SoftGOT2.
 Displays the dialog box for exiting GT SoftGOT2 when it turns ON.
 Turns OFF when the exit instruction is canceled in the dialog box.

2.6.2 Device range available for GOT-A900 series


The device ranges of PLC CPUs that can be used for GOT are as follows.

Note that the device ranges in the following tables are the maximum values that can be set in GT Designer2. Since the device specifications may be different depending on the models even though they belong to the same series of the PLC CPU,

Please make setting according to the specifications of the PLC CPU actually used.

When a non-existent device or device No. outside the range is specified, other objects may not be monitored.

For the device setting methods, see the following section.

 Section 5.1 Device Setting

1 Mitsubishi Electric PLC (Including motion controllers)

(1) MELSEC-QnA, Q, MELDAS C6/C64

Device name		Setting range		Device No. Notation Representation	
Bit device	Input (X)	X0	to X1FFF	Hexadecimal	
	Output (Y)	Y0	to Y1FFF		
	Internal relay (M) ^{*9}	M0	to M32767	Decimal	
	Latch relay (L)	L0	to L32767		
	Annunciator (F)	F0	to F32767		
	Link relay (B)	B0	to B7FFF	Hexadecimal	
	Timer ^{*9}	Contact (TT)	TT0	to TT32767	Decimal
		Coil (TC)	TC0	to TC32767	
	Counter ^{*9}	Contact (CT)	CT0	to CT32767	
		Coil (CC)	CC0	to CC32767	
	Special relay (SM)	SM0	to SM2047		
	Retentive timer ^{*9}	Contact (SS)	SS0	to SS32767	
		Coil (SC)	SC0	to SC32767	
	Step relay (S)	S0	to S32767		
	Link special relay (SB)	SB0	to SB7FF	Hexadecimal	
	Word device bit	Specified bit of the following word devices (Except Index register and Buffer memory)		-	
Word device	Data register (D) ^{*9}	D0	to D32767	Decimal	
	Special data register (SD)	SD0	to SD2047	Hexadecimal	
	Link register (W)	W0	to W7FFF		
	Timer (current value) (TN) ^{*9}	TN0	to TN32767	Decimal	
	Counter (current value) (CN) ^{*9}	CN0	to CN32767		
	Retentive timer (current value) (SN) ^{*9}	SN0	to SN32767		
	Link special register (SW)	SW0	to SW7FF	Hexadecimal	
	File register (R) ^{*1*2}	R0	to R32767	Decimal	
	Extension fill register (ER) ^{*1}	Block	0		to 255
		Device	R0		to R32767
	Extension file register (ZR) ^{*1*3*4}	ZR0	to ZR1042431		
	Index register (Z)	Z0	to Z15		
	Buffer memory (special function module) (BM) ^{*5}	BM0	to BM32767	Hexadecimal	
	Ww	Ww0	to WwFF		
	Wr	Wr0	to WrFF		
Bit device word ^{*6}	Converting the above bit devices to words		-		

*1 Do not set a file register by GT Designer2 when multiple programs are executed with the file of the file register set at "Use the same file name as the program" by the PLC parameter of GX Developer. (With exceptions of MELSEC-QnA and MELDAS C6/C64).

Otherwise, read/write at GOT will be erroneous.

*2 Available for file register of block No. switched with the RSET instruction.

*3 Available for file register of block No. of file name switched with the QDRSET instruction.

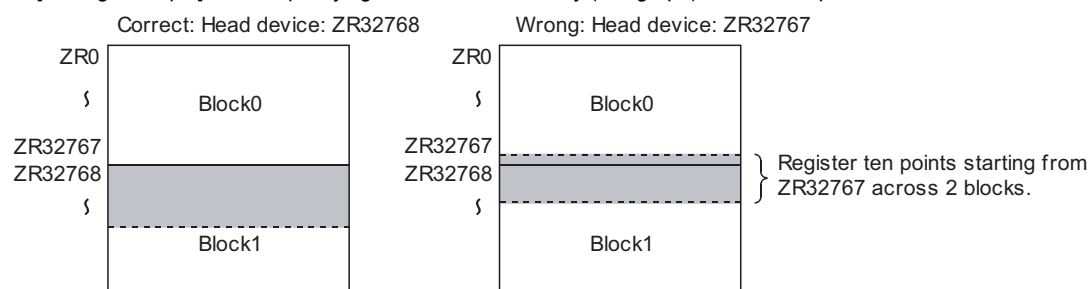
*4 GOT treats them in units of 32k (32767 points).

Make the setting not to break up the 32k-unit block when specifying the extension file register (ZR) in the object settings.

In the case of incorrect setting, the error message "The specified device is outside the valid range" will be displayed in the system alarm.

There is no range limit for the read/write by specifying the file register name with the recipe function.

[Setting Example]: When specifying devices consecutively (line graph): allocate 10 points



*5 Only the special function module on the station connected to GOT can be specified.

Set within the address range of the buffer memory existing in the special function module.

*6 The device No. must be set in multiples of 16.

*7 If a word device out of the range is set while monitoring MELDAS C6/C64, this will result in an inconsistent value. If a bit device out of the range is set, the relevant object may not be displayed, or preset functions may not operate.

Therefore, make sure to check the set device by reference to the GT Designer2 Device List.

*8 The devices used for C6/C64 system are not usable.

*9 Do not use the local device set in a MELSEC-Q system.

Otherwise normal monitoring is not performed.

(2) MELSEC-Q (Multi)/Q Motion

Device name		Setting range		Device No. Notation	
Bit device	Input (X)	X0	to X1FFF	Hexadecimal	
	Output (Y)	Y0	to Y1FFF		
	Internal relay (M) ^{*11}	M0	to M32767	Decimal	
	Latch relay (L)	L0	to L32767		
	Annunciator (F)	F0	to F32767		
	Link relay (B)	B0	to B7FFF	Hexadecimal	
	Timer ^{*11}	Contact (TT)	TT0	to TT32767	Decimal
		Coil (TC)	TC0	to TC32767	
	Counter ^{*11}	Contact (CT)	CT0	to CT32767	
		Coil (CC)	CC0	to CC32767	
	Special relay (SM) ^{*7}	SM0	to SM2047		
	Retentive timer ^{*11}	Contact (SS)	SS0	to SS32767	
		Coil (SC)	SC0	to SC32767	
	Step relay (S)	S0	to S32767		
	Link special relay (SB)	SB0	to SB7FF	Hexadecimal	
	Word device bit	Specified bit of the following word devices (Except Index register and Buffer memory)		-	
Word device	Data register (D) ^{*8*9*11}	D0	to D32767	Decimal	
	Special data register (SD)	SD0	to SD2047		
	Link register (W)	W0	to W7FFF	Hexadecimal	
	Timer (current value) (TN) ^{*11}	TN0	to TN32767	Decimal	
	Counter (current value) (CN) ^{*11}	CN0	to CN32767		
	Retentive timer (current value) (SN) ^{*11}	SN0	to SN32767		
	Link special register (SW)	SW0	to SW7FF	Hexadecimal	
	File register (R) ^{*1*2}	R0	to R32767	Decimal	
	Extension file register (ER) ^{*1}	Block	0		to 255
		Device	R0		to R32767
	Extension file register (ZR) ^{*1*3*4}	ZR0	to ZR1042431		
	Index register (Z)	Z0	to Z15		
	Buffer memory (special function module) (BM) ^{*5}	BM0	to BM32767		
	Ww	Ww0	to WwFF	Hexadecimal	
	Wr	Wr0	to WrFF		
	Motion device (#) ^{*10}	#0	to #8191	Decimal	
Bit device word ^{*6}	Converting the above bit devices into words		-		

*1 to *6(1) Refer to the MELSEC-QnA/Q.

Q Motion

*7 When setting special internal relay M9000 to M9255, use SM for the device name and set the value subtracted 9000 for the device number (0 to 255).

*8 The setting range is D9000 to D9255 when setting the special data register.

*9 D8192 to D8999 and D9256 to D9999 are out of the valid setting range.

*10 Monitoring is not available with GT SoftGOT2.

*11 Do not use the local device in a MELSEC-Q(Multi)/Q Motion system.
Otherwise normal monitoring is not performed.

(3) MELSEC-A

Device name		Setting range		Device No. Representation	
Bit device	Input (X)	X0	to X1FFF	Hexadecimal	
	Output (Y)	Y0	to Y1FFF		
	Internal relay/Special internal relay (M)	M0	to M32767	Decimal	
	Latch relay (L)	L0	to L32767		
	Annunciator (F)	F0	to F32767		
	Link relay (B)	B0	to B7FFF	Hexadecimal	
	Timer	Contact (TT)	TT0	to TT32767	Decimal
		Coil (TC)	TC0	to TC32767	
	Counter	Contact (CT)	CT0	to CT32767	
		Coil (CC)	CC0	to CC32767	
	Link special relay (SB)	SB0	to SB7FF	Hexadecimal	
Word device bit	Specified bit of the following word devices (Except Index register and Buffer memory)		-		
Word device	Data register/Special data register (D)	D0	to D32767	Decimal	
	Link register (W)	W0	to W7FFF	Hexadecimal	
	Timer (current value) (TN)	TN0	to TN32767	Decimal	
	Counter (current value) (CN)	CN0	to CN32767		
	Link special register (SW)	SW0	to SW7FF	Hexadecimal	
	File register (R) *1	R0	to R32767*1	Decimal	
	Extension file register (ER) *1	Block	1		to 255
		Device	R0		to R32767
	Index register *2	(Z)	Z0		to Z15
		(V)	V0		to V6
	Annunciator (A)	A0	to A1		
	Buffer memory (special function module) (BM)) *3	BM0	to BM32767	Decimal	
	Ww	Ww0	to WwFF	Hexadecimal	
Wr	Wr0	to WrFF			
Bit device word *4*5	Converting the above bit devices to words (Except Timer and Counter)		-		

*1 In the computer link connection, the bit specification writing of the word device to the ER29-0 (block 29 of the extension file register) or later of A3ACPU, A3UCPU, A4UCPU is not available.

When the bit specification writing of the word device is required, use the range of block No. 0 to 28.

*2 In the computer link connection, writing to the index register (e.g., the touch switch function, numerical input function) is not available.

*3 Only the special function module on the station connected to GOT can be specified.
Set within the address range of the buffer memory existing in the special function module.

*4 The device No. must be set in multiples of 16.

*5 If the special internal relay (M) is converted to the word device, treat 9000 of the device No. as 0 and set in multiples of 16.

Example: M9000, M9016, M9240

(4) MELSEC-FX

Device name		Setting range		Device No. Notation
Bit device	Input (X)	X0	to X377	Octal
	Output (Y)	Y0	to Y377	
	Auxiliary relay (M)	M0	to M3071	Decimal
	Special auxiliary relay (M)	M8000	to M8255	
	State (S)	S0	to S999	
	Timer contact (T)	T0	to T255	
	Counter contact (C)	C0	to C255	
	Word device bit *1	Specified bit of the following word devices		-
Word device	Data register (D)	D0	to D0999	Decimal
	RAM file register (D)	D1000	to D7999	
	Special data register (D)	D8000	to D8255	
	Timer (current value) (T)	T0	to T255	
	Counter (current value) (C)	C0	to C255	
	Bit device word *2	Converting the above bit devices to words (Except Timer contact and Counter contact)		

*1 When executing the touch switch function that has been set during the bit specification of the word device, do not write any data to the word device through the sequence program.

*2 The device No. must be set in multiples of 16.

*3 For FX3UC series, device setting cannot be made exceeding the above range by using GT Designer2.

2 OMRON PLC (OMRON SYSMAC)

Device name		Setting range		Device No. Notation	
Bit device	I/O relay/internal auxiliary relay	..0000	to	..614315	Decimal + hexadecimal
	Data link relay (LR)	LR00000	to	LR19915	
	Auxiliary memory relay (AR)	AR00000	to	AR95915	
	Holding relay (HR)	HR00000	to	HR51115	
	Internal holding relay (W)	WR00000	to	WR51115	
	Timer contact (TIM) ^{*1*2}	TIM0000	to	TIM2047	Decimal
	Counter contact (CNT) ^{*1*2}	CNT0000	to	CNT2047	
	Word device bit	Specified bit of the following word devices (Except Data link relay, Auxiliary memory relay, Holding relay and Internal holding relay.)			-
Word device	I/O relay/internal auxiliary relay	0000	to	6143	Decimal
	Data link relay (LR)	LR000	to	LR199	
	Auxiliary memory relay (AR)	AR000	to	AR959	
	Holding relay (HR)	HR000	to	HR511	
	Internal holding relay (W)	WR000	to	WR511	
	Data memory (DM)	DM0000	to	DM9999	
	Timer (current value) (TIM) ^{*5}	TIM0000	to	TIM2047	
	Counter (current value) (CNT) ^{*5}	CNT0000	to	CNT2047	
	Extension data memory (EM current bank) ^{*3}	EM0000	to	EM9999	
	Extension data memory (E0 to EC: 13 banks) ^{*3*4}	E0000	to	E09999	
EC0000		to	EC9999		

*1 Writing is not allowed when using CV1000, CS1, and CJ1.

*2 When executing the touch switch function that has been set during the bit specification of the word device, do not write to word device through the sequence program.

*3 Writing or reading the extension data memory using multiple banks is not allowed.

*4 The range from E0 to 2 is available when CJ1 is used.

*5 Timer (current value) and counter (current value) are valid within the range of 0 to 999.
(This applies to the 16 bit/32 bit device data.)

*6 COM1H-CPU61 cannot read from or write to this device.

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

8

ALARM

3 Yaskawa PLC

(1) Yaskawa GL/PROG1C8

Device name		Setting range		Device No. Notation
Bit device	Coil (O) ^{*1}	O01	to O63424	Decimal
	Input relay (I)	I1	to I63424	
	Link coil (D)	D1	to D2048	
		D10001	to D12048	
		D20001	to D22048	
Word device bit	Specified bit of the following word devices		-	
Word device	Input register (Z) ^{*1}	Z1	to Z31840	Decimal
	Holding register (W) ^{*2,4}	W1	to W28291	
		SW1	to SW28291	
	Link register (R) ^{*4}	R1	to R2048	
		R10001	to R12048	
		R20001	to R22048	
		SR1	to SR2048	
		SR10001	to SR12048	
	SR20001	to SR22048		
Constant register (K) ^{*3}	K1	to K4096	-	
Bit device word	Converting the above bit devices to word devices (Except Coil and Input relay)		-	

*1 Change the input register "30001 to 30512" to "Z1 to Z512" for setting. (When set in default)

*2 Change the holding register "40001 to 49999" to "W1 to W9999" for setting. (When set in default)

*3 Change the constant register "31001 to 35096" to "K1 to K4096" for setting. (When set in default)

*4 SR and SW indicate registers (virtual register) compatible to the data format where internal data of PLC is displayed using R or W.

The following shows the difference between the display values of SR, SW and those of R, W corresponding to the values of PLC internal data.

PLC internal data (16 bit)	SR, SW	R,W
9999	9999	9999
1001	1001	1001
1000	1000	1000
999	999	999
0	0	0
-1	-1	32769
-999	-999	33767
-1000	-1000	33768
-1001	-1001	33769
-9999	-9999	42767

*5 The internal coil N1 to N1536 can be set as o513 to o2048.

However, setting must not exceed o1 to o512 and o513 to o2048.

(2) Yaskawa CP-9200SH/MP-900 series

Device name		Setting range		Device No. Notation
Bit device	Coil (MB) ^{*1}	MB0	to MB32767F	Decimal + hexadecimal
	Input relay (IB)	IB0000	to IBFFFF	Hexadecimal
	Bit of word device	Specified bit of the following bit device (Except Coil and Input relay.)		-
Word device	Input register (IW)	IW0	to IW7FFF	Hexadecimal
	Holding register (MW)	MW0	to MW32767	Decimal
	Input relay (IB)	IB0	to IBFFF	Hexadecimal
	Coil (MB)	MB0	to MB32767	Decimal
	Word device bit	Converting the above bit devices to word devices		-

*1 MB40960 to MB32767F is available for MP-940 only.

(3) Yaskawa CP-9200 (H)

Device name		Available setting range		Device No. Notation
Bit device	Coil (OB) ^{*1}	OB0	to OB7FF	Hexadecimal
	Input relay (IB)	IB0	to IB7FF	
	Word device bit	Specified bit of the following word devices		-
Word device	Input register (IW)	IW0	to IW7F	Hexadecimal
	Output register (OW)	OW0	to OW7F	
	Data register (DW, ZD) ^{*1}	DW0	to DW2047	Decimal
		ZD0	to ZD2047	
	Common register (MW)	MW0	to MW7694	
Bit device word	Converting the above bit devices to word devices		-	

*1 Setting is available only when CP-9200 is used.

(4) Yaskawa CP-9300MS (MC compatible)

Device name		Available setting range		Device No. Notation
Bit device	Coil (OB) ^{*1}	OB0	to OB7FF	Hexadecimal
	Input relay (IB)	IB0	to IBFFFF	
	Word device bit	Specified bit of the following word devices		-
Word device	Input register (IW)	W0	to IW7F	Hexadecimal
	Output register (OW)	OW0	to OW7F	
	Data register (DW, ZD) ^{*1}	DW0	to DW2047	Decimal
		ZD0	to ZD2047	
	Common register (MW)	MW0	to MW7694	
Bit device word	Converting the above bit devices to word devices		-	

4 Allen-Bradley PLC

(1) AB SLC500 series

	Device name	Setting range		Device No. Notation	
Bit device	Bit (B)	B3:0/0 B10:0/0	to	B3:255/15 B255:255/15	Decimal
	Timer (Timing bit) (TT)	T4:0/14(TT) T10:0/14(TT)	to	T4:255/14(TT) T255:255/14(TT)	
	Timer (Completion bit) (TN)	T4:0/13(DN) T10:0/13(DN)	to	T4:255/13(DN) T255:255/13(DN)	
	Counter (Up counter) (CU)	C5:0/15(CU) C10:0/15(CU)	to	C5:255/15(CU) C255:255/15(CU)	
	Counter (Down counter) (CD)	C5:0/14(CD) C10:0/14(CD)	to	C5:255/14(CD) C255:255/14(CD)	
	Counter (Completion bit) (CN)	C5:0/13(DN) C10:0/13(DN)	to	C5:255/13(DN) C255:255/13(DN)	
	Integer (N)	N7:0 N10:0	to	N7:255 N255:255	
Word device	Bit (B)	B3:0	to	B3:255	Decimal
	Timer (Set value) (TP) ^{*1}	T4:0.1(PRE) T10:0.1(PRE)	to	T4:255.1(PRE) T255:255.1(PRE)	
	Timer (Current value) (TA) ^{*1}	T4:0.2(ACC) T10:0.2(ACC)	to	T4:255.2(ACC) T255:255.2(ACC)	
	Counter (Set value) (CP) ^{*1}	C5:0.1(PRE) C10:0.1(PRE)	to	C5:255.1(PRE) C255:255.1(PRE)	
	Counter (Current value) (CA) ^{*1}	C5:0.2(ACC) C10:0.2(ACC)	to	C5:255.2(ACC) C255:255.2(ACC)	
	Integer (N) ^{*1}	N7:0 N10:0	to	N7:255 N255:255	

*1 Writing on the device is not allowed for 32-bit data.

*2 Do not set the device outside the range.

If the set device is outside the range, the object set by the device within the range cannot be displayed.

(2) AB MicroLogix1000/1500 series

Device name		Setting range		Device No. Notation
Bit device	Bit (B)	B3:0/0	to B255:255/15	Decimal
	Timer (Timing bit) (T)	T3:0/14(TT)	to T255:255/14(TT)	
	Timer (Completion bit) (T)	T3:0/13(DN)	to T255:255/13(DN)	
	Counter (Up counter) (C)	C3:0/15(CU)	to C255:255/15(CU)	
	Counter (Down counter) (C)	C3:0/14(CD)	to C255:255/14(CD)	
	Counter (Completion bit) (C)	C3:0/13(DN)	to C255:255/13(DN)	
	Integer (N)	N3:0	to N255:255	
Word device	Bit (B)	B3:0	to B255:255	Decimal
	Timer (Set value) (T) ^{*1}	T3:0.1(PRE)	to T255:255.1(PRE)	
	Timer (Current value) (T) ^{*1}	T3:0.2(ACC)	to T255:255.2(ACC)	
	Counter (Set value) (C) ^{*1}	C3:0.1(PRE)	to C255:255.1(PRE)	
	Counter (Current value) (C) ^{*1}	C3:0.2(ACC)	to C255:255.2(ACC)	
	Integer (N) ^{*1}	N3:0	to N255:255	

*1 Writing on the device is not allowed for 32 bit data.

*2 Do not set device outside the range.

If the set device is outside the range, the object set by the device within the range cannot be displayed.

5 Sharp PLC (Sharp JW)

Device name		Setting range		Device No. Notation		
Bit device	I/O relay	0 20000	to to	15777 75777	Octal	
	Timer (Contact) (T)	T0000	to	T1777		
	Counter (Contact) (C)	C0000	to	C1777		
	Ward device bit	Specified bit of the following word devices		-		
Word device	Timer (Current value) (T)	T0000	to	T1777	Octal	
	Counter (Current value) (C)	C0000	to	C1777		
	Register (09 to E7)		09000	to		09776
			19000	to		19776
			29000	to		29776
			39000	to		39776
			49000	to		49776
			59000	to		59776
			69000	to		69776
			79000	to		79776
			89000	to		89776
			99000	to		99776
			E0000	to		E0776
			E1000	to		E1776
			E2000	to		E2776
			E3000	to		E3776
			E4000	to		E4776
			E5000	to		E5776
		E6000	to	E6776		
		E7000	to	E7776		
File register (1 to 7)		1000000 2000000 3000000 4000000 5000000 6000000 7000000	to to to to to to to	1177776 2177776 3177776 4177776 5177776 6177776 7177776		

6 Toshiba PLC (Toshiba PROCES T/V series)

Device name		Setting range		Device No. Notation	
Bit device	External input (X)	X0000	to	X511F	Hexadecimal
	External output (Y)	Y0000	to	Y511F	
	Internal relay (R) ^{*1}	R0000	to	R4095F	
	Special relay (S) ^{*7}	S0000	to	S511F	
	Link register relay (Z)	Z0000	to	Z999F	
	Link relay (L)	L0000	to	L255F	
	Timer (Contact) (T) ^{*1}	T0	to	T999	Decimal
	Counter (Contact) (C) ^{*1}	C0	to	C511	
Word device bit ^{*2*7}	Specified bit of the following word devices (Except External input, External output, Internal relay, Special relay, Link relay, Timer and Counter.)			-	
Word device	External input (XW)	XW0	to	XW511	Decimal
	External output (YW)	YW0	to	YW511	
	Internal relay (RW) ^{*6*8}	RW0	to	RW4095	
	Special relay (SW) ^{*8}	SW0	to	SW511	
	Link relay (LW)	LW0	to	LW255	
	Timer (Current value) (T) ^{*1}	T0	to	T999	
	Counter (Current value) (C) ^{*1}	C0	to	C511	
	Data register (D) ^{*4*6*8}	D0	to	D8191	
	Link register (W) ^{*3}	W0	to	W2047	
	File register (F) ^{*5}	F0	to	F32767	

PROSEC T series

- *1 Write of the timer (contact)/(current value), counter (contact)/(current value) is executed after having been read by GOT. Therefore, do not edit it in the sequence program during this period.
- *2 The bit specification of word device is executed after having been read by GOT. Therefore, please do not change it in the sequence program during this period.
- *3 Link register relay (Z) occupies 1 link register (W) bit out of the 1000 bits ranging 0 to 999.
- *4 When the mode switch on the CPU module has been set to "P-RUN", writing to D0000 through D4095 is disabled.
- *5 Extension file register is not supported.

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

8

ALARM

PROSEC V series

- *2 The bit specification of word device is executed after having been read by GOT. Therefore, do not change it in the sequence program during this period.
- *6 RW0000 and D0000 indicate the same data register in the same region although they are shown in different notations.
- *7 For bit data, the conversion from Toshiba's address notation to address notation of GOT is shown as follows.
Toshiba's address notation ÷ 16=Word address (Quotient)...Bit address (Remainder)

Toshiba's address notation	Address notation used by GOT	Conversion
S8191	S511F (Decimal) (Hexadecimal)	8191 ÷ 16 = 511...15
R65535	R4095F (Decimal) (Hexadecimal)	65535 ÷ 16 = 4095...15

- *8 For word data, the conversion from Toshiba's address notation to address notation of GOT is shown as follows.

Data format	Toshiba's address notation	Address notation of GOT
16 bit data	DW10	D10
32 bit data	(Integer) DD10 (Calculate the device No. in 32-bit unit)	D20
	(Real number) DF10 (Calculate the device No. in 32-bit unit)	D20

7 SIEMENS PLC (SIEMENS S7-300/400 series)

Device name		Setting range	Device No. Notation	
Bit device	Input relay (I)	I0000 to I5117	Decimal	
	Output relay (Q)	Q0000 to Q5117		
	Bit memory (M)	M00000 to M20477		
	Word device bit	Specified bit of the following word devices (Except Input relay, Output relay, Bit memory, Timer and Counter.)	-	
Word device	Input relay (IW)	IW000 to IW510	Decimal	
	Output relay (QW)	QW000 to QW510		
	Bit memory (MW)	MW0000 to MW2046		
	Timer (Current value) (T)	T0 to T511		
	Counter (Current value) (C)	C0 to C511		
	Data register (D)	D000100000 to D000165534		.
		D000200000 to D000265534		
		D000300000 to D000365534		
D409400000 to D409465534				
D409500000 to D409565534				

8 HITACHI PLC (HITACHI HIDIC H series)

	Device name	Setting range		Device No. Notation	
Bit device	External input (X)	X00000	to	X05A95	Hexadecimal + Decimal
	External output (Y)	Y00000	to	Y05A95	
	Remote external input (X)	X10000	to	X49995	Decimal
	Remote external output (Y)	Y10000	to	Y49995	
	1st CPU link (L)	L0000	to	L3FFF	Hexadecimal
	2nd CPU link (L1)	L10000	to	L13FFF	
	Data area (M)	M0000	to	M3FFF	
	On-delay timer (TD) ^{*1}	TD0	to	TD255	Decimal
	Single-shot timer (SS) ^{*1}	SS0	to	SS255	
	Watchdog timer (WDT) ^{*1}	WDT0	to	WDT255	
	Monostable timer (MS) ^{*1}	MS0	to	MS255	
	Retentive timer (TMR) ^{*1}	TMR0	to	TMR255	
	Up counter (CU) ^{*1}	CU0	to	CU511	
	Ring counter (RCU) ^{*1}	RCU0	to	RCU511	
	Up/Down counter (CT) ^{*1}	CT0	to	CT511	Hexadecimal
	Bit internal output (R)	R0	to	R7BF	
	Rising edge detection (DIF) ^{*1}	DIF0	to	DIF511		Decimal
Falling edge detection (DIF) ^{*1}	DFN0	to	DFN511		
Word device bit	Specified bit of the following word devices (Except External input, External output, Remote external input, Remote external output, First CPU link, Second CPU link and Data area.)			-	
Word device	External input (WX)	WX0000	to	WX05A7	Hexadecimal + Decimal
	External output (WY)	WY0000	to	WY05A7	
	Remote external input (WX)	WX1000	to	WX4997	Decimal
	Remote external output (WY)	WY1000	to	WY4997	
	First CPU link (WL)	WL000	to	WL3FF	Hexadecimal
	Second CPU link (WL1)	WL1000	to	WL13FF	
	Data area (WM)	WM000	to	WM3FF	
	Timer/Counter (Elapsed value) (TC) ^{*1}	TC0	to	TC511	Decimal
	Word internal output (WR)	WR000	to	WR3FF	Hexadecimal

*1 The same number cannot be used repeatedly.

*2 Do not set device outside the range.

If the set device is outside the range, the object set by the device within the range cannot be displayed.

9 Matsushita PLC (Matsushita MEWNET-FP series)^{*1}

Device name		Setting range		Device No. Notation
Bit device	Input relay (X) ^{*2,*3}	X0000	to X511F	Hexadecimal + Decimal
	Output relay (Y) ^{*3}	Y0000	to Y511F	
	Internal relay (R)	R0000	to R886F	
	Special relay (R) ^{*2}	R9000	to R910F	
	Link relay (L) ^{*5}	L0000	to L639F	
	Timer contact (T) ^{*2,*4}	T0	to T3071	Decimal
	Counter contact (C) ^{*2,*4}	C0	to C3071	
Bit device word	Specified bit of the following word devices (Except Input relay, Output relay, Internal relay, Special relay and Link relay.)		-	
Word device	Input relay (WX) ^{*2}	WX000	to WX511	Decimal
	Output relay (WY)	WY000	to WY511	
	Internal relay (WR)	WR000	to WR886	
	Special relay (WR)	WR900	to WR910	
	Link relay (WL)	WL000	to WL639	
	Timer/Counter (Elapsed value) (EV) ^{*4}	EV0	to EV3071	
	Timer/Counter (Set value) (SV) ^{*4}	SV0	to SV3071	
	Data register (DT)	DT0	to DT10233	
	Special data register (DT)	DT90000	to DT90511	
	Link register (LD) ^{*5}	LD0	to LD8447	
	File register (FL) ^{*5,*6}	FL0	to FL32764	

*1 The above device range is for the case where FP10SH is used.

For Fp0, FP1, FP2, FP3, FP5, FP-10(S), or FP-M, device ranges are different in individual CPUs.

*2 Writing to device is not allowed.

*3 Only those devices that have been assigned to I/O contacts by peripheral software can be used.

*4 The device points of the timer and counter differs depending on the head numbers of the counter set by the value of the system register (No. 5).

*5 This device does not exist in FP0, FP1, and FP-M.

*6 When FP2SH is used, one bank of "32765 × 3 banks" can be monitored.

10 Microcomputer connection

Device name		Setting range		Device No. Notation
Bit device	Bit specification of data register (D)	Specified bit of data register (D)		-
Word device	Data register (D)	D0	to D2047	Decimal

*1 Read from/write to the host by GB and GD devices cannot be executed.

2.6.3 Device range available for GOT-F900 series

The device range of the PLC CPU that can be used in GOT is shown as follows.


Note that the device range in the table below is the maximum value that can be set in GT Designer2.

The specifications of devices may differ depending on the models even though they belong to the same PLC CPU series.

Make setting in accordance with the specifications of actual PLC CPUs used.

When non-existent devices or device numbers outside of the range has been set, some of the correctly set objects may not be monitored.

For the setting method, see the following section.

 Section 5.1 Device Setting

1 Mitsubishi Electric PLC

(1) MELSEC-QnA, Q (Multiple CPUs)

Device name		Setting range		Device No. Representation	
Bit device	Input (X)	X0	to X1FFF	Hexadecimal	
	Output (Y)	Y0	to Y1FFF		
	Internal relay (M)	M0	to M32767	Decimal	
	Latch relay (L)	L0	to L32767		
	Annunciator (F)	F0	to F32767		
	Link relay (B)	B0	to B7FFF	Hexadecimal	
	Timer	Contact (TT)	TT0	to TT32767	-
		Coil (TC)	TC0	to TC32767	
	Counter	Contact (CT)	CT0	to CT32767	
		Coil (CC)	CC0	to CC32767	
	Special relay (SM)	SM0	to SM2047		
	Retentive timer	Contact (SS)	SS0	to SS32767	
		Coil (SC)	SC0	to SC32767	
	Step relay (S)	S0	to S32767		
Link special relay (SB)	SB0	to SB7FF	Hexadecimal		
Word device	Data register (D)	D0	to D32767	Decimal	
	Special data register (SD)	SD0	to SD2047		
	Link register (W)	W0	to W7FFF	Hexadecimal	
	Timer (current value) (TN)	TN0	to TN32767	Decimal	
	Counter (current value) (CN)	CN0	to CN32767		
	Retentive timer (current value) (SN)	SN0	to SN32767		
	Link special register (SW)	SW0	to SW7FF	Hexadecimal	
	File register (R)	R0	to R32767 ^{*1}	Decimal	
Index register (Z)	Z0	to Z15			

*1 Available for file register of the block No. switched with the RSET instruction.

(a) Restrictions on setting monitor of A series computer link

When the GOT-F900 has been connected to the QnACPU with A series computer link module installed, monitoring range of QnACPU is applied. The restrictions are shown as follows: (depending on restrictions of the computer link).

Device name		Setting range			Device No. Notation	
Word device	Timer	Current value (TN)	TN0	to	TN255	Decimal
		Set value (TS)	-			
	Counter	Current value (CN)	CN0	to	CN255	Decimal
		Set value (CS)	-			
File register (R)		-			-	

(b) PLC No. specification in multiple CPU system

Add a PLC number when specifying a device.

- 0 : CPU connected (Control CPU for link connection.)
- 1 to 4 : CPU of station number specified

(2) MELSEC-A, motion controller CPU (A series)

Device name		Setting range			Device No. Notation	
Bit device	Input (X)	X0	to	X1FFF	Hexadecimal	
	Output (Y)	Y0	to	Y1FFF		
	Internal relay (M)	M0	to	M8191	Decimal	
	Special internal relay (M)	M9000	to	M9255		
	Latch relay (L) *1	L0	to	L8191		
	Annunciator (F)	F0	to	F2047		
	Link relay (B)	B0	to	B1FFF	Hexadecimal	
	Timer	Contact (TT)	TT0	to	TT2047	Decimal
		Coil (TC)	TC0	to	TC2047	
	Counter	Contact (CT)	CT0	to	CT1023	
Coil (CC)		CC0	to	CC1023		
Data register (D)		D0	to	D8191	Decimal	
Special data register (D)		D9000	to	D9255		
Link register (W)		W0	to	W1FFF	Hexadecimal	
Word device	Timer	Contact (TN)	TN0	to	TN2047	Decimal
		Coil (TS)	TS0	to	TS2047	
	Counter	Contact (CN)	CN0	to	CN1023	
		Coil (CS)	CS0	to	CS1023	
	File register (R)		R0	to	R8191	
	Index register *2	(Z)	Z0	to	Z6	
		(V)	V0	to	V6	
	Accumulator (A)		A0	to	A1	

*1 Latch relay (L) is treated as internal relay (M) in GOT-F900.

*2 When connected to computer link, writing to the index register (the touch switch function, numerical input function, etc) is not allowed.

Condition enabling data changes

While the GOT is connected to the A Series CPU or A Series computer link unit, data cannot be changed in set values (specified directly) of timers and counters and file registers in the following condition.

PLC status		While PLC is stopped		While PLC is running	
Memory type		Operation with RAM	Operation with ROM	Operation with RAM	Operation with ROM
Keyword	Not present	○	× *1	○	× *1
	Present	× *2		× *2	

The following error messages are displayed on the screen only when a timer, counter or file register is accessed through a Numeric Input or ASCII input.

- *1 When data of a set value (specified directly) of a timer or counter is tried to be changed, the error message "CAN NOT WRITE." is displayed.
(Set values of timers and counters can be changed if they are specified indirectly using data registers.)
When data of a file register is tried to be changed, the error message "CAN NOT WRITE." is displayed.
- *2 The error message "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed.

(3) MELSEC-FX

Device name		Setting range		Device No. Notation		
Bit device	Input (X)	X0	to X377	Octal		
	Output (Y)	Y0	to Y377			
	Auxiliary relay (M)	M0	to M3071	Decimal		
	Special auxiliary relay (M)	M8000	to M8255			
	State (S)	S0	to S999			
	Timer contact (T)	T0	to T255			
	Counter contact (C)	C0	to C255			
Word device	Data register (D) (Including file register)	D0	to D7999	Decimal		
	Special data register (D)	D8000	to D8255			
	Timer (T)	Current value (T)	T0		to T255	
		Set value (TS) ^{*2}	TS0		to TS255	
	Counter (C)	16bit	Current value (C)		C0	to C199
			Set value (CS)		CS0	to CS199
		32bit	Current value (C) ^{*2}		C200	to C255
			Set value (CS) ^{*2}		CS200	to CS255
	Index register (Z)		Z			
	Index register (V)		V (16 bits)			

*1 For FX3UC series, device setting cannot be made exceeding the above range by using GT Designer2.

*2 Bar code reader cannot be specified as word device.

Condition enabling data changes

While the GOT is connected to the A Series CPU or A Series computer link unit, data cannot be changed in set values (specified directly) of timers and counters and file registers in the following condition.

PLC status		While PLC is stopped				While PLC is running			
Memory cassette attached to PLC	Memory type	RAM	EPROM	EEPROM		RAM	EPROM	EEPROM	
		Write protect switch status	-	-	ON	OFF	-	-	ON	OFF
Keyword	Not present	○	× *1	× *1	○	○	× *1	× *1	× *3
	Present	× *2				× *2			

The following error messages are displayed on the screen only when a timer, counter or file register is accessed through a Numeric Input or ASCII input.

*1 When data of a set value (specified directly) of a timer or counter is tried to be changed, the error message "CAN NOT WRITE." is displayed.

(Set values of timers and counters can be changed if they are specified indirectly using data registers.)

When data of a file register is tried to be changed, the error message "CAN NOT WRITE." is displayed.

*2 The error message "CAN NOT USE THE FUNCTION WHILE PROTECTED." is displayed.

*3 The error message "PLC IS RUNNING." is displayed.

(4) FX series GM positioning

Device name		Setting range		Device No. Notation
Bit device	Input (X) ^{*1}	X0	to X377	Octal
	Output (Y)	Y0	to Y67	
	Auxiliary relay (M)	M0	to M511	Decimal
	Special auxiliary relay (M)	M9000	to M9175	
Word device	Data register (D)	D0	to D3999	Decimal
	Special data register (D)	D9000	to D9313	
	File register (D)	D4000	to D6999	
	Index register (Z)	Z0	to Z6 (16 bits)	
	Index register (V)	V0	to V6 (32 bits)	

*1 Writing to device is not executable.

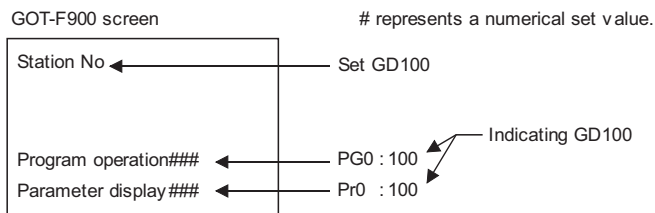
(5) FREQROL series inverter

Device name		Setting range		Device No. Notation
Bit device	Control status (S)	S0: □	to S7: □	Decimal
Word device	Alarm code (A)	A0: □	to A7: □	Decimal
	Parameter (Pr)	Pr0: □	to Pr993: □	
	Program operation (PG)	PG0: □	to PG89: □	
	Special parameter (SP)	SP108: □	to SP127: □	

Set the station No. in □ for the inverter to be monitored.

There are 2 ways to specify the station No.:

- Direct specification : Specifies the station No. of the inverter when setting device.
[Valid range: 0 to 31]
- Indirect specification : Indirectly specifies the station No. of the inverter using the 16-bit GOT internal register (GD100 to GD115) when setting device, allowing changing more than one station No. per screen.
[Valid range: 100 to 115]* Corresponding to GD100 to GD115 respectively.



2 OMRON PLC (OMRON SYSMAC)

Device name		Setting range		Device No. Notation
Bit device	I/O relay	..000000	to ..614315	Decimal
	Internal auxiliary relay	WR00000	to WR51115	
	Data link relay (LR)	LR00000	to LR19915	
	Auxiliary memory relay (AR) ^{*1}	AR00000	to AR95915	
	Holding relay (HR)	HR00000	to HR51115	
	Timer contact (TIM)	TIM0000	to TIM2047	
	Counter contact (CNT)	CNT0000	to CNT2047	
Word device	Data memory (DM)	DM0000	to DM9999	Decimal
	Timer (current value) (TIM) ^{*2}	TIM0000	to TIM2047	
	Counter (current value) (CNT) ^{*2}	CNT0000	to CNT2047	
	Extension data memory (EM current bank)	EM0000	to EM9999	
	Extension data memory (E0 to EC: 13 banks)	E00000 : EC0000	to : EC9999	

*1 ON/OFF operation of the Auxiliary memory relay (AR) is not available when the SYSMAC α , CPM1A/2A/2C, CS1 series is connected.

Do not use the key operation setting (bit).

*2 Set values cannot be read.

3 Yaskawa PLC (CP-9200SH/MP-900 series)

Device name		Setting range		Device No. Notation
Bit device	Coil (MB)	MB0	to MB4095F	Decimal + hexadecimal
	Input relay (IB)	IB0000	to IBFFFF	Hexadecimal
Word device	Input register (IW)	IW0	to IW7FFF	Hexadecimal
	Holding relay (MW)	MW0	to MW32767	Decimal

4 Allen-Bradley PLC

(1) AB SLC500

Device name		Setting range		Device No. Notation	
Bit device	Bit (B)	B3:0/0 B10:0/0	to to	B3:255/15 B255:255/15	Decimal
	Timer (Timing bit) (TT)	T4:0/14(TT) T10:0/14(TT)	to to	T4:255/14(TT) T255:255/14(TT)	
	Timer (Timing bit) (TN)	T4:0/13(DN) T10:0/13(DN)	to to	T4:255/13(DN) T255:255/13(DN)	
	Counter (Up-counter) (CU)	C5:0/15(CU) C10:0/15(CU)	to to	C5:255/15(CU) C255:255/15(CU)	
	Counter (Down-counter) (CD)	C5:0/14(CD) C10:0/14(CD)	to to	C5:255/14(CD) C255:255/14(CD)	
	Counter (Completion bit) (CN)	C5:0/13(DN) C10:0/13(DN)	to to	C5:255/13(DN) C255:255/13(DN)	
Word device	Timer (Set value) (TP) ^{*1}	T4:0.1(PRE) T10:0.1(PRE)	to to	T4:255.1(PRE) T255:255.1(PRE)	Decimal
	Timer (Current value) (TA) ^{*1}	T4:0.2(ACC) T10:0.2(ACC)	to to	T4:255.2(ACC) T255:255.2(ACC)	
	Counter (Set value) (TCP) ^{*1}	C5:0.1(PRE) C10:0.1(PRE)	to to	C5:255.1(PRE) C255:255.1(PRE)	
	Counter (Current value) (CA) ^{*1}	C5:0.2(ACC) C10:0.2(ACC)	to to	C5:255.2(ACC) C255:255.2(ACC)	
	Integer (N)	N7:0 N10:0	to to	N7:255 N255:255	

*1 32-bit specification is not available.

*2 Do not set the device outside the valid range.

A communication error may occur if a device outside the valid range has been set.

(2) AB MicroLogix1000/1200/1500 series

Device name		Setting range		Device No. Notation	
Bit device	Bit (B)	B3:0/0	to	B255:255/15	Decimal
	Timer (Timing bit) (TT)	T3:0/14(TT)	to	T255:255/14(TT)	
	Timer (Completion bit) (TN)	T3:0/13(DN)	to	T255:255/13(DN)	
	Counter (Up-counter) (CU)	C3:0/15(CU)	to	C255:255/15(CU)	
	Counter (Down-counter) (CD)	C3:0/14(CD)	to	C255:255/14(CD)	
	Counter (Completion bit) (CN)	C3:0/13(DN)	to	C255:255/13(DN)	
Word device	Timer (Set value) (TP) ^{*1}	T3:0.1(PRE)	to	T255:255.1(PRE)	Decimal
	Timer (Current value) (TA) ^{*1}	T3:0.2(ACC)	to	T255:255.2(ACC)	
	Counter (Set value) (TCP) ^{*1}	C3:0.1(PRE)	to	C255:255.1(PRE)	
	Counter (Current value) (CA) ^{*1}	C3:0.2(ACC)	to	C255:255.2(ACC)	
	Integer (N) ^{*1}	N3:0	to	N255:255	

*1 32-bit specification is not available.

5 FUJITSU PLC (FUJITSU FLEX-PC N series)

Device name		Setting range		Device name	
Bit device	Input (X)	X000	to	X7FF	Hexadecimal
	Output (Y)	Y000	to	Y7FF	
	Internal relay (M)	M0000	to	M1FFF	
	Latch relay (L)	L0000	to	L1FFF	
	State (S)	S000	to	S7FF	
	Special internal relay (M)	M0800	to	M81FF	
Word device	Timer (current value) (T)	T000	to	T3FF	Hexadecimal
	Counter (setting value) (C)	C000	to	C1FF	
	Data register (D)	D0000	to	D2FFF	
	Special data register (D)	D8000	to	D81FF	
	Link register (W)	W0000	to	W3FFF	
	File register (R)	R0000	to	F7FFF	

6 SIEMENS PLC

(1) SIEMENS S7-200 series

Device name		Setting range		Device name	
Bit device	Variable Memory(V)	V00	to	V51197	Decimal
	Input(I)	I00	to	I77	
	Output(Q)	Q00	to	Q77	
	Bit memory(M)	M00	to	M317	
	Special Memory(SM)	SM00	to	SM1947	
	Timer(T) ^{*1}	T0	to	T255	
	Counter(C) ^{*1}	C0	to	C255	
	Sequence Control Relay(S)	S00	to	S317	
Word device	Variable Memory (V) ^{*6}	VW0	to	VW5118	Decimal
	Input(I) ^{*6}	IW0	to	IW6	
	Output(Q) ^{*6}	QW0	to	QW6	
	Analog Input(AI) ^{*2,*6}	AIW0	to	AIW30	
	Analog Output(AQ) ^{*6}	AQW0	to	AQW30	
	Bit memory(M) ^{*6}	MW0	to	MW30	
	Special Memory(SM) ^{*3,*6}	SMW0	to	SMW192	
	Timer(T) (16-bit) ^{*4}	T0	to	T255	
	Counter(C) (16-bit) ^{*4}	C0	to	C255	
	High Speed Counter(HC) (32-bit) ^{*5}	HC0	to	HC2	
	Sequence Control Relay(S) ^{*6}	SW0	to	SW30	

*1 Writing to the bit device, T and C is not allowed.

*2 Writing to the word device, HC and AL is not allowed.

*3 The word device SM cannot be monitored.

*4 The word device T and C are 16-bit devices.

*5 The word device HC is a 32-bit device.

*6 The byte address is numbered using even numbers only.

(2) SIEMENS S7-300 series

Device name		Setting range		Device name	
Bit device	Input relay (I)	I0000	to	I5117	Decimal
	Output relay (Q)	Q0000	to	Q5117	
	Bit memory (M)	M00000	to	M20477	
Word device	Timer (Current value) (T)	T000	to	T511	Decimal
	Counter (Current value) (C)	C000	to	C511	
	Data register (D) Setting range Input relay (I)	D000100000	to	D000165534	
		D000200000	to	D000265534	
		D000300000	to	D000365534	
	:				
	:				
	D102300000	to	D102365534		

7 Matsushita Electric Works PLC (Matsushita MEWNET-FP series)

Device name		Setting range		Device No. Notation
Bit device	Input relay (X) ^{*3}	X0000	to X511F	Decimal + Hexadecimal ^{*6}
	Output relay (Y)	Y0000	to Y511F	
	Internal relay (R) ^{*4}	R0000	to R886F	
	Special relay (R) ^{*4}	R9000	to R910F	
	Link relay (L) ^{*1}	L0000	to L639F	
	Error alarm relay (E) ^{*2, *3}	E0000	to E2047	Decimal
	Timer contact (T) ^{*3}	T0000	to T3071	
	Counter contact (C) ^{*3}	C0000	to C3071	
Word device	Timer/Counter (Elapsed value) (EV)	EV0000	to EV3071	Decimal
	Timer/Counter (Set value) (SV)	SV0000	to SV3071	
	Data register (DT) ^{*4}	DT00000	to DT16383	
	Link register (LD) ^{*1}	LD0000	to LD8447	
	File register (FL) ^{*1, *5}	FL00000	to FL32764	

Pulse relay (P) and Index register (IX, IY) are not supported.

- *1 This device is not provided in FP0, FP Σ
- *2 Applicable for FP2SH only.
- *3 Writing to the device is not allowed.
- *4 Includes Special register (R9000 to R910F) and Special data register (DT9000 to DT9255). However, access is not possible for the FP series when Special data register starts from D90000.
- *5 Accessible to Bank 0 only.
- *6 Bit device No. (3-digit decimal) + Bit position (1-digit hexadecimal)

8 Microcomputer connection

Device name		Setting range		Device name
Bit device	Bit data (M) ^{*1}	M0	to M2047	Decimal
	Special memory (M) ^{*2}	M8000	to M8063	
Word device	Word data (D)	D0	to D4095	Decimal
	Special memory (M) ^{*2}	D8000	to D8015	

- *1 Bit data (M) are provided in GT Designer Version SW1 E or later.
- *2 Special memory is a device for special applications of GOT (Interrupt output, communication error information, etc.).
- *3 In the F920GOT-K, D0 to D1023 are available.

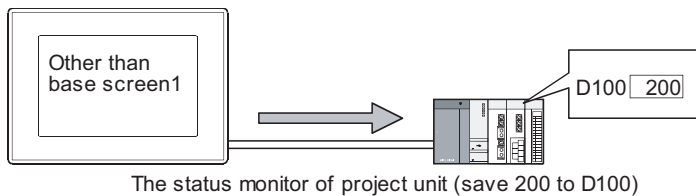
2.7 Precautions for Object Setting

Do not write from multiple objects to one device with the same trigger.
GOT and PLC may execute the operation that is unnecessary for users.

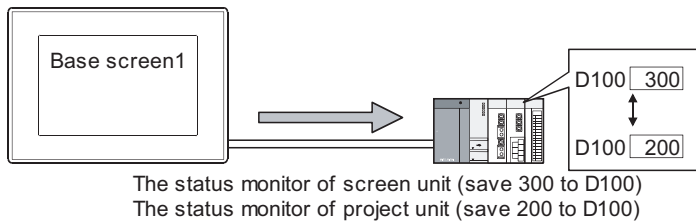
Example: Status monitor function

Items	Condition	Action
Screen tab	X0 in ON status (object base screen1)	Data SET D100 300
Project tab	X0 in ON status	Data SET D100 200

- (1) The trigger is enabled when monitoring the screen other than base screen1 (X0 OFF ON) <no problem>
Write 200 to D100 of PLC CPU.



- (2) The trigger is enabled when monitoring base screen1 (X0 OFF ON) <with problem>
Write 300 and 200 to D100 of PLC CPU.
(When displaying numeric value on GOT, display 200 and 300 in turn.)



3. COMMON SETTING

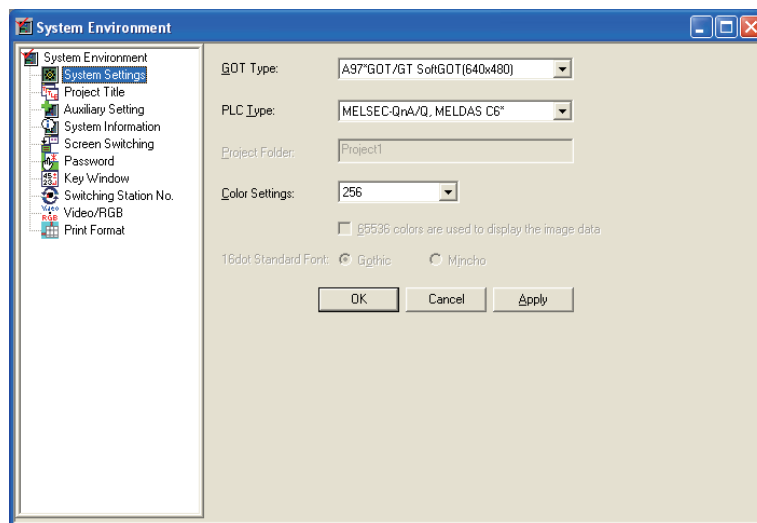
This section explains how to set devices commonly used in all projects.

3.1 GOT/ PLC Type Setting

After starting GT Designer2, select [New] from the menu bar. Then "System Environment" dialog box will appear.

In [System Settings] within the dialog box, set the GOT type that uses the project to be created and the PLC CPU type connected to that GOT.

These settings can be changed after the project is created.

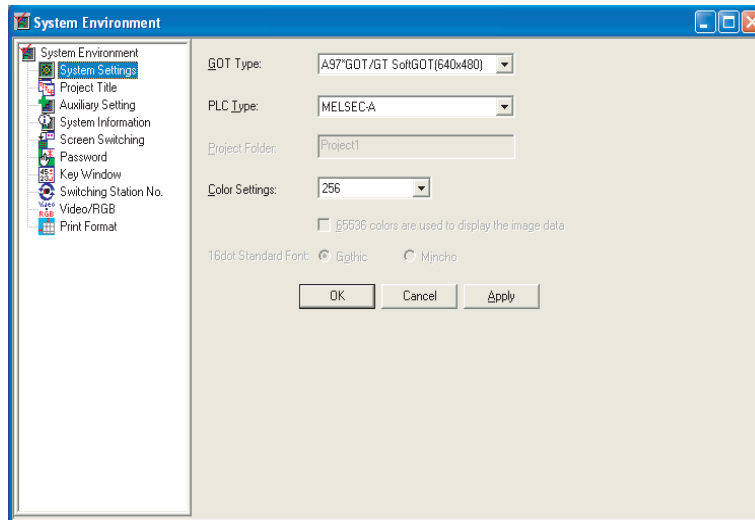


3.1.1 Settings

- 1 Follow (1) or (2) below:
 - (1) Changing the GOT and PLC settings during project setting
Select [Common] → [System Environment] from the menu.
 - (2) When making settings at a creation of a new project:
The wizard is displayed when making a new project.
Follow the steps below after finishing the wizard.
- 2 After the "System Environments" dialog box appears, make the settings with reference to the following explanation.

3.1.2 Setting items

This section explains the setting items for GOT type and PLC type.



Item	Description	A	F
GOT Type	Select the GOT type to be used.	<input type="radio"/>	<input type="radio"/>
PLC Type	Select the PLC CPU type to be connected to GOT while considering the available device range, as the device setting will be made within the device range of the selected PLC CPU. When accessing multiple PLC CPUs, select the PLC CPU type of the largest device range.	<input type="radio"/>	<input type="radio"/>
Color Settings	Select the color setting for the screen displayed in GOT Select the color setting in accordance with the GOT display color. The color setting applicable for GT Designer2 will be set.	<input type="radio"/>	<input type="radio"/>



- (1) When Multiple CPU system is used
To monitor the multiple CPU system of other station by GOT, select [MELSEC-Q(Multi)/Q-Motion]. The PLC CPU type of host station (QCPU, QnACPU or ACPU) is not relevant.
PLC No. setting is disabled if other PLC type has been selected.
- (2) When connecting GOT to remote I/O station
When connecting GOT to a remote I/O station in MELSECNET/H network system, set "MELSEC-QnA/Q, MELDAS C6*" as PLC type.

3.1.3 Precautions

There are no Precautions for setting the GOT and PLC type.
However, there are the following precautions for changing the GOT and PLC type.

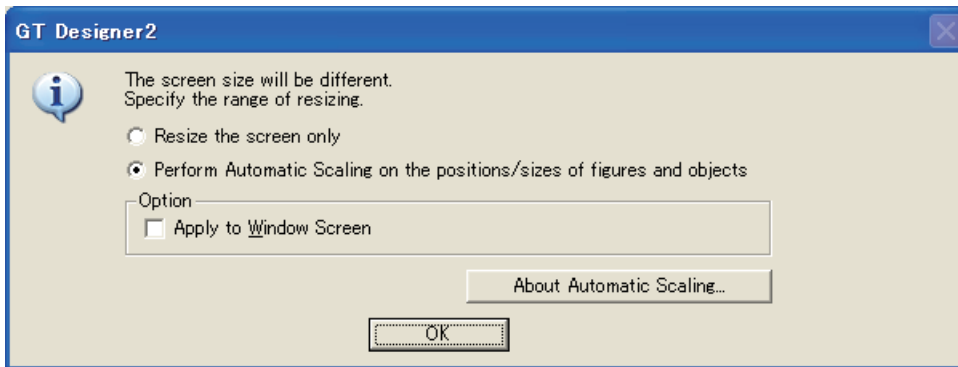
1 Precautions for changing the GOT type

If GOT type is changed, this may change or delete the some function settings or affect the figure/frame settings.

Therefore, change GOT type while paying full attention to followings. (Also, make sure to check other settings.)

- (1) If settings, figures and/or objects which are not supported by the GOT type after change exist:
After GOT type is changed, some settings, figures and objects may be deleted, if they are not supported by the GOT currently set.
Even if GOT type is changed to the previous one, the deleted settings will not be restored.
- (2) Undo and Redo
"Undo", "Redo" settings will be reset when GOT type is changed.
- (3) Items to be set at the GOT after changing the GOT type
Some setting items must be set after GOT type change is completed, as they are not included in the previous GOT type. Note that default values are set for these setting items.
- (4) Object shape
A shape is changed as indicated below.
 - (a) When the shape is set [None], the setting remains [None].
 - (b) A basic figure will be changed to the same figure, if it is included in the currently set GOT.
However, it will be changed to the first basic figure, i.e., figure set at the top of the combo box, if not included.
- (5) If device ranges not applicable to the GOT type after change exist:
The applicable device range/type differs with the GOT type. GT Designer2 displays the device out of the range as "??". In this case, make device settings again. Some device types (BCD, real number) may be deleted, as they are not supported by the GOT.
- (6) If user defined libraries exist:
User defined libraries will not be changed.
The data within user defined libraries are usable even after GOT type is changed. However, if they include figures or objects that are not supported by the GOT, the libraries cannot be used.
the previous GOT type. Note that default values are set for these setting items.

- (7) Changing to the GOT of which screen size is different
 When the different GOT type is selected, positions and sizes of figures and objects set on the screen can be selected whether set or not the adjusting positions and sizes automatically.



Item	Description
Resize the screen only	Check this item to change the screen size only. When this item is checked, positions and sizes of figures and objects on the screen are not changed after the GOT type is changed.
Perform Automatic Scaling on the positions/sizes of figures and objects	Check this item to automatically change positions and sizes of figures and objects to adjust those of the changed GOT type.
Apply to Window Screen	Check this item to automatically adjust the positions and sizes of figures and objects on the window screen.
[About Automatic Scaling...]	Clicking this item displays the explanation for the automatic scaling.

When [Perform Automatic Scaling on the positions/sizes of figures and objects] is checked, figures and objects are changed as follows:

(a) Automatic scaling of figures and objects

When the different GOT type is selected, figures and objects are zoomed in or zoomed out automatically.

Figures and objects are zoomed in or zoomed out automatically corresponding to the GOT screen size.

- On the base screen

Figures and objects are zoomed in or zoomed out automatically corresponding to the GOT screen size.

- On the window screen

When the used GOT type is changed to a smaller type, the window screen is zoomed out automatically. (The window screen is not zoomed in.)

Figures and objects are zoomed out automatically corresponding to the maximum size of screen.

The following items are restricted to be zoomed in or zoomed out.

Item	Restriction
Numerical Display/Input, Ascii Display/ Input, Date/Time Display	<ul style="list-style-type: none">• The numerical size is zoomed in or zoomed out within the available display range set for GT Designer2.• When [6 x 8dot] is set for the fonts, the object area is not zoomed in or zoomed out.• When the frame format is set, figures set for objects are zoomed in or zoomed out and the object area is not zoomed in or zoomed out.
Data List, Alarm History	The object area is not zoomed in or zoomed out. When the frame format is set, only figures are zoomed in or zoomed out.
Parts Movement	Objects are zoomed in or zoomed out when [Line] is set for the movement way.
Parts Display, Set Overlay Screen, Window Position	For the parts display and the set overlay screen, objects and the screen size are not zoomed in or zoomed out. For the window position, the position set on the base or window screen is not changed.

(b) The display range for automatic scaling

Figures and objects set out of the display range are not zoomed in or zoomed out even if changing to the different type of GOT screen.

Relayout figures and objects into the display range when figures and objects are out of the display range.

(c) Changing the logo image size

If changed to the GOT of which screen size is different, the size of the logo image may be changed.

When the size of the logo image is changed, set the logo image again.

- (8) When the GOT type is changed from A95*GOT to A956WGOT:
The data in the 6-dot area at the bottom of the A95*GOT screen is not displayed on A956WGOT.
Adjust the set points of figure and object positions when utilizing A95*GOT screen data.



2 Precautions for changing the PLC type

- (1) If devices that cannot be converted are included:
When the PLC type is changed, GT Designer2 displays the device cannot be converted (no corresponding device type, or setting available range is exceeded) as "??". In this case, set the device again.
- (2) If the PLC type after change does not correspond to the network:
The network setting will be made as host station.



When changing GOT/PLC type

When changing GOT/PLC type, make backup for the project in advance in order to prevent the settings to be deleted by mistake.

3.2 Switching Screen Device Setting



For GOT, set the device for screen switching in order to switch base screens and display window screen.

Device types for screen switching are as follows:

- Device for base screen switching
- Device for overlap window 1 switching (For base screen in the case of GOT-F900 series)
- Device for overlap window 2 switching (For base screen in the case of GOT-F900 series)
- Device for superimposed window switching (For GOT-A900 series only)

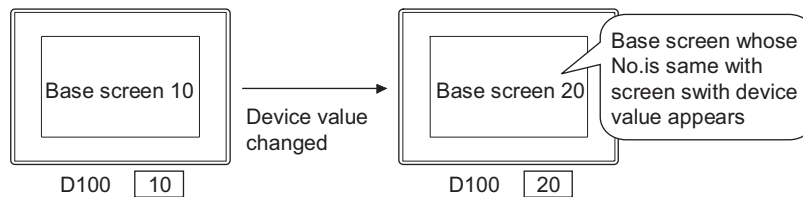
1 Switching base screens

Switch base screens by setting a base screen No. to the device for base screen switching.

There are the following two methods for specifying the base screen No. At using these methods, the screen No. is stored into the switching screen device.

- The screen No. is stored into the set device.
- The screen is switched by the touch switch (go to screen switch).

Example: In the case of device for base screen switching: D100

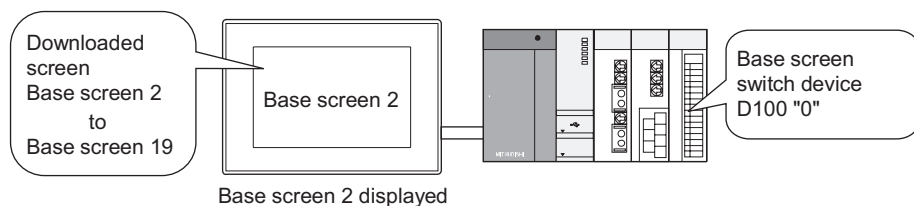


Remark

The value of the device for base screen switching when GOT is powered on

(1) In the case of GOT-A900 series

When the value of device for base screen switching is 0 or the screen No. that has not been downloaded is stored, GOT will display the base screen with the lowest screen among those screens already downloaded. Errors will not be displayed (system alarm).



(2) In the case of GOT-F900 series

When the value of device for base screen switching is 0, or the value of screen No. that has not been downloaded is stored, GOT will display the corresponding error message (The corresponding screen No. is displayed.)
The No. 1 base screen will be always displayed when GOT is powered on. (Base screen No.1 must have been created.)

(a) Initialization of the device for base screen switching

As the user screen No. is always bigger than 1, an error message appears on the monitoring screen to warn that no corresponding screen is provided when the current value of the word device that specifies a base screen is 0.

In the switching setting of GT Designer2 (☞ Section 3.2.2 Setting items), it is recommended to make the settings in order that the device for base screen switching will be initialized when GOT is powered on, depending on the situation.

(This setting is available in the system screen of GOT.)

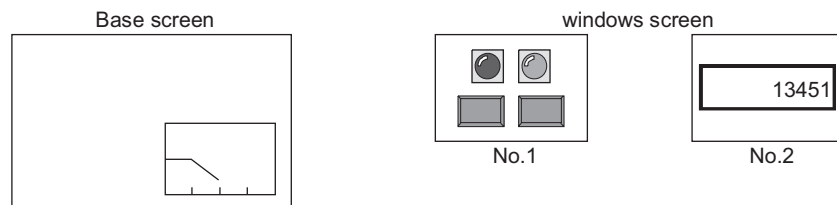
2 Displaying or erasing window screen (for GOT-A900 only)

The device for window screen switching stores the window screen No. to switch window screens; and stores 0 to erase the window screens.

There are the following two methods for specifying the window screen No. At using these methods, the screen No. is stored into the switching screen device.

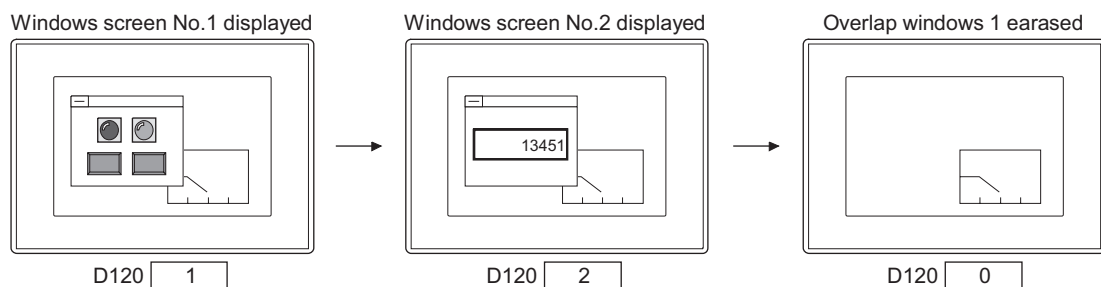
- The screen No. is stored into the set device.
- The screen is switched by the touch switch (go to screen switch).

<Downloaded window screen>



<Example of GOT Display>

Device for overlap window 1 switching: D120



Remark


- (1) Methods of erasing window screen by touch operation
When close key is displayed on an overlap window, touch it to erase the window.

 Section 2.1.2 Window screen specifications

- (2) Position of window screen display
Set the position of window screen display using GT Designer2.

 Section 2.1.2 Window screen specifications

Specify the display position based on the device value.

 Section 3.2.2 Setting items

Hint!

Switching screen device setting

Switching screen device is set as the following.

- (1) GOT internal device

It is recommended to use this device only for switching the screen by the touch switch (go to screen switch).

Screen switching cannot be controlled by the PLC CPU.

However, screen switching of only base screens can be controlled by the PLC CPU with the script function.

(Script example)

```
[w:GD10]=[w:D10]; //D10 value is stored into GD10.
```

- (2) PLC CPU device

It is recommended to use this device to control screen switching from the PLC CPU.

Screen switching can also be performed by the touch switch (go to screen switch).

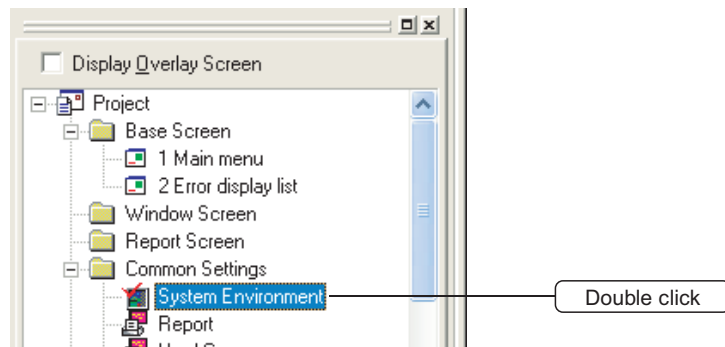
3.2.1 Settings

- 1 Select [Common] → [System Environments] from the menu.
- 2 Double-click on [Screen Switching] in [System Environments] .
- 3 As the setting dialog box appears, make the settings with reference to the following explanation:

Remark

When setting in project workspace

Double-click on [System Environments] and "System Environment" dialog box appears, then double-click on [Screen Switching].



1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

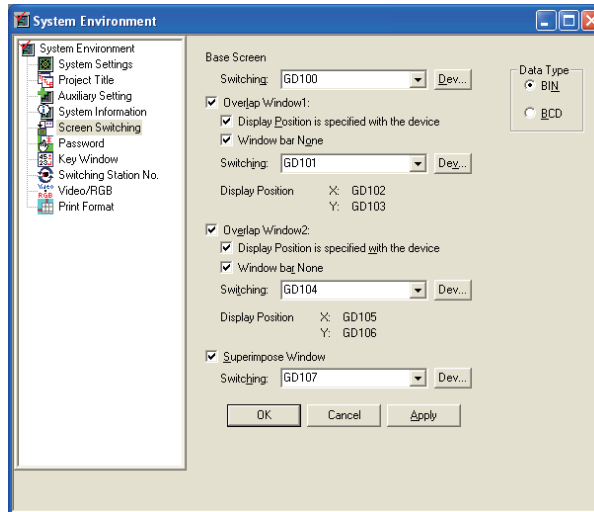
NUMERICAL/
CHARACTER DISPLAY

8

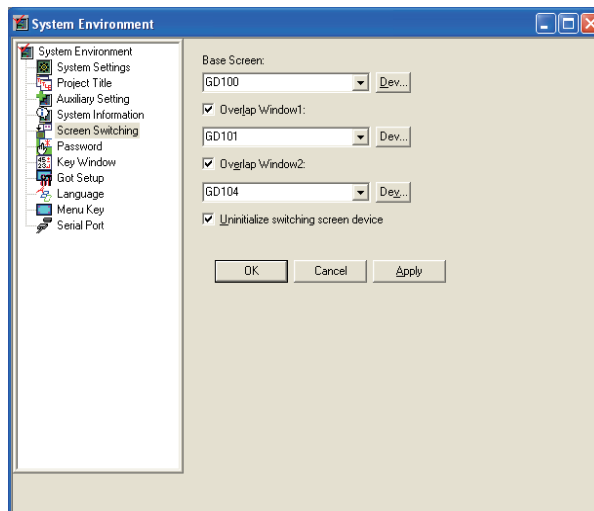
ALARM

3.2.2 Setting items

Set a screen switching device for each screen type (base screen, overlap screen 1, overlap screen 2 and superimposed screen).




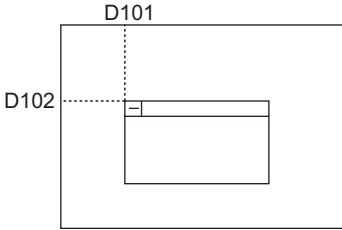
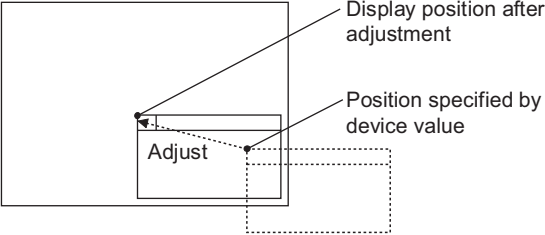
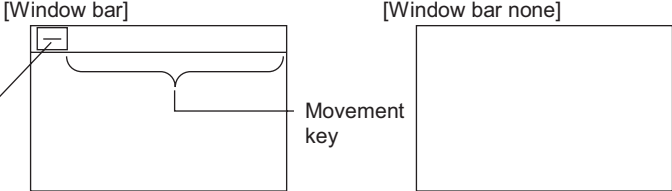

(When setting GOT-A900 series)



(When setting GOT-F900 series)

Items	Description	A	F
Data Type	Select the data format to process screen switching device value. BIN : Processes the screen switching device value as binary value. BCD : Processes the screen switching device value as BCD value.		
	The range of the screen (screen No.) can be switched will depend on the set data format. BIN : 1 to 32767 BCD : 1 to 9999 GOT-F900 series processes it as binary value.	○	×
Base Screen	Set the screen switching device for base screen. (☞ Section 5.1 Device Setting)	○	○

(Continued to next page)

Item	Description	A	F
Overlap Window 1 Overlap Window 2	<p>Check this item to display Overlap Window 1 or Overlap Window 2 Then set the switching screen device for each window. ( Section 5.1 Device Setting)</p> <p>The overlap windows will not be displayed without setting the switching screen devices. (In the case of GOT-F900 series, the overlap window will overlap with the base screen and the specified base screen. Check this item to display the base screens to be overlapped.)</p>	○	○
Display Position is specified with the device	<p>Check this item to specify the display position of the window based on the device value. The devices that store display positions will be set consecutively starting from the device set in Specify multiples of 16 for the X and Y coordinates of the overlap window. If a non-multiple of 16 is specified for the coordinate, the overlap window is placed on the coordinate of the rounded down number when the remainder is 7 or less, or on the coordinate of the rounded up number when the remainder is 8 or more. When the coordinates of rounded up/down numbers are the same with the previous coordinates, the overlap window will not be drawn again. [Screens Switching] . Example: In the case that switching screen device is set to D100. Display position X : D101 Y : D102 The window screen will be displayed as follows:</p>  <p>If the device value exceeding the range for display in GOT is stored as the device value that stores display position, the GOT will automatically adjust the display position and then display the window screen. The device value will not be updated with the above adjustment.</p> 	○	x
Window bar None	<p>Check this item to display the overlap window without window bar.</p>  <p>Users can move and close this window.</p> <p>Users cannot move the window To close it, please set the screen switching device value as "0".</p>	○	x
Superimpose Window	<p>Check this item to display superimposed window. Then set the switching screen device for the superimposed window ( Section 5.1 Device Setting)</p> <p>The superimposed windows will not be displayed without setting the switching screen devices.</p>	○	x

1	OVERVIEW
2	SPECIFICATIONS
3	COMMON SETTING
4	PREPARATORY OPERATION FOR OBJECT SETTING
5	COMMON SETTINGS FOR OBJECTS
6	LAMP, SWITCH
7	NUMERICAL/ CHARACTER DISPLAY
8	ALARM

Item	Description	A	F
Uninitialize switching screen device	Uncheck this item to write 1 into the device with the base screen switching settings when GOT is powered on. This setting prevents the device value from being reset; a screen error from appearing on GOT screen when GOT is powered on.	×	○

3.2.3 Precautions

This section provides the precautions for setting the switching screen device.

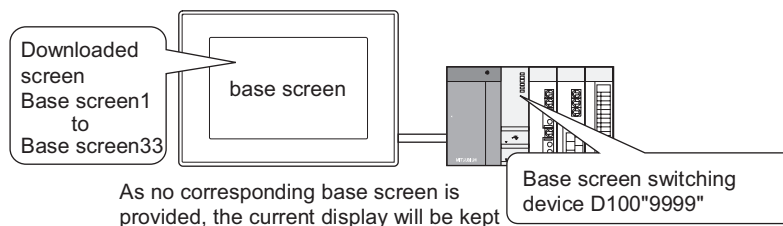
1 Precautions for drawing

- (1) Switching screen device for screen switching
Use the switching screen device only when switching GOT screens.
- (2) Switching base screen device
The default value of switching base screen device is set to "GD100".
Change the switching base screen device when "GD100" is used in other objects. (The default value in GT Designer2 is different. (GT Designer: D0))
- (3) Display restrictions of used set objects
If the line graph with locus display on the base screen has been set, the overlap window2 cannot be displayed.

2 Precautions for use

- (1) If the value that cannot be displayed is stored into the switching screen device during GOT monitoring.
 - (a) In the case of GOT-A900 series
If the screen No. that is not downloaded is saved as the value of the switching screen device, the screen currently displayed will be kept.
This action is common in all types of screens (base screen, overlap window1, overlap window2, and superimposed window).

Example: In case of base screen



- (b) In the case of GOT-F900 series
An error message will appear on GOT.
- (2) Word device for base screen switching (for GOT-F900 only)
If the word device that specifies a base screen is not located in the backup battery area (keep area, latch area), the current value of the word device will be 0 when the PLC CPU is powered off or is changed to "Stop" status.
As the base screen No. is always 1 or bigger, an error message appears on GOT to warn that the next screen is not provided. (No.**).
It is recommended to specify the keep area of the switching base screen device.

3.3 Switching Station No. Device Setting

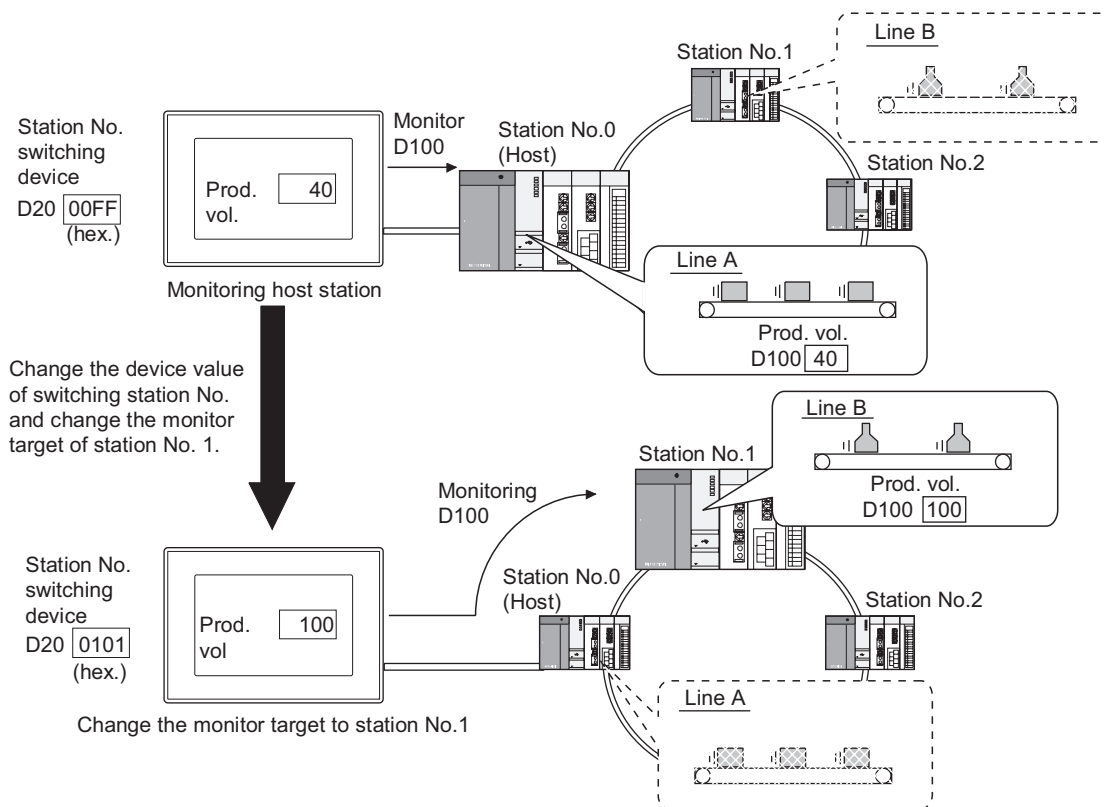


Station No. switching is a function to switch the monitored station No. of the object.
 In a system with the same controlled multiple machines to a network, for example, the multiple machines can be monitored on the same monitor screen by using station No. switching.
 As the number of object to be set can be reduced, the built-in memory of GOT can be saved.
 Switching station No. can be carried out for the station No. that can be monitored by GOT.
 For more information on station No. that can be monitored by GOT (accessible range), Refer to the following.

GOT-A900 series User's Manual (Connection System Manual)

3.3.1 Methods of switching station No.

The device dedicated to switching station No. is used to switch the station No.
 The screen object is redrawn after changing the value stored in the station No. switching device

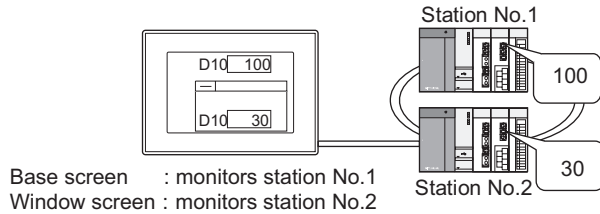


1 OVERVIEW
 2 SPECIFICATIONS
 3 COMMON SETTING
 4 PREPARATORY OPERATION FOR OBJECT SETTING
 5 COMMON SETTINGS FOR OBJECTS
 6 LAMP, SWITCH
 7 NUMERICAL/ CHARACTER DISPLAY
 8 ALARM

Application example

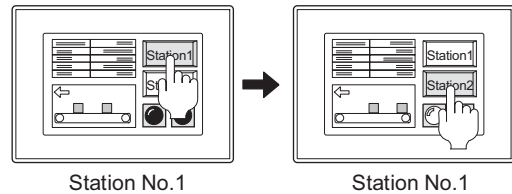
Monitor different station Nos. on base screen and window screen.

☞ Set on "Station No. switching device" dialog box



Use Touch switch to change monitor target.

☞ Set using the Touch switch



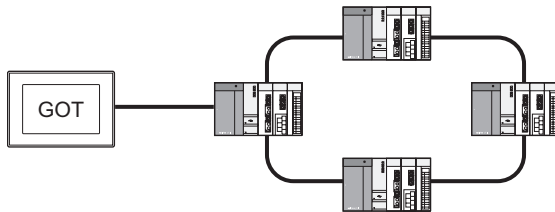
1 Methods of switching station No.

Station No. switching is executed by switching the station No. stored to the station No. switching device. The station No. can be specified in either of the following methods. The station No. is stored into the station No. switching device by the methods.

(1) Store a value in the device for switching station No.

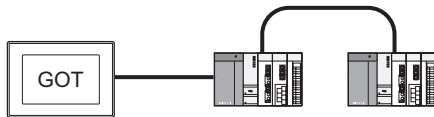
Station No. can be switched if a value is stored in the device for switching station No. as follows:

- When GOT has been incorporated into the data link system (MELSECNET) or CC-Link system




Switching target	Storage value (hexadecimal)
Master station	0000H
Local station (1 to 64)	0001H to 0040H
Station No. set for each object (The same monitor target is set if "Switching station No." has not been set.)	00FEH
Host (connection target) monitor	00FFH

- When the GOT is included in a network system (MELSECNET/10) or Ethernet system*




Switching target	Storage value (hexadecimal)
Network No. (1 to 255)	Relation between change target and storage value is as follows: When monitoring PLC station No: 18, network No.: 1 0112H └───┬─── PLC station No. └───┬─── Network No.
PLC station No. (1 to 64)	
Station No. set for each object (The same monitor target is set if "Switching station No." has not been set.)	00FEH
Host station (connection target) monitor	00FFH

* For Ethernet connection, Ethernet setting is required on GT Designer2. Refer to the following manual for details of the setting method.

 GOT-A900 Series User's Manual (Connection System Manual)

- (2) Use touch switch to switch station No.]
Touch the touch switch dedicated to switching station No. to switch the station No.

 Section 6.2 Touch Switch

Point

When using GOT data register (GD) for switching station No. device

Module connected to station No.0 of network No.0 is monitored until setting the value of switching station No. device (GD) after turning on GOT. Thus, the system alarm "402 Communication timeout. Confirm communication pathway or modules." will occur depending on the connection type. To not occur the system alarm, create the initial displaying screen and set the value to switching station No. device in the screen.

3.3.2 Settings


- 1 Select [Common] → [System Environment] from the menu.
- 2 As "System Environment" dialog box appears, double-click on [Switching Station No]. in the dialog box.
- 3 As the setting dialog box appears, make the settings with reference to the following explanation.

Point

Before setting switching station No.

When switching station No., set the function available or unavailable for each of base screen and window screen.

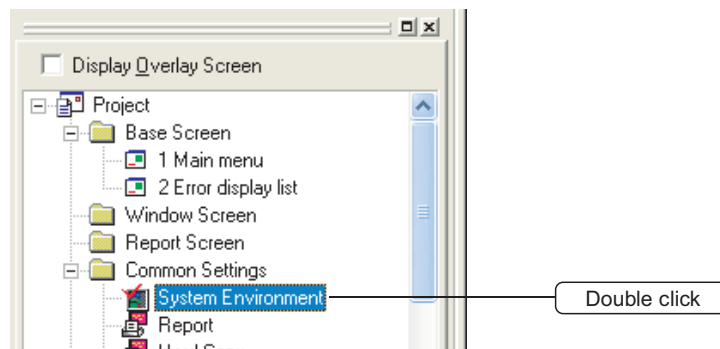
To use the function, make it available in the [Auxiliary Setting] for each screen.

 Section 4.5 Auxiliary Settings

Remark

When making the settings in project workspace

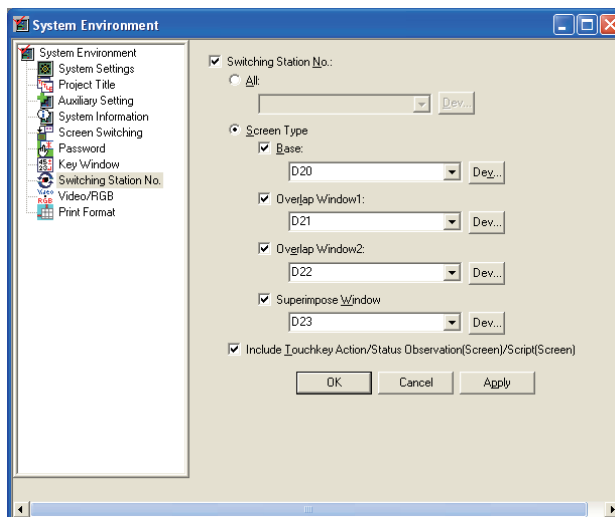
Click on [System Environment] to display "System Environment" dialog box, and then double click on [Switching Station No.] there.

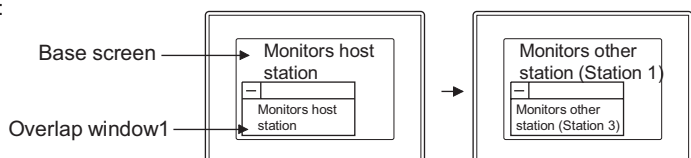


3.3.3 Setting items

Set a switching station No. device.

Use the device common to all screens or the different device for each screen.



Items	Description	A	F
Switching Station No.	Check this item to use "Switching station No.".	<input type="radio"/>	<input checked="" type="checkbox"/>
All	Check this item to make "Switching station No." available for all screens. Then set the switching station No. device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Screen Type	Check this item to specify the target station No. by screen type. Then check the screen type to carry out "Switching station No."	<input type="radio"/>	<input checked="" type="checkbox"/>
Base	Check the screen type(s) that will perform "Switching station No." (base/overlap window1/overlap window2/superimposed window). Then set the switching station No. device for each screen type.	<input type="radio"/>	<input checked="" type="checkbox"/>
Overlap Window1	"Switching station No." will not be performed without this setting. Example: 	<input type="radio"/>	<input checked="" type="checkbox"/>
Overlap Window2		<input type="radio"/>	<input checked="" type="checkbox"/>
Superimpose Window	Switching station No. device (hexadecimal) ● Base screen : 00FFH → : 0101H ● Overlap window1 : 00FFH → : 0103H	<input type="radio"/>	<input checked="" type="checkbox"/>
Include Touchkey Action/ Status Observation(Screen)/ Script(Screen)	Check this item to make touch switch action/status observation/script object functions the targets for switching station No.	<input type="radio"/>	<input checked="" type="checkbox"/>



Action of touch switch/status observation/script function

When using the device of which station No. has been switched to perform all actions of switch function, status observation function, and script function, check [Include Touchkey action/Status Observation(Screen)/Script(Screen)].

If it is not checked, each object operates as shown below:

Object	Function	Monitor/Action object
Touch switch function	ON/OFF figure to display status	Device of which station No. has been switched.
	Device for indirect comment	
	Action at touch	Device of which station No. set in the object
Status observation function (screen)	Trigger device	Device of which station No. has been switched.
	Action when condition success	Device of which station No. set in the object
Script function (screen)	Script function (screen)	Device of which station No. has been switched.
	Script (refer to device)	
	Script (write to device)	Device of which station No. set in the object

3.3.4 Precautions

This section provides the precautions for switching station No.

1 PLC CPU compatible with "Switching station No."

"Switching station No." is available only when MELSEC-A, MELSELQ-QnA, MELSELQ-Q series are monitored.

2 Objects incompatible with "Switching station No."

The following object devices are not compatible with "Switching station No."
GOT monitors the device of the station No. set in each object.

Note that if the object compatible with "Switching station No." has been set in the same screen, GOT will monitor the different station No. depending on the object when carrying out "Switching station No."

- Screen switching function
- System information function
- Alarm history display function
- Recipe function
- Hardcopy function
- Alarm list display function^{*1}
- Line graph display function^{*2}
- Status observation function^{*3}
- Switching station No. function
- Clock display function
- Floating alarm function
- Report function
- Trend graph display function^{*1}
- Scatter graph display function^{*1}
- Script function^{*3}
- Gateway function

*1 Only when the [memory storage] has been set, GOT monitors the device of the station No. set in the object.
GOT monitors the device of the station No. set as the switching target when the [memory storage] is not set.

*2 Only when the [Locus] has been set, GOT monitors the device of the station No. set in the object.
GOT monitors the device of the station No. set as the switching target when the [Locus] is not set.

*3 Only when the settings have been made for each project, GOT monitors the device of the station No. set in the object.
GOT monitors the device of the station No. set as the switching target when the settings have been made for each screen.

3.4 Password Setting



Passwords can be set to object, screen display/operation, upload operation, and utility operation. The setting of each password restricts the operable user.

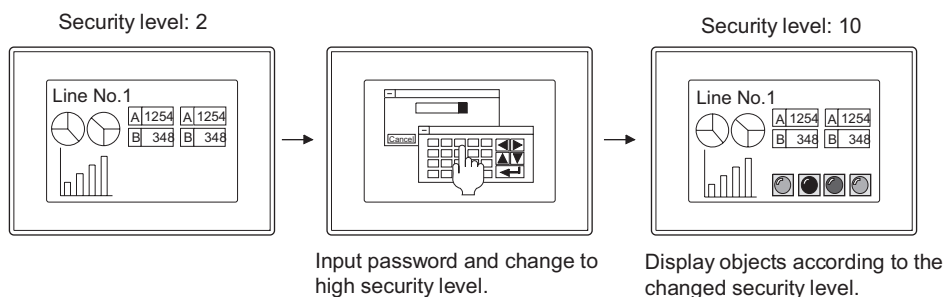
1 Restricting the object and screen display/operation

The screen display can be changed according to the user's security level by setting the security level (0 to 15) for each object and screen.

(In the case of GOT-F900 series, security level can be set for the base screen and utility.)

The security level can be changed by entering the password corresponding to each security level has.

➔ Section 5.8 Security Function

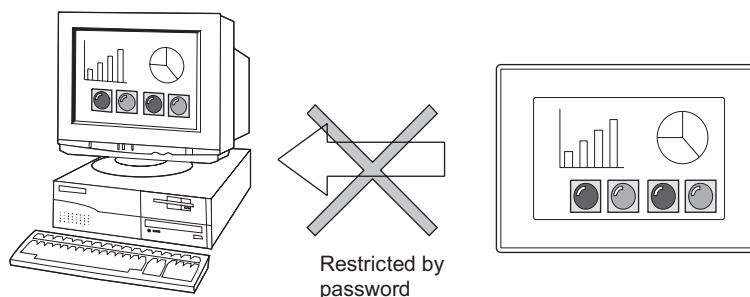


2 Restricting the upload operation

By the preset password, the screen data upload operation can be restricted.

For details of data transmission operation, refer to the following manual.

➔ GT Designer2 Version2 Operating Manual

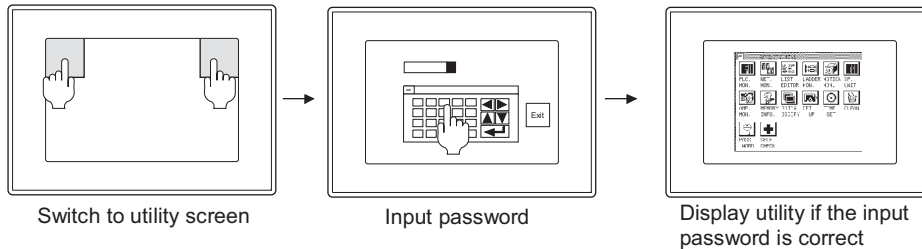


3 Restricting the utility operation

When starting utility, enter the preset password to prevent the unnecessary utility operation. For details of utility, refer to the following manual.

☞ GOT-A900 Series Operating Manual (Extended • Option Functions Manual)

☞ GOT-F900 Series OPERATION Manual [GT Designer2]

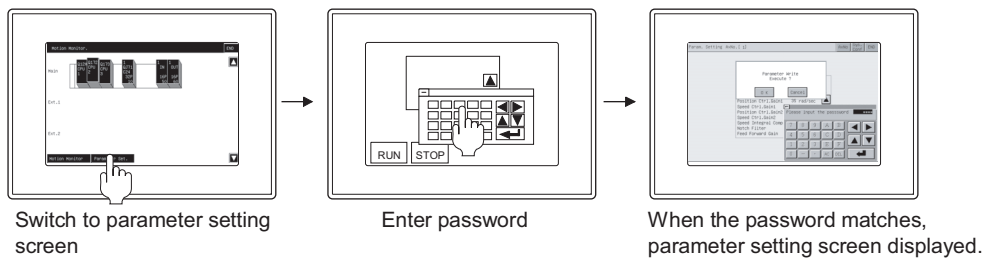


4 Parameter change screen

When displaying the parameter setting screen of motion monitor function or servo amplifier monitor function, enter the preset password to prevent the unnecessary change of the parameter settings for motion controller QCPU (Q172CPU/Q173CPU)/servo amplifier to be connected. For details of servo amplifier monitor function and motion monitor function, refer to the following manual.

☞ GOT-A900 Series Operating Manual (Extended • Option Functions Manual)

☞ GOT-F900 Series OPERATION Manual [GT Designer2]



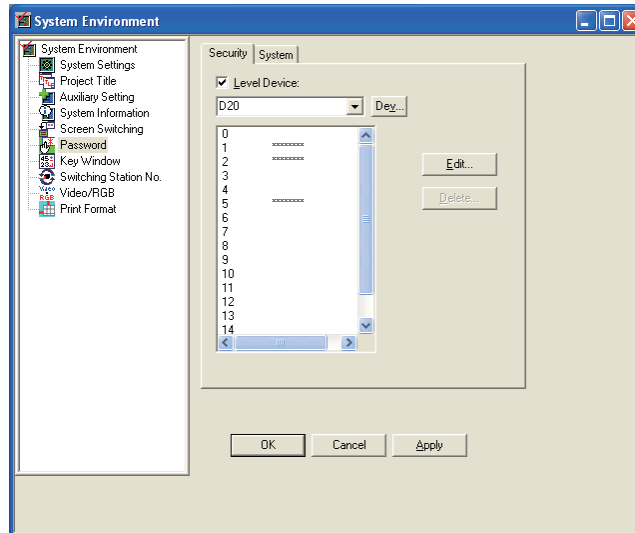
3.4.1 Settings

- 1 Select [Common] → [System Environment] from the menu.
- 2 Double click on [Password] in "System Environment" dialog box.
- 3 As the "Password" dialog box appears, select the tab for setting the password.

3.4.2 Password setting items

1 Security tab

Set the password according to each security level.



Security System		A	F
Item	Description	A	F
Level Device	<p>Check this item to use security function. Then, set the device (level device) that stores the security level value of GOT display screen.</p> <p>In case of GOT-A900 series</p> <p>If the level device is not controlled by PLC CPU, set GOT internal device (GD) .</p> <p>The security level can be changed by changing the level device value from the PLC CPU. Example: Level device: D10</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> </div> <p>In the case of GOT-F900 series</p> <ul style="list-style-type: none"> The level device value can be checked from PLC CPU 	○	○
Password list	<p>Passwords for changing the security level are listed. (Passwords are displayed as "**".)</p> <p>Select the security level No. (0 to 15) for which the password to be registered from the password list.</p> <p>Passwords can be set for each security level.</p> <p>Security level 0 : Security function is not set Security level 1 : Low ↓ Security level 15 : High</p>	○	○

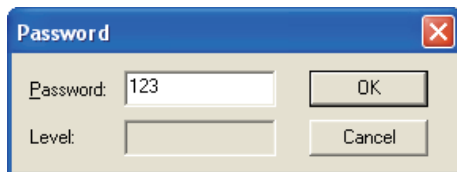
(Continued to next page)

Item	Description	A	F
Edit ^{*1*2}	This setting is available for setting a new password or changing the preset password.	○	○
Delete ^{*3}	Deletes the registered password.	○	○

For details of *1 to *3, refer to the following.

*1 Registering new password

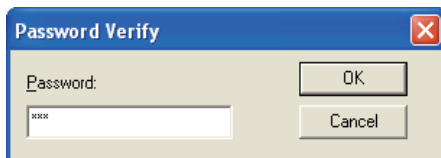
Enter numeric characters in 1 to 8 digits as new password and then click on button.



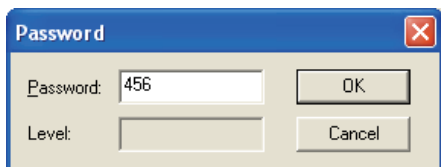
*2 Changing password

Before changing password, enter the current password and then verify the password.

- 1 In "Password Verify" dialog box, enter the current password, and then click on button.

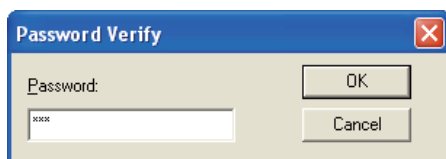


- 2 As "Password" dialog box appears, enter numerical characters in 1 to 8 digits as new password, and then click on button.



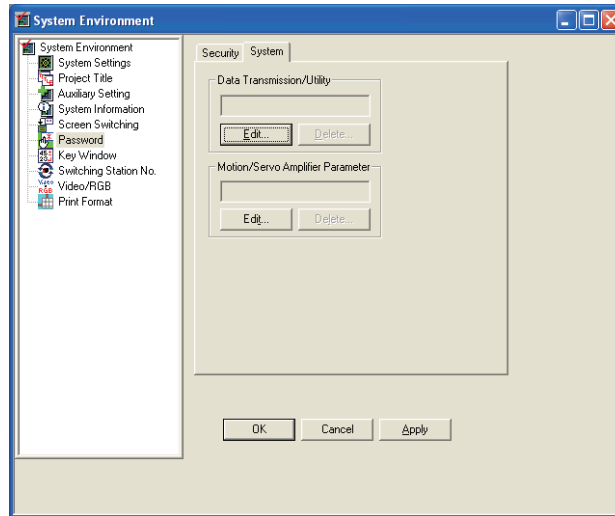
*3 Deleting password

In "Password Verify" dialog box, enter the current password, and then click on button.



2 Password (System) tab

Set the password to restrict screen data upload, utility start, display of parameter change screen for motion monitor function/servo amplifier monitor function from the GOT .



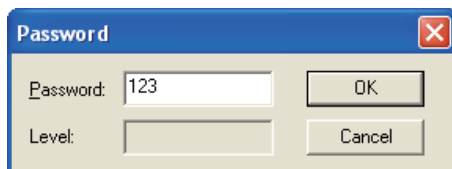
Security System

Item		Description	A	F
Data Transmission/Utility	Edit ^{*1*2}	For GOT-A900 series Registers or changes the password that restricts GOT screen data upload and utility screen display. For GOT-F900 series Registers or changes the password that restricts GOT screen data upload.	<input type="radio"/>	<input type="radio"/>
	Delete ^{*3}	Deletes the registered password.	<input type="radio"/>	<input type="radio"/>
Motion/Servo Amplifier Parameter	Edit ^{*1*2}	Registers or changes the password that displays parameter change screen for motion monitor function/servo amplifier monitor function.	<input type="radio"/>	<input checked="" type="radio"/>
	Delete ^{*3}	Deletes the registered password.	<input type="radio"/>	<input checked="" type="radio"/>

For details of *1 to *3, refer to the following.

*1 Registering new password

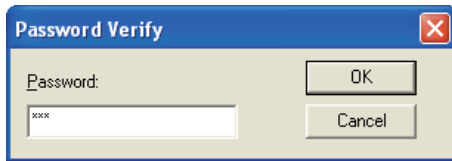
In "Password" dialog box, enter alphanumeric characters (0 to 9, A to F) in 1 to 8 digits as new password and then click on button.



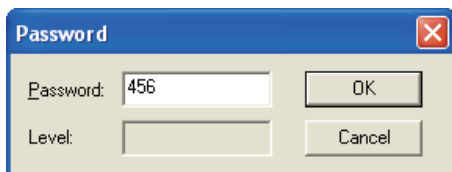
*2 Changing password

Before changing password, enter the current password and then verify the password.

- 1 In "Password Verify" dialog box, enter the current password, and then click on button.

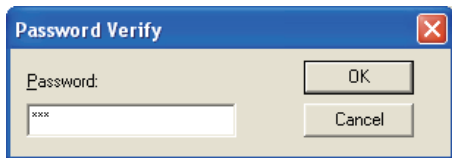


- 2 As "Password" dialog box appears, enter alphanumeric characters (0 to 9, A to F) as new password, and then click on button.



*3 Deleting password

In "Password Verify" dialog box, enter the current password, and then click on button.



3.4.3 Precautions


This section provides precautions for using password setting.

1 Precautions on drawing

When the security level device value is changed with the numerical input function, the key window used for the value input is deleted after the input is completed, regardless of the setting for [Close cursor and key window when RET key is pressed] in the auxiliary setting (per project).

When [Display cursor and key window] is set for [Action when condition success] or [Action when switching screens] in the auxiliary setting (per project or screen), the key window is redisplayed.

The cursor position for redisplaying the key window is the same position set for switching screens.

 Section 4.5 Auxiliary Settings

2 Making a note of the password

The already registered password cannot be checked later. Therefore, always make a note of the password.

If the password is forgotten, a security level change or security level password change/deletion cannot be made, and the project data must be recreated. (Re-setting of only the password cannot be done.)

To prevent the password from being forgotten, it is recommended to fill out the following list.

Tear-off line

Password list

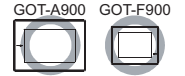
Installation name (No.): _____

Manager: _____

1. Keep this memo safe from loss.
2. Do not reveal the password.
The GOT display may change depending on the security level.
3. As the security level No. is greater, the security level is higher.

Security level		User (operator or department)	Password (1 to 8 digits)								Date of entry or change	Remarks
Level												
	8	Manager of worksite (John Mitsubishi)	8	8	8	8	8	8	8	8	2004.6.1	Example
	0											Do not set the security function.
Low:	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
High:	15											

3.5 System Information Setting

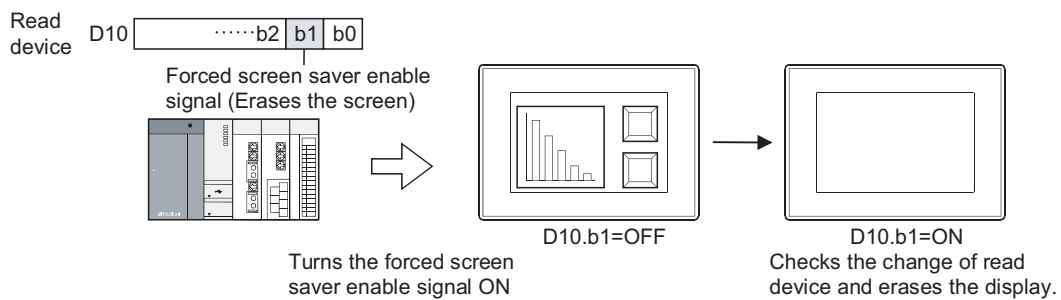


According to the data written to device, GOT operations (screen erasing, invalidating key input, etc) will be controlled via PLC CPU and GOT status will be notified to PLC CPU. The following two types of devices are provided for setting the system information.

- Read device: controls GOT operation via PLC CPU
- Write device: notifies PLC CPU of GOT operation status

1 Controlling GOT operation (read device)

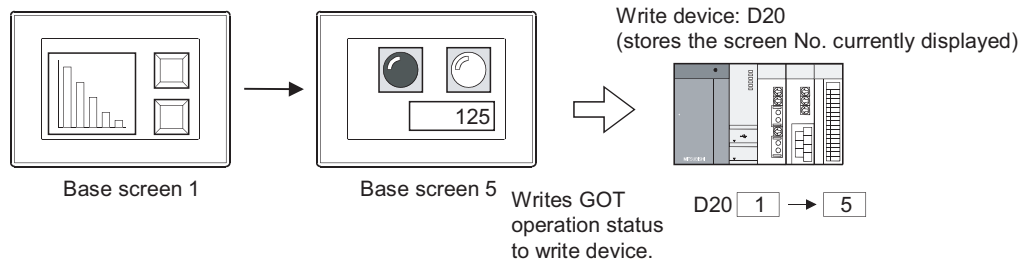
PLC CPU writes the value to the read device specified for GOT operation and controls GOT operation. Example: Turning the GOT to screen save mode forcibly by PLC CPU.



2 Writing GOT status (write device)

GOT writes action status to write device to notify PLC CPU.

Example: Write the base screen No. currently displayed to the device.



Monitoring system information data/update timing

The following explains monitoring the read device set in the system information and deciding the timing to update the write device.

- Read device : monitored at intervals of GOT monitor period.
The read device value needs to be longer compared to the interval of GOT monitor period.
The monitor period value is stored in the GOT internal device (GS8). (For GOT-A900 only)
☞ Section 2.6.1 GOT internal devices
- Write device : updated when the GOT operation status has changed.

3 Function overview (In the case of GOT-A900 series)

The following operations can be confirmed and controlled in the system information.

Item	Function description			
	Control of GOT operation (read device)		Notification of GOT operation status (write device)	
		Device name/signal name		Device name/signal name
Screen	Disables screen save function. (Turns backlight off in the case of GOT-F900 series)	System signal 1 b0	Notifies the base screen No. currently displayed	On-screen base screen No.
	Forcibly executes screen save	System signal 1 b1	Notifies the window screen No. currently displayed	On-screen window screen No.
Buzzer	Outputs buzzer	System signal 1 b14	---	---
	Outputs buzzer once	System signal 1 b15		
Human sensor	---	---	Detects human movement and notifies it	System signal 2 b5
Error	Resets the error occurred in GOT	System signal 1 b13	Notifies the GOT status (normal/abnormal) at power on	System signal 2 b1
			Notifies the status of GOT error occurrence and error code	System signal 2 b13 GOT error code
			Notifies the PC card battery error	System signal 2 b2
			Notifies printer error	System signal 2 b15
Handy GOT	Turns operation switch lamp of handy GOT ON/OFF	External I/O function Output information	Notifies GOT grip switch ON/OFF status	System signal 2 b9
Numerical input	---	---	Notifies input range over when values beyond the input range are stored in the device of write target	System signal 2 b14
			Notifies the timing to update the input data	System signal 2 b4 Numerical input NO.
			Notifies value before numerical input and after the input is updated	Value before numerical input change Value after numerical input change
Bar code	Disables bar code function	System signal 1 b5	Notifies that data is read after it is complete	System signal 2 b6
Hard copy	Changes output setting (Black-White print)	System signal 1 b10	Notifies that hard copy is in printing	System signal 2 b7
	Changes output setting (Color print)	System signal 1 b11	Notifies when the number of files in PC card approaches the upper limit of memory	System signal 2 b12
	Changes output setting (Black-White Inversion Print)	System signal 1 b12		
Report	---	---	Notifies that report function is in printing	System signal b8 Report screen in printing
Recipe	---	---	Notifies that recipe function is in processing	System signal 2 b10
Key window	---	---	Notifies the display of key window	System signal 2 b11

Item	Function description			
	Control of GOT operation (read device)		Notification of GOT operation status (write device)	
		Device name/signal name		Device name/signal name
Cursor	---	---	Notifies the position of the previous or current input cursor	Cursor position Previous cursor position Numerical input of cursor position
Key input	Disables all Key input	System signal 1 b9	System signal 1 b9	System signal 2 b3
			Notifies the input key code	Input key code
External I/O	Stores the output signal of external I/O function	External I/O function Output information	Stores the input signal of external I/O function	External I/O function Input information

* Note that some functions cannot be confirmed or controlled depending on the GOT.

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

8

ALARM

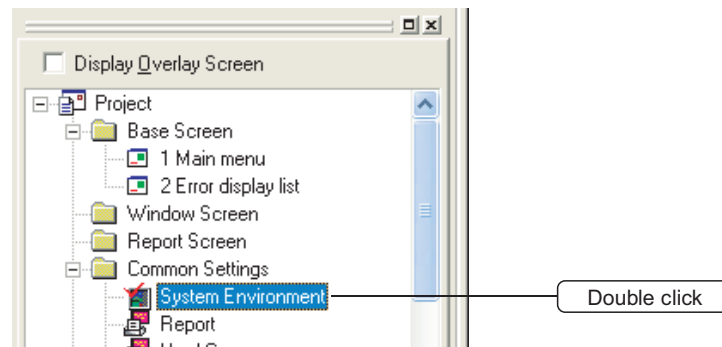
3.5.1 Setting methods

- 1 Select [Common] → [System Environment] from the menu.
- 2 Double click on [System Information] in "System Environment" dialog box.
- 3 As the setting dialog box appears, make the settings according to the following explanation.

Remark

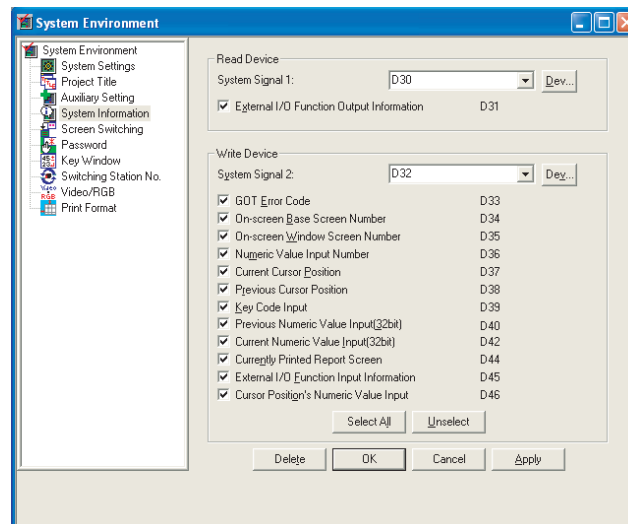
When making the settings in project work space

Double click on [System Environment] to display "System Environment" dialog box, and then double click on [System Information] there.

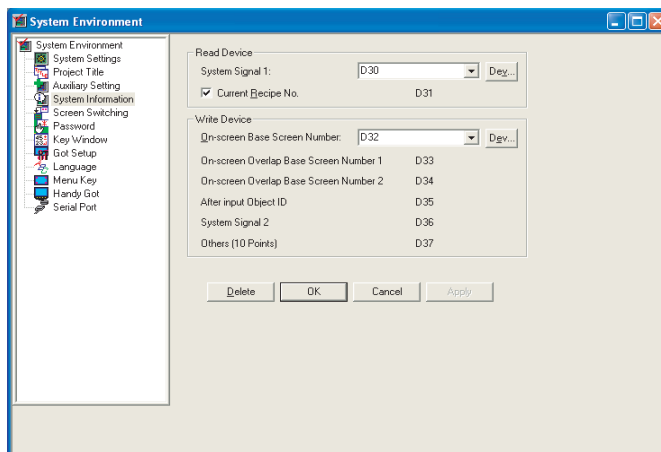


3.5.2 Setting items

Set devices and functions → to be used in the system information.



In the case of GOT-A900 series



In the case of GOT-F900 series

Item	Description	A	F
Read Device	Set this item to control GOT operations with the device of PLC CPU. If a device No. is assigned to the system signal 1, the devices of the following Nos. will be consecutively assigned to the items following to the system signal 1 automatically. (The unchecked items will not be set.)	○	○
System Signal 1 ^{*1}	Set the device that stores the data that triggers GOT action. (☞ Section 5.1 Device Setting)	○	○
External I/O Function Output Information ^{*3}	Check this item to externally output by turning the bit of the specified device ON when the external I/O function is used.	○	×
Current Recipe No.	Check this item to use recipe function to specify the recipe No. for writing to PLC CPU from the PLC CPU. The recipe No. assigned is less than one of the actual recipe No. to be read/written. For example: to read/write from/to recipe No. 5, Set the current recipe No. to 4.	×	○
Write Device	Set this item to write GOT operations to PLC CPU. If the device No. is assigned to the system signal 2 or the base screen currently displayed is set, the devices of the following Nos. will be consecutively assigned to the items following to the system signal 2. (The device of unchecked items will not be set in GOT-A900 series.)	○	○
System Signal 2 ^{*2}	Set the write device of GOT operation status. (☞ Section 5.1 Device Setting)	○	○
GOT Error Code	Check this item to store the GOT error. (☞ Section 3.5.3 7 Confirm the error occurred in GOT (for GOT-A900 Series only))	○	×

(Continued to next page)

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6








LAMP, SWITCH

7




NUMERICAL/ CHARACTER DISPLAY

8

ALARM

Item	Description	A	F														
Write Device	<p>In case of GOT-A900 series</p> <ul style="list-style-type: none"> Check this item to store the screen No. currently displayed. The screen No. stored is as follows. <table border="1"> <thead> <tr> <th rowspan="2">Display screen</th> <th colspan="2">Data format of screen switching device</th> </tr> <tr> <th>BIN</th> <th>BCD</th> </tr> </thead> <tbody> <tr> <td>The screen other than user- created screen (utility, RGB etc)</td> <td>-1</td> <td>Hold user-created base screen No. right before being displayed.</td> </tr> <tr> <td>During screen switching</td> <td colspan="2">0</td> </tr> <tr> <td>Currently displayed base screen</td> <td>1to 32767</td> <td>1to 9999</td> </tr> </tbody> </table> <p>In case of GOT-F900 series</p> <p>The following 15 points will be occupied after device setting.</p> <p>D+0 : On-screen base screen No. D+1 : On-screen overlay screen No. 1 D+2 : On-screen overlay screen No. 2 D+3 : Object ID after input is complete (after input value is updated, the user ID number of numerical input function is stored.) D+4 : System signal 2*2 D+5 to D+14 : Others D+5 and D+6 output the information on keys pressed on the keypad in the F920GOT-K and F930GOT-K. (The system signal 1 of the read device should be set.) For the details, refer to the GOT-F900 SERIES OPERATION MANUAL [GT Designer2 Version].</p>	Display screen	Data format of screen switching device		BIN	BCD	The screen other than user- created screen (utility, RGB etc)	-1	Hold user-created base screen No. right before being displayed.	During screen switching	0		Currently displayed base screen	1to 32767	1to 9999	○	×
Display screen	Data format of screen switching device																
	BIN	BCD															
The screen other than user- created screen (utility, RGB etc)	-1	Hold user-created base screen No. right before being displayed.															
During screen switching	0																
Currently displayed base screen	1to 32767	1to 9999															
On-screen Base Screen Number	<p>Check this item to store the currently displayed window screen (overlap window 1). The screen No. stored is as follows.</p> <table border="1"> <thead> <tr> <th rowspan="2">Display screen</th> <th colspan="2">Data format of the screen switching device</th> </tr> <tr> <th>BIN</th> <th>BCD</th> </tr> </thead> <tbody> <tr> <td>No screen is displayed or , during screen switching</td> <td colspan="2">0</td> </tr> <tr> <td>The screen No. of the currently displayed overlap window 1</td> <td>1to 32767</td> <td>1to 9999</td> </tr> </tbody> </table> <p>The status of screens other than overlap window 1 is confirmed by using switching screen device.  Section 3.2 Switching Screen Device Setting)</p>	Display screen	Data format of the screen switching device		BIN	BCD	No screen is displayed or , during screen switching	0		The screen No. of the currently displayed overlap window 1	1to 32767	1to 9999	○	○			
Display screen	Data format of the screen switching device																
	BIN	BCD															
No screen is displayed or , during screen switching	0																
The screen No. of the currently displayed overlap window 1	1to 32767	1to 9999															
On-screen Window Screen Number	<p>Check this item to store the user ID No. for numerical input function after the input value is updated.  Section 7.1 Numerical Display/Numerical Input)</p> <p>This can be applied to ASCII input function by turning ON the GOT internal device GS450.b2.</p>	○	×														
Numeric Value Input Number	<p>Check this item to store the object ID No. of the object in which the cursor is currently located.  Section 3.5.3 3 Confirm cursor's display position (for GOT-A900 Series only))</p>	○	×														
Current Cursor Position	<p>Check this item to store the object ID No. of the object in which the cursor was previously located.  Section 3.5.3 3 Confirm cursor's display position (for GOT-A900 Series only))</p>	○	×														
Previous Cursor Position	<p>Check this item to store the set key code when input keys (numerical input, ASCII input, touch switch, and operating panel) are used for input.  Section 3.5.3 2 Confirm the input key code by input key (for GOT-A900 series only))</p>	○	×														
Key Code Input	<p>Check this item to store the value (32 bit) before being changed by numerical input function.  Section 7.1 Numerical Display/Numerical Input)</p>	○	×														
Previous Numeric Value Input (32 bit)	<p>Check this item to store the value (32 bit) changed by numerical input function.  Section 7.1 Numerical Display/Numerical Input)</p>	○	×														
Current Numeric Value Input (32 bit)		○	×														

(Continued to next page)

Item		Description	A	F
Write Device	Currently Printed Report Screen	Check this item to store the report screen No. being printed. ( Section 12.1 Report Function)	<input type="radio"/>	<input checked="" type="checkbox"/>
	External I/O Function Input Information*3	Check this item to store the information externally input to the specified word device when external I/O function is used.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Cursor Position's Numeric Value Input	Stores the user ID No. of the numerical input function currently displayed with input cursor. ( Section 3.5.3  Confirm cursor's display position (for GOT-A900 Series only)) This can be applied to ASCII input function by turning ON the GOT internal device GS450.b2.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select All/Unselect		Selects/Deselects all the items selected in [Write Device].	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete		Deletes the set read and write devices.	<input type="radio"/>	<input type="radio"/>

For details of *1 to *3, refer to the following.

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/ CHARACTER DISPLAY










8

ALARM

In the case of GOT-A900 series










* 1. System Signal 1

Controls the GOT operation by turning the bit of word device set as system signal 1 ON/OFF

Signal Name	Description
Automatic Screen Saver Disable Signal (b0)	<p>ON : Disables screen saver function (that turns monitor screen display OFF) .</p> <p>OFF : Enables screen saver function.</p> <p> Section 3.5.3 4 Control of Screen Display (for GOT-A900 series only))</p>
Forced Screen Saver Enable Signal (b1)	<p>ON : Forcibly turns the GOT into screen saver mode.</p> <p>OFF : Common status (Displays screen again)</p> <p> Section 3.5.3 4 Control of Screen Display (for GOT-A900 series only))</p>
Key Code Read Complete Signal (b3)	<p>ON : Clears the following signal.</p> <ul style="list-style-type: none"> • Turns [Key input signal (System signal 2)] OFF <p>OFF : Does not clear the above signal.</p> <p> Section 3.5.3 2 Confirm the input key code by input key (for GOT-A900 series only))</p>
Numeric Value Input Read Complete Signal (b4)	<p>ON : Turns [Numeric value input signal (System signal 2)] OFF.</p> <p>OFF : Does not turn the above signal OFF</p> <p> Section 7.1 Numerical Display/Numerical Input)</p> <p>This can be applied to ASCII input function by turning ON the GOT internal device GS450.b2.</p>
Barcode Input Disable Signal (b5)	<p>ON : Disables bar code function.</p> <p>OFF : Enables bar code function.</p>
Barcode Input Read Complete Signal (b6)	<p>ON : Turns [Barcode input signal (System signal 2)] OFF.</p> <p>OFF : Does not turn the above signal OFF.</p> <p> Section 12.4 Bar Code Function)</p>
Key-In Disable Signal (b9)	<p>ON : Disables all key-input .</p> <p>OFF : Enables key-input .</p>
Hard Copy Setting Enable Signal (b10)	<p>ON : Makes hard copy output setting changeable according to bit ON/OFF status of [Hard copy black-white print signal (b11)] and [Hard copy black-white inversion signal (b12)] for system signal 1.</p> <p>OFF : Carries out hard copy output according to the settings made by GT Designer2)</p> <p> Section 12.2 Hard Copy)</p>
Hard Copy Black-White Print Signal (b11)	<p>ON : Changes the hard copy printing mode to [Black-White] .</p> <p>OFF : Changes the hard copy printing mode to [Color (256 Colors/ 16 Colors)]</p> <p> Section 12.2 Hard Copy)</p>
Hard Copy Black-White Inversion Signal (b12)	<p>ON : Inverses the black-white portion of monitor screen and output.</p> <p>OFF : Outputs the black-white portion of monitor screen without making any changes.</p> <p> Section 12.2 Hard Copy)</p>
GOT Error Reset Signal (b13)	<p>ON : Processes the following signals.</p> <ul style="list-style-type: none"> • Stores "0" to [GOT error code storage area (Write Device)] • Turns [GOT error detection signal (System signal 2)] OFF. <p>OFF : Does not process the above signals.</p> <p> Section 3.5.3 7 Confirm the error occurred in GOT (for GOT-A900 Series only))</p>
Buzzer Output Signal (b14)	<p>ON : Keeps buzzer.</p> <p>OFF : Does not output buzzer.</p> <p>Even if [Buzzer Volume] of GOT utility (Setup) is set as [None] , buzzer volume will be output when the bit is ON.</p>
Buzzer One-shot Output Signal (b15)	<p>ON : Outputs buzzer once.</p> <p>OFF : Does not output buzzer.</p> <p>The length of buzzer volume is same with the settings (Long, Short) made in [Buzzer Volume] of GOT utility. (When set as [None], buzzer volume is same as the setting of [Long].)</p>

* 2 System Signal 2

Writes the GOT operation status to PLC CPU according to the bit ON/OFF status of the word device set in system signal 2.

Signal Name	Description
Screen saving signal(b0)	ON : GOT is in screen saver mode. OFF : GOT is not in screen saver mode.
GOT Ready Signal (b1)	ON : GOT status normal at power-on OFF : GOT status abnormal at power-on If the signal will not be ON by resetting the GOT again, its possible cause is hardware error of GOT. Consult your local Mitsubishi service center or representative.
PC Card Battery Error Detection Signal (b2)	ON : Battery error detected OFF : Battery normal
Key Input Signal (b3)	ON : Key input done OFF : No key input  Section 3.5.3 2 Confirm the input key code by input key (for GOT-A900 series only)
Numeric Value Input Signal (b4)	ON : The value input by value input function has been updated. OFF : The value input by value input function has not been updated.  Section 7.1 Numerical Display/Numerical Input This can be applied to ASCII input function by turning ON the GOT internal device GS450.b2.
Human Sensor Detection Signal (valid in A985GOT only) (b5)	ON : Human movement is detected by human sensor OFF : Human movement has not been detected by human sensor (In the case that the human movement can not be detected during the period specified within the GOT utility)  Section 3.5.3 4 Control of Screen Display (for GOT-A900 series only)) Due to the characteristic of human sensor, the signal output remains ON for 60 seconds after starting the GOT.
Barcode Input Signal (b6)	ON : The data read by bar code reader has been stored into the specified device. OFF : No data has been read by bar code reader.  Section 12.4 Bar Code Function)
Hard Copy Output Signal (b7)	ON : Hard copy function being executed. OFF : Hard copy function execution completed, or interrupted.  Section 12.2 Hard Copy)
Report Output Signal (b8)	ON : Printing by report function OFF : Printing by report function completed, or interrupted.  Section 12.1 Report Function)
A950 Handy GOT's Grip Switch Pressing Signal (b9)	ON : A950 Handy GOT's Grip Switch being pressed. OFF : A950 Handy GOT's Grip Switch is released.
Recipe Processing Signal (b10)	ON : Recipe being processed (Write/Read operation) OFF : Recipe process completed, or interrupted.  Section 11.2 Recipe Function)
Key window Output Signal (b11)	ON : Key window being displayed OFF : Key window not displayed
Hardcopy Sub-signal (b12)	ON : The number of files (file No.) for screen data stored in PC card by hard copy function exceeds 9900 OFF : The number of files (file No.) of screen data stored in PC card by hard copy function is less than 9900  Section 12.2 Hard Copy)
GOT Error Detection Signal (b13)	ON : GOT error has occurred. OFF : Normal  Section 3.5.3 1 Confirm the error occurred in GOT (for GOT-A900 Series only))

(Continued to next page)

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6


LAMP, SWITCH

7

NUMERICAL/ CHARACTER DISPLAY

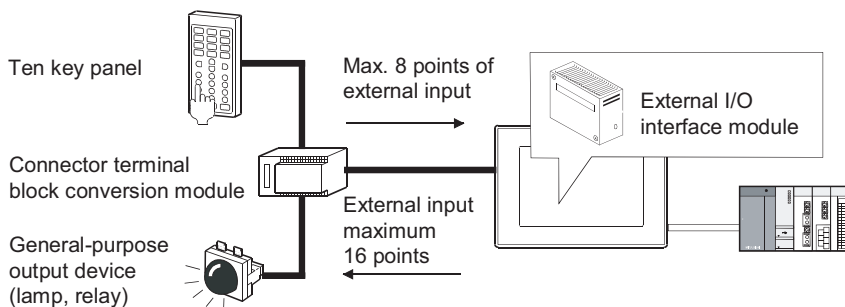
8

ALARM

Signal Name	Description
Numeric Value Error Detection Signal (b14)	<p>ON : The value exceeding the input range has been stored into the write target device of numeric value input function (Check this item on screen switching)</p> <p>OFF : The value within the input range has been stored into the write target device of numeric value input function.</p> <p> Section 7.1 Numerical Display/Numerical Input)</p>
Printer Error Detection Signal (b15)	<p>ON : Printer error (power OFF, cable disconnected, No paper provided/ paper jammed, etc) has occurred. (The signal turns OFF when printer problem is resolved.)</p> <p>OFF : Normal</p>

* 3 External I/O Function (Input information/ Output information)

External I/O function enables data to be input from the outside of GOT (Operation panel); to be output to the outside of GOT (Lamp or relay), according to the device set in system information.



Bit No.	Output signal storage area of external I/O function (Read Device)	Input signal storage area of external I/O function (Write Device)
b0	Output Y0	Input X0
b1	Output Y1	Input X1
b2	Output Y2	Input X2
b3	Output Y3	Input X3
b4	Output Y4	Input X4
b5	Output Y5	Input X5
b6	Output Y6	Input X6
b7	Output Y7	Input X7
b8	Output Y8	Fuse blown
b9	Output Y9	Use prohibited
b10	Output YA	
b11	Output YB	
b12	Output YC	
b13	Output YD	
b14	Output YE	
b15	Output YF	

Remark

- (1) When A950 handy GOT is used
 When A950 handy GOT is used, b0 to b3 within the storage area of external output function (read device) controls the LED status of operation switch.
 b0: LED of operation switch (SW1) for A950 handy GOT
 b1: LED of operation switch (SW2) for A950 handy GOT
 b2: LED of operation switch (SW3) for A950 handy GOT
 b3: LED of operation switch (SW4) for A950 handy GOT
- (2) When external I/O function is used without system information
 Data can be input to/output from the outside of GOT by using GOT internal device (GB).

Section 2.6.1 GOT internal devices

In the case of GOT-F900 series



*1 System Signal 1

Controls the GOT operation by turning the bit of word device set as system signal 1 ON/OFF.

Signal Name	Description
Alarm History Clear Signal (b0)	ON : Clears the history data of alarm history function. OFF : Does not clear alarm history data.
Back Light OFF Signal (b1)	ON : Turns the backlight OFF after the backlight OFF setting time has passed. OFF : Keeps the backlight always ON.
Sampling Data Clear Signal (b2)	ON : Clears the sampling data of sampling function. OFF : Does not clear sampling data.
Unused Signal (b3 to b4)	Not used
Barcode Input Disable Signal (b5)	ON : Disables bar code function and clears the data. OFF : Enables bar code function.
Barcode Input Read Complete OFF Signal (b6)	ON : Turns [Barcode input signal (System signal 2)] OFF. OFF : Does not turn the above signal OFF. Turn OFF b5 of write device +4 (System signal 2) to which input data of bar code reader has been written.
Unused Signal (b7)	Not used
Password Input Request Signal (b8)	ON : Automatically displays the window for password input when switching to a higher lever security. OFF : Does not automatically display the window for password input.
Unused Signal (b9)	Not used
Keypad information valid signal 1 (b10)	[Only in the F920GOT-K and F930GOT-K] ON : Writes the information on pressing of the keypad to the write devices Do +6 and Do +7. OFF : Does not write such information.
Keypad information valid signal 2 (b11)	ON : Writes information to the write devices D□ +5 and D□ +6 when the key pad status is changed or when a scan processing is executed inside the GOT. (Only in the F920GOT-K) ON : Writes the information to the write devices D□ +5 and D□ +6 when the key pad status is changed and in a constant cycle (1 sec). (Only in the F930GOT-K) OFF : Writes information to the write devices Do +5 and Do +6 when the key pad status is changed.
Unused signal (b12 to b15)	Not used

*2 System Signal 2

Writes the GOT operation status to PLC CPU according to the bit ON/OFF status of the word device set in system signal 2.

Signal Name	Description
Alarm Device ON Confirmation Signal (b0)	ON : Turns ON when any of the devices assigned by alarm function turns ON. OFF : Turns OFF when all of the devices assigned by alarm function turn OFF.
Sampling Function Execution ON Signal (b1)	ON : Turns ON while the device value of sampling function is being sampled. OFF : Turns OFF when the device value of sampling function is not sampled.
Numeric Value Input Signal (b2)	ON : The value input by numeric value input function has been updated. OFF : The value input by in numeric value input function has not been updated.  Section 7.1 Numerical Display/Numerical Input)
Battery Voltage Drop Detection Signal (b3)	ON : GOT battery voltage low (It is recommend to replace it within a month after turning ON.) OFF : Normal
Handy GOT's Grip Switch Pressing Signal (b4)	ON : F94* Handy GOT's (except RH type) grip switch is being pressed. OFF : F94* Handy GOT's grip switch is released.
Barcode Input Signal (b5)	ON : The data read by bar code reader has been stored into the specified device. OFF : No data has been read by bar code reader.  Section 12.4 Bar Code Function)
Unused signal (b6 to b7)	Not used.

(Continued to next page)

Signal Name	Description
Confirmation Signal during data change (b8)	ON : Turns ON when the data is changed by numeric value input and ASCII input function. OFF : Turns OFF when the data is not changed by numeric value input and ASCII input function. (☞ Section 7.1 Numerical Display/Numerical Input)
Keypad information signal 1 (b9)	[Only in the F920GOT-K and F930GOT-K] ON : Indicates that the cursor is displayed in the Alarm List Display or Alarm History Display. OFF : Indicates that the cursor is not displayed in the Alarm List Display or Alarm History Display.
Keypad information signal 2 (b10)	[Only in the F920GOT-K and F930GOT-K] ON : Indicates that the backlight is ON. OFF : Indicates that the backlight is OFF.
Unused Signal (b9 to b15)	Not used.

3.5.3 Application example

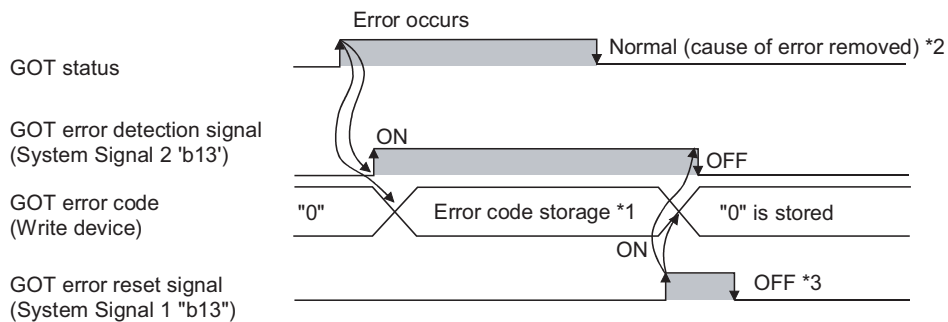
1 Confirm the error occurred in GOT (for GOT-A900 Series only)

The code of the error occurred in GOT can be confirmed.

The error codes within the range of error code 300 to 499 are displayed.

For the details of error code, refer to the following manuals.

(☞) GOT-A900 Series User's Manual



- *1. When multiple errors occur simultaneously, the latest error code will be stored.
- *2. Error code will not be cleared automatically even after the cause of error is removed. Clear the error code by using the GOT error reset signal.
- *3. Turn the GOT error reset signal OFF after error reset is completed. If the GOT error reset signal is kept ON, error code will be reset when error occurs next time.



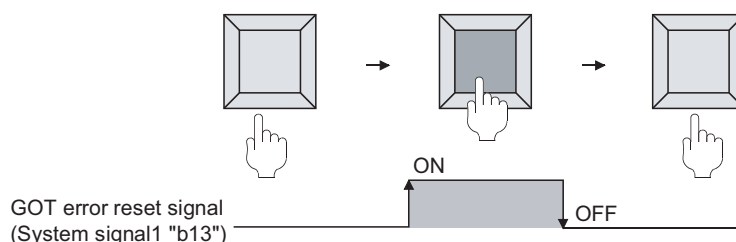
Hint!

Error Reset Method

An error can be reset by using GOT as explained below.

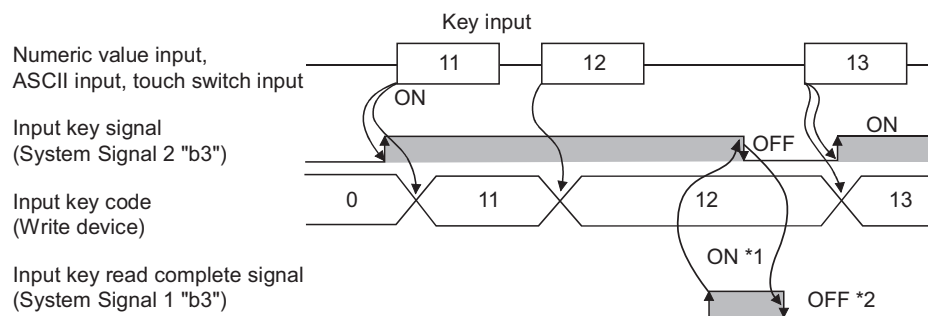
When the cause of error is removed, error can be reset by touching the touch switch.

Example: Create the touch switch that keeps GOT error reset signal ON only while being touched.



2 Confirm the input key code by input key (for GOT-A900 series only)

The input key code can be confirmed by input key (Numeric value input, ASCII input, touch switch).



- *1. When key input is completed, the stored key code is held.
When the "Key code read complete signal" turns ON, the "input key signal" turns OFF.
- *2. Signal turns OFF after input key is reset.
If [Input key read complete signal] keeps ON, the stored key code will be reset when key input is performed next time.

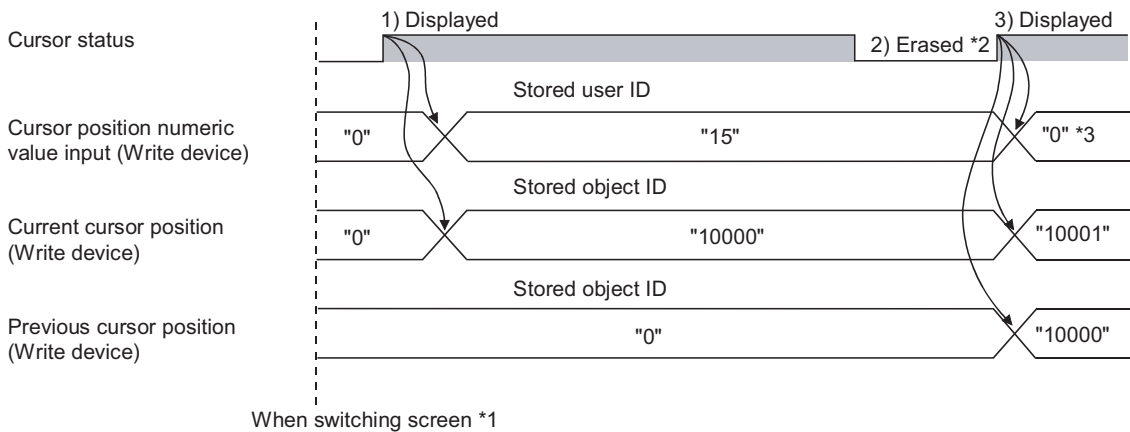
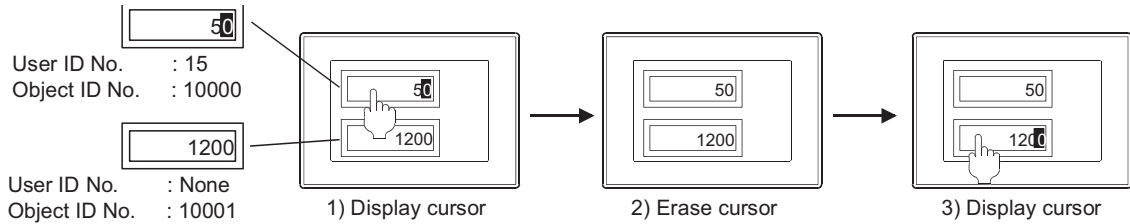
3 Confirm cursor's display position (for GOT-A900 Series only)

The cursor's display position can be confirmed by writing the data of the object (numeric value input function, ASCII input function) in which cursor is located into the device.

The object information to be written are classified into the following types:

- User ID : Can be set to any object.
Set user ID on setting dialog box of each object.
- Object ID : Automatically set when setting an object with GT Designer2.

Example: Operation example of cursor display



- *1. If a cursor is not displayed when switching screens, "0" will be stored.
- *2. The stored user ID and object ID can be held even if a cursor is erased.
- *3. If a cursor is displayed at the object (numeric input function, ASCII input function) with a user ID unset, the cursor position numeric value input will be "0".



Deleting the stored user ID and object ID when a cursor is deleted.

Turn ON the GOT internal device (monitor common control: (GS450.b3) to store "0" when a cursor is deleted.

For details of GOT internal devices, refer to the following.

Section 2.6.1 GOT internal devices

Remark

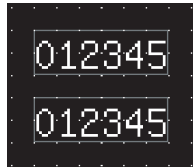
Object ID

Object ID will be set automatically when object is set.
The object ID cannot be changed by user.

(1) Method of confirming object ID

Object ID can be confirmed on the GT Designer2 screen.

Select [Display] → [Option] from the menu to display the object ID on "Preferences" dialog box.



Object ID not displayed



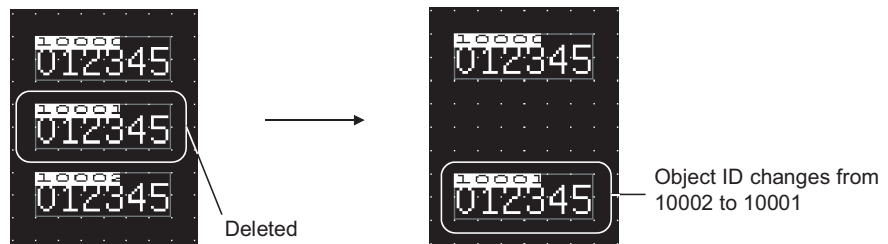
Object ID displayed

For details of the above operation, refer to the following manual.

 GT Designer2 Version □ Operating Manual

(2) Methods of changing object ID

If the arranged object is deleted, the object ID will change automatically.



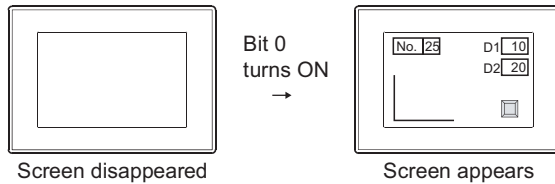
4 Control of Screen Display (for GOT-A900 series only)

(1) Disable screen saver function

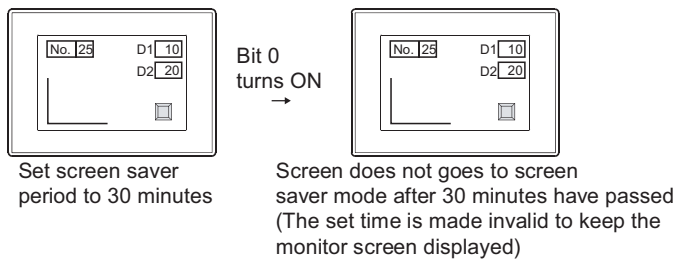
The screen saver function, which is set within the GOT utility, is designed to turn off the screen display if the GOT is not touched within a specified time. This function prevents the screen performance from deteriorating over its operable life.

By turning [Automatic screen saver disable signal] ON in the system information, the function that is set within the GOT utility (Setup) is disabled

Example 1: Display the monitor screen erased by automatic screen saver function



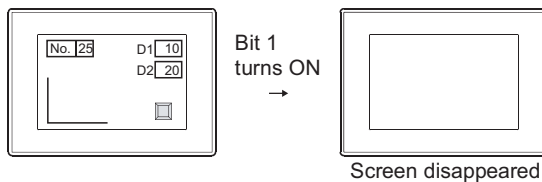
Example 2: Disables screen saver function to start even after the specified period has passed.



(2) Erase screen

By turning [Forced screen saver enable signal] ON, the displayed monitor screen can be erased. While the bit is ON, monitor screen will not appear even when the GOT screen is touched.

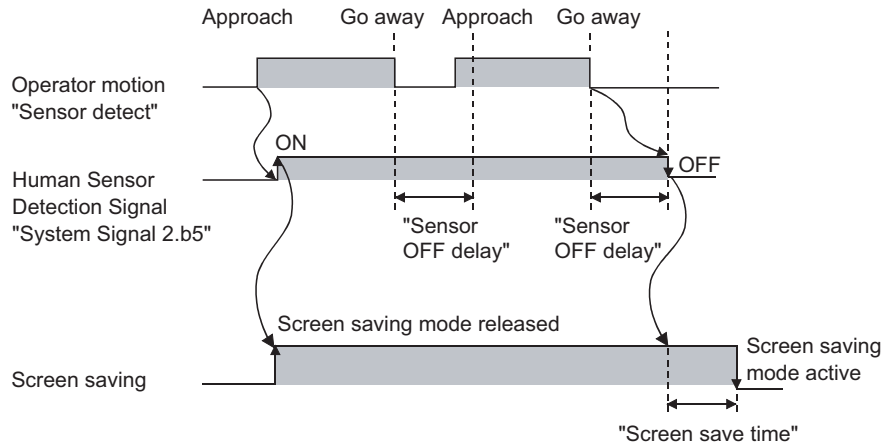
Example: Erase displayed monitor screen



(3) Display control by human sensor (Specific to A985GOT)

The human sensor is a function that releases the GOT from the screen saving mode without the necessity to touch the GOT.

This function releases the GOT from the screen saving mode when the operator has come closer to the GOT.



When there is no operator around the GOT for the time set as "Sensor OFF delay", the "Human Sensor Detection Signal" turns OFF.

When the time set as the "Screen save time" elapses after the "Human Sensor Detection Signal" turns OFF, the GOT enters the screen saving mode.

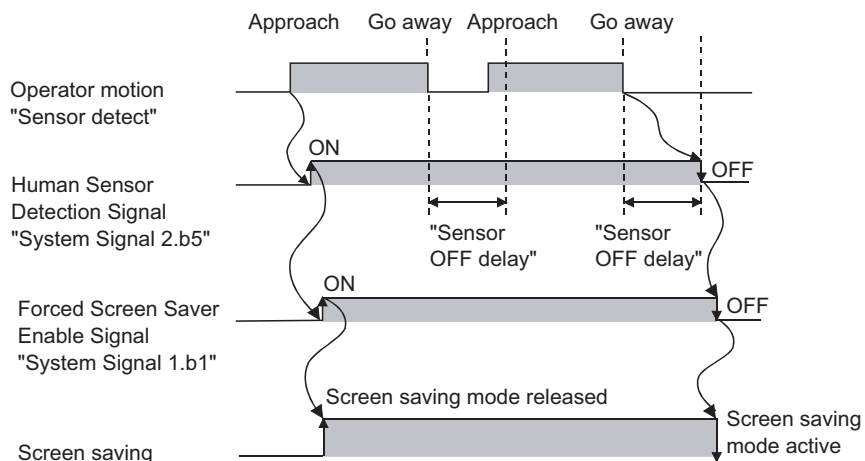
Make the human sensor settings (such as "Sensor detect" and "Sensor OFF delay") using the GOT utility.

Refer to the following manual for the GOT utility.

GOT-A900 Series Operating Manual (Extended · Option Functions Manual)



It is possible to make the settings so that the GOT will be released from the screen saving mode only when human movement is detected; the screen saving mode will not be released by touch or externally.



Associate the "Human Sensor Detection Signal" with "Forced Screen Saver Enable Signal" in the sequence program to control the screen saving mode.

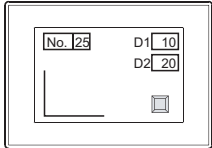
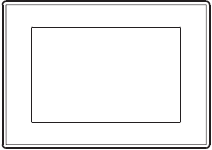
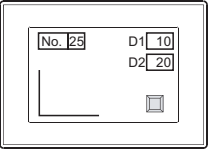
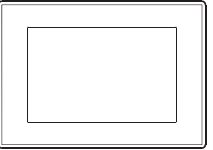
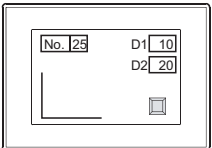
With this setting, the GOT enters the screen saving mode after the Sensor OFF delay time elapses, regardless of the screen saving time.

Remark

GOT Screen Control

The following shows the priority among functions that control the screen status (Displayed/ Not displayed):

Low → Priority → High


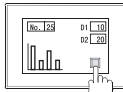
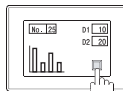

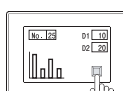

Display Screen	Screen Saver Function (Utility)	Screen Saver Disable Signal	Forced Screen Saver Enable Signal
	 With screen saver function	 ON Screen save function of utility is disabled.	 ON Forces the screen to go into the screen saver mode. The screen saver settings, the status of screen saver disable signal and human sensor are irrelevant.
	 Without screen saver function		

! DANGER

- If the GOT backlight has reached its maximum lifespan, this may cause the mis-operation of touch switch and result in an accident.
 When the GOT backlight goes out, the display turns black and causes the monitor screen to appear blank, while the input of touch switches still remain active.
 This may confuse an operator in thinking that display is in screen saver mode, who then tries to release the GOT display from this mode by touching the display screen, which may cause a touch switch to operate.
 Note that the following occurs on the GOT when the backlight goes out.
 - The monitor screen disappears even when the screen saver mode is not set.
 - The monitor screen will not come back on by touching the display, even if the GOT is in screen saver mode.

(4) Relation between screen saver functions and Key-In Disable Signal

The relation between screen saver functions and Key-In Disable Signal is as follows.

Forced screen saver enable signal	Key-in disable signal	Screen saver function	Screen status
ON	ON/OFF	ON/OFF	The GOT screen goes into the screen saver status.  No response to touching
OFF	ON	ON	When the key-in disable signal turns on, the GOT screen does not go into the screen saver status. When the key-in disable signal turns on while the GOT screen is in the screen saver status, the screen saver status is canceled.  No response to touching
		OFF	The GOT screen does not go into the screen saver status.  No response to touching
	OFF	ON	The GOT screen goes into the screen saver status.   Touch the screen, and then the screen saver status is canceled.
		OFF	The GOT screen does not go into the screen saver status.  Touch the object, and then the object responds to touching.

3.5.4 Precautions

This section provides the precautions for using system information

1 Precautions for drawing

Do not use a special register as a read device or write device, as it is an internal device of which specifications are defined within PLC CPU, and cannot be used as a normal internal device for system information.

If a special register is used as described above, GOT may not operate correctly.

2 Precautions for using system information

Do not write to the device set as a read device directly from PLC CPU.

The data of the write device held within the GOT inside will be overwritten.

However, the GOT ready signal (system signal 2 "b1") can be OFF only when clock data of GOT is updated.

 Section 2.4.1 Clock function for monitoring by GOT.

3 Precautions for using external I/O function (for GOT-A900 series only)

(1) Extended Function OS

When using external I/O function, make sure to install the extended function OS (with key input) into GOT.

(2) Required optional device

The following device is required when using the external I/O function:

GOT	Required device
A985GOT,A97*GOT,A960GOT, A956WGOT,A95*GOT	External I/O interface module

For details of external I/O interface module, refer to the following:

- For specification and performance of external I/O interface module

 External I/O Interface Module User's Manual

- For connection of external I/O interface module

 GOT-A900 Series User's Manual (Connection System Manual)

3.6 Print Format Setting

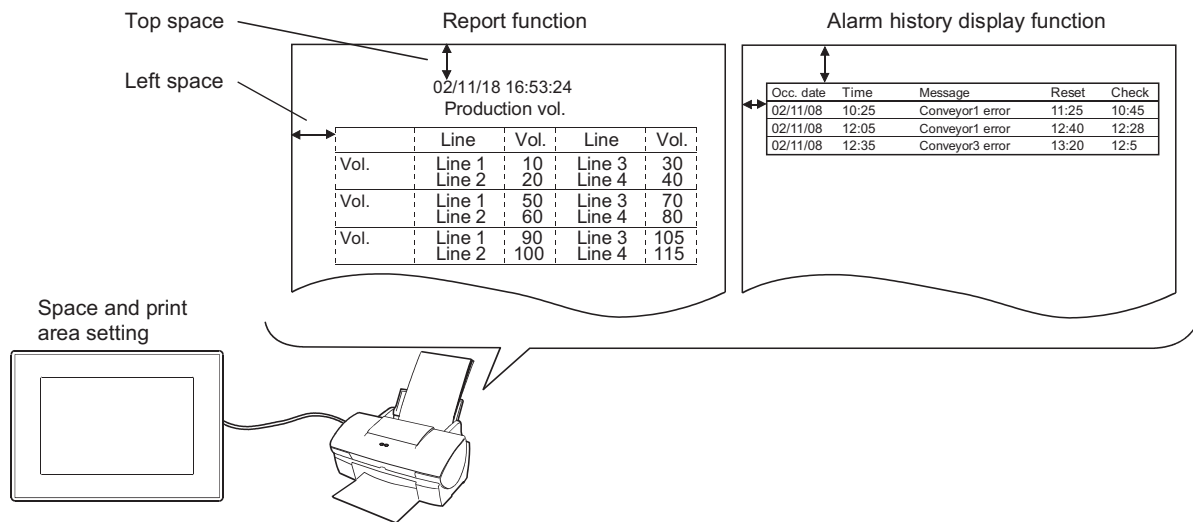


Set the format for printing with alarm history display function or report function.

This setting is common to print (common) tag of alarm history display function and report function.

(With this setting, the same settings are updated on print (common) tag of alarm history display function and report function automatically.)

Section 8.3 Alarm History Display
Section 12.1 Report Function



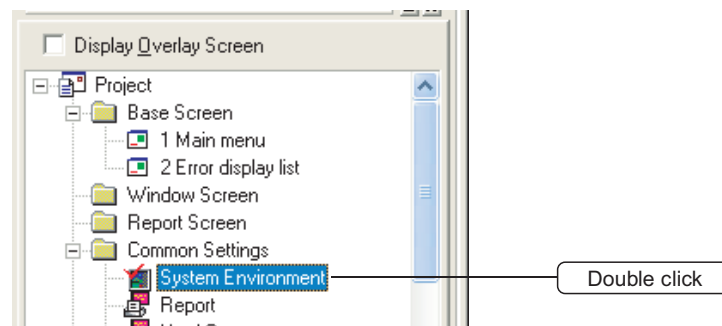
3.6.1 Settings

- 1 Select [Common] → [System Environment] in the menu.
- 2 When "System Environment" dialog box appears, double click on [Print Format] .
- 3 As the setting dialog box appears, make the settings with reference to the following explanation:

Remark

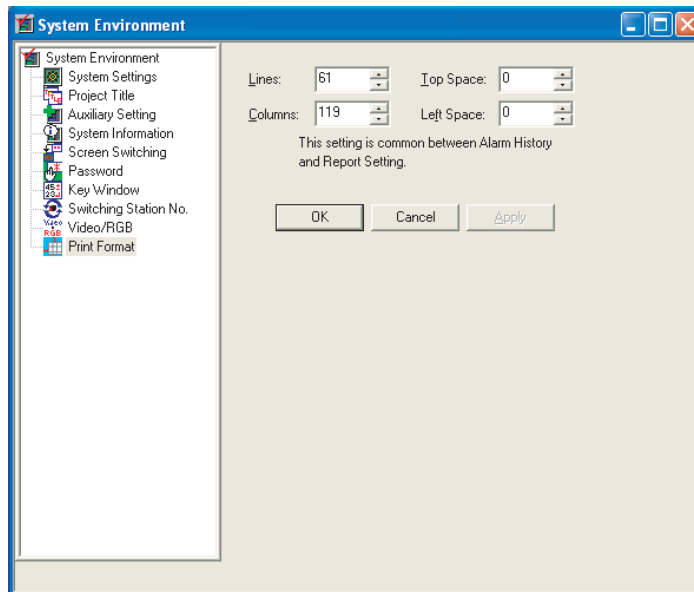
When setting in project workspace

Double click on [System Environment] , and "System Environment" dialog box appears, then double click on [Print Format]



3.6.2 Setting items

Set print format.



Item	Description	A	F
Lines	Set the number of lines (1 to 127) and number of columns (1 to 255) to be printed in one page; number of lines (0 to 31) for the top space and number of columns (0 to 254) for the left space in printout diagram.		
Columns			
Top Space		0	x
Left Space			

Remark

Column number is different according to the character

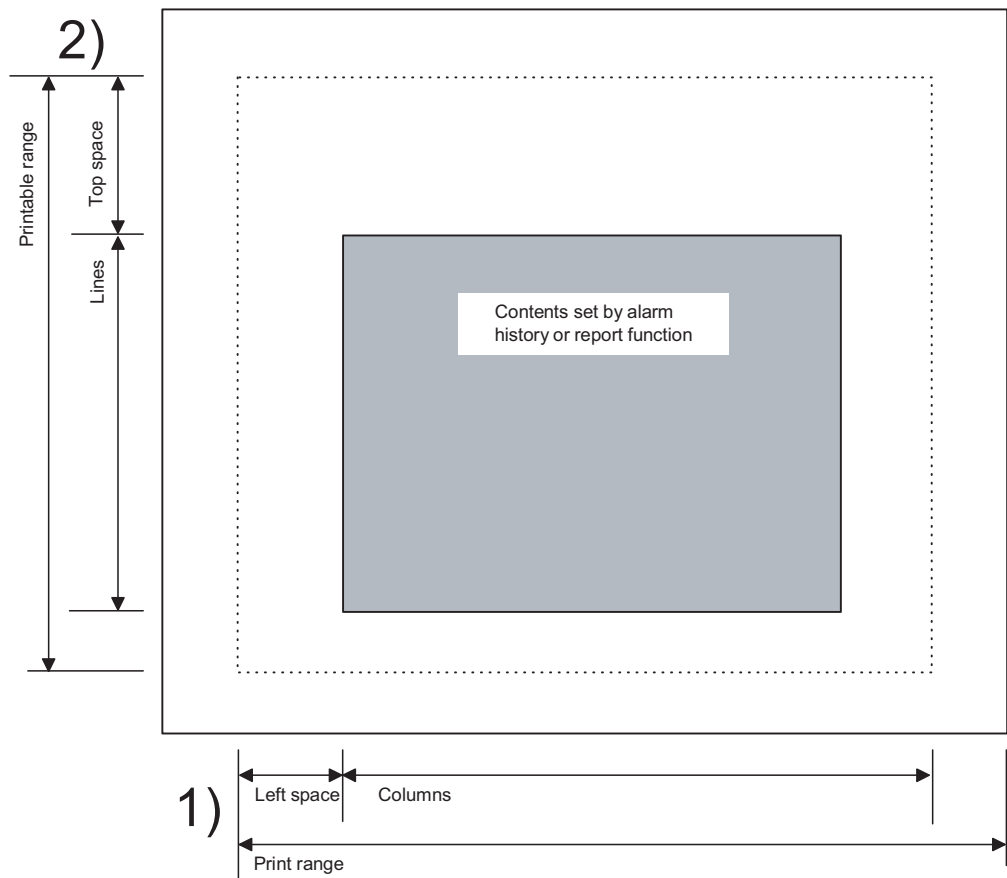
For both alarm history display function and report function, one character occupies one column.

3.6.3 Precautions

1 Precautions for drawing

(1) Setting precautions

- (a) Print format setting is common to alarm history display function and report function.
The settings will be updated on print (common) tag of alarm history display function and report function.
- (b) Report screen size will be automatically adjusted according to the print format settings.
- (c) Set print format according to the printable area. (Set "Printable Range" > top space + lines or left space + columns.)
Print format settings can be calculated as explains below.



1) When finding the maximum setting value (width) of columns + left space

(Width of printable range for printer [mm]) / 25.4 × 15

Example: When width of printable range for printer is "190mm"

$$190 / 25.4 \times 15 = 112.20 \dots$$

In GOT print format setting, set [Columns] + [Left space] within 112.

2) When finding the maximum value (length) of lines + top space

(Length of printable range for printer [mm]) / 4.23

Example: When length of printable range for printer is "280mm"

$280 / 4.23 = 66.19 \dots$

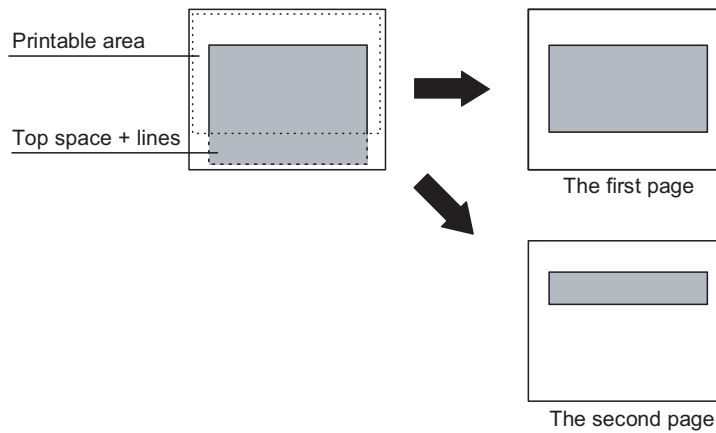
In GOT print format setting, set [Lines] + [Top space] within 66.

The printable range for printer differs depending on the printer in use.
For details of specifications, refer to the instructions of the printer.

Remark

When top space + lines is out of printable range

If top space + lines is out of printable range, the excess lines will be printed on the next page.



4. PREPARATORY OPERATION FOR OBJECT SETTING

4.1 Comment Registration

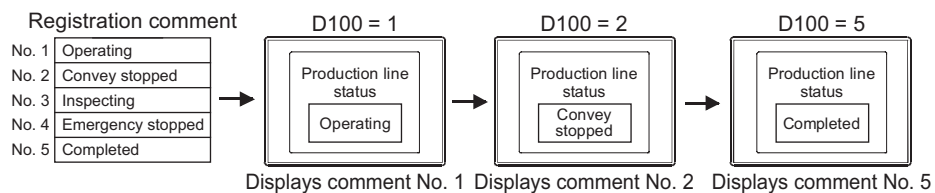


4.1.1 Required knowledge for comment registration

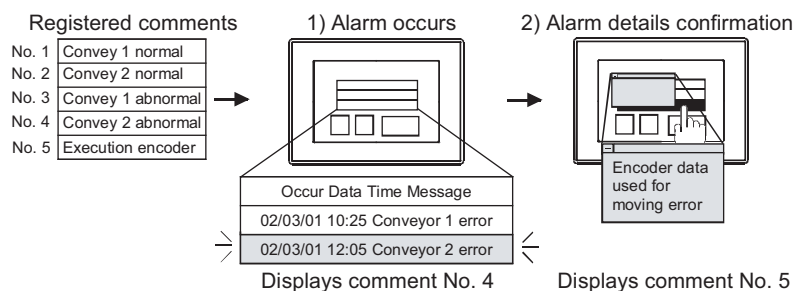
1 Comment

Registering comments in advance allows users to display their contents with multiple object functions.

- (1) Displaying comments with the comment display function (👉 Section 7.5 Comment Display)
 A comment of the comment No. corresponding to the value of the monitored device is displayed.



- (2) Displaying comments with the alarm history function (👉 Section 8.3 Alarm History Display)
 Alarm history and its details are displayed as comments.



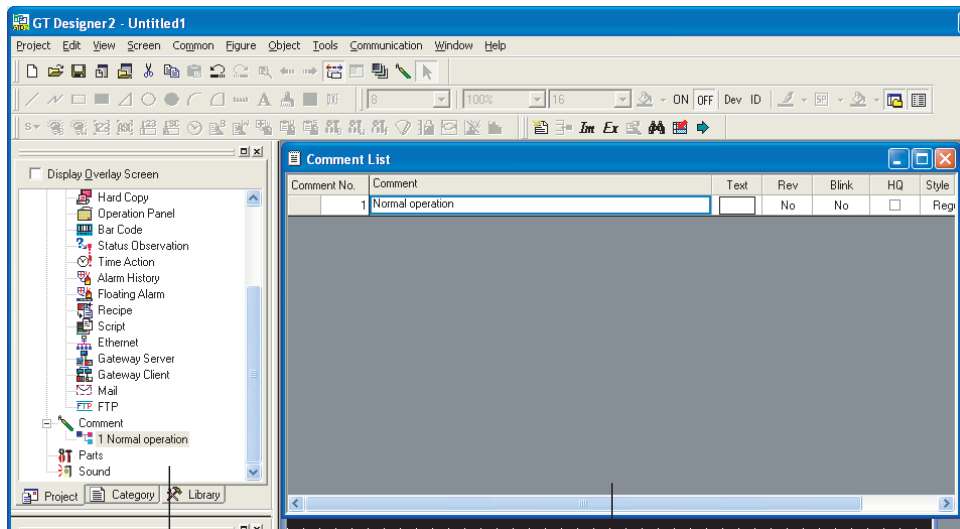
2 Object functions using comments

Comments can be used with the following object functions:

- Comment display
 - ☞ Section 7.5 Comment Display
- Alarm list (User alarm)
 - ☞ Section 8.1 User Alarm Display
- Touch switch function
 - ☞ Section 6.2 Touch Switch
- Data list
 - ☞ Section 7.2 Data List
- Floating alarm
 - ☞ Section 8.4 Floating Alarm
- Report function
 - ☞ Section 12.1 Report Function

3 Comment registration screen

Comments can be registered and edited on the following 2 types of screens.



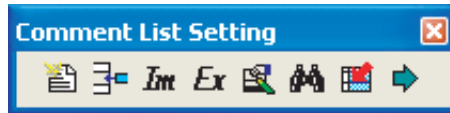
[Project workspace]
Convenient to edit and register comments
confirming the overall project setting









Comment list dialog box
All comment-related settings can be
done on this screen. Recommended
for registration of new comments.

4.1.2 Basic operation for comment registration

1 Basic operation of toolbar (Comment List Setting)

The operation of the toolbar used for comment registration will be explained.

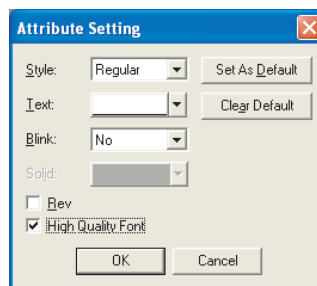



Items	Description
 New Comment	Add a new comment.
 Insert Row	Add a comment between comments.
 Import	Read text files and CSV files as the comment.
 Export	Write a comment in text file and CSV file format.
 Attribute	The Attribute Setting dialog box of the selected comment is displayed. *1
 Search	The Search dialog box is displayed. Enter the text to be searched, select the search direction (up/down), and click the <input type="button" value="Search Next"/> button to search the entered text for a comment.
 Jump	Jump to the specified comment No.
 Attribute Display/Non-Display	Whether the comment attributes are displayed or hidden can be set.

For details of *1, refer to the following.

*1 Attribute Setting dialog box

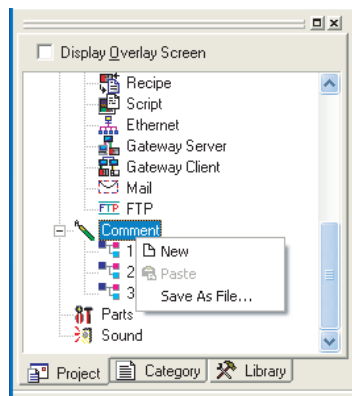
Set the comment attributes (text style, text color, etc.).



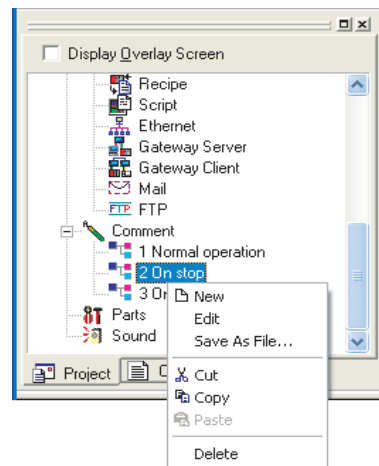
Items	Description
Style	Select the style to display comment. <div style="text-align: right;">  Standard Thick Solid Carve </div>
Text	Select the display color of comment.
Blink	Select comment's blink display (None/Low speed/Middle speed/High speed).
Solid	Select the solid color from Solid/Carve in [Style]
Rev	Check comment's flip display.
High Quality Font	Check comment's high quality font display.
Set As Default	Click this item to set the changed attribute as the preset value.
Clear Default	Click this item to return the changed attribute to the default.

2 Basic operation of project workspace

Select the object that carries out operation and right click it, select setting items.
The displayed items will differ according to different selected objects.



Right click when [Comment] is selected



Right click when a registered comment is selected

Items	Description	A	F
New	Add a new comment.	<input type="radio"/>	<input type="radio"/>
Edit	Edit the selected comment.	<input type="radio"/>	<input type="radio"/>
Saved As File	Save the comment in text file/CSV file format.	<input type="radio"/>	<input type="radio"/>
Cut	Cut the selected comment.	<input type="radio"/>	<input type="radio"/>
Copy	Copy the selected comment.	<input type="radio"/>	<input type="radio"/>
Paste	Paste the copied or cut comment.	<input type="radio"/>	<input type="radio"/>
Delete	Delete the selected comment.	<input type="radio"/>	<input type="radio"/>



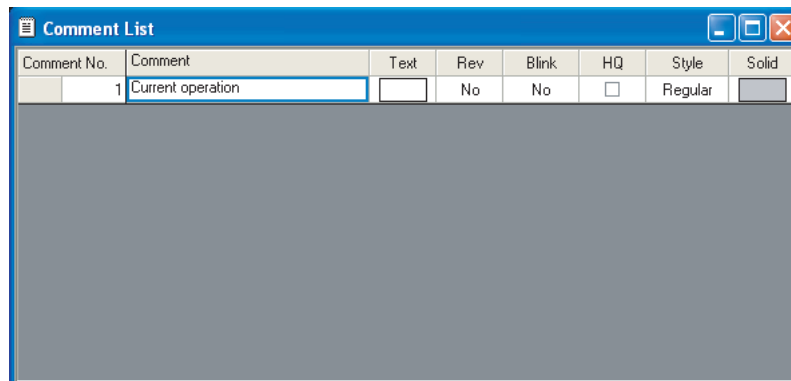
Remark

Comment display of project workspace


In project workspace, only the first line of the comment will be displayed.

3 Basic operation of comment list dialog box

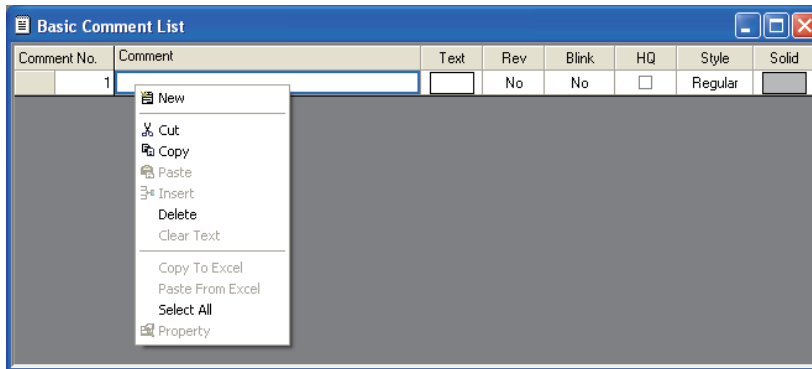
Select [Common] → [Comment] → [Comment] from the menu to display the following screen.



(1) Setting items for Comment List

Items	Description
Comment No.	Display the comment No.
Comment	Input the comment contents.
Text	Select the display color of comment.
Rev	Check comment's flip display.
Blink	Select comment's blink display (None/Low speed/Middle speed/High speed).
HQ	Check comment's high quality font display.
Style	Select the style to display comment. <div style="text-align: right;">  Standard Thick Solid Carve </div>
Solid	Select the solid color from Solid/Carve in [Style]


(2) Menu displayed by right clicking



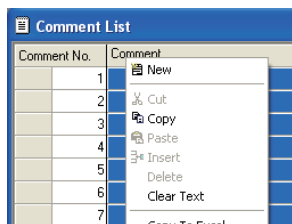
Item	Description
New	Adds a new comment row.
Cut *1	Cuts a comment selected.
Copy	Copies a comment selected.
Paste	Pastes a comment copied or cut.
Insert	Inserts a row to the row selected.
Delete *1	Deletes a comment selected.
Clear Text	Clears a comment of the row or column selected. *3
Copy to Excel	Copies a comment selected to Excel. Copy a comment in row or column unit.*3 After copying, paste the comment on Excel.
Paste from Excel	Pastes a comment selected from Excel. Copy or cut a comment on Excel and paste it on the Comment List dialog box.
Select All	Selects all comments in Comment List.
Property	Displays the Attribute Setting dialog box of the comment selected. *2

*1 Disabled for an entire column.


*2 For the Attribute Setting dialog box, refer to the following.

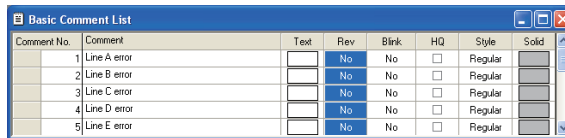
 This section **1** *1 Attribute Setting dialog box

*3 When selecting a column, select the Comment column.



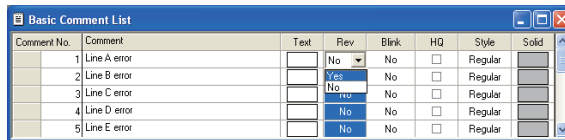


- (1) Selecting method of multiple comments
When there are multiple comments, all comments can be selected by either of the following operations.
 - Click on the top left cell ("Comment No." part) with the mouse.
 - Click [Select All] in the menu displayed by right-clicking the mouse.
- (2) Reusing comments between different projects
Comments can be pasted to the different project comment.
 This section 3 (2) Menu displayed by right clicking
- (3) Batch setting of Text, Rev, Blink, HQ, Style or Solid
You can apply the same setting to all comments simultaneously by selecting a column before making a setting.



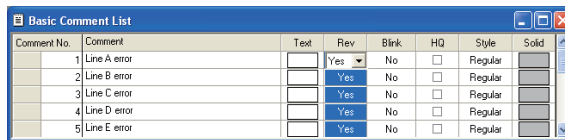
Comment No.	Comment	Text	Rev	Blink	HQ	Style	Solid
1	Line A error		No	No	<input type="checkbox"/>	Regular	
2	Line B error		No	No	<input type="checkbox"/>	Regular	
3	Line C error		No	No	<input type="checkbox"/>	Regular	
4	Line D error		No	No	<input type="checkbox"/>	Regular	
5	Line E error		No	No	<input type="checkbox"/>	Regular	

1 Select a column.



Comment No.	Comment	Text	Rev	Blink	HQ	Style	Solid
1	Line A error		No	No	<input type="checkbox"/>	Regular	
2	Line B error		Yes	No	<input type="checkbox"/>	Regular	
3	Line C error		No	No	<input type="checkbox"/>	Regular	
4	Line D error		No	No	<input type="checkbox"/>	Regular	
5	Line E error		No	No	<input type="checkbox"/>	Regular	

2 Make a setting with the column selected.



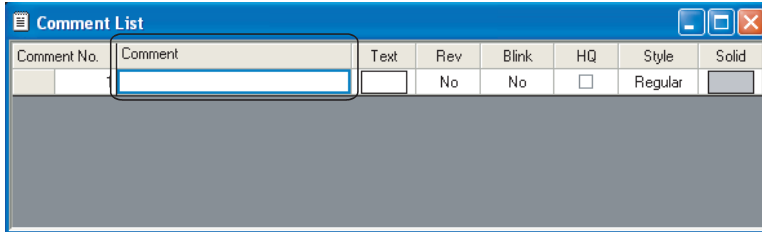
Comment No.	Comment	Text	Rev	Blink	HQ	Style	Solid
1	Line A error		Yes	No	<input type="checkbox"/>	Regular	
2	Line B error		Yes	No	<input type="checkbox"/>	Regular	
3	Line C error		Yes	No	<input type="checkbox"/>	Regular	
4	Line D error		Yes	No	<input type="checkbox"/>	Regular	
5	Line E error		Yes	No	<input type="checkbox"/>	Regular	

3 All comments are batch set to the same.

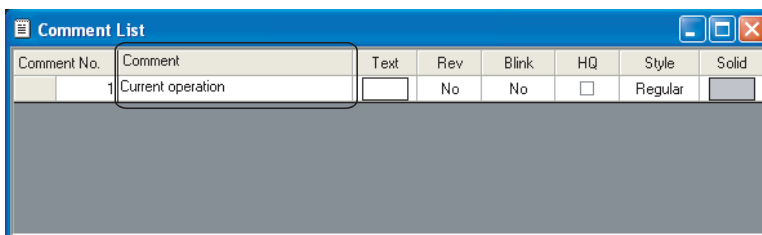
4.1.3 Registering a comment

Register the display comment in object function.

- 1 Click on the comment area of the register comment No.

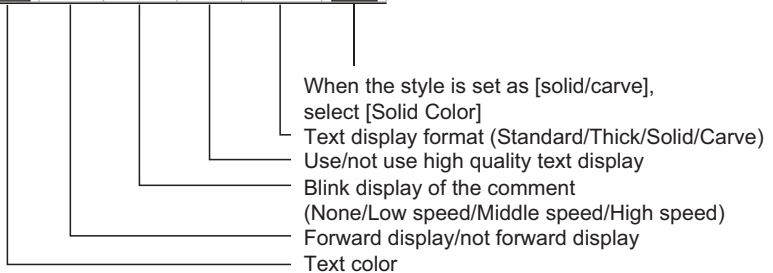



- 2 Input the comment to [Comment] text box.

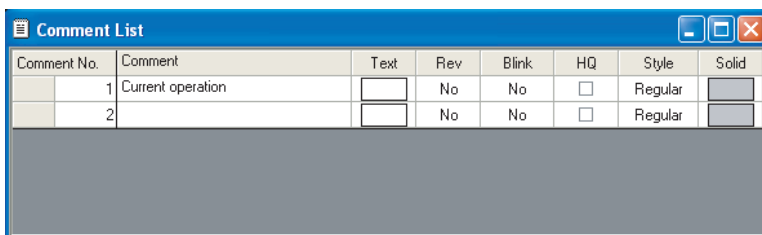



- 3 Set the display attribute of the comment

Comment No.	Comment	Text	Rev	Blink	HQ	Style	Solid
1	Current operation		No	No	<input type="checkbox"/>	Regular	<input type="checkbox"/>



- 4 Click on  [New Comment] after the comment registration, the following comment area will be displayed.



- 5 To register the comment, close the window with click on the  button at top right of the Comment window.

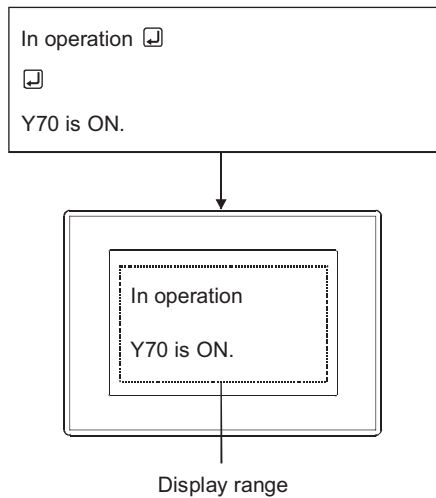
Remark

(1) Create multiple row comment

- (a) When changing to another row, input **Alt** and **Enter** key at the end of the row.



- (b) When writing multiple row comment, GOT will be displayed as follows:



(2) Create a comment by keyboard

This section explains how to create a comment by keyboard.

As a cursor can move within a comment list dialog box by using keys as shown below, mouse is not needed. (To add a comment No., press **Alt** and **N** key at the same time.)

- (a) When a cell is selected

- **→** key: Moves right one cell.
- **←** key: Moves left one cell.
- **↑** key: Moves up one cell.
- **↓** key: Moves down one cell.

- (b) When a line is selected

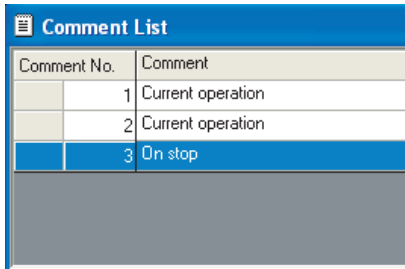
- **→** key: Moves to the comment cell in the line.
- **←** key: Moves to the comment cell in the line.
- **↑** key: Moves up to the comment cell in the above line.
- **↓** key: Moves down to the comment cell in the below line.

4.1.4 Copying or cutting a comment registered

Copy a comment registered.

1 Copying or cutting a comment for another comment No.

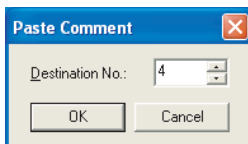
- 1 Select a comment row to be copied or cut.



Comment No.	Comment
1	Current operation
2	Current operation
3	On stop

- 2 Click the  [Copy] or  [Cut] button and then click the  [Paste] button.

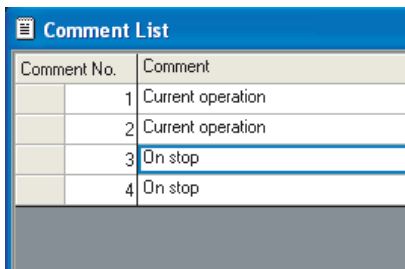
- 3 Paste comment dialog box is displayed.
Specify a paste destination No. and click the button.



Paste Comment

Destination No.: 4

- 4 The selected comment is pasted.



Comment No.	Comment
1	Current operation
2	Current operation
3	On stop
4	On stop

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH


7

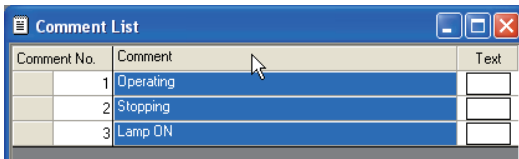
NUMERICAL/
CHARACTER DISPLAY


8

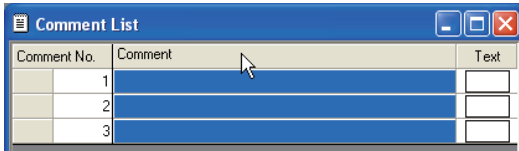
ALARM

2 Copying a comment for another column

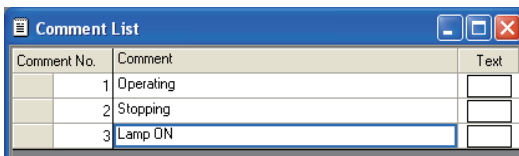
- 1 Select a comment column to be copied and click the  [Copy] button.



- 2 Select a column to which the comment is pasted, and click the  [Paste] button.



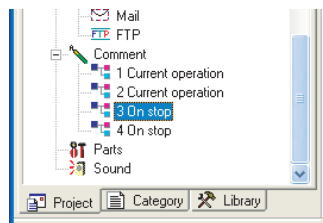
- 3 The comment is pasted.



Point

- (1) When operating in project workspace

When copy the comment in the project workspace, select the comment and carry out the following operations.

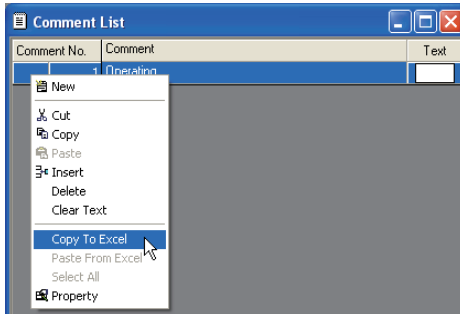


- 1 Right click, and select [Copy] from the menu.
 - 2 Right click again, and select [Paste] from the menu.
 - 3 Input the No. of the copied comment, and click on button.
- (2) In the case that pasting an entire row is disabled
Pasting may be disabled according to the comments of the pasting destination when copying/cutting and paste an entire row.
In such a case, copy/cut the relevant cells one by one or directly input the comment to the pasting destination.

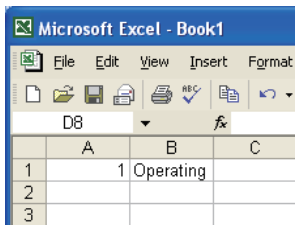
3 Copying/pasting a comment to/from Excel

(1) Copying to Excel

- 1 Select a comment row or column to be copied and right-click on the row/column. Select [Copy to Excel] from the displayed menu.

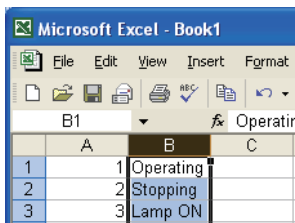


- 2 Perform the paste operation on the Excel, and the comments are pasted.

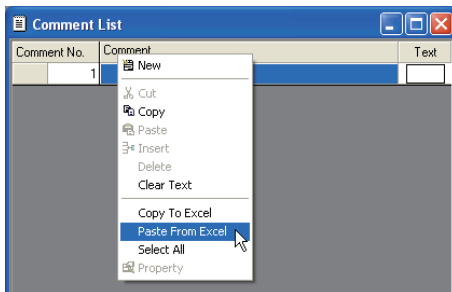


(2) Pasting from Excel

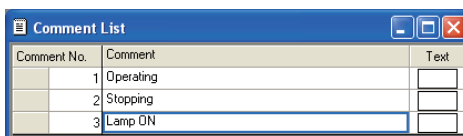
- 1 Perform a copy operation on the Excel.



- 2 Select a comment row/column to which the row/column of the Excel is pasted and right-click on the row/column.



- 3 The comment is pasted.

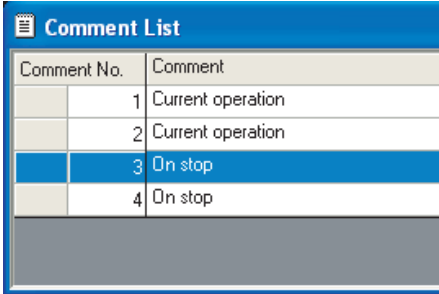


4.1.5 Deleting/clearing the text of a comment registered

1 Deleting comments

Delete registered comments.

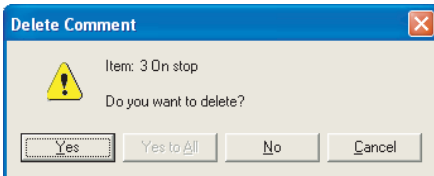
1 Select the comment to be deleted.



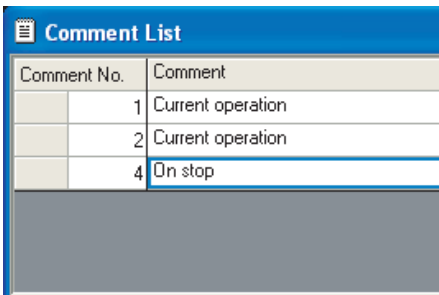
Comment No.	Comment
1	Current operation
2	Current operation
3	On stop
4	On stop

2 Select [Edit] → [Delete] from the menu bar.

3 Click on [Yes] button when comment delete dialog box is displayed.



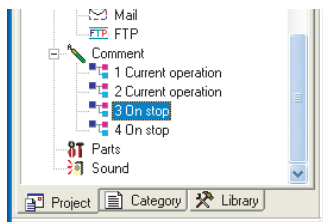
4 The selected comment is deleted.



Comment No.	Comment
1	Current operation
2	Current operation
4	On stop

Remark

- (1) In the case of operating in project workspace
When deleting comment in project workspace, select the comment and carry out the following operation.

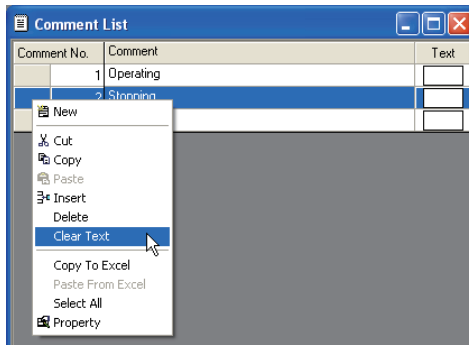


- 1 Right click, and select menu [Delete].
 - 2 Click on [Yes] button when the comment delete dialog box is displayed.
- (2) Deleting a comment in a column unit
Deleting a comment in a column unit is disable.

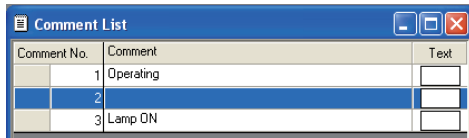
2 Clear text

The comment texts are cleared in a row or column.

- 1 Select a comment row or column and right-click on it.
Select [Clear Text] from the displayed menu.



- 2 The texts are cleared.



4.1.6 Changing the registered comment's settings

Change comment contents, comment No. and the display attribute of registered comment.

- 1 Select the comment whose setting is to be changed.

Comment List	
Comment No.	Comment
1	Current operation
2	Current operation
3	On stop
4	On stop

- 2 Change the items of comment.

Comment No.	Comment	Text	Rev	Blink	HQ	Style	Solid
1			No	No	<input type="checkbox"/>	Regular	<input type="checkbox"/>

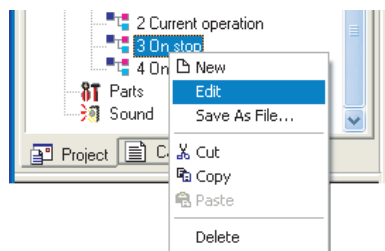
When style is set to [solid/carve], select [Solid Color]
 Display format of font (Standard/Thick/Solid/Carve)
 Display with/without high quality font
 Blink display of comment
 Reverse/without reverse
 Text color
 Comment contents
 Comment No.

- 3 When the comment setting is changed, close the window with click on the button at top right of the Comment List dialog box.

Remark

When operating in project workspace

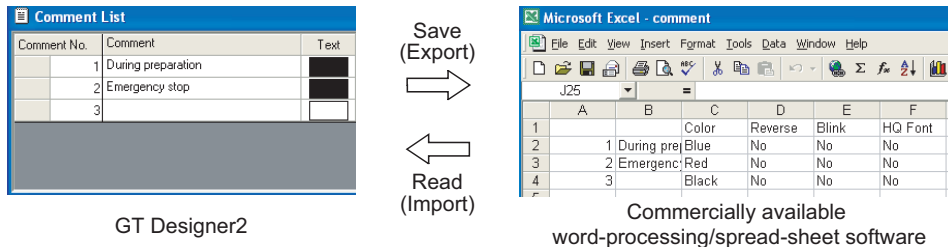
When changing the comment setting in project workspace, select the comment and carry out the following operations.



- 1 Right click to select [Edit] from the menu.
- 2 When a comment list dialog box is displayed, change the comment setting.

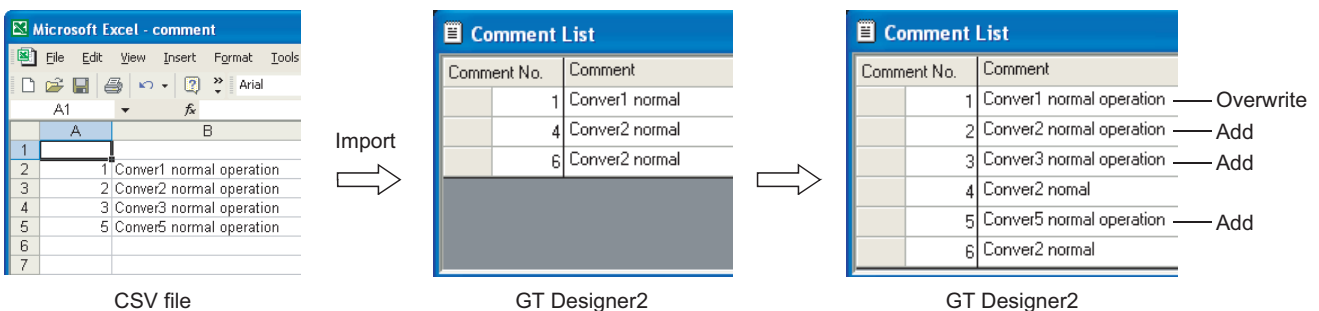
4.1.7 Saving/reading a comment as file

Registered comments can be saved as a text file (*.TXT), Unicode text file (*.TXT) or CSV file (*.CSV). Also, the files (Text/CSV file) created by commercially available word processing or spread-sheet software can be used to read comments.



Point

- (1) Add/Overwrite operation when importing comments from a file
 No. of the comment imported from the file is compared with No. of previously registered comment, and the data are handled as follows:
 - When both comment Nos. are different, the comment in the file is added.
 - When both comment Nos. are the same, the comment in the file is overwritten.



If the comment Nos. to be created are determined in advance, the comments can be created efficiently by sharing the task with several operators.

- (2) The Precautions for exporting from GT Designer2
 When exporting data from GT Designer2, all the registered comments will be reflected on the file. If a file is overwritten after exporting, all the previously saved comments will be lost.

Remark

- (1) Unicode text file
 The unicode text file is used for "import/export" by the multi-language input. Refer to the following manual for the multiple language input.

➡ GT Designer2 Version □ Operating Manual

- (2) How to save/read comments in a row or column unit in/from the Excel
 Refer to the following for details.

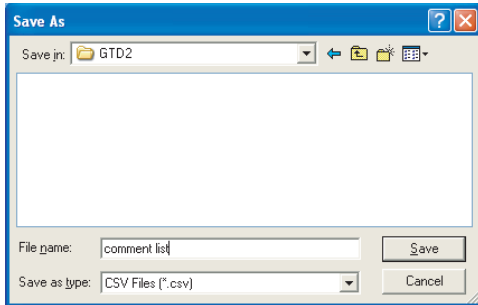
➡ Section 4.1.4 3 Copying/pasting a comment to/from Excel

1 Save comment as file (Export)


The registered comment is saved as text file/Unicode text file/CSV file.


1 Click on  [Export] button.

2 The [Save As] dialog box is displayed.



Select a file type from [File Type]. (txt: Text file/Unicode text file, CSV: CSV file)

Input file names and select the save positions, then click on  button.

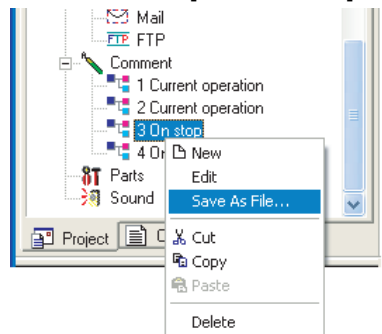
3 When the comment is written, click on the  button at top right of the Comment List dialog box.


Remark

When operating in project workspace

When comment is to be saved as a file in project workspace, please operate as follows:

1 Right click to select [Save As File] from the menu.

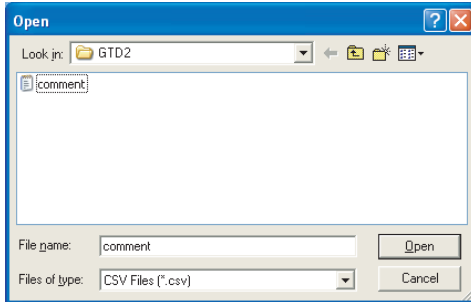


2 On the Save As dialog box, attach a file name, select the storage place, and click on the  button.

2 Read text file/Unicode text file/CSV file (Input) Read the text file/Unicode text file/CSV file as comment.

1 Click on  [Input] button.

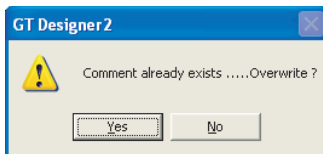
2 Display the dialog box to open file.



Select the file type from [File Type]. (txt: Text file/Unicode text file, CSV: CSV file)

Select the file to be read and click on button.

3 When the comment is registered, [Overwrite Confirmation] dialog box will be displayed, click on button.



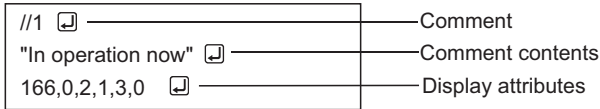
4 When the comment is read, click on the button at top right of the Comment List dialog box.

4.1.8 Editing the comment as text/csv file

The following explains how to edit the comments saved in a text/CSV file.

1 Text file

The comment saved/imported as a text file is edited with a text editor as shown below.



- Before entering the comment, hit the `/` key twice, input comment No. and press the Enter Register key.



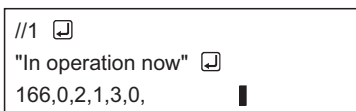
- Enter the comment.

Enclose the comment with the marks using the `"` key, and then press `,` key, and Enter Register key at the end.

Each comment must be written within a range of 1 to 512 characters.



- Set the comment attributes



Solid color (Set it same with text color No.)

Style (0: Standard 1: Thick 2: Solid 3: Carve)

Use/not use high quality font (0: Use 1: Not use)

Blink (0: None 1: Low speed 2: Middle speed 3: High speed)

Flip/not flip (0: None 1: Yes)

Text No.

255: White	109: Dark white	0: Black	182: Gray	3: Blue	2: Dark blue
224: Red	160: Dark red	227: Purple	162: Dark purple	28: Green	20: Dark green
31: Light blue	22: Dark blue	31: Light blue	22: Dark blue	252: Yellow	180: Dark yellow

Please confirm corresponding No. of the color not listed above in text list by selecting Other Colors from [Text] IN [Comment List] dialog box.



- Precautions when saving file

The edited file must be saved in text file (*.TXT) format.

- Precautions when inputting comment

Do not input a double quotation (`"`), comma (`,`) and return mark (`↵`) in that order consecutively, as the comment may not be correctly imported.

If they are already input in that way, modify the comment in text file, and then import it again.

Remark

When writing comment with multiple lines

When writing a comment with multiple lines, input **Register** key at the end of line.

When spacing one line, input **Register** key at the line.

```
//1
  "In operation now
  Y70 is ON"
```

By **/ / 1**, **Register** key input is processed as one comment.
Comment No.

```
//1
  "In operation now
  Y70 is ON"
  X30 is ON
  250, 0, 0, 1, 1,
//2
  "In stop now"
  150, 1, 3, 1, 1,
//3
  "Operation start",
  101, 0, 1, 0, 1,
```

Process as comment No. 1

Process as comment No. 2

Process as comment No. 3

2 CSV format file

The comment saved/ read as CSV format file is edited as follows:

(1) When editing with spreadsheet software and so on

When editing with spreadsheet software and so on, write each setting items as follows:

(Following is an example using Microsoft® Excel.)

	A	B	C	D	E	F	G	H
1			Color	Reverse	Blink	HQ Font	Style	Solid
2	1	During preparation	Blue	Normal	No	No	Normal	
3	2	Emergency stop Power supply check	Red	Normal	No	No	Normal	

- Solid color (Set it same with text color No.)
- Style (0: Standard 1: Thick 2: Solid 3: Carve)
- High quality font (with/ without)
- Blink (None/ Low speed / Middle speed/ High speed)
- Flip (with/without)
- Text name and No.
(White, dark white, gray, dark blue, red, dark red, purple, dark purple, green, dark green, light blue, dark blue, yellow, dark yellow)
- Please confirm corresponding No. of the color not listed above in text list by selecting [Other Colors] from [Text] IN [Comment List] dialog box.
- Comment text
- Comment No.

(2) When editing with text editor

The configuration of the comment data saved in the CSV file format is shown as follows on the text.

Specify character string with (" ").

Color, Flip, Blink, High quality font, Style, Solid color
1. "During operation preparation" Blue, No, No, Yes, Standard
2. "Line A, supply stops" Red, No, No, Yes, Solid, Red

Six commas divide this into 7 fields.
Comma (,) in the character string is recognized as a character.

Added when style is [Solid] or [Carve].

Comment
Line A, supply stop

Point

Precautions for file saving

Edited file must be saved in CSV file format (*.csv).

Remark

When the display attributes for the comment are not imported

When the number or position of commas in the CSV file is not correct, the display attributes for the comment may not be imported.

Confirm the number and position of commas.

3 Unicode text file

Comments are edited as shown below before being stored as a Unicode text file and imported to GT Designer2.

Specify character string with (" ").

→ Color → Flip → Blink → High quality font → Style → Solid color
1. "During operation preparation" Blue → No → No → Yes → Standard
2. "Line A, supply stops" Red → No → No → Yes → Solid → Red

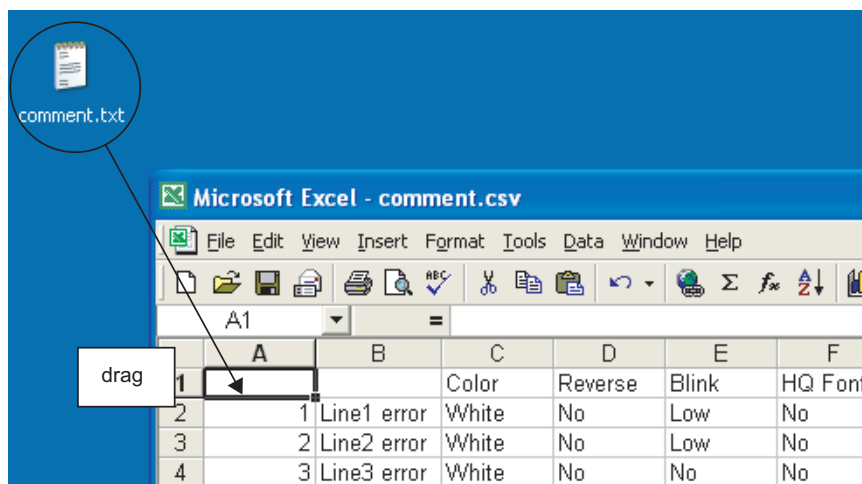
Six Tabs (→) divide this into 7 fields.

Tab (→) cannot be inserted in the character string.

Added when style is [Solid] or [Carve].

Point

- (1) Display language
Comment text is displayed in various languages that have been input by user.
The attribute (color, flip and blink etc.) is displayed in Japanese.
- (2) Precautions for storage files
Make sure to save the edited file in unicode text file (*.TXT) format.
- (3) Unicode text-compatible code
This code is Unicode (file format: UTF16 LittleEndian).
- (4) Unicode version
The text supported by the unicode version 1.1 or above cannot be displayed in GT Designer2.
- (5) Compatible OS
A Unicode text file can be imported/exported by the following OSs only.
 - Windows® 2000 Professional • Windows® XP Professional
 - Windows® XP Home Edition
- (6) Editing a Unicode text file by Microsoft(R) Excel
To open a Unicode text file that contains a comment of multiple lines by the Microsoft(R) Excel, drag the Unicode text file to the Microsoft(R) Excel.
If the Unicode text file is opened in other methods, it may not be displayed in the Microsoft(R) Excel correctly.



4.1.9 Precautions for comment registration

1 Maximum number of comments

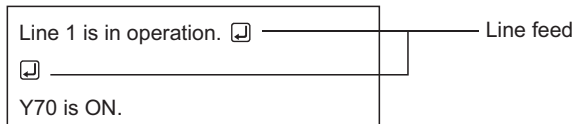
In GOT-A900 Series, up to 32767 comments can be registered.

In GOT-F900 Series, registrations of 10000 comments are available.

2 Maximum number of characters available in one comment

One comment can be created with 1 to 512 characters.

Note that one line feed is equivalent to 2 characters.



3 Character size of comment displaying

The character size of displayed comment is set in the dialog box of each object setting.

4 Comment display attributes

Depending on the object function, some display attributes set in comments may not function.

For restrictions on comments of each object function, please refer to the relevant sections of each object function.

Object function	Display attribute
Alarm list display function	"Blink" cannot be displayed.
Alarm history display function	In GOT-A900 Series, "Blink" and "Flip" cannot be displayed. In GOT-F900 Series, "Blink", "Flip" and "Text" cannot be displayed.
Floating alarm function	"Blink", "Flip" and "High quality font" cannot be displayed.
Comment display function	Depending on the object function, other display attribute can be used instead of the one set for the comment to display.
Touch switch function	

4.2 Parts Registration



There are two types for the parts displayed.

- Parts registered in the GT Designer2
- Parts of BMP files saved in the PC card

This section describes how to register parts in the GT Designer2.

For how to display a BMP file stored in the PC card as parts, refer to the following.

- How to store a BMP file in the PC card

Section 4.3 Storing a BMP file part in the PC card

- How to display a BMP file stored in the PC card

Section 9.1.1 Parts displaying method

4.2.1 Required knowledge for parts registration

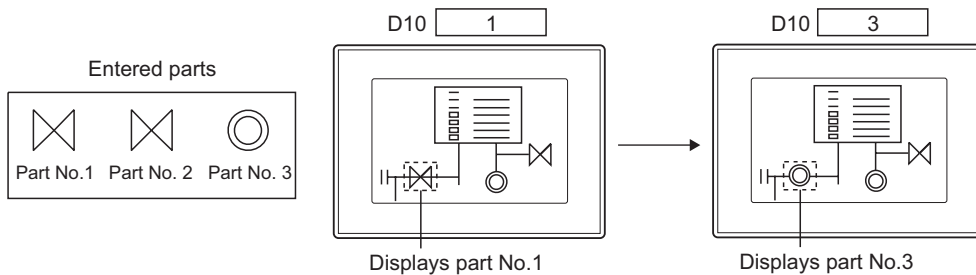
1 Parts

User-created figures are registered as parts.

The registered figures can be displayed as parts by the part display function and the parts movement function.

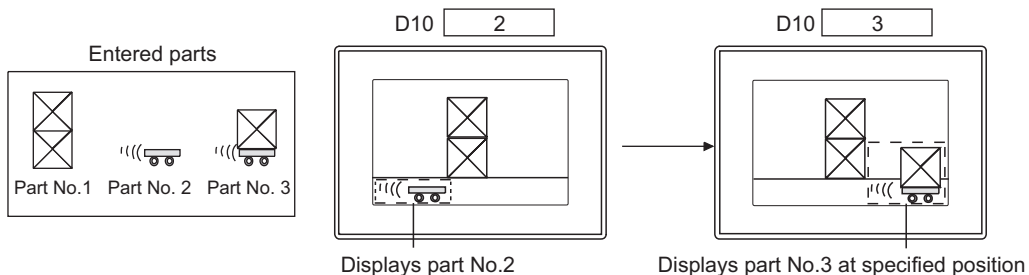
- (1) Use the parts display function (Section 9.1 Parts Display)

The several kinds of figures can be displayed by changing a monitor device value.



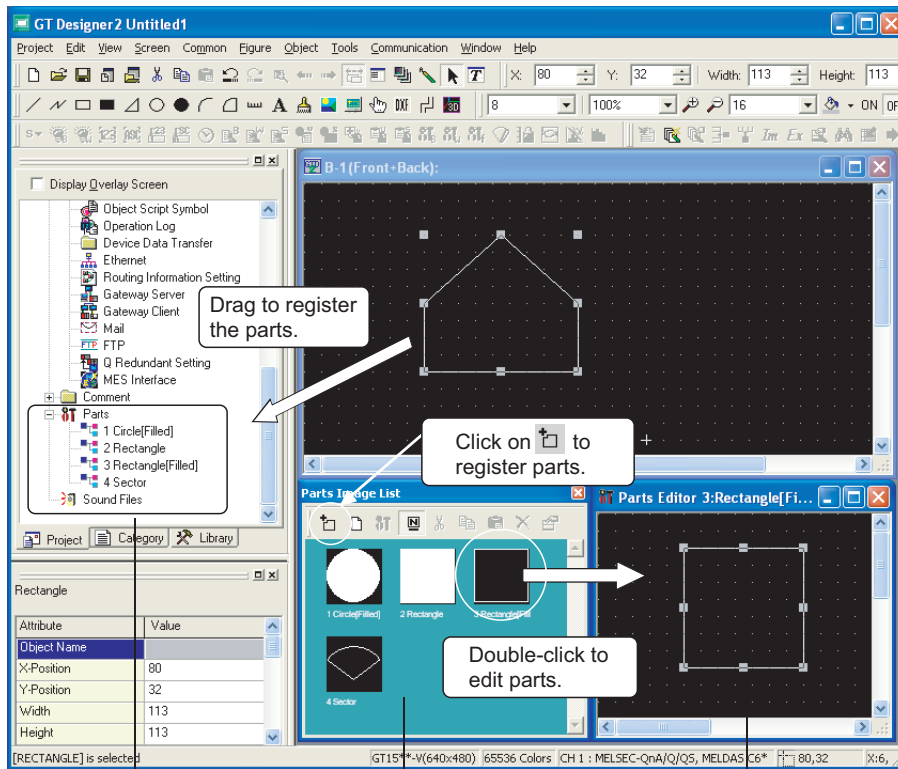
- (2) Use the parts movement display (Section 9.2 Parts Movement) (for GOT-A900 Series only)

By changing a monitor device value, several kinds of figures can be displayed changing each position.



2 Screens for registering and editing parts

Register/edit parts on three screens.



[Project Workspace]

- Drag to register figures as parts.
- Double-click to display "Parts Image Display" or "Parts Editor".

[Parts Image Display]

- Click on [icon] to register figures as parts.
- Parts editing can be done on "Parts Editor" with confirming a parts image .

[Parts Editor]

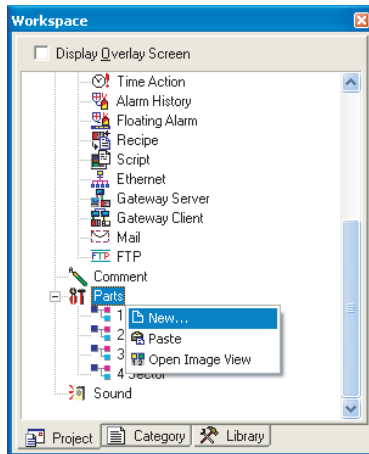
- Registered parts can be edited easily on the dedicated editor.

4.2.2 Basic operation for parts registration

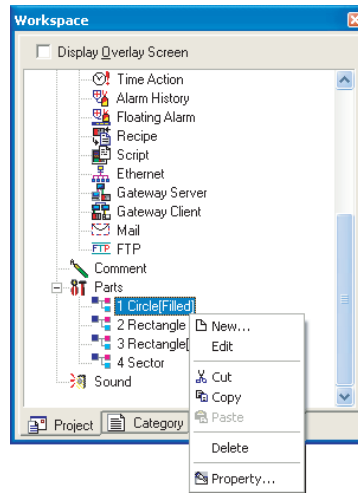
1 Basic operation of project workspace

Select an operation execution object and right click it to select setting items.

Owing to the difference of selected objects, the displayed items will be different.



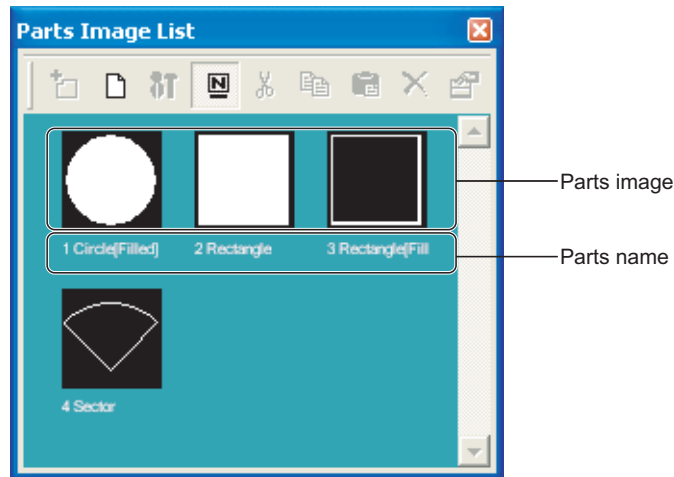
Right click when select [Parts]



Right click when select parts name

Items	Description	A	F
New	Register a new part.	<input type="radio"/>	<input type="radio"/>
Edit	The selected parts can be edited/corrected on parts editor screen.	<input type="radio"/>	<input type="radio"/>
Cut	Cut the selected parts.	<input type="radio"/>	<input type="radio"/>
Copy	Copy selected parts.	<input type="radio"/>	<input type="radio"/>
Paste	Paste the copied or cut parts.	<input type="radio"/>	<input type="radio"/>
Delete	Delete the selected parts.	<input type="radio"/>	<input type="radio"/>
Property	Change [Parts No.] and [Parts Name] of the selected parts.	<input type="radio"/>	<input type="radio"/>
Open Image View	Display the parts image in [Parts Image Display] dialog box.	<input type="radio"/>	<input type="radio"/>

2 Basic operation of parts image display dialog box
 Select [Common] → [Parts] from the menu for displaying.

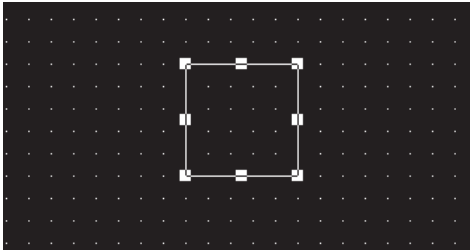


Items	Description	A	F
[Register]	Register selected figure to parts.	<input type="radio"/>	<input type="radio"/>
[New Parts]	Register a new part.	<input type="radio"/>	<input type="radio"/>
[Edit]	Correct the contents of registered parts.	<input type="radio"/>	<input type="radio"/>
[Name]	Switch display/not display parts name.	<input type="radio"/>	<input type="radio"/>
[Cut]	Cut the selected parts.	<input type="radio"/>	<input type="radio"/>
[Copy]	Copy the selected parts.	<input type="radio"/>	<input type="radio"/>
[Paste]	Paste the copied or cut parts.	<input type="radio"/>	<input type="radio"/>
[Delete]	Delete the selected parts.	<input type="radio"/>	<input type="radio"/>
[Property]	Change [Parts No.] and [Parts Name] of the selected parts.	<input type="radio"/>	<input type="radio"/>

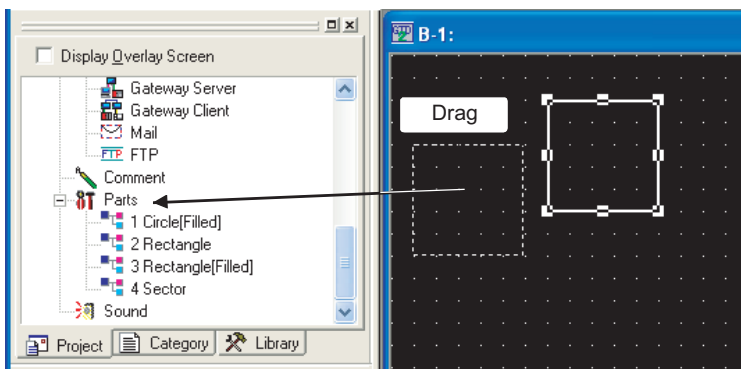
4.2.3 Registering parts

Register the parts displayed by parts display function and parts movement display function.

- 1 Select the figure to be registered.

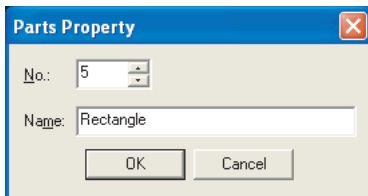


- 2 Drag the figure to be registered to the parts in project workspace.

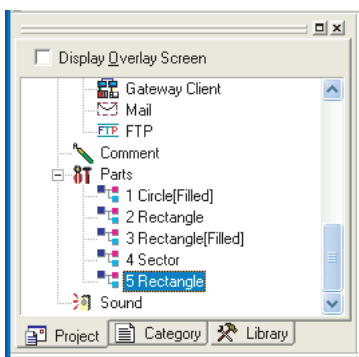


- 3 Display parts property dialog box.

Input No. and the name of the parts to be registered, and click on **OK** button.



- 4 The registration is completed.

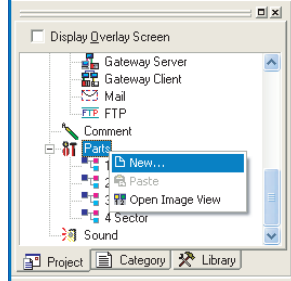


Project workspace

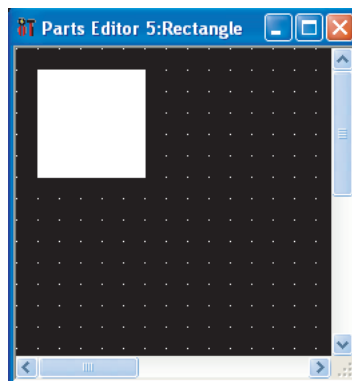
Remark

- (1) When registering parts with the parts editor
The figure registered as parts can be created with parts editor.

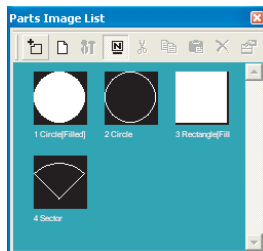
- 1 Right click to select [New Parts] from the menu.



- 2 The parts property dialog box is displayed.
Input No. and the name of the parts to be registered, and click on button.
- 3 When the parts editor is displayed, draw the figure as parts when figure is drawn, then close parts editor.



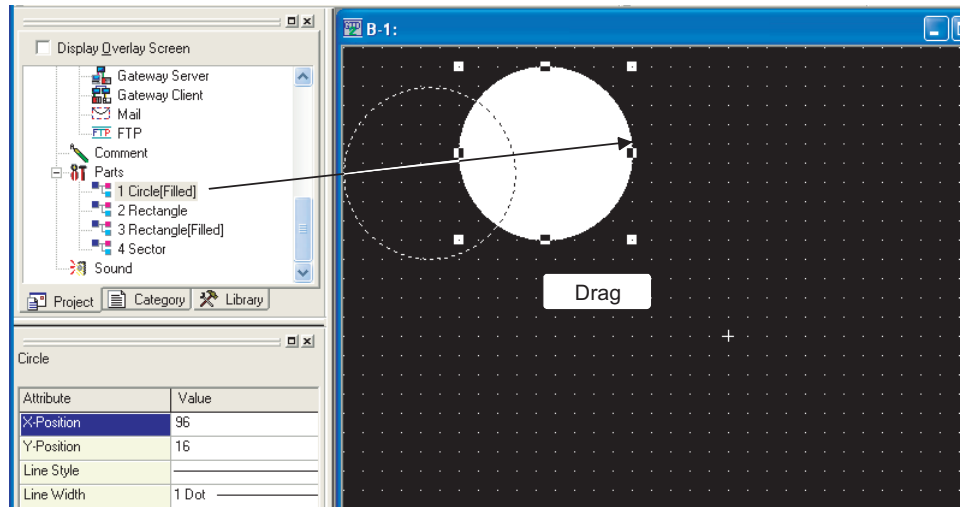
- (2) When registering parts in parts image dialog box
When registering parts in parts image dialog box, select the figure to be registered and operate as follows.



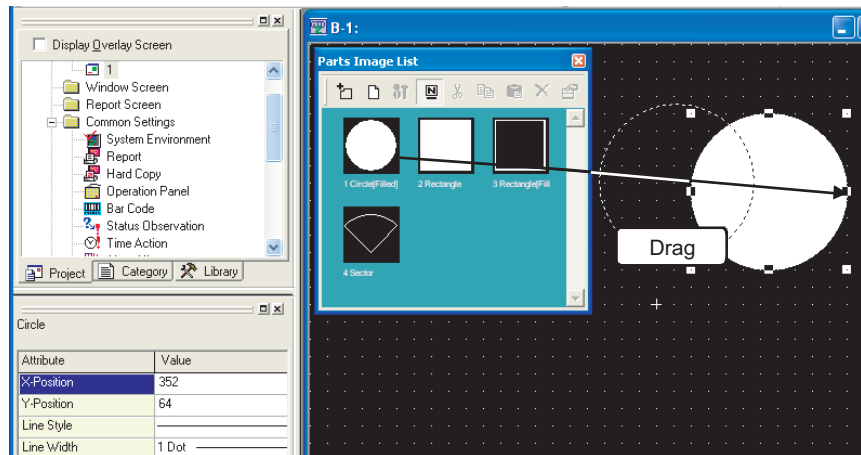
- 1 Click on [Register] button.
- 2 When the parts property dialog box is displayed, input No. and the names of the parts to be registered, and click on button.

- (3) Paste the figure registered in parts to the screen
 Select the parts to be read, and drag it to drawing screen.

- Paste from the project workspace



- Paste from the parts image display dialog box



The figure can be registered as parts

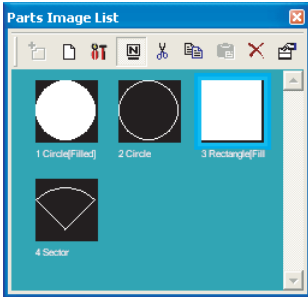
The bitmap file (*.BMP) data input as a figure can be registered by the same procedure with that of figure.



 GT Designer2 Version□ Operating Manual

4.2.4 Copying the registered parts

Copy the registered parts to other part No.

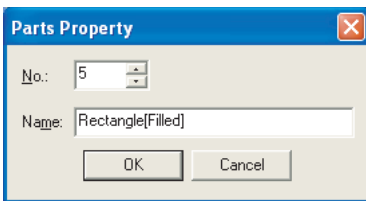
- 1 Select the parts to be copied.



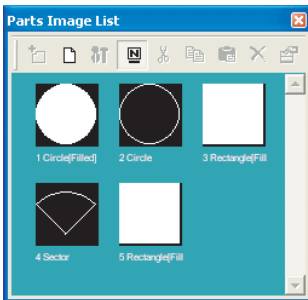
- 2 Click on  [Copy] button, then click on  [Paste] button.

- 3 Parts property dialog box is displayed.

Set the destination parts No. and parts name, and click on **OK** button.



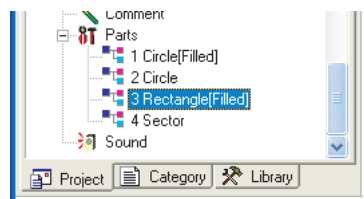
- 4 Copy the selected parts.



Remark

When operating in the project workspace

When copying in the project workspace, select the parts and operate them as follows.

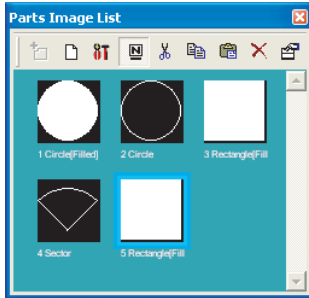


- 1 Right click, and select [Copy] from the menu.
- 2 Right click again, and select [Paste] from the menu.
- 3 Input the destination parts No. and names.

4.2.5 Deleting the registered parts

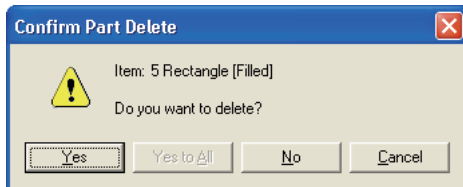
Delete the registered parts.

- 1 Select the parts to be deleted.

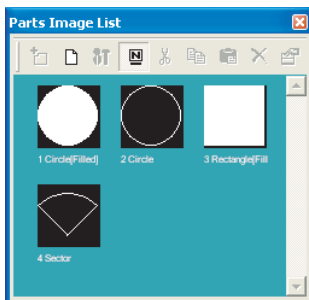


- 2 Click on  [Delete] button.

- 3 When the parts delete confirmation dialog box is displayed, click on button.



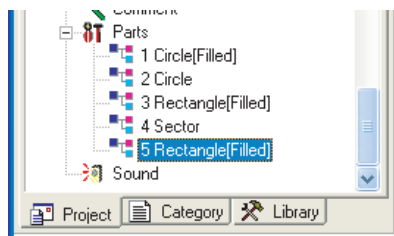
- 4 Delete the selected parts.



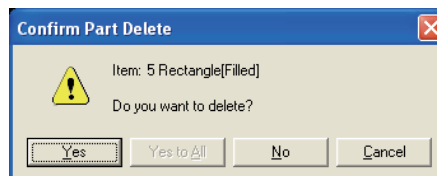
Remark

When operating in the project workspace

When deleting parts in the project workspace, select the parts and operate them as follows.



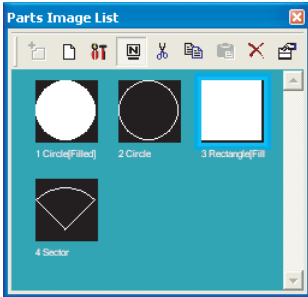
- 1 Right click, and select [Delete] from the menu.
- 2 When the parts delete confirmation dialog box is displayed, click on button.




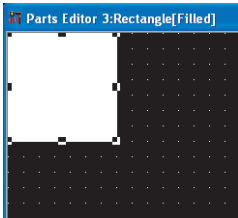
4.2.6 Changing the registered parts settings


Edit the registered parts.

- 1 Select the parts to be edited.



- 2 Click on  [Edit] button. (The parts can be double-clicked too.)
- 3 When the parts editor screen is displayed, edit the parts.

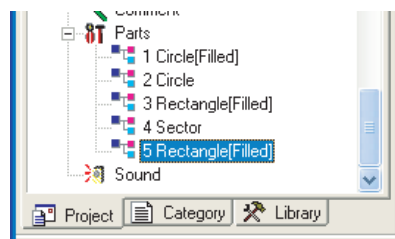


- 4 When parts edit is completed, close the screen.
(Click on  button at the top-right of screen.)

Remark

When operating in the project workspace

When editing parts in the project workspace, select the parts and operate them as follows.

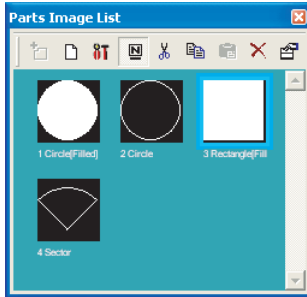


- 1 Right click, and select [Edit] from the menu. (It can be double-clicked too.)
- 2 When the parts editor screen is displayed, edit the parts.

4.2.7 Changing property of the registered parts

Change the No. and name of registered parts.

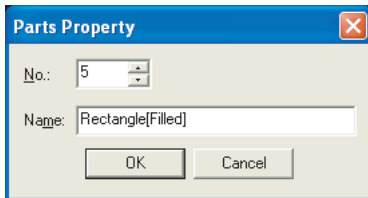
- 1 Select the parts whose property is to be changed.



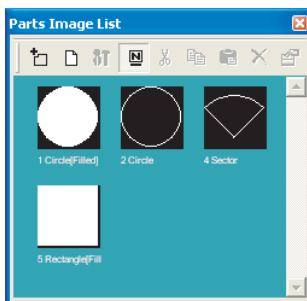
- 2 Right click the mouse, and select [Property] menu.

- 3 The parts property dialog box is displayed.

Input the parts No. and name to be changed, and click on button.



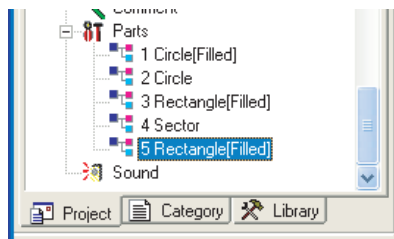
- 4 Change the property of selected parts.



Remark

When operating in the project workspace

When changing parts property in the project workspace, select the parts and operate them as follows.



- 1 Right click to select [Property] from the menu.
- 2 In the parts property dialog box, set the parts No. and parts name to be changed.


4.2.8 Precautions

1 Maximum number of Parts that can be registered

For GOT-A900 Series, up to 32767 types of parts can be registered.
For GOT-F900 Series, up to 2000 types of parts can be registered.

2 Memory capacity required for parts

It is same with memory capacity for drawing figure.

 Section 2.2 Figures and Data Capacity

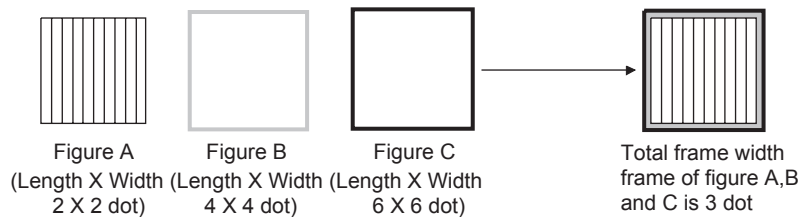
3 Precautions when registering figure as parts

(1) Line width of figure outline frame

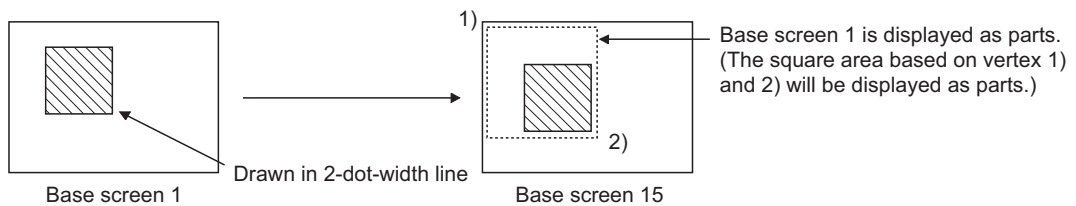
For a figure to be registered as parts, its frame must be drawn in 1-dot line.
If drawn in 2-dot or wider line, it may not appear in actual width on GOT.
However, the frame of 2-dot or wider line can be displayed by following the steps below.

(a) When display with changing the color of figure (figure displayed as mark)

Example: Combine three figures drawn in 1-dot line to make one figure with 3-dot-wide frame. drawn.



(b) Set a figure drawn in 2-dot or wider line on an unused base screen and display the base screen as parts using parts display function.



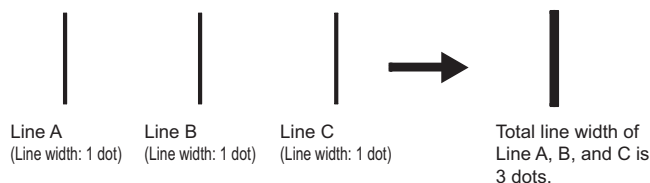
(2) Line width (except slant lines)

When the width of a line (except slant lines) to be registered as a part is 2 to 7 dots, the line may not be displayed with the set width on a GOT.

When displaying a 2-dot or more line on a GOT, refer to the following steps.

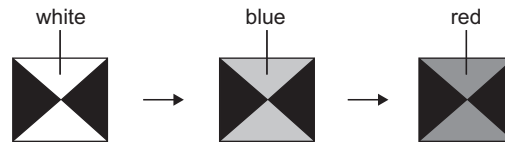
(a) Drawing a 2-dot or more line with 1-dot lines

Example: Combine three 1-dot lines and make a part with 3-dot line width.



(b) Creating a rectangle (filled) and dragging the rectangle to change into the shape of a line

- (3) Changing the color of a figure on the screen (figure marked as a mark)
The white area of a part displayed as a mark by Parts Display/Parts Movement, can be changed to another color.



Change the area color from white to other colors.

Register the part displayed as a mark as below.

- Draw the color changing area of the figure in white.
 - Do not use the figure data of imported BMP format file.
- The above figures displayed as a mark will not change in color.

4.3 Storing a BMP file part in the PC card



The parts of the BMP files stored in the PC card (herein after referred to as BMP file parts) can be displayed as parts in Parts Display/Parts Movement.

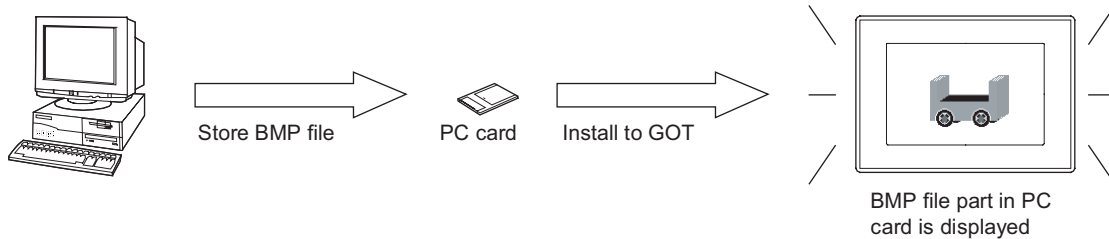
By registering parts in the PC card as BMP file parts, the size of the project data stored in the GOT can be reduced.

This section explains how to store a BMP file in the PC card.

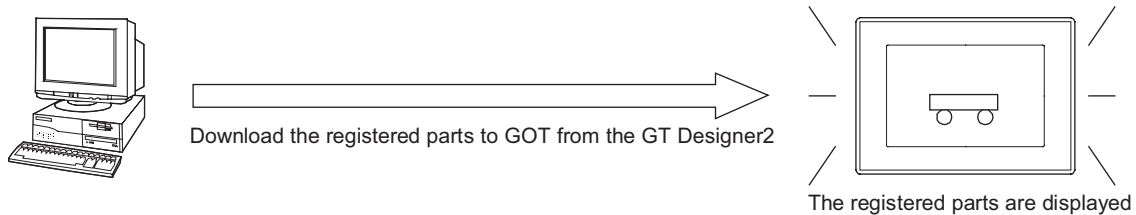
For how to display a BMP file stored in the PC card, refer to the following.

- For Parts Display : Section 9.1.1 Parts displaying method
- For Parts Movement : Section 9.2.1 Moving and displaying parts:

- When displaying BMP file part



- When displaying registered part



Remark

Time taken to display BMP image parts (reference value)

The following table shows times taken to display a BMP image parts on each GOT.

Item	Data format of displayed BMP file			Time taken to display part *1 (Seconds)
	Resolution (Dots)	Number of colors (Colors)	File capacity (KB)	
GT SoftGOT2	1280 × 1024	24-bit, full-color	3850	0.4
		256	1280	0.3 or less
	1024 × 768	24-bit, full-color	2300	0.3 or less
		256	770	0.3 or less
A985GOT	800 × 600	24-bit, full-color	1400	4.9
		256	480	4.4
A97 GOT	640 × 480	24-bit, full-color	900	3.5
		256	302	3.1
A960GOT	640 × 400	24-bit, full-color	770	3.2
		256	256	2.8
A956WGOT	480 × 234	24-bit, full-color	330	1.7
		256	112	1.6
A95*GOT	320 × 240	24-bit, full-color	230	0.9
		256	76	0.9

*1Depending on the used monitor screen data, the time taken may differ from the above value.

4.3.1 Before using the BMP image parts

1 Checking the OS

To use the BMP image parts, the following OS must be installed in the GOT.

OS type	Description
Basic function OS	Ver. 9.5.5 or later

(1) How to check the basic function OS

Basic function OS versions installed in the GOT can be checked in the built-in memory information on GT Designer2.

If the basic function OS installed in the GOT is old, reinstall new OS version.

 GT Designer2 Version  Operating Manual

2 BMP files that can be displayed

The following describes the data format of the BMP file that can be used as BMP file parts.

Item	Description
Data format	The BMP data ^{*1} of 24-bit, 8-bit, 4-bit or 1-bit
Number of colors ^{*2}	256 colors, 16 colors or monochrome
Resolution	Max.: 1280 × 1024 dots ^{*3} Min.: 1 × 1 dot

*1 The BMP data compressed by compression software cannot be used.

*2 For the BMP files stored in the PC card, the number of colors will be reduced to the number supported by the GOT in use.

*3 When specifying an image file larger than the display size of the GOT in use, the file will not be displayed.


Point

Difference between data available to BMP file parts and registered parts

The BMP file that can be stored in the PC card (BMP file parts) differs with the BMP file that can be used in the GT Designer2 (registered parts).

The data used as a registered part may not be used as a BMP file part.

For the BMP file that can be used as registered parts, refer to the following.

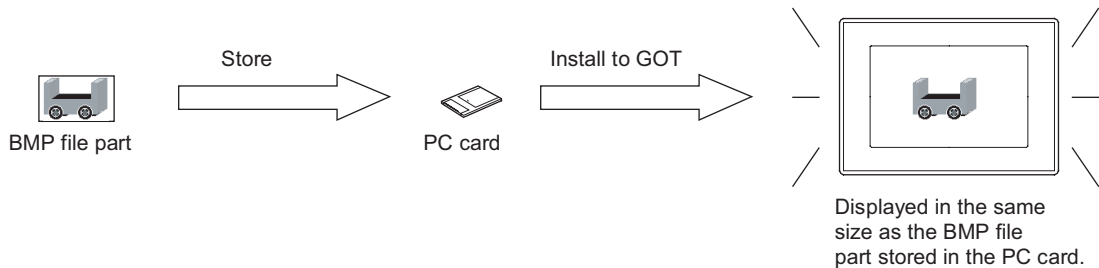
 Section 2.2.1  Figures in BMP/DXF file format

4.3.3 Precautions

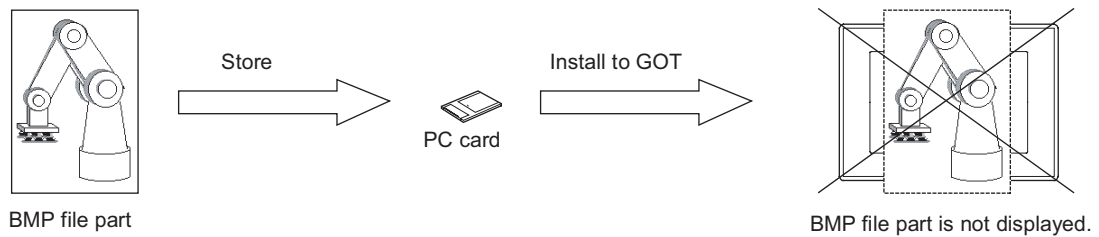
1 Precautions for drawing

- (1) The size of the BMP file parts stored in the PC card
 The BMP file parts displayed in the GOT is the same size as the BMP image parts stored on the PC card.
 The BMP file parts which are larger than the display size cannot be displayed.
 The BMP file parts to be stored onto the PC card should be smaller than the display size of the GOT.

- When the BMP file part is equal to or smaller than the display size of the GOT



- When the BMP file part is larger than the display size of the GOT



2 Precautions for hardware

- (1) GOT with restrictions on use
 BMP image parts cannot be used as the A95 * handy GOT does not support PC card.
- (2) Required optional Units
 The following Units is required to use BMP file parts.

Used GOT	Required device
A985GOT, A97 * GOT, A960GOT	None
A956WGOT	SRAM type: Memory Card Interface Unit Compact Flash PC card: No device required
A95 GOT	SRAM type: Memory Card Interface Unit Compact Flash PC card: Unavailable

- (3) SRAM type PC card
 When using the SRAM type PC card, carefully check the capacity of the PC card and the total capacity of the BMP files.
 If the total capacity of the BMP files exceeds the PC card capacity, the BMP files cannot be stored.

4.4 Registering Gaiji



4.4.1 What are external characters


External characters indicate character patterns, company logos and symbols which are created and registered in advance, then displayed as characters of objects or comments. In models not equipped with built-in Shift JIS second level Kanji character fonts, such Kanji characters can be created and displayed as external characters.

4.4.2 Setting

- 1 Select [Common] → [Gaiji] from the menu.
- 2 When the setting dialog box is displayed, please make settings referring to the following explanation.

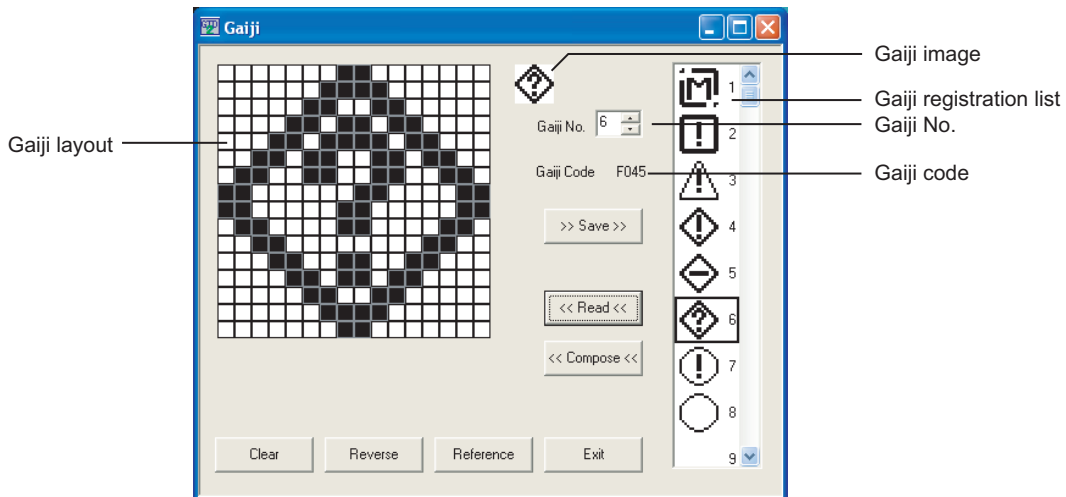
Remark

When setting in the project workspace

In the project workspace, when double clicking , the setting dialog box can also be displayed.

4.4.3 Setting items

The explanation about Gaiji setting items is as follows.



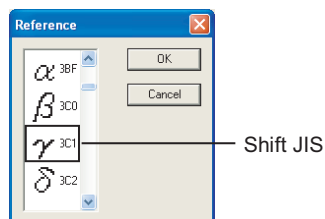
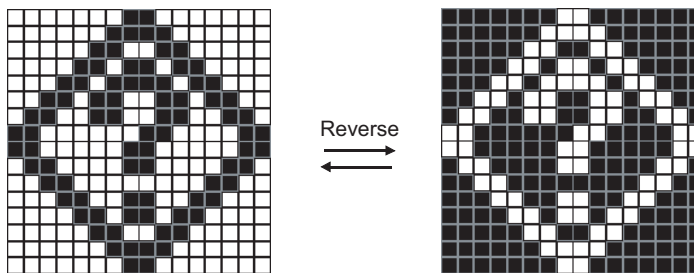
Items	Description	A	F
Gaiji layout	Click the mouse in 16 dots × 16 dots matrix, dot becomes ON (black) of OFF (white), and Gaiji can be created/edited. Additionally, click the mouse and drag it at the same time, dot will be filled with the selected color.	×	○
Gaiji No.	Select the Gaiji No. to be created, edited or saved.	×	○
Gaiji image	The Gaiji being created can be displayed, confirmed and edited with actual-sized image.	×	○
Gaiji Code	Display character code No. corresponding to the saved Gaiji No. from F040H to F0C0H (Hexadecimal).	×	○
Gaiji registration list	Display saved Gaiji image with serial number.	×	○

Before

As previous data is overwritten, please confirm the saved Gaiji No. before execution.

Before termination, it is necessary to save the changed Gaiji.

When [Gaiji Layout] or the one being already registered is black, dots are displayed in black.



Point

Display input method of the Gaiji registered in object and comment

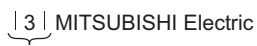

(1) Specify character, comment, lamp, etc.

When specify newly-created Gaiji in character input area, indicate Gaiji No. with "]" (DBC vertical line *1) and it is represented as 1 character.


(Comment is used in alarm message, bit comment, word comment, etc.)

*1: Vertical line can be input by pressing [Shift] key and [] key at the same time.

Input example 1: (Register Gaiji No.  = 3)

 MITSUBISHI Electric
 MITSUBISHI Electric is displayed.

Input example 2: Register Gaiji No.  = 9,  = 5,  = 1

 is displayed.

(2) Gaiji specification of ASCII input and ASCII display

Please specify character code No. displayed in [Gaiji No.] which is same with Chinese character and symbol, etc.

4.4.4 Precautions

1 Use of external characters

The external character creation function is available only when "Japanese" is selected in "Language Character Set" in "System Environment".

4.5 Auxiliary Settings



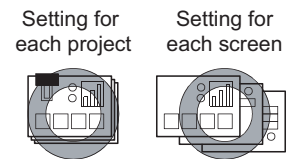
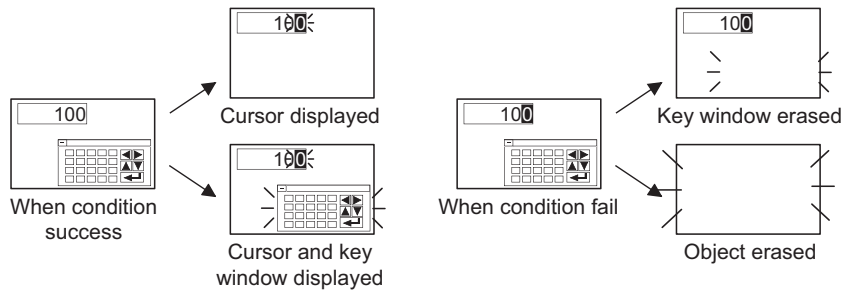
Operation of cursor, key window or other can be set for each screen or project.
The auxiliary settings are explained as follows:

In the case of GOT-A900 series

1 Action of cursor and key window when condition success/switching screen/condition fail

When condition success/switching screen, cursor and key window are displayed.

When condition fail, cursor and key window are erased.

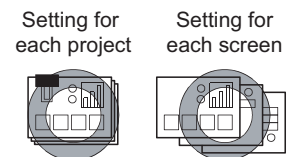
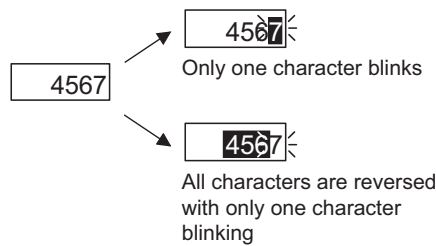


Setting items

- [Action when condition success]
- [Switching screen option]
- [Action when condition fail]
- [Cursor position]

2 Methods of displaying cursor input area

For numeric input and ASCII input, cursor display method is selectable.

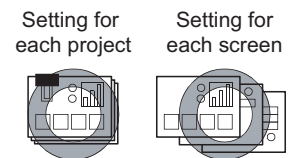
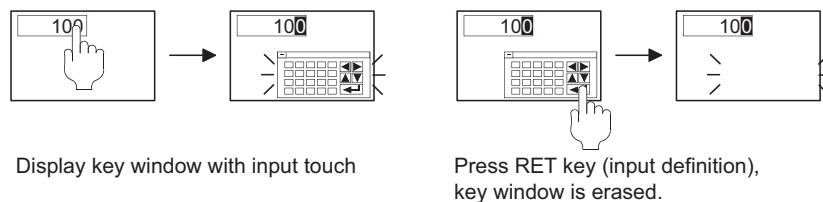


Setting items

- [Cursor input area]

3 Methods of displaying/erasing key window

Key window can be displayed as soon as touch input is detected; can be erased when the RET key is pressed.

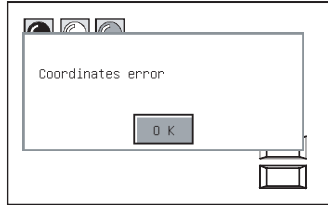


Setting items

- [Close cursor and key window when RET key is pressed.]
- [When touch input is detected, open key window at the same time]

4 Check for overlapping objects

If objects overlap when screen calling function and superimpose window are used, message will appear on GOT. As GOT may not the display overlapping objects correctly, correct the monitor screen data.



5 Change of touch key sound


The sound output when a touch switch is pressed can be set. (Prepare the files that play sounds.)



Remark

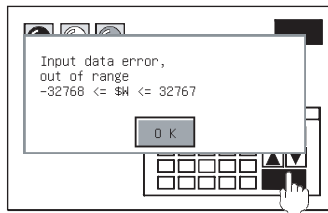
Change touch key sound

To change touch key sound, sound files must have been registered in advance. For the GOT that does not support sound function, touch key sound cannot be changed.

 Section 12.5 Sound

6 Displaying input range for numeric value Input

When a numeric value out of input range is input, a message appears showing the input range.



Setting for each project



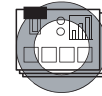
Setting for each screen



Setting items

- [Carry out check for overlapping objects within GOT]

Setting for each project



Setting for each screen



Setting items

- [Change touch key sound]

Setting for each project



Setting for each screen



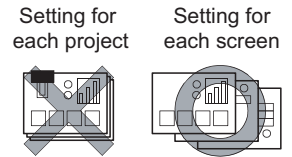
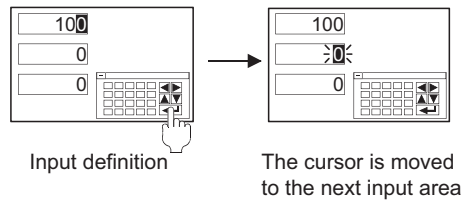
Setting items

- [Display the input range when inputs the out of range in numerical input]

7 Action of cursor key

If multiple areas for numerical input and ASCII input are provided, the input order can be set.

After input definition, the cursor is moved to the next input area automatically.

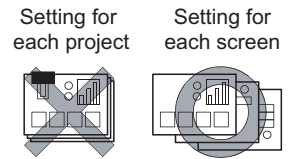
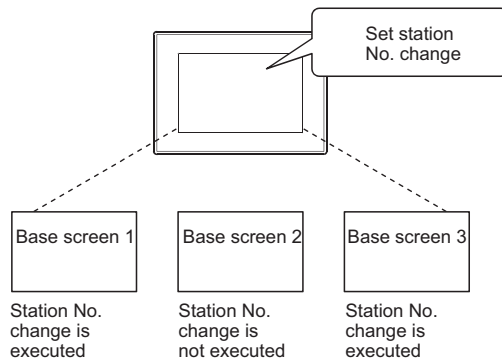


Setting items

- [Defined key action]
- [Position to specify area]

8 Station No. change execution/inexecution

Station No. change can be set to be executed or not for each screen.

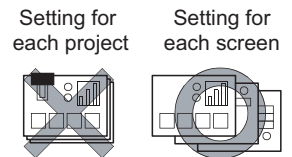
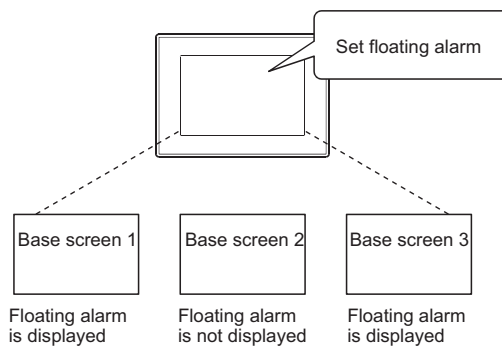


Setting items

- [Carry out station no. change]

9 Floating alarm display execution/inexecution

Floating alarm display can be set to be executed or not for each screen.

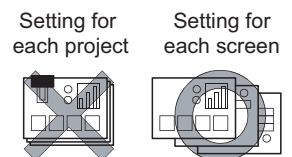
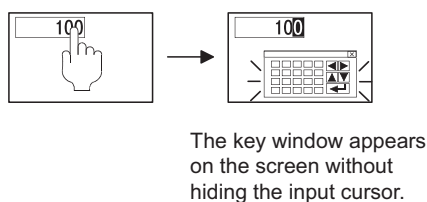


Setting items

- [Carry out display of alarm flow]

10 Moving/Not moving key window

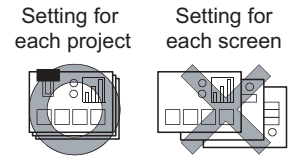
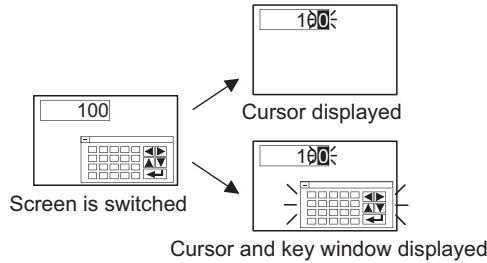
Moving or Not moving of a key window can be set for each screen.



Setting items

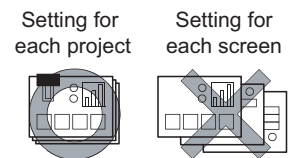
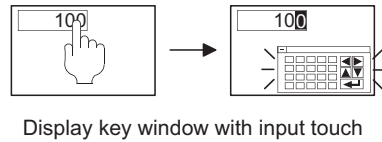
- [Move key window]

1 Actions of cursor and key window when switching screen
 When switching screen, the cursor and key window can be displayed.



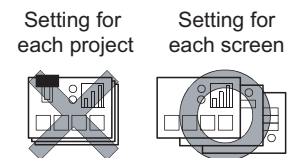
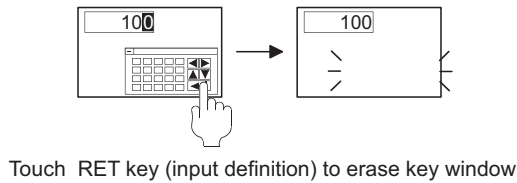
Setting items
 • [Action when switching screens]

2 Method of displaying/erasing key window
 Key window can be displayed as soon as touch input is detected; can be erased when the RET key is pressed.



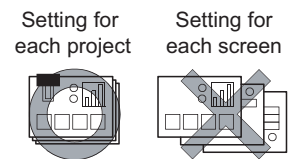
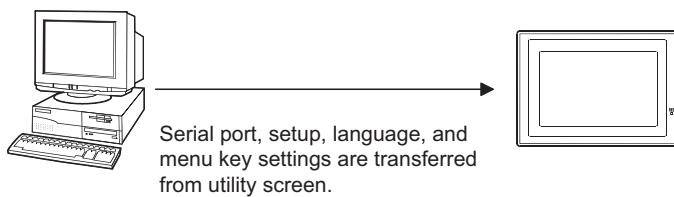
Setting items
 • [When touch input is detected, open key window at the same time]

3 Method of erasing key window
 Key window can be erased when the RET key is pressed.



Setting items
 • [Defined key action]

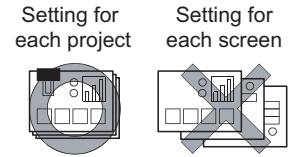
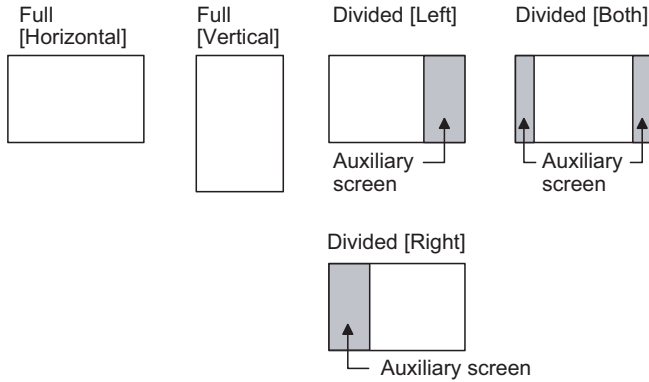
4 Use serial port, setup, language, menu key.
 All kinds of basic settings can be written according to the settings made with drawing software.
 Check this item when making the settings with drawing software.
 Uncheck this item when writing the basic settings within utility of GOT-F900 series.



Setting items
 • [Use Serial Port, Setup, Language, Menu Key]

5 Screen division method and layout method (for F940WGOT, F930GOT only)

Screen layout can be classified as vertical installation and horizontal installation. In latter case, one screen can be divided into two or three. (can be divided in F940WGOT only)

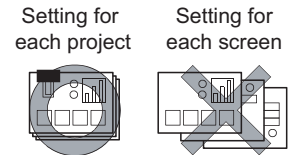
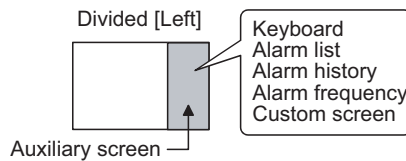


Setting items

- [Format]

6 Auxiliary screen settings for wide display(for F940WGOT only)

For F940WGOT, function(s) and background to be displayed on auxiliary screen can be selected.



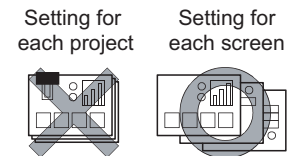
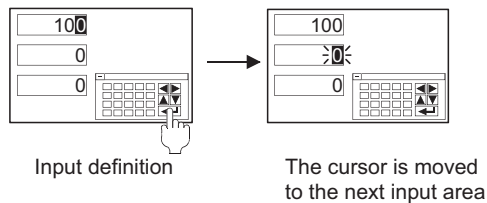
Setting items

- [Screen configuration settings]

7 Cursor key action

If multiple areas for numerical input and ASCII input are provided, the input order can be set.

After input definition, the cursor is moved to the next input area automatically.

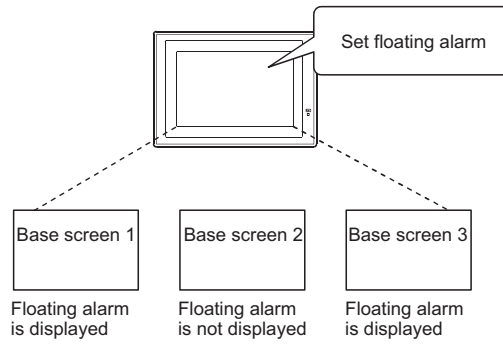


Setting items

- [Defined key action]

8 Floating alarm display execution/inexecution

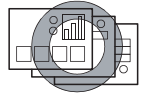
Floating alarm display can be set to be executed or not for each screen.



Setting for each project



Setting for each screen



Setting items

- [Carry out display of alarm flow]

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

8

ALARM

4.5.1 Settings

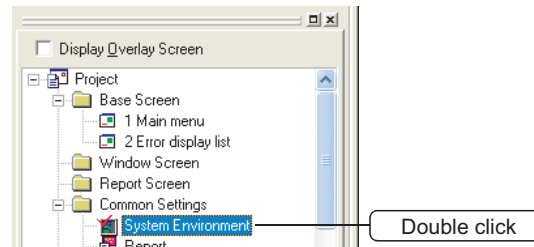
1 When setting for each project

- 1 Select [Common] → [System Environment] from the menu.
- 2 As "System Environment" dialog box appears, double click on [Auxiliary Settings] there.
- 3 As "Auxiliary Settings" dialog box appears, make the setting with reference to the following explanation(Section 4.5.2 **1** Setting dialog box for each project).

Remark

When setting in project workspace

Double click on System Environment and "System Environment" dialog box appears, then double click on Auxiliary Settings



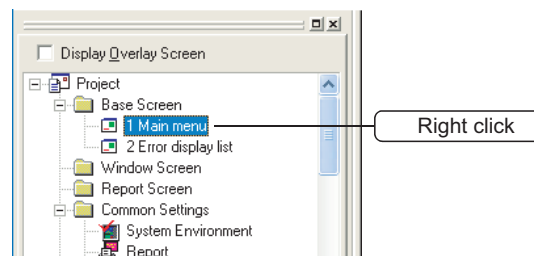
2 When setting for each screen

- 1 Select a screen, and then select [Screen] → [Properties] from the menu.
- 2 As the setting dialog box appears, click on "Auxiliary" tab dialog box, and then make the setting with reference to the following explanation (Section 4.5.2 **2** Setting dialog box for each screen).

Remark

When setting in project workspace

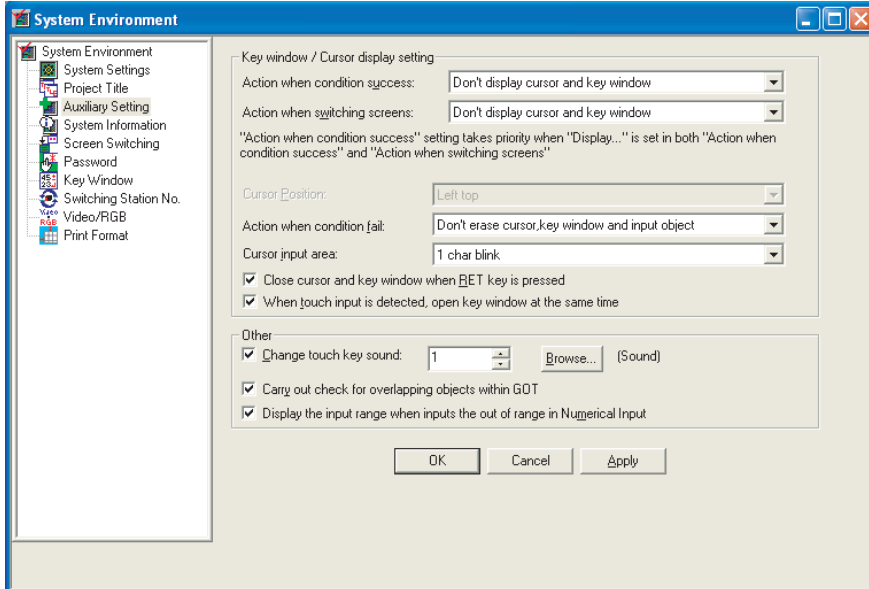
Select a screen and right-click on the screen with a mouse, and then select [Property]. As the setting dialog box appears, double click on "Auxiliary" tab dialog box.



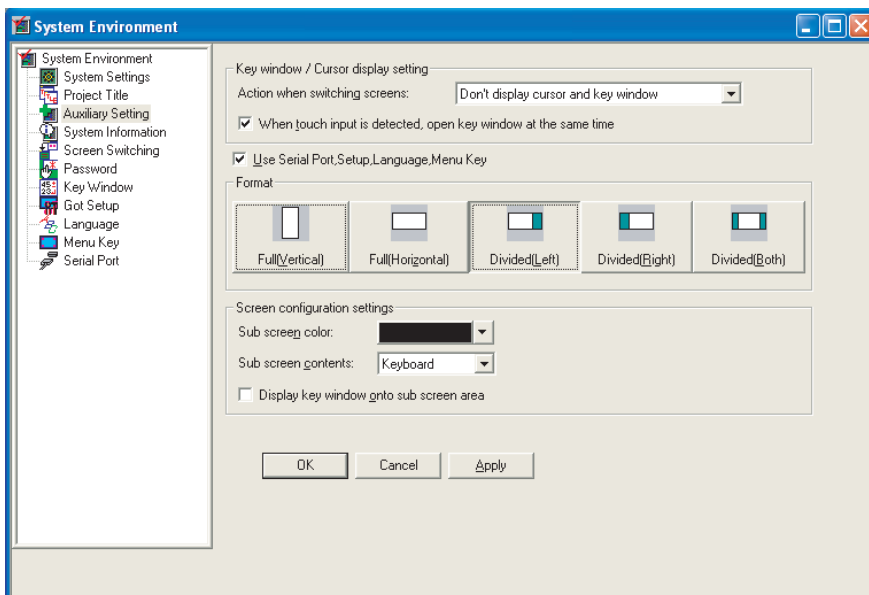
4.5.2 Setting items

1 Setting dialog box for each project

Make the auxiliary settings for each project.



GOT-A900 Series



GOT-F900 Series

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

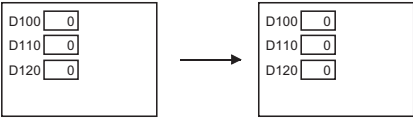
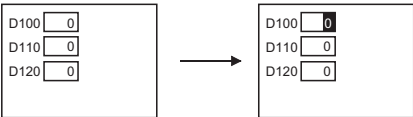
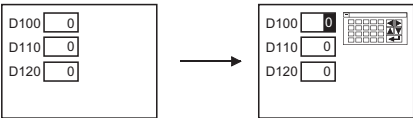


LAMP, SWITCH

7

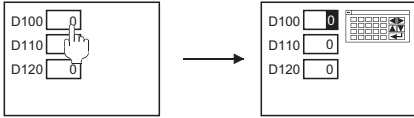
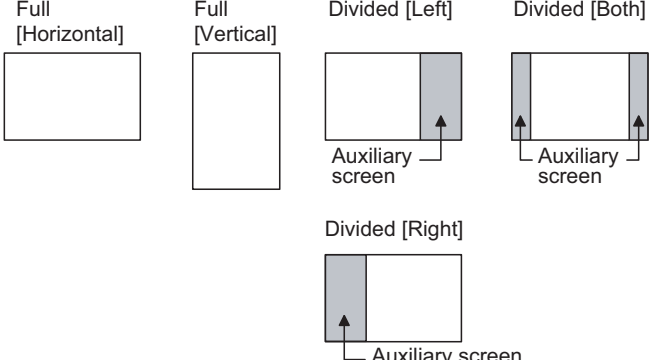
NUMERICAL/
CHARACTER DISPLAY

8

ALARM

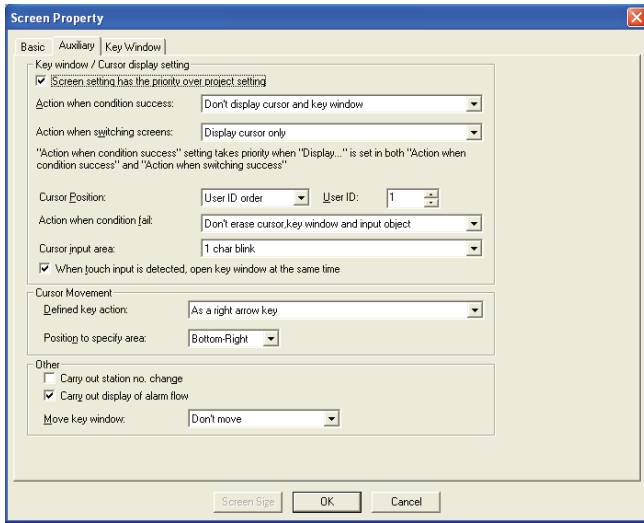
Items	Description	A	F
<p>Action when condition success</p> <hr/> <p>Action when switching success</p>	<p>Set the display method of cursor and key window with numerical input function and ASCII input function when the condition is satisfied/switching screen.</p> <p>Cursor and key window are not displayed: When the condition is satisfied/switching screen, the cursor or key window is not displayed. In the case of key input, touch the input area.</p>  <p>Only cursor is displayed: When the condition is satisfied/switching screen, the cursor is displayed automatically. If there is key for key input on the screen, key input can be executed.</p>  <p>Both the cursor and key window are displayed: When the condition is satisfied/switching screen, the cursor and key window are displayed. Even if there is no key for key input on the screen, key input can be executed.</p> 	<p>○ ○</p>	<p>○ ○</p>
<p>Cursor Position</p>	<p>Set the cursor position when switching screen.</p> <p>Left top :When switching screen, the cursor is displayed on input area in upper left part of the screen.</p> <p>User ID minimum :When switching screen, the cursor is displayed on the input area in which minimum user ID has been set.</p>	<p>○ ○</p>	<p>× ×</p>
<p>Action when condition fail</p>	<p>Set the display method of cursor and key window with numerical input function, ASCII input function and switch touch function when the condition is not satisfied.</p> <p>They will be erased only when the trigger has been set to [ON] or [OFF]. Shape of numeric value/ ASCII input (frame) is displayed as it is.</p> <p>Cursor, key window and input object are not erased: When the condition is not satisfied, cursor/key window/ object is displayed as it is.</p> <p>Cursor and key window are erased: When the condition is not satisfied, cursor/ key window is erased.</p> <p>Cursor, key window and input object are erased: When the condition is not satisfied, cursor/key window/ object is erased.</p>	<p>○ ○</p>	<p>× ×</p>
<p>Cursor input area</p>	<p>Set the display method of input area in input area.</p> <p>1 character blink :One character blinks within input area.</p>  <p>All reverse + 1 character blink :The characters are reversed within input area, and only one character blinks</p> 	<p>○ ○</p>	<p>× ×</p>

(Continued to next page)

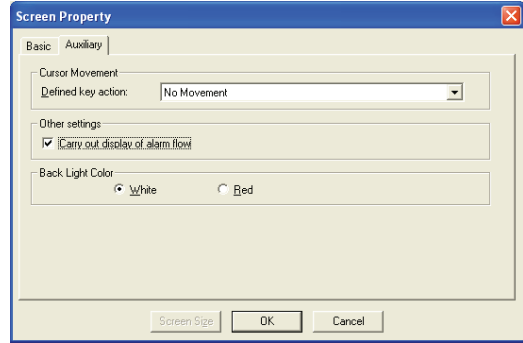
Items	Description	A	F	
Close cursor and key window when RET key is pressed.	Check this item to automatically erase the key window and input cursor when the RET key is touched after inputting numeric value/ASCII code with key window	<input type="radio"/>	<input checked="" type="radio"/>	
When touch input is detected, open key window at the same time	Check this item to automatically display the key window when the input area for numeric input function and ASCII input function is touched. (In the case of ASCII input, ASCII key screen No. must have been set in the key windows screen No. setting.) 	<input type="radio"/>	<input type="radio"/>	
Change touch key sound	Check this item to change the sound that is output by touching a touch switch. Then set sound No. of the sound file that replays the sound. The replay sound can be selected from the displayed list by clicking on [Reference] button.	<input type="radio"/>	<input checked="" type="radio"/>	
Carry out check for overlapping objects within GOT	Check this item to make the GOT to display a message when objects are overlapped due to screen calling function and superimpose window.	<input type="radio"/>	<input checked="" type="radio"/>	
Display the input range when inputs the out of range in Numerical Input	Check this item to display a message showing the input range if the value out of range is input on a key window while numerical input function is used.	<input type="radio"/>	<input checked="" type="radio"/>	
Use Serial Port, Setup, Language, Menu Key	Check this item to make the settings for system environment setup, language, serial port and menu key with a drawing software.	<input checked="" type="radio"/>	<input type="radio"/>	
View Format	Select the screen direction and division.  GOT-F900 series corresponding view format <ul style="list-style-type: none"> • Horizontal full size GOT-F900 series full type • Vertical full size F930GOT and F940WGOT • Divided into 2 horizontally (Right) F940WGOT • Divided into 2 horizontally (left) F940WGOT • Divided into 3 horizontally F940WGOT 	<input checked="" type="radio"/>	<input type="radio"/>	
Screen configuration settings	Sub screen color	Select a background of auxiliary screen when view format is divided into two or three by F940WGOT.	<input checked="" type="radio"/>	<input type="radio"/>
	Sub screen contents	Select the alarm list, alarm history, keyboard, and customize to be displayed on auxiliary screen.	<input checked="" type="radio"/>	<input type="radio"/>
	Display auxiliary screen on key window	Check this item to display the keyboard (Standard only) that appears on auxiliary screen when numerical input or ASCII input is touched.	<input checked="" type="radio"/>	<input type="radio"/>

2 Setting dialog box for each screen

Make the auxiliary settings for each screen on base screens or window screens.



GOT-A900 series



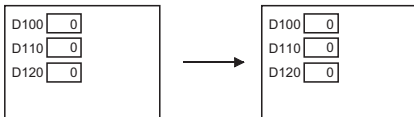
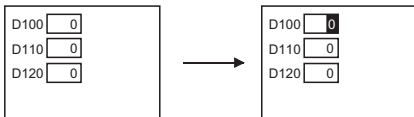
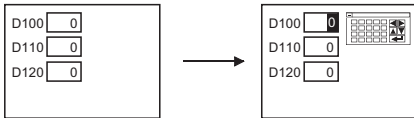
GOT-F900 series

Basic **Auxiliary** Key Window

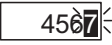

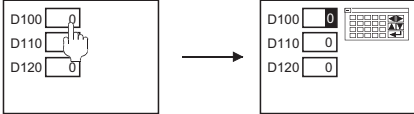
A

Basic **Auxiliary**

F

Items	Description	A	F
Screen setting has the priority over project setting	Check this item to give screen settings priority over project setting.	<input type="radio"/>	<input checked="" type="checkbox"/>
Action when condition success	Set the display method of cursor and key window with numerical input function and ASCII input function when the condition is satisfied/switching screen. Cursor and key window are not displayed: When the condition is satisfied/switching screen, the cursor or key window is not displayed. In the case of key input, touch the input area. 		
Action when switching screens	Only cursor is displayed: When the condition is satisfied/switching screen, the cursor is displayed automatically. If there is a key for key input on the screen, key input can be executed.  Both cursor and key window are displayed: When the condition is satisfied/switching screen, the cursor and key window are displayed. Even if there is no key for key input on the screen, key input can be executed. 	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Items	Description	A	F
Cursor Position	<p>Set the cursor position when switching screen.</p> <p>Left top :When switching screen, the cursor is displayed on input area in upper left part of the screen.</p> <p>User ID minimum :When switching screen, the cursor is displayed on the input area in which minimum user ID has been set.</p> <p>User ID order :When switching screen, the cursor is displayed on the input area in which the set user ID order has been set.</p>		×
Action when condition fail	<p>Set the display method of cursor and key window with numerical input function, ASCII input function and switch touch function when the condition is not satisfied.</p> <p>They will be erased only when the trigger has been set to [ON] or [OFF].</p> <p>Shape of numeric value/ ASCII input (frame) is displayed as it is.</p> <p>Cursor, key window and input object are not erased: When the condition is not satisfied, cursor/key window/ object is displayed as it is.</p> <p>Cursor and key window are erased: When the condition is not satisfied, cursor/ key window is erased.</p> <p>Cursor, key window and input object are erased: When the condition is not satisfied, cursor/key window/ object is erased.</p>	○	×
Cursor input area	<p>Set the display method of input area in input area.</p> <p>1 character blink :One character blinks within input area.</p>  <p>All reverse + 1 character blink :The characters are reversed within input area, and only one character blinks</p> 	○	×
When touch input is detected, open key window at the same time	<p>Check this item to automatically display the key window when the input area for numeric input function and ASCII input function is touched. (In the case of ASCII input, ASCII screen No. must have been set in the key windows screen No. setting.)</p> 	○	×
Defined key action *1	<p>Select the position to display the input cursor after defined key for numeric value input/ASCII input function is input.</p> <p>As a right arrow key: (GOT-A900 series only) After defined key input, the cursor moves to the input area at the right of the position set in [Position to Specify Area].</p> <p>As a down arrow key: (GOT-A900 series only) After defined key input, the cursor moves to the input area at the bottom of the position set in [Position to Specify Area].</p> <p>No movement: After defined key input, the cursor does not move from the written input area.</p> <p>User ID order (no cursor move when it's immovable): After defined key input, the cursor moves to the input areas in user ID order. (This setting is valid when the settings of move destination ID have been made on "Numeric input/ASCII input function" option tab dialog box.</p> <p>Cursor and key window are erased: After defined key input, cursor and key window are erased.</p>	○	○

(Continued to next page)

1	OVERVIEW
2	SPECIFICATIONS
3	COMMON SETTING
4	PREPARATORY OPERATION FOR OBJECT SETTING
5	COMMON SETTINGS FOR OBJECTS
6	LAMP, SWITCH
7	NUMERICAL/ CHARACTER DISPLAY
8	ALARM

Items	Description	A	F
Position to specify area *1	Bottom-right :Move the cursor based on the position at the lower-right of input area.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Top-left :Move the cursor based on the position at the upper-left of input area.	<input type="radio"/>	<input type="checkbox"/>
Carry out station no. change	Check this item to use station No. change function.	<input type="radio"/>	<input checked="" type="checkbox"/>
Carry out display of alarm flow	Check this item to use floating alarm function.	<input type="radio"/>	<input type="radio"/>
Move key window	Don't move :Key window is displayed at the set fixed position.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Automatic move :Key window is displayed at the position that is not overlapping with input area.	<input type="radio"/>	<input type="checkbox"/>
Back Light Color	Select a back light color from (White/Red). (for F920GOT-K only)	<input checked="" type="checkbox"/>	<input type="radio"/>

For details of * 1, refer to the following.

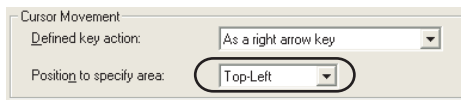
*1 Relation between [Position to specify area] and specified area of cursor (for GOT-A900 series only)

(1) When the cursor is not moved as designed

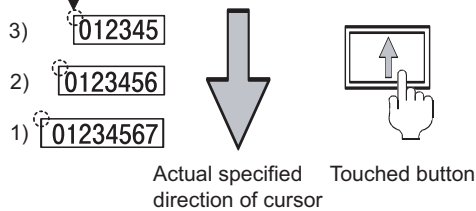
The following diagram shows the example of which the cursor is moved to the opposite position with the cursor direction of the touched arrow key.

When changing the setting of [Position to specify area] from [Top-Left] to [Bottom-Right], the cursor is enabled to move the same cursor direction as the direction of the touched arrow key.

(Before setting change)



[Position to specify area]



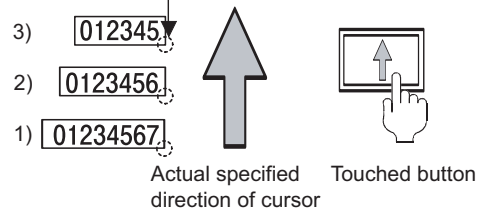
The cursor is moved in the order, 3) → 2) → 1).

As the top-left parts of three objects are not on the same x-coordinate, the cursor is moved to the closest object on the left when operating to move the cursor to top direction.

(After setting change)



[Position to specify area]

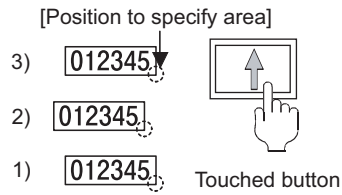


The cursor is moved in the order, 1) → 2) → 3).

As the bottom-right parts of three objects are on the same x-coordinate, the cursor is moved to the same direction as the arrow key when changing [Position to specify area] from [Top-Left] to [Bottom-Right].

- (2) When the cursor is not moved as designed even if changing the setting of above (1)
Readjust the arrangement of the objects as follows.

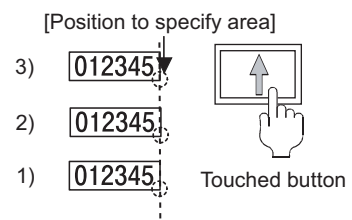
(Before setting change)



The cursor is moved in the order, 1) → 3) → 2).

As the [Position to specify area] is not on the same x-coordinate, the cursor is moved in the order, 1) → 3) → 2).

(After setting change)



The cursor is moved in the order, 1) → 2) → 3).

Arrange the objects so that the [Position to specify area] may be on the same x-coordinate.
(When moving the cursor from side to side, arrange the objects so that the [Position to specify area] may be on the same y-coordinate.)

- (3) When the cursor is not moved as designed even if readjust the arrangement of the objects
Directly touch the object to input.

4.5.3 Precautions

1 Precautions when making the auxiliary settings for each project

- (1) Precaution a touch key sound with reference to precautions for sound function.

 Section 12.5 Sound

- (2) Precautions for displaying the input range when a value out of range is input by numerical input function.

(a) In the case of A95*GOT, A956WGOT and GOT-F900 series, the input range cannot be displayed on key window.

2 Precautions when making the auxiliary settings for each screen

- (1) RET key operation setting

Make sure to uncheck [Close cursor and key window when RET key is pressed] in the project setting when [Close cursor and key window when RET key is pressed] and [User ID order:(no cursor move when it's immovable)] are used for defined key action setting, If checked, action of [Close cursor and key window when RET key is pressed] will be executed with priority.

- (2) "Action when condition success", "Switching Screen Option" setting

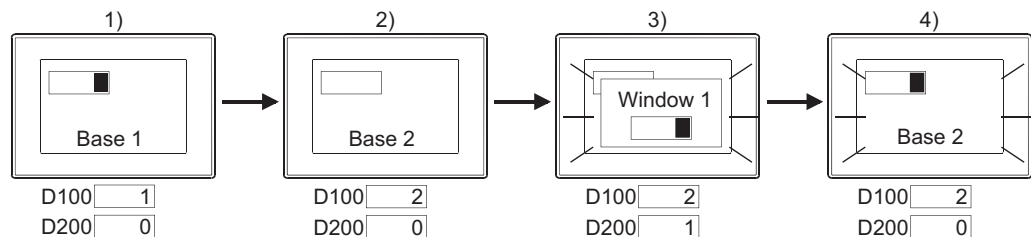
It is recommended to make the same settings for the base screen and overlap window. Otherwise, the screens may not operate correctly as described below.

For "Action when condition success", "Switching Screen Option" setting, the settings for the screen activated most recently remain active.

If the settings of an overlap window are active (the overlap window is displayed after the base window is switched) as described in 3) below, and then the overlap window is closed as described in 4), its settings will remain active (a cursor is displayed).

Ex)	▪ Base screen 1	When condition success	Only a cursor is displayed.
	▪ Base screen 2	When condition success	A cursor and key window are not displayed.
	▪ Window screen 1	When condition success	Only a cursor is displayed.
	▪ Base screen switching device D100		
	▪ Window screen switching device D200		

<Operaion when condition success>



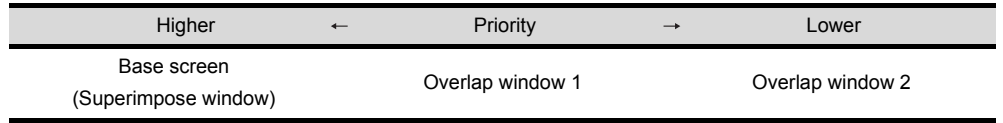
Activating base screen settings

Make the settings in order that a superimpose window set as a dummy on a base screen will be switched when closing an overlap window.

(The script function is used to observe the overlap window switching device, and change the superimpose window switching device when the device value is 0.)



Setting priority when base screen, overlap window 1, 2 are simultaneously switched.
Setting priority of the screens is as follows:



When switching the station No. (common to all projects) or security level, GOT recognizes that screens are switched, and activates the settings of base screen according to the above priority.
(Also when station No. is switched simultaneously for each screen type, GOT operates as described above.)

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

8

ALARM

4.6 Key Window



This section explains how to operate key window for numeric value input function and ASCII input function as well as how to create user-key-window.

4.6.1 Key window type

Key window can be classified into two types: GOT original key window (Default key window) and key window created by user (User-created key window).

Default key window is used for numerical input.

The key window for ASCII input must be created by user.

1 Default key window

Default key window will display the key window according to the data type (hexadecimal, decimal, octal or binary) of input area automatically.

When the data type of input area is hexadecimal, decimal, octal or binary, the key window for hexadecimal input will be displayed.

(1) Key window for decimal input



(2) Key window for hexadecimal input



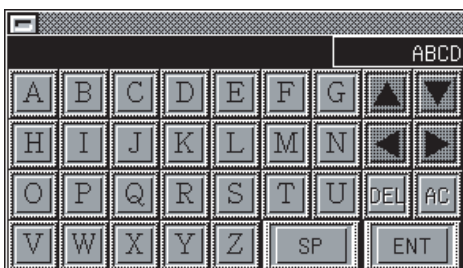
* The above windows are based on GOT-A900 series. Those for GOT-F900 series are different.

2 User-created key window

User's original key window can be created by registering a user-created window as key window.

To use ASCII input function, create a key window with a user-created key window.

(1) User-created key window (Created for ASCII input)



(2) User-created key window (Created for numeric input (hexadecimal))



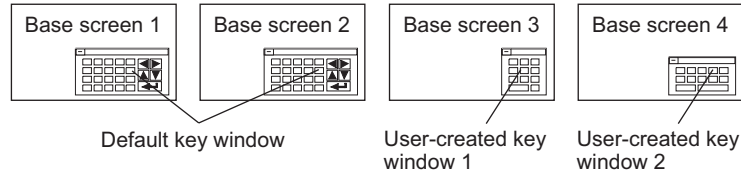
* The above windows are based on GOT-A900 series. Those for GOT-F900 series are different.

Remark

Key window to be displayed

A key window to be displayed can be set in project unit or screen unit. A suitable key window for each screen can be displayed from multiple key windows created beforehand.

Section 4.6.4 How to create user-created key window



4.6.2 Keys on default key window and display items

Keys displayed on default key window and the display items will be explained as follows.



(Example: Key window for hexadecimal)

Items	Description	A	F
	Displays the input value.	<input type="radio"/>	<input type="radio"/>
	Displays the numerical input range. (Does not display in A95*GOT, A956WGOT or GOT-F900 Series.)	<input type="radio"/>	<input checked="" type="radio"/>
	The key to input numeric value, decimal point and minus symbol. (In GOT-F900 series, decimal point is not displayed.)	<input type="radio"/>	<input type="radio"/>
	The key to move the input cursor. (In GOT-F900 series, left/right keys are not displayed.)	<input type="radio"/>	<input type="radio"/>
	The key to delete the least significant digit of the numeric value being input and shift the whole numeric value to right by one digit.	<input type="radio"/>	<input type="radio"/>
	The key to erase whole input numeric value.	<input checked="" type="radio"/>	<input type="radio"/>
	The key to write the input numeric value to a device. (Confirmation key)	<input type="radio"/>	<input type="radio"/>
	The key to close key window.	<input type="radio"/>	<input type="radio"/>

*1 Input value and input range can be set to not be displayed.

Section 4.6.4 2 Setting to display key window

*2 When state is set by numerical input, the input range of the state with minimum No. will be displayed.

Section 5.4 State Setting

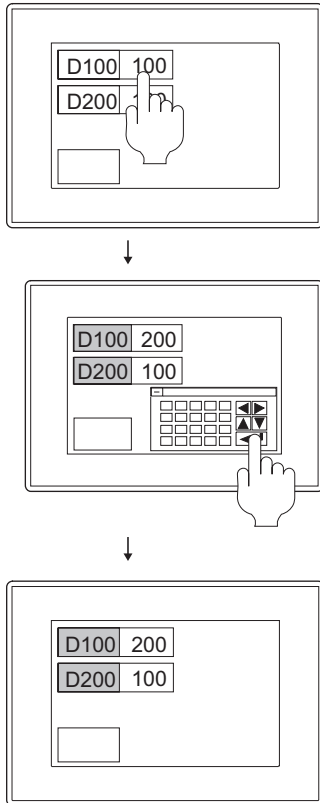
4.6.3 How to operate key window

This section explains the methods of displaying a key window.

1 Basic operation method

Basic operation method of key window is explained as follows.

In the following case, numerical input function is used to explain key window operation as an example. The operation is the same as when ASCII input function is used.



① Touch the numerical input function to be input.

② As a key window appears, input the numeric value.

Then, touch the RET key.

By default, a key windows is displayed at the lower-right.

The user can set key window position.

③ The input value is updated, and key window is closed.

Remark

(1) Key window position

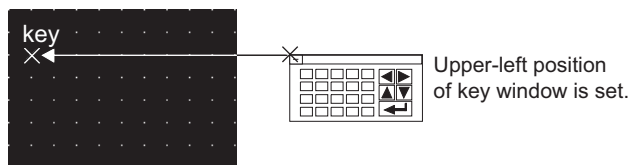
Key window position can be set as follows.

① Select either of the following ways from the menu.

GOT-A900 Series: [Object] → [Window Position] → [Key Window]

GOT-F900 Series: [Object] → [Key Window Position]

② Click on the position to display a key window with a mouse.



(2) Key window display

By making the auxiliary settings, following operations can be carried out.

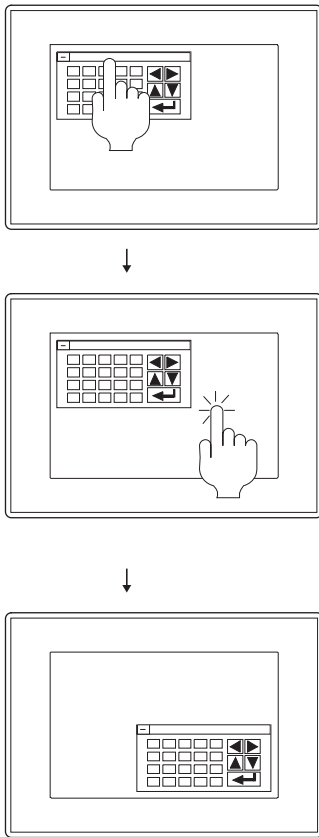
☞ Section 4.5 Auxiliary Settings

Example 1: A key window is displayed at the same time when switching to the screen on which numeric input function and ASCII input function are set.

Example 2: A key window will not be displayed when numerical input function or ASCII input function is being touched.

2 Method of moving key window

This section explains how to move a key window.



- 1 Touch the upper part of key window.
A key window goes to movement mode.
- 2 Touch the position to move the key window to within three seconds.
If not touched in more than three seconds, the movement mode of the key window will be released. Even if the position in which the object has been set is touched within less than three seconds, the object will not operate.
- 3 The key window moves to the specified position.



Hint!

Method of confirming key window movement mode (for GOT-A900 series only)

If buzzer volume is set to [LONG] or [SHORT] within GOT menu setup utility, buzzer will be output when a key window is in movement mode. If buzzer volume is set to [NONE], it will not be output.

4.6.4 How to create user-created key window

A user-created key window is created in order to input numeric value on the original key window or display key window by ASCII input function.

To use a user-created key window, arrange touch switches on a window screen and set the screen as key window.

The user-created key window can be displayed instead of default key window, and can control as default key window.



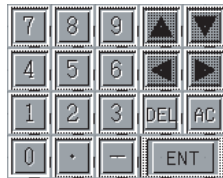
To create key window quickly

Keys for numeric input/ASCII input have been registered in the library.

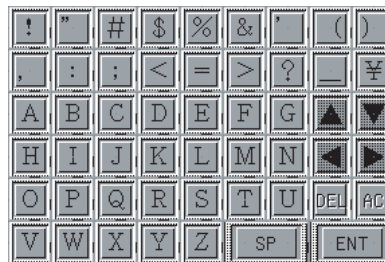
A user-created key window can be created quickly by utilizing those keys.

Example: The key registered in the library
(Keys other than following types have been registered.)

Keys for numerical input



Keys for ASCII input



For details of library, refer to the following manual.

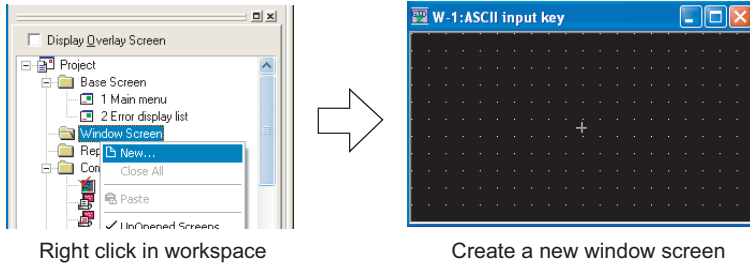
 GT Designer2 Version □ Operating Manual

1 Outline procedure

The outline procedure of creating a user-created key window is as follows.

Start

Create a window screen.

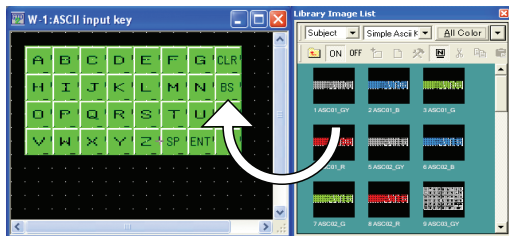


Right click in workspace

Create a new window screen

- Create a new window screen.
 - ☞ GT Designer2 Version □ Operating Manual

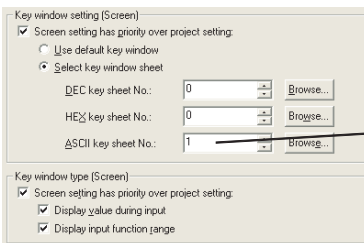
Set touch switches assigned with key code on the window screen.



Set touch switches on the window screen. Library is available.

- Set the touch switch assigned with key code on window screen.
 - ☞ Section 6.2 Touch Switch
 - By utilizing the key for numeric input/ASCII input in the library, it can be easily set.

Make the settings in order that the created window screen will be displayed as a key window.



Select a key window to be used as a key window for ASCII input.

- Set the screen to be used commonly for a whole project or used for each base screen.
 - ☞ 2 Setting to display key window

Make the required settings to display input value and input range.



Set input value position and number of digits.

- Set the view format and position of input value and input range.
 - ☞ 3 Input area/Input range setting (for GOT-A900 series only)

Preview on GT Designer2.



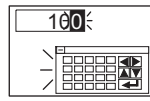
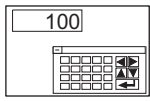
- Confirm the display image on GT Designer2.
 - ☞ GT Designer2 Version □ Operating Manual

(To next page)

(From previous page)



Set the cursor action and key window action as necessary.



When condition success, cursor and key window are displayed automatically.

Cursor and key window are displayed.

••Set the key window display method and cursor action.



Section 4.5 Auxiliary Settings



Completed

2 Setting to display key window

Set a key window to be used for a whole project or for each screen. (for GOT-A900 series only).

(1) Settings

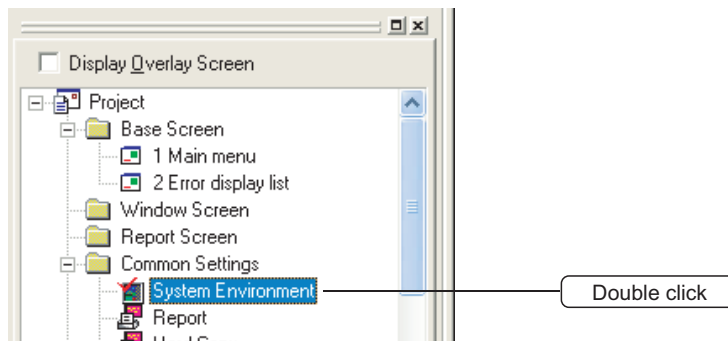
(a) When setting a key window used for a whole project

- 1 Select [Common] → [System Environment] from the menu.
- 2 As [System Environment] dialog box appears, double click on [Key Window].
- 3 As the setting dialog box appears, make the settings with reference to the following explanation ((2)(a)).

Remark

When setting in project workspace

Double click on it to display "System Environment" dialog box. And then double click on "Key Window" there.



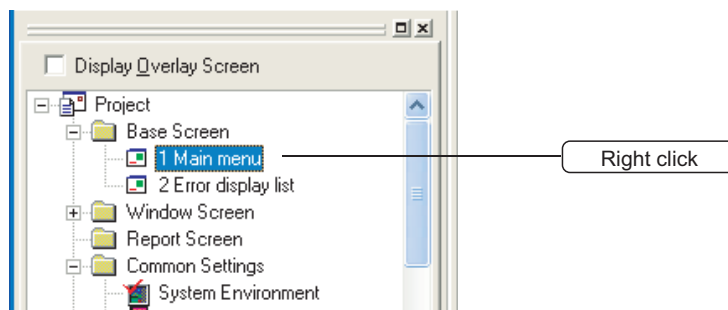
(d) When setting a key window used for each screen (for GOT-A900 series only)

- 1 Select a screen, and then select [Screen] [Property] from the menu.
- 2 As the setting dialog box appears, double click on "Key window" tab dialog box, and make the settings with reference to the following explanation ((2)(b)).

Remark

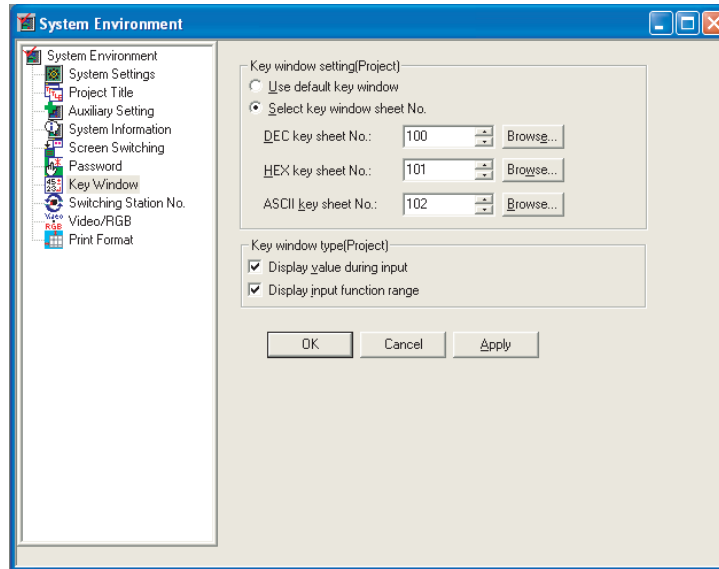
When setting in project workspace

Select a screen and right-click on the screen with a mouse, and then select [Property]. As the setting dialog box appears, double click on "Auxiliary" tab dialog box.



(2) Setting items

(a) When setting a key window for a whole project



Items	Description	A	F
Use default key window	Select this item to use a default key window.	<input type="radio"/>	<input type="radio"/>
Select key window sheet No.	Select this item to use a user-created key window.	<input type="radio"/>	<input type="radio"/>
DEC key sheet No.	Set a window screen to be used as key window for numerical input (Decimal/Hexadecimal) and ASCII input.		
HEX key sheet No.	The screen can be confirmed by clicking on [Browse] button. DEC/HEX key sheet No.... :When the No. is set to 0, a default key window will be displayed.	<input type="radio"/>	<input type="radio"/>
ASCII key sheet No.	ASCII key sheet No.... :When the No. is set to 0, a key window will not be displayed in GOT-A900 series. In GOT-F900 series, a default key window will be displayed.		
Display value during input	Check this item to display the value being input on a key window.	<input type="radio"/>	<input checked="" type="checkbox"/>
Display input function range	Check this item to display the data input range on a key window.	<input type="radio"/>	<input checked="" type="checkbox"/>

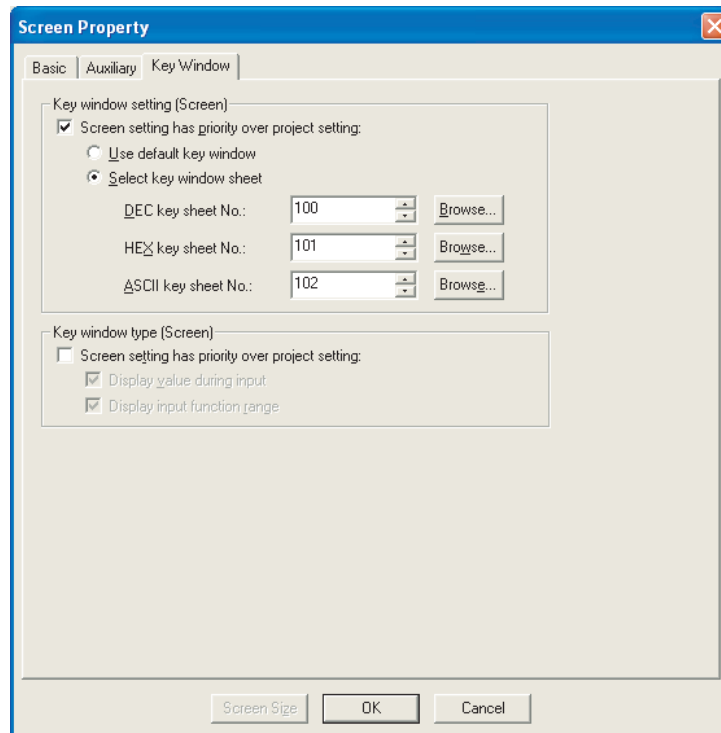


To display the value being input and the input range in GOT-F900 series

To display the value being input and the input range in GOT-F900 series, arrange numerical display on the created window.

- (1) When displaying value being input
Arrange numerical display and set GOT internal device (GD12) in the device.
- (2) When displaying input range
Arrange numerical display and set GOT internal device in the device.
For upper limit of input numeric value, set GOT internal device GD8 to 32 bit (GD8, GD9).
For lower limit of input numeric value, set GOT internal device GD10 to 32 bit (GD10, GD11).

(b) When setting a key window for each screen



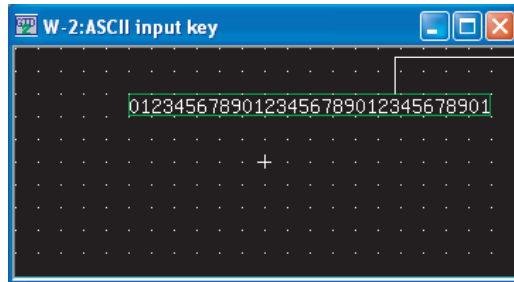
Basic Auxiliary **Key Window**

Items	Description	A	F
Screen setting has priority over project setting	Check this item to give screen settings priority over project setting. After setting, select the type of key window to be used.	<input type="radio"/>	<input checked="" type="checkbox"/>
Use default key window	Select this item to use a default key window.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select key window sheet	Select this item to use a user-created key window.	<input type="radio"/>	<input checked="" type="checkbox"/>
DEC key sheet No.	Set a window screen to be used as a key window for numerical input (Decimal/Hexadecimal) and ASCII input.	<input type="radio"/>	<input checked="" type="checkbox"/>
HEX key sheet No.	The screen can be confirmed by clicking on [Browse] button. DEC/HEX key sheet No. :When the No. is set to 0, a default key window will be displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
ASCII key sheet No.	ASCII key sheet No. :When the No. is set to 0, a key window will not be displayed in GOT-A900 series. In GOT-F900 series, a default key window will be displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
Screen setting has priority over project setting	Check this item to give screen settings priority over project setting. After setting, select the display of key window to be used.	<input type="radio"/>	<input checked="" type="checkbox"/>
Display value during input	Check this item to display the value being input on a key window.	<input type="radio"/>	<input checked="" type="checkbox"/>
Display input function range	Check this item to display the data input range on a key window.	<input type="radio"/>	<input checked="" type="checkbox"/>

3 Input area/Input range setting (for GOT-A900 series only)

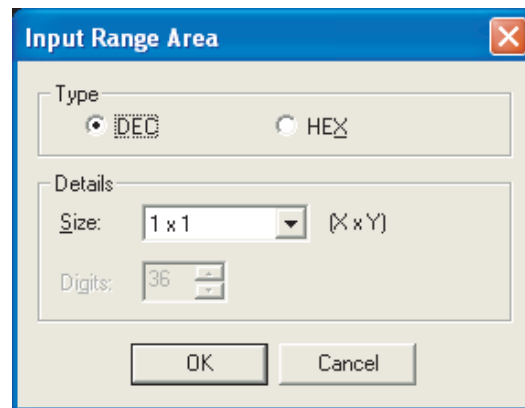
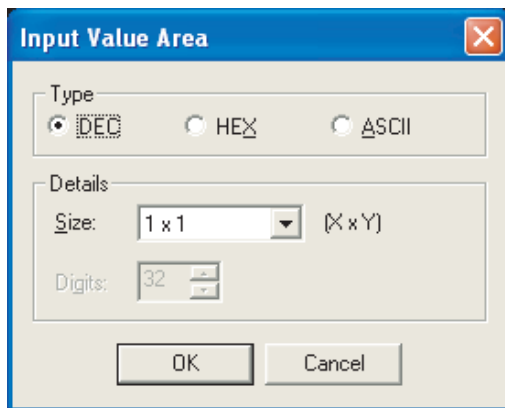
Set the area to display the value being input and the input range on user-created key window.

- 1 Select [Object] → [Key Window Setting] → [Input Value Area] or [Input Range Area] from the menu.
- 2 Click on the position to display input value/input range.



The input value/input range area is displayed on which a mouse is clicked.

- 3 Double click on the assigned input value area/input range area to set the attribute.



Items		Description	A	F
Type		Select the view format of the input value to be displayed.		
		Dec :Select this item when a decimal key window has been created.	<input type="radio"/>	<input checked="" type="checkbox"/>
		Hex :Select this item when a hexadecimal key window has been created.	<input type="radio"/>	<input checked="" type="checkbox"/>
Details		ASCII :Select this item when a key window for ASCII input has been created.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Size	Select character size of the input value to be displayed.		
	Digits	When setting input value area For ASCII input, select the number of digits (1 to 80) to be used for display. When [Type] is set to [Decimal], [Digits] will be fixed to 32 digits; set to [Hexadecimal], [Digits] will be fixed to 16 digits. When setting input range Fixed to 36 digits.	<input type="radio"/>	<input checked="" type="checkbox"/>

4.6.5 Precautions

This section provides the precautions for using key window are as follows.

1 Precautions for using default key window and user-created key window.

A key window cannot be displayed when details of alarm is displayed on a comment window by using alarm list display function and alarm history display function.

2 Precautions for creating user-created key window (for GOT-A900 series only)

- (1) Object that can be set on user-created key window
Make sure to set only touch switches in which key codes for numerical input/ASCII input has been set on a user-created key window.
- (2) Action of the touch switch set on a user-created key window
 - (a) If the actions of key code, bit SET and word SET are set together in the action setting, only key code action will be available.
 - (b) Even if ON/OFF shape is set, touch switch will be displayed in OFF shape.

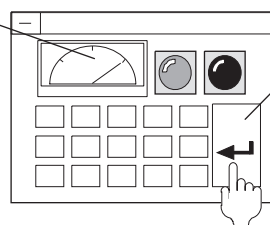


To create a key that includes function (1) and (2)

When creating a key window with a key that includes the above functions, use a normal window screen as a key window without making the settings for displaying the key window.

Example: Normal overlap window used as key window

- Set the objects except Numerical input and ASCII input.



- Turn ON the other device (bit SET) simultaneously with RETURN (0000H).

- (3) Size of user-created key window
The key window size is same with the size of set window screen.
It can be changed by changing the size of window screen.

GT Designer2 Version□ Operating Manual

The applicable size of window screen is different according to the status of close key and move key, i.e., whether they are displayed or not.

Section 2.1.2 Window screen specifications

- (4) Input value area/Input range area (for GOT-A900 Series only)
 - (a) In A95*GOT and A956WGOT, input range area can not be displayed.
In GOT-F900 series, input value area and input range area cannot be set.
 - (b) Multiple input value areas/input range areas cannot be set on one window screen.

5. COMMON SETTINGS FOR OBJECTS

This chapter is described the items to be set commonly after Chapter 6.

5.1 Device Setting




This chapter explains the setting method of the device applicable for monitoring or writing using object functions.


5.1.1 Device setting

1 Device that can be set by GT Designer2

For details on the device type and setting range, please refer to the following.

 Section 2.6 Supported Devices

2 Device usable for PLC monitoring

The device range available for setting by GT Designer2 depends on the PLC type selected when the GT Designer2 project is created. ( Section 3.1 GOT/ PLC Type Setting)

As the following table shows, the device range set by GT Designer2 may be different with the usable range in PLC.

Example: Difference between the device setting range of PLC and GT Designer2


Device setting range	SIEMENS PLC: SIMATIC S7-300 Series (Input relay)	Matsushita Electric Works PLC: MEWNET-FP Series (Index register)
PLC	10000 to 11277	IX0 to IX13, IY0 to IY13
GT Designer2	10000 to 15117	N/A

GT Designer2 does not check whether the device settings (device name, device No.) are actually available for the target PLC.


For the availability, check it as follows:

(1) Check the following when drawing

- Device type and setting range available for setting by GT Designer2.

 Section 2.6 Supported Devices

- Device type and setting range available for PLC monitoring

 User's Manual of the connected PLC

(2) Check when monitoring

Check the device name and range with the system alarm.

If a device name or range invalid for the PLC is set for monitoring, system alarm "322 Out of device range error" will occur.

5.1.2 Settings

Click the **Device** button in the setting dialog box provided for each object function and make setting for devices.

Example: Setting a device to be monitored by "Lamp"

The diagram illustrates the workflow for setting a device. It starts with the **Bit Lamp** dialog box (Basic tab) where the **Device** button is highlighted with a 'Click' callout. An arrow labeled 'Set device' points to the **Device <Specification:Bit>** dialog box, which allows for selecting a device (e.g., '0010') and configuring its properties like bit position, block, and unit top I/O. A final arrow points to a smaller **Bit Lamp** dialog box where the **Device** field now contains 'X0010', with a callout stating 'Device can be set by input from keyboard.'

Point

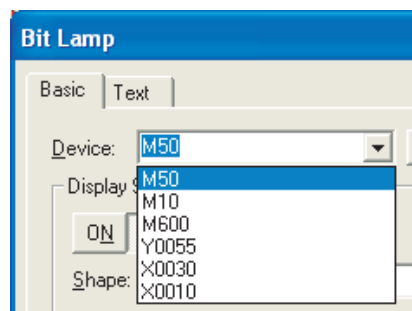
Specifying a bit device to the device of word format (16/32bits)
The device number that can be set is a multiple of 16.

Hint!

Setting of frequently-used device.

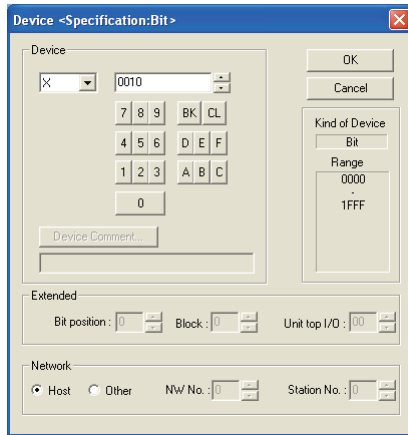
Once a device is set, it can be selected from the displayed list for setting from the next time.

Maximum 10 device names can be added to the list. If more than 10 devices are kept, the device name will be deleted from the oldest one.

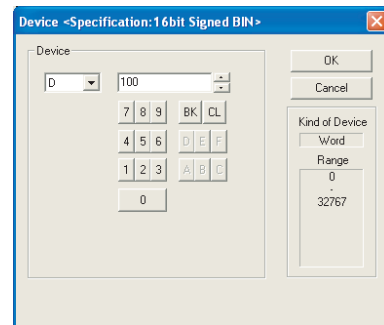


5.1.3 Setting items

1 Mitsubishi Electric PLC



GOT-A900 series



GOT-F900 series

Items		Description	A	F
Device		Select the device name to be set. Then, set the device number by [0] to [F] buttons (or by direct input). When setting BM (buffer memory), set the buffer memory address in the space for the device number.	○	○
	Device Comment	Reading the device comment data created by GX Developer and confirming the device comment/ device name is available during device setting. (GT Designer2 Version <input type="checkbox"/> Operating Manual)	○	×
Kind of Device		Displays the device type (Bit/Word) selected in [Device].	○	○
Range		Displays the setting range available for the device selected in [Device].	○	○
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	○	×
	Block	Set the block number of the extended file register. (It can be set when "ER" is selected as the device name.)	○	×
	Unit top I/O	Set the head I/O number of the buffer memory for the special function module. Set the first 2 digits of the 3-digit head I/O number. (It can be set when "BM" is selected as the device name.)	○	×
Network ^{*1}		Set the station number of the PLC to be monitored.	○	○
Host		Select this when monitoring the host PLC.	○	×
Other ^{*2}		Select this when monitoring other PLC. Then, set the station number and network number of the PLC to be monitored. NW No. : Set the network No. Station No. : Set the station No.	○	×

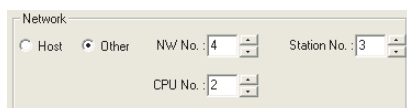
For details of *1, *2, refer to the following.

***1 When monitoring multi-CPU system**

- In the case of GOT-A900 series
Set the CPU No. (1 to 4) in the network setting when monitoring a multiple CPU system.
When the CPU No. is set to "0", set the CPU No. (1 to 4) in the network setting.

Connection method			Monitor device
Direct CPU connection			Connected PLC CPU
Bus connection	Computer link connection	MELSECNET connection	Control CPU
Ethernet connection	CC-Link connection		

If monitoring a single CPU system, set CPU No. to 0.



- In the case of GOT-F900 series
In the Q multi-CPU system, set the CPU unit No. (1 to 4) in the network setting.
In the single-CPU system, select "System Settings"->"PLC Type", then select "MELSEC-QnA/Q".

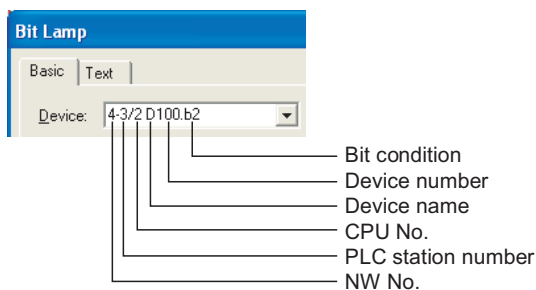
***2 When monitoring B and W assigned in link parameter and network parameter.**

Set device B and W running cyclic communication as [Host].
If it is set as [Other] in the network setting, the cyclic transmission will be changed to the transient transmission irrespective of the network type, resulting in delay of the object display.



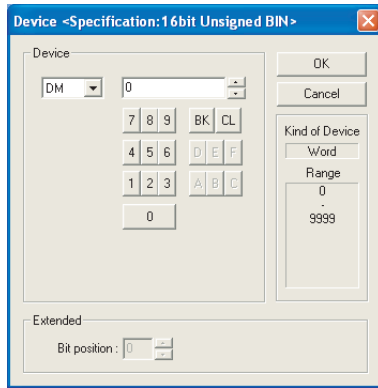
Setting device by inputting directly from keyboard

When setting it by inputting directly from the keyboard, set the items as follows:

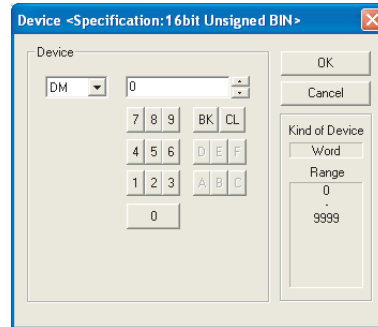


1	OVERVIEW
2	SPECIFICATIONS
3	COMMON SETTING
4	PREPARATORY OPERATION FOR OBJECT SETTING
5	COMMON SETTINGS FOR OBJECTS
6	LAMP, SWITCH
7	NUMERICAL/ CHARACTER DISPLAY
8	ALARM

2 Omron PLC



GOT-A900 series

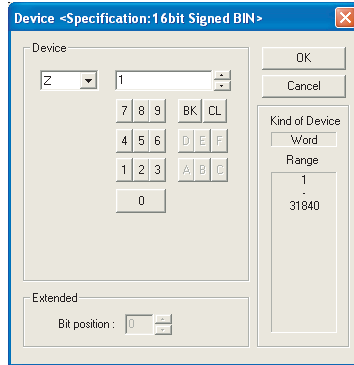


GOT-F900 series

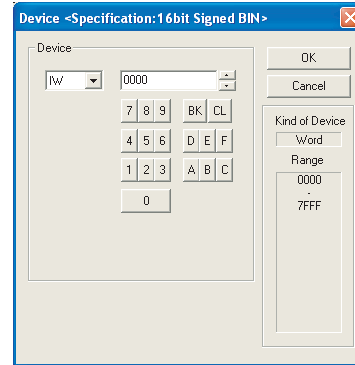
Items		Description	A	F
Device		Select the device name to be set. Then, set the device number by [0] to [F] buttons (or by direct input).	○	○
Kind of Device		Displays the device type (Bit/Word) selected in [Device].	○	○
Range		Displays the setting range available for the device selected in [Device].	○	○
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	○	×

3 Yaskawa PLC

(For GOT-A900: CP-9200 (H), CP-9200SH, CP-9300MS, CP-9300MC (only a portion of this range), MP-920, MP-930, PROGIC-8
For GOT-F900: CP-9200SH, MP-920, MP-930)



GOT-A900 series



GOT-F900 series

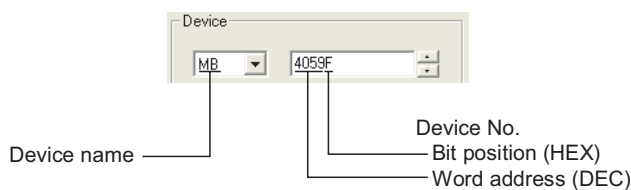
Items		Description	A	F
Device ^{*1}		Select the device name to be set. Then, set the device number by [0] to [F] buttons (or by direct input).	○	○
Kind of Device		Displays the device type (Bit/Word) selected in [Device].	○	○
Range		Displays the setting range available for the device selected in [Device].	○	○
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting).	○	×

For details of *1, refer to the following.

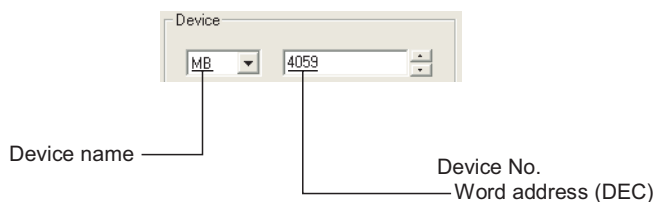
*1 Device settings for Yaskawa PLC (For CP-9200SH, CP-9300MS, MP-920, MP-930)

Set the coil device (MB) as follows:

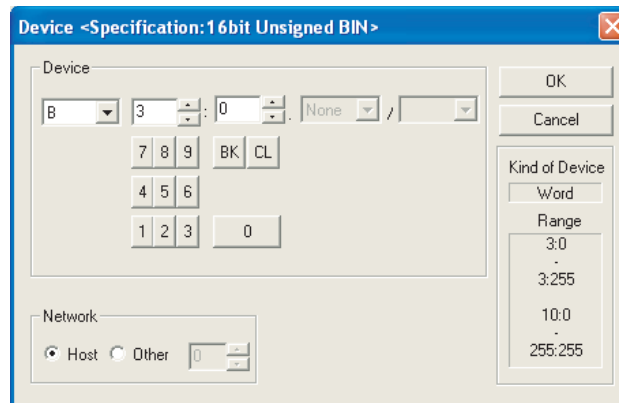
- (1) Set the link and coil as a bit device
Set it in the format of word address (DEC)+bit position (HEX).



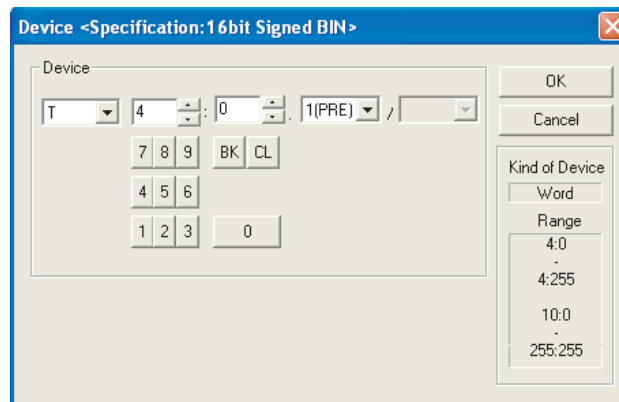
- (2) Set a register as a word device
Set it with a word address (DEC).



4 Allen-Bradley PLC



GOT-A900 series



GOT-F900 series

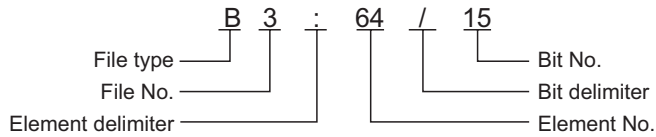
Items	Description	A	F
Device ^{*1}	Select the device name to be set. Then, set the file numbers/element number by [0] to [9] buttons (or by direct input).	<input type="radio"/>	<input type="radio"/>
Kind of Device	Displays the device type (Bit/Word) selected in [Device].	<input type="radio"/>	<input type="radio"/>
Range	Displays the setting range available for the device selected in [Device].	<input type="radio"/>	<input type="radio"/>
Network	Set the station number of the PLC connected to the specified device.	<input type="radio"/>	<input checked="" type="radio"/>
Host	Select this when monitoring the host PLC.	<input type="radio"/>	<input checked="" type="radio"/>
Other	Select this when monitoring the other PLC. Then, set the station number of the PLC to be monitored.	<input type="radio"/>	<input checked="" type="radio"/>

For details of *1, refer to the following.

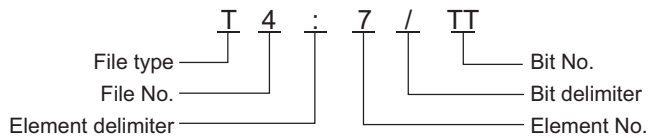
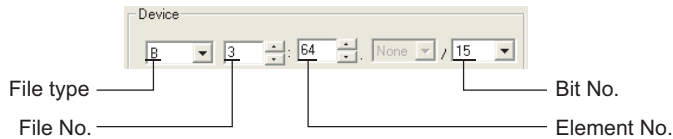
*1 Device settings for Allen-Bradley PLC

The Allen-Bradley PLC device addressing consists of a file and element. Make setting as follows using GT Designer2.

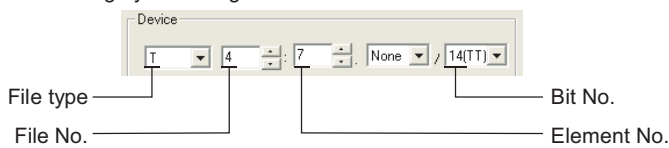
(1) Set a bit address as a bit device



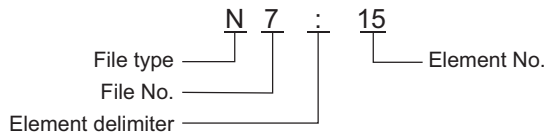
• Setting by GT Designer2



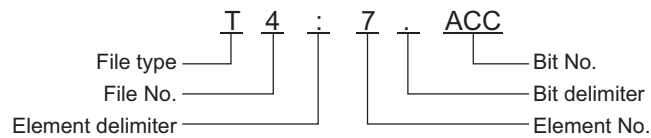
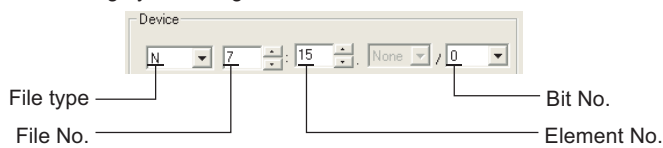
• Setting by GT Designer2



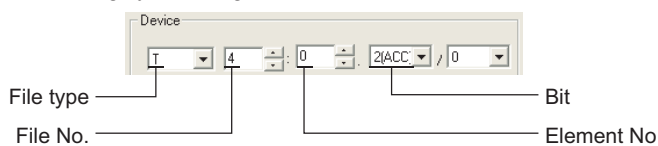
(2) Set an element address as a word device



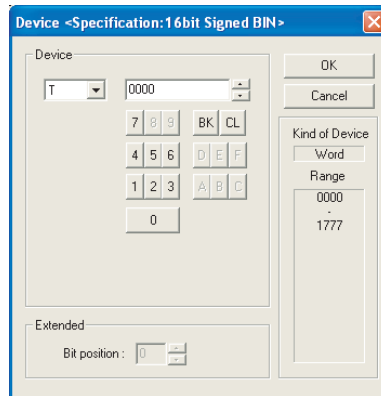
• Setting by GT Designer2



• Setting by GT Designer2



5 SHARP PLC (Compatible with GOT-A900 series only)



Items		Description	A	F
Device ^{*1}		Select the device name to be set. Then, set the address number by [0] to [F] buttons or by direct input).	<input type="radio"/>	<input checked="" type="checkbox"/>
Kind of Device		Displays the selected device type (Bit/Word) selected in [Device].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range		Displays the setting range available for the device selected in [Device].	<input type="radio"/>	<input checked="" type="checkbox"/>
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

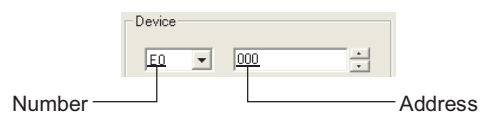
*1 Device settings of SHARP PLC

Make the device setting for Sharp PLC as follows:

(1) Set a register as a bit device.

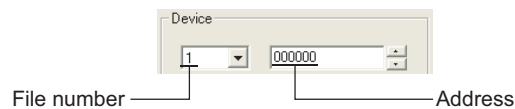
(a) Registers

Set the type (first 2 digits) and the address.



(b) File register

Set the file number and the address.



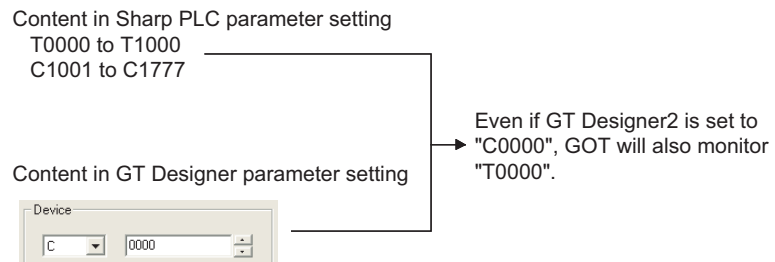
Remark

Monitoring the timer and the counter:

(a) Address setting

Be sure not to set the same address range for the timer and the counter. Even if these addresses are overlapped, GOT will display no error. GOT monitors them according to the address instead of the device name. Therefore, if the device invalid for the Sharp PLC side parameter is set using GT Designer2, GOT will monitor other device (the device corresponding to the set device address range).

Example:



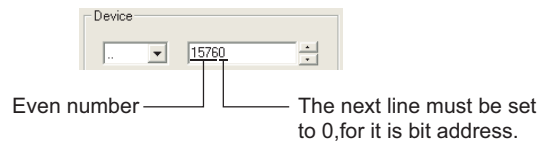
(b) Contact writing into timer and counter

Writing the contact for the timer and counter can only be done while the CPU is in RUN (while the timer and counter is in operation).

(2) Set a register and memory as a word device

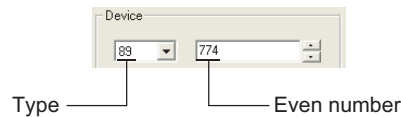
(a) I/O relay

Set a combination of the device address (multiple of 16)+bit address format (fixed to 0).

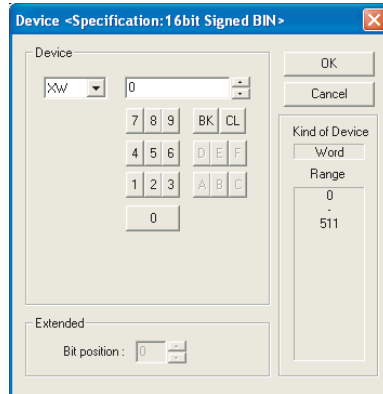


(b) Registers and file register

Set the device address (multiple of 16).



6 TOSHIBA PLC (GOT-A900 series only)



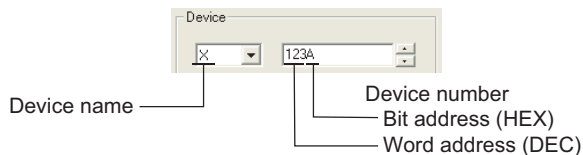
Items		Description	A	F
Device ^{*1}		Select the device name to be set. Then, set the device number by [0] to [F] buttons (or direct input it).	<input type="radio"/>	<input checked="" type="checkbox"/>
Kind of Device		Display the device type (Bit/Word) selected in [Device].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range		Display the setting range available for the device selected in [Device].	<input type="radio"/>	<input checked="" type="checkbox"/>
Extended	Bit position	Set the bit position for the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

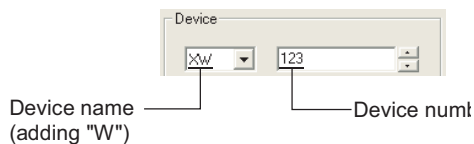
*1 Device settings for Toshiba PLC

Make the device setting for Toshiba PLC as follows:

- (1) Set a relay as a bit device
Set the device using the format of word address (DEC)+bit address (HEX)



- (2) Set a relay as a word device
Set the word address (DEC).
For device name setting, enter "W" after the bit device name.



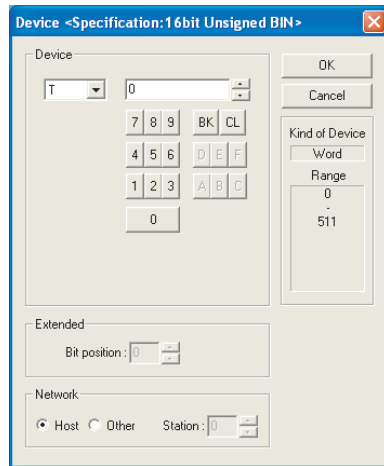
Remark

Notation of device address (when using PROSEC V series)

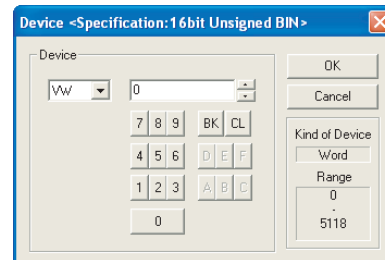
The notation of device address setting is different between the Toshiba PLC peripheral software and GOT. Refer to the following for details.

Section 2.6 Supported Devices

7 SIEMENS PLC



GOT-A900 series



GOT-F900 series

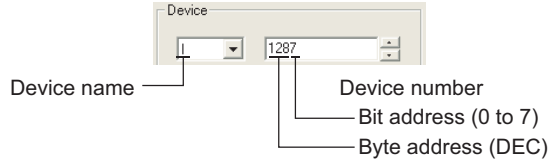
Items		Description	A	F
Device ^{*1}		Select the device name to be set. Then, set the device number by [0] to [F] buttons (or direct input it).	<input type="radio"/>	<input type="radio"/>
Kind of Device		Display the device type (Bit/Word) selected in [Device].	<input type="radio"/>	<input type="radio"/>
Range		Display the setting range available for the device selected in [Device].	<input type="radio"/>	<input type="radio"/>
Extended	Bit position	Set the bit position for the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	<input type="radio"/>	<input checked="" type="radio"/>
Network		Set the monitor target of the set device.	<input type="radio"/>	<input checked="" type="radio"/>
	Host	Select this to monitor the PLC specified as the host from the GOT utility (setup).	<input type="radio"/>	<input checked="" type="radio"/>
	Other	Select this when monitoring the PLC other than the one specified as [Host]. Then, set the PLC MPI address.	<input type="radio"/>	<input checked="" type="radio"/>

For details of *1, refer to the following.

*1 Device settings of SIEMENS PLC

Make the device setting for SIEMENS PLC as follows:

- (1) Set a bit memory as a bit device
Set the device using the format of byte address (DEC)+bit address (0 to 7)



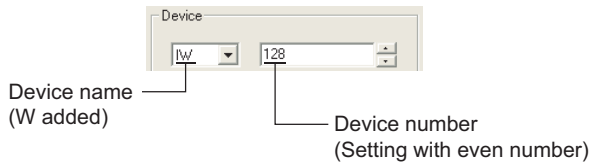
Remark

Notation of bit memory

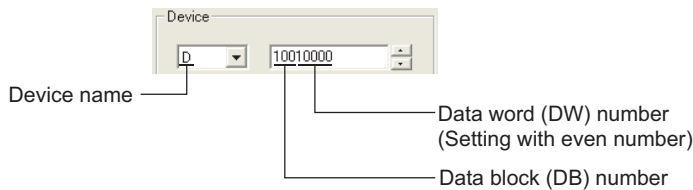
The difference in bit memory notation between GOT and PLC is as follows:

Notation of GOT	Notation of PLC
Q0007	Q0.7

- (2) Set a bit memory as a word device
Set it with device number.
For the device name setting, enter "W" after the bit memory device name.



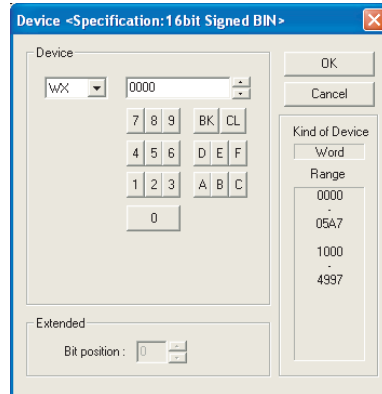
- (3) When setting a data register
Set the device using the format of data block (DB) + data word (DW).



Remark

- (1) Before setting data register
 - (a) It is necessary to define the data block using a peripheral software and sequence program, before using a data register.
 - (b) Setting more than one data block cannot be done.
- (2) Timer (Current value) (T)
Only one device can be set for the write target of this device.
Therefore, multiple devices, such as, using the recipe function, etc., cannot be used.

8 HITACHI PLC (GOT-A900 series only)



Items		Description	A	F
Device *1		Select the device name to be set. Then set the device number by [0] to [F] buttons (or direct input).	○	×
Kind of Device		Display the device type (Bit/Word) selected in [Device].	○	×
Range		Display the setting range available for the device selected in [Device].	○	×
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	○	×

For details of *1, refer to the following.

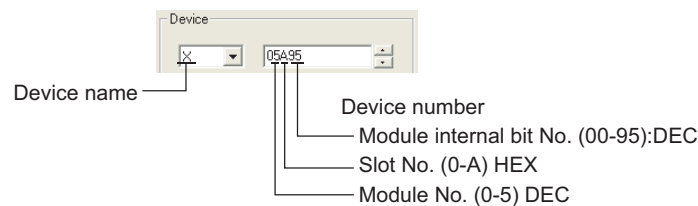
*1 Device setting for Hitachi PLC

Make the device setting for Hitachi PLC as follows:

(1) When specifying an external I/O device

(a) When setting a bit device

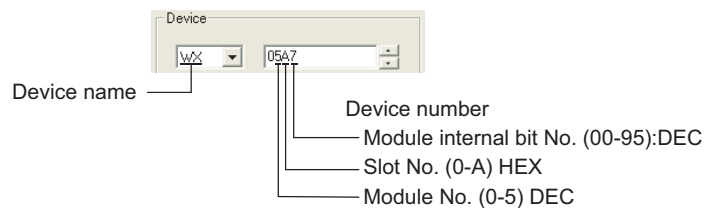
Set the device using the format of module No.+ slot No.+ module bit No.



(b) When setting a word device

Set the device using the format of module No.+ slot No.+ module bit No.

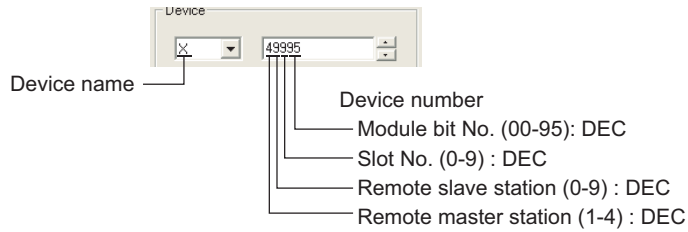
For the device name setting, enter "w" before the bit device name.



(2) When specifying a remote external I/O device

(a) Setting a bit device

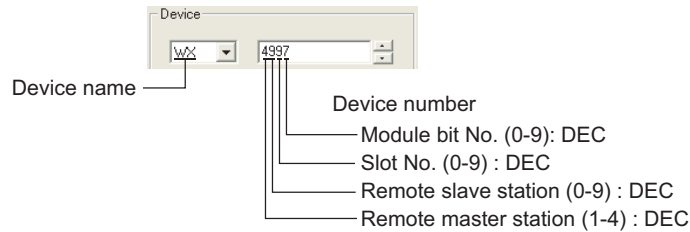
Set the device using the format of remote master station + remote slave station + slot No. + module bit No.



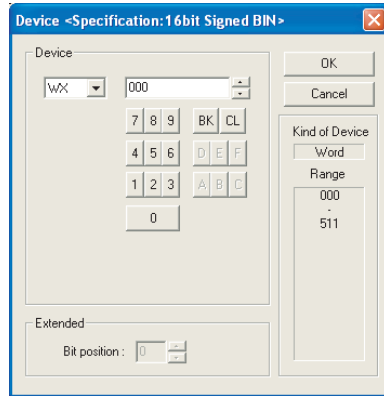
(b) When setting a word device.

Set the device using the format of remote master station + remote slave station + slot No. + module bit No.

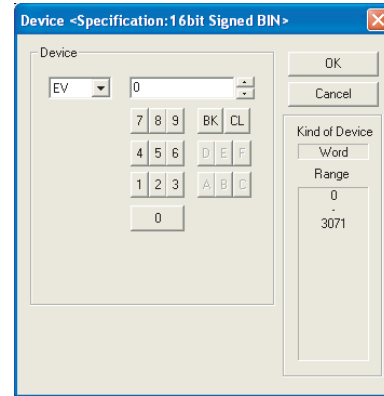
For device name setting, enter "W" before the bit device name.



9 MATSUSHITA Electric Works PLC



GOT-A900 series



GOT-F900 series

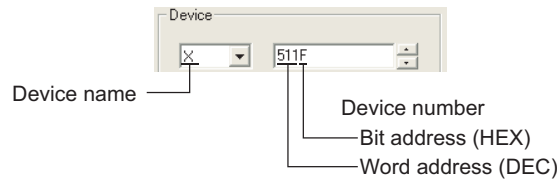
Items		Description	A	F
Device ^{*1}		Select the device name to be set. Then, set the device number by [0] to [F] buttons. (or direct input).	○	○
Kind of Device		Display the device type (Bit/Word) selected in [Device].	○	○
Range		Display the setting range available for the device selected in [Device].	○	○
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name is selected in [Device] in bit device setting.)	○	×

For details of *1, refer to the following.

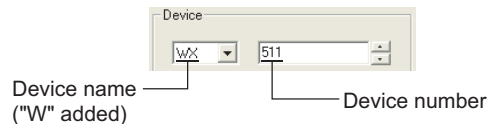
*1 Device setting for Matsushita Electric Works PLC

Make the device setting for Matsushita Electric Works PLC as follows.

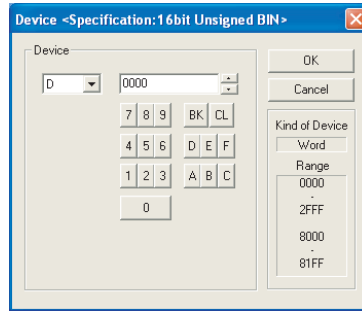
- (1) Set a contact as a bit device
Set the device using the format of word address (DEC)+ bit address (HEX).



- (2) Set a contact as a word device
Set the device number.
Enter "W" before the device name, not including the bit address.

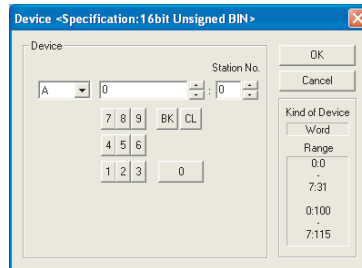


10 FUJI Electric Works PLC (GOT-F900 series only)



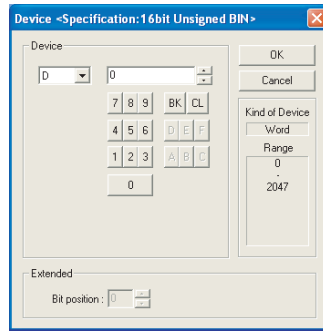
Items	Description	A	F
Device	Select the device name to be set. Then, set the device number by [0] to [F] buttons (or direct input).	×	○
Kind of Device	Display the device type (Bit/Word) selected in [Device].	×	○
Range	Display the setting range available for the device selected in [Device].	×	○

11 Inverter (GOT-F900 series only)



Items	Description	A	F
Device	Select the device name to be set. Then, set the device number by [0] to [9] buttons (or direct input).	×	○
Kind of Device	Display the device type (Bit/Word) selected in [Device].	×	○
Range	Display the setting range available for the device selected in [Device].	×	○

12 Microcomputer



Items		Description	A	F
Device		Select the device name to be set. Then, set the device number by [0] to [9] buttons (or direct input).	<input type="radio"/>	<input type="radio"/>
Kind of Device		Display the device type (Bit/Word) selected in [Device].	<input type="radio"/>	<input type="radio"/>
Range		Display the setting range available for the device selected in [Device].	<input type="radio"/>	<input type="radio"/>
Extended	Bit position	Set the bit position of the word device to be monitored. (It can be set if the word device name selected in [Device] in bit device setting.)	<input type="radio"/>	<input checked="" type="radio"/>

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

8

ALARM

5.2 Numeric Data that can be Handled with GOT



GOT supports and handles the following 7 types of numeric data.

- 16- or 32-bit signed binary (binary including a sign)
- 16- or 32-bit unsigned binary (binary including no sign)
- 16- or 32-bit BCD (Binary Coded Decimal)
- 32-bit real number (floating point data)

The range of each numeric data type is shown below.

The data range varies depending on the data length (16 or 32 bits).

Data type	Data range	
	Data length: 16 bits	Data length: 32 bits
Signed BIN	-32768 to 32767	-2147483648 to 2147483647
Unsigned BIN	0 to 65535	0 to 4294967295
BCD	0 to 9999	0 to 99999999
Real number	Not used	Signed 13-digit notation (floating point format only) *1

*1: The real number precision is given up to the sixth decimal place. The accuracy of the 7th and later decimal places cannot be guaranteed.

If a number having 7th and later digits is displayed on GOT, there are cases the displayed value differs from the value displayed on GX Developer.


Example: When the value of a real number (floating point data) of the connected PLCs is 4.123

Display on GX Developer : 4.123000

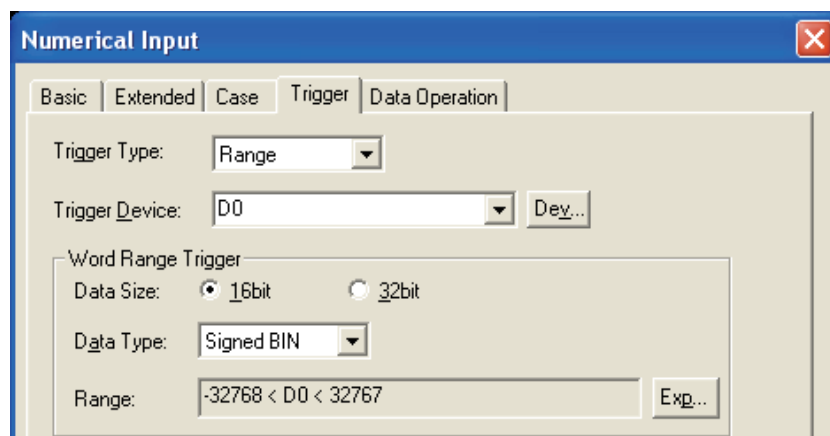
Display on GOT (display of up to 6th digit) : 4.123000

Display on GOT (display of up to 13th digit) : 4.1230001449585

For details of real number (floating point data), refer to the following.

 QCPU User's Manual (Function Explanation, Program Fundamentals) (Section 3.9.4 Real numbers (floating decimal point data))

The following shows an example where the data length and data type are set on the Trigger tab in the Numerical Input.



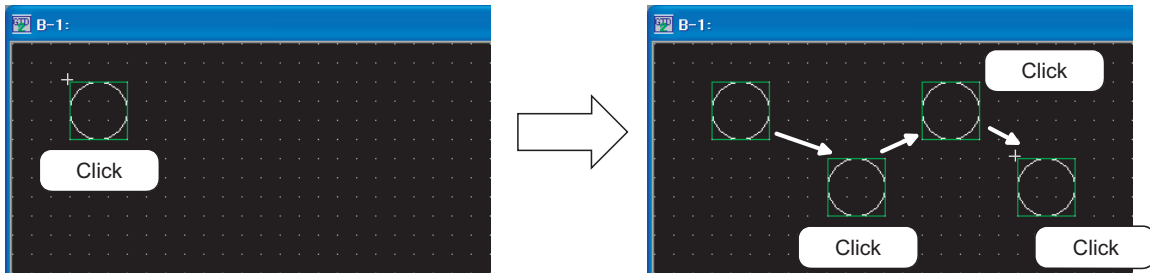
5.3 Object Arrangement and Display Image Setting



5.3.1 Object arrangement

If the menu/icon for setting object is selected, the cursor will go to arrangement mode (+). In default setting, clicking on the drawing screen arranges an object. When continuously clicked on the screen, multiple same type objects will be continuously arranged.

The arrangement mode can be released by right-clicking the mouse or using the **[ESC]** key.

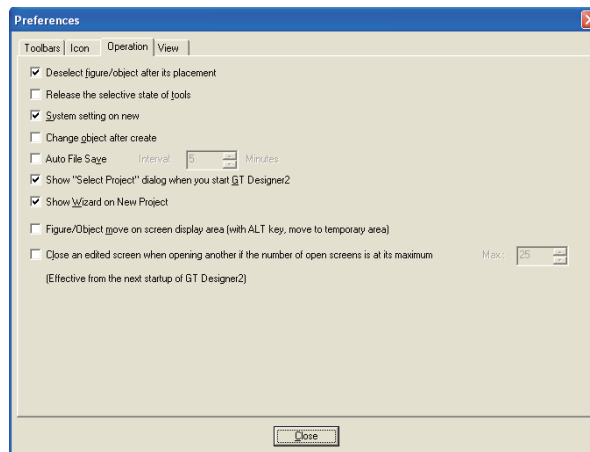


1 To change the object arrangement method

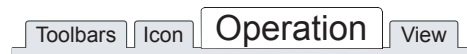
Object arrangement method can be changed in the Preferences dialog box. (Select [Project] → [Preferences] from the menu to display the dialog box.)

For details of the Preferences dialog box, refer to the following manual.

GT Designer2 Version Operating Manual



Preferences dialog box



Items	Description	A	F	
Figure/Object deselect-after create	Checked	: After arranging objects, the selected status (status with handle) is reset.		
	Not checked	: With the selected status (status with handle), figures/objects are arranged on the drawing screen.	<input type="radio"/>	<input type="radio"/>
Tool de-select after use	Checked	: After setting figures/objects, the tool selected status is reset. It is convenient to arrange different figures/objects.	<input type="radio"/>	<input type="radio"/>
	Not checked	: After setting figures/objects, the selected status remains active. It is convenient to arrange the same figures/objects continuously.	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

Items	Description	A	F
System setting on new	Checked : The system settings dialog box (GOT type, PC type, etc.) appears in creation of a new project.	○	○
	Not checked : The system settings dialog box (GOT type, PC type, etc.) does not appear in creation of a new project.		
Change object after create	Checked : After arranging objects on the drawing screen, the settings dialog box automatically appears.	○	○
	Not checked : After arranging objects on the drawing screen, the settings dialog box does not automatically appear.		
Auto File Save	Checked : File is automatically saved. Saving interval (5 to 720) is set.	○	○
	Not checked : File is not automatically saved.		
Show "Select Project" dialog when you start GT Designer2	Checked : When the GT Designer2 is started, the project selection dialog box (New, Open, etc.) appears.	○	○
	Not checked : When the GT Designer2 is started, the project selection dialog box (New, Open, etc.) does not appear.		
Show wizard on new project	Checked : When creating a new project, the wizard screen appears.	○	○
	Not checked : When creating a new project, the wizard screen does not appear.		
Close edit screen before opening another when open screens count is at its maximum	Set the maximum number of screens to be displayed (1 to 25 screens). The setting is enabled on the next start-up of GT Designer2.	○	○

5.3.2 Object shape setting

Frames, i.e., shapes can be set to objects in order to make distinction between display images and ranges of objects such as touch switches, lamps and others.

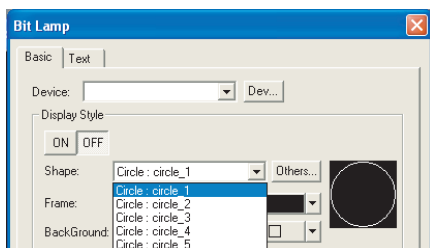
1 Setting procedure

Set the shape in the object setting dialogue box.

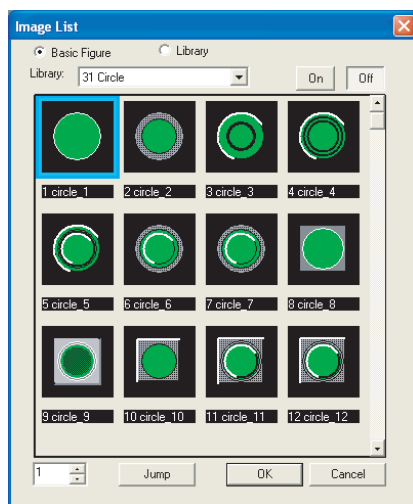
The following explains the setting procedure of shape with the example of bit lamp.

1 Five basic shapes can be selected in the Basic tab.

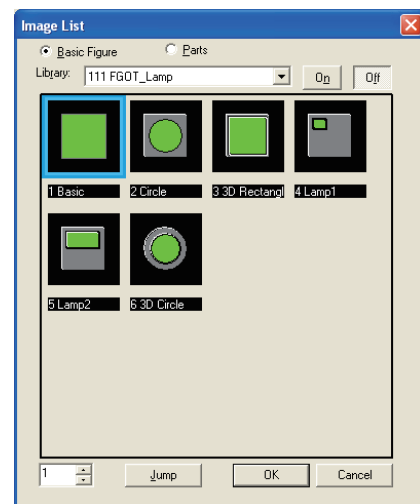
To select other shapes than basic ones, click on the **Others** button.



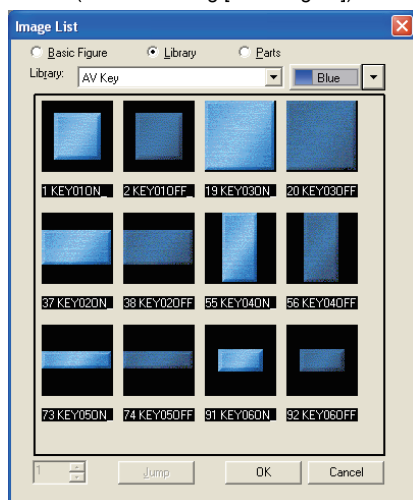
2 Click on the **Others** button to display the "Image List" dialogue box. Select one shape among them.




GOT-A900 series
(When selecting [Basic Figure])



GOT-F900 series



GOT-A900 series
(When selecting [Library] except my favorites)

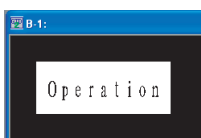
Items	Description	A	F
Basic Figure Library ^{*1} *2/Parts (Only for lamp function and touch switch function)	Select the shape for an object. Basic figure : Basic shapes that have been registered for each object Library : Shapes that have been registered as library (My favorite, User defined Libraries, System Libraries). (Only for GOT-A900 series) Parts : Shapes that have been registered as parts. (Only for GOT-F900 series)	<input type="radio"/>	<input type="radio"/>
Library	Switch the basic shape type or library type.	<input type="radio"/>	<input type="radio"/>
On/Off (Only for lamp function and touch function)	The buttons are displayed when [Basic Figure] is selected. These buttons are used to switch the shapes displayed at the time of ON/OFF.	<input type="radio"/>	<input type="radio"/>
	The item is displayed when [Library] (except my favorites) is selected. Switch colors of the displayed figure.	<input type="radio"/>	<input checked="" type="radio"/>
Image List	Select the shape for an object.	<input type="radio"/>	<input type="radio"/>
	Set the No. of shape to be displayed. Click on the Jump button to switch the shapes.	<input type="radio"/>	<input type="radio"/>

For details of *1, *2, refer to the following.

*1 Use of high quality font

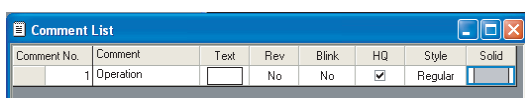
When the high quality font is included in the library used as the figures of the lamp display or touch switch function, also make the following setting (1) or (2).

The text is not displayed as the high quality font on the GOT screen without the above setting.



(1) Register to comment

Register the same texts used the high quality font as a comment of high quality font.
It is not necessary to display the registered comment.



(2) Arrange text on screen

Arrange the same texts used the high quality font on the screen as a text of the high quality font.
It is not necessary to display the registered comment.
It is recommended to create a screen to arrange the high quality font.

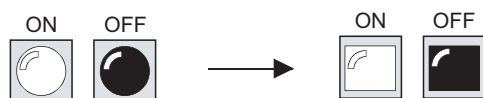


*2 Precautions for changing switch/lamp shape

When switch/lamp shape is changed, the ON/OFF shapes may not be switched automatically depending on the shape used as switch/lamp. Make sure to check whether the ON/OFF shape can be automatically switched before changing the switch/lamp shape, and make the relevant setting as necessary.

Example: Lamp (Bit)

Shape as basic figure → Shape as basic figure



ON shape is changed

If the ON shape is changed, the OFF shape will be changed automatically.

Shape within library → Shape within library



ON shape is changed

Even if the ON shape is changed, the OFF shape will not be changed automatically.

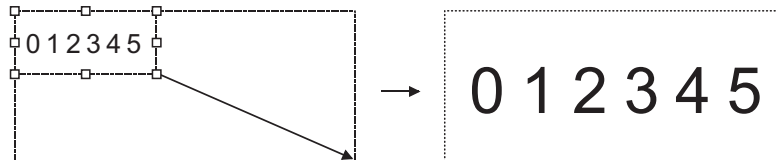
5.3.3 Object size change

This section explains how to change the size of arranged object.

1 Object size change

(1) Method of changing size

- ① elect the object to be changed in size.
- ② Position the cursor over the sizing handles, click and drag it to change the object size.



Remark

The size of some objects cannot be changed using the above method.

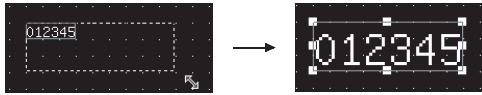

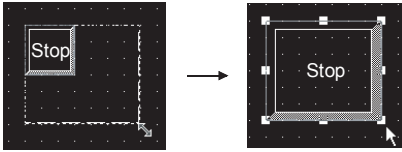
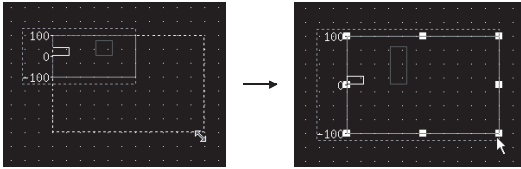
The size of data list and alarm history is determined according to the text size set on the corresponding basic tab. Therefore, changing the size using the above method is not applicable.

To change the object size, open the setting dialogue box and change the text size within the basic tab.

(2) Text size

The text size changes with the object size.

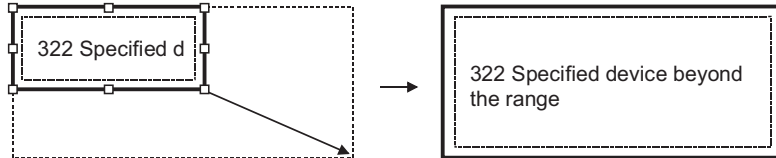
The changing details are different according to object types.

Change of text size	Object	Details of change
Changeable	Numerical display Numerical input	The text size is enlarged 0.5 to 8 times from the original object size. 
	ASCII display ASCII input	The text size is enlarged 1 to 8 times from the original object size. 
Unchangeable	Touch switch Lamp Alarm list Comment display Data list Alarm history Trend graph Line graph Bar graph Statistics graph Scatter graph Panel meter	The text size can be changed by setting text size from the dialog box of each object. Example) Touch switch  Example) Bar graph 

2 Change size of object with shape

(1) Method of changing size

- 1 Select the object to be changed in size.
- 2 Position the cursor over the sizing handles, click and drag it to change the object size.

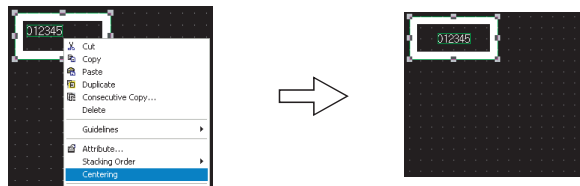


(2) Misalignment of object and shape

Some objects, to which shape is set, may cause the following phenomena;
When the whole object size is changed, i.e., enlarged by click and drag, only the shape is enlarged, but the object remains at the original position, resulting in misalignment between the object and shape.

(a) Center the object in its shape

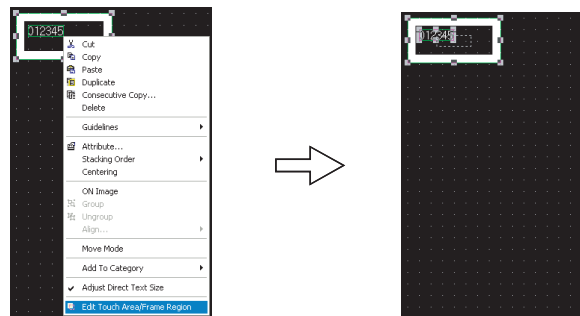
Right click on the object to realign the shape with the object.



Right-click the mouse and select [Centering] in menu.

(b) Move the object to any position within the shape

The position of object and shape can be changed separately as instructed below.

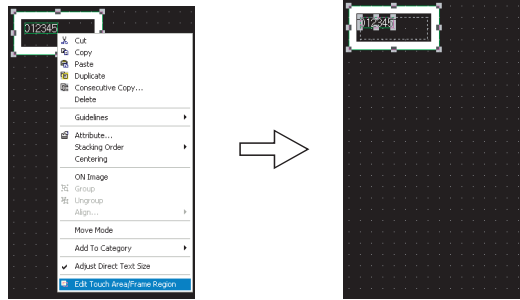


Right-click the mouse and select [Edit Touch Area/Frame Region] in menu.

Drag the object to align it with the shape.

(c) Change the size of object and shape separately

The size of object and shape can be changed separately as instructed below.

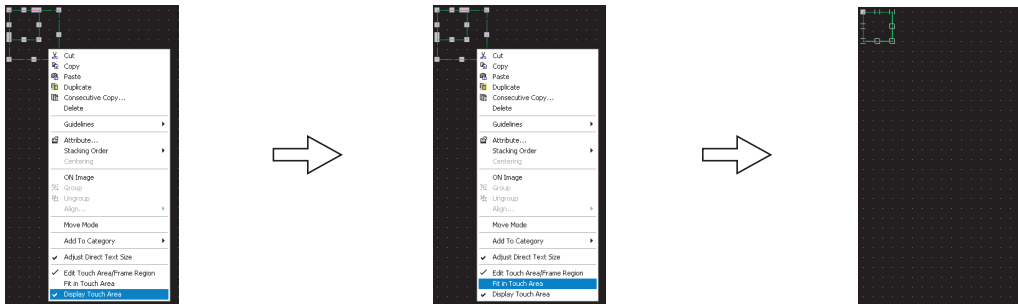


Right-click the mouse and select [Edit Touch Area/Frame Region] in menu.

Drag the object to change its size.

(3) Fitting touch switch valid area in object frame

A touch switch valid area can be fit in an object frame.



Right-click on an object, and then check [Display Touch Area].

Right-click on an object, and then select [Fit in Touch Area].

The touch switch valid area is fit in the object frame.

5.4 State Setting



With this setting, the ON/OFF status of bit device can be changed as well as the color of object shape according to the word device value.

- Word device value being monitored by object function.
- Bit device ON/OFF for display change.
- Word device value for display change.

The objects compatible with state setting and the conditions for display change are listed in the following table.

○ : Applicable × : N/A

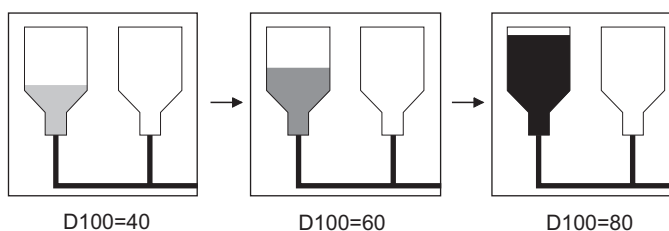
Object type	Conditions for display changing		
	Word device value being monitored	Display changing device	
		Bit device ON/OFF	Word device value
Numerical display			
Word parts display	○	○	○
Parts movement (word)			
Word lamp			
Numerical input			
Data list			
Word comment	○	×	○*1
Level			
Panel meter			
Scatter graph			

*1 The word device value being monitored must be set as the condition for display change.

1 Display changes according to the word device value being monitored.

Example: Level display function

- Word device D100 being monitored

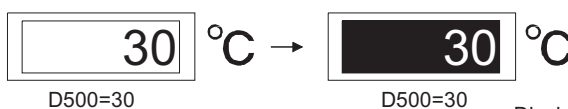


Display color changes according to the word device value being monitored.

2 Display changes according to bit device ON/OFF.

Example: Numerical display function

- Word device D500 (temperature) being monitored
- Bit device M10 (ON in error occurrence) for display changing



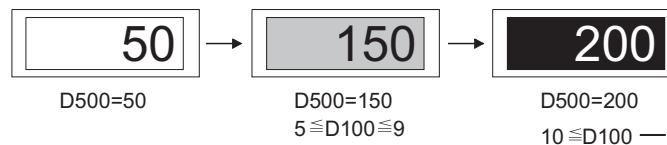
D500=30 M10 ON — Display changes due to an error occurrence.

1	OVERVIEW
2	SPECIFICATIONS
3	COMMON SETTING
4	PREPARATORY OPERATION FOR OBJECT SETTING
5	COMMON SETTINGS FOR OBJECTS
6	LAMP, SWITCH
7	NUMERICAL/ CHARACTER DISPLAY
8	ALARM

3 Display changes according to word device value

Example: Numerical display function

- Word device D500 (production output) being monitored
- Word device D100 (defective products) for display changing



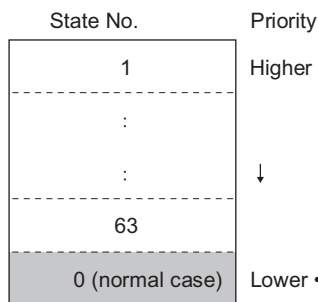
Display changes when the number of defective products exceeds the specified number.

5.4.1 Display priority

Up to 64 (0 to 63) states can be set to one object.

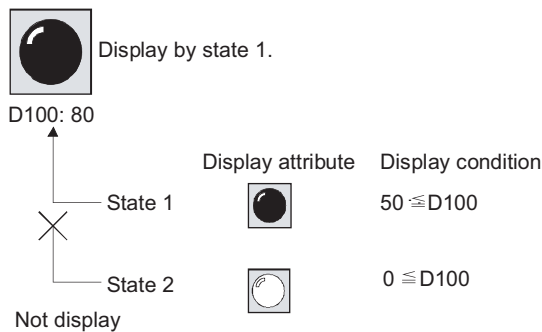
When display change conditions overlap, the state of the smaller No. will be displayed with the priority.

[Display priority]



Lower •••• The display attribute that must be set to an object. If conditions for other states (1 to 63) have not been satisfied, the attribute of state No.0 is displayed.

Example: When conditions for displaying state 1 and 2 occur simultaneously.



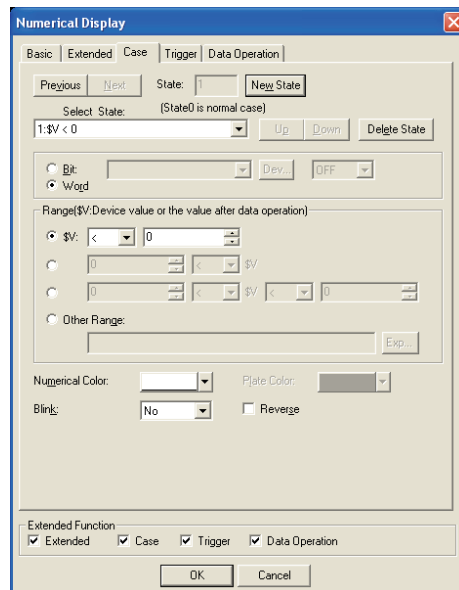
5.4.2 Arrangement and settings

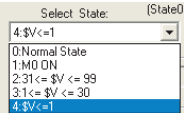
State is set for each object function.

For details, refer to the arrangement and setting of the object.

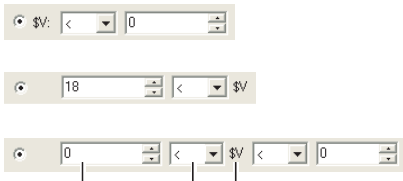

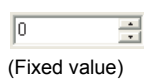



5.4.3 Setting items

This section explains the setting items for state setting with the example of numerical display.



Items	Description	A	F
State	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	<input checked="" type="radio"/>
New State	Create a new state.	<input type="radio"/>	<input checked="" type="radio"/>
Delete State	Delete a specified state.	<input type="radio"/>	<input checked="" type="radio"/>
Previous/Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	<input checked="" type="radio"/>
Up/Down	Changes the priority of the current state. Example: When changing the priority level of "B" in state 2 with the [Up]/[Down] buttons. <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>State 0 Ordinary</p> <p>State 1 A</p> <p>State 2 B</p> <p>State 3 C</p> </div> <div style="margin-right: 20px;"> <p>Up ↗</p> <p>Down ↘</p> </div> <div> <p>State 0 Ordinary</p> <p>State 1 B</p> <p>State 2 A</p> <p>State 3 C</p> <p>↑ Priority up</p> </div> <div style="margin-left: 20px;"> <p>State 0 Ordinary</p> <p>State 1 A</p> <p>State 2 C</p> <p>State 3 B</p> <p>↓ Priority down</p> </div> </div>	<input type="radio"/>	<input checked="" type="radio"/>
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.  <p>Display conditional expression State</p>	<input type="radio"/>	<input checked="" type="radio"/>

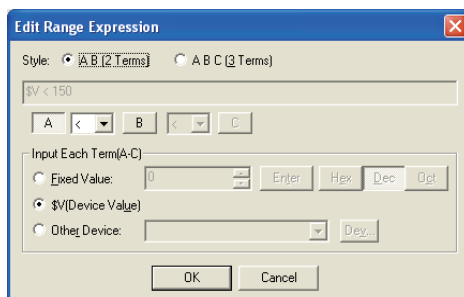
(Continued to next page)

Items	Description	A	F
Device	<p>Select the display change conditions according to state.</p> <p>Bit : Select it when changing the display according to the ON/OFF status of bit device. After selecting "Bit", set the bit device and device status (ON/OFF). (☞ Section 5.1 Device Setting)</p> <p>Word : Select it when changing the display according to the value of word device. After selecting [Word], set a condition expression for the word device value in [Range].</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	<p>Set the value of word device range to change the display using a conditional expression.</p> <ul style="list-style-type: none"> Select the conditional expression from the following patterns. <p>Combine device value (\$V, \$W) and fixed value to set the conditional expression.</p>  <p>Fixed value Device value(\$V) being monitored/input value (\$W) Comparison operator</p> <ul style="list-style-type: none"> When setting the operation expression other than the above 3 patterns.*1 User-setting conditional expression. Click on the [Range] button after selecting [Others]. For user-setting conditional expression, the word device for display change can be set as a condition. 	<input type="radio"/>	<input checked="" type="checkbox"/>
	Input the value in decimal.	<input type="radio"/>	<input checked="" type="checkbox"/>
	<p>Set the comparison operator of conditional expression.</p> <p>< : The left value is smaller than right value. == : The left value is equal to the right value. <= : The left value is smaller than or equal to the right value. != : The left value is not equal to the right value.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
\$V (\$W)	<p>Indicates the device value monitored using the object.</p> <p>Indicates the operation value when data operation function is used. (The input value of numerical input function is expressed as \$W.)</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
 *1	Used to display the range input dialogue box.	<input type="radio"/>	<input checked="" type="checkbox"/>
Numerical color	Set the color of numeric value when display conditions of the state are satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
Plate Color	<p>Select the plate color when display conditions of the state are satisfied.</p> 	<input type="radio"/>	<input checked="" type="checkbox"/>
Blink	<p>Select the blinking pattern of numerical value when display conditions of state are satisfied.</p> <p>No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Reverse	Check this item to reverse the numerical value when display conditions of state are satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

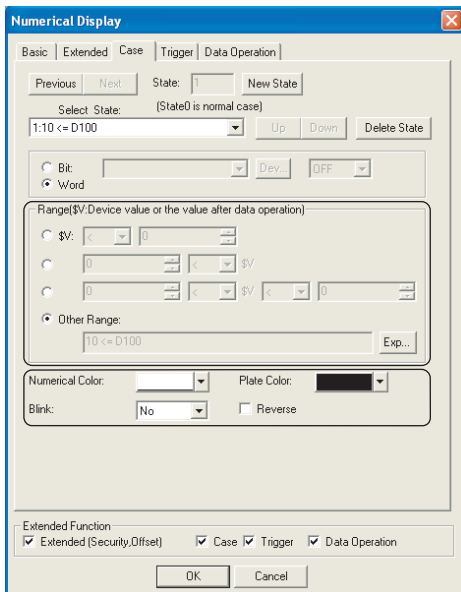
***1 Input range dialog box setting**

This dialog box is used to set the value range of word device used for state.



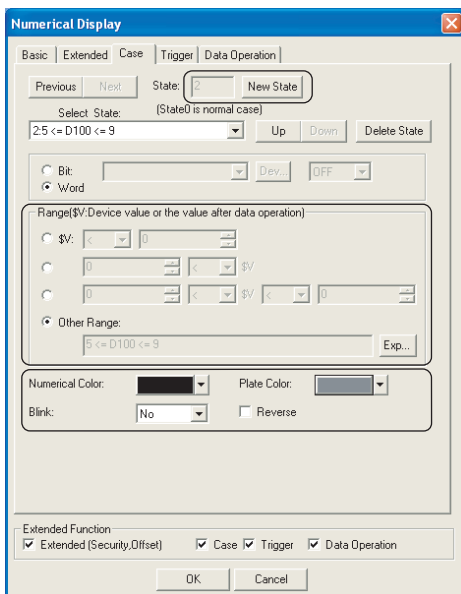
Items	Description	A	F
Style	<p>Select the format of the conditional expression.</p> <p>A B (2 items) : Display condition range is set using two expressions. A B C (3 items) : Display condition range is set using three expressions. Example:</p> <ul style="list-style-type: none"> • \$V == 500 • 10 <= \$V(\$W) <= D50 <p>Value of the word device for display change. Set the comparison operator (<,<=,==,!)= of the conditional expression. \$V: Indicate the value of the device monitored using object. It indicates operation value when data operation function is used. \$W:Indicate the input value of the data input function. Fixed value directly set by user (hexadecimal system/decimal system/octal system)</p>	○	×
	Click on the to button to set fixed value and variable value of each item [Input Each Term (A-C)].	○	×
	Set the comparison operator of conditional expression. < : The left value is smaller than the right value. == : The left value equals the right value. <= : The left value is smaller than or equivalent with the right value. != : The left value doesn't equal the right value.	○	×
Input Each Term (A-C)	<p>Set the description of condition expression items.</p> <p>Fixed Value : Set the fixed value. Then, input the numeric value and click on the button. The data type of numeric value can be selected with the buttons.</p> <p>\$V, \$W (Device Value) : Specify the word device that is set as monitoring and writing target by using the object.</p> <p>Other Device : Set the word device for display change. (Section 5.1 Device Setting)</p>	○	×

- 2 Set state 1
Set state 1 on the case tab.



- (1) Create state 1 by clicking [New State].
- (2) Set the conditions displaying state 1.
 - Others (10<=D100)
- (3) Set the display attribute of state 1.
 - Numerical Color : White
 - Blink : No
 - Reverse : Unchecked
 - Plate color : Black

- 3 Set state 2.



- (1) Click on the [New State] to create state 2.
- (2) Set the conditions of displaying state 2.
 - Others (5<=D100<=9)
- (3) Set the display attribute of state 2.
 - Numerical Color: Black
 - Blink : No
 - Reversed: Unchecked
 - Plate Color: Gray Color

5.4.5 Precautions

1 Precautions for drawing

Do not set the conditional expressions that cannot be satisfied (e.g. "100<\$V<10"). GT Designer2 does not check whether the conditional expressions are applicable or not. If this kind of conditional expression is set, the corresponding state will not be displayed during monitoring by GOT.

5.5 Trigger Setting

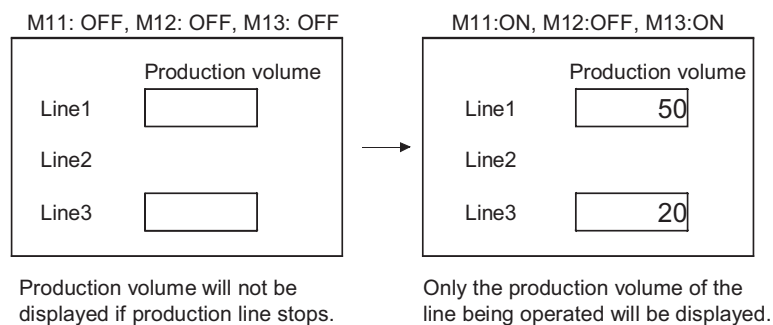


The following triggers can be set for monitoring and writing operations of each object function.

- (1) Trigger (for display) (For GOT-A900 series only)
Set for the object that monitors device.
When the trigger is not satisfied, the object will stop device monitor or disappear.
- (2) Trigger (for write)
Set for the object that writes to device.
When the trigger is not satisfied, the writing operation will be disabled or only the operable objects will be displayed. (GOT-F900 series can disable writing operation only.)
- (3) Trigger (for script execution) (For GOT-A900 series only)
Set for the script function.
When the trigger is not satisfied, the script is not executed.

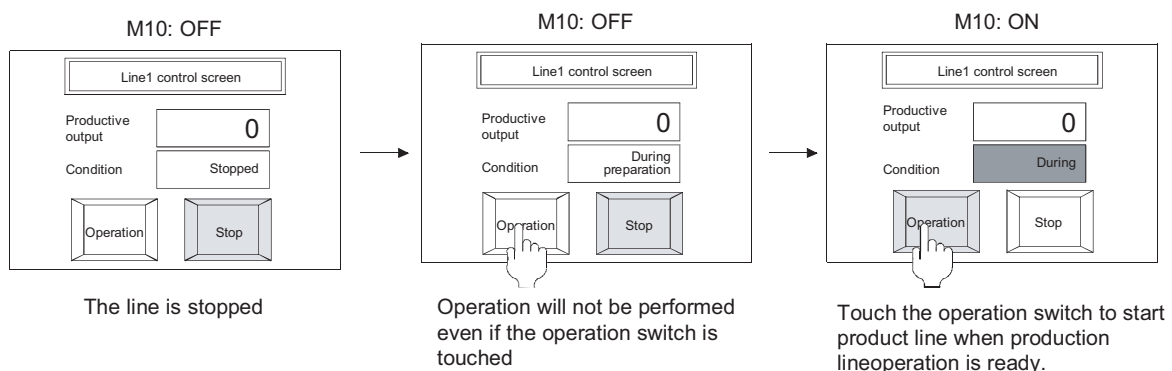
Example 1: Only the numerical display functions that are monitoring the production line are displayed.

Production start signal (line1: M11, line2: M12, line3: M13)



Example 2: Set an interlock device for a touch switch

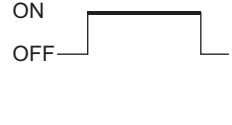
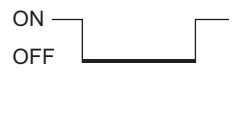
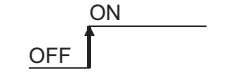
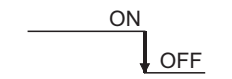
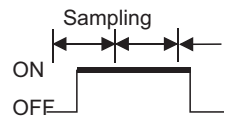
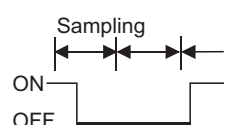
Line operation ready signal: M10



1 About triggers

Triggers and actions that can be set are shown below.

(1) Triggers (for display and action) of GOT-A900 series

Trigger type	Execution trigger	Actions when condition is satisfied
Ordinary	None	<p><Display condition></p> <ul style="list-style-type: none"> The device is monitored at the monitor sampling of the GOT. <p><Action condition></p> <ul style="list-style-type: none"> The action set to the object can be executed at the monitor sampling of the GOT.
ON		<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored at the monitor sampling of the GOT. When trigger is not satisfied: Select to check or not "Hold Display" as the display condition setting. Checked: The previous object display is retained *2. Not checked: The object display is erased *3. <p><Action condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The action set to the object can be executed. When trigger is not satisfied: The previous object display is retained. <p>To erase the object display, set "Action when condition fail" in the Auxiliary setting.*3</p>
OFF		<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored only once. When trigger is not satisfied: The previous object display is retained. <p>To monitor the device and display the object at screen switching, set "Initial display" in the display condition.</p>
Rise		<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored only once. When trigger is not satisfied: The previous object display is retained. <p>To monitor the device and display the object at screen switching, set "Initial display" in the display condition.</p>
Fall		
Sampling	Sampling	<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored at each preset sampling. Setting range: 0.1 to 3600 seconds (every 100ms), 1 to 3600 seconds (every one second) When trigger is not satisfied: The previous object display is retained.
Range	Word device value	<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored at the monitor sampling of the GOT. When trigger is not satisfied: The previous object display is retained*2. <p><Action condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The action set to the object can be executed. When trigger is not satisfied: The previous object display is retained *2. <p>To erase the object display, set "Action when condition fail" in the Auxiliary setting *3.</p>
Multi bit trigger *1	Logical operation result of ON/OFF condition of the set multi bit device*1	<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored at both of the satisfied trigger (the specified device is ON or OFF) and each preset sampling. When trigger is satisfied : The device is monitored at both of the satisfied trigger (the specified device is ON or OFF) and each preset sampling. Setting range: 0.1 to 3600 seconds (every 100ms), 1 to 3600 seconds (every one second) When trigger is not satisfied: The previous object display is retained.
ON Sampling		<p><Display condition></p> <ul style="list-style-type: none"> When trigger is satisfied : The device is monitored at both of the satisfied trigger (the specified device is ON or OFF) and each preset sampling. When trigger is satisfied : The device is monitored at both of the satisfied trigger (the specified device is ON or OFF) and each preset sampling. Setting range: 0.1 to 3600 seconds (every 100ms), 1 to 3600 seconds (every one second) When trigger is not satisfied: The previous object display is retained.
OFF Sampling		

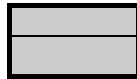
For details of *1 to *3, refer to the following.

*1 Multi bit trigger

As trigger, 2 to 8 bit devices and its ON/OFF statuses.

Operate logical AND or logical OR based on the preset ON/OFF status of the multi bit device.

Example: When M10, M11 and M12 are used as the display condition



Area where trigger is satisfied ○ : Trigger satisfied × : Trigger not satisfied

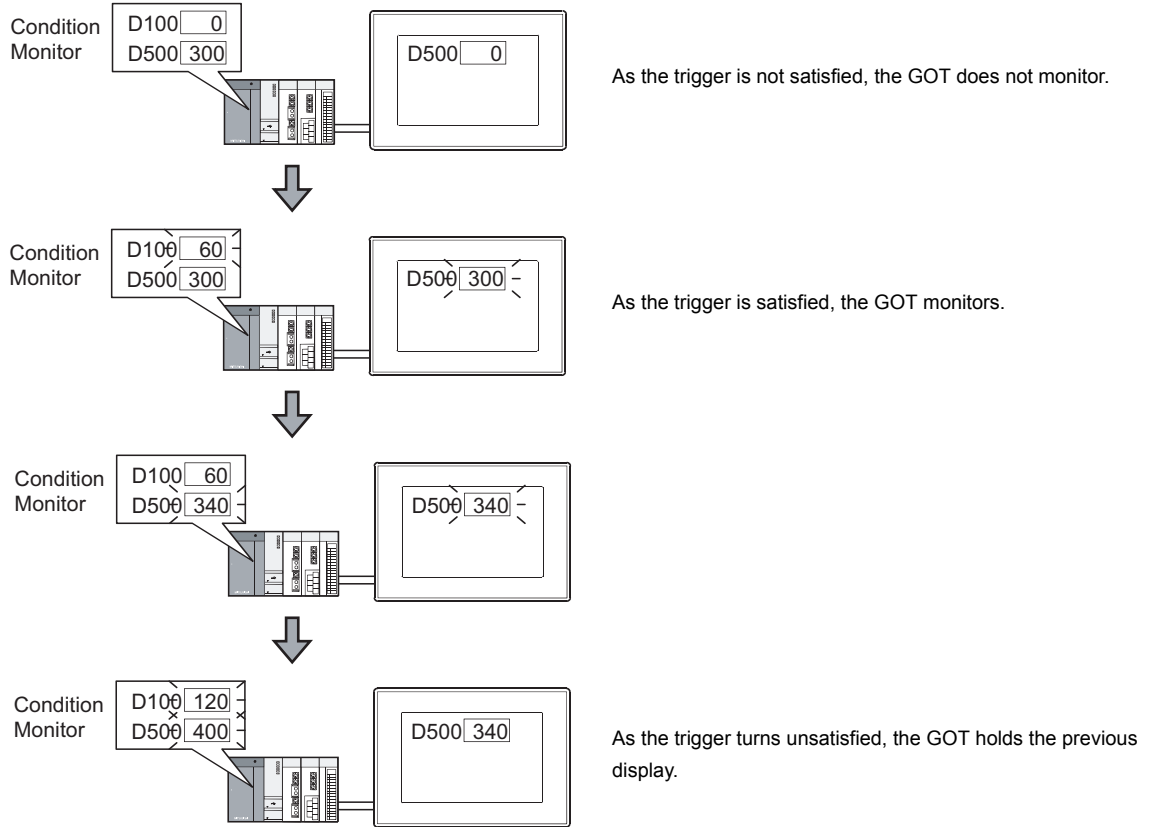
Display condition	M10 is ON	M11 is OFF	M12 is ON	Operation result	
				Logical AND	Logical OR
Upper: ON/OFF status Lower: Satisfied/Not satisfied	OFF	OFF	OFF	×	○
	×	○	×		
	ON	OFF	OFF	×	○
	○	○	×		
	OFF	ON	OFF	×	×
	×	×	×		
	ON	ON	OFF	×	○
	○	×	×		
	OFF	OFF	ON	×	○
	×	○	○		
	ON	OFF	ON	○	○
	○	○	○		
	OFF	ON	ON	×	○
	×	×	○		
	ON	ON	ON	×	○
	×	×	×		

***2 Trigger and display on GOT**

When the trigger is not satisfied, GOT does not monitor.

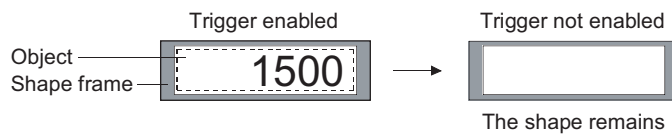
If the trigger is satisfied once and then unsatisfied, the previous display is held.

Example: •Condition: range (D100: 50 to 100) •Display: D500 is numerically displayed



***3 Object placed into shape**





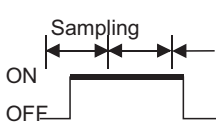
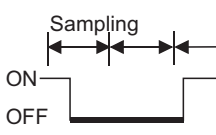
The object shape will remain when the object is erased.



(2) GOT-F900 Series

Trigger type	Execution trigger	Actions when trigger is satisfied
Ordinary	None	<Trigger> • The action set for object can always be executed.
ON	ON	<Trigger> • When the trigger is satisfied, the actions set for the object can be executed.
OFF	OFF	• When the trigger is not satisfied, the actions set for the object cannot be executed. (☞ Section 4.5 Auxiliary Settings)

(3) Triggers for script execution (GOT-A900 series only)

Trigger type	Execution trigger	Actions when condition is satisfied
Ordinary	Executed always	
ON		
OFF		
Rise		
Fall		<p><Trigger for executing script></p> <ul style="list-style-type: none"> • When condition is satisfied: The script is executed. • When condition is not satisfied: The script is not executed.
Sampling	Sampling	
ON sampling		
OFF sampling		

2 Objects that support trigger condition

The object types that can be set by a trigger are listed below.
The trigger type varies according to object types.

(1) GOT-A900 Series

Object type	Trigger type						
	Ordinary	ON/OFF	Rise/Fall	Sampling	Range	Multi Bit trigger	ON Sampling/ OFF Sampling
Numerical display Data list ASCII display Comment display Alarm list (User alarm) display Parts display Parts movement Line graph Bar graph Statistics graph Level							
Trend graph Scatter graph Line graph ^{*4}	×	×	○	○	×	×	○
Alarm list (User alarm) ^{*5}	×	×	×	○	×	×	×
Touch switch Numerical input ASCII input	○	○	×	×	○	○	×

*4 [Locus] function has been set.

*5 [Store Memory] function has been set using alarm list (user alarm) display function.

(2) GOT-F900 Series

Object type	Trigger type						
	Ordinary	ON/OFF	Rise/Fall	Sampling	Range	Multi bit trigger	ON Sampling/ OFF Sampling
Touch switch Numerical input ASCII input	○	○	×	×	×	×	×

(3) Script execution trigger

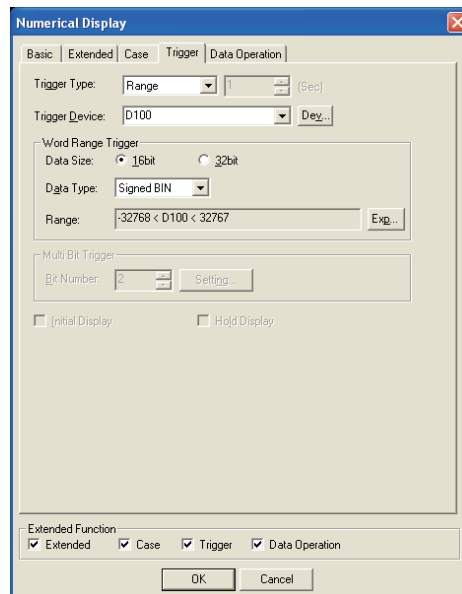
Object type	Trigger type				
	Ordinary	ON/OFF	Rise/Fall	Sampling	ON sampling/ OFF sampling
Script function	○	○	○	○	○

5.5.1 Arrangement and settings

Set the trigger for each object function.
Refer to the arrangement and setting of the object.

5.5.2 Setting items

This section explains the setting items of trigger with the example of numerical display.



(Example: In the case of GOT-A900 series)



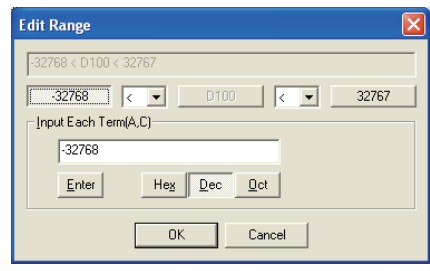
Items	Description	A	F	
Trigger Type	Select the trigger for displaying/operating the object. When [Sampling] is selected, the cycle is set in second unit (1 to 3600s). • Ordinary • Sampling • Range • ON • OFF • Rise • Fall • Bit trigger	<input type="radio"/>	<input type="radio"/>	
Trigger Device	When [ON], [OFF], [Rise], [Fall] or [Range] is selected in [Trigger Type], click on the Device button to set the bit/word device range for the trigger. (This is only valid when selecting the range for word device.) (Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>	
Word Range Trigger	Set the type of word device that has been set when [Range] is selected in [Trigger Type].	<input type="radio"/>	<input checked="" type="radio"/>	
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="radio"/>
	Data Type	Select the data type of word device. Signed BIN: Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary value. Real : Treats the word device value as a floating point type real number. (Only when selecting [32bit] for [Data Size].)	<input type="radio"/>	<input checked="" type="radio"/>
	Range ^{*1}	Click Range button to set the conditional expression of word device range.	<input type="radio"/>	<input checked="" type="radio"/>

(Continued to next page)

Items	Description	A	F
Multi Bit Trigger Bit Number*2	Select number of bit devices (2 to 8) to be set as the trigger when [Bit trigger] has been selected in [Trigger Type]. After selecting, click on the Setting button to set the bit device and execution trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Initial Display	Check this item to monitor and display device even if the initial trigger of screen switch is not satisfied when [Rise] or [Fall] has been selected in [Trigger Type]. <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">Base screen 1</div> <div style="margin-right: 10px;">→</div> <div style="text-align: center;"> <p>Initial display</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;">Base screen 2 D10 125</div> <p>Monitor and display device when trigger is not satisfied.</p> </div> <div style="margin-left: 10px;"> <p>No initial display</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;">Base screen 2 D10</div> <p>Not display when trigger is not satisfied.</p> </div> </div> <p style="margin-left: 20px;">Switch to base screen 2</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Hold Display	Check this item to hold the object display if the trigger is not satisfied when [ON] or [OFF] is selected in [Trigger Type]. <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">D10 125</div> <div style="margin-right: 10px;">→</div> <div style="text-align: center;"> <p>Hold display</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;">D10 125</div> <p>Hold display state when the display condition is satisfied.</p> </div> <div style="margin-left: 10px;"> <p>Not hold display</p> <div style="border: 1px solid black; padding: 5px; display: inline-block;">D10</div> <p>Clear it as the display condition is not satisfied.</p> </div> </div> <p style="margin-left: 20px;">Display condition is not satisfied</p>	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, *2, refer to the following.

*1 Edit range dialog box settings

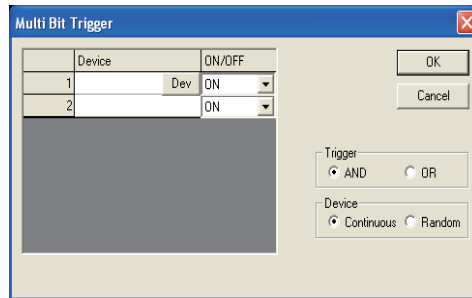


Items	Description	A	F
[<input type="text"/>] Button	Click on this button to set the fixed value for each term in [Input Each term (A-C)]	<input type="radio"/>	<input checked="" type="checkbox"/>
<input type="text"/> (Comparison operator)	Set the comparison operator of range expression. < : Left value is smaller than right value == : Left value is equal to right value <= : Left value is smaller than or equal to right value != : Left value is not equal to right value	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Items		Description	A	F
Input Each Term (A-C)	Enter	Updates the input fixed value on the range expression.	<input type="radio"/>	×
	Hex/Dec/Oct	Select the data type for the numeric value.	<input type="radio"/>	×

***2 Multi bit trigger dialogue box settings**



Items		Description	A	F
Device		The devices preset as multi bit trigger are listed.	<input type="radio"/>	×
<input type="text" value="Dev"/>		This button will be displayed by clicking on the device bar. Click on the <input type="text" value="Dev"/> button to set the bit device used as trigger. (Section 5.1 Device Setting)	<input type="radio"/>	×
ON/OFF		Select whether ON or OFF status of bit device will be set as the trigger condition.	<input type="radio"/>	×
Trigger		Select the definition for multi bit trigger condition. AND : If all triggers that are specified based on the bit device ON/OFF statuses are satisfied, the multi bit trigger is set. OR : If any of the triggers specified based on the bit device ON/OFF statuses are satisfied, the multi bit trigger is set.	<input type="radio"/>	×
Device		Select the method of setting device. Continuous : Set the specified number of devices continuously starting from the set device automatically. Random : Randomly set the specified number of devices.	<input type="radio"/>	×

5.5.3 Precautions

1 Object of which trigger has been set to sampling

Up to 100 objects can be set on one screen, of which the trigger type was been set to "Sampling". Therefore, any objects form 101 onwards will not operate on the screen.

2 Setting of status observation function

- (1) When the object display on GOT screen is delayed
When excessive number of devices set as trigger is arranged, or the cycle of monitoring device is short, object display on the screen will be delayed.
In this case, reduce the number of devices set as trigger or set the cycle of monitoring device longer.
- (2) When GOT does not monitor according to the setting of observation cycle (E.g. data sampling cannot be operated normally as timing is delayed)
In some cases, GOT may not normally monitor the object for which offset function is specified or the screen displayed as superimpose window screen according to the setting of status observation. (E.g. data sampling cannot be operated normally as timing is delayed.)
In this case, set the observation cycle to [Ordinary].
- (3) Cycle of trigger device
Make the settings in order that the trigger device will turn ON/OFF more frequently than the observation cycle.

3 Setting of trigger for line graph

When many devices are monitored in line graph form, and the trigger is set to [Ordinary], the object processing may be delayed.
In this case, change the trigger type to [Sampling] and adjust the sampling cycle to 2 seconds or longer.

4 Setting of trigger for each object

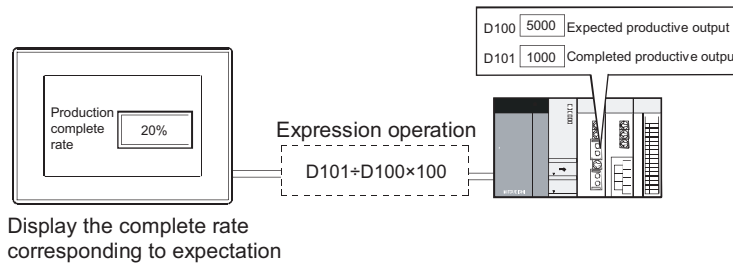
- (1) Trigger type and trigger device
If trigger types are set while some or all of trigger devices are not set, the object operates by the default trigger type.
- (2) When [Range] is selected in [Trigger]
If Real is selected as the data type when [Range] has been set as trigger for each object, GOT reads decimal data by rounding it off. In case that GOT may read decimal data, select the data type for decimal from GT Designer2

5.6 Data Operation Function



If data operation function has been set, each object executes the operations set in [Data operation] the pre-set word device values, and monitors based on the results.

Example: Data operation is used in numerical display function
 Monitored device: D101



1 Bit operation

This function executes operation of the word device value in bit unit.

(1) Bit mask (for GOT-A900 only)

Executes a logical operation of the word device value by the preset pattern value.

(a) Logical AND (AND)

The operation result is "1" when the corresponding bits of both the device value and pattern value are "1".

The operation result is "0" in other cases.

(b) Logical OR (OR)

The operation result is "0" when the corresponding bits of both device value and pattern value are "0".

The operation result is "1" in other cases.

(c) Exclusive logic XOR (XOR)

The operation result is "0" when the corresponding bits of device value and pattern value are equivalent; "1" when not equivalent.

Example: When logical AND (AND) is operated

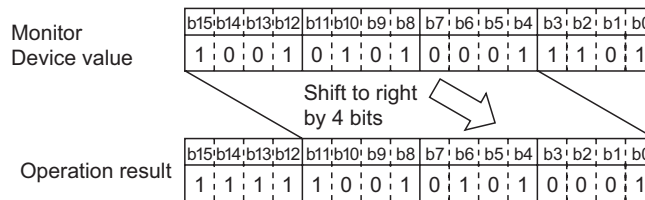
Monitor device value	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
	AND															
Pattern value (Hexadecimal)	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
	↓															
Operation result	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0

(2) Bit shift (for GOT-A900 series only)

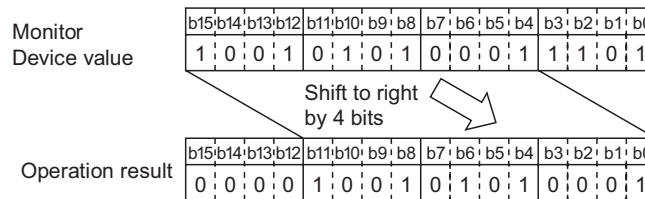
Shifts the word device value to the right or left in bit unit to execute an operation on the value.
(It becomes arithmetic shift when it comes to the signed monitor format of device.)

Example: Shift right for 4 bits

(a) Signed



(b) Unsigned



2 Data operation

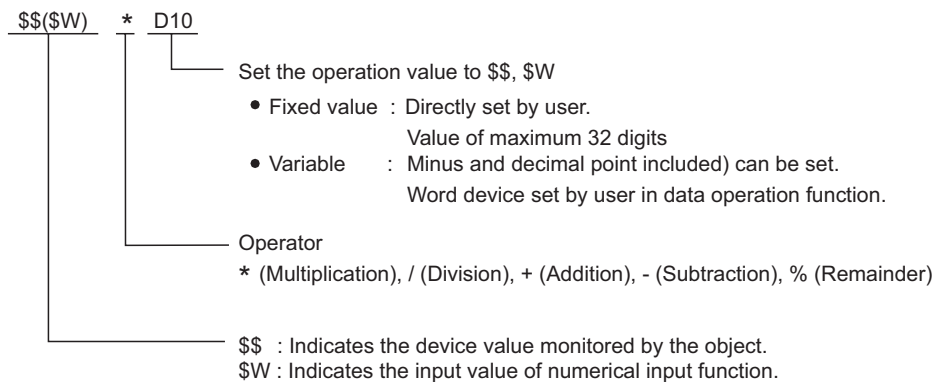
Executes the preset data operation on the word device value.

(1) In the case of GOT-A900 series

Select and set the data operation format from the 9 types.

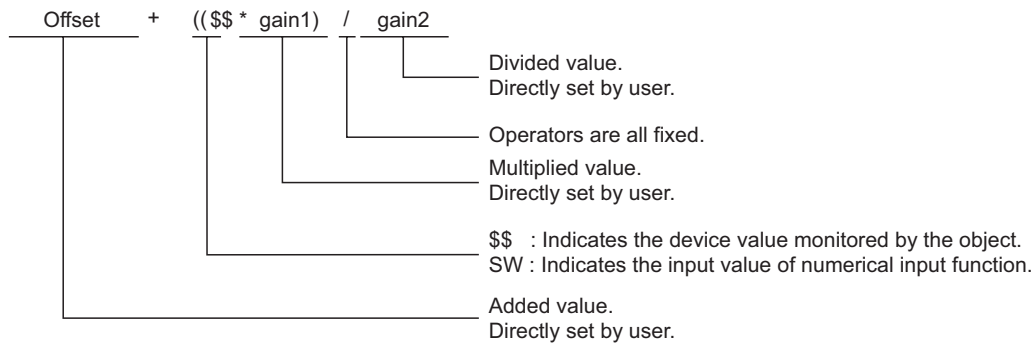
The operation is executed based on the following conditions:

Example:



- (2) In the case of GOT-F900 series
The data operation is executed using a fixed format.

Example:



Data operation function is applicable to the following objects. (GOT F900 series, only the Numeric Display and Numeric Input functions are available)

- | | | |
|---------------------|---------------------------------|---------------------|
| • Numerical display | • Numerical input ^{*1} | • Data list display |
| • Comment display | • Parts display | • Parts movement |
| • Lamp | • Panel meter | • Level |
| • Trend graph | • Line graph | • Bar graph |
| • Statistics graph | • Scatter graph | • Report |

*1 If bit mask operation is used for numerical input function, only logical (AND) is applicable. Logical add (OR) and exclusive logical add (XOR) are not applicable.

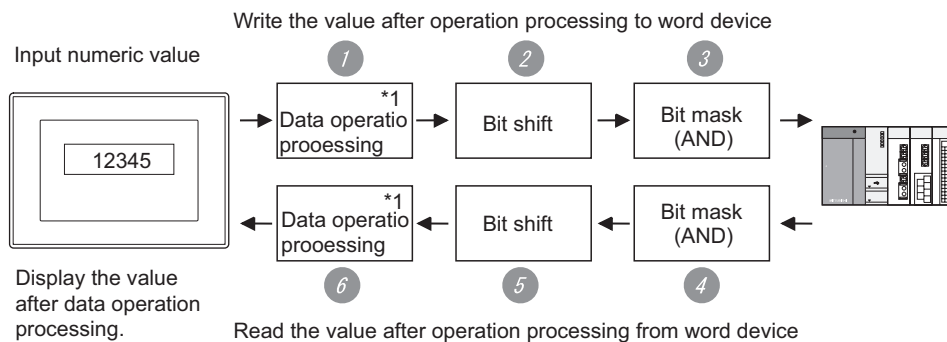
3 Procedure for operation processing (GOT-A900 series only)

The operation processing for device monitoring and numerical inputting is shown as follows.

- (1) When monitoring device

- ① Bit mask
- ② Bit shift
- ③ Data operation processing

- (2) When using numerical input function



<Write the value after operation processing to word device>

① Data operation processing

The input value by the preset operation expression for writing device value is calculated.

② Bit shift

Shifts the input value in the set direction (right / left)

③ Bit mask

Executes bit mask (logical AND) on the input value by the preset value.

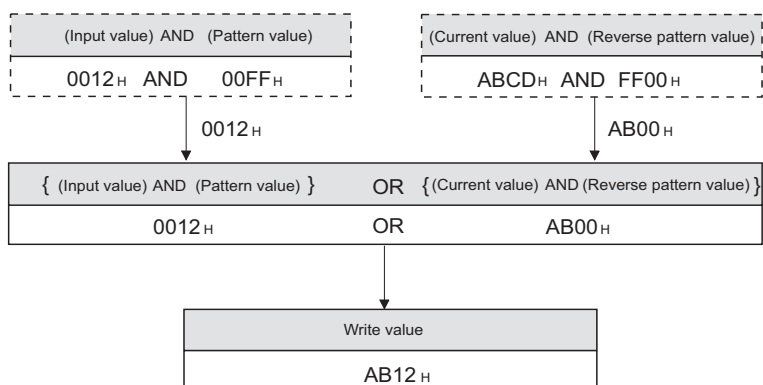
To write the bit and mask the remaining, carry out the following.

[Operation data]

$$(\text{Write value}) = \underbrace{\{(\text{Input value}) \text{ AND } (\text{Pattern value})\}}_{\text{User-set value}} \text{ OR } \underbrace{\{(\text{Current value}) \text{ AND } (\text{Reverse pattern value})\}}_{\text{Value created for GOT operation}}$$

Example: Writing 12_H to the lower two digits of the current value ABCD_H

Input value (value input by user)	: 0012 _H
Current value (value before write)	: ABCD _H
Pattern value (value set by user)	: 00FF _H
Reverse pattern value (value created for GOT operation)	: FF00 _H



<Read the word device value after operation processing>

④ Bit mask

Executes bit mask (logical AND) of the device value by the preset pattern value.

⑤ Bit shift

Shifts the device value in the reverse direction.

⑥ Data operation processing

Calculates and displays the written device value by the preset operation expression for reading device value.

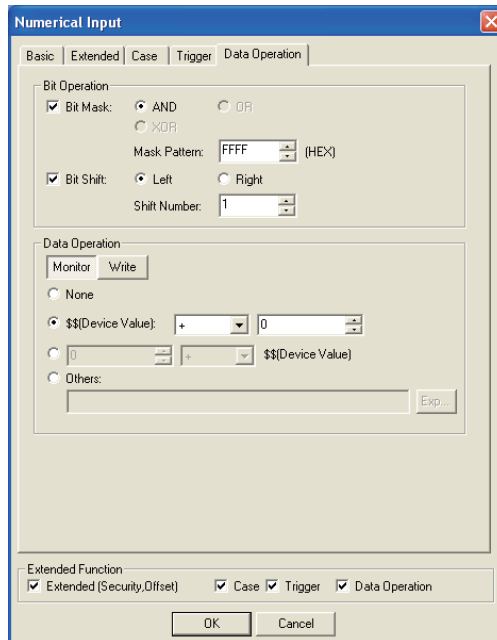
5.6.1 Arrangement and settings

Data operation function is set for each arranged object function.
For the details, refer to the arrangement and setting of the object.

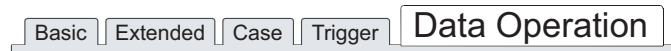
5.6.2 Setting items

This section explains the setting items for data operation function with the example of numerical input function.

1 GOT-A900 series



(Example: When setting GOT-A900 series numerical input function)

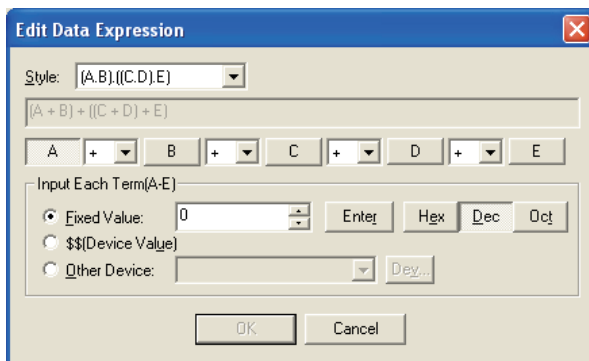


Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. Select the bit mask type and set the mask pattern value in hexadecimal format.</p> <p>AND : Executes logical product. OR : Executes logical add. XOR : Executes exclusive logical add. Mask Pattern : At data length of 16 bits (0 to FFFF), at 32 bits (0 to FFFFFFFF)</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable the bit shift operation (for monitoring/writing). Select the shift direction and set the number of bits to shift [Shift Number].</p> <p>Left : Shift left Right : Shift right Shift Number : At data length of 16 bits (1 to 15), at 32 bits (1 to 31)</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		<p>Set the data operation for writing to device and for monitoring each. Switch by Monitor and Write buttons.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Monitor/ Write *1		<p>Select the data operation format from the following 4 patterns.</p> <p>When not executing operation by data operation, check this item.</p> <p>When executing operation by monitor device value (\$\$) and one type of constant, select this item. After the selection, set the constant (decimal).</p> <p>When setting other than above expressions i.e., user-setting conditional expression. Select "Others" to set the conditional expression. After selecting, click on Exp button to display "Edit Data Expression" dialog box. Set the conditional expression on that dialog box.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

*1 Edit data expression dialog box

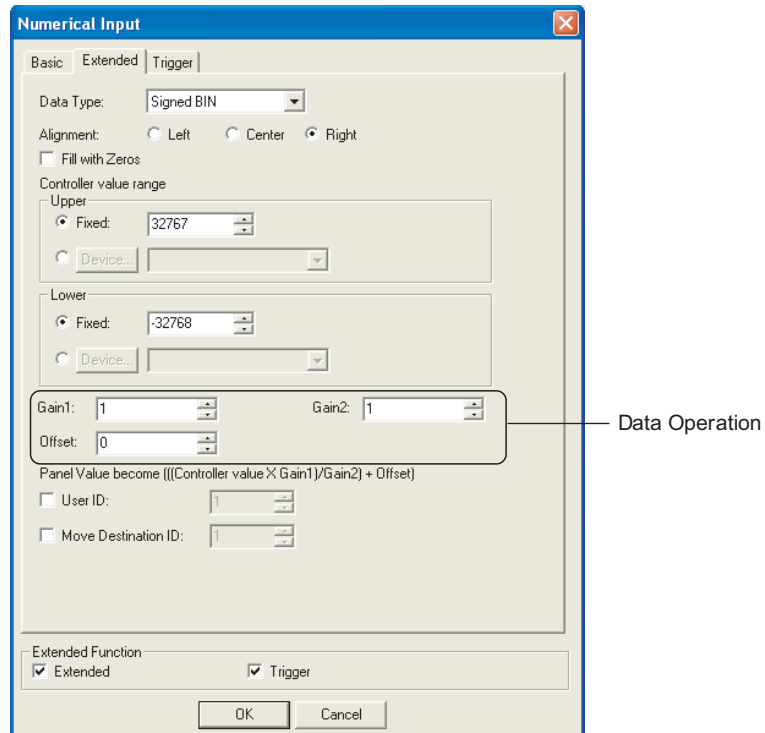
Set the expression for data operation.



Items	Description	A	F
Style	<p>Set the operation expression format.</p> <p>A · B — Fixed value,variable (represented as "\$\$", "SW" , respectively; — Operator any word device set for operation)</p> <p>Select from the following 9 types.</p> <p>1) A 4) (A · B) · C 7) ((A · B) · C) · (D · E) 2) A · B 5) A · ((B · C) · D) 8) (A · B) · ((C · D) · E) 3) A · (B · C) 6) A · (B · (C · D)) 9) ((A · B) · (C · D)) · E</p>	○	×
[A] [B] [C] [D] [E]	Click buttons [A] to [E] to set fixed value and variable for each item in [Input f Each Term (A-E)].	○	×
Operator	<p>Select the operator for operation expression.</p> <p>+: Add *: Multiply %: Remainder -: Subtract /: Divide</p> <p>% (Remainder operator) The left value is divided by the right value and the remainder the result. Example) 100 % 3 = 1 (100 / 3 = 33 remainder is 1)</p>	○	×
Input Each Term (A-E)	<p>Set each item for data operation.</p> <p>Fixed value : Select this item when using fixed value to execute the operation. After selecting, input the value and click on the [Enter] button. Select the data type for the value by [Hex] , [Dec] and [Oct] buttons.</p> <p>\$\$, \$W (Device value) : Select this item to execute the operation of the word device value that has been set as monitor and write destination. Be sure to set one.</p> <p>Other device : Select this item to execute the operation of the word device value. (☞ Section 5.1 Device Setting) Data type is the same as the monitor device (\$\$ and \$W).</p>	○	×

1	OVERVIEW
2	SPECIFICATIONS
3	COMMON SETTING
4	PREPARATORY OPERATION FOR OBJECT SETTING
5	COMMON SETTINGS FOR OBJECTS
6	LAMP, SWITCH
7	NUMERICAL/ CHARACTER DISPLAY
8	ALARM

2 GOT-F900 series



(Example: When setting GOT-F900 series numerical input function)



Items	Description	A	F
Gain1	Set the multiplication value for monitor device	×	○
Gain2	Set the division value for monitor device	×	○
Offset	Set the addition value for monitor device	×	○

5.6.3 Precautions

This section provides precautions for using data operation function.

1 Precautions in using the GOT-F900.

- (1) Bit operation (bit mask and bit shift) cannot be executed in GOT-F900 series. Only data operation is available.
- (2) Data operation of "Gain1", "Gain2" and "Offset" cannot be executed in the GOT-F900 series if "Real" is set in "Format" on the "Basic" tab.

5.7 Offset Function

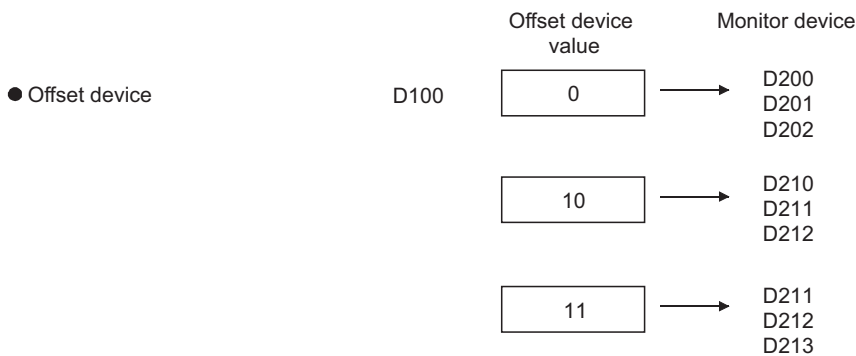


This function enables switching and monitoring plural devices by setting a single device in each object function. (In the alarm list function, plural comments can be switched and displayed by setting a single device.)

1 Switching and monitoring plural device statuses by a single device

The value set in the device using the offset function (hereinafter referred to as offset device) is added to the device set in each object function.

- Device set in each object function D200, D201, D202



Switch the monitor device according to the value stored in offset device.

This function is available for the following objects.

- Numerical display
- ASCII display
- Lamp
- Line graph
- Touch switch*
- Numerical input
- Comment display
- Panel meter
- Bar graph
- Script
- Data list
- Parts display
- Level
- Statistics graph
- Status Observation Function
- ASCII input
- Parts movement
- Trend graph
- Scatter graph

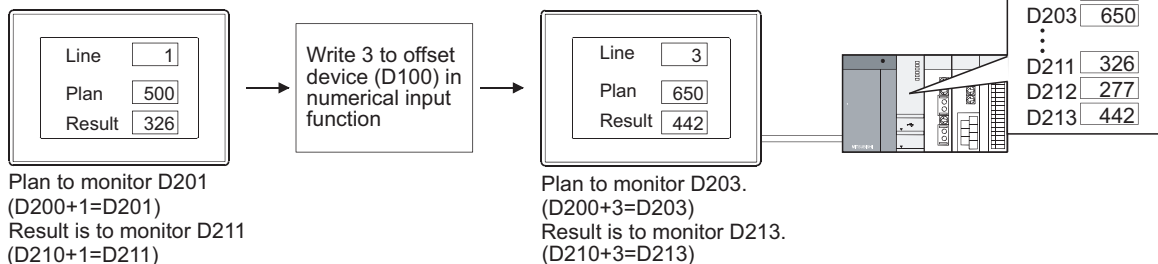
* The offset device value is added to the device set in the action setting.

Example:

Switch and monitor plural line statuses with a single numerical display function.

Section 7.1 Numerical Display/Numerical Input

Line:	Numerical input function	Device	D100
Plan:	Numerical display function	Device	D200
		Offset device	D100
Result:	Numerical display function	Device	D210
		Offset device	D100



Plan to monitor D201
(D200+1=D201)
Result is to monitor D211
(D210+1=D211)

Plan to monitor D203.
(D200+3=D203)
Result is to monitor D213.
(D210+3=D213)

2 Switch and display plural comments by a single device (The alarm list (user alarm))

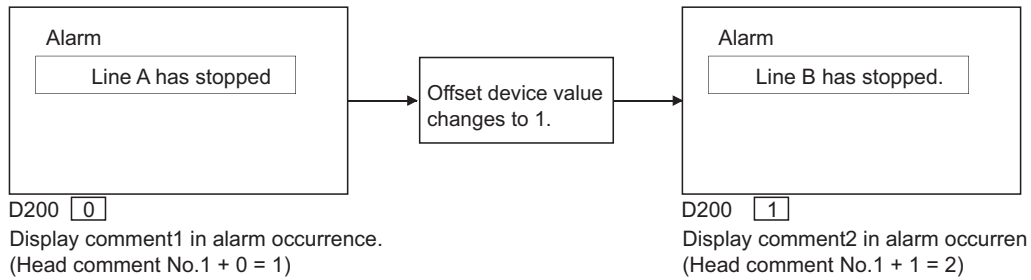
The offset device value is added to the comment set in the alarm list function.

In a normal alarm list, it needs to set bit devices for the number of displayed comments. However, by using the offset function, plural comments can be switched and displayed by a single device.

(1) Offset of display setting

The offset device value is added to the number of the comment to be displayed.

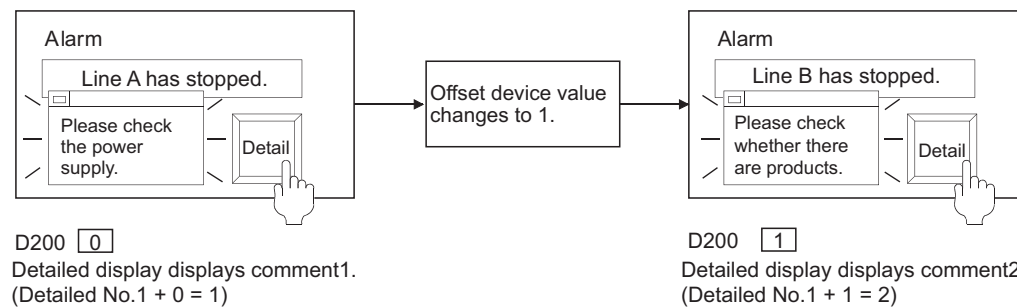
Head comment No. : 1
Comment No. offset : D200



(2) Offset of detailed display setting

The offset device value is added to the numbers of comment (comment window), window screen and base screen to be displayed as details.

Detailed display : Comment window
Detailed No. of alarm device : 1
Detailed No. offset : D200



Hint!

When executing offset of detailed display setting

When executing offset of detailed display setting, the comment for detailed display will change. The message of alarm list is not relevant.

To relate the message to the comment, adjust comment and the message displayed by using offset of display setting.

5.7.1 Arrangement and settings

The offset function is to arrange and set each object function.
Refer to the arrangement and setting of the objects.

5.7.2 Setting items

The offset function is set in each object function.
Refer to the setting items of the corresponding objects.

5.7.3 Precautions

Precautions for using the offset function are as follows.

1 Precautions for drawing

- (1) When monitoring the trigger device in sampling by the status observation function
When offsetting the trigger device in a constant sampling, set the offset sampling longer than the monitor sampling.

Example: Changing cycle (7 s) of offset device value > Status observation function sampling (5 s)

- (2) Abnormal operation of the status observation cycle setting (e.g. uncollected data by affecting the timing shift)

The condition device for the status observation has the delays in monitor screen set an offset function-specified object. Do not set an offset function-specified object on the monitor screen at using the status observation.

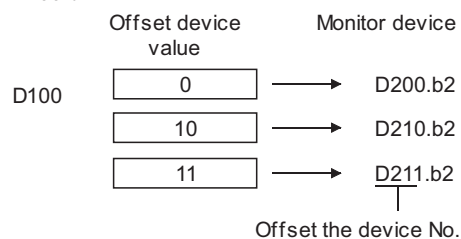
- (3) Device setting

- (a) The offset function is not available for the bit device word specification.
- (b) For the word device bit specification, the device No. is offset.

Example:

- Device that has been set in each object D200.b2

- Offset device



2 Precautions for use

(1) Offset value change

The monitor device will be read as the offset value changes; so do not change the offset value frequently.

If the offset value is changed frequently, the monitor speed will become low.

(2) When the offset device No. exceeds the PLC word range trigger

When the offset device No. exceeds the PLC device range, monitoring and writing will not be executed. Error will be displayed in alarm list (system alarm), if it is set in advance.

When monitoring plural devices with a single graph, the display method is determined by the setting method of monitored device.

(a) Trend graph, line graph, bar graph and statistics graph

When setting the device consecutively: Holds the previous display.

When setting the device at random : Holds the previous display only when the displaying exceeds word range trigger.

For the display other than the above, the offset device will be monitored.

(b) Scatter graph

When setting the device consecutively: Holds the previous display.

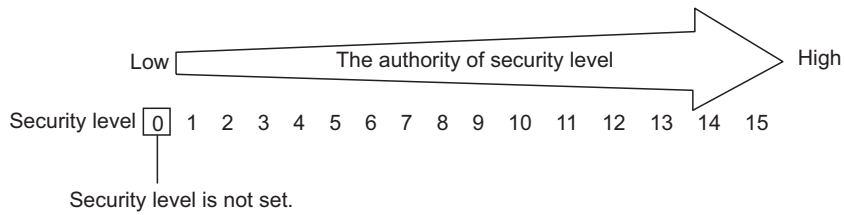
When setting the device at random : Holds the previous display.

5.8 Security Function



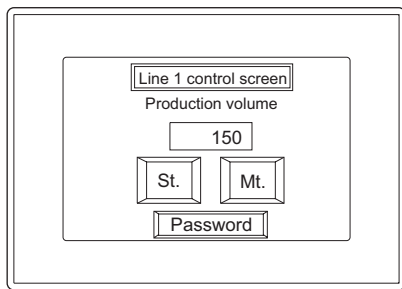
This function determines which screen is displayed depending on the security level. The security level can be changed by inputting the password corresponding to each level. The security level (0 to 15) can be set for each screen and object. The objects that are settable by the security level depend on the GOT model type used.

- GOT-A900 series: Base screen, window screen, each object function
- GOT-F900 series: Base screen, each utility screen



1 Example (when using GOT-A900 series)

Change the contents that can be operated by each user in the screen for setting plural objects.

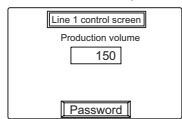


Base screen 1
Screen design example

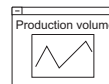
Used objects and security levels

- 150 Display product volume (security level: 4)
- St. Display product volume condition(Window screen 2) (security level: 4)
- Mt. Switch to Mt. screen (base screen 10)(security level: 4)
- Password Display password input screen (security level: 0)

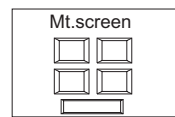
Screen example for each security level



Base screen 1
(Security level: 1)



Window screen 2
(Security level: 8)



Mt. screen
(Security level: 15)

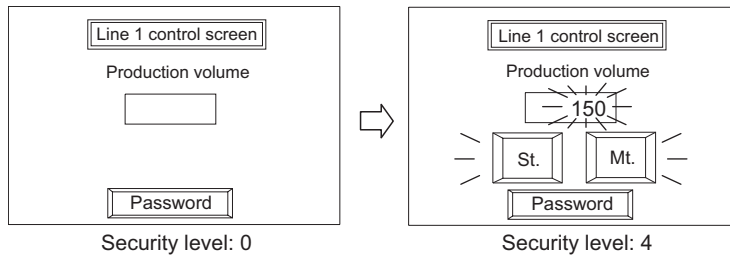
○: Enabled ×: Not enabled.

User	User's security level	150	St.	Mt.	Password	Production volume	Maintenance screen
Operator	4	○	○	○	○	×	×
Supervisor	8	○	○	○	○	○	×
Maintenance staff	15	○	○	○	○	○	○
Others	0	×	×	×	×	×	×

(1) Operation example

(a) Set the security function in the object function.

The following example shows the object display and operation changed from 0 to 4 of the security level.

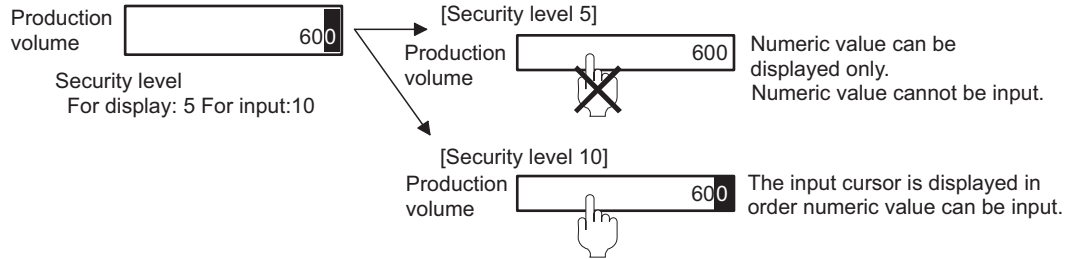


Security level status	Screen	Operation contents
Level 0	<p>Line 1 control screen</p> <p>Production volume</p> <p>Password</p> <p>Base screen 1</p>	<p>The object function on the screen cannot be used, because the security level is in a low status</p> <ul style="list-style-type: none"> • Base screen 1 (security level 0) • Each object function (security level 4)
Level 0	<p>Display security password screen</p> <p>Base screen 1</p>	<p>In order to change the security level, display the password screen by the touch switch.</p> <p>(Hand icon) 2 Change method of the security level)</p>
Level 0 ↓ Level 4	<p>Input the password of security level 4</p> <p>Password screen 1</p>	<p>Input the password, and change the security level into 4.</p>
Level 4	<p>Line 1 control screen</p> <p>Production volume</p> <p>150</p> <p>St. Mt.</p> <p>Password</p> <p>Base screen 1</p> <p>Numeric value display</p> <p>Display touch switch</p>	<p>Display the object function corresponding to security level 4.</p>

Remark

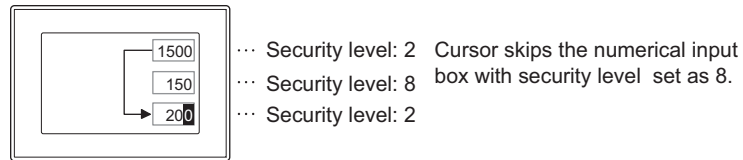
- (1) The security level set in the numerical input, the ASCII input and the touch switch. 2 types of security levels (for input and display) can be set in the numerical input, the ASCII input and the touch switch.

Example: When the security level is set in the numerical input.



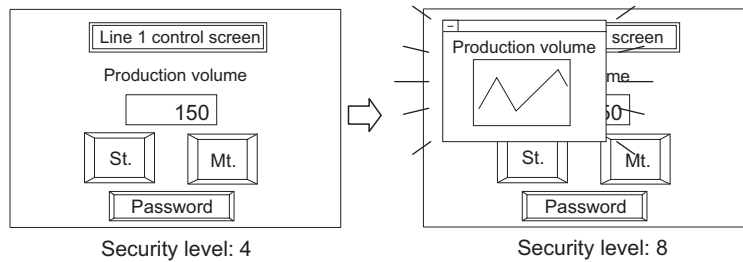
- (2) The movement of the input cursor when setting the security function. The cursor will move to the currently available numerical input box or ASCII input box, when setting security level respectively in plural numerical input and ASCII input.

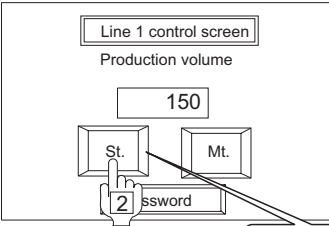
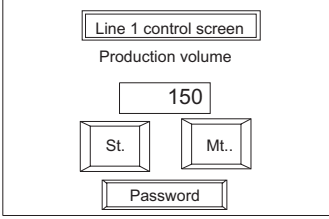
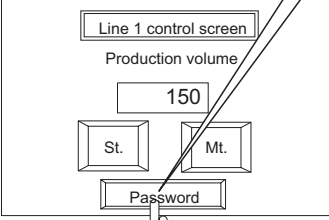

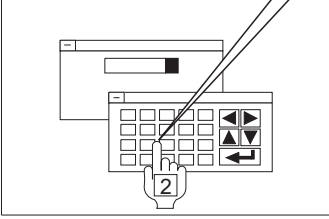
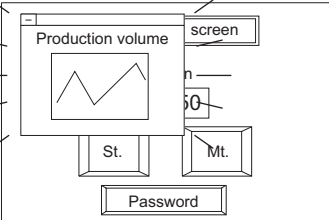
Example: Input numeric value when the base screen security level is "2".



(b) Window screen

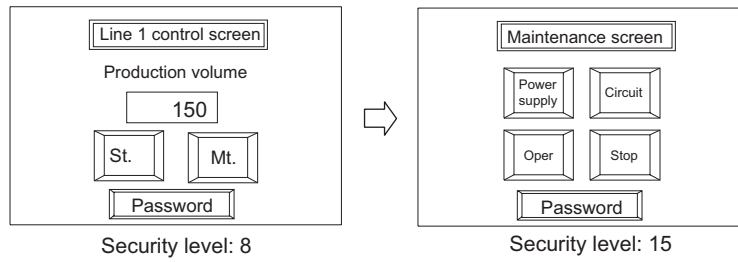
The following example shows the object display and operation changed from 4 to 8 of the security level.



Security level status	Screen	Operation contents
Level 4	 <p>Line 1 control screen Production volume 150 St. Mt. Password</p> <p>Base screen 1</p> <p>Display window screen through operating touch switch.</p>	<p>Base screen 1 (security level 4)</p> <p>↓</p> <p>Window screen 2 (security level 8)</p>
Level 4	 <p>Line 1 control screen Production volume 150 St. Mt. Password</p> <p>Base screen 1</p> <p>Display security password screen</p>	<p>Do not display the window screen.</p>
Level 4	 <p>Line 1 control screen Production volume 150 St. Mt. Password</p> <p>Base screen 1</p> <p>Input the password with 8 or higher security level.</p>	<p>In order to change security level, display the password screen by touch switch.</p> <p> Change method of the security level)</p>
Level 4 ↓ Level 8	 <p>Password screen</p>	<p>Input the password, and change the security level into 8 or higher.</p>
Level 8	 <p>Production volume screen 150 St. Mt. Password</p> <p>Window screen 2</p>	<p>Display a window screen.</p>

(c) Switching the base screen

The following example shows the object display and operation changed from 8 to 15 of the security level.



Security level status	Screen	Operation contents
Level 8	<p>Line 1 control screen</p> <p>Production volume</p> <p>150</p> <p>St. Mt.</p> <p>Password</p> <p>Base screen 1</p> <p>Switch screen through operating touch switch</p>	Base screen 1 (security level 8)
Level 8 ↓ Level 15	<p>Password screen</p> <p>Input the password of security level 15.</p>	Display the password screen automatically. Input the password, and change the security level into 15.
Level 15	<p>Maintenance screen</p> <p>Power supply Circuit</p> <p>Oper Stop</p> <p>Password</p> <p>Base screen 10</p>	Switch to base screen 10

2 Change method of the security level




In order to change the security level, the password of each security level needs to be input on the password screen.

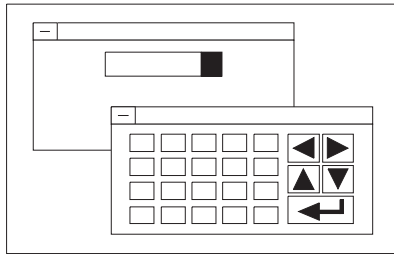
(1) In the case of GOT-A900 series

Either of the following methods is available to display the password screen.

- (a) Use the touch switch for switching to the password screen. (Extension: Password)
- (b) Display the GOT utility, and touch [Password]

The following indicates how to change the security level.


- 1 Display the password screen.
- 2 Input the password of the security level to be changed and touch  (GOT-A900 series)/  (GOT-F900 series)
To close the password screen, touch  at the top-left of the password display window.



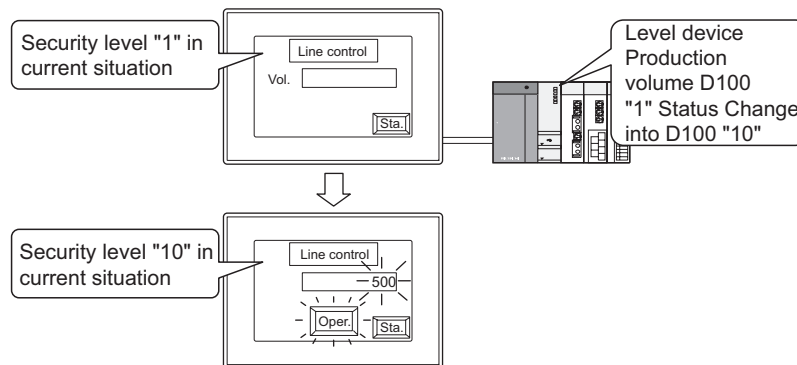
Point

Changing the security level from the PLC CPU (GOT-A900 series only)

The level of security is stored in the device storing "security level status" (Level device)

 Section 3.4 Password Setting)

Current security level can be changed by directly changing the level device value from the PLC CPU.



Change the display according to the changed security level.

When the value stored in the level device is set to below the security level for the base screen currently displayed, a screen for changing security levels is displayed. For returning to the previous screen, input the password for the set security level or higher.

(2) In the case of GOT-F900 series

Switching to the password input screen or canceling the security password (Level 0), can be done by creating touch switches on the base screen and setting key codes to each touch switch.

- Security password input screen : Key code "FF68"
- Security password cancellation (level 0): Key code "FF69"

It is recommended to arrange the touch switches for the security password input and cancellation on the same screen.

(a) Automatic display setting of the security password input screen.

When switching to the screen with a higher security level, the security password input screen can be displayed.

When displaying the security password input screen, it is necessary to turn ON the read device system signal 1 (b8) of the system information except in the F920GOT-K.

In the F920GOT-K, the security password input screen is automatically displayed.

Use the ten keys to input the password.

(b) Password setting for the security level 15 (essential)

If at least one security password is set, utility screens (system screens) are set to the level 15. Accordingly, system screens cannot be displayed if the password is not set for the level 15.

Make sure to set the password for the level 15.

The level of a utility (system screen) can be changed by right-clicking a system screen whose level is to be changed in the project work space, selecting the property, then selecting a desired level.



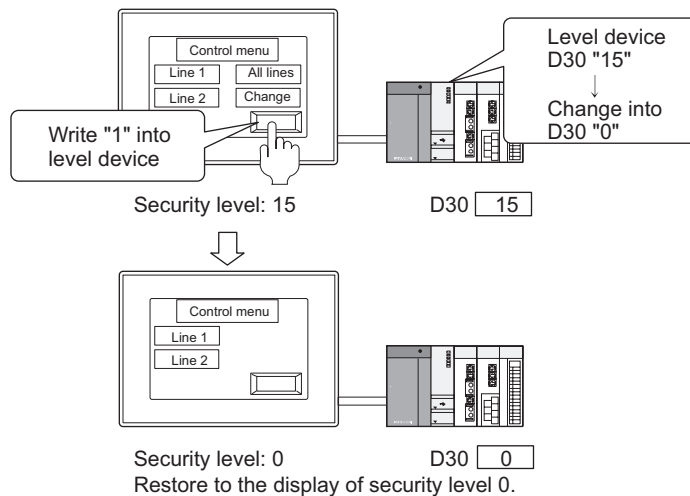
To undo temporarily-raised security level

The security level that is increased temporarily for maintenance and inspection tasks can be restored back to its original state easily.

- Inform the users of the normal security level password to restore the security level through the normal password input operation.
- Create the touch switch for restoring the security level to normal level.

Example: When changing the security level to "0" with the touch switch.

- Level device : D30
- Touch switch : Write "0" into level device D30




5.8.1 Security function setting

The following setting is needed when using the security function.

1 Setting the password for the security function

Set its password and the device (level device) where each security level is to be stored.

 Section 3.4 Password Setting

2 Setting the security level of each screen/object

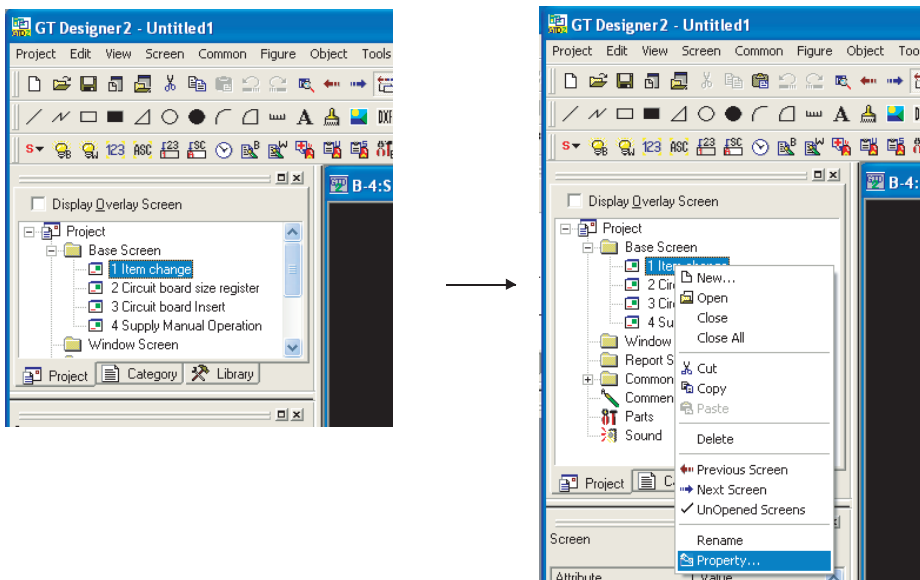
Set security level in the screen (using security function) and object function.

(1) Object function (GOT-A900 series only)

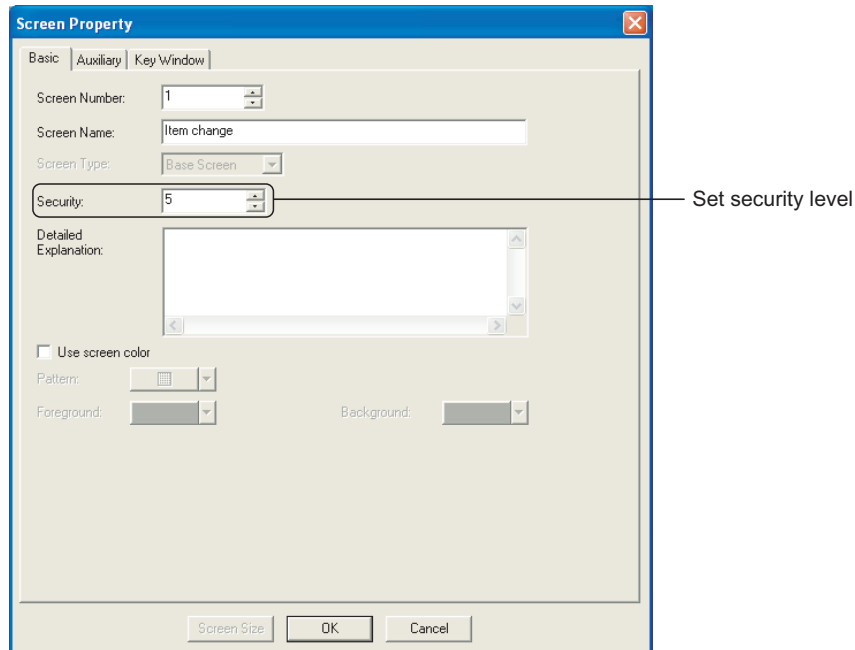
Set the security levels in the setting dialogue box for each object function.

(2) Screen

- 1 In the workspace (the project tab), select the screen whose security function is to be set, and right click the mouse to select [Property] in the menu.



- 2 Display the Screen Property dialogue box.
Set the security level (that is set to the screen) in Security of the basic tab.



5.8.2 Precautions

1 Making a note of the password

The already registered password cannot be checked later. Therefore, always make a note of the password.

If the password is forgotten, a security level change or security level password change/deletion on GT Designer2 cannot be made, and the project data must be recreated. (Re-setting of only the password cannot be done.)

2 Precautions for using GOT-F900 series

- (1) When GOT power supply is OFF
When GOT power supply is OFF, the security level will be canceled (level 0).

6. LAMP, SWITCH

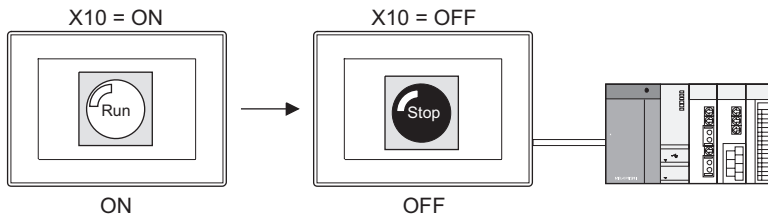


6.1 Lamp Display



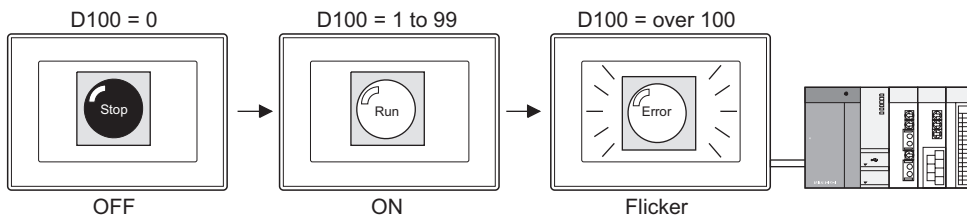
1 Bit lamp (☑️) (☞ Section 6.1.2 Setting items of bit lamp)

This function turns ON/OFF the lamp according to the ON/OFF status of the bit device.



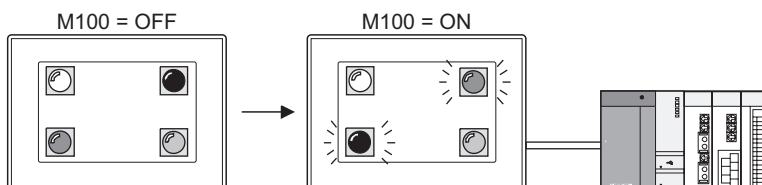
2 Word lamp (💡) (☞ Section 6.1.3 Setting items of word lamp (for GOT-A900 series only))

This function enables changing lamp color according to the word device value.
(GOT-A900 series only)



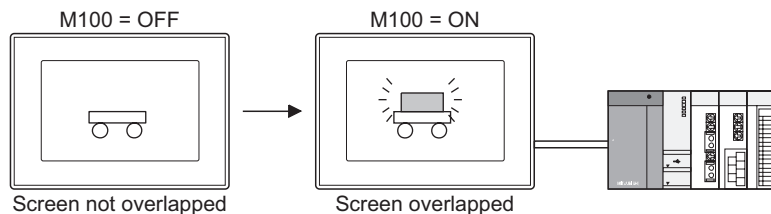
3 Bit lamp area (💡) (☞ Section 6.1.4 Setting items of bit lamp area (for GOT-F900 series only))

This function enables exchange of two colors used within the specified range according to the ON/OFF status of the bit device.
(GOT-F900 series only)



4 Screen lamp (Section 6.1.5 Setting items of screen lamp (for GOT-F900 series only))

This function enables overlapping of the specified screen No. according to the ON status of the bit device. (GOT-F900 series only)

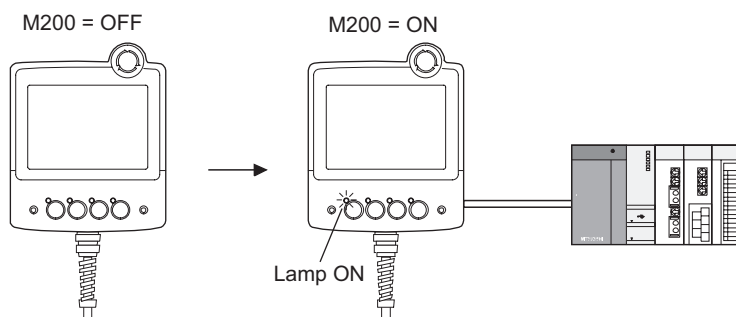


5 External lamp (Section 6.1.6 Setting items of external lamp (for GOT-F900 series only))

This function enables control of the operation switch lamps for GOT-F900 series (F930GOT-K, F94* handy GOT only) according to the ON/OFF status of the bit device.






Assign the operation switch and function switch lamp to bit devices. (GOT-F900 series only)

<In the case of handy GOT>



6.1.1 Arrangement and settings

1 Carry out either of the following operations.

- Click on  [Bit Lamp]/  [Word Lamp]/  [Bit Lamp Area]/  [Screen Lamp]/  [External Lamp].
- Select [Object] → [Lamp] → [Bit Lamp]/[Word Lamp]/[Bit Lamp Area]/[Screen Lamp]/[External Lamp] from the menu.

2 Click on the position where the lamp is to be located to complete the arrangement.

(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key. For the screen lamp and external lamp, the arrangement is not required.)

3 Double click on the arranged lamp to display the setting dialog box. Make the settings with reference to the following explanation.

(For the screen lamp and external lamp, the dialog box is not displayed.)



Easier setting method

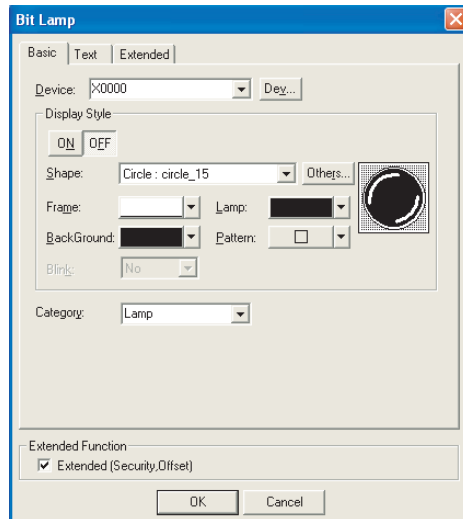
Using the property sheet enables direct on-screen object setting.

 GT Designer2 Version Operating Manual

6.1.2 Setting items of bit lamp




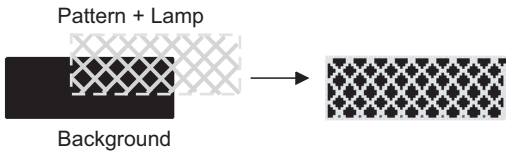
1 Basic tab

Set the device to be monitored and the lamp figure (shape/color) to be displayed when the device is ON/OFF.



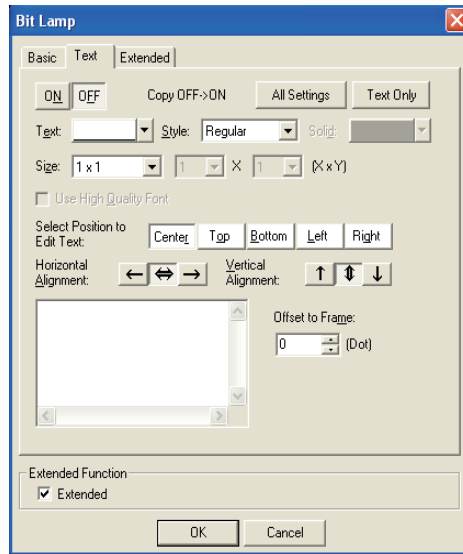
(Example: In the case of GOT-A900 series)


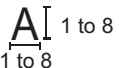
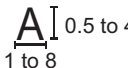

Basic | Text | Extended

Items		Description	A	F
Device		Set the device to be monitored. (☞ Section 5.1 Device Setting)	○	○
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	○	○
	OFF	Click on this item to set the display attributes when the device turns OFF.	○	○
	Shape	Set a Lamp Figure. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	○	○
	Frame	Select the color of the lamp shape.	○	○
	Lamp	Select the color of the lamp figure.	○	○
	BackGround	Select the pattern and background color of the lamp figure. The selected pattern in the lamp color is displayed on the background color.	○	×
	Pattern	Example: Background :  Pattern :  Lamp :  	○	×
Blink	Select the blinking pattern of the Lamp. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	○	×	
Category		When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	○	○

2 Text tab

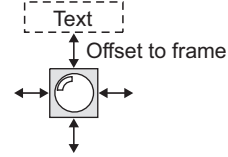
Set the text to be displayed at the center or on the top, bottom, right or left of the lamp.



Items	Items	Description	A	F
ON		Click on this item to set the text to be displayed when the device turns ON.	<input type="radio"/>	<input type="radio"/>
OFF		Click on this item to set the text to be displayed when the device turns OFF.	<input type="radio"/>	<input type="radio"/>
Copy OFF → ON / Copy ON → OFF		Used to copy the set attribute. Copy OFF → ON :The "OFF" attribute is copied to the "ON" attribute. Copy ON → OFF :The "ON" attribute is copied to the "OFF" attribute. The contents to be copied differ depending on the selected item.	<input type="radio"/>	<input type="radio"/>
	All Settings	Copies all text attributes.		
	Text Only	Copies only text.		
Text		Select the color of text to be displayed.	<input type="radio"/>	<input type="radio"/>
Style		Select the view format of the text (Regular/Bold/Solid/Raised). 	<input type="radio"/>	<input type="checkbox"/>
Solid		Select the solid color when [Solid] or [Raised] is set in [Style]	<input type="radio"/>	<input type="checkbox"/>
Size		Select the size (X × Y) of the text that is displayed to the right, left, top or bottom of the object. GOT-A900 series:  1 to 8 GOT-F900 series:  0.5 to 4	<input type="radio"/>	<input type="radio"/>
Use High Quality Font		Check this item when using high quality font to display the text. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)	<input type="radio"/>	<input type="checkbox"/>
Select Position to Edit Text		Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right) 	<input type="radio"/>	<input type="checkbox"/>
Horizontal Alignment		Select the horizontal position of the text.	<input type="radio"/>	<input type="checkbox"/>
Vertical Alignment		Select the vertical position of the text.	<input type="radio"/>	<input type="checkbox"/>

(Continued to next page)

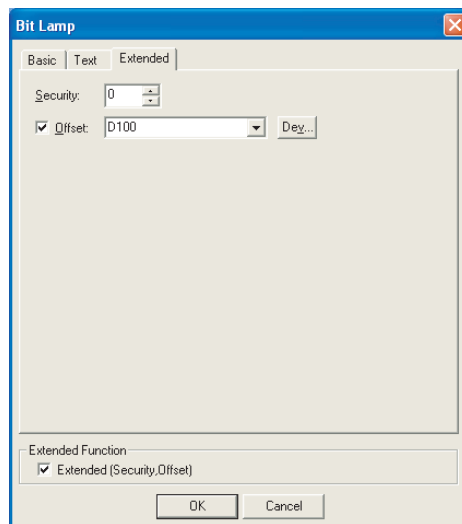
Items	Description	A	F
Text Input Area	Input the text to be displayed. (Up to 32 characters) Press the Enter key to input a new line of the end of the first line. (A line feed is counted as two characters.)	<input type="radio"/>	<input type="radio"/>
Offset to Frame	Set the number of dots for the distance between the text and object shape, i.e., frame. (Up to 100 dots)	<input type="radio"/>	<input checked="" type="radio"/>



3 Extended tab (GOT-A900 series only)

Set the security level and offset value.

Check "Extended" at the bottom of the dialog box to display this tab.

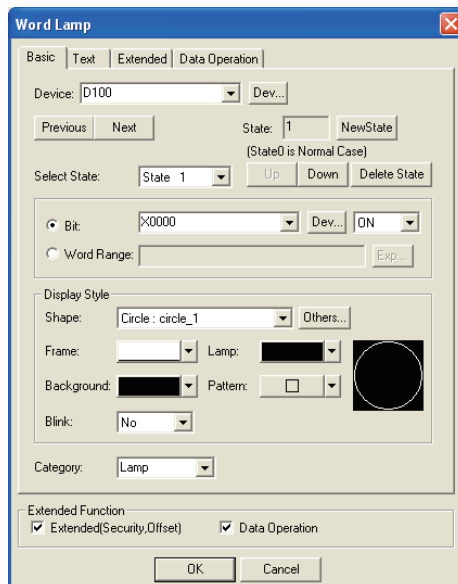


Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	<input type="radio"/>	<input checked="" type="radio"/>
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="radio"/>

6.1.3 Setting items of word lamp (for GOT-A900 series only)

1 Basic tab

Set the lamp figure (shape/color) corresponding to the device to be monitored or monitor device value.



Basic




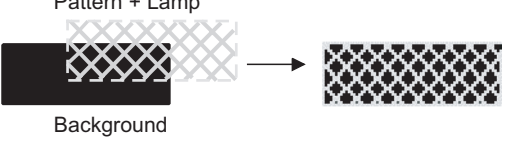

Text

Extended

Data Operation

Items	Description	A	F
Device	Set the device to be monitored. (Section 5.1 Device Setting)	○	×
State *1	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	○	×
New State	Creates a new state.	○	×
Delete State	Deletes a specified state.	○	×
Previous/Next	Switches the currently editing state to the previous or next state.	○	×
Up/Down	Changes the priority of the current state.	○	×
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	○	×
Exp	Set the condition by which the display attribute is changed. When a word device value is taken as a condition, click on Exp to enter the conditional expression in the dialog box for editing the display range. (Section 5.4 State Setting)	○	×
Display Style	Set the display attribute for the lamp.	○	×
Shape	Set a lamp figure. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (Section 5.3.2 Object shape setting)	○	×
Frame	Select the frame color of the lamp figure.	○	×
Lamp	Select the color of the lamp figure.	○	×

(Continued to next page)

Items	Description	A	F
State *1	Select the pattern and background color of the lamp figure. The selected pattern in the lamp color is displayed on the background color.	<input type="radio"/>	<input checked="" type="checkbox"/>
Background		<input type="radio"/>	<input checked="" type="checkbox"/>
Pattern	Example: Background :  Pattern :  Lamp :  	<input type="radio"/>	<input checked="" type="checkbox"/>
Blink	Select the blinking pattern of the Lamp. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	<input type="radio"/>	<input checked="" type="checkbox"/>
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

*1 State

For details of states, refer to the following.

☞ Section 5.4 State Setting

(1) When conditions are overlapped

When conditions are overlapped, a state with smaller No. has priority.

Example: Monitor device : D100

Data view format : Signed decimal, 16-bit signed decimal

The operation priority for setting overlap conditions

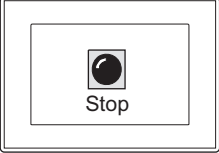
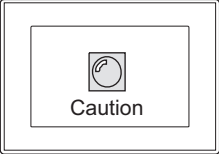
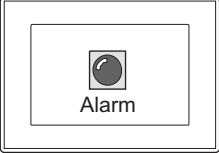
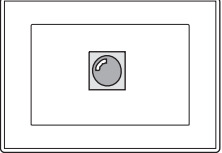
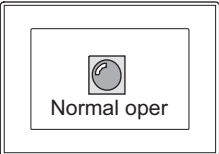
High



Low

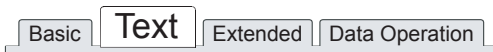
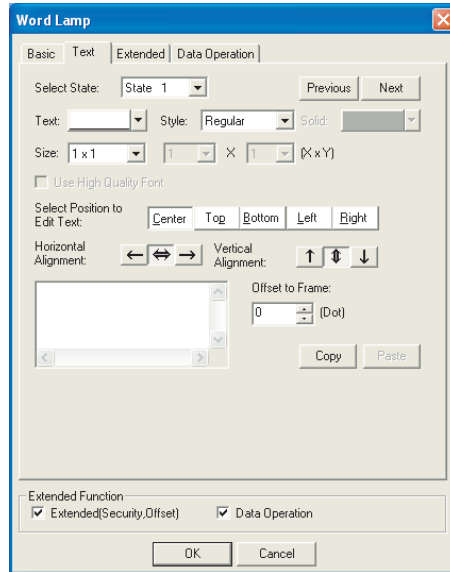
State No.	Display range	Lamp	Display text	Blink
1	M10 ON	Red	Stop	No
2	60 ≤ \$V ≤ 80	Yellow	Caution	No
3	81 ≤ \$V	Red	Alarm	Low
Normal case (State 0)	-	Blue	Normal operation	-


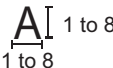
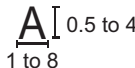

* \$V is the monitor device value.

State 1	When M10 is ON, the lamp will be red and the displayed text will be "Stop".	
State 2	When the device value is between 60 and 80 (60 ≤ \$V ≤ 80), the lamp will be yellow and the displayed text will be "Caution".	
State 3	When the monitor device value is 81 or more (81 ≤ \$V), the display (lamp color and displayed text) on state 3 and the lamp color on state 0 will blink alternately. The text set on state 0 is not displayed.	 Blink every second. ⇄ 
Normal case (State 0)	When condition is other than state 1, 2 and 3, the lamp will be blue and the displayed text will be "Normal operation".	

2 Text tab

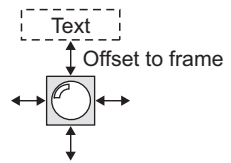
Set the text to be displayed at the center or on the top, bottom, left or right of the lamp.



Items	Description	A	F
Previous/Next	When changing the lamp text setting of the preset state, select the state No. and then change the setting.	○	×
Select State			
Text	Select the color of text to be displayed.	○	×
Style	Select the view format of the text (Regular/Bold/Solid/Raised). 	○	×
Solid	Select the solid color when [Solid] or [Raised] is set in [Style]	○	×
Size	Select the text size (X × Y). Size of 1 × 1 represents 16 × 8 dots. GOT-A900 series:  1 to 8 GOT-F900 series:  0.5 to 4 1 to 8	○	×
Use High Quality Font	Check this item when using high quality font to display the text. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)	○	×
Select Position to Edit Text	Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right) 	○	×
Horizontal Alignment	Select the horizontal position of the text.	○	×
Vertical Alignment	Select the vertical position of the text.	○	×
Text Input Area	Input the text to be displayed. (Up to 32 characters) Press the [Enter] key to input a new line of the end of the first line. (A line feed is counted as two characters.)	○	×

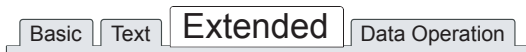
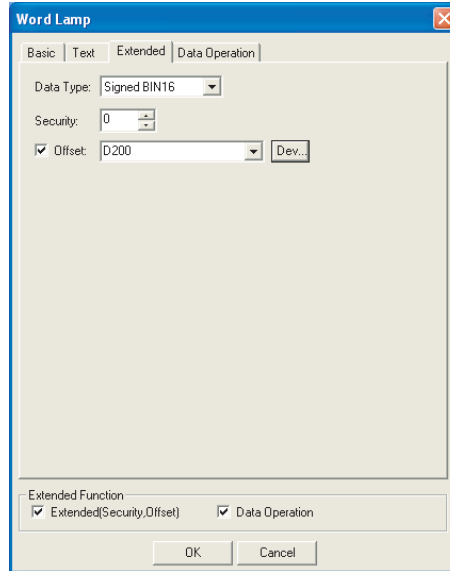
(Continued to next page)

Items	Description	A	F
Offset to Frame	Set the number of dots for the distance between the text and object shape, i.e., frame. (Up to 100 dots)	○	×
Copy	Copy the set text attribute.	○	×
Paste	Clicking on the <input type="button" value="Paste"/> button in other state completes the copy of the text attribute.	○	×



3 Extended tab

Set the data type, security level and offset value of the monitor device.
Check "Extended" at the bottom of this dialog box to display this tab.



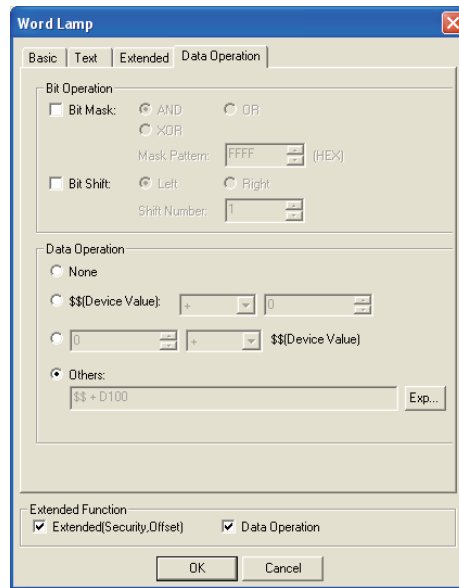
Items	Description	A	F
Data Type	Select the data type of the word device to be monitored.		
	Signed BIN16 : Lamp display is executed by a signed 16-bit binary value of a word device.		
	Unsigned BIN16 : Lamp display is executed by an unsigned 16-bit binary value of a word device.	○	×
Security	BCD16 : Lamp display is executed by a 16-bit BCD (Binary-Coded Decimal) value of a word device.		
	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function)		
	After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×

4 Data Operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

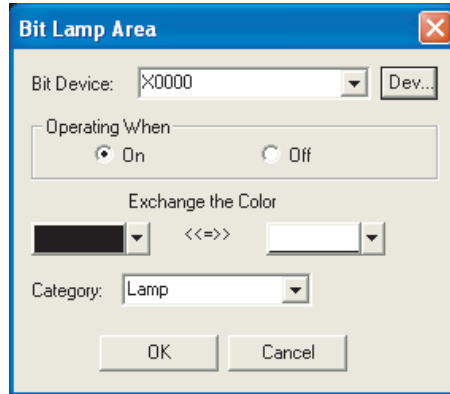
 Section 5.6 Data Operation Function



Items		Description	A	F
Bit Operation	Bit Mask	Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern]. AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.	○	×
	Bit Shift	Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number]. Left :Left shift Right :Right shift	○	×
Data Operation		Select an operational expression format for data operation.	○	×

6.1.4 Setting items of bit lamp area (for GOT-F900 series only)

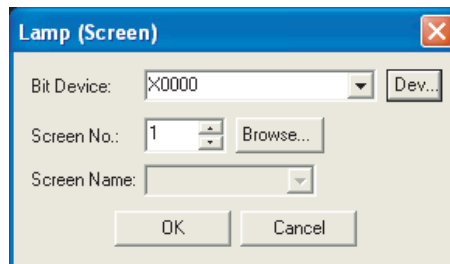
Set the device to be monitored and the colors to be exchanged.



Items	Description	A	F
Bit Device	Set the device to be monitored. (Section 5.1 Device Setting)	×	○
Operating When	Select the condition for color replacement when bit device is ON/OFF.	×	○
Exchange the Color	Select 2 colors to be exchanged in 1-dot unit within the arranged area on the screen.	×	○
Category	When allocating category to the object, select a proper category. (GT Designer2 Version□ Operating Manual)	×	○

6.1.5 Setting items of screen lamp (for GOT-F900 series only)

Set the device to be monitored and overlapped screen of color.

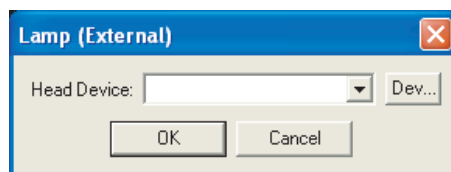


Items	Description	A	F
Bit Device	Set the device to be monitored. (Section 5.1 Device Setting)	×	○
Screen Type	Only base screen can be set here. (Up to 3 screens in total can be overlapped on one and other)	×	○
Screen No.	Select the screen to be overlapped by screen No.	×	○
Screen Name	Select the screen to be overlapped by the screen name.	×	○

The image for the object arrangement is not displayed on the screen.

6.1.6 Setting items of external lamp (for GOT-F900 series only)

Set the device that makes the external lamp ON.



Items	Description	A	F
Head Device	Set the head of the bit device that is related to the operation switch lamp on the F930GOT-K or F94* handy GOT (Section 5.1 Device Setting) The ON/OFF of the operation switch lamp is controlled according to the ON/OFF status of a bit device that is set by a PLC.	x	○

The image for the object arrangement is not displayed on the screen.

6.1.7 Precautions

The following is the precautions for using the lamp function.

1 Precautions for drawing

- (1) Maximum number of lamp objects settable on one screen
 - GOT-A900 series : 256
 - GOT-F900 series : 50

- (2) Display on GT Designer2 and GOT

With GT Designer2, only figures for which bit devices are ON are displayed. However, with GOT, a figure corresponding to bit device ON may be displayed overlaying a figure that corresponds to bit device OFF state. (When a bit device is ON, bit lamp display may differ between GT Designer2 and GOT.)

In such a case, take appropriate measures so that the figure corresponding to bit device OFF will not be displayed. Setting a lamp color or background color can be effective.

Example of a bit lamp displayed differently between GT Designer2 and GOT

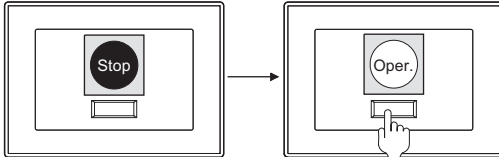
Item	Display	
	Bit device ON	Bit device OFF
Setting at GT Designer2	ON	OFF
Display on GOT	OFF	OFF

* The representation above is given only for the purpose of explanation and it differs from actual display.

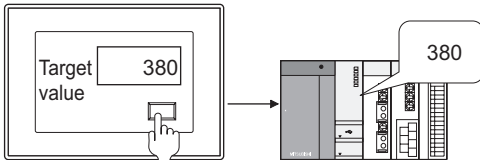
6.2 Touch Switch



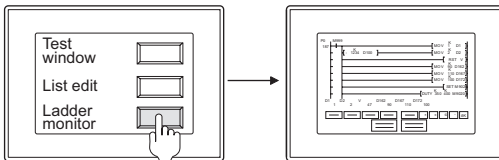
- 1 Bit switch** B (Section 6.2.2 Setting items of bit switch)
Turns bit device ON/OFF.



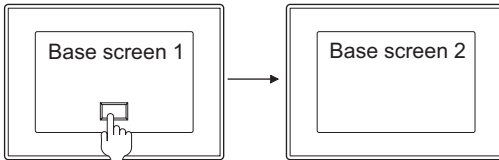
- 2 Data set switch** D (Section 6.2.3 Setting items of data set switch)
Changes word.




- 3 Special function switch** F (Section 6.2.4 Setting items of special function switch)
Switches to special function screen such as ladder monitor, test window, etc.

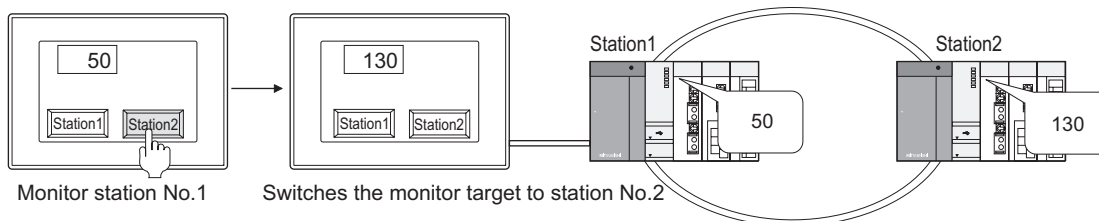



- 4 Go to screen switch** S (Section 6.2.5 Setting items of go to screen switch)
Switches base screen/window screen.



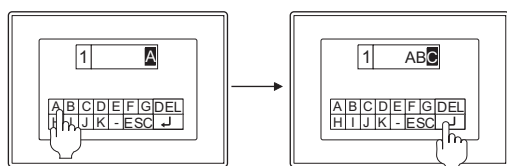
5 Change station No. switch  (☞ Section 6.2.6 Setting items of change station No. switch (specific for GOT-A900 series))


Switches the object device being monitored to the same device of other station No.



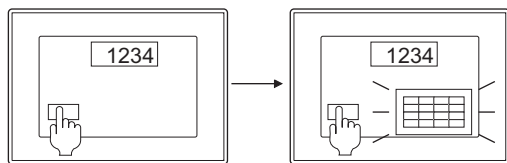
6 Key code switch  (☞ Section 6.2.7 Setting items of key code switch)


Operates as preset key code.



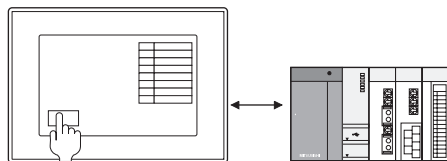
7 Data change switch  (☞ Section 6.2.8 Setting items of data change switch (specific for GOT-F900 series))


Displays the window for numerical input/ASCII input and input data with keys.
(The windows are provided within GOT.)



8 Recipe transfer switch  (☞ Section 6.2.9 Setting items of recipe transfer switch (specific for GOT-F900 series))

The recipe value is written to the PLC data register.



9 Multi action switch  (☞ Section 6.2.10 Setting items of multi action switch)

Sets the actions same with the switches described in **1** to **6**.

Multiple actions of **1** to **6** (GOT-A900 series: Max. 105 actions, GOT-F900 series: Max. 50 actions) are performed with touch operation.

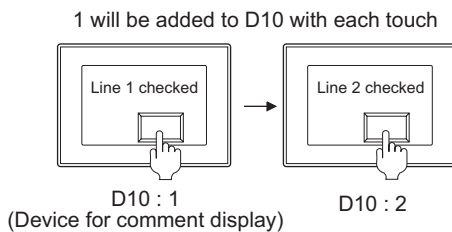
Touch switch extended function

Switch type	Description	A	F
Bit Switch	<ul style="list-style-type: none"> • Turns ON the specified bit device. (SET) • Turns OFF the specified bit device. (RESET) • Reverses (ON \leftrightarrow OFF) the current status of specified bit device. (ALT) • Turns ON the specified bit device only while the touch switch is touched. (Momentary) 	○	○
Data Set Switch	<ul style="list-style-type: none"> • Writes the set value to specified word device. (Fixed) • Writes the set word device value to specified word device. (Indirect) • Writes the set word device value + fixed value to specified word device. (Fixed + indirect) 	○	○
Go to Screen Switch	<ul style="list-style-type: none"> • Switches to the screen of which base screen No. that was displayed previously. • Switches to the screen of which screen No. that is specified. • Switches to the screen of which screen No. that is specified according to specified bit device ON/OFF. • When the current value of specified word device corresponds to the specified comparison expression, switches to the specified station No. 	○	○
Special Function Switch	Switches to special function screen of ladder monitor, test window, etc.	○	○
Change Station No. Switch	<ul style="list-style-type: none"> • Switches to the station No. specified as monitor target. • Switches to the specified station No. when the bit device (of which monitor target is specified) turns ON/OFF. • When the current value of specified word device corresponds to the specified comparison expression, switches to the specified station No. 	○	×
Key Code Switch	Controls numerical input, key input of ASCII input, alarm list, data list and alarm history.	○	○
Data Change Switch	Displays the key window for numerical input/ASCTII input. (The windows are provided within GOT.)	×	○
Recipe Transfer Switch	<ul style="list-style-type: none"> • Writes the recipe value to the specified data register. • Writes the specified data register to recipe. 	×	○
Multi Action Switch	The above operation can be set to this switch.	○	○

Application Example

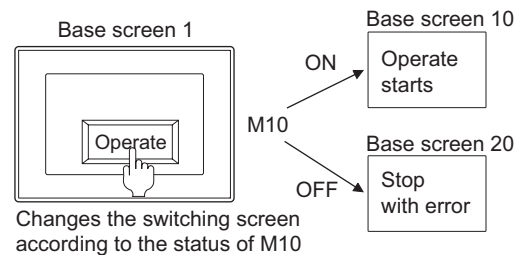
Comment display changes with each touch

☞ Section 6.2.3 Setting items of data set switch



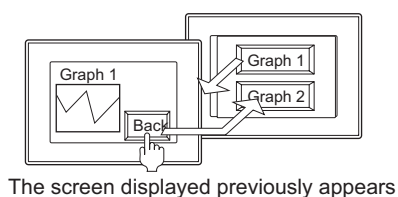
Change the switching screen according to device status

☞ Section 6.2.5 Setting items of go to screen switch



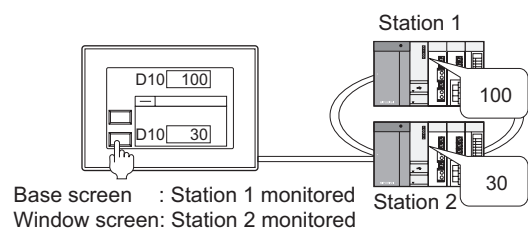
Return to the previously displayed screen

☞ Section 6.2.5 Setting items of go to screen switch



Switches different station No. among different screen types

☞ Section 6.2.6 Setting items of change station No. switch (specific for GOT-A900 series)



6.2.1 Arrangement and settings

1 Carry out either of the following operations.

- Click on each touch switch icon.



Bit switch



Go to screen switch



Data set switch



Key code switch



Special function switch



Change station No. switch



Data change switch



Recipe transfer switch



Multi action switch

- Select a touch switch from the menu.

[Object] → [Switch] → [Bit Switch]
[Data Set Switch]
[Special Function Switch]
[Go to Screen Switch]
[Change Station No. Switch]
[Key Code Switch]
[Data Change Switch]
[Recipe Transfer Switch]
[Multi Action Switch]

- Click on the position where the touch switch is to be located to complete the arrangement. (After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- Double click on the arranged touch switch to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

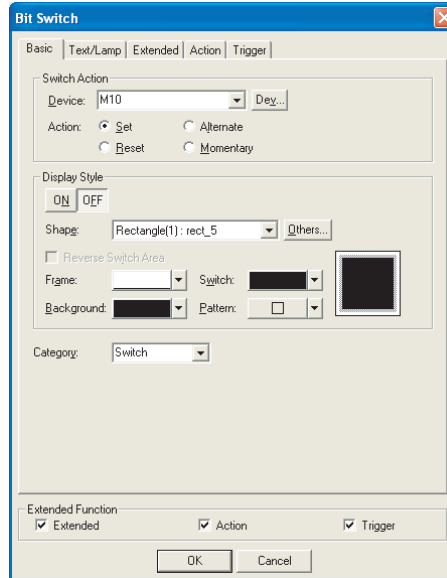
Using the property sheet enables direct on-screen object setting.



GT Designer2 Version □ Operating Manual

6.2.2 Setting items of bit switch

1 Basic tab



(Example: When setting in GOT-A900 series)

Basic

Text/Lamp




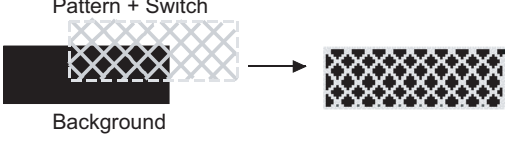


Extended

Action

Trigger

Items		Description	A	F
Switch Action	Device	Set bit device as write destination. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
	Action	Select the function corresponding to the bit device as write destination. Set : Turns ON bit when touched. Alternate : Switches bit ON/OFF with each touch. Reset : Turns OFF bit when touched. Momentary : Turns on bit only when being touched.	<input type="radio"/>	<input type="radio"/>
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	<input type="radio"/>	<input type="radio"/>
	OFF	Click on this item to set the display attributes when the device turns OFF.	<input type="radio"/>	<input type="radio"/>
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the <u>Others</u> button, shapes other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Reverse Switch Area	Check this item to XOR-reverse the touch switch area in which shape is not set, according to the background color.	<input type="radio"/>	<input checked="" type="radio"/>
	Frame	Select the frame color of the touch switch.	<input type="radio"/>	<input type="radio"/>
	Switch	Select the touch switch color.	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

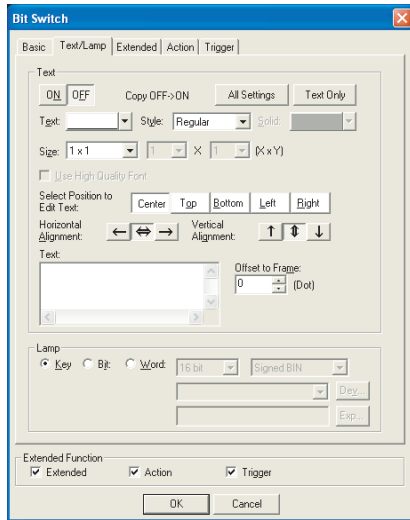
Items		Description	A	F
Display Style	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.		
	Pattern	Example: Background :  Pattern :  Switch :  	○	×
Category		When allocating category to the object, select a proper category. ( GT Designer2 Version  Operating Manual)	○	○

Point

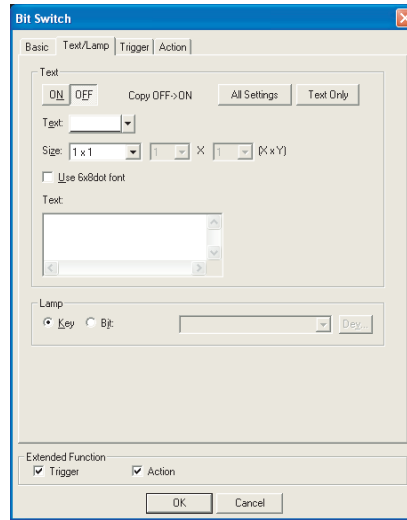
Touch switch operation when [Momentary] is set.

- (1) When any of the following takes place while the switch for which momentary is set is being touched, the bit device may remain ON even if the switch is released.
 - GOT hardware error
 - GOT power supply turned OFF
 - Communication error with a connected controller
 Set a timeout period for the corresponding device concerning continuous ON time as required, and have the connected controller forcibly turn OFF the bit device.
- (2) The actual switching of the base screen will occur once the operators finger is released off the touch switch from the moment it is first touched.

2 Text/Lamp tab



In the case of GOT-A900 series

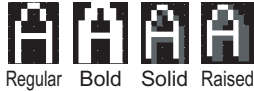



In the case of GOT-F900 series

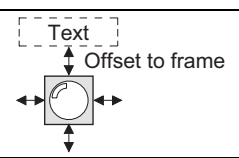


A

F

Items		Description	A	F
Text	ON	Click on this item to set the text to be displayed, positioning point and display position when the device turns ON.	<input type="radio"/>	<input type="radio"/>
	OFF	Click on this item to set the text to be displayed, positioning point and display position when the device turns OFF.	<input type="radio"/>	<input type="radio"/>
	Copy ON → OFF	Used to copy the set attribute. Copy OFF → ON :The "OFF" attribute is copied to the "ON" attribute.	<input type="radio"/>	<input type="radio"/>
	Copy OFF → ON	Copy ON → OFF :The "ON" attribute is copied to the "OFF" attribute.		
	All Settings	Copies all text attributes.		
	Text Only	Copies only text.		
	Text	Select the color of text to be displayed.	<input type="radio"/>	<input type="radio"/>
	Style	Select the view format of the text (Regular/Bold/Solid/Raised). 	<input type="radio"/>	<input type="checkbox"/>
	Solid	Select the solid color for the text when [Solid] or [Raised] is set in [Style].	<input type="radio"/>	<input type="checkbox"/>
	Size	Select the size of text to be displayed. (GOT-A900 series: 0.5 to 8, GOT-F900 series: 1 to 8 × 0.5 to 4) When (1 × 1) is set, the font size is 8 × 16 dots.	<input type="radio"/>	<input type="radio"/>
	Use High Quality Font	Check this item when using high quality font to display touch switch text. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)	<input type="radio"/>	<input type="checkbox"/>
	Select Position to Edit Text	Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right) 	<input type="radio"/>	<input type="checkbox"/>
	Horizontal Alignment	Select the horizontal position of the text.	<input type="radio"/>	<input type="checkbox"/>
Vertical Alignment	Select the vertical position of the text.	<input type="radio"/>	<input type="checkbox"/>	

(Continued to next page)

Items		Description	A	F
Text	Use 6 × 8dot font	Font is displayed in size of 6 × 8 dots. (Characters only)	×	○
	Text	Input the text to be displayed. (Up to 32 characters) Press the [Enter] key to input a new line at the end of the first line. (A line feed is counted as two characters.)	○	○
	Offset to Frame	Set the number of dots for the distance between the text and object shape, i.e., frame. (Up to 100 dots) 	○	×
Lamp		Select the method of switching touch switch image (ON shape, OFF shape).	○	○
	Key	ON shape is displayed when the touch switch is touched. OFF shape is displayed when the touch switch is released.	○	○
	Bit	When the bit device set in [Device] is ON, OFF shape will be switched to ON shape. After selecting, set the device (☞ Section 5.1 Device Setting).	○	○
	Word	When the range of specified word device is set to [Range] in [Device], OFF shape will be switched to ON shape. After selecting, make the settings as follows: Device :Sets the word device. (☞ Section 5.1 Device Setting) Data size 16 bit/32 bit :Selects data size for word device. Data type Signed BIN :Treats the word device value as signed binary value. Unsigned BIN :Treats the word device value as unsigned binary value. BCD :Treats word device value as BCD (binary decimal) value. Real :Treats the word device value as floating point type real. Display range Range :After setting the specified word device, click on [Range] button to set the switch range for ON/OFF shape. (☞ Section 5.5 Trigger Setting)	○	×

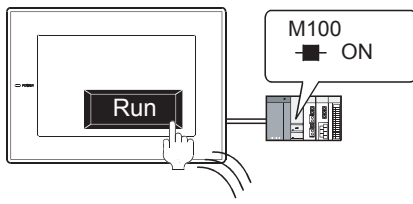
 **Hint!**

Lamp

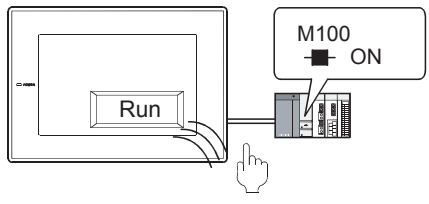
Select the item according to the application of ON/OFF shape set for a touch switch.

(1) When "Key" is selected

Select this item to switch only the image when the touch switch is touched. With the setting, OFF shape appears when the touch switch is released, regardless of the device status. Therefore, select "Bit" or "Word" to show the device status.



ON shape appears when the touch switch is touched.



OFF shape appears when the touch switch is released regardless of the device status.

1 OVERVIEW

2 SPECIFICATIONS

3 COMMON SETTING

4 PREPARATORY OPERATION FOR OBJECT SETTING

5 COMMON SETTINGS FOR OBJECTS

6 LAMP, SWITCH

7 NUMERICAL/ CHARACTER DISPLAY

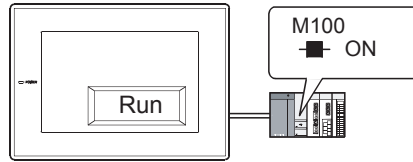
8 ALARM

(2) When "Bit" or "Word" is selected

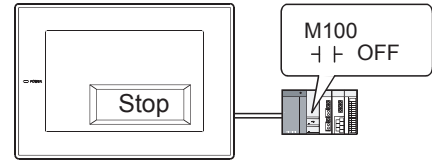
Select this item to switch the image according to the device status.

By setting the same device set in the basic tab, the device status can be shown by touch switch (lamp function).

Example: Bit: M100 Setting

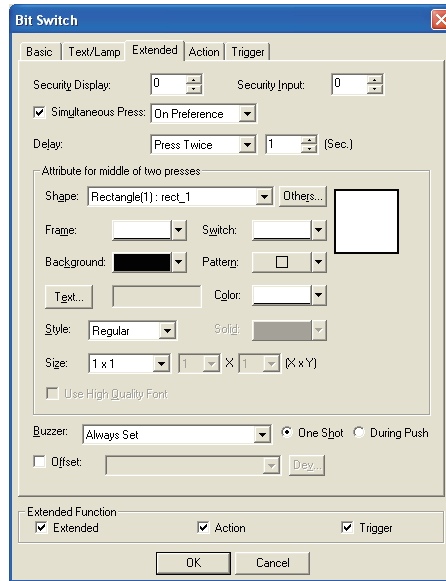


ON shape appears when M100 is ON







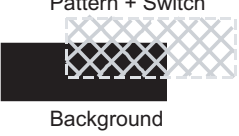


OFF shape appears when M100 is OFF.

3 Extended tab (for GOT-A900 series only)



Items	Description	A	F
Security Display/ Security Input	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (Section 5.8 Security Function) The number for security input must be larger than that for security display.	○	×
Simultaneous Press	<p>Check this item to disable simultaneous press of touch switch.</p> <p>On Preference: On status is handled with the priority as shown below.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Follow from the outside to inside of the touch key valid area in GOT by finger.</p> <p>Touch switch: ON</p> </div> <div style="text-align: center;"> <p>Follow from the inside to outside of the Touch key valid area in GOT by finger.</p> <p>Touch switch: ON status</p> </div> </div> <p>OFF Preference: OFF status is handled with the priority as shown below.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Follow from the outside to inside of the touch key valid area in GOT by finger.</p> <p>Touch switch: Won't be ON</p> </div> <div style="text-align: center;"> <p>Follow from the inside to outside fo the Touch key valid area in GOT by finger.</p> <p>Touch switch: OFF</p> </div> </div> <p>Press the outside of touch switch valid area while valid area in GOT is pressed. (Two points are simultaneously pressed.)</p> <div style="text-align: center;"> <p>Touch switch: OFF</p> </div>	○	×

(Continued to next page)

Items	Description	A	F
Delay	<p>Set the time from the instance the touch switch is touched to start the operation, i.e., delay time in 1-second unit. (Minimum: 1 second, Maximum: 5 seconds.)</p> <p>None : No delay time will occur.</p> <p>ON : Select this item to carry out ON operation by pressing the touch switch during the set time. Set the delay time. This setting can prevent an incorrect operation from occurring.</p> <p>OFF : Select this item to carry out OFF operation in the set time after the touch switch is turned OFF. Touch switch is ON during the set time. After selecting, set the delay time.</p> <p>Press Twice : Select this item to carry out the operation when the touch switch is touched once and then touched for the second time within the set time.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Attribute for middle of two presses	Set the display attribute for the touch switch after touched once when [Press Twice] is set in [Delay].	<input type="radio"/>	<input checked="" type="checkbox"/>
Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the [Others] button, shapes other than those in the list box or library figures can be selected. ( Section 5.3.2 Object shape setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Frame	Select the frame color of the touch switch.	<input type="radio"/>	<input checked="" type="checkbox"/>
Switch	Select the touch switch color.	<input type="radio"/>	<input checked="" type="checkbox"/>
Pattern	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	<input checked="" type="checkbox"/>
Background	<p>Example: Background : </p> <p>Pattern : </p> <p>Switch : </p> <p>Pattern + Switch </p> <p>Background </p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Text *1	When displaying text on the touch switch, click on [Text] button, set the text to be displayed and positioning point and display position.	<input type="radio"/>	<input checked="" type="checkbox"/>
Style	Select the view format of the text (Regular/Bold/Solid/Raised). 	<input type="radio"/>	<input checked="" type="checkbox"/>
Color	Select the color of text to be displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
Solid	Select the solid color for the text when [Solid] or [Raised] is set in [Style].	<input type="radio"/>	<input checked="" type="checkbox"/>
Size	Select the size of text on touch switch (0.5 to 8).	<input type="radio"/>	<input checked="" type="checkbox"/>
Use High Quality Font	Check this item when using high quality font to display touch switch text. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)	<input type="radio"/>	<input checked="" type="checkbox"/>

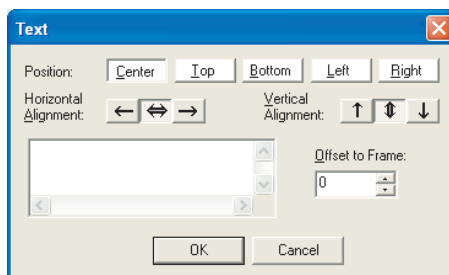
(Continued to next page)

Items	Description	A	F
Buzzer	Select the time the buzzer is on when the touch switch is touched. Always Set : The buzzer sound is on whenever the touch switch is touched. Set Only Fill Requirement : The sound is on only when the touch switch is touched and the trigger has been satisfied. Always Not Set : The buzzer sound is not on even when the touch switch is touched.	<input type="radio"/>	<input checked="" type="checkbox"/>
One Shot	Check this item to output volume at the moment the touch switch is touched when [Always Set] is set in [Buzzer Volume] and [Set Only Fill Requirement] is set.	<input type="radio"/>	<input checked="" type="checkbox"/>
During Push	Check this item to keep buzzer beeping while the touch switch is touched when [Always Set] is set in [Buzzer Volume] and [Set Only Fill Requirement] is set.	<input type="radio"/>	<input checked="" type="checkbox"/>
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

***1 Set the text to be displayed on touch switch**

When text is displayed on the touch switch when [Attribute for middle of two presses] is set, the settings must be made as follows.



Items	Description	A	F
Position	Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right)	<input type="radio"/>	<input checked="" type="checkbox"/>
Horizontal Alignment	Select the horizontal position of the text.	<input type="radio"/>	<input checked="" type="checkbox"/>
Vertical Alignment	Select the vertical position of the text.	<input type="radio"/>	<input checked="" type="checkbox"/>
Text	Input the text to be displayed. (Up to 32 characters) Press the [Enter] key to input a new line of the end of the first line. (A line feed is counted as two characters.)	<input type="radio"/>	<input checked="" type="checkbox"/>
Offset to Frame	Set the number of dots for the distance between the text and object shape, i.e., frame. (Up to 100 dots)	<input type="radio"/>	<input checked="" type="checkbox"/>



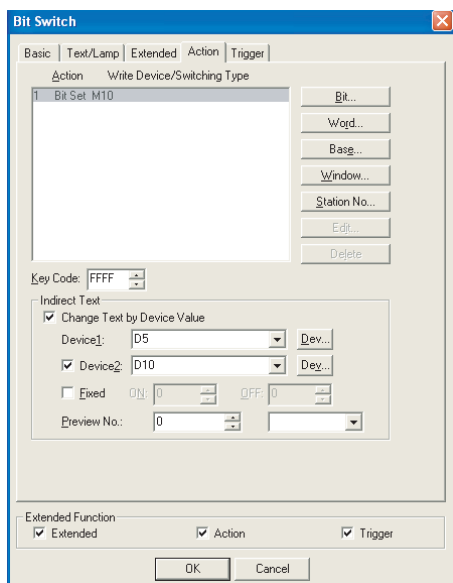
Displaying text on the top/bottom/left/right of touch switch

To display text on the top/bottom/left/right of touch switch, when [Attribute for middle of two presses] is set, set the text to be displayed when the device turns ON/OFF on the text/lamp tab.

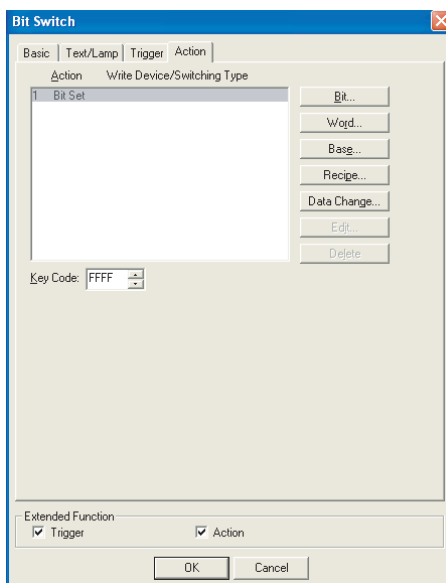
If the settings are not made for the text display on the text/lamp tab, text will not be displayed based on the attribute for middle of two presses.

(The display text at the time of ON/OFF may be blank.)

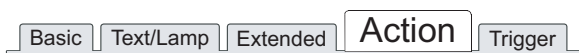
4 Action tab



In the case of GOT-A900 series



In the case of GOT-F900 series



A



F

Items	Description	A	F
Action	The set actions will be displayed in list format.	○	○
Key Code	Set the key code of the key for numeric value and ASCII input. (☞ App.2 Key Code List)	○	○
Bit *1	Click on this item to set the bit device ON/OFF operation for touch switch.	○	○
Word *2	Click on this item to set the word device value change for touch switch.	○	○
Base *3	Click on this item to make the settings in order the base screen will be switched by using touch switch.	○	○
Window *4	Click on this item to make the settings in order the window screen will be switched by using touch switch.	○	×
Station No. *5	Click on this item to make the settings in order the station No. will be switched by using touch switch.	○	×
Recipe	Click on this item to make the settings in order the data of recipe value will be transmitted by using touch switch.	×	○
Data Change	Click on this item to set the display of key window for numeric/ASCII input by using touch switch.	×	○
Edit	When intending to edit a preset action, select the action from [Action] and then click on Edit button. As the corresponding setting dialog box will appear, edit the action on that dialog box.	○	○
Delete	When intending to delete a preset action, select the action from [Action] and then click on Delete button. As the corresponding setting dialog box will appear, delete the action on that dialog box.	○	○

(Continued to next page)

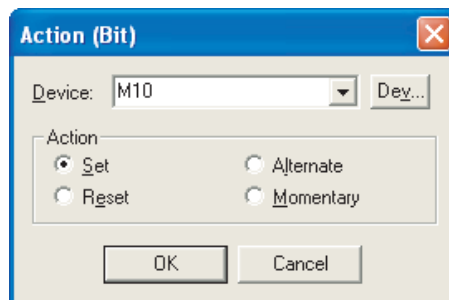
Items		Description	A	F
Indirect Text *6	Change Text by Device Value	Check this item to change the text display of touch switch according to a device value. After checking, click on the [Device] button and set the device stored a value. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Device 1	The comment having the same number as the value stored in the set device is displayed. "Text" on the "Text/Lamp" tab becomes invalid with check.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Device 2	Check this item to add the value of other device to "Device 1". After checking, click on the [Device] button and set the device stored a value. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Fixed	Check this item to add the other value to "Device 1" according to the display status (ON/OFF display) of touch switch. After checking, set the added value at ON/OFF of touch switch.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Preview No.	Set the comment to be displayed as touch switch text on GT Designer2 screen by the comment No.	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1 to *6, refer to the following.

***1 Bit**

The followings can be set as the touch switch actions taken when the bit device turns ON/OFF.

■ Setting of [Action (Bit)] dialog box

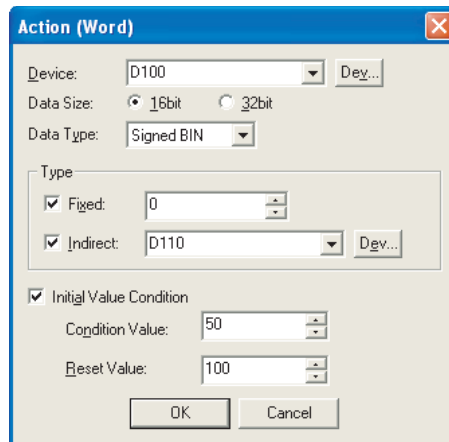


Items		Description	A	F
Device		Click on [Device] button to set the bit device of write destination. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
Action		Select the corresponding function to the bit device as write destination when touched. Set : Turns ON bit when touched. Alternate : Switches bit ON/OFF when touched. Reset : Turns OFF bit when touched. Momentary : Turns ON bit when touched only.	<input type="radio"/>	<input type="radio"/>

*2 Word

When changing the word device value with touch switch, set as show below.

■ Setting of [Action (Word)] dialog box




Items	Description	A	F
Device	Set the device of write destination. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
Data Size	Select the data size (16 bits/32 bits) of the word device.	<input type="radio"/>	<input type="radio"/>
Data Type	Select the data type of the value to be set in [Type] and [Initial Value Condition]. Signed BIN :Treats word device value as a signed binary value. Unsigned BIN :Treats word device value as an unsigned binary value. BCD :Treats word device value as BCD (binary decimal) value. Real :Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].)	<input type="radio"/>	<input type="radio"/>
Type	Fixed :Check this item to write a fixed value into the word device set as write destination, and then set the value. (This item must be always set when GOT-F900 is used.) Indirect :Check this item to write the specified value into a word device, and then set the word device. (☞ Section 5.1 Device Setting) When [Fixed] and [Indirect] are both checked, the value (fixed value + indirect value) will be written into the word device.	<input type="radio"/>	<input type="radio"/>
Initial Value Condition	If the value becomes the condition value when [Fixed] and [Indirect] are both set in [Type], the reset value will be written into the specified word device. Condition Value :Set the value as condition for writing the reset value into the specified word device. Reset Value :Set the value written into the word device when the condition value is satisfied	<input type="radio"/>	<input type="radio"/>

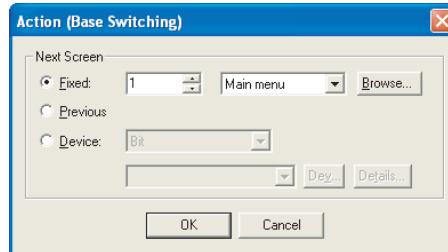
*3 Base

When switching base screen with touch switch, set as shown below.

For the details of the base screen switching function, refer to the following.

 Section 6.2.5 Setting items of go to screen switch (Basic tab)

■ Setting of [Action (Base Switching)] dialog box




Items	Description	A	F
Next Screen	Select the action of switching screen.	<input type="radio"/>	<input type="radio"/>
Fixed	Select this item to switch to the base screen of the specified No. Set the base screen No. as switching destination.	<input type="radio"/>	<input type="radio"/>
Previous	Select this item to switch to the base screen of which screen No. was displayed previously.	<input type="radio"/>	<input type="radio"/>
Device	Select this item to switch to the base screen specified by the No. based on the ON/OFF status or current value of the specified device. Select the data type of the device to be monitored. Bit :Switches base screen when the bit device turns ON/OFF. Signed (BIN16) :Switches base screen based on the word device (BIN16) binary value. BCD16 :Switches base screen based on the word device (BCD16) binary decimal value. After setting the device, click on Details button. As the corresponding dialog box will appear, set the action on that dialog box.	<input type="radio"/>	<input checked="" type="checkbox"/>

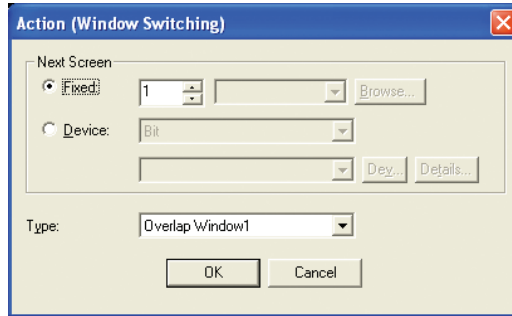
*4 Window

Make the settings in order that window screen will be displayed or switched by using the touch switch, as shown below.

For the details of the window screen switching function, refer to the following.

 Section 6.2.5 Setting items of go to screen switch (Basic tab)


■ Setting of [Action (Window)] dialog box



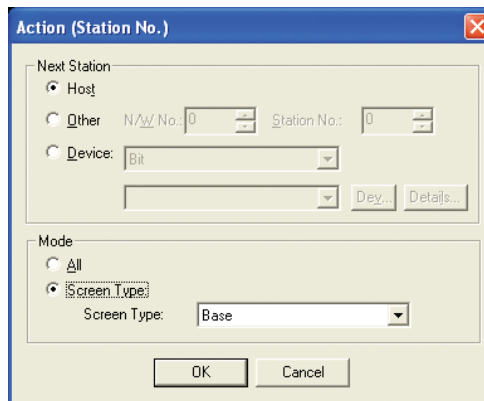
Items	Description	A	F
Next Screen	Select the action of switching screen.	<input type="radio"/>	×
Fixed	Select this item to switch to the window screen of the specified No. Set the window screen No. as switching destination.	<input type="radio"/>	×
Device	Select this item to switch to the window screen specified by the No. based on the ON/OFF status or current value of the specified device. Select the data type of the device to be monitored. Bit :Switches window screen when the bit device turns ON/OFF. Signed (BIN16) :Switches window screen based on the word device (BIN16) binary value. BCD16 :Switches window screen based on the word device (BCD16) binary decimal value. After setting the device, click on <u>Details</u> button. As the corresponding dialog box will appear, set the action on that dialog box.	<input type="radio"/>	×
Type	Select the window screen type to be switched to when the touch switch is touched. Overlap Window 1: Displays the window screen specified as overlap window 1 when the touch switch is touched. Overlap window 1 is displayed at the set display position on the base screen. Overlap Window 2: Displays the window screen specified as overlap window 2 when the touch switch is touched. Overlap window 2 is displayed at the set display position on the base screen. Superimpose Window: Displays the window screen specified as superimpose window when the touch switch is touched. Superimpose window is displayed at the set display position on the base screen.	<input type="radio"/>	×

***5 Station No.**

When setting the station No. switching function with the touch switch, set the following actions.
For the details of the station No. switching function, refer to the following.

 Section 6.2.6 Setting items of change station No. switch (specific for GOT-A900 series)
(Basic tab)

■ Setting of [Action (Station No.)] dialog box

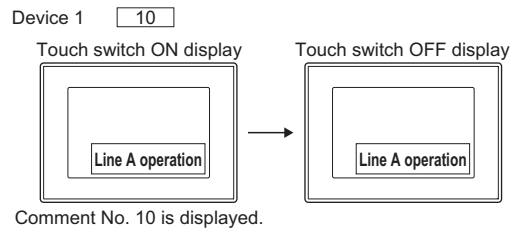


Items	Description	A	F
Next Station	Select the action of switching station No.	○	×
Host	Select this item to monitor the station No. connected with GOT.	○	×
Other	Select this item to switch the monitor target to other station. Set the network No. and station No. that will be switched to in decimal.	○	×
Device	Select this item to switch to the station, specified by the No., based on the ON/OFF status of current value of the specified device. Select the data type of the device to be monitored. Bit : Switches base screen when the bit device turns ON/OFF. Signed (BIN16) : Switches base screen based on the word device (BIN16) binary value. BCD16 : Switches base screen based on the word device (BCD16) binary decimal value. After setting the device, click on Details button. As the corresponding dialog box will appear, set the action on that dialog box.	○	×
Mode	All : Select this item to switch the whole project by station No. Screen Type : Select this item to switch the specified screen by station No.	○	×

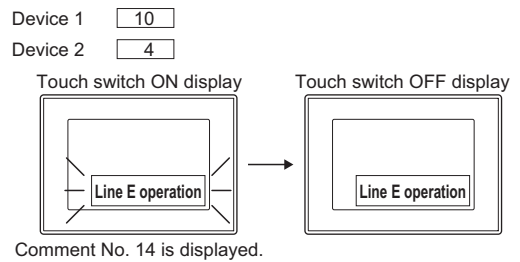
*6 Indirect Text

Set Indirect Text to change the text displayed on the touch switch according to the value of device.

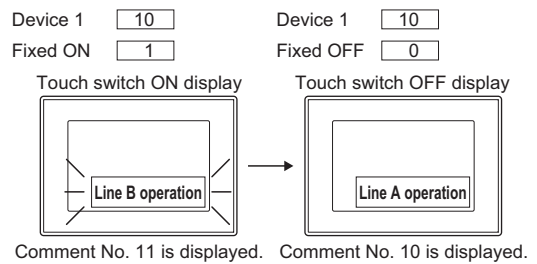
- (1) When set "Device 1" only
The comment having the same number as "Device1" is displayed without regarding ON/OFF of touch switch.



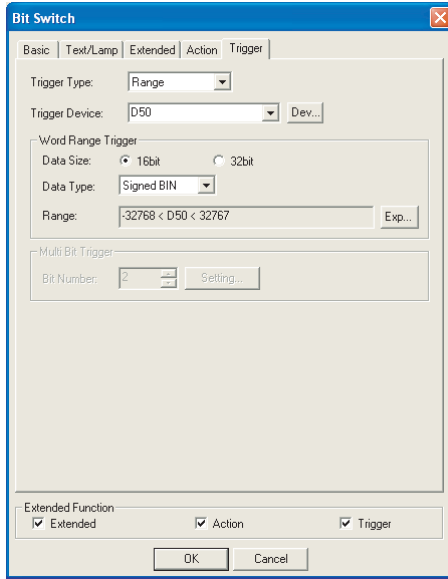
- (2) When set "Device 1" and "Device 2"
The comment having the same number as the total of "Device 1" + "Device 2" values is displayed without regarding ON/OFF of touch switch.



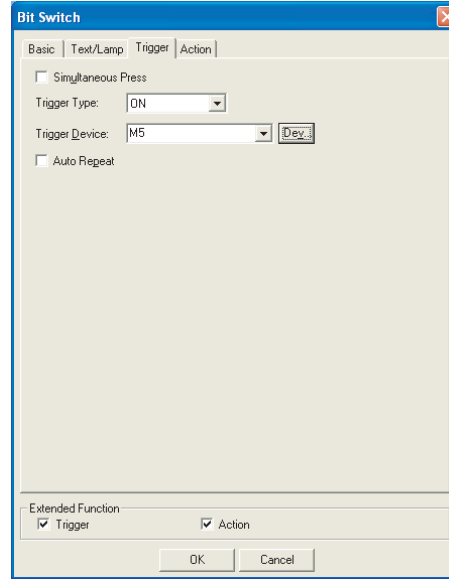
- (3) When set "Device 1" and "Fixed"
During touch switch is ON, the comment having the same number as the total of "Device 1" + "Fixed ON" values is displayed.
During touch switch is OFF, the comment having the same number as the total of "Device 1" + "Fixed OFF" values is displayed.



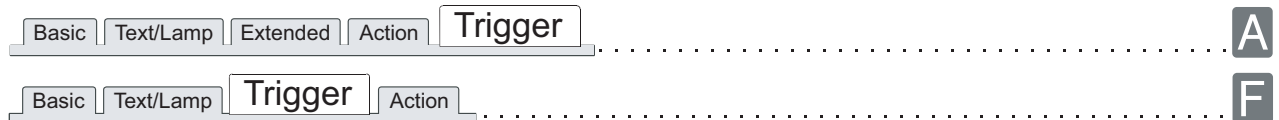
5 Trigger tab

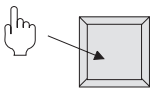
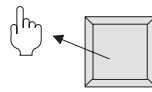
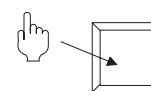
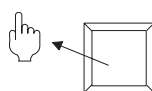
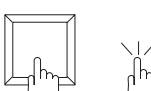


In the case of GOT-A900 series







In the case of GOT-F900 series



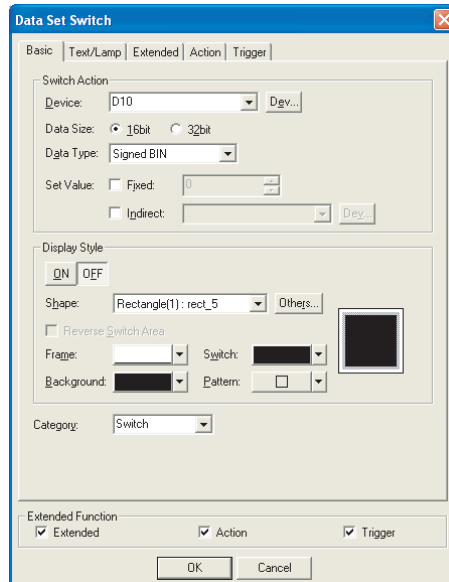
Items	Description	A	F
Simultaneous Press	<p>Check this item to disable simultaneous press of touch switch.</p> <p>ON Preference: ON status is handled with the priority as shown below.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Follow from the outside to inside of the touch key valid area in GOT by finger.</p>  <p>Touch switch: ON</p> </div> <div style="text-align: center;"> <p>Follow from the inside to outside of the touch key valid area in GOT by finger.</p>  <p>Touch switch: ON status</p> </div> </div> <p>OFF Preference: OFF status is handled with the priority as shown below.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Follow from the outside to inside of the touch key valid area in GOT by finger.</p>  <p>Touch switch: Won't be ON</p> </div> <div style="text-align: center;"> <p>Follow from the inside to outside of the touch key valid area in GOT by finger.</p>  <p>Touch switch: OFF</p> </div> </div> <p>Press the outside of touch switch valid area while valid area in GOT is pressed. (Two points are simultaneously pressed.)</p>  <p>Touch switch: OFF</p>	×	○
Trigger Type	<p>Select the trigger for displaying the object. (☞ Section 5.5 Trigger Setting)</p> <p>In the case of GOT-A900 series:</p> <ul style="list-style-type: none"> • Ordinary • Range • ON/OFF • Bit Trigger <p>In the case of GOT-F900 series:</p> <ul style="list-style-type: none"> • Ordinary • ON/OFF 	○	○

(Continued to next page)

Items	Description	A	F
Trigger Device	When [ON], [OFF] or [Range] is selected in [Trigger Type], click on Device button to set bit device and word device (only when [Range] is selected). ( Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger Device	When [ON] or [OFF] is selected in [Trigger Type], click on Device button to set bit device. ( Section 5.1 Device Setting)	<input checked="" type="checkbox"/>	<input type="radio"/>
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items for the word device set as trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Type	Select the data type of word device. Signed BIN :Treats the word device value as signed binary value. Unsigned BIN :Treats the word device value as unsigned binary value. Real :Treats the word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].)	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Click on the Range button and set conditional expression for the word device range. ( Section 5.5 Trigger Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Multi Bit Trigger	When selecting [Bit Trigger] in [Trigger Type], set the set bit device number (2 to 8) as multi bit trigger. After the setting, click on Setting button to set bit device and trigger conditions. ( Section 5.5 Trigger Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Auto Repeat	The device repeatedly turns ON/OFF in a certain period, while the touch switch is being pressed.	<input checked="" type="checkbox"/>	<input type="radio"/>

6.2.3 Setting items of data set switch

1 Basic tab




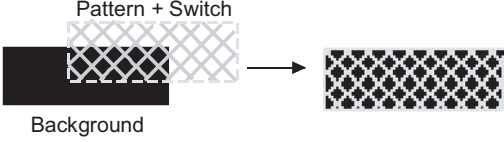



(Example: In the case of GOT-A900 series)

Basic | Text/Lamp | Extended | Action | Trigger


Items		Description	A	F
Switch Action	Device	Set the device of write destination. (☞ Section 5.1 Device Setting)	○	○
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	○
	Data Type	Select the data type of the value to be set in [Set Value]. Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value.	○	○
	Set Value	Fixed : Check this item to write a fixed value into the word device set as write destination, and then set the value. (This item must be always set when GOT-F900 is used.) Indirect : Check this item to write the specified value into a word device, and then set the word device. (☞ Section 5.1 Device Setting) When [Fixed] and [Indirect] are both checked, the value (fixed value + indirect value) will be written into the word device.	○	○
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	○	○
	OFF	Click on this item to set the display attributes when the device turns OFF.	○	○
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the [Others] button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	○	○
	Reverse Switch Area	When [None] is set in [Shape], check this item to XOR-reverse the touch switch (no shape) area according to the background color.	○	×
Frame	Select the frame color of the touch switch.	○	○	

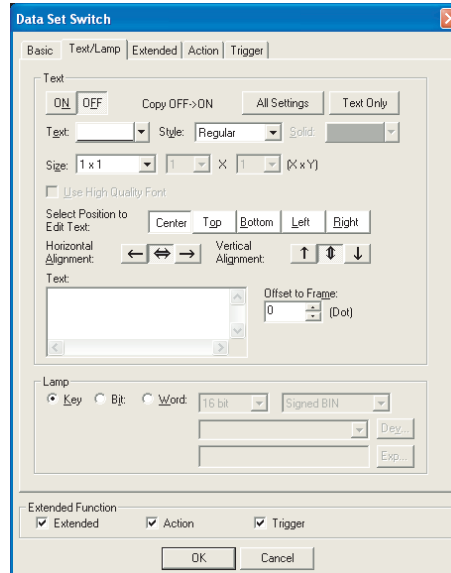
(Continued to next page)

Items		Description	A	F
Display Style	Switch	Select the touch switch color.	<input type="radio"/>	<input type="radio"/>
	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	<input type="radio"/>
	Pattern	Example: Background :  Pattern :  Switch :   Background	<input type="radio"/>	<input checked="" type="radio"/>
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version <input type="checkbox"/> Operating Manual)	<input type="radio"/>	<input type="radio"/>	

2 Text/Lamp tab

The setting items of text/lamp tab are the same with those of bit switch.
For the details of the set data, refer to the following.

 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)

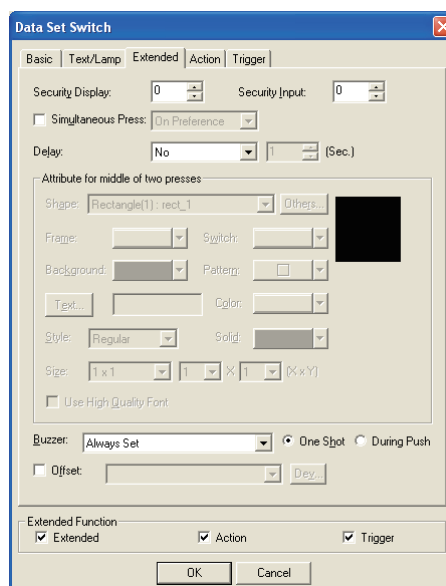


(Example: In the case of GOT-A900 series)

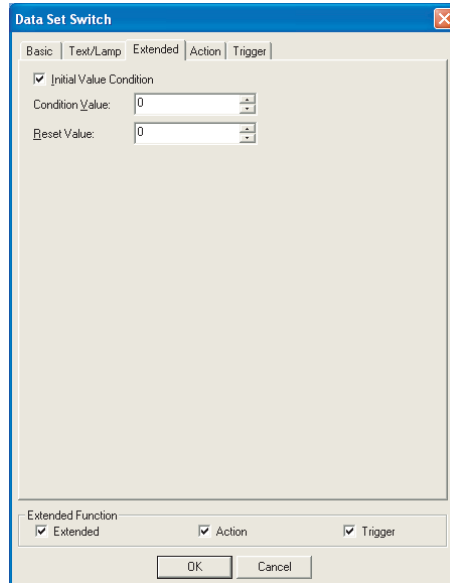
3 Extended tab (specific for GOT-A900 series)

The setting items of extended tab are the same with those of bit switch.
For the details of the set data, refer to the following.

 Section 6.2.2 Setting items of bit switch (Extended tab (for GOT-A900 series only))




4 Extended tab (for GOT-F900 series only)

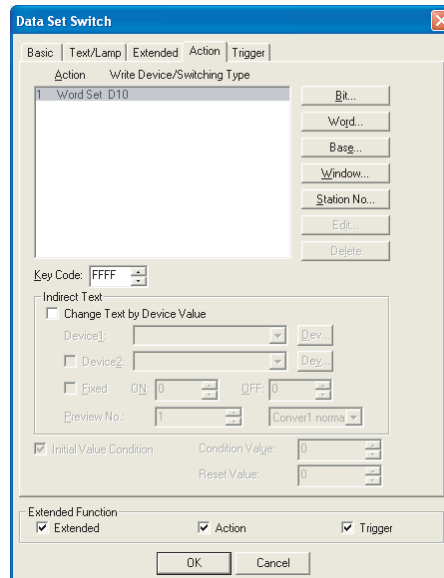


Items	Description	A	F
Initial Value Condition	<p>If the value becomes the condition value when [Fixed] and [Indirect] are both set in [Type], the reset value will be written into the specified word device.</p> <p>Example: Creating touch key that adds "1" to D0 when touched; and returns the value to "0" when it reached "10". Device : D0 (Initial value = 0) Fixed : 1 Indirect : D0 Condition value: 11 Reset value: 0</p> <p>Touch the touch switch for ten times Touch the touch switch again The value of D0 returns to 0</p>	×	○
Condition Value	Set the condition value for writing the reset value to the specified word device.	×	○
Reset Value	Set the value that is written to the word device, when the condition value is satisfied.	×	○

5 Action tab

The setting items of action tab are the same with those of bit switch.
For the details of the set data, refer to the following.


 Section 6.2.2 Setting items of bit switch (Action tab)

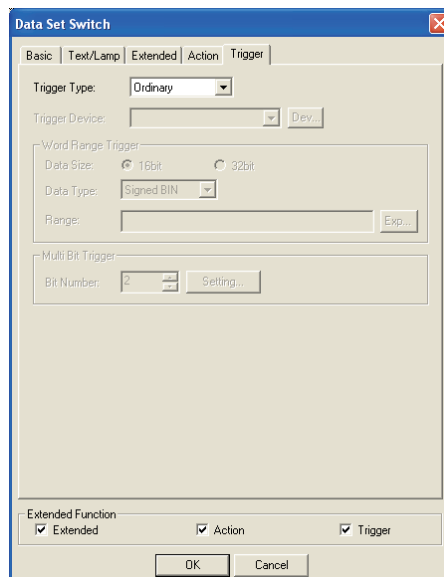


(Example: In the case of GOT-A900 series)

6 Trigger tab

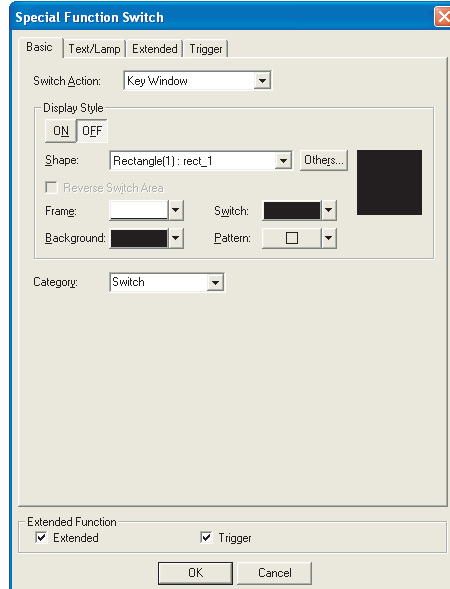
The setting items of action tab are the same with those of bit switch.
For the details of the set data, refer to the following.

 Section 6.2.2 Setting items of bit switch (Trigger tab)



6.2.4 Setting items of special function switch

1 Basic tab






Basic | Text/Lamp | Extended | Trigger

Items	Description	A	F
Switch Action	Select the screen type for the special function screen to be displayed.		
	Utility* : Displays the utility.		
	Ladder monitor* : Displays the screen of ladder monitor function.		
	Key window* : Displays the key window for numerical/ASCII input function.		
	System Monitor* : Displays the screen of system monitor function.		
	Test window* : Displays the window for test function. (Section 13.2 Test Function)		
	Special function monitor* : Displays the screen of special function module monitor function.		
	Hard copy start* : Starts hard copy function. (Starts to collect screen data)	○	○
	Hard copy interrupt* : Interrupts the presently processed hard copy function. (Section 12.2 Hard Copy)		
	Password : Displays password screen.		
	Clock setting : Displays clock setting screen.		
	Screen clear* : Displays the screen for screen clear.		
	Network monitor* : Displays the screen of network monitor function.		
	Change brightness : Displays the change brightness screen.		
	List editor : Displays the screen of list editor function.		
Motion/CNC monitor* : Displays the screen of motion/CNC monitor function.			
Servo amplifier monitor* : Displays the screen of servo amplifier monitor function.			

* Not corresponding to GOT-F900 series.

(Continued to next page)


Items		Description	A	F
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	<input type="radio"/>	<input type="radio"/>
	OFF	Click on this item to set the display attributes when the device turns OFF.	<input type="radio"/>	<input type="radio"/>
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Reverse Switch Area	When [None] is set in [Shape], check this item to XOR-reverse the touch switch (no shape) area according to the background color.	<input type="radio"/>	<input checked="" type="radio"/>
	Frame	Select the frame color of the touch switch.	<input type="radio"/>	<input type="radio"/>
	Switch	Select the touch switch color.	<input type="radio"/>	<input type="radio"/>
	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	<input checked="" type="radio"/>
	Pattern	Example: Background : Pattern :  Switch :  	<input type="radio"/>	<input checked="" type="radio"/>
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>	

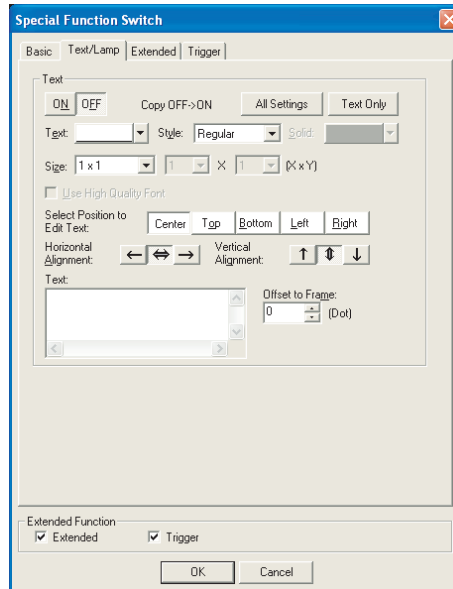
Remark

- (1) Brightness Adjustment
In the GOT of which brightness can not be changed, settings can not be made although the corresponding screen is displayed.
- (2) When using A95*GOT, A956WGOT
 - (a) In A95*GOT, [Ladder Monitor], [Test Window] and [Special Function Monitor] of special function can not be used.
 - (b) In A956WGOT, [Test Window] and [Special Function Monitor] of special function can not be used.

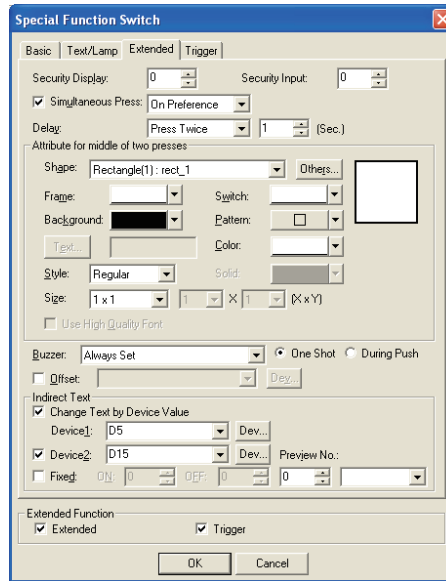
2 Text/Lamp tab

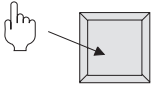
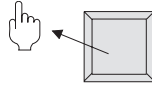
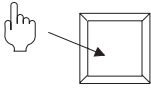
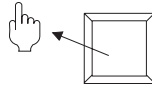
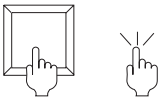
The setting items of text/lamp tab are the same with those of bit switch. For the details of the set data, refer to the following.

 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)





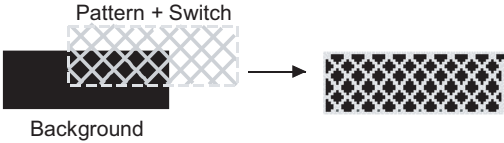



3 Extended tab (for GOT-A900 series only)







Items	Description	A	F
Security Display/ Security Input	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". The number of security input must be larger than that for security display. (☞ Section 5.8 Security Function)	○	×
Simultaneous Press	<p>Check this item to disable simultaneous press of touch switch.</p> <p>ON Preference: ON status is handled with the priority as shown below.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Follow from the outside to inside of the touch key valid area in GOT by finger.</p>  <p>Touch switch: ON</p> </div> <div style="text-align: center;"> <p>Follow from the inside to outside of the Touch key valid area in GOT by finger.</p>  <p>Touch switch: ON status</p> </div> </div> <p>OFF Preference: OFF status is handled with the priority as shown below.</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Follow from the outside to inside of the touch key valid area in GOT by finger.</p>  <p>Touch switch: Won't be ON</p> </div> <div style="text-align: center;"> <p>Follow from the inside to outside of the Touch key valid area in GOT by finger.</p>  <p>Touch switch: OFF</p> </div> </div> <p>Press the outside of touch switch valid area while valid area in GOT is pressed. (Two points are simultaneously pressed.)</p> <div style="text-align: center;">  <p>Touch switch: OFF</p> </div>	○	×

(Continued to next page)

Items	Description	A	F
Delay	<p>Set the time from the instance the touch switch is touched to start the operation, i.e., delay time in 1-second unit. (Minimum: 1 second, Maximum: 5 seconds.)</p> <p>None : No delay time will occur.</p> <p>ON : Select this item to carry out ON operation by pressing the touch switch during the set time. Set the delay time. This setting can prevent an incorrect operation from occurring.</p> <p>OFF : Select this item to carry out OFF operation in the set time after touch switch is turned OFF. Touch switch is ON during the set time. After selecting, set the delay time.</p> <p>Press Twice : Select this item to carry out the operation when the touch switch is touched once and then touched for the second time within the set time.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Attribute for middle of two presses	Set the display attribute for the touch switch after touched once when [Press Twice] is set in [Delay].	<input type="radio"/>	<input checked="" type="checkbox"/>
Shape	<p>Select the shape for touch switch. When [None] is selected, no frame will be displayed.</p> <p>By clicking on the [Others] button, shapes other than those in the list box or library shapes can be selected.</p> <p> Section 5.3.2 Object shape setting)</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Frame	Select the frame color of the touch switch.	<input type="radio"/>	<input checked="" type="checkbox"/>
Switch	Select the touch switch color.	<input type="radio"/>	<input checked="" type="checkbox"/>
Pattern	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	<input checked="" type="checkbox"/>
Background	<p>Example: Background : </p> <p>Pattern : </p> <p>Switch : </p> <p></p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Text *1	When displaying text on the touch switch, click on [Text] button, set the text to be displayed and positioning point and display position.	<input type="radio"/>	<input checked="" type="checkbox"/>
Style	Select the view format of the text (Regular/Bold/Solid/Raised). 	<input type="radio"/>	<input checked="" type="checkbox"/>
Color	Select the color of text to be displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
Solid	Select the solid color for the text when [Solid] or [Raised] is set in [Style].	<input type="radio"/>	<input checked="" type="checkbox"/>
Size	Select the size of text on touch switch (0.5 to 8).	<input type="radio"/>	<input checked="" type="checkbox"/>
Use High Quality Font	Check this item when using high quality font to display touch switch text. (only when display size X, Y is set to any of 2, 4, 6 or 8.)	<input type="radio"/>	<input checked="" type="checkbox"/>
Buzzer	<p>Select the time the buzzer sound is on when the touch switch is touched.</p> <p>Always Set : The buzzer sound is on whenever the touch switch is touched.</p> <p>Set Only Fill Requirement : The buzzer sound is on only when the touch switch is touched and the trigger has been satisfied.</p> <p>Always Not Set : The buzzer sound is not on even when the touch switch is touched.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

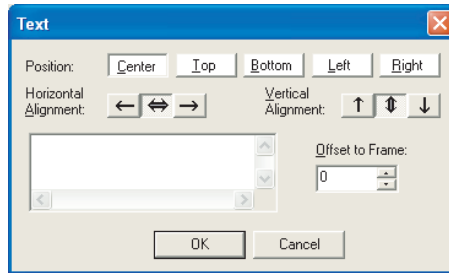
Items		Description	A	F
One Shot		Check this item to output volume at the moment the touch switch is touched when [Always Set] is set in [Buzzer Volume] and [Set Only Fill Requirement] is set.	○	×
During Push		Check this item to keep buzzer beeping while the touch switch is touched when [Always Set] is set in [Buzzer Volume] and [Set Only Fill Requirement] is set.	○	×
Offset		Check this item when executing monitor by switching between multiple devices.  Section 5.7 Offset Function After checking, set the offset device.  Section 5.1 Device Setting	○	×
Indirect Text *2	Change Text by Device Value	Check this item to change the text display of touch switch according to a device value. After checking, click on the <input type="text" value="Device"/> button and set the device stored a value.  Section 5.1 Device Setting	○	×
	Device1	The comment having the same number as the value stored in the set device is displayed. "Text" on the "Text/Lamp" tab becomes invalid with check.	○	×
	Device2	Check this item to add the value of other device to "Device 1". After checking, click on the <input type="text" value="Device"/> button and set the device stored a value.  Section 5.1 Device Setting	○	×
	Fixed	Check this item to add the other value to "Device 1" according to the display status (ON/OFF display) of touch switch. After checking, set the added value at ON/OFF of touch switch.	○	×
	Preview No.	Set the No. of comment to be displayed as touch switch text on GT Designer2 screen.	○	×

For details of *1, refer to the following.

For details of *2, refer to *6 in Section 6.2.3 Setting items of bit switch (Action tab).

*1 Setting text displayed on switch

Make the following settings when displaying text on the switch based on the attribute for middle two presses.



Items	Description	A	F
Position	Select the position where the text is to be displayed on the object. (Center/Top/Bottom/Left/Right)	<input type="radio"/>	×
Horizontal Alignment	Select the horizontal position of the text.	<input type="radio"/>	×
Vertical Alignment	Select the vertical position of the text.	<input type="radio"/>	×
Text	Input the text to be displayed. (Up to 32 characters) Press the Enter key to input a new line at the end of the first line. (A line feed is counted as two characters.)	<input type="radio"/>	×
Offset to Frame	Set the number of dots for the distance between the text and object shape, i.e., frame. (Up to 100 dots)	<input type="radio"/>	×



When the text is displayed on top/bottom/left/right of the touch switch

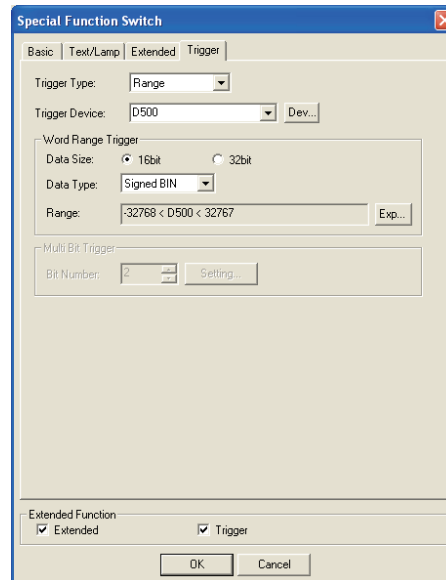
When displaying the text on top/bottom/left/right of touch switch, based on the attribute for middle of two presses, set the text display on the text/lamp when the device is ON/OFF.

If not set, the text of the attribute for middle of two presses will not be displayed. (The displayed text may be blank when the switch is ON/OFF.)

4 Trigger tab

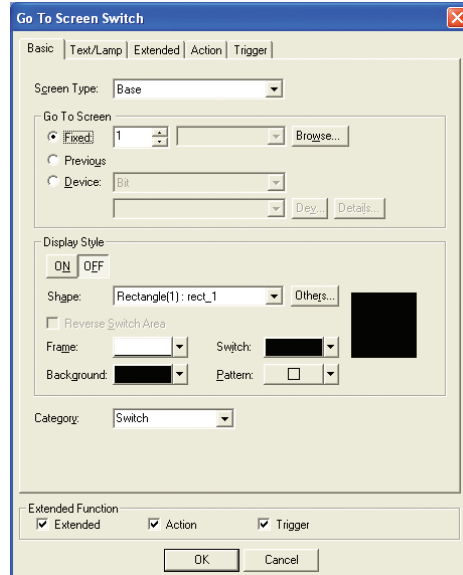
Action setting is available when [Key window] is set in [Action] on the basic tab.
The setting items of trigger tab are the same with those of bit switch.
Refer to the following for details of the set data.

 Section 6.2.2 Setting items of bit switch (Trigger tab)



6.2.5 Setting items of go to screen switch

1 Basic tab





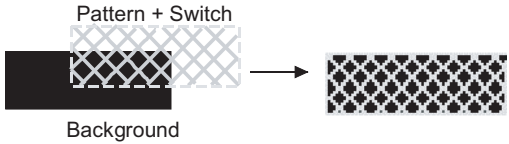



(Example: In the case of GOT-A900 series)

Basic | Text/Lamp | Extended | Action | Trigger

Items	Description	A	F
Screen Type	Select the screen type of switching destination.		
	Base :Switches to base screen.		
	Overlap Window1 :Switches to or display overlap window1 screen.	<input type="radio"/>	×
	Overlap Window2 :Switches to or display overlap window2 screen.		
Go to Screen	Select the action of switching screen.	<input type="radio"/>	<input type="radio"/>
	Fixed Select this item to switch to the base screen/window screen specified by the screen No.. After selecting, set the base/window screen of switching destination. Click on Browse button to display the screen image dialog box. Make the settings while checking the image of the currently edited screen on that dialog box.	<input type="radio"/>	<input type="radio"/>
	Previous*1 Select this item to switch to the screen of base screen No. that was displayed previously. This item is available only when switching base screen. As GOT can store the displayed screen No. including the current base screen, up to 10 base screens can be switched based on the history.	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

Items	Description	A	F	
Go to Screen	<p>Select this item to switch to the base/window screen specified by screen No., according to ON/OFF status/current value of the specified device.</p> <p>Before setting device, select data type of monitor device.</p> <p>Bit : Switch screens according to ON/OFF status of bit device. Word (BIN16) : Switch screens according to 16-bit binary value of word device. Word (BCD16) : Switch screens according to 16-bit BCD (binary coded decimal) value to switch screen.</p> <p>After setting device, click on <input type="button" value="Details"/> button to set action.</p>	○	×	
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	○	○
	OFF	Click on this item to set the display attributes when the device turns OFF.	○	○
	Shape	<p>Select the shape for touch switch. When [None] is selected, no frame will be displayed.</p> <p>By clicking on the <input type="button" value="Others"/> button, shapes other than those in the list box or library shapes can be selected.</p> <p>( Section 5.3.2 Object shape setting)</p>	○	○
	Reverse Switch Area	When [None] is set in [Shape], check this item to XOR-reverse the touch switch (no shape) area according to the background color.	○	×
	Frame	Select the shape, i.e., frame color of the touch switch	○	○
	Switch	Select the touch switch color.	○	○
	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	○	○
Pattern	<p>Example: Background : </p> <p>Pattern : </p> <p>Switch : </p> <p></p> <p>Background</p>	○	×	
Category	<p>When allocating category to the object, select a proper category.</p> <p>( GT Designer2 Version <input type="checkbox"/> Operating Manual)</p>	○	○	

For details of *1, *2, refer to the following.

*1 Previous

Select the hierarchy mode or history mode using the specific touching switch.

Hierarchy mode (Upper tier switch mode)

Pressing the touch switch display, i.e., switches to the base screen set as the upper tier.
This cycle can be repeated up to 10 times.

Example:

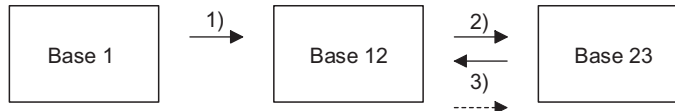


When the screens are switched as shown above, 1) → 2) → 3), and then the touch switch on the base screen 12 is pressed, the base screen1, that is set as the upper tier, will be displayed.

History mode (Previous screen switch mode)

Pressing the touch switch returns to the base screen that was previously displayed.
This cycle can be repeated up to 10 times.

Example:



When the screens are switched as shown above, 1) → 2) → 3), and then the touch switch on the base screen12 is pressed, the base screen23, that was previously displayed, will be displayed again. (After this, whenever the touch switch is pressed, the screen will return to base screen12 → base screen1.)



Hierarchy/history mode information

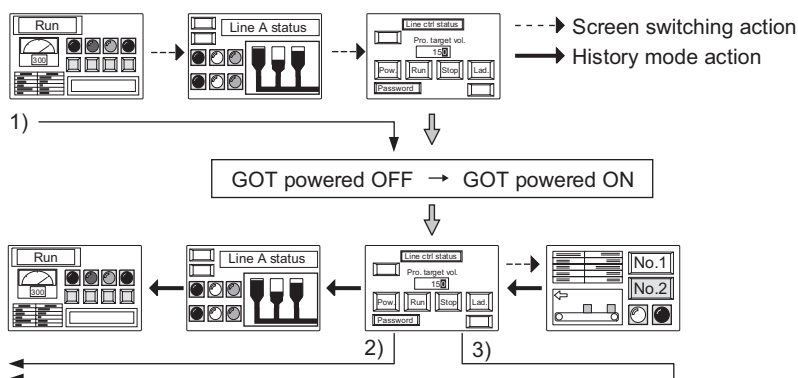
If GOT is powered off, the hierarchy/history information become invalid.
Therefore, once GOT is powered off, and then on again, the screen will not be switched based on the previous hierarchy/history. (The history information can be stored in a Memory card as instructed in (2).)

- (1) Method of switching between the hierarchy mode and history mode
The hierarchy mode is set as default.
When changing to history mode, turn on GOT internal device GS450.b14 by using status observation function.
For more information, refer to (2) (c).
- (2) Storing the history information in a Memory card
When history mode is used, up to 10 screens of history information can be stored into a Memory card. (Mount a Memory card to GOT in advance.)
By using the stored history information can return to the screen before GOT is powered off.
 - (a) How to store the history information
When the history mode is used (GS450.b14 is ON), turn on the GOT internal device GS450.b13. This enables the history information to be saved in a Memory card.
Make sure to turn the above device on by using status observation function.

(b) Operation overview

Store the history information into a memory card when switching screen.

After powering on GOT, read the historical information stored in the memory card when switching the initial screen.



1) After switching the screen, turn power OFF.

2) After turning power ON, touch the Previous switch of history mode to return to the screen before power-OFF.

3) After turning power ON, screen can be switched to the 10th screen before power-OFF.

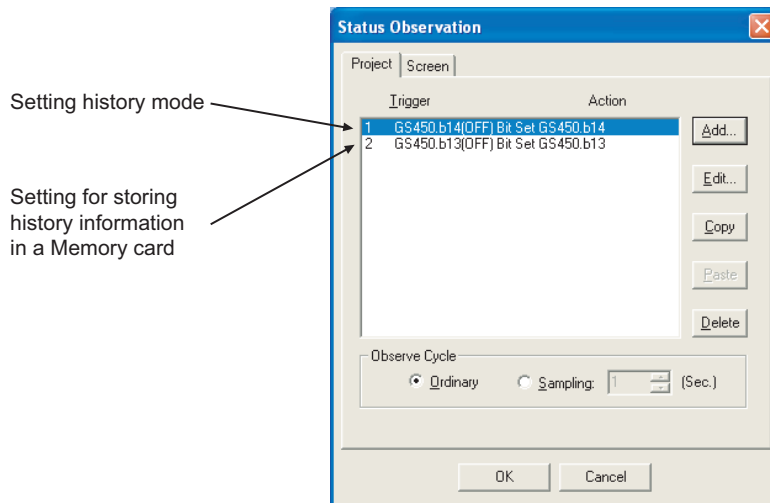
(c) Setting example

Set the history mode at the first line of status observation function.

(After GOT is powered ON, it switches to the history mode instantly.)

When switching from the hierarchy mode to the history mode during monitoring, if screen change has been done, the screen information within GOT might be lost. In this case, it is impossible to return to the previous screens as the history.

When the history mode is used, it is recommended to switch to the history mode instantly after powering GOT on.



• Making the setting in the status observation function of project

• Set the trigger observation cycle as [Ordinary]

(3) Precautions

(a) If the history information has been stored into a Memory card, do not change the screen switching device value in PLC CPU while GOT is off.

As the history information while GOT is off is not saved, it is impossible to switch back to the screen as controlled in PLC CPU.

(b) Once the hierarchy mode is switched to the history mode, it is impossible to switch to the hierarchy mode even by turning the above devices off. To switch to the hierarchy mode, power GOT off.

*2 Device (Switch base/window screen according to ON/OFF status/current value of specified device.)

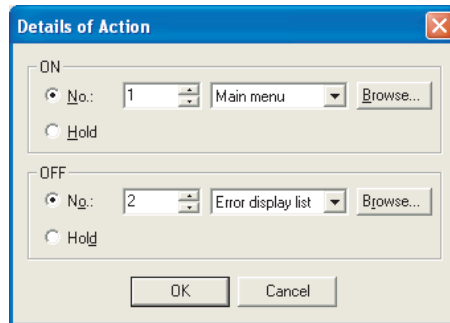
Set the following actions.

- Switch to the base/window screen specified by screen No. according to ON/OFF status of the specified device.
- When the current value of specified device corresponds to the set comparison expressions, switch to the base/window screen specified by screen No.
(Up to 64 comparison expressions can be set.)

(1) When specifying bit device

After setting bit device, click on **Details** button, and set the action when switching screen on the following dialog box.

Setting of "Details of Action" dialog box

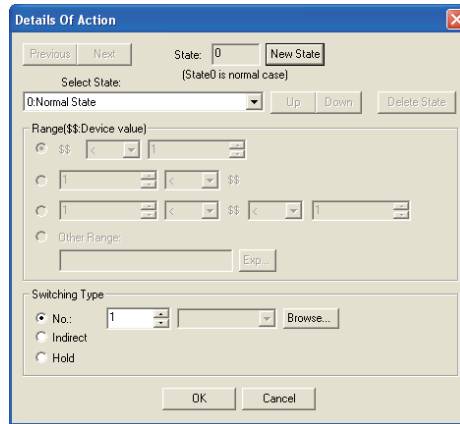


Items		Description	A	F
ON/OFF	No.	Select this item when switching to base/window screen specified by screen No. when the specified devices turns ON/OFF. Set the screen No. of the switching destination screen.	<input type="radio"/>	×
	Hold	Select this item when making the settings in order the screen will not be switched when the specified device turns ON/OFF.	<input type="radio"/>	×

(2) When specifying word device

After setting word device, click on **Details** button, and set the action when switching screen on the following dialog box.

Setting of Details of Action dialog box



Items	Description	A	F
State	Set the conditions for change the operation and details of the changed operation for each state. Up to 64 states (including the normal case) can be set. (State No. 0 indicates the normal case).	○	×
New State	Creates a new state.	○	×
Delete State	Deletes a specified state.	○	×
Previous/Next	Switches the currently editing state to the previous or next state.	○	×
Up/Down	Changes the priority of the current state.	○	×
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	○	×
Range	Set the range of word device values for operation change using a conditional expression.	○	×
Switching Type	<p>No. : Switch to base/window screen specified by screen No. when the specified device value corresponds to the set condition. Set the screen No. of the target screen on the Spin box. Click on Browse button to display the screen image dialog box. Set the screen, while checking the image of the currently edited screen on that dialog box.</p> <p>Indirect : Switch to the screen No. corresponding to specified word device when specified device value corresponds to the set conditional expression.</p> <p>Hold : Do not switch screen when specified device value corresponds to the set conditional expression.</p>	○	×

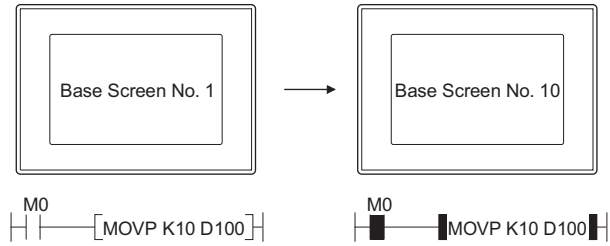


Methods of Switching Screen

Sequence program also can be used to switch screen.

Create the sequence program that writes value of the device for switching each screen No. by using the value of the screen No. to be switched.

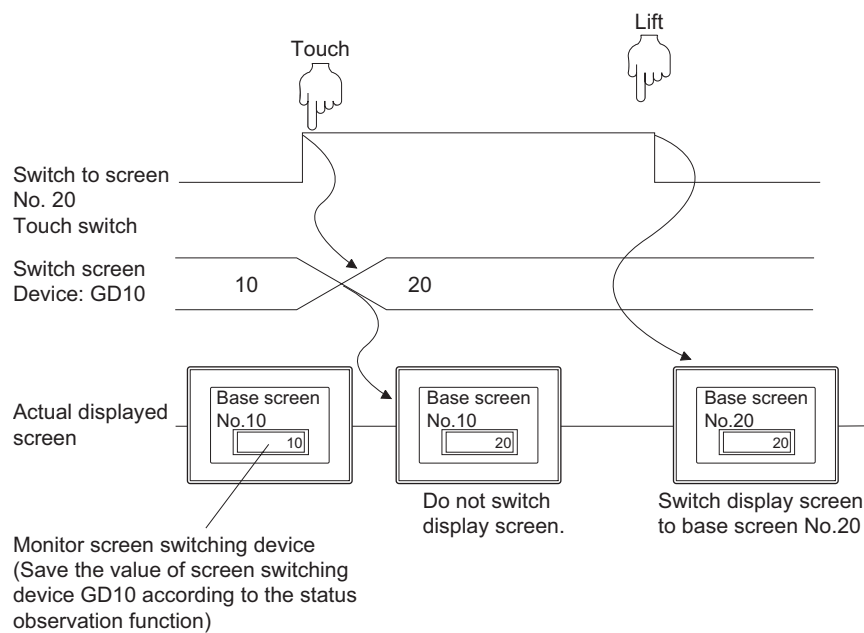
By using this sequence program, the base/window screen can be switched without touch switch function.



No sequence program can be used to switch base/window screen when GOT internal devices (GB, GD, GS) are used as base/window screen switching device

Remark

- (1) Methods of erasing window screen
When erasing window screen, touch the Close button, or set the switching screen device value to "0" by using touch switch or sequence program. (Fixed: 0)
- (2) Timing to switch screen
The base/window screen is switched at the moment when the touch switch is released.
If the touch switch is kept touched for a long time, this will delay the timing when the actual screen is displayed, and the screen may not appear as specified with the device value.
When using status observation function to monitor switching screen device, the value different from actually displayed screen No. may be stored, depending on the timing of scanning.



In this case, set the script function for each screen as shown below, in order that the screen will be displayed as specified by screen No..


Screen script function

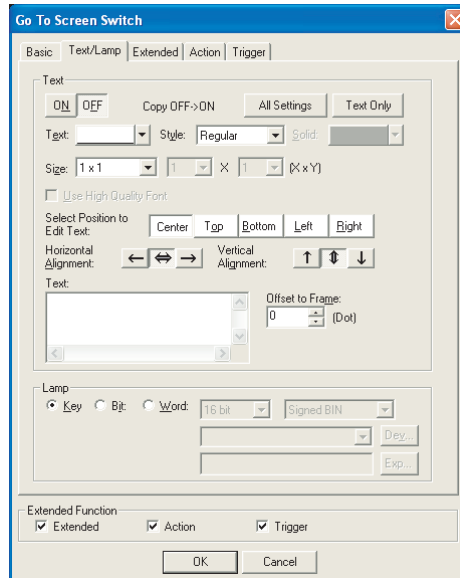
- Trigger : GB100 (Ordinary ON, Rise)
- Script : [w: GD87] = [w: GD10];

Make sure to set GOT special register GS386 (screen script initial action) to "0" to execute script function after switching screen.

2 Text/Lamp tab

The setting items of Text/Lamp tab are the same as the bit switch.
Refer to the following for the details of setting items.

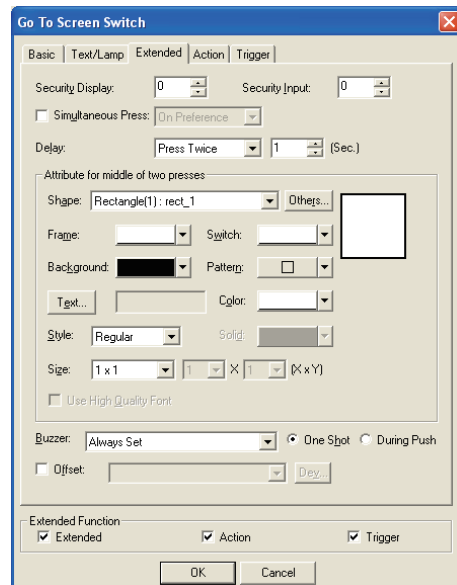
 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)



3 Extended tab (specific for GOT-A900 series)


The setting items of Extended tab are the same as the bit switch.
Refer to the following for the details of setting items.

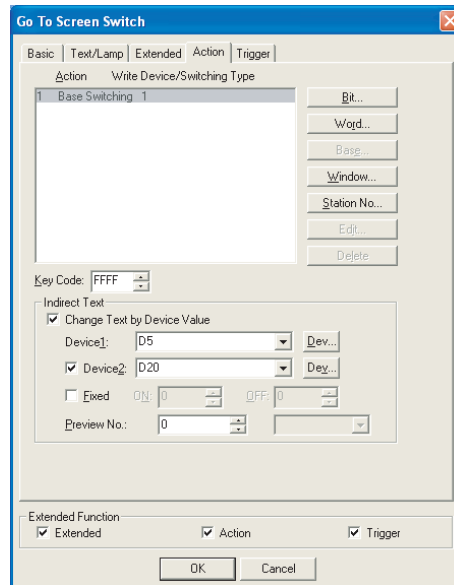
 Section 6.2.2 Setting items of bit switch (Extended tab (for GOT-A900 series only))



4 Action tab


The setting items of Action tab are the same as the bit switch.
Refer to the following for the details of setting items.

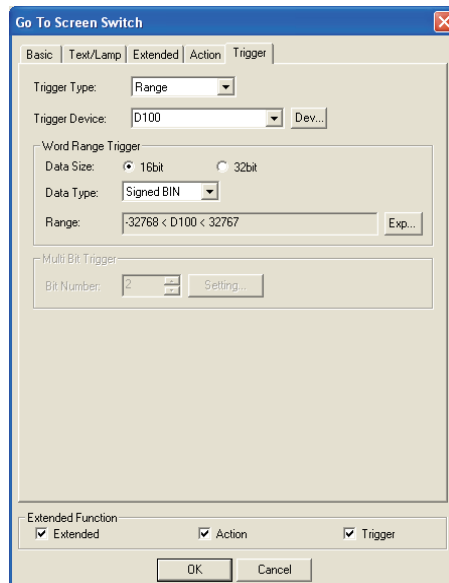
 Section 6.2.2 Setting items of bit switch (Action tab)



5 Trigger tab

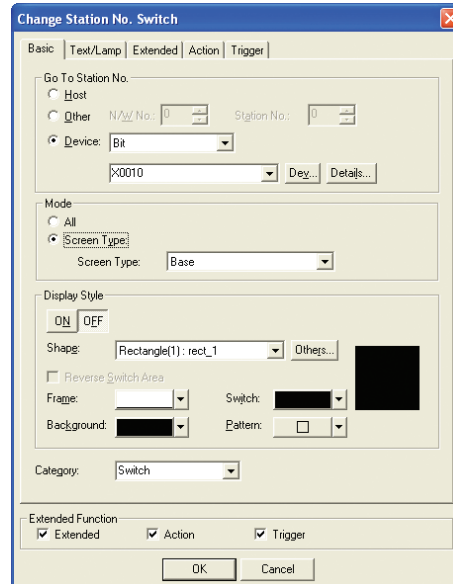
The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details of setting items.

 Section 6.2.2 Setting items of bit switch (Trigger tab)



6.2.6 Setting items of change station No. switch (specific for GOT-A900 series)





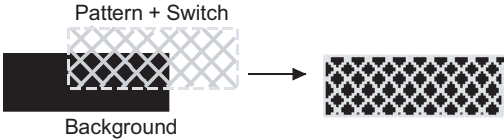

1 Basic tab



Basic | Text/Lamp | Extended | Action | Trigger

Items	Description	A	F
Go To Station No.	Select the action of switching station No.	<input type="radio"/>	×
Host	Select this item to monitor the station No. connected with GOT.	<input type="radio"/>	×
Other	Select this item to switch the monitor target to other station. Set the network No.(in [N/W No.]) and station No. (in [Station No.])of the PLC CPU as switch destination in decimal.	<input type="radio"/>	×
Device *1	Select this item to switch to the station specified by the No. based on the ON/OFF status or current value of the specified device. Select the data type of the device to be monitored. Bit : Switches station No. when the bit device turns ON/OFF. Signed (BIN16) : Switches station No. based on the word device (BIN16) binary value. BCD16 : Switches station No. based on the word device (BCD16) binary decimal value. After setting the device, click on Details button. As the corresponding dialog box will appear, set the action on that dialog box.	<input type="radio"/>	×
Mode	All : Select this item to switch the whole project by station No. Screen Type : Select this item to switch the specified screen by station No.	<input type="radio"/>	×

(Continued to next page)


Items	Description	A	F	
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	<input type="radio"/>	x
	OFF	Click on this item to set the display attributes when the device turns OFF.	<input type="radio"/>	x
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the [Others] button, shapes other than those in the list box or library shapes can be selected. ( Section 5.3.2 Object shape setting)	<input type="radio"/>	x
	Reverse Switch Area	When [None] is set in [Shape], check this item to XOR-reverse the touch switch (no shape) area according to the background color.	<input type="radio"/>	x
	Frame	Select the shape, i.e., frame color of the touch switch.	<input type="radio"/>	x
	Switch	Select the touch switch color.	<input type="radio"/>	x
	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	x
	Pattern	Example: Background :  Pattern :  Switch :   Background	<input type="radio"/>	x
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)	<input type="radio"/>	x	

For details of *1, refer to the following.

Point

The required settings for switching station No.

- (1) To change station No., set whether station No. is to be switched for each screen.
Select [Screen] → [Property] from the menu. As the corresponding dialog box appears, set whether station No. will be changed on the screen dialog box (Auxiliary Setting tab).
- (2) To change station No., set device for switching station No..

 Section 3.3 Switching Station No. Device Setting

*1 Device (Switch station No. to be monitored according to the ON/OFF status/current value of the specified device.)

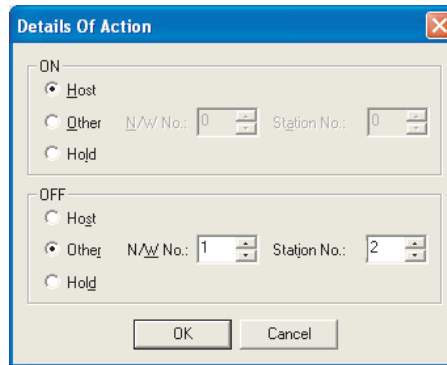
Set the following actions.

- Switch station No. according to the ON/OFF status of the specified bit device.
- Switch to the screen specified by station No. when current value of specified word device corresponds to the set condition. (Up to 64 conditions can be set.)

(1) When specifying bit device


After setting bit device, click on **Details** button to set action for switching station No. on the following dialog box.

Setting of "Details Of Action" dialog box

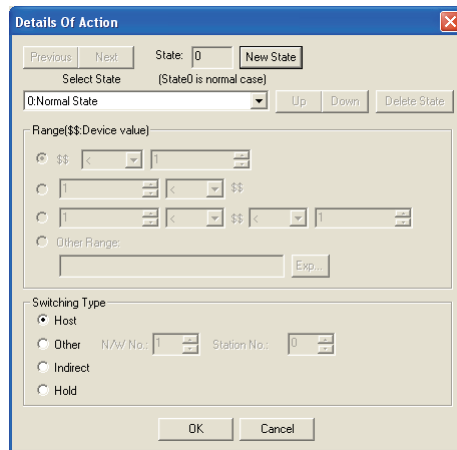



Items		Description	A	F
ON/OFF	Host	Select this item to monitor the station No. connected with GOT.	<input type="radio"/>	×
	Other	Select this item to switch monitoring destination to other station. Set the network No. (in [N/W No.]) and station No. (in [Station No.]) of the PLC CPU as switch destination in decimal.	<input type="radio"/>	×
	Hold	Select this item when making the settings in order that the screen will not be switched when the specified device turns ON/OFF.	<input type="radio"/>	×

- (2) When specifying word device
 After setting word device, click on **Details** button to set action on switching screen according to device status.
 Refer to the following for the details about setting method.

 Section 5.4 State Setting


Setting of action (word) dialog box

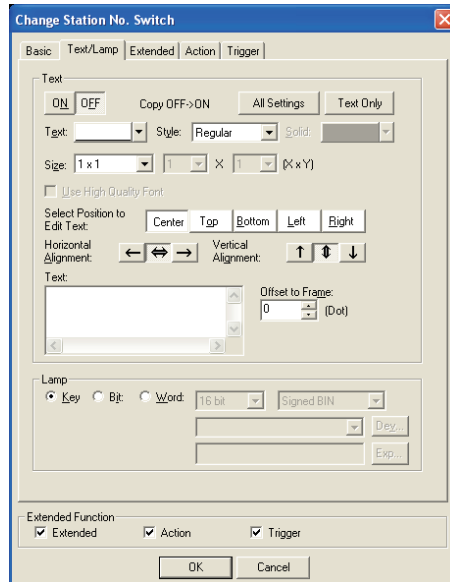


Items	Description	A	F
State	Set the conditions for changing the operation and details of the changed operation for each state. Up to 64 states (including the normal case) can be set. (State No. 0 indicates the normal case.)	<input type="radio"/>	<input checked="" type="checkbox"/>
	New State	<input type="radio"/>	<input checked="" type="checkbox"/>
	Delete State	<input type="radio"/>	<input checked="" type="checkbox"/>
	Previous/Next	<input type="radio"/>	<input checked="" type="checkbox"/>
	Up/Down	<input type="radio"/>	<input checked="" type="checkbox"/>
	Select State	<input type="radio"/>	<input checked="" type="checkbox"/>
	Range	<input type="radio"/>	<input checked="" type="checkbox"/>
Switching Type	Select the displaying method for switching station No. when the specified word device value corresponds to the condition set in "Range".  Section 3.3 Switching Station No. Device Setting) Host : Monitor the PLC connected with GOT when the specified device value corresponds to the set condition. Other : Switch the monitor destination to other station when the device value corresponds to the set condition. Set the network No. (in [N/W No.]) and station No. (in [Station No.]) of the PLC CPU as switch destination in decimal. Indirect : Switch to monitoring destination corresponding to the specified device when the specified device value corresponds to the set condition. Hold : Do not switch monitoring destination when the specified device value corresponds to the set condition.	<input type="radio"/>	<input checked="" type="checkbox"/>

2 Text/Lamp tab

The setting items of Text/Lamp tab are the same as the bit switch.
Refer to the following for the details about setting items.

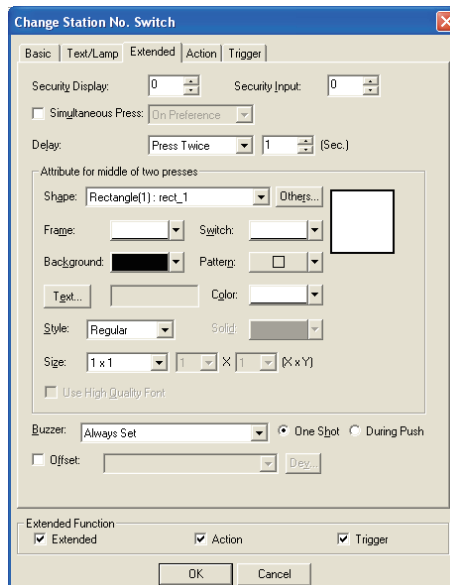
 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)



3 Extended tab


The setting items of Extended tab are the same as the bit switch.
Refer to the following for the details about setting items.

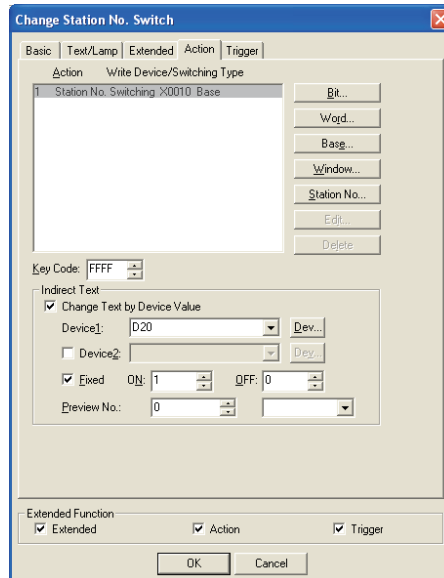
 Section 6.2.2 Setting items of bit switch (Extended tab (for GOT-A900 series only))



4 Action tab


The setting items of Action tab are the same as the bit switch.
Refer to the following for the details about setting items.

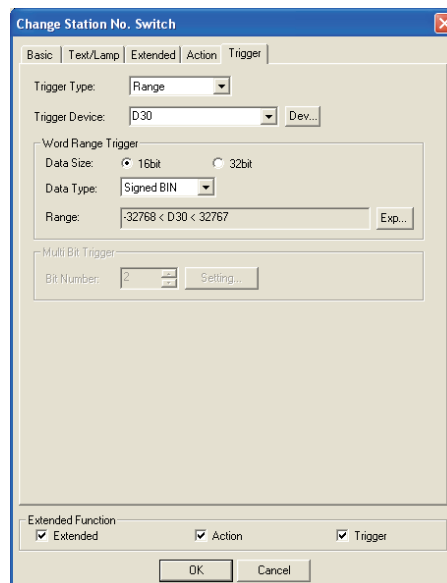
 Section 6.2.2 Setting items of bit switch (Action tab)



5 Trigger tab

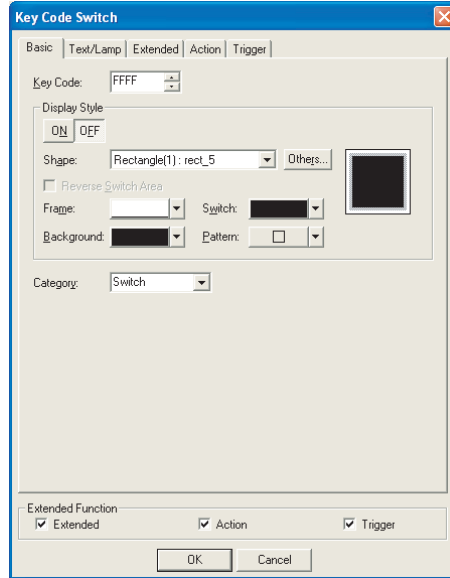
The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

 Section 6.2.2 Setting items of bit switch (Trigger tab)




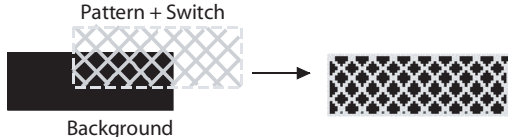


6.2.7 Setting items of key code switch

1 Basic tab




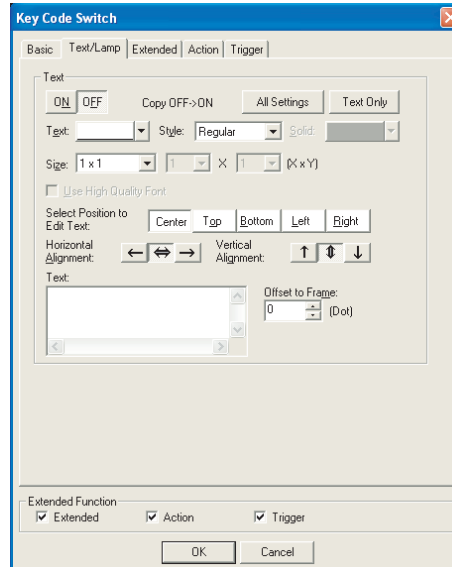
Basic | Text/Lamp | Extended | Action | Trigger

Items		Description	A	F
Key Code		Set the key code of the key for numeric value and ASCII input. (☞ App.2 Key Code List)	<input type="radio"/>	<input type="radio"/>
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	<input type="radio"/>	<input type="radio"/>
	OFF	Click on this item to set the display attributes when the device turns OFF.	<input type="radio"/>	<input type="radio"/>
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Reverse Switch Area	When [None] is set in [Shape], check this item to XOR-reverse the touch switch (no shape) area according to the background color.	<input type="radio"/>	<input checked="" type="radio"/>
	Frame	Select the shape, i.e., frame color of the touch switch.	<input type="radio"/>	<input type="radio"/>
	Switch	Select the touch switch color.	<input type="radio"/>	<input type="radio"/>
	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	<input checked="" type="radio"/>
Pattern	Example: Background :  Pattern :  Switch :  	<input type="radio"/>	<input checked="" type="radio"/>	
Category		When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>

2 Text/Lamp tab

The setting items of Text/Lamp tab are the same as the bit switch. Refer to the following for the details about setting items.

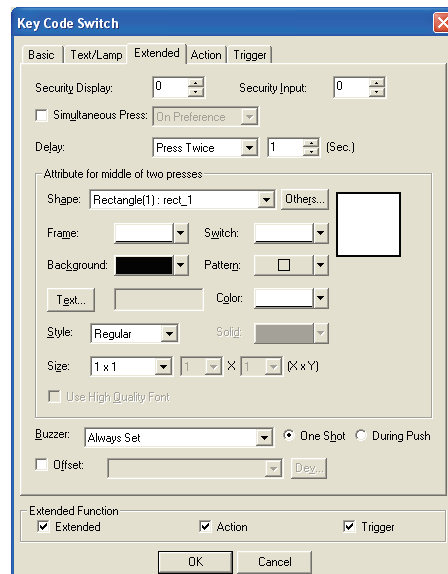
 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)



3 Extended tab (specific for GOT-A900 series)


The setting items of Extended tab are the same as the bit switch. Refer to the following for the details about setting items.

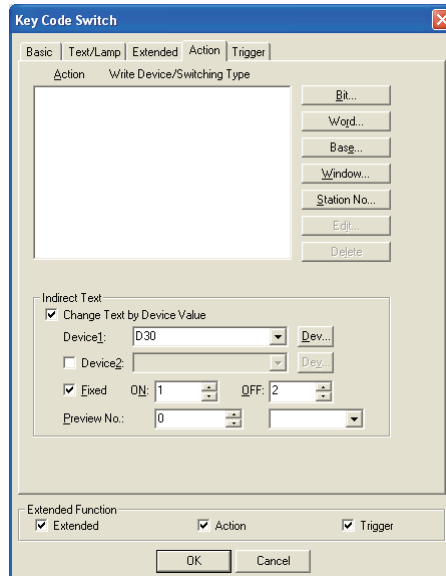
 Section 6.2.2 Setting items of bit switch (Extended tab (for GOT-A900 series only))



4 Action tab


The setting items of Action tab are the same as the bit switch.
Refer to the following for the details about setting items.

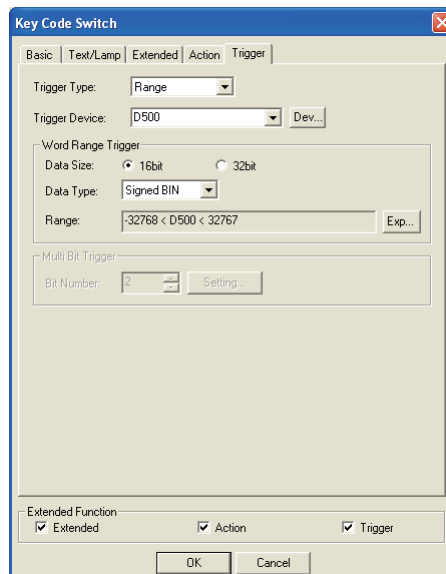
 Section 6.2.2 Setting items of bit switch (Action tab)



5 Trigger tab

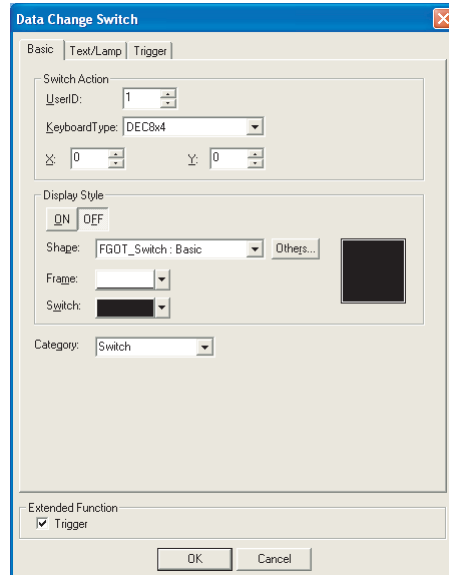
The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

 Section 6.2.2 Setting items of bit switch (Trigger tab)



6.2.8 Setting items of data change switch (specific for GOT-F900 series)

1 Basic tab



Basic

Text/Lamp

Trigger

Items	Description	A	F
UserID	<p>Check this item when setting the user ID No. (1 to 65535).</p> <p>By setting the user ID for data change switch function, the following operations are available.</p> <ul style="list-style-type: none"> Changes data if the user ID set for this function is the same as that for numerical input function. Changes data if the user ID set for this function is the same as that for ASCII input function. 	×	○
Switch Action	<p>Select the keyboard displayed on window when touched.</p> <ul style="list-style-type: none"> F940GOT, F940WGOT, Handy GOT, ET-900 <ul style="list-style-type: none"> DEC: 8x4 DEC: 16x2 DEC: 10x4 Characters 1: 16x5 DEC: 8x8 DEC: 16x4 DEC: 10x8 Characters 2: 16x5 In the case of F930GOT, F930GOT-K <ul style="list-style-type: none"> DEC DEC (H) HEX In the case of F920GOT-K The data changes switch function is not provided. 	×	○
X/Y	Set the start point position where keyboard window will be displayed.	×	○

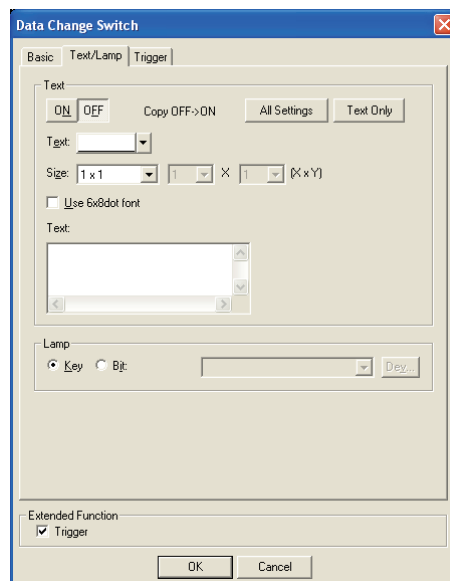
(Continued to next page)

Items	Description	A	F	
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	×	○
	OFF	Click on this item to set the display attributes when the device turns OFF.	×	○
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	×	○
	Frame	Click on this item to set the display attribute to be displayed when the device turns OFF.	×	○
	Switch	Select the touch switch color.	×	○
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	×	○	

2 Text/Lamp tab


The setting items of Text/Lamp tab are the same as the bit switch. Refer to the following for the details about setting items.

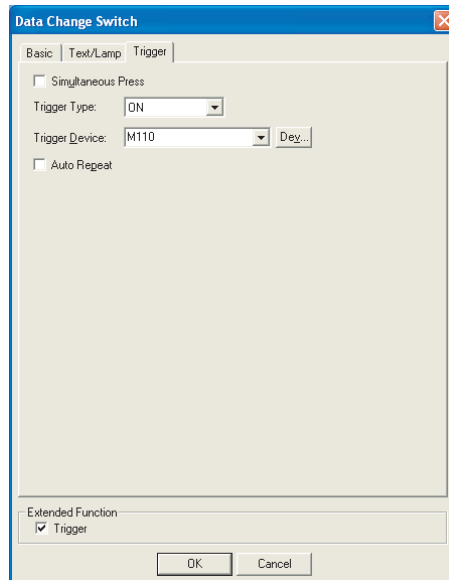
(☞ Section 6.2.2 Setting items of bit switch (Text/Lamp tab))



3 Trigger tab

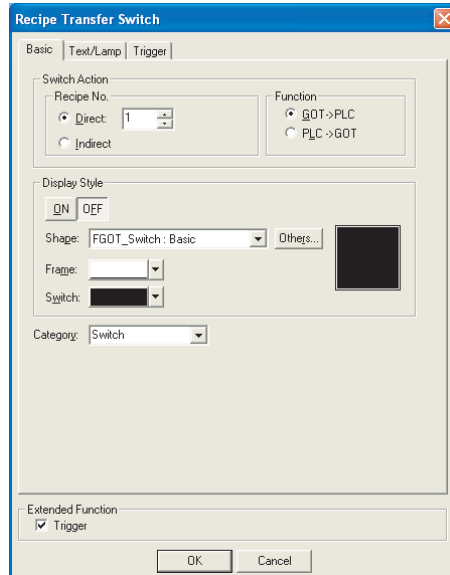
The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

 Section 6.2.2 Setting items of bit switch (Trigger tab)



6.2.9 Setting items of recipe transfer switch (specific for GOT-F900 series)

1 Basic tab




Basic

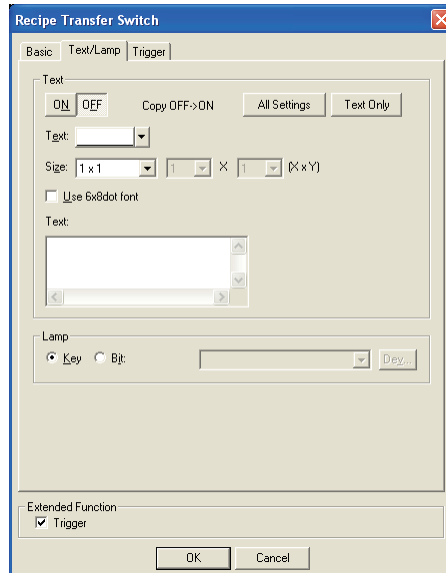
Text/Lamp Trigger

Items	Description	A	F
Switch Action	Recipe No. Select the recipe file No. (1 to 256) directly or indirectly (indirect specification using a device in the PLC). The reference destination of the recipe No. to be transferred can be set as follows by direct or indirect specification: <ul style="list-style-type: none"> • Direct : The recipe file No. can be specified directly. • Indirect : The recipe file No. to be referred to can be specified as the value stored in the data register of the PLC specified by "Read Device (D+1)" of "System Information". The number of recipe files, number of points and specification of transfer device should be set in advance in "Common"- "Recipe".	×	○
	Function Select the direction to transfer the recipe data when touched. <ul style="list-style-type: none"> • GOT → PLC : Data is written from the GOT to a data register of the PLC • PLC → GOT : Data is read from a data register of the PLC to the GOT. 	×	○
Display Style	ON Click on this item to set the display attributes when the device turns ON.	×	○
	OFF Click on this item to set the display attributes when the device turns OFF.	×	○
	Shape Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	×	○
	Frame Select the shape, i.e., frame color of the touch switch	×	○
Switch Select the touch switch color.	×	○	
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	×	○

2 Text/Lamp tab


The setting items of Text/Lamp tab are the same as the bit switch.
Refer to the following for the details about setting items.

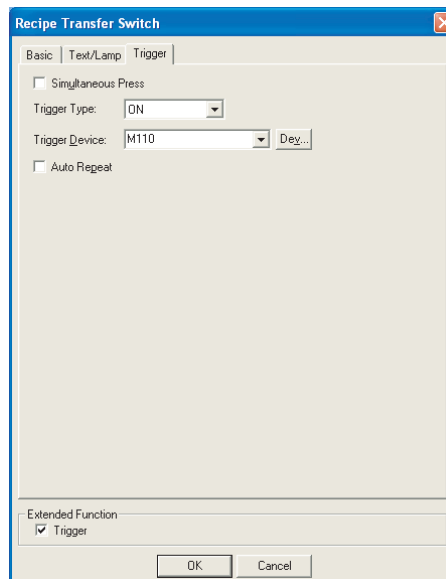
 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)



3 Trigger tab

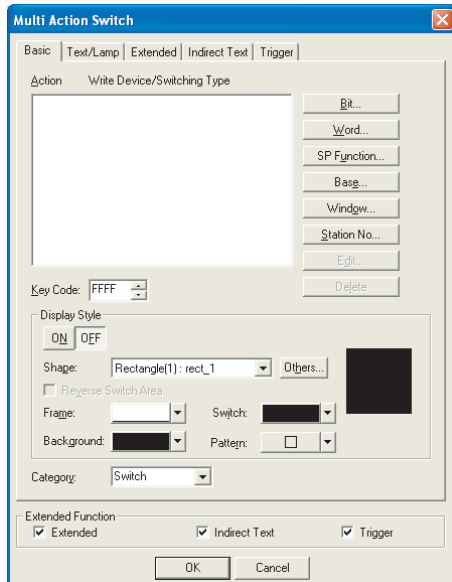
The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

 Section 6.2.2 Setting items of bit switch (Trigger tab)

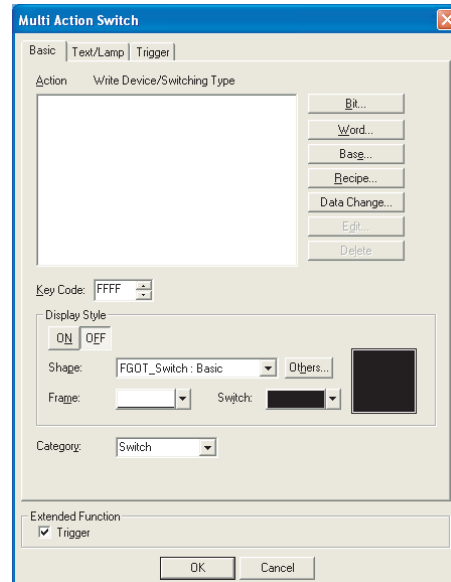


6.2.10 Setting items of multi action switch

1 Basic tab



In the case of GOT-A900 series



In the case of GOT-F900 series


Basic

Text/Lamp




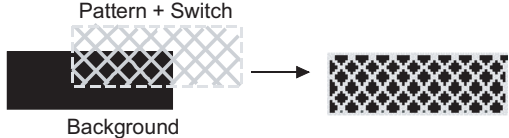
Extended

Indirect Text

Trigger

Items	Description	A	F
Action	The set actions will be displayed in list format.	<input type="radio"/>	<input type="radio"/>
Key Code	Set the key code of the key for numeric value and ASCII input. ( App.2 Key Code List)	<input type="radio"/>	<input type="radio"/>
Bit *1	Click on this item to set the bit device ON/OFF operation for touch switch.	<input type="radio"/>	<input type="radio"/>
Word *2	Click on this item to set the word device value change for touch switch.	<input type="radio"/>	<input type="radio"/>
SP Function	Click on this item to make the settings in order that the currently displayed screen will be switched to the specified extension function screen by using touch switch.	<input type="radio"/>	<input checked="" type="radio"/>
Base *3	Click on this item to make the settings in order that the base screen will be switched by using touch switch.	<input type="radio"/>	<input type="radio"/>
Window *4	Click on this item to make the settings in order that the window screen will be switched by using touch switch.	<input type="radio"/>	<input checked="" type="radio"/>
Station No. *5	Click on this item to make the settings in order that the station No. will be switched by using touch switch.	<input type="radio"/>	<input checked="" type="radio"/>
Recipe	Click on this item to make the settings in order that the data of recipe value will be transmitted by using touch switch.	<input checked="" type="radio"/>	<input type="radio"/>
Data Change	Click on this item to set the display of key window for numeric/ASCII input by using touch switch.	<input checked="" type="radio"/>	<input type="radio"/>
Edit	When intending to edit a preset action, select the action from [Action] and then click on <input type="button" value="Edit"/> button. As the corresponding setting dialog box will appear, edit the action on that dialog box	<input type="radio"/>	<input type="radio"/>
Delete	When intending to delete a preset action, select the action from [Action] and then click on <input type="button" value="Delete"/> button. As the corresponding setting dialog box will appear, delete the action in that dialog box	<input type="radio"/>	<input type="radio"/>

(Continued to next page)


Items	Description	A	F	
Display Style	ON	Click on this item to set the display attributes when the device turns ON.	<input type="radio"/>	<input type="radio"/>
	OFF	Click on this item to set the display attributes when the device turns OFF.	<input type="radio"/>	<input type="radio"/>
	Shape	Select the shape for touch switch. When [None] is selected, no frame will be displayed. By clicking on the Others button, shapes other than those in the list box or library shapes can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Reverse Switch Area	When [None] is set in [Shape], check this item to XOR-reverse the touch switch (no shape) area according to the background color.	<input type="radio"/>	<input checked="" type="radio"/>
	Frame	Select the shape, i.e., frame color of the touch switch.	<input type="radio"/>	<input type="radio"/>
	Switch	Select the touch switch color.	<input type="radio"/>	<input type="radio"/>
	Background	Select the pattern, background color and switch color for the touch switch. The selected pattern in the switch color is displayed on the background color.	<input type="radio"/>	<input type="radio"/>
Pattern	Example: Background :  Pattern :  Switch :   Background	<input type="radio"/>	<input checked="" type="radio"/>	
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>	

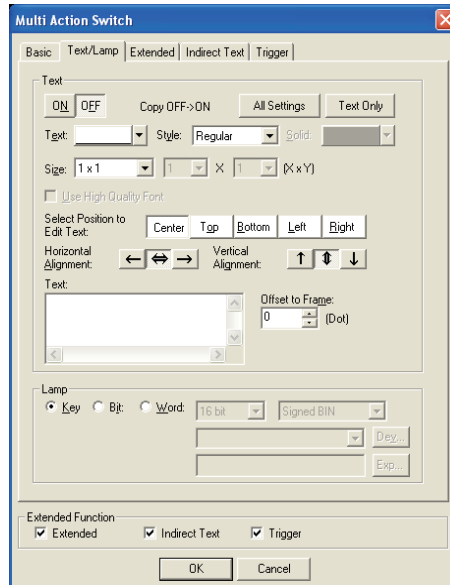
For details of *1 to *5, refer to the following.

☞ The explanations of *1 to *5 in Section 6.2.2 [4](#) Action tab.

2 Text/Lamp tab

The setting items of Text/Lamp tab are the same as the bit switch.
Refer to the following for the details about setting items.

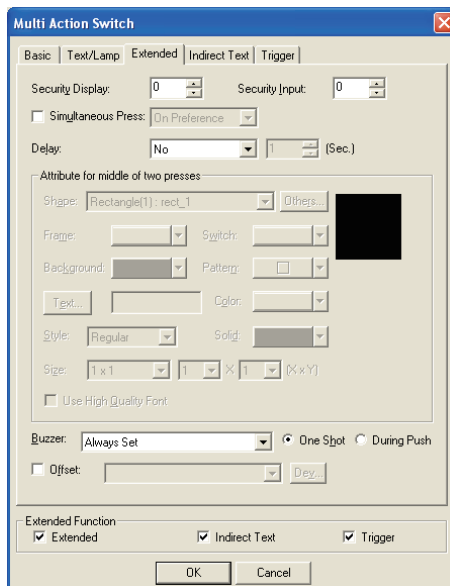
 Section 6.2.2 Setting items of bit switch (Text/Lamp tab)



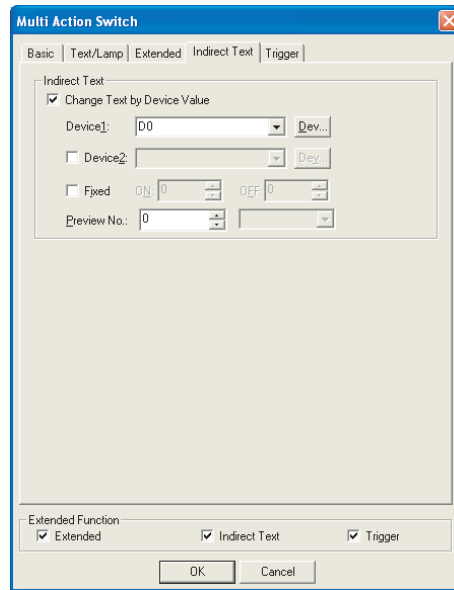
3 Extended tab (specific for GOT-A900 series)

The setting items of Extended tab are the same as the bit switch.
Refer to the following for the details about setting items.

 Section 6.2.2 Setting items of bit switch (Extended tab (for GOT-A900 series only))



4 Indirect Text tab (specific for GOT-A900 series)



Items		Description	A	F
Indirect Text *1	Change Text by Device Value	Check this item to change the text display of touch switch according to a device value. After checking, click on the Device button and set the device stored a value. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Device1	The comment having the same number as the value stored in the set device is displayed. "Text" on the "Text/Lamp" tab becomes invalid with check.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Device2	Check this item to add the value of other device to the value of "Device 1". After checking, click on the Device button and set the device where the added value will be stored. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Fixed	Check this item to add the other value to "Device 1" according to the display status (ON/OFF display) of touch switch. After checking, set the added value at ON/OFF of touch switch.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Preview No.	Set the comment to be displayed as touch switch text on GT Designer2 screen by the comment No.	<input type="radio"/>	<input checked="" type="checkbox"/>

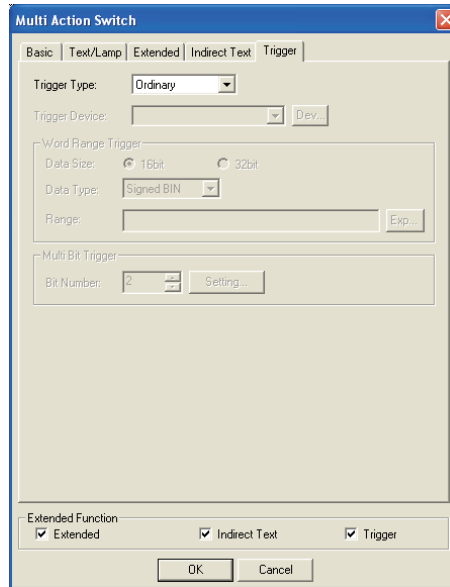
For details of *1, refer to the following.

(☞ The explanations of *6 in Section 6.2.2 **4** Action tab.

5 Trigger tab

The setting items of Trigger tab are the same as the bit switch.
Refer to the following for the details about setting items.

 Section 6.2.2 Setting items of bit switch (Trigger tab)



6.2.11 Keyboard function

In the GOT-F900 series, a keyboard built in the GOT can be always displayed.
Eight types of keyboards are provided for inputting numeric values only or inputting both numeric values and ASCII codes.

Material setting							
Material 1	JY34534						
Material 2	JZ12345						
Material 3	EX23561						
A	B	C	D	E	F	BS	CLR
G	H	I	J	K	7	8	9
L	M	N	O	P	4	5	6
Q	R	S	T	U	1	2	3
V	W	X	Y	Z	0	-	ENT

1 Setting

- 1 Select [Object] → [Keyboard] from the menu.
- 2 When the setting dialog box appears, set required items while referring to the explanation below.

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

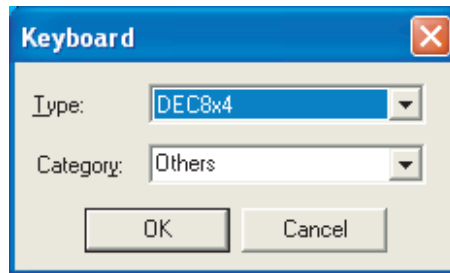
NUMERICAL/
CHARACTER DISPLAY

8

ALARM

2 Set items

Set the keyboard function.



Items	Description	A	F																																																																																																																																																																																																																																																			
Type	<p>Select the keyboard to be always displayed on the screen among the eight types below. In the F940GOT, F940WGOT or F94* handy GOT.</p> <p> DEC: 8x4 <table border="1"> <tr><td>7</td><td>8</td><td>9</td><td>CLR</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>▲</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>▼</td></tr> <tr><td>0</td><td>-</td><td>ENT</td><td></td></tr> </table> </p> <p> DEC: 16x2 <table border="1"> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>-</td><td>▲</td><td>CLR</td></tr> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td>▼</td><td>ENT</td></tr> </table> </p> <p> DEC: 10x4 <table border="1"> <tr><td>C</td><td>D</td><td>E</td><td>F</td><td>CLR</td></tr> <tr><td>8</td><td>9</td><td>A</td><td>B</td><td>▲</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>▼</td></tr> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>ENT</td></tr> </table> </p> <p> Characters 1: 16x5 <table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>BS</td><td>CLR</td></tr> <tr><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>L</td><td>M</td><td>N</td><td>O</td><td>P</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>Q</td><td>R</td><td>S</td><td>T</td><td>U</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>V</td><td>W</td><td>X</td><td>Y</td><td>Z</td><td>0</td><td>-</td><td>ENT</td></tr> </table> </p> <p> DEC: 8x8 <table border="1"> <tr><td>7</td><td>8</td><td>9</td><td>CLR</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>▲</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>▼</td></tr> <tr><td>0</td><td>-</td><td>ENT</td><td></td></tr> </table> </p> <p> DEC: 16x4 <table border="1"> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>-</td><td>▲</td><td>CLR</td></tr> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td>▼</td><td>ENT</td></tr> </table> </p> <p> DEC: 10x8 <table border="1"> <tr><td>C</td><td>D</td><td>E</td><td>F</td><td>CLR</td></tr> <tr><td>8</td><td>9</td><td>A</td><td>B</td><td>▲</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>▼</td></tr> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>ENT</td></tr> </table> </p> <p> Characters 2: 16x5 <table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>CLR</td></tr> <tr><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td><td>BS</td></tr> <tr><td>O</td><td>P</td><td>Q</td><td>R</td><td>S</td><td>T</td><td>U</td><td>▲</td></tr> <tr><td>V</td><td>W</td><td>X</td><td>Y</td><td>Z</td><td></td><td>SP</td><td>▼</td></tr> <tr><td>英大</td><td>英小</td><td>数字</td><td>記号</td><td>加1</td><td>加2</td><td></td><td>ENT</td></tr> </table> </p> <p>In the F930GOT or F930GOT-K</p> <p> DEC <table border="1"> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>CLR</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>▲</td></tr> <tr><td>0</td><td>1</td><td>-</td><td>ENT</td><td></td></tr> </table> </p> <p> DEC (H) <table border="1"> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>-</td><td>▲</td><td>CLR</td></tr> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td>▼</td><td>ENT</td></tr> </table> </p> <p> HEX <table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>CLR</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td></td><td>▲</td></tr> <tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td></td><td>▼</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>ENT</td></tr> </table> </p>	7	8	9	CLR	4	5	6	▲	1	2	3	▼	0	-	ENT		5	6	7	8	9	-	▲	CLR	0	1	2	3	4		▼	ENT	C	D	E	F	CLR	8	9	A	B	▲	4	5	6	7	▼	0	1	2	3	ENT	A	B	C	D	E	F	BS	CLR	G	H	I	J	K	7	8	9	L	M	N	O	P	4	5	6	Q	R	S	T	U	1	2	3	V	W	X	Y	Z	0	-	ENT	7	8	9	CLR	4	5	6	▲	1	2	3	▼	0	-	ENT		5	6	7	8	9	-	▲	CLR	0	1	2	3	4		▼	ENT	C	D	E	F	CLR	8	9	A	B	▲	4	5	6	7	▼	0	1	2	3	ENT	A	B	C	D	E	F	G	CLR	H	I	J	K	L	M	N	BS	O	P	Q	R	S	T	U	▲	V	W	X	Y	Z		SP	▼	英大	英小	数字	記号	加1	加2		ENT	6	7	8	9	CLR	2	3	4	5	▲	0	1	-	ENT		5	6	7	8	9	-	▲	CLR	0	1	2	3	4		▼	ENT	A	B	C	D	E	F	CLR	5	6	7	8	9		▲	0	1	2	3	4		▼							ENT	×	○
7	8	9	CLR																																																																																																																																																																																																																																																			
4	5	6	▲																																																																																																																																																																																																																																																			
1	2	3	▼																																																																																																																																																																																																																																																			
0	-	ENT																																																																																																																																																																																																																																																				
5	6	7	8	9	-	▲	CLR																																																																																																																																																																																																																																															
0	1	2	3	4		▼	ENT																																																																																																																																																																																																																																															
C	D	E	F	CLR																																																																																																																																																																																																																																																		
8	9	A	B	▲																																																																																																																																																																																																																																																		
4	5	6	7	▼																																																																																																																																																																																																																																																		
0	1	2	3	ENT																																																																																																																																																																																																																																																		
A	B	C	D	E	F	BS	CLR																																																																																																																																																																																																																																															
G	H	I	J	K	7	8	9																																																																																																																																																																																																																																															
L	M	N	O	P	4	5	6																																																																																																																																																																																																																																															
Q	R	S	T	U	1	2	3																																																																																																																																																																																																																																															
V	W	X	Y	Z	0	-	ENT																																																																																																																																																																																																																																															
7	8	9	CLR																																																																																																																																																																																																																																																			
4	5	6	▲																																																																																																																																																																																																																																																			
1	2	3	▼																																																																																																																																																																																																																																																			
0	-	ENT																																																																																																																																																																																																																																																				
5	6	7	8	9	-	▲	CLR																																																																																																																																																																																																																																															
0	1	2	3	4		▼	ENT																																																																																																																																																																																																																																															
C	D	E	F	CLR																																																																																																																																																																																																																																																		
8	9	A	B	▲																																																																																																																																																																																																																																																		
4	5	6	7	▼																																																																																																																																																																																																																																																		
0	1	2	3	ENT																																																																																																																																																																																																																																																		
A	B	C	D	E	F	G	CLR																																																																																																																																																																																																																																															
H	I	J	K	L	M	N	BS																																																																																																																																																																																																																																															
O	P	Q	R	S	T	U	▲																																																																																																																																																																																																																																															
V	W	X	Y	Z		SP	▼																																																																																																																																																																																																																																															
英大	英小	数字	記号	加1	加2		ENT																																																																																																																																																																																																																																															
6	7	8	9	CLR																																																																																																																																																																																																																																																		
2	3	4	5	▲																																																																																																																																																																																																																																																		
0	1	-	ENT																																																																																																																																																																																																																																																			
5	6	7	8	9	-	▲	CLR																																																																																																																																																																																																																																															
0	1	2	3	4		▼	ENT																																																																																																																																																																																																																																															
A	B	C	D	E	F	CLR																																																																																																																																																																																																																																																
5	6	7	8	9		▲																																																																																																																																																																																																																																																
0	1	2	3	4		▼																																																																																																																																																																																																																																																
						ENT																																																																																																																																																																																																																																																
Category	<p>When allocating category to the object, select a proper category.</p> <p> GT Designer2 Version□ Operating Manual</p>	×	○																																																																																																																																																																																																																																																			

3 Precautions

The precautions on using the keyboard function are as follows:

- (1) Precautions on screen creation
Only one keyboard can be set for one screen.
- (2) Unavailable GOT type
The keyboard function is not available in the F920GOT-K because the touch switch function is not provided in it.
- (3) Combined use with key window
A key window cannot be used on the screen set a keyboard.
A key window will not pop up with touching Numerical Input or ASCII Input.

6.2.12 Precautions

This section provides the precautions for using touch switch.

1 Precautions for drawing

- (1) Maximum number of touch switch objects set in one screen
 - GOT-A900 series : 256
 - GOT-F900 series : 50 (Up to 50 overlapped screens)

- (2) Action of touch switch

- (a) Multiple functions can be set for one touch switch.
(Multiple functions cannot be set if extension key is set.)

GOT-A900 series		GOT-F900 series		Action sequence for multi setting
Momentary	: 20	Momentary	: 50	High
Set	: 20	Set	: 50	
Reset	: 20	Reset	: 50	
Alternate	: 20	Alternate	: 50	
Word Set	: 20	Word Set	: 50	
Base screen switching	: 1	Base screen switching	: 1	↓
Window screen switching	: 1	Recipe	: 50	
Overlap Window1	: 1	Data change	: 50	
Overlap Window2	: 1			
Superimpose	: 1			
Station No. switching	: 1			Low
Total	: 105	Total	: 50	

- (b) When setting multiple functions for one touch switch, some functions cannot work according to the combination of the set functions.

○ : Available × : N/A

Key Type	High → Action sequence for multi setting → Low			
	Extension Function	Key Code Setting	Key Code Setting Numerical value/ ASCII input confirmation	Word set Set Reset Alternate Momentary Basic Screen switch Window Screen switch Station No. switch
Extension Function	○	×	×	×
Key Code Setting	×	○	×	×
Key Code Setting (Numerical value/ ASCII input confirmation key)	×	×	○	○

Only in the following case, the key code of GOT-F900 series can be set simultaneously.

- Muffle function that does not output the sound when the touch switch is touched: FFFE_H

- (3) Size of touch switch

- GOT-A900 series : minimum 16 dots (Y) 16 dots (X)
- GOT-F900 series : minimum 16 dots (Y) 20 dots (X)

(4) Valid range of touch switch

(a) GOT-A900 series

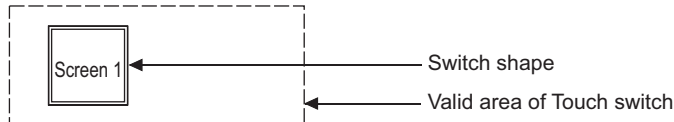
The setting unit of switch shape is 1 dot. The setting unit of valid range is 16 dots.

By right-clicking an object and checking [Edit Touch Area/Frame Region], the size of the switch shape and the valid area of the touch switch can be set respectively.

The valid area of a touch switch can be fit in an object frame with [Fit in Touch Area].



Section 5.3.3 Object size change



(b) GOT-F900 series

The setting unit of switch shape is 1 dot.

The valid area is workable in the more than half of 16 dots x 20 dots.

(5) Precautions for using comment (specific for GOT-A900 series)

Only one line of comment can be displayed as touch switch text.

When text size is larger than touch switch shape size, the comment part outside of the shape will not be displayed.

To use comment as touch switch text, make sure to install the currently used OS of GT Designer2 (basic function OS) into GOT.

(6) Key code setting

For key code setting, directly input the key to be used.

Even though invalid key code is set for touch switch, it cannot be checked in GT Designer2.

(7) Precautions in using the F920GOT-K

The touch switch function is not available because touch switches are not provided on the screen. Set the switch function to the function switches by setting the operation panel.

In this case, however, key codes cannot be set.

2 Precautions for using

(1) Simultaneously press is enabled.

When three switches are simultaneously touched, the third one will not work.

(2) When multiple actions including either of bit Set/Reset/Alternate and either of screen switching/ station No. switching are set for a touch switch

When multiple actions including either of bit Set/Reset/Alternate and either of screen switching/ station No. switching are set for a touch switch, the timing when the screen or station No. changes will vary depending on the standard monitor OS version in GOT, as shown below.

Setting item	Standard monitor version 9.0.7 or earlier	Standard monitor version 9.1.1 or later
Screen switching/Station No. Switching + Set	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. Switching + Reset	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. Switching + Alternate	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. Switching + Momentary	When the touch switch is released	
Screen switching/Station No. Switching + Word	When the touch switch is touched	When the touch switch is touched

Standard monitor version 9.0.7: Stored in GT Designer Version5 30G edition

Standard monitor version 9.1.1: Stored in GT Designer Version5 31H edition or GT Designer2 Version1 00A edition

Example: When multiple actions including followings are set for a touch switch.

When multiple actions including both screen switching and bit Alternate are set for a touch switch, the device status after screen change is reversed between standard monitor version 9.0.7 or earlier and 9.1.1 or later.

(However, when bit Momentary is set with other actions for a touch switch, the same operation as standard monitor version 9.0.7 or earlier is performed.)

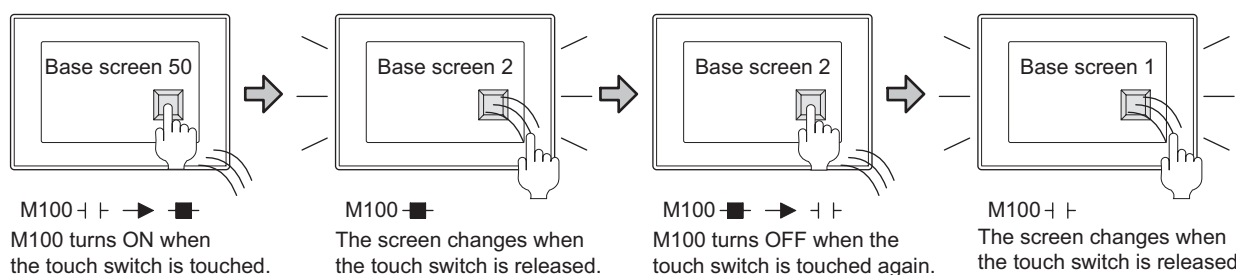
Bit Alternate : M100

Screen switching : Screen changes to base screen 2 when M100 turns ON.

Screen switching : Screen changes to base screen 1 when M100 turns OFF.

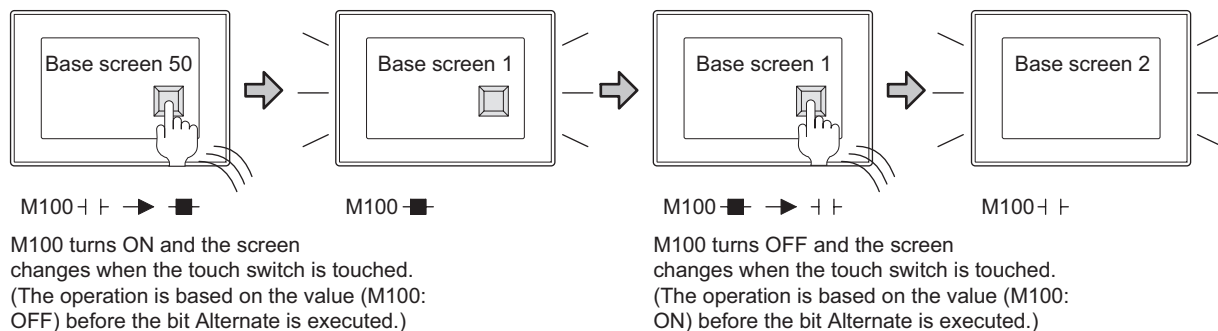
(a) Action when standard monitor version 9.0.7 or earlier is used.

For standard monitor version 9.0.7 or earlier, the screen or station No. changes simultaneously when the specified bit device has turned ON/OFF/ON OFF. The GOT operates based on the value after the bit Set/Reset/Alternate is executed.



(b) Action when standard monitor version 9.1.1 or later is used.

For standard monitor version 9.1.1 or later, the screen or station No. changes simultaneously when the specified bit device has turned ON/OFF/ON OFF. The GOT operates based on the value before the bit Set/Reset/Alternate is executed.



<Corrective action>

The same operation as standard monitor version 9.0.7 or earlier is preformed by turning the GOT internal device (GS450.b12) ON before pressing the touch switch.

Setting item	GS450.b12	
	ON	OFF
Screen switching/Station No. Switching + Set	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. Switching + Reset	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. Switching + Alternate	When the touch switch is released	When the touch switch is touched
Screen switching/Station No. Switching + Momentary	When the touch switch is released	
Screen switching/Station No. Switching + Word	When the touch switch is touched	When the touch switch is touched

The following example shows how to make the settings so that the status observation function will work to automatically turn GS450.b12 ON after the GOT is powered ON.

<Example of setting the status observation function>

Make the following settings in the "Status Observation" screen.

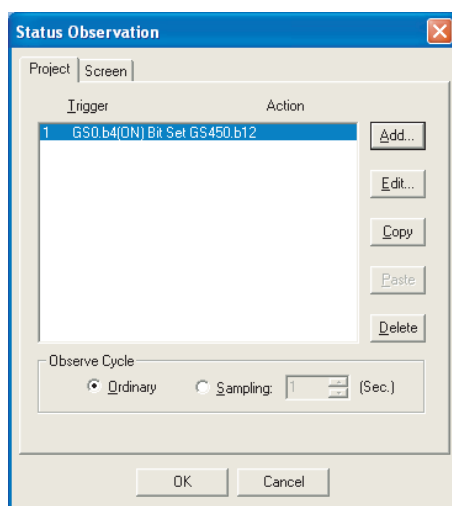
The GOT internal device (device that is always ON: GS0.b4) functions as a trigger.

GS450.b12 turns ON when the trigger is ON.

With this settings, the status observation function works and GS450.b12 turns ON after the GOT is powered ON.

For details of observation function, refer to the following.

 Section 11.1 Status Observation Function



- Make the settings in the "Project" tab within the "Status Observation" screen
- Put the settings in the first line (GS450.b12 turns ON right after the GOT is powered ON)
- Set "Observe Cycle" to "Ordinary"

7. NUMERICAL/CHARACTER DISPLAY

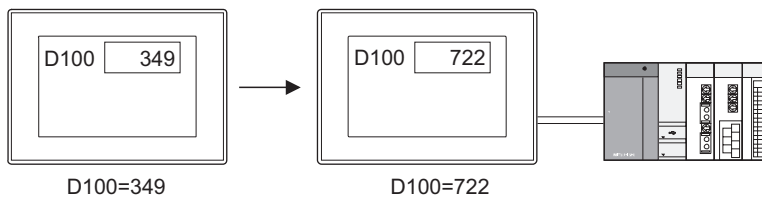


7.1 Numerical Display/Numerical Input



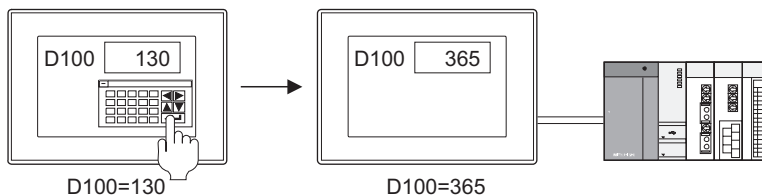
1 Numerical display (Section 7.1.2 Setting items of numerical display)

This function allows the data saved in PLC CPU devices to be displayed as numeric values on GOT.



2 Numerical input (Section 7.1.3 Setting items of numerical input)

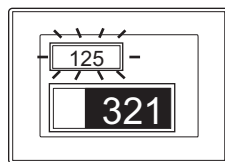
This function enables writing any value from GOT to PLC CPU device.



Example:

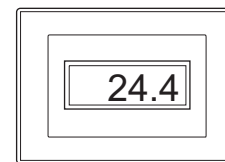
Displays numeric values in various patterns

Section 7.1.2 setting



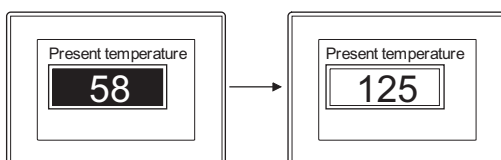
Displays/Inputs numeric value with decimal points

Section 7.1.2 setting



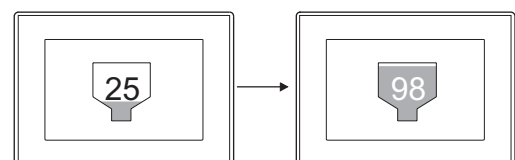
Changes display /background color depending on the value (GOT-A900 Series only)

Setting on Case tab



Uses numerical display/numerical input in combination with the lever display function (GOT-A900 Series only)

Section 10.2 Level





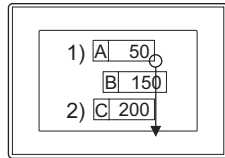
When inputting using the numerical input function

Setting for various operations such as input operation is available for each project or screen.

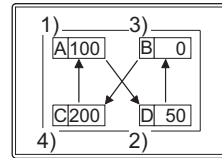
<Setting example>

- Setting the input order of multiple numerical values

☞ Section 4.5 Auxiliary Settings



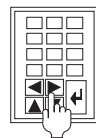
Sets the input order based on coordinate position



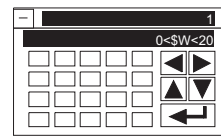
Sets the input order in desired order

- Setting the input key window

☞ Section 4.6 Key Window



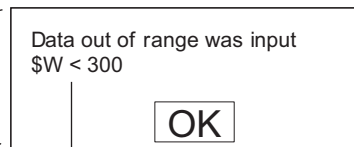
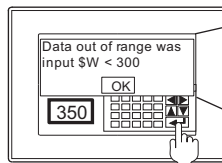
Uses user-created key window (GOT-A900 Series only)



Displays input value/input range on key window

- When the input value is out of range, displaying input range with message

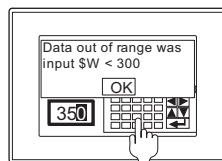
☞ Section 4.5 Auxiliary Settings



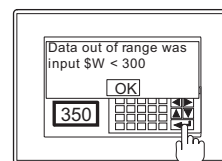
Display/Not display of input range can be selected

- When input is out of range, setting display timing of message

☞ Section 2.6.1 GOT internal devices



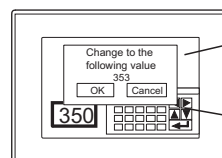
When GS450.b1 is ON, displays message during numerical input. (Input check mode)



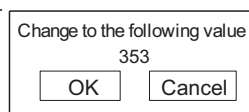
When GS450.b1 is OFF, displays message on entry of numerical input (Input confirmation mode)

- Setting Display/Not display confirmation message when inputting numerical values

☞ Section 2.6.1 GOT internal devices





When GS450.b0 is ON, displays confirmation message on entry of



When GS450.b0 is OFF, does not display confirmation

7.1.1 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Numerical Display]/ [Numerical Input]
 - Select [Object] → [Numerical Display]/[Numerical Input] from the menu.
- 2 Clicking at a desired position completes the numerical display/numerical input setting.
(After the arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double-clicking on the setting area of the numerical display/numerical input displays the setting dialog box. Make the settings with reference to the following explanation.



Easier setting method


Using the property sheet enables direct on-screen object setting.

 GT Designer2 Version Operating Manual



Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

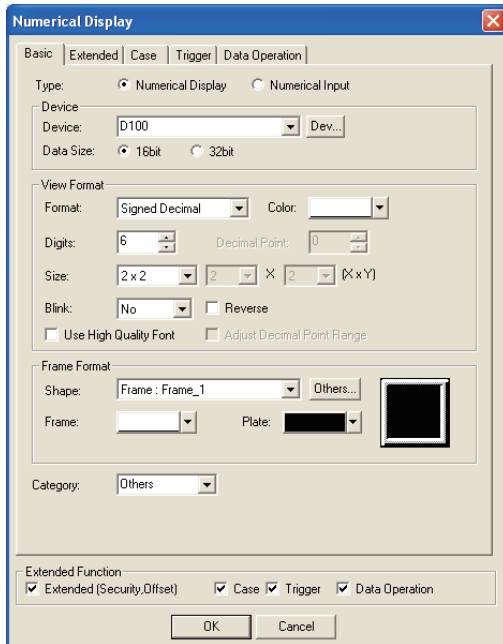
 Section 5.3.3 Object size change



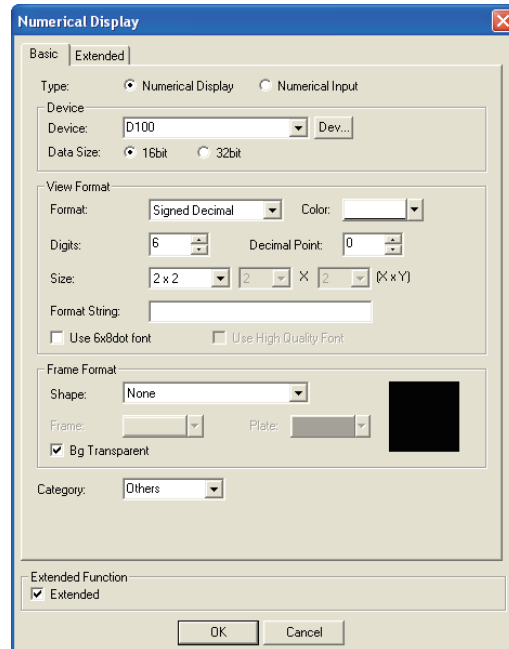
Object outline frame
Shape frame

7.1.2 Setting items of numerical display

1 Setting items of Basic tab



(Example: When setting GOT-A900 series)

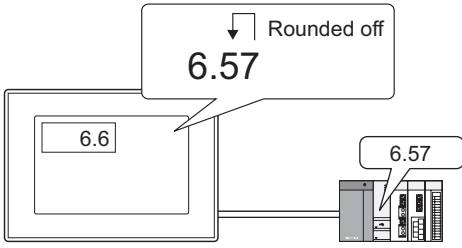



(Example: When setting GOT-F900 series)

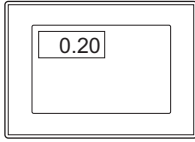
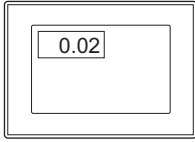



Basic Extended Case Trigger Data Operation

Items		Description	A	F
Type		Select the function to be used (Numerical display/Numerical input).	<input type="radio"/>	<input type="radio"/>
Device	Device	Set the device to be monitored. (Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input type="radio"/>
View Format	Format	Select the displayed data format of a monitored device. Signed (Unsigned) decimal: The value is displayed in decimal. Hexadecimal :The value is displayed in hexadecimal. Octal :The value is displayed in octal. Binary :The value is displayed in binary. Real :The value is displayed in real number. (The GOT-F900 series displays a binary float value in real number.) Example: GOT display examples Signed decimal : -12623 Binary : 0011000101001111 Unsigned decimal : 12623 Octal : 30517 Real : 1262.3 Hexadecimal : 314F The default of a handled data format is signed BIN. To monitor by the other data format (unsigned decimal, BCD, floating-point type real number) , change the setting in "Data Form" on the Extended tab.	<input type="radio"/>	<input type="radio"/>
	Color	Select the color of the numeric character to be displayed.	<input type="radio"/>	<input type="radio"/>

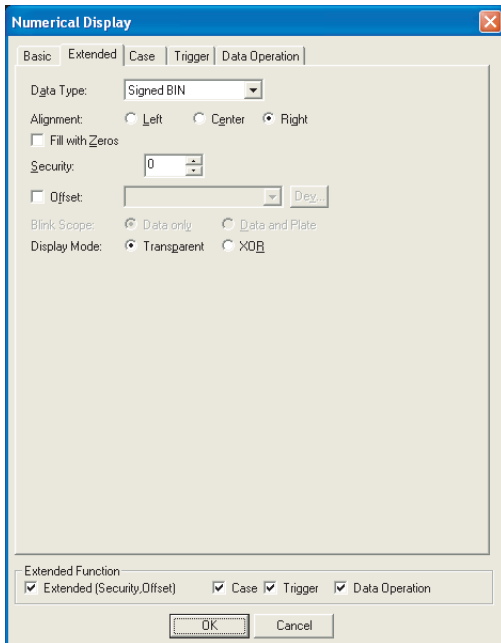
(Continued to next page)

Items	Description	A	F
Digits	<p>Set the number of digits for the numeric value to be displayed.</p> <p>Available number of digits is different depending on the [Format] setting.</p> <p>Signed (Unsigned) decimal: 1 to 13 digits (including minus (-))</p> <p>Hexadecimal : 1 to 8 digits</p> <p>Octal : 1 to 6 digits</p> <p>Binary : 1 to 32 digits</p> <p>Real : 1 to 32 digits (including minus (-), decimal point and decimal part)</p>	<input type="radio"/>	<input type="radio"/>
Decimal Point	<p>When REAL is selected in [Format], set the number of digits after the decimal points (1 to 32).</p> <p>The lower digits of the set digit are rounded off.</p> <p>At the setting "0", the lower digits of the decimal point are rounded off.</p> <p>Example: Device value: 6.57 Number of digits after decimal point: 1</p> 	<input type="radio"/>	<input type="radio"/>
View Format	<p>Select the text size (magnification of X × Y) of the numeric value. Text size of 1X and 1Y represents 16 × 8 dots.</p> <p>GOT-A900 series: $\overset{A}{\underset{1}{\boxed{\quad}}}$ 0.5 to 8 multiple 0.5 to 8 multiple</p> <p>GOT-F900 series: $\overset{A}{\underset{1}{\boxed{\quad}}}$ 0.5 to 4 multiple 1 to 8 multiple</p>	<input type="radio"/>	<input type="radio"/>
Blink	<p>Select the blinking pattern of the numeric value/figure frame</p> <p>No : Not blink.</p> <p>Low : Blinks every 1 second.</p> <p>Middle : Blinks every 0.5 seconds.</p> <p>High : Blinks every 0.2 seconds.</p>	<input type="radio"/>	<input checked="" type="radio"/>
Reverse	Check this item when reversing the numeric character.	<input type="radio"/>	<input checked="" type="radio"/>
Use High Quality Font	<p>Check this item when using high quality font to display numeric values.</p> <p>(Only when display size X, Y is set to any of 2, 4, 6 or 8.)</p> 	<input type="radio"/>	<input type="radio"/>

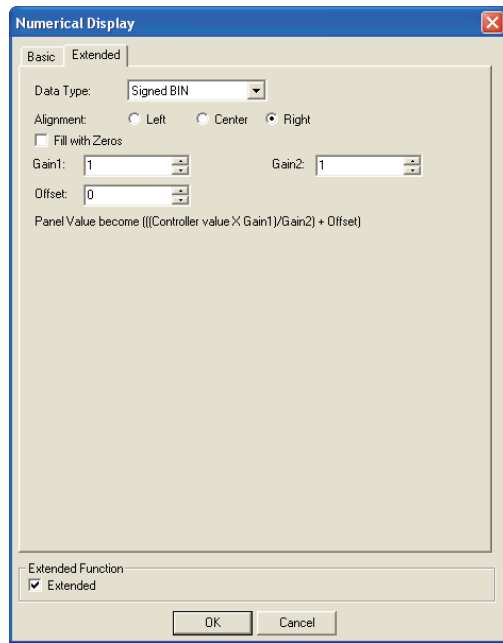
(Continued to next page)

Items	Description	A	F						
View Format	<p>Check this item to display the device value of integer (data format other than real number) as a value with decimal point. The device value is displayed at the number of digits set in "Decimal Point".</p> <p>Example: Number of digits after decimal point: 2 PLC device value: 20</p>  <p>0.20 is displayed on GOT.</p> <p>Number of digits after decimal point: 3 PLC device value: 20</p>  <p>0.02 is displayed on GOT.</p> <p>The automatic adjustment is also available for the following:</p> <p>Display range : \$V (Value of monitor device/Value of data operation result), the specified device value</p> <p>Data operation : \$\$ (Value of monitor device), the specified device value</p>	<input type="radio"/>	<input type="radio"/>						
	<p>Format String</p> <p>Characters (alphabets, numeric, Kanji and symbols) can be arbitrarily added to the number to be displayed.</p> <ul style="list-style-type: none"> Each "#" indicates one numeric. The rightmost number goes for the last digit. If the numeric characters exceed the set digit number, the redundant numbers will not be displayed. <p>Example: Adding a decimal point (.) and characters (Measured value and Ω) to the four-digit number (each # is one numeric):</p> <table border="1"> <thead> <tr> <th>Setting in character format</th> <th>Data register in PLC</th> <th>Display in GOT-F900</th> </tr> </thead> <tbody> <tr> <td>Measured value ###.# Ω</td> <td>K1234</td> <td>Measured value 123.4Ω</td> </tr> </tbody> </table>	Setting in character format	Data register in PLC	Display in GOT-F900	Measured value ###.# Ω	K1234	Measured value 123.4Ω	<input checked="" type="radio"/>	<input type="radio"/>
	Setting in character format	Data register in PLC	Display in GOT-F900						
Measured value ###.# Ω	K1234	Measured value 123.4Ω							
Use 6 × 8 dot font	Font is displayed in size of 6 × 8 dots. (Characters only)	<input checked="" type="radio"/>	<input type="radio"/>						
Frame Format	<p>Shape</p> <p>Set a frame for the object. When [None] is selected, no frame will be displayed.</p> <p>By clicking on the <input type="checkbox"/> Others button, figures other than those in the list box or library figures can be selected.</p> <p> Section 5.3.2 Object shape setting)</p>	<input type="radio"/>	<input type="radio"/>						
	<p>Frame</p> <p>Select the shape, i.e., frame/plate color.</p>  <p>Plate</p>	<input type="radio"/>	<input type="radio"/>						
	Bg Transparent	Select this when the background is to be transparent.	<input checked="" type="radio"/>	<input type="radio"/>					
Category	<p>When allocating category to the object, select a proper category.</p> <p> GT Designer2 Version□ Operating Manual)</p>	<input type="radio"/>	<input type="radio"/>						

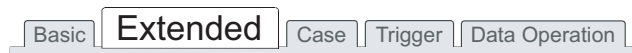
2 Extended Tab



In case of GOT-A900 Series

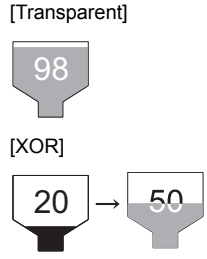


In case of GOT-F900 Series




Items	Description	A	F
Data Type	<p>Select the data type of the device to be displayed.</p> <p>GOT-A900 Series</p> <ul style="list-style-type: none"> Signed BIN : Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary value. BCD : Treats the word device value as a BCD (binary decimal) value. Real : Treats the word device value as a floating point type real number. (Only when selecting [32bit] for [Data Size].) <p>GOT-F900 Series</p> <ul style="list-style-type: none"> Signed BIN : Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary 	○	○
Alignment	<p>Select the position to display the numeric value.</p> <p>Left Center Right</p>	○	○
Fill with Zeros	<p>When [Right Alignment] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item.</p> <p>Example: (In the case of five digits)</p> <p>Zero not suppressed Zero suppressed</p>	○	○
Security	<p>When using the security function, set the security level (1 to 15).</p> <p>When not using the function, set it to "0".</p> <p>(Section 5.8 Security Function)</p>	○	×

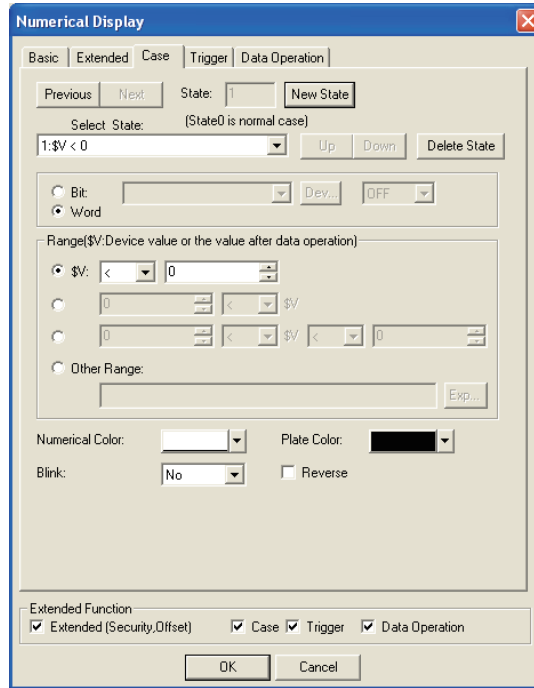
(Continued to next page)


Items	Description	A	F
Offset	<p>Check this item when executing monitor by switching between multiple devices.</p> <p>(☞ Section 5.7 Offset Function)</p> <p>After checking, set the offset device.</p> <p>(☞ Section 5.1 Device Setting)</p>	○	×
Blink Scope	<p>Select a blink area.</p> <p>Data only : Makes the numerical area blink.</p> <p>Data and Plate : Makes the numerical area and plate blink.</p>	○	×
Display Mode	<p>Select a desired display mode when displaying a numeric value with the level display overlapped.</p> <p>Transparent : Displays the numeric value on the level display.</p> <p>XOR : In order to identify the level and numeric easily, the numeric character is displayed in color different from the level color based on XOR. This is valid when GOT is Monochrome type/EL type.</p> <p>(☞ App.5 Synthesized Colors Available for XOR)</p> 	○	×
Gain1	Set the value by which the monitor device value is multiplied.	×	○
Gain2	Set the value by which the monitor device value is divided.	×	○
Offset	Set the value to be added to the monitor device value.	×	○

3 Case Tab (GOT-A900 Series only)

The attribute can be changed on this setting tab depending on the device status.
For details of states, refer to the following.

 Section 5.4 State Setting



Items	Description	A	F
State ^{*1}	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	○	×
New State	Creates a new state.	○	×
Delete State	Deletes a specified state.	○	×
Previous/Next	Switches the currently editing state to the previous or next state.	○	×
Up/Down	Changes the priority of the current state.	○	×
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	○	×
Device	Select a condition for display change depending on the state. Bit : Select this to change the display based on ON/OFF status of a bit device. Then, set the bit device and the device status (ON/OFF). ( Section 5.1 Device Setting) Word : Select this to change the display based on a word device value. Then, set a conditional expression for the word device value in [Range].	○	×
Range	Set the range of word device values for display change using a conditional expression.	○	×
Numerical Color	Select a numerical color for the case that conditions for the state display are satisfied.	○	×
Plate Color	Select a plate color for the case that conditions for the state display are satisfied.	○	×

(Continued to next page)

Items	Description	A	F
State*1	Blink Select the blinking pattern of the numeric value. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	○	×
	Reverse Check this item to reverse numeric display.	○	×

For details of *1, refer to the following.

*1 State

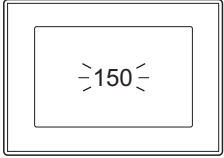
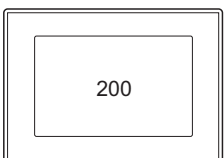
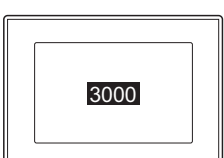
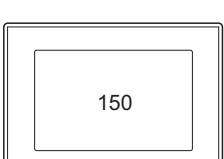
(1) Display for condition other than those set on the Case tab
 When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
 When conditions are overlapped, a state with smaller No. has priority.

Example: Monitor device : D100
 Data view format : Signed decimal with 16-bit data size

Priority level for overlapped setting	State No.	Range	Color
High	1	M10 ON	Red (Blink)
	2	200≤\$V≤300	Blue
↓	3	1000≤\$V	Yellow (Reverse)
Low	Normal case (State 0)	—	Green

* \$V represents the monitor device value.


State 1	When M10 is ON, the numeric value will be displayed in red (Blink).	
State 2	When the device value is within a range of 200 to 300 (200≤\$V≤ 300), the numeric value will be displayed in blue.	
State 3	When the device value is 1000 or more (1000≤\$V), the numeric value will be displayed in yellow (Reverse).	
Normal Case (State 0)	When the condition is out of the range of State 1 to 3, the numeric value will be displayed in green.	

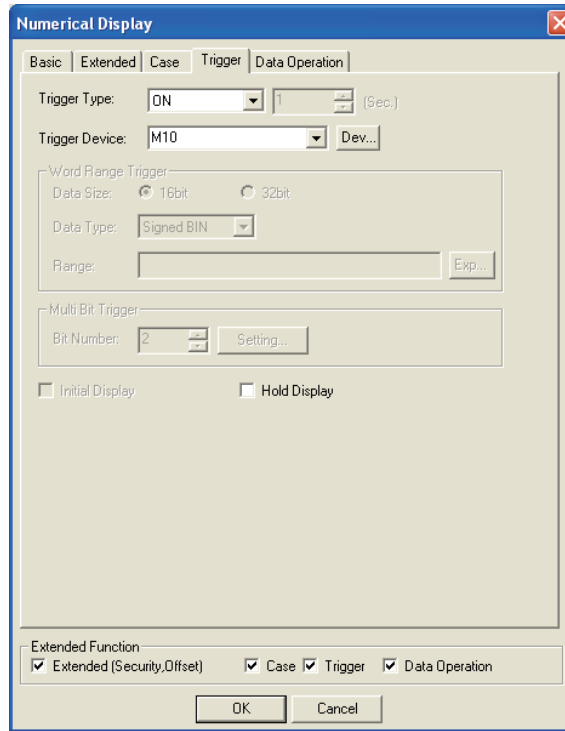
4 Trigger Tab (GOT-A900 Series only)

Set conditions for displaying the object.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



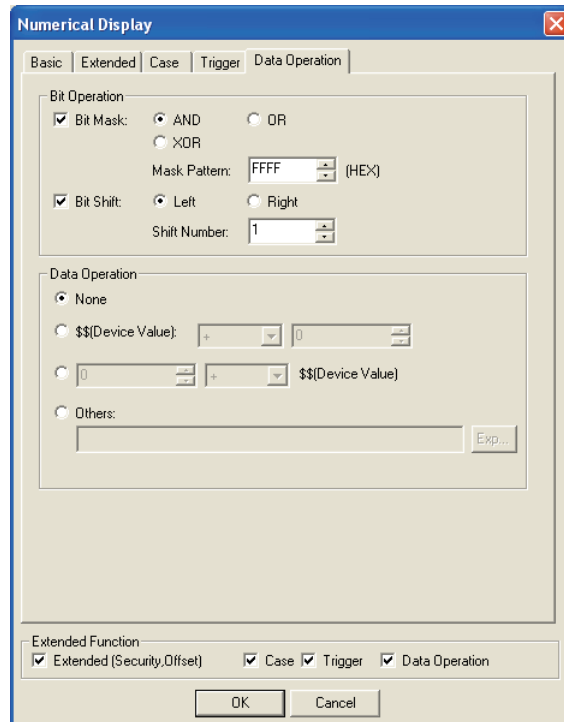
Items	Description	A	F	
Trigger Type	Select trigger by which the object is displayed. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger	○	×	
Trigger Device	Specify the device used for the trigger.	○	×	
	When [Range] is selected in [Trigger Type], set the following items.	○	×	
Word Range Trigger	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
	Data Type	Select the data type (Signed BIN/ Unsigned BIN/Real) of the word device. Real can be set only if [32bit] is selected in [Data Size].	○	×
	Range	Click on the [Exp] button and set conditional expression for the word device range.	○	×
Multi Bit Trigger	Bit Number	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click on the [Setting] button and set the bit devices and their conditions.	○	×
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied.	○	×	
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied. If not checked, the object will be deleted when the conditions become invalid.	○	×	

5 Data Operation Tab (GOT-A900 Series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

Section 5.6 Data Operation Function

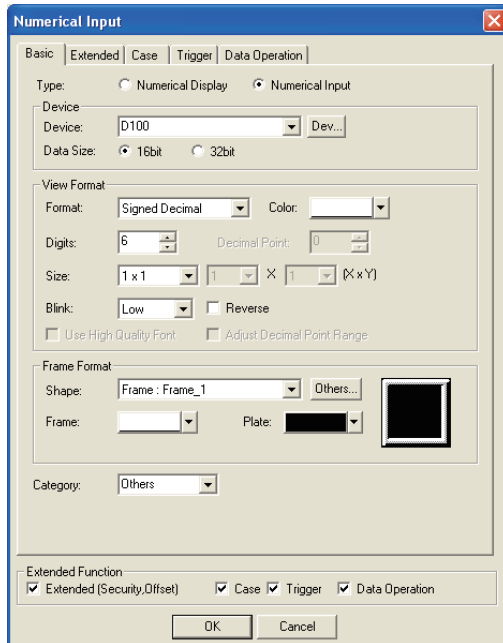


Basic Extended Case Trigger **Data Operation**

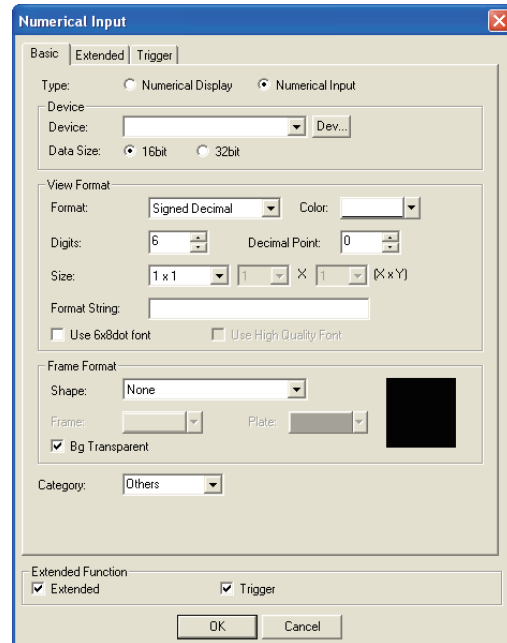
Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

7.1.3 Setting items of numerical input

1 Basic Tab



(Example: GOT-A900 Series setting)

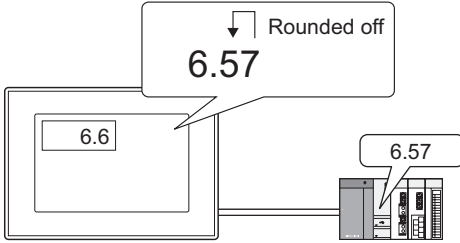





(Example: GOT-F900 Series setting)

Basic Extended Case Trigger Data Operation

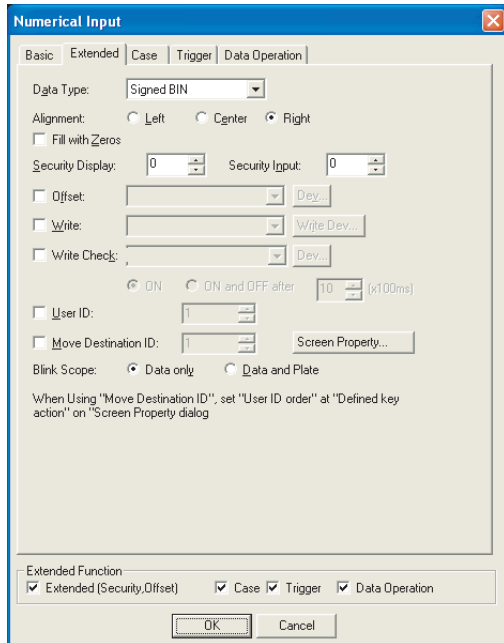
Items		Description	A	F												
Type		Select the function to be used (Numerical Display/Numerical Input)	<input type="radio"/>	<input type="radio"/>												
Device	Device	Set a word device to which the value is written. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>												
	Data Size	Select data size of word device (16 bit/32 bit)	<input type="radio"/>	<input type="radio"/>												
View Format	Format	<p>Select the displayed format of a write device value.</p> <p>Signed (Unsigned) decimal : The value is displayed in decimal. Hexadecimal : The value is displayed in hexadecimal. Octal : The value is displayed in octal. Binary : The value is displayed in binary. Real : The value is displayed in real number. (The GOT-F900 series displays a binary float value in real number.)</p> <p>Example: Example of GOT display</p> <table border="0"> <tr> <td>Signed decimal</td> <td>: -12623</td> <td>Binary</td> <td>: 0011000101001111</td> </tr> <tr> <td>Unsigned decimal</td> <td>: 12623</td> <td>Octal</td> <td>: 30517</td> </tr> <tr> <td>Real</td> <td>: 1262.3</td> <td>Hexadecimal</td> <td>: 314F</td> </tr> </table> <p>The default of a written data format is signed BIN. To write by the other data format (unsigned decimal, BCD, floating-point type real number), change the setting in "Data Form" on the Extended tab.</p>	Signed decimal	: -12623	Binary	: 0011000101001111	Unsigned decimal	: 12623	Octal	: 30517	Real	: 1262.3	Hexadecimal	: 314F	<input type="radio"/>	<input type="radio"/>
	Signed decimal	: -12623	Binary	: 0011000101001111												
Unsigned decimal	: 12623	Octal	: 30517													
Real	: 1262.3	Hexadecimal	: 314F													
	Color	Select the color of the numeric character to be displayed.	<input type="radio"/>	<input type="radio"/>												

(Continued to next page)

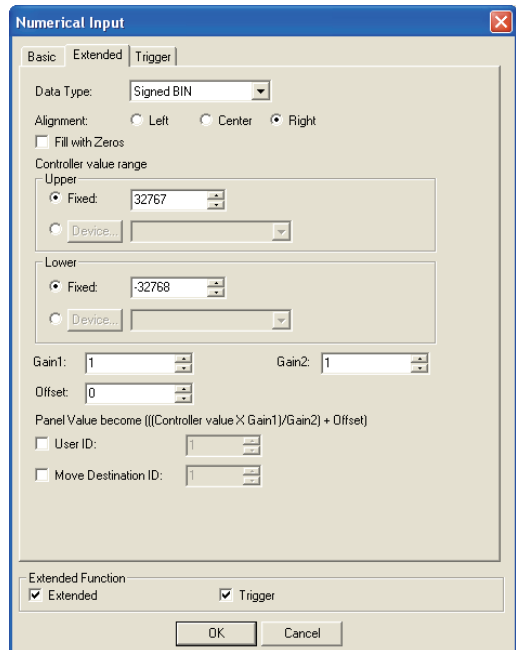
Items	Description	A	F
Digits	<p>Set the number of digits for the numeric value to be displayed.</p> <p>Available number of digits is different depending on the Format setting.</p> <p>Signed/ Unsigned decimal : 1 to 13 digits (including minus (-))</p> <p>Hexadecimal : 1 to 8 digits</p> <p>Octal : 1 to 6 digits</p> <p>Binary : 1 to 32 digits</p> <p>Real : 1 to 32 digits (including minus (-), decimal point and decimal part)</p>	<input type="radio"/>	<input type="radio"/>
Decimal Point	<p>When REAL is selected in [Format], set the number of digits after the decimal points (1 to 32). The lower digits of the set digit are rounded off.</p> <p>At the setting "0", the lower digits of the decimal point are rounded off.</p> <p>Example: Device value: 6.57 Number of digits after decimal point: 1</p> 	<input type="radio"/>	<input type="radio"/>
View Format Size	<p>Select the text size (magnification of X × Y) of the numeric value. Text size of 1X and 1Y represents 16 × 8 dots.</p> <p>GOT-A900 Series:  1 to 8 multiple 1 to 8 multiple</p> <p>GOT-F900 Series:  0.5 to 4 multiple 1 to 8 multiple</p>	<input type="radio"/>	<input type="radio"/>
Blink	<p>Select the blink pattern of the numeric value/figure frame</p> <p>No : Not blink.</p> <p>Low : Blinks every 1 second.</p> <p>Middle : Blinks every 0.5 seconds.</p> <p>High : Blinks every 0.2 seconds.</p>	<input type="radio"/>	<input checked="" type="radio"/>
Reverse	Check this item when reversing the numeric character.	<input type="radio"/>	<input checked="" type="radio"/>
Use High Quality Font	<p>Check this item when using high quality font to display numeric values. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)</p>  <p>Normal Using high quality font</p>	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

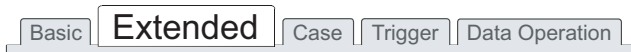
2 Extended Tab



In case of GOT-A900 Series

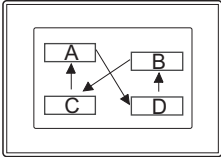


In case of GOT-F900 Series



Items	Description	A	F
Data Type	<p>Select the data type of the device to be displayed or input.</p> <p>GOT-A900 Series</p> <ul style="list-style-type: none"> Signed BIN : Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary value. BCD : Treats the word device value as a BCD (binary decimal) value. Real : Treats the word device value as a floating point type real number. (Only when selecting [32bit] for [Data Size].) <p>GOT-F900 Series</p> <ul style="list-style-type: none"> Signed BIN : Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary value. 	○	○
Alignment	<p>Select the position to display the numeric value.</p> <p style="text-align: center;">Left Center Right</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; text-align: left;">[150-----]</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">[---150---</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">[---1500---</div> <div style="border: 1px solid black; padding: 5px; text-align: right;">[-----150]</div> </div>	○	○
Fill with Zeros	<p>When [Right Alignment] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item.</p> <p>Example: (In the case of five digits)</p> <p style="text-align: center;">Zero not suppressed Zero suppressed</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; text-align: right;">[-----5]</div> <div style="border: 1px solid black; padding: 5px; text-align: right;">[-----00005]</div> </div>	○	○

(Continued to next page)

Items	Description	A	F															
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". Be sure to set a larger value to Security (Input) than Security (Display). (☞ Section 5.8 Security Function)	○	×															
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×															
Blink Scope	Select a blink area. Data only : Makes the numerical area blink. Data and Plate : Makes the numerical area and plate blink.	○	×															
Write	Check this item when writing the value input in [Numerical Input] to devices. When the data operation has been set, the data before operation can be saved. After checking, set the device.	○	×															
Write Check	After completion of numerical input, check this item when turning ON a bit device. After checking, click on the Device button and set the device. When setting is completed, set the device operation. ON : When numerical input is completed, the set bit device is turned on. ON to OFF : When numerical input is completed, the set bit device is turned on, and it will be turned off after a certain period of time has elapsed. It is very convenient for the case that handshake on the PLC CPU side is difficult. After selecting, set the time for which the bit device is on (0.5 to 3 seconds).	○	×															
User ID ^{*1}	Check this item when setting user ID No. (1 to 65535).	○	○															
Move Destination ID	When numerical input is completed, check this item to move the cursor for the numerical input of the specified user ID No. After checking, set the user ID No. to move the cursor for the next numerical input. After setting, click on the Screen Properties button and set [Defined Key Action] to [User ID Order] to display this function.  <table border="1"> <thead> <tr> <th></th> <th>User ID</th> <th>Move Destination ID</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> <td>1</td> </tr> <tr> <td>B</td> <td>4</td> <td>3</td> </tr> <tr> <td>C</td> <td>3</td> <td>2</td> </tr> <tr> <td>D</td> <td>1</td> <td>4</td> </tr> </tbody> </table> Arrow: Cursor's movement		User ID	Move Destination ID	A	2	1	B	4	3	C	3	2	D	1	4	○	○
	User ID	Move Destination ID																
A	2	1																
B	4	3																
C	3	2																
D	1	4																
Controller value range	Upper/Lower Use the radio buttons to select whether to set upper/lower values as fixed values or to set with the value saved in the specified device. Fixed : Select this when setting by inputting upper/lower limit values. Device : Select this when setting the values stored in the specified devices as the upper/lower limit values. Click on the Device button and set the word devices.	×	○															
Gain1	Set the value by which the write value is multiplied.	×	○															
Gain2	Set the value by which the write value is divided.	×	○															
Offset	Set the value to be added to the write value.	×	○															

For details of *1, refer to the following.

*1 User ID

The user ID setting allows the cursor position setting for screen switching (☞ Section 4.5 Auxiliary Settings) and confirm timing of numerical input to be stored into devices (☞ refer to the following).

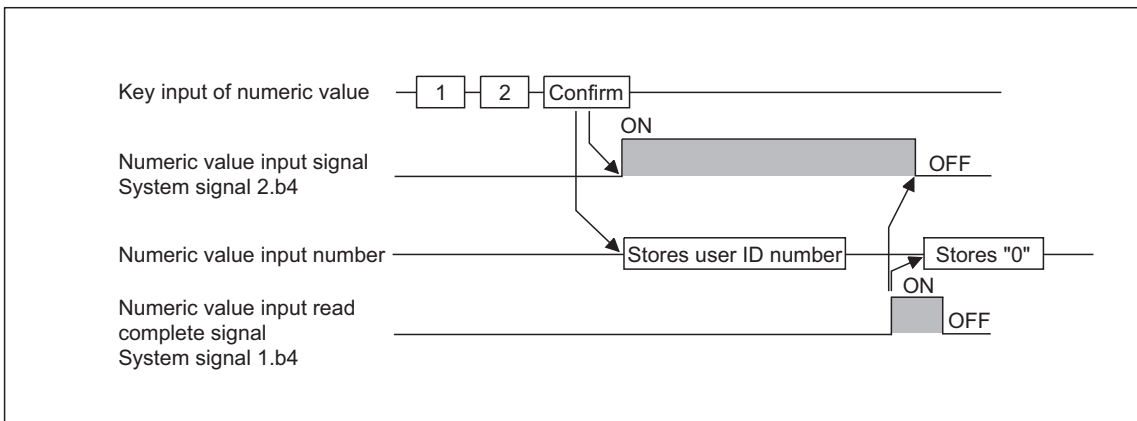
(1) Confirm timing of numerical input (System Information)

- In the case of GOT-A900 series

When a input value is entered using the numerical input function, the user ID is written to "Numeric Value Input Number" in "System Information" and "Numeric Value Input Signal" turns on.

When clearing the user ID written to "Numeric Value Input Number" or turning off "Numeric Value Input Signal", turn on "Numeric Value Input Read Complete Signal".

(After clearing, turn off the numeric value input read complete signal. If the signal remains ON, storing the user ID or turning on the bit device cannot be done even if the numerical value has been input.)

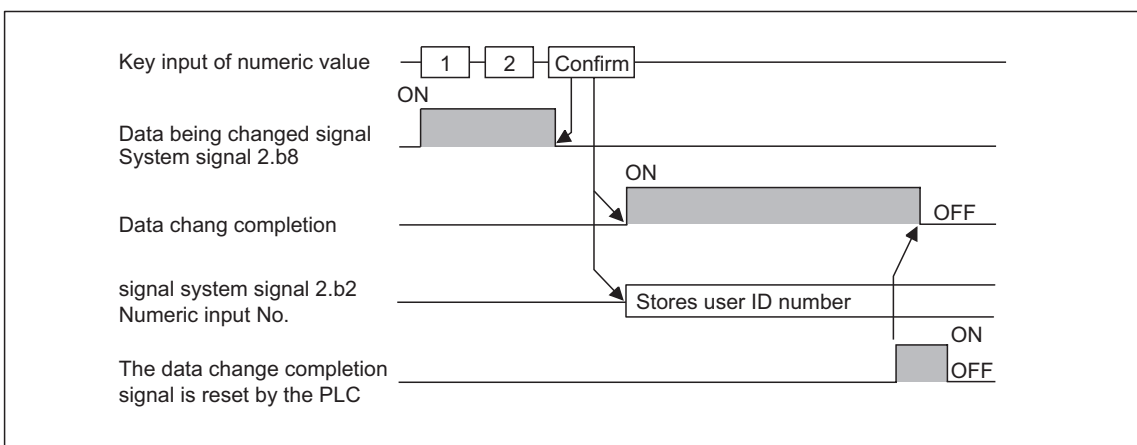


System signal 2 b4 Numeric value input signal : Turn on when a value is entered using the numerical input function.
 System signal 1 b4 Numeric value read complete signal: When this signal turns on, the numeric value input signal (System signal 2 b4) turns off.

- In the case of GOT-F900 series

When the input value is determined in the Numeric input function, the user ID is written in "User ID" in "System Information", and the "data change completion" signal turns ON.

To set to OFF the "data change completion" signal, reset it in the sequence program.




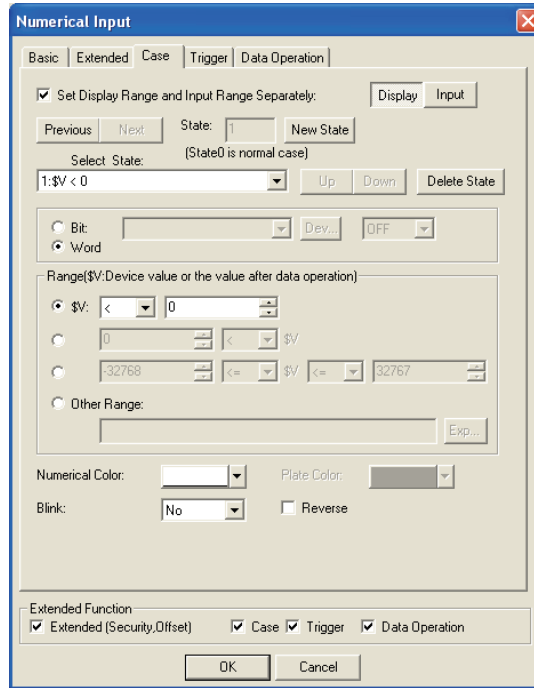
For the setting method of the system information, refer to the following.


☞ Section 3.5 System Information Setting

3 Case Tab (GOT-A900 Series only)

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

 Section 5.4 State Setting



Items	Description	A	F
Set Display Range and Input Range Separately* ¹	Check this item when setting the display range and the input range separately. After checking, click on the Display or Input button to set each range. Display : Set condition and attribute for the numerical display. Input : Set input range for the numerical input function.	○	×
State* ²	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	○	×
New State	Creates a new state.	○	×
Delete State	Deletes a specified state.	○	×
Previous/Next	Switches the currently editing state to the previous or next state.	○	×
Up/Down	Changes the priority of the current state.	○	×
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	○	×
Device	Select a condition for display change depending on the state. Bit : Select this to change the display based on ON/OFF status of a bit device. Then, set the bit device and the device status (ON/OFF). ( Section 5.1 Device Setting) Word : Select this to change the display based on a word device value. Then, set a conditional expression for the word device value in [Range].	○	×

(Continued to next page)

Items	Description	A	F	
State	Range	Set the range of word device values for display change using a conditional expression.	○	×
	Numerical Color	Select a numerical color for the case that conditions for the state display are satisfied.	○	×
	Plate Color	Select a plate color for the case that conditions for the state display are satisfied.	○	×
	Blink	Select the blinking pattern of the numeric display. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	○	×
	Reverse	Check this item to reverse numeric display.	○	×

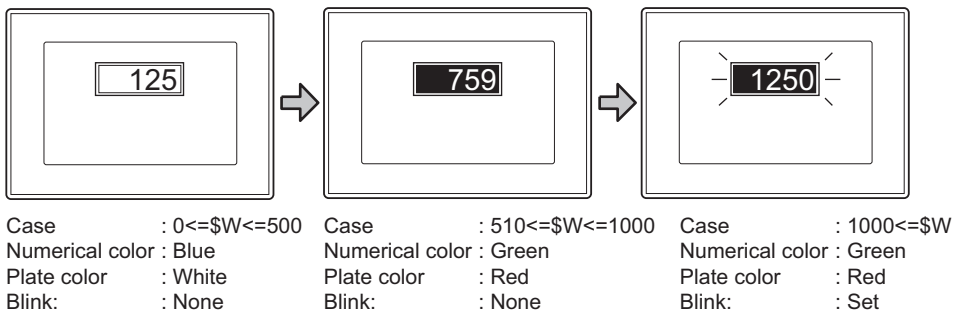
For details of *1, *2, refer to the following.

***1 Set Display Range and Input Range Separately**

By setting display range and input range separately, the attribute can be changed depending on the displayed value and the input exceeding the set range can be restricted.

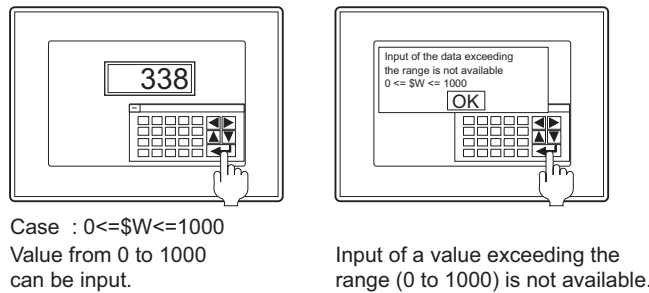
(1) When displaying

The attributes (Numerical color/Background color/Reverse display/Blink) can be changed depending on the display value.



(2) When inputting

When an input exceeds the set range, a message will be displayed and the numerical input will be restricted.



*2 State

(1) Display for condition other than those set on the Case tab
 When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

(2) Display when conditions are overlapped
 When conditions are overlapped, a state with smaller No. has priority.

Example: Monitor device : D100

Data view format : Signed decimal with 16-bit data size

Priority level for overlapped setting	State No.	Range	Color
High	1	200<=\$W<=300	Blue
	2	1000<=\$W	Yellow (Reverse)
↓	3	\$W<=0	Red (Blink)
Low	Normal case (State 0)	---	Green

* \$V represents the monitor device value.


State 1	When the device value is 200 to 300 (200<=\$W<= 300), numeric value will be displayed in blue.	200
State 2	When the device value is 1000 or more (1000<=\$W), the numeric value will be displayed in yellow (reverse).	3000
State 3	When the device value is 0 or less (\$W<= 0), the numeric value will be displayed in red (blink).	-200
Normal case (State 0)	When the condition is out of the range of State 1 to 3, the numeric value will be displayed in green.	150

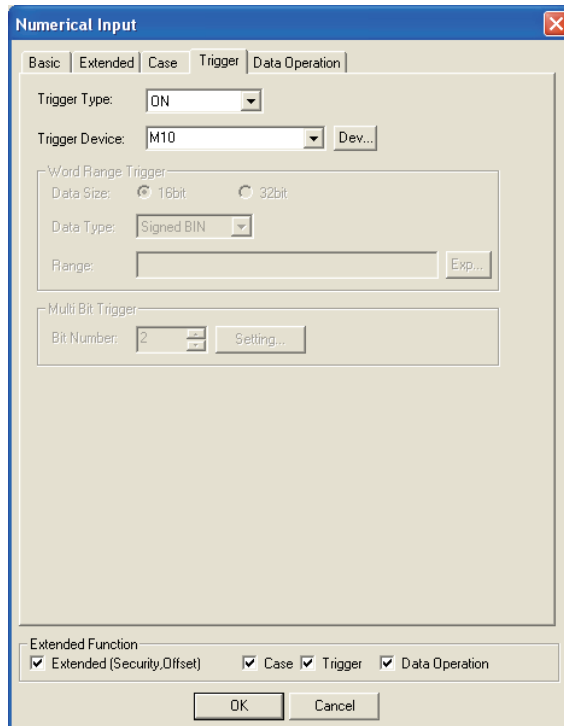
4 Trigger Tab

Set conditions for displaying the object.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



(Example: On GOT-A900 Series setting)




Items	Description	A	F	
Trigger Type* ¹	Select the trigger type for displaying the object. GOT-A900 Series • Ordinary • ON • OFF • Range • Bit Trigger GOT-F900 Series • Ordinary • ON • OFF	<input type="radio"/>	<input checked="" type="checkbox"/>	
Trigger Device	Specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>	
	When [Range] is selected in [Trigger Type], set the following items.	<input type="radio"/>	<input checked="" type="checkbox"/>	
Word Range Trigger	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Data Type	Select the data type (Signed BIN/ Unsigned BIN/Real) of the word device. Real can be set only if [32bit] is selected in [Data Size].	<input type="radio"/>	<input checked="" type="checkbox"/>
	Range	Click on the <input type="button" value="Exp"/> button and set conditional expression for the word device range.	<input type="radio"/>	<input checked="" type="checkbox"/>
Multi Bit Trigger	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click on the <input type="button" value="Setting"/> button and set the bit devices and their conditions.	<input type="radio"/>	<input checked="" type="checkbox"/>	

For details of *1, refer to the following.

*1 Cursor display when condition fails in numerical input

For cursor display when the condition fails in numerical input, refer to the following.

 Section 4.5 Auxiliary Settings

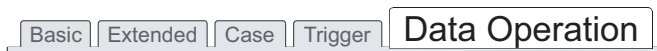
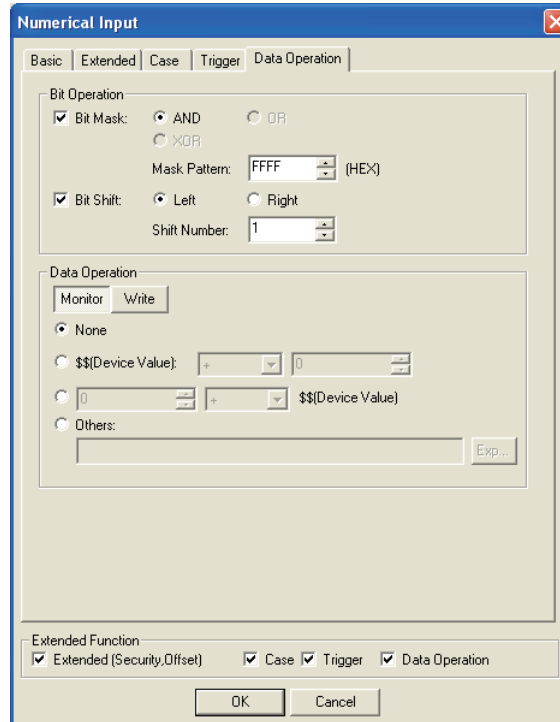
5 Data Operation Tab (GOT-A900 Series only)

Operational expression is set on this tab when operating the input value and writing the obtained value to the device.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function




Items		Description	A	F
Bit Operation	Bit Mask	Check this to enable bit mask operation. Set the bit mask pattern value in hexadecimal format.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number]. Left : Left shift Right : Right shift	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Monitor	Click on this and set the operational expression for monitoring device.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Write	Click on this and set the operational expression for writing to device.	<input type="radio"/>	<input checked="" type="checkbox"/>

7.1.4 Precautions

This section explains the precautions for using the numerical display/input function.

1 Precautions for drawing

- (1) Maximum number of objects that can be set on 1 screen
 - (a) GOT-A900 Series
 - Number of numerical display objects : 512
 - Number of numerical input objects : 256
 - (b) GOT-F900 Series
 - Number of numerical display objects : 50
 - Number of numerical input objects : 50
- (2) When overlaying numerical display with level display
 - When displaying numerical values with the level display overlapped, refer to the level precautions.


 Section 10.2 Level

- (3) Numerical input arrange position

Depending on the arranged position of the numerical input, there are cases the input operation is not possible.

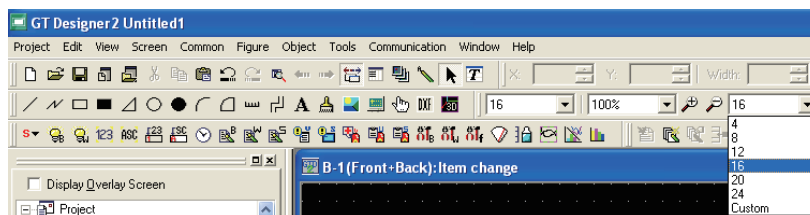
Before downloading the created project data to a GOT, check the arranged position of the numerical input by the data check function of GT Designer2.

For the procedure for using the data check function, refer to the following manual.

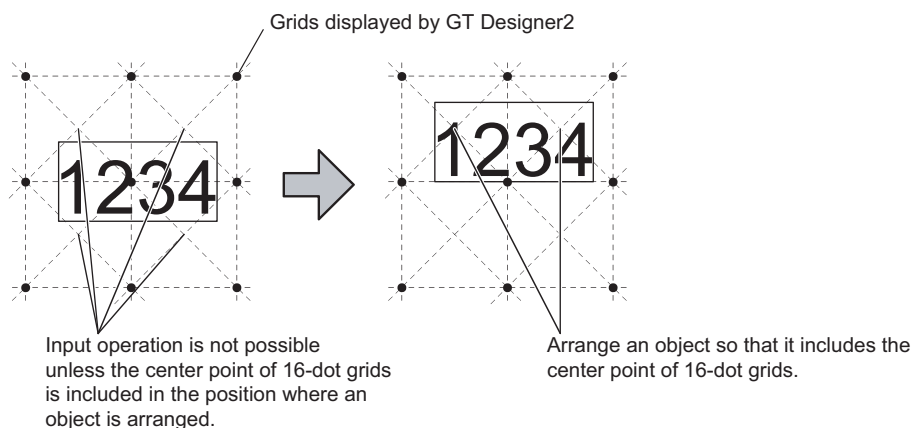
 GT Designer2 Version □ Operating Manual (Section 9.3 Checking Monitor Data for Errors)

If an error is detected in data check, take the corrective action as below.

- 1 Change the GT Designer2 grid spacing to 16 dots.

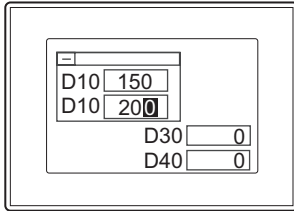


- 2 Change the arrangement of object so that a center point of 16-dot grid is included in the object.



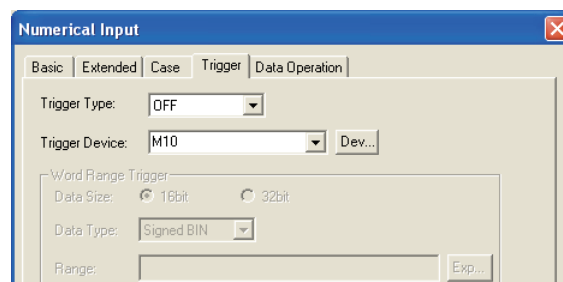
2 Precautions for use

- (1) When numerical input is set on window screen
When the numerical input function is used on the base screen and the window screen at the same time, the input cursor is displayed only on the window screen.



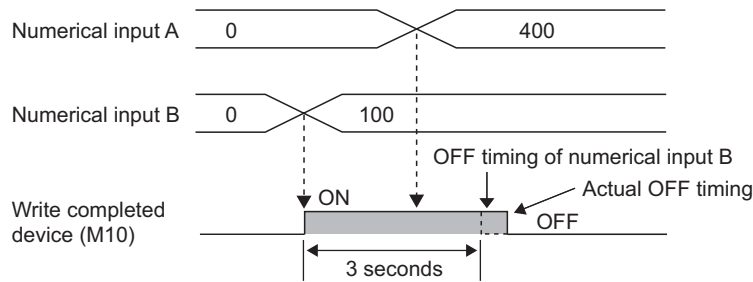
- (2) When special function switch (key window) is set
If a key window is displayed using a special function switch when an input cursor is not displayed at a numerical input, the key window will be displayed as follows;
 - (a) For default key window
A default key window for hexadecimal input will be displayed.
 - (b) For user-created key window
The screen set at [DEC key sheet No.] will be displayed.
If the above setting is not made, a default key window for hexadecimal input will be displayed.
- (3) When blink is set
The input cursor will stop blinking temporarily when it is displayed.
- (4) When [ON and OFF after] is set in write check (GOT-A900 series only)
 - (a) Don't turn on twenty-one devices above simultaneously.
Or not, the 22nd device or later cannot be turned off automatically.
 - (b) At using the same write completed device for multiple numerical inputs, set the numerical input to not be able to input the value while the write completed device is ON.

Setting example) Set the operation condition to trigger type "OFF" and the device "M10"




At inputting before turning OFF, the write completed device will not turn OFF at normal timing.

Example: Write completed device: M10 (which turns OFF in 3 seconds after it turned ON)



- (c) The write completed device will not turn OFF if screen switching (including switching to the utility) occurs while the write completed device is ON. It keeps ON for the specified period of time.
- (5) To insert/delete numerals in a numeric value
The cursor is fixed to the right end of the object. Continue to delete numerals from that point until the cursor reaches the position you want to insert/delete numerals.

3 When using input check mode (GOT-A900 series only)

- (1) For use of the input check mode
- (a) When using the input check mode, install the standard monitor OS of the GT Designer2 Version1 00A or later into GOT.
If the standard monitor OS version is old, install it again.
For how to install the standard monitor OS, refer to the following manual.
 GT Designer2 Version2 Operating Manual
- (b) The input check mode will be enabled when GOT's internal device GS450.b1 is ON.
When GOT is started, GS450.b1 must be turned on with the touch switch, etc.



Hint!

Activating the input check mode when starting GOT

Using the script function allows the input check mode to be activated when starting GOT.

- Rise trigger : GS0.b4
- Script description example : set ([b:GS450.01])

- (2) Precautions for using input check mode
The input check mode operates under the following conditions.
- (a) One Case
If the number of cases is more than one, the input range check is executed not during input but when the RET key is pressed.

(b) When range expression pattern is as follows:

- $A < B, A \leq B$

A: Monitor device (\$W) B: Fixed value/Specified device
(B is a positive numeric value)

- $A < B < C, A \leq B < C, A < B \leq C, A \leq B \leq C$

A: Fixed value/Specified device, B: Monitor device (\$W), C: Fixed value/Specified device
(C is a positive numeric value)

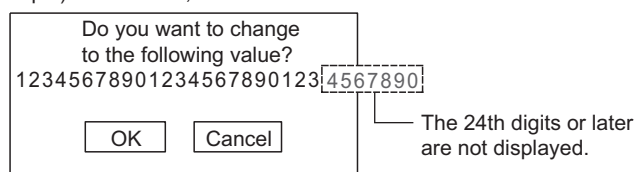
Remark

- (1) Lower limit value check
The lower limit value check is executed when the RET key is pressed.
- (2) Comparison with specified device
When comparing with the specified device, if the device value cannot be read, an error message will be displayed.

4 Precautions for input confirmation message display

- (1) Number of digits for numeric value available for message
Depending on GOT types, the numeric value digits available for display is different.
The digits exceed the following limit are not displayed on the message.
 - GT SoftGOT2, A985GOT, A97*GOT, A960GOT: 35 digits
 - A956WGOT, A95*GOT: 23 digits

Example) A956WGOT, A95*GOT



- (2) Message position
The message position will be different depending on the key window type.
 - (a) When using default key window
The message is displayed on the key window.
 - (b) When using user-created key window or no key window
The message is displayed on the center of the screen.

5 Precautions in using the GOT-F900 series

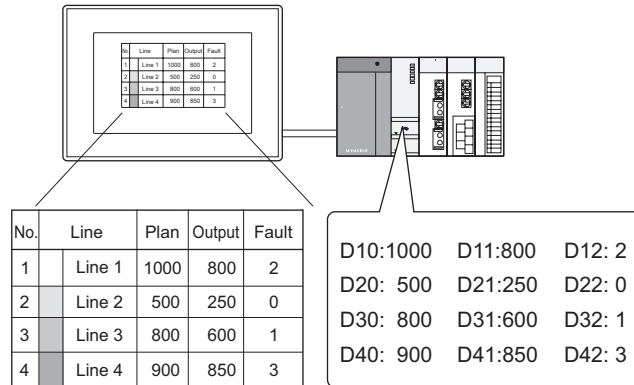
- (1) Real number display and availability of data operation when "Real" is set in "Format" on the "Basic" tab, data operation of "Gain1", "Gain2" and "Offset" cannot be executed.



7.2 Data List



This section explains the data list function that displays multiple word device values in list form. With this function, line No. and ruled lines of the list are displayed automatically.



Example:

Sort lines according to the values of the prior setting item.

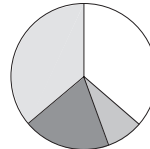
☞ Set on Basic tab

No.	Line	Plan	Output	Fault
2	Line 2	500	250	0
3	Line 3	800	600	1
1	Line 1	1000	800	2
4	Line 4	900	850	3

The lines will be displayed in ascending order of "Output" values.

Display the list with statistics graph on the same screen

☞ Section 10.6 Statistics Graph



No.	Line	Plan	Output	Fault
1	Line 1	1000	800	2
2	Line 2	500	250	0
3	Line 3	800	600	1
4	Line 4	900	850	3

Device status can be displayed effectively.

Remark

Comments displayed by using data list

Comments must be registered in advance for displaying in data list.

☞ Section 4.1 Comment Registration

7.2.1 Required knowledge for data list setting

1 Methods of setting data list

The basic function of data list can be set on the following ① to ② tab screen in order.

① Basic tab

Set the number of columns and lines for data list.

Fixed text	Comment column	Data column		
No.	Line	Plan	Output	Fault
1	Line 1	1000	800	2
2	Line 2	500	250	0
3	Line 3	800	600	1
4	Line 4	900	850	3

Setting item name is displayed.

Number of lines (rows, display rows)

Label (Rows)

Comment is displayed.

Device value is displayed.

② List tab

Set devices, comments, label color or similar on each dialog box.

The screenshot shows the 'Data List' software interface. The 'Basic' tab is active, showing a table with columns 'Line', 'Plan', 'Output', and 'Fault'. The 'List' tab is also visible, showing a table with columns 'Column1' through 'Column6'. Three dialog boxes are overlaid on the interface:

- Edit Rows**: A dialog box for setting device, comment number, label pattern, foreground, and background colors.
- Edit Columns (Comment Column)**: A dialog box for setting digits, title, and color for comment columns.
- Edit Columns (Data Column)**: A dialog box for setting format, alignment, digits, decimal point, data type, title, and color for data columns.

Continuous : Set continuous comments and devices.

Set the head comment and device in 1).

Random : Set comments and continuous devices for each line.

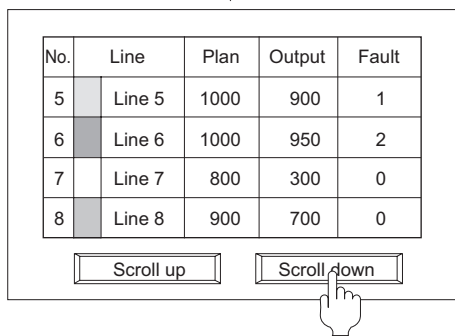
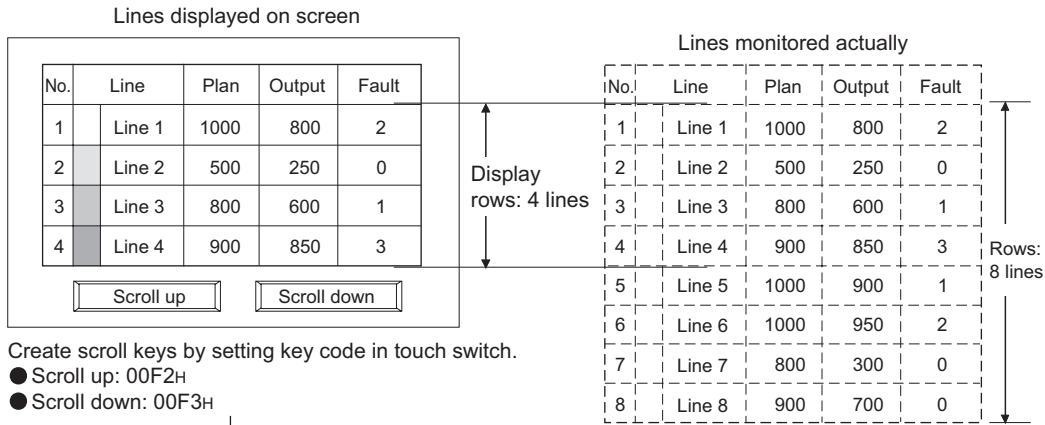
Set comments and the head device in 1) to 4).

2 Data list function

(1) Scroll function

In data list, the number of screen display lines (display rows) can be set separately from the number of corresponding set lines (rows).

When scroll up/scroll down key is set, data list can be scrolled up and down



(2) Sort function

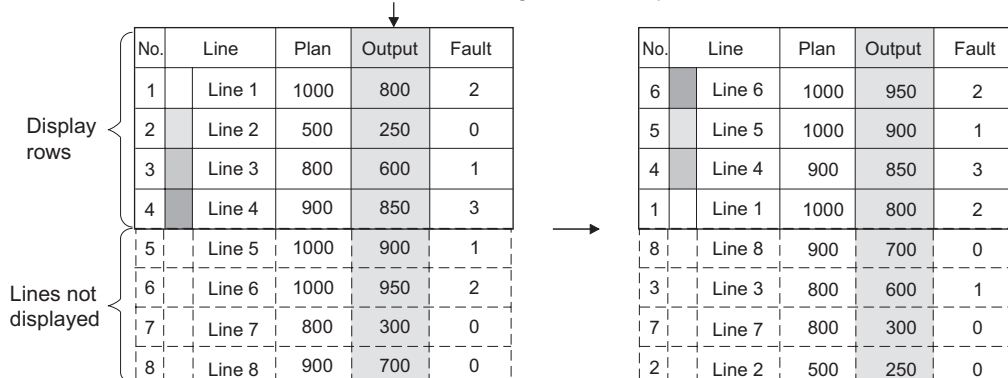
Lines can be sorted based on device status of specified columns (ascending/descending order of device value).

Example: Sort the lines in descending order of device values of the third column.


Make the settings on basic tab as follows:

Rows : 8 lines Sort : Descending
 Display rows : 4 lines Sort/Attribute column : 3 columns

The columns will be sorted in descending order of "Output" values.



7.2.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Data List]
 - Select [Object] → [Data List] from the menu.
- 2 Click on the data list display position to complete the data list arrangement.
- 3 Double click on the arranged data list to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.


 GT Designer2 Version □ Operating Manual

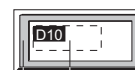


Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

 Section 5.3.3 Object size change



Object outline frame
Shape frame

7.2.3 Setting items

1 Basic tab

This tab screen is used to set the device value to be monitored and the list form to display a comment.

Basic List Extended Case Trigger

Items	Description	A	F	
List Form	Rows	Set the number of lines for monitoring devices using data list (1 to 128).	○	×
	Display Rows	Set the number of lines to be displayed on screen (1 to 27). The lines out of the screen can be displayed with scroll up/scroll down key. (Section 7.2.1 Required knowledge for data list setting)	○	×
	Columns	Set the number of columns to be displayed (2 to 6).	○	×
	Label	Check this item to display a label. After check, set number of label digits (2 to 6). (one digit for one character)	○	×
	Space	Set the text (title, comment, numeric value) to be displayed and ruled line space of the list (0 to 32 dots). 	○	×
	Size	Select the size of text (title, comment, numeric value) to be displayed. Size of X x Y is 16 x 8 dots.	○	×
	Sort	Set the method of arranging (sort) lines. No. order : Display in line number column order. Ascending : Arrange from small value to large value. Descending : Arrange from large value to small value. Without sort : Not sort.	○	×

(Continued to next page)

Basic

List Extended Case Trigger

Items		Description	A	F
List Form	Sort/Attr Column	Set the sort basis column.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Use High Quality Font	Check this item to display numeric values as high quality font. (only when the magnification factor of X × Y is set to 2, 4, 6, 8)	<input type="radio"/>	<input checked="" type="checkbox"/>
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the <input type="checkbox"/> Others button, figures other than those in the list box or library figures can be selected. (Section 5.3.2 Object shape setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Frame	<div style="text-align: center;"> <p>Title (The color of each title)</p> <p>Frame</p> <p>Ruled Line</p> </div>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Plate		<input type="radio"/>	<input checked="" type="checkbox"/>
	Title		<input type="radio"/>	<input checked="" type="checkbox"/>
	Text		<input type="radio"/>	<input checked="" type="checkbox"/>
	Ruled Line		<input type="radio"/>	<input checked="" type="checkbox"/>
Reverse	Check this item to reverse text.	<input type="radio"/>	<input checked="" type="checkbox"/>	
Category	When allocating category to the object, select a proper category. (GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input checked="" type="checkbox"/>	

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/ CHARACTER DISPLAY

8

ALARM

2 List tab

Click on **Column** button and **Row** button on this dialog box to display the corresponding setting dialog box. Then set devices and comments on the dialog box.

For the settings on each setting dialog box, refer to the following explanation (1) to (3).

(1) Edit rows dialog box
Make the settings to be displayed in rows.
(Device, comment, label)

(2) Edit columns dialog box (comment column)
Set the display attribute of comment column.

(3) Edit rows (Data column) dialog box
Set the display attribute of data column.

Title, device and comment can be input directly.

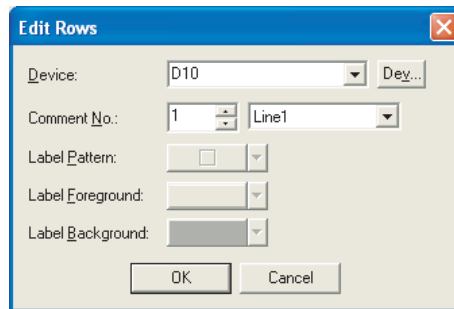
Comment No. Device






Basic **List** Extended Case Trigger

Items	Description	A	F																																								
Device No.	<p>Select a device setting method.</p> <p>Continuous : Set devices of continuous No. through all rows. Random : Set devices of continuous No. in each row.</p> <p>Example: When "Continuous" is set When "Random" is set</p> <p style="text-align: center;">Set initial device Set initial device in each row</p> <table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr> <th></th> <th>Column 1</th> <th>Column 2</th> <th>Column 3</th> <th>Column 4</th> </tr> </thead> <tbody> <tr> <td>Line 1</td> <td>1</td> <td>D10</td> <td>D11</td> <td>D12</td> </tr> <tr> <td>Line 2</td> <td>2</td> <td>D13</td> <td>D14</td> <td>D15</td> </tr> <tr> <td>Line 3</td> <td>3</td> <td>D16</td> <td>D17</td> <td>D18</td> </tr> </tbody> </table> <table border="1" style="display: inline-table;"> <thead> <tr> <th></th> <th>Column 1</th> <th>Column 2</th> <th>Column 3</th> <th>Column 4</th> </tr> </thead> <tbody> <tr> <td>Line 1</td> <td>1</td> <td>D10</td> <td>D11</td> <td>D12</td> </tr> <tr> <td>Line 2</td> <td>2</td> <td>D20</td> <td>D21</td> <td>D22</td> </tr> <tr> <td>Line 3</td> <td>3</td> <td>D30</td> <td>D31</td> <td>D32</td> </tr> </tbody> </table>		Column 1	Column 2	Column 3	Column 4	Line 1	1	D10	D11	D12	Line 2	2	D13	D14	D15	Line 3	3	D16	D17	D18		Column 1	Column 2	Column 3	Column 4	Line 1	1	D10	D11	D12	Line 2	2	D20	D21	D22	Line 3	3	D30	D31	D32	○	×
	Column 1	Column 2	Column 3	Column 4																																							
Line 1	1	D10	D11	D12																																							
Line 2	2	D13	D14	D15																																							
Line 3	3	D16	D17	D18																																							
	Column 1	Column 2	Column 3	Column 4																																							
Line 1	1	D10	D11	D12																																							
Line 2	2	D20	D21	D22																																							
Line 3	3	D30	D31	D32																																							
Comment No.	<p>Select a comment setting method.</p> <p>Continuous : Set comments of continuous No. through all rows. Random : Set comments of continuous No. in each row.</p>	○	×																																								

(1) Edit Rows dialog box

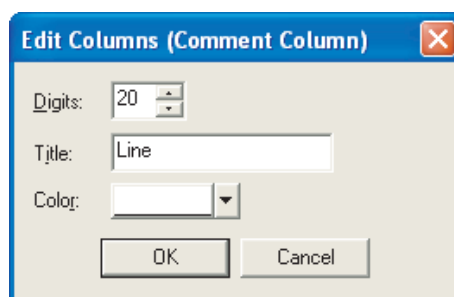
This dialog box is used to set the device to be monitored, comment to be displayed and label (display attribute).



Items	Description	A	F
Device	Set the device to be monitored. (☞ Section 5.1 Device Setting)	○	×
Comment No.	Set the comment No. to be displayed in the selected line.	○	×
Label Pattern	Select label pattern/label foreground/label background.	○	×
Label Foreground	The pattern is displayed in color of the label foreground on the label background.	○	×
Label Background	<p>Example:</p> <p>Label Pattern : </p> <p>Label Foreground : </p> <p>Label Background : </p> <p>Label Pattern + Label Foreground → </p> <p>Label Background → </p>	○	×

(2) Edit columns (comment column) dialog box

This dialog box is used to set the number of comment characters, the title and title color of the column.

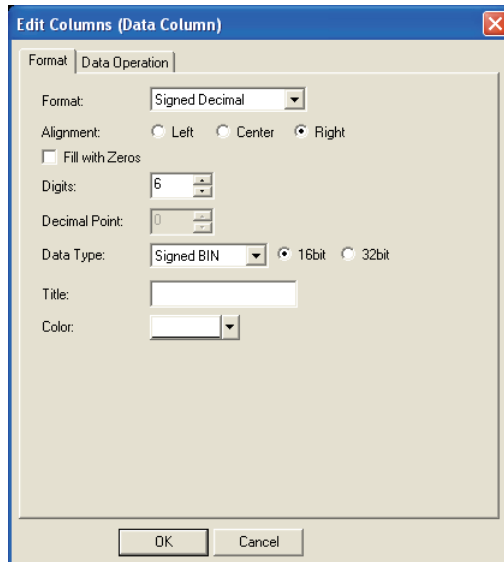


Items	Description	A	F
Digits	Set number of comment characters from 1 to 80 (80 characters).	○	×
Title	Input the title of comment column.	○	×
Color	Select the title color.	○	×

(3) Edit Columns (Data Column) dialog box

(a) View format tab

This tab is used to set the number of digits for device value, view format/ data type of the device to be monitored, title and title color of the column.



Format | Data Operation

Items	Description	A	F
Format	Select the view format of the monitor device value. Signed decimal : Displays the value in signed decimal. Unsigned decimal : Displays the value in unsigned decimal. Hexadecimal : Displays value in hexadecimal. Octal : Displays value in octal. Binary : Displays value in binary. Real : Displays the value in floating point type real number.	<input type="radio"/>	<input checked="" type="checkbox"/>
Alignment	Select the position based on the width of data column. Left : Align left. Center : Align center. Right : Align right.	<input type="radio"/>	<input checked="" type="checkbox"/>
Fill with Zeros	When [Right Alignment] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item.	<input type="radio"/>	<input checked="" type="checkbox"/>
Digits	Set the number of digits for the device value to be displayed in data column. Available number of digits is different depending on the [Format] setting. Signed (Unsigned) decimal : 1 to 13 digits (includes minus (-)) Hexadecimal : 1 to 8 digits Octal : 1 to 6 digits Binary : 1 to 32 digits Real : 1 to 32 digits (includes minus (-), decimal point and decimal part)	<input type="radio"/>	<input checked="" type="checkbox"/>
Decimal Point	When REAL is selected in [Format], set the number of digits (1 to 32) for the decimal part.	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Format

Data Operation

Items	Description	A	F
Data Type	<p>Select the data type of word device to be monitored. After selecting, set the data size (16 bit, 32 bit).</p> <p>Signed BIN : Treats word device value as signed binary value. Unsigned BIN : Treats word device value as unsigned binary value. BCD : Treats word device value as BCD (binary decimal) value. Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].)</p>	○	×
Title	Input the title of data column.	○	×
Color	Select the title color.	○	×

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

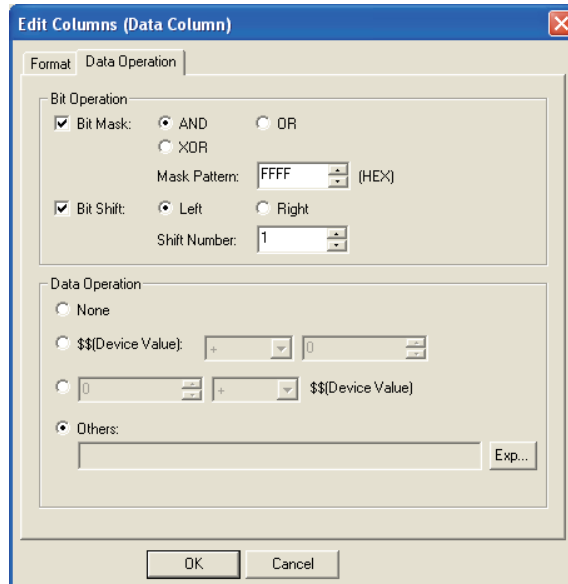
8

ALARM

(b) Data Operation tab

This tab is used to set the expression to operate the device value and display the results. For details of data operation, refer to the following.

 Section 5.6 Data Operation Function



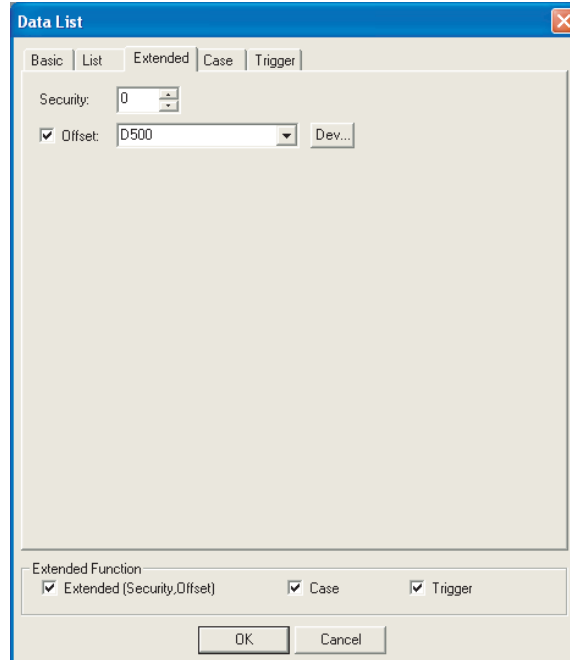
Format **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].	○	×
		AND :Carries out logical AND.		
		OR :Carries out logical OR. XOR :Carries out exclusive logic OR.		
Data Operation	Bit Shift	Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].	○	×
		Left :Left shift		
		Right :Right shift		
Data Operation		Select an operational expression format for data operation.	○	×

3 Extended tab

Set the security and offset.


This tab is displayed by checking "Extended" at the bottom of dialog box.

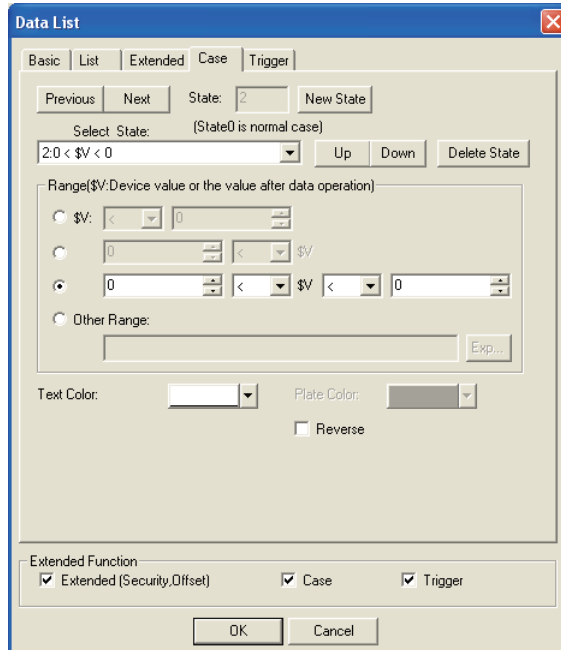


Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×

4 Case tab (GOT-A900 Series only)

Operational expression is set on this tab when monitoring the device by computing the device values. This tab is displayed by checking the corresponding extended function at the bottom of the dialog box. For details of state, refer to the following.

 Section 5.4 State Setting



Basic | List | Extended | **Case** | Trigger

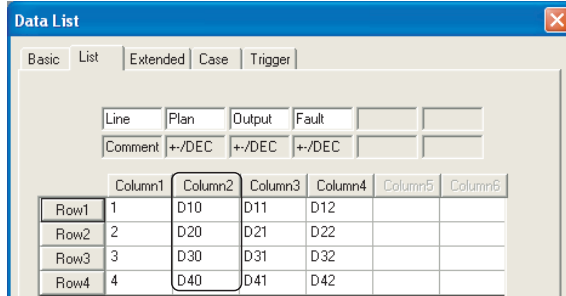
Items	Description	A	F
State *1	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	<input checked="" type="checkbox"/>
New State	Creates a new state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete State	Deletes a specified state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Previous/Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Up/Down	Change the priority of the current state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Set the range of word device values for display change using a conditional expression	<input type="radio"/>	<input checked="" type="checkbox"/>
Text Color	Select a text color for the case that conditions for the state display are satisfied	<input type="radio"/>	<input checked="" type="checkbox"/>
Plate Color	Select a plate color for the case that conditions for the state display are satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
Reverse	Check this item to revers text.	<input type="radio"/>	<input checked="" type="checkbox"/>

* For details of 1, refer to the following.

*1 State

- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.

- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.
- (3) State conditions of data list
In data list, \$V value of a state condition (monitor device) is the device value set in the 2nd column.
Example:



D10, D20, D30 and D40 are treated as \$V value.

Example: Device : D10, D20, D30, D40
Data view format : Signed decimal, with size of 16 bits

No.	Line	Output	Fault
1	Line 1	D10	D11
2	Line 2	D20	D21
3	Line 3	D30	D31
4	Line 4	D40	D41

Action priority when setting overlaps
High
↓
Low

State No.	Range	Text color	Plate color
1	$1000 \leq \$V$	White	Green
2	$900 \leq \$V < 999$	Yellow	White
Normal case (State 0)	----	Black	White

State 1

When monitor device value is over 1000 ($1000 \leq \$V$), the plate color will be changed to green.

No.	Line	Output	Fault
1	Line 1	1000	2
2	Line 2	1000	0
3	Line 3	950	1
4	Line 4	980	3

State 2

When monitor device value is 900 to 999 ($900 \leq \$V < 999$), the text color will be changed to yellow.

No.	Line	Output	Fault
1	Line 1	890	2
2	Line 2	880	0
3	Line 3	920	1
4	Line 4	910	3

Normal case (State 0)

When monitor device value is out of the range (below 899), the text color will be black and the plate color will be white.


No.	Line	Output	Fault
1	Line 1	890	2
2	Line 2	880	0
3	Line 3	820	1
4	Line 4	810	3

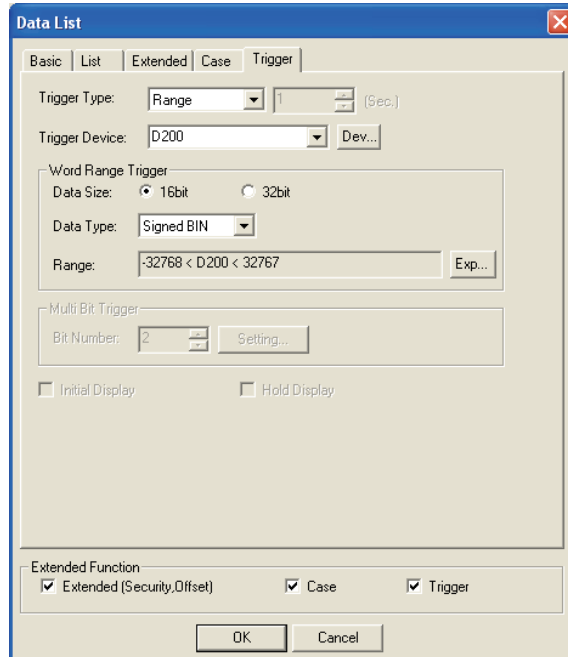
5 Trigger tab

Set conditions to display an object.

This tab is displayed by checking the extended function at the bottom of dialog box.

For details of trigger, refer to the following.

 Section 5.5 Trigger Setting



Basic List Extended Case **Trigger**

Items	Description	A	F
Trigger Type	Select the trigger type for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. <ul style="list-style-type: none"> • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger 	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger Device	Click on button [Dev] to specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Word Range Trigger	When Range is selected in Trigger Type , set the following items.	<input type="radio"/>	<input checked="" type="checkbox"/>
Date Size	Select the data size (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Type	Select the data type (Signed BIN/ Unsigned BIN/Real) of word device. Real can be set only if [32bit] is selected in [Data Size].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Click on the [Exp] button and set conditional expression for the word device range.	<input type="radio"/>	<input checked="" type="checkbox"/>
Multi Bit Trigger	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click the [Setting] button to set the bit device and operation condition.	<input type="radio"/>	<input checked="" type="checkbox"/>
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied. If not checked, the object will be deleted when the conditions become invalid.	<input type="radio"/>	<input checked="" type="checkbox"/>

7.2.4 Precautions

This section provides the precautions for using data list function.

1 Precautions for drawing

- (1) Maximum number of data list objects in one screen
 - GOT-A900 Series: 1

- (2) Applicable screen
 - Only base screen can be set.

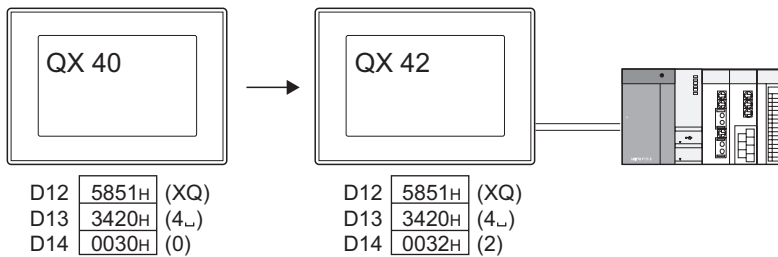
- (3) Precautions for using together with other object
 - (a) The object that cannot be set on the same screen
 - Alarm history cannot be set on the same screen.
 - (b) The object restricted on the applicable function
 - In alarm list, the touch switch used for alarm list (user alarm) cannot be set.

7.3 ASCII Display/Input



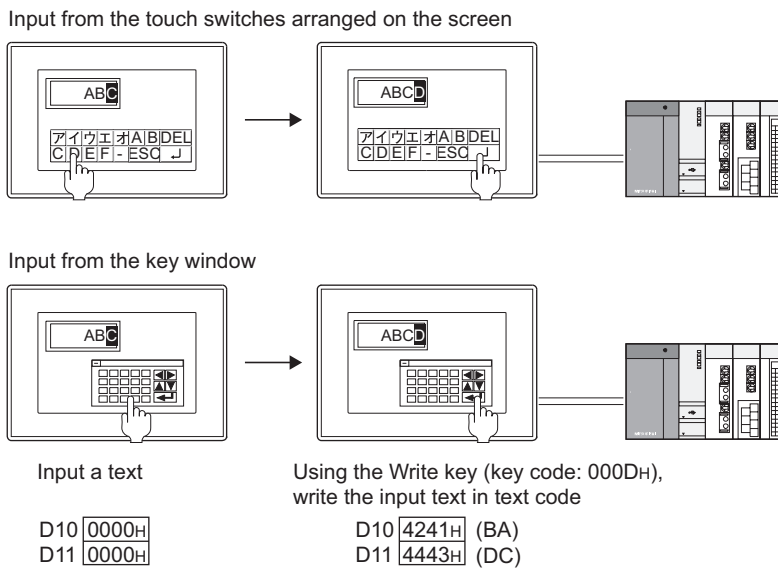
1 ASCII display

ASCII display is the function that treats the data stored in word device as text code (ASCII code) to display the text column.



2 ASCII input

ASCII input is the function that writes the input text into word device in text code (ASCII code). The keys for input are created by assigning key codes to touch switch.



*1 The key window must be created by the user.

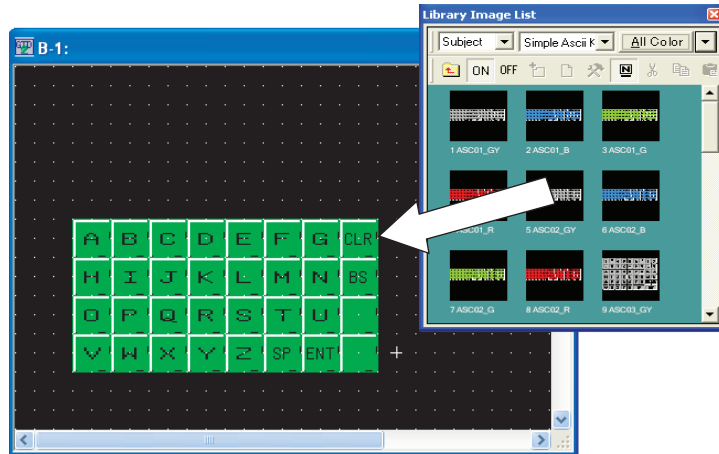
Refer to the following section for the creating method, types and operation method of the key window.

Section 4.6 Key Window



- (1) The key for ASCII input
 (a) To use the key registered in GT Designer2 library

The key for ASCII input is registered in GT Designer2 library.



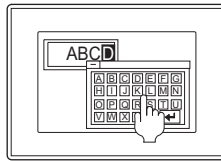
- (b) To create the key window for ASCII input.

Users can create key window for ASCII input.

Register the window screen in which keys for ASCII input are arranged as key window.

The created key window operates as numerical input function key window.

Section 4.6.4 How to create user-created key window



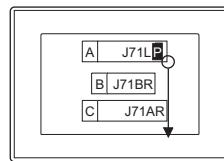
Register the user-created window for ASCII input as key window. (Only with GOT-A900 series)

- (2) Input operation during ASCII input

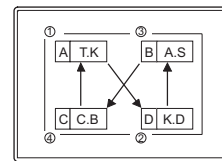
The input status during ASCII input (display of key window and cursor) and the input order (cursor sort) can be customized for each project and screen.

Section 4.5 Auxiliary Settings

Example 1: Setting the input order of multiple ASCII input

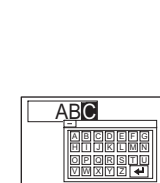


Make the settings according to the positions

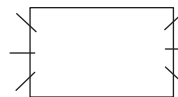


Make the settings at random

Example 2: Erasing ASCII input function when trigger is disabled

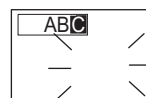


When the trigger is disabled



ASCII input function is erased.

When the trigger is disabled



The key window for ASCII input is erased.

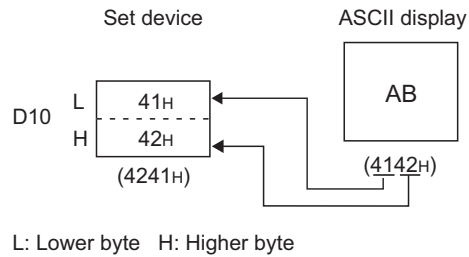
7.3.1 Before setting ASCII display/input

1 Text code reading/writing order

Read/written text codes are stored in order from lower to higher byte.

Read/written text codes are stored in reverse order every 8 bits.

Example: In the case of ASCII display (ASCII codes "41 (A)", "42 (B)" are displayed)



2 Number of display digits and available devices

One word device is used for ASCII display/input every two display digits.




Example: Set device (head device) : D1

Number of display digits : 3

↓

Two word devices D1 and D2 are used.

7.3.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [ASCII Display]/  [ASCII Input]
 - Select [Object] → [ASCII Display] / [ASCII Input] from the menu.
- 2 Click on the position where ASCII Display/ASCII Input to be located to complete the arrangement. (After arrangement, release the arrangement mode by right-clicking the mouse or using  key.)
- 3 Double click on the arranged ASCII Display/ASCII Input to display the setting dialog box. Make the settings with reference to the following explanation.



Easier setting method


Using the property sheet enables direct on-screen object setting.

 GT Designer2 Version Operating Manual



Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

 Section 5.3.3 Object size change



Object outline frame
Shape frame

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

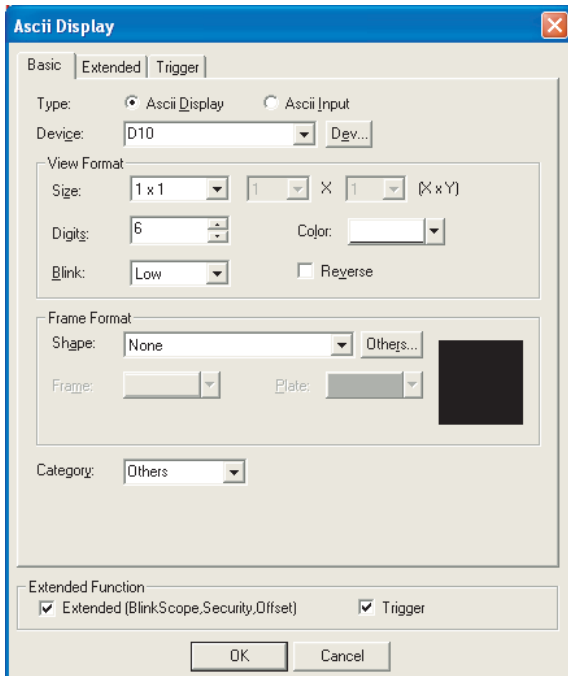
8

ALARM

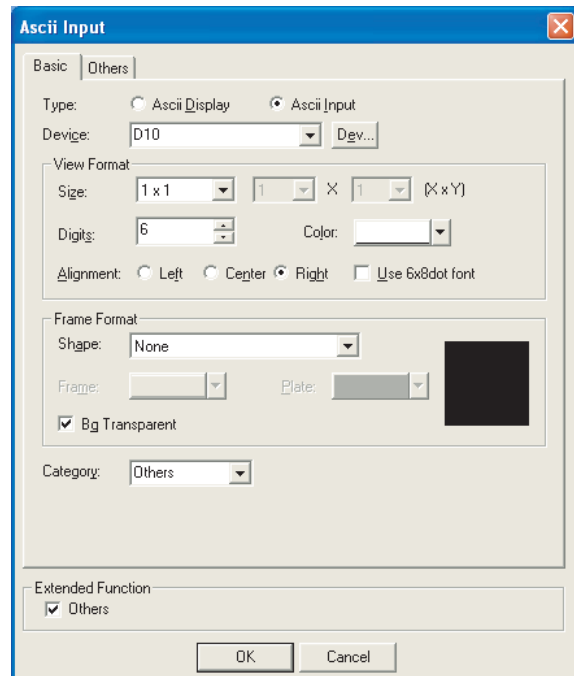
7.3.3 Setting items

1 Basic tab

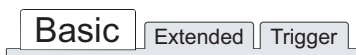
This tab is used to select ASCII display function or ASCII input function, and set the target device and view format (text size, digits, display frame)



In the case of GOT-A900 series



In the case of GOT-F900 series



A



F

Items		Description	A	F
Type		Select the function to be used (ASCII display/ASCII input).	<input type="radio"/>	<input type="radio"/>
Device		Set the head bit device where text code is stored	<input type="radio"/>	<input type="radio"/>
View Format	Size	Select the size of text (width height). Size of X × Y is 8 × 16 dots. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>GOT-A900 series</p> <p>0.5 to 8 (ASCII display) 1 to 8 (ASCII input) 1 to 8</p> </div> <div style="text-align: center;"> <p>GOT-F900 series</p> <p>0.5 to 4 (ASCII display) 1 to 4 (ASCII input) 1 to 8</p> </div> </div>	<input type="radio"/>	<input type="radio"/>
	Digits	Set the number of digits (1 to 80) for the text to be displayed/input. The applicable number of digits differ according to text type: Text (ASCII code) : 1 digit Text (ASCII code) : 1 digit	<input type="radio"/>	<input type="radio"/>
	Color	Select the color of text to be displayed.	<input type="radio"/>	<input type="radio"/>
	Alignment	Select the position to display the text. <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Left: </p> </div> <div style="text-align: center;"> <p>Center: </p> </div> <div style="text-align: center;"> <p>Right: </p> </div> </div>	<input checked="" type="radio"/>	<input type="radio"/>
	Use 6 × 8 dot font	Font is displayed in size of 6 × 8 dots. (Characters only)	<input checked="" type="radio"/>	<input type="radio"/>

(Continued to next page)

Basic

Extended

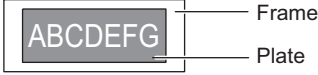
Trigger

A

Basic

Others

F

Items		Description	A	F
View Format	Blink	Select the blinking pattern of the text/figure frame No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds. If blink setting is made, it will not blink while the input cursor is displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Reverse	Check this item to reverse text.	<input type="radio"/>	<input checked="" type="checkbox"/>
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Frame	Select the shape, i.e., frame/plate color. 	<input type="radio"/>	<input type="radio"/>
	Plate		<input type="radio"/>	<input type="radio"/>
	Bg Transparent	Select this when the background is to be transparent.	<input checked="" type="checkbox"/>	<input type="radio"/>
Category		When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/ CHARACTER DISPLAY

8

ALARM

2 Extended tab (for GOT-A900 series only)

This tab is used to set security, offset, blink scope, user ID and move destination ID.

(When setting ASCII display function)

(When setting ASCII input function)

Basic **Extended** Trigger

Items	Description	A	F
Security (ASCII display only)	When using the security function, set the security level (1 to 15).	<input type="radio"/>	<input type="checkbox"/>
Security Display (ASCII input only)	When not using the function, set it to "0". The number for security input must be larger than that for security display.	<input type="radio"/>	<input type="checkbox"/>
Security Input (ASCII input only)	(Section 5.8 Security Function)	<input type="radio"/>	<input type="checkbox"/>
Offset	Check this item when executing monitor by switching between multiple devices. (Section 5.7 Offset Function) After checking, set the offset device. (Section 5.1 Device Setting)	<input type="radio"/>	<input type="checkbox"/>
Blink Scope	Select a blink area. Text only : Makes the text area blink. Text and Plate : Makes the text area and plate blink.	<input type="radio"/>	<input type="checkbox"/>
User ID *1 (Only when setting ASCII input function)	Check this item when setting the user ID No. (1 to 65535). By setting the user ID, the following operations are available. Decides the cursor display position when switching screen. • (Section 4.5 Auxiliary Settings) Confirms the ASCII input definition timing using PLC CPU. • (Section 3.5 System Information Setting)	<input type="radio"/>	<input type="checkbox"/>

(Continued to next page)

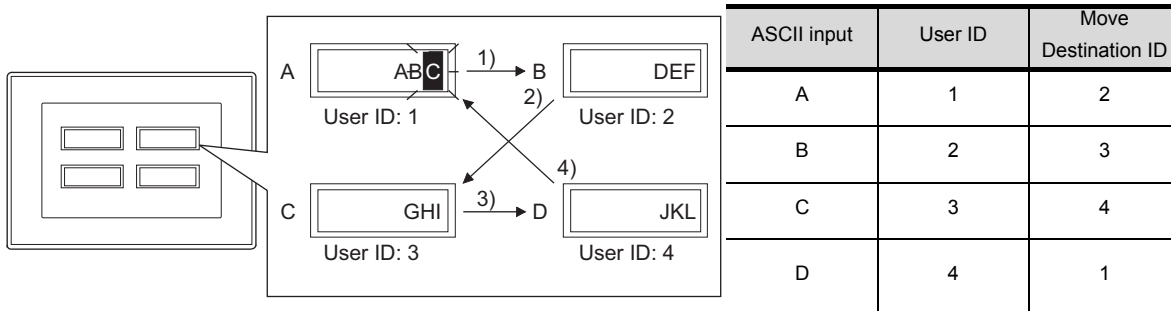
Items	Description	A	F
Move Destination ID *1 (Only when setting ASCII input function)	Check this item when moving the cursor to the ASCII input specified by the user ID No. after an ASCII input is defined. After checking, set the user ID No. for the ASCII input to which the cursor is moved. Then, click on the Screen Properties button and set [Defined key action] to [User ID order] to make the function available.	○	×

For details of *1, refer to the following.

***1 Relation between User ID and Move Destination ID**

The destination ID No. indicates the user ID No. of ASCII input function to which the cursor will move.

Example: Cursor movement to the destination ID




3 Trigger tab (for GOT-A900 series only)

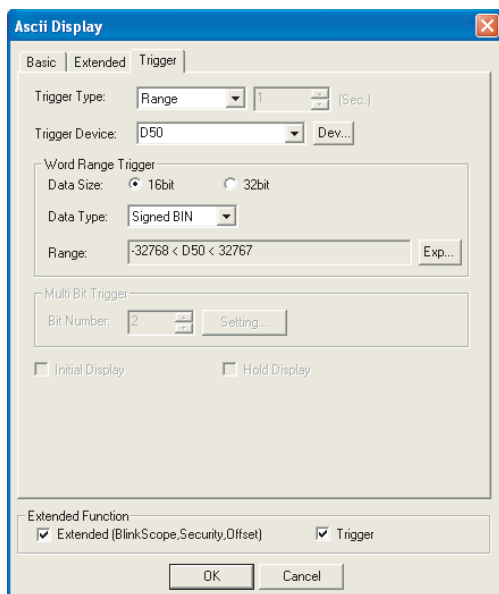
This tab is used to set the display and operation condition of object.

Set conditions for displaying the object, i.e., trigger.

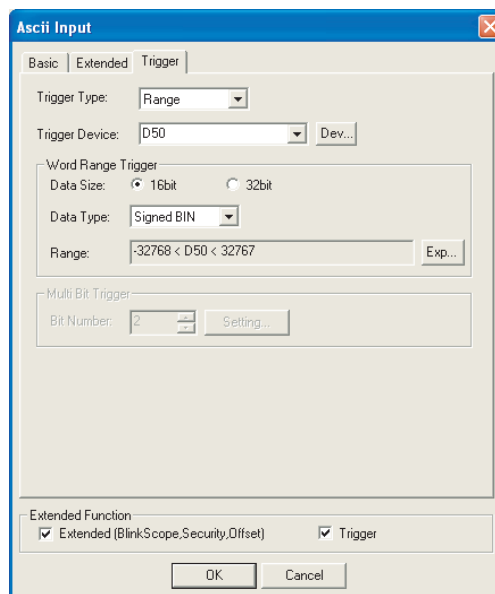
Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



(When setting ASCII display function)



(When setting ASCII input function)

Basic | Extended | **Trigger**

Items	Description	A	F	
Trigger Type *1	<ul style="list-style-type: none"> When setting ASCII display function: <ul style="list-style-type: none"> Select the trigger by which data is displayed in ASCII. When [Sampling] is selected, sampling (1 to 3600 s) is set with 1 sec as unit. <ul style="list-style-type: none"> • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger When setting ASCII input function <ul style="list-style-type: none"> Select the trigger to operate ASCII input <ul style="list-style-type: none"> • Ordinary • ON • OFF • Range • Bit Trigger 	○	×	
Trigger Device	Specify the device used as trigger.	○	×	
	When [Range] is selected in [Trigger Type], set the following items.	○	×	
Word Range Trigger	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
	Data Type	Select the data type of word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data Size].	○	×
	Range	Click on the [Exp] button and set conditional expression for the word device range.	○	×
Multi Bit Trigger	<ul style="list-style-type: none"> When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used as trigger. After setting, click on the [Setting] button and set the bit devices and their conditions. 	○	×	
Initial Display (Only when setting ASCII display function)	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied.	○	×	


(Continued to next page)

Items	Description	A	F
Hold Display (Only when setting ASCII display function)	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied. If not checked, the object will be deleted when the conditions become invalid.	○	×

For details of *1, refer to the following.

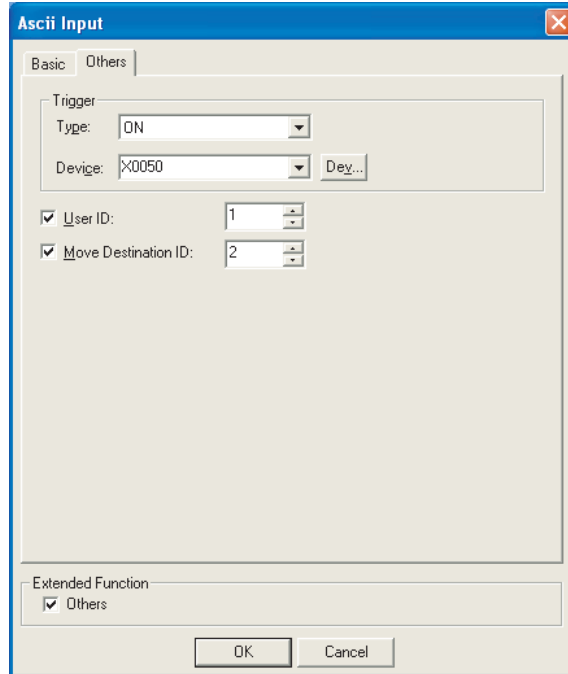
*1 The cursor display when trigger is enabled during ASCII input

Refer to the following for the cursor display when trigger is enabled during ASCII input.

 Section 4.5 Auxiliary Settings

4 Other tabs (for GOT-F900 series only)

This tab is used to set ASCII input function trigger, user ID and destination ID.
The Others tab is displayed only when the ASCII input function is set.



Basic Others

Items		Description	A	F														
Trigger	Type	Select the trigger for displaying the data in ASCII. (Section 5.5 Trigger Setting) • Ordinary • ON • OFF	×	○														
	Device	The bit device range can be set by clicking the [Dev] button when [ON]/[OFF] is selected in [Type]. (Section 5.1 Device Setting)	×	○														
User ID	Check this item when setting the user ID No. (1 to 65535). By setting the user ID, the following operations are available. • Decides the cursor display position when switching screen. (Section 4.5 Auxiliary Settings) • Confirms the ASCII input definition timing using PLC CPU. (Section 3.5 System Information Setting)	×	○															
Move Destination ID	Check this item when moving the cursor to the ASCII input specified by the user ID No. after an ASCII input is defined. After checking, set the user ID No. for the ASCII input to which the cursor is moved. Then, click on the [Screen Properties] button and set [Defined key action] to [User ID order] to make the function available. Example: <table border="1" style="display: inline-table; vertical-align: middle;"> <thead> <tr> <th></th> <th>User ID</th> <th>Destination ID</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>2</td> <td>1</td> </tr> <tr> <td>B</td> <td>4</td> <td>3</td> </tr> <tr> <td>C</td> <td>3</td> <td>2</td> </tr> <tr> <td>D</td> <td>1</td> <td>4</td> </tr> </tbody> </table> Arrow: Cursor moving route		User ID	Destination ID	A	2	1	B	4	3	C	3	2	D	1	4	×	○
	User ID	Destination ID																
A	2	1																
B	4	3																
C	3	2																
D	1	4																

7.3.4 Precautions

This section provides the precautions when using ASCII display/ASCII input function.


1 Precautions for drawing

- (1) Maximum Number of ASCII display/input objects that can be set in one screen
 - GOT-A900 series: 256
 - GOT-F900 series: 10
- (2) ASCII input arrange position

Depending on the arranged position of the ASCII input, there are cases the input operation is not possible.

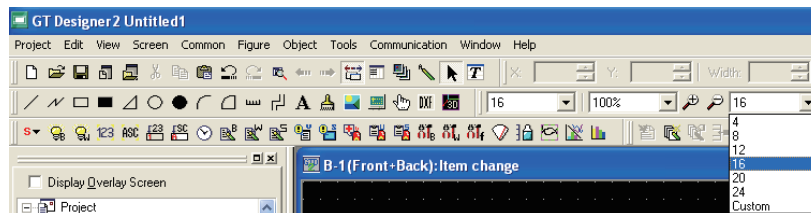
Before downloading the created project data to a GOT, check the arranged position of the ASCII input by the data check function of GT Designer2.

For the procedure for using the data check function, refer to the following manual.

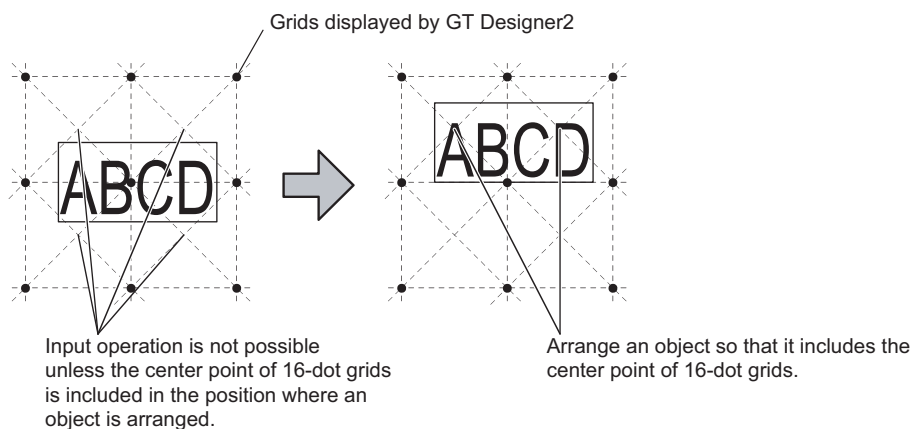
 GT Designer2 Version □ Operating Manual (Section 9.3 Checking Monitor Data for Errors)

If an error is detected in data check, take the corrective action as below.

- 1 Change the GT Designer2 grid spacing to 16 dots.



- 2 Change the arrangement of object so that a center point of 16-dot grid is included in the object.



2 Precautions for use

(1) When unavailable ASCII codes are stored

Note that if the text code with meaning other than the text (000H to 001FH, 0080H to 009FH, 00E0H to 00FFH) is included in the data that enables ASCII display, the whole character string with the text code cannot be displayed.

(2) To insert/delete characters in a character string

As the cursor is fixed to the right end of the object. Continue to delete characters from that point until the cursor reaches the position you want to insert/delete characters.

(3) Message display and ASCII input/display

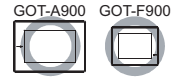
The character code to be displayed differs depending on the language that is set for the utility.

- Japanese : Treated as the Shift JIS code.

- English : Treated as the ASCII code (Characters such as Kana are not displayed.)



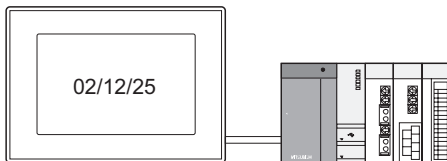
7.4 Clock Display



1 Date display

Date display is the function for displaying a date on GOT.

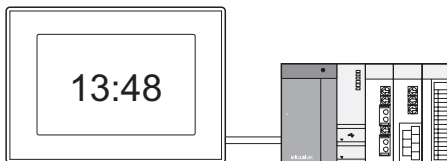
Year display is the function for displaying the last 2 digits of the year.



2 Time display

Time display is the function for displaying the time on GOT.

The hour is displayed in 24-hour display format.




Point

Displayed clock data

Different clock data are displayed depending on the GOT type.

- (1) GOT-A900 series
Displaying the clock data of the connected PLC CPU.
(There are no clock data in the GOT.)
Every hour the PLC CPU clock data is verified.
- (2) GOT-F900 series
Displaying the GOT built-in clock data.
F920GOT-K displays the clock data of the connected PLC CPU (FX).
- (3) GOT SoftGOT2
Displaying the clock data of PC.

7.4.1 Arrangement and Settings

- 1 Carry out either of the following operations.
 - Click on  [Clock Display]
 - Select [Object] → [Date Display]/[Time Display] from the menu.
- 2 Click on the position where Clock Display to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged Clock Display to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.



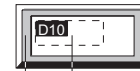
GT Designer2 Version □ Operating Manual



Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].



Object outline frame
Shape frame

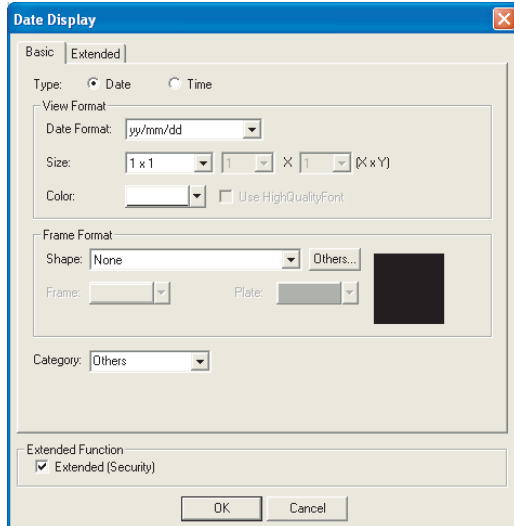


Section 5.3.3 Object size change

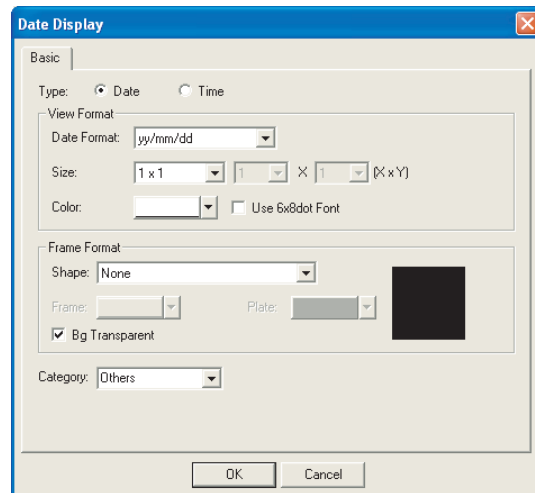
7.4.2 Setting items

1 Basic tab

Set the view items (date/time) and the displaying format.




In the case of GOT-A900 series




In the case of GOT-F900 series

Basic

Extended

Items	Description	A	F
Type	Select whether to display the date or time Date : Displays the Year/Month/Day Time : Displays the time	<input type="radio"/>	<input type="radio"/>
View Format	Select view format of date and time. View format of date (In the case of 12/25/2002) GOT-A900 series yy/mm/dd : 02/12/25 mm/dd/yy : 12/25/02 dd/mm/yy : 25/12/02 GOT-F900 series yy/mm/dd : 02/12/25 mm/dd/yy : 12/25/02 dd/mm/yy : 25/12/02 Type 1: Dec. 25, 2002 (Wednesday) Type 2: Dec. 25, 2002	<input type="radio"/>	<input type="radio"/>
	Select the text size for the date/time display (X × , Y ×) When (1 × 1) is set, the font size is 8 × 16 dots. GOT-A900 series  1 to 8 multiple 1 to 8 multiple	<input type="radio"/>	<input type="radio"/>
Color	Select the color for displaying the date and time.	<input type="radio"/>	<input type="radio"/>
Use High Quality Font	Check this item when displaying the date and time using the high quality font. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)	<input type="radio"/>	<input checked="" type="radio"/>
Use 6 × 8dot Font	Font is displayed in size of 6 × 8 dots. (Characters only)	<input checked="" type="radio"/>	<input type="radio"/>

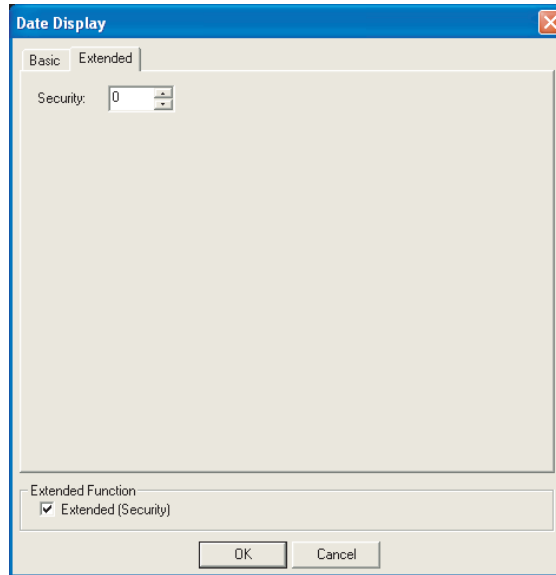
(Continued to next page)

Items	Description	A	F
Frame Format	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the <input type="checkbox"/> Others button, figures other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Frame 	<input type="radio"/>	<input type="radio"/>
	Plate Select the shape, i.e., frame/plate color.	<input type="radio"/>	<input type="radio"/>
	Bg Transparent Select this item when the background is to be transparent.	<input checked="" type="checkbox"/>	<input type="radio"/>
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>

2 Extended tab (GOT-A900 series only)

Make the security setting on this tab.

This tab will be displayed by checking the corresponding "Extended" at the bottom of this dialog box.



Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×

7.4.3 Precautions

This section provides the precautions for using the clock display function.

1 Precautions for drawing


- (1) The maximum number of the clock displays that can be set on one screen.
 - GOT-A900 series: 2
 - GOT-F900 series: 10

2 Precautions for use

- (1) System configuration in which the clock function is not available

GOT-A900 series and F920GOT-K

The clock display function may not be used depending on the PLC CPU or connection type.

 Section 2.4 Clock Function

GOT-F900 series (other than F920GOT): Uses GOT built-in clock.

- (2) When reading/writing the clock data with sequence program

The clock data will not set properly with this function if it is uploaded/downloaded to the PLC CPU side using a sequence program.

- (3) When M9028 is on in ACPU

When the connected PLC CPU is ACPU and M9028 is ON, the clock setting function of GOT utility is not available.

- (4) When Character Set is not set to Japanese

The type1 and the type2 of the date/time format are displayed in irregular characters.

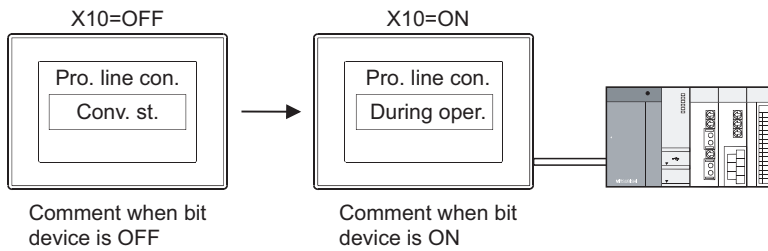


7.5 Comment Display



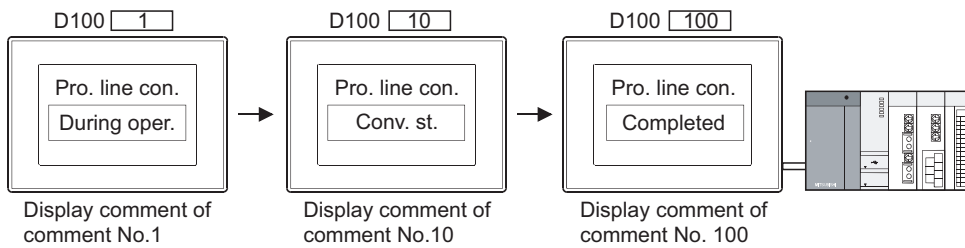
1 Bit comment (Section 7.5.2 Setting items of bit comment)

It is the function to display the comment corresponding to the ON/OFF status of bit device.



2 Word comment (Section 7.5.3 Setting items of word comment)

It is the function to display the comment corresponding to word device value.



Remark

Comment displayed by comment display

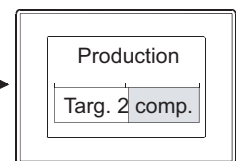
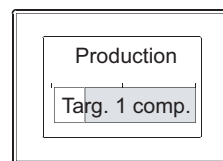
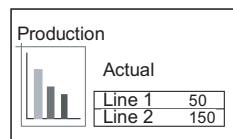
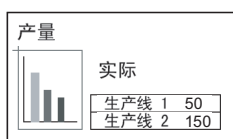
The comment to be displayed by comment display needs to be registered in advance.

Section 4.1 Comment Registration



Switch all the comment on the screen
(Comment display (bit/word))
 Display comment tab setting

Used with level function
(Comment display (bit/word))
 Set in extended tab

<GOT-A900 series only>



7.5.1 Arrangement and settings

- 1 Carry out either of the following operations.
 -  Click on [Bit Comment]/  [Word Comment]
 - Select [Object] → [Comment Display] → [Bit Comment] / [Word Comment] from the menu.
- 2 Click on the position where Comment Display to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using ESC key.)
- 3 Double click on the arranged Comment Display to display the setting dialog box. Make the settings with reference to the following explanation.



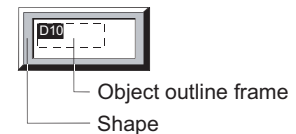
Easier setting method


Using the property sheet enables direct on-screen object setting.

 GT Designer2 Version Operating Manual

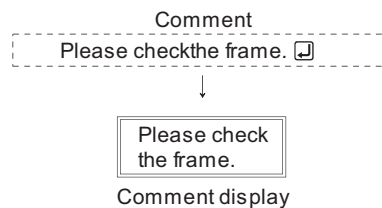


- (1) Method of adjusting objects in which shape is set
Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

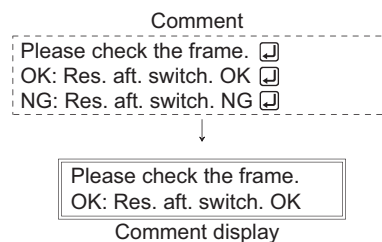


 Section 5.3.3 Object size change

- (2) When displaying the comment out of the display range
(GOT-A900 series only)
When the comment is out of the horizontal display range, display the remaining part in the next line.



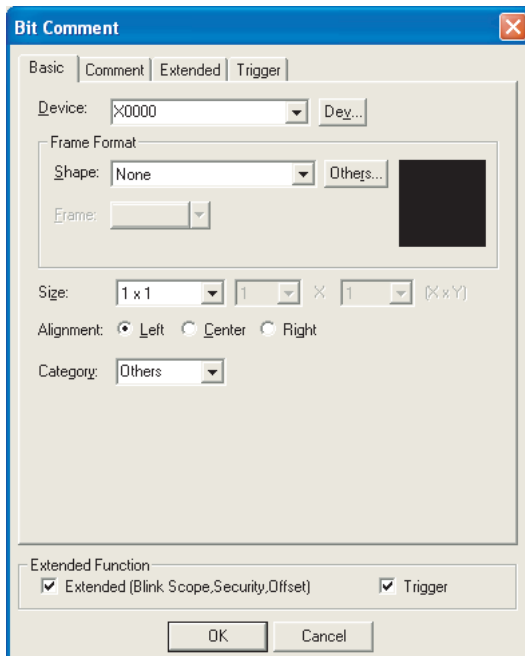
When the comment is out of the vertical display range, only the part within the display range is displayed.



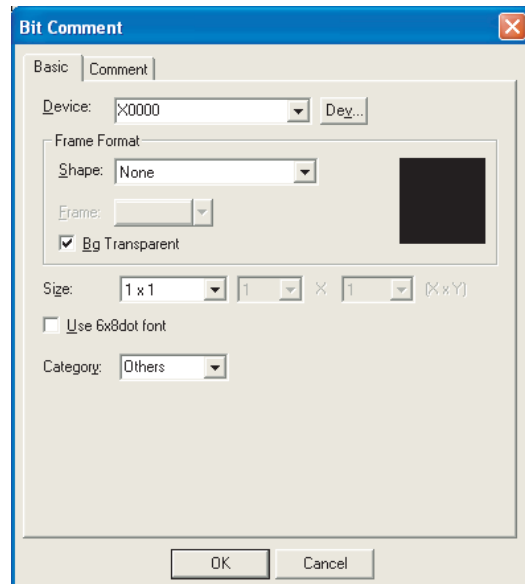
7.5.2 Setting items of bit comment

1 Basic tab

Set the view format of device to be monitored and comment (Shape/Size/Alignment).



In the case of GOT-A900 series




In the case of GOT-F900 series



Items		Description	A	F									
Device		Set the device to be monitored. (☞ Section 5.1 Device Setting)	○	○									
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)	○	○									
	Frame	Select the shape color.	○	○									
	Bg Transparent	Select this item when the background is to be transparent.	×	○									
Size		Select the size of comment to be displayed (0.5 to 8). GOT-A900 series: \overline{A} 1 to 8 GOT-F900 series: \overline{A} 0.5 to 8 1 to 8	○	○									
Alignment		Select the position to display the text value. Left: <table border="1"><tr><td>AAAA</td></tr><tr><td>BB</td></tr><tr><td>CCCC</td></tr></table> Center: <table border="1"><tr><td>AAAA</td></tr><tr><td>BB</td></tr><tr><td>CCCC</td></tr></table> Right: <table border="1"><tr><td>AAAA</td></tr><tr><td>BB</td></tr><tr><td>CCCC</td></tr></table>	AAAA	BB	CCCC	AAAA	BB	CCCC	AAAA	BB	CCCC	○	×
AAAA													
BB													
CCCC													
AAAA													
BB													
CCCC													
AAAA													
BB													
CCCC													

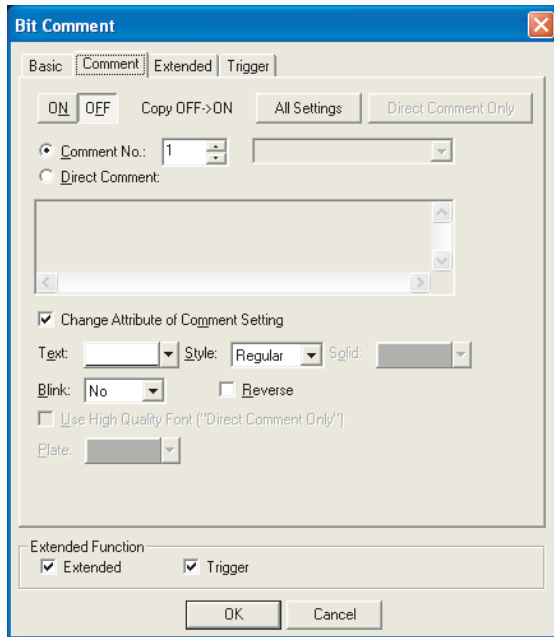
(Continued to next page)

Basic Comment Extended Trigger **A**
Basic Comment **F**

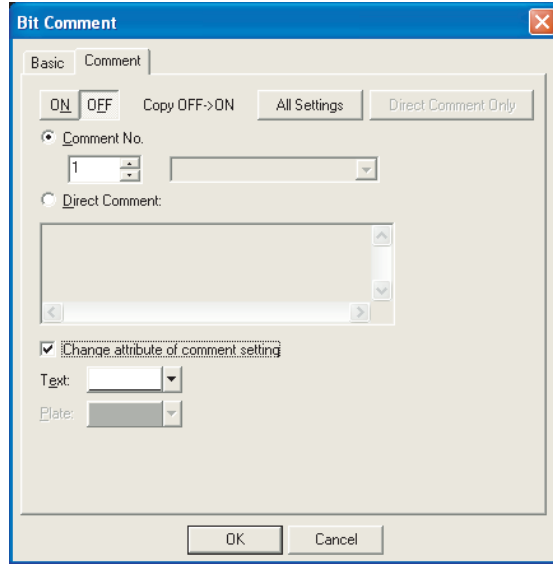
Items	Description	A	F
Use 6 × 8dot Font	Font is displayed in size of 6 × 8 dots. (Characters only)	×	○
Category	When allocating category to the object, select a proper category.  GT Designer2 Version <input type="checkbox"/> Operating Manual)	○	○

2 Comment tab

Set the device ON/OFF comment and display attributes.




In the case of GOT-A900 series



In the case of GOT-F900 series



Items	Description	A	F	
ON	Click on this item to set the text to be displayed when the device turns ON.	<input type="radio"/>	<input type="radio"/>	
OFF	Click on this item to set the text to be displayed when the device turns OFF.	<input type="radio"/>	<input type="radio"/>	
Comment No.	Select this item to display the registered comment data. After selecting , set the comment No. to be displayed . Comment will not be displayed if its No. is set to 0. (Set the comment No. to 0 during OFF if the comment is to be displayed only ON.)	<input type="radio"/>	<input type="radio"/>	
Direct Comment	Select this item to directly input the displayed comment. After selecting, enter comment. Up to 512 characters can be entered. (Two characters corresponding to the line feed are occupied.)	<input type="radio"/>	<input type="radio"/>	
Change Attribute of Comment Setting	Check this item to display the display attribute which is different from the one set in comment registration.	<input type="radio"/>	<input type="radio"/>	
	Text	Select the color of text to be displayed.	<input type="radio"/>	<input type="radio"/>
	Style	Select the view format of the text (Regular/Bold/Solid/Raised). 	<input type="radio"/>	<input type="checkbox"/>
Solid	Select the solid color when [Solid] or [Raised] is set in [Style]	<input type="radio"/>	<input type="checkbox"/>	

(Continued to next page)

Basic

Comment

Extended


Trigger

A

Basic

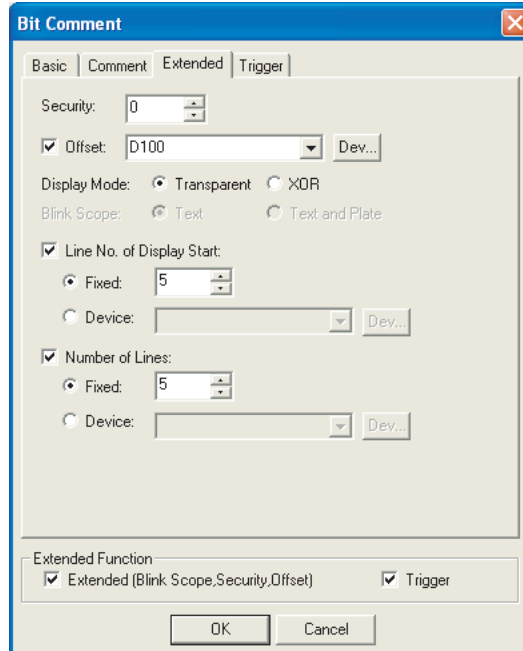
Comment

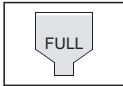
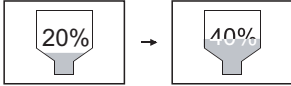
F

Items		Description	A	F
Change Attribute of Comment Setting	Blink	Select the blinking pattern of the Comment. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	<input type="radio"/>	×
	Reverse	Check this item to reverse comment. This item can be set at "Regular" in "Style" category.	<input type="radio"/>	×
Use High Quality Font ("Direct Comment Only")		Check this item when displaying the comment using the high quality font setting. (Only setting at both of the height and width to 2, 4, 6 or 8 times in "Size" on the Basic tab) Only the display comment which is input directly by keyboard can use this font.	<input type="radio"/>	×
Plate		Select the background color for the inside display area of the comment.	<input type="radio"/>	<input type="radio"/>
Copy OFF → ON/ Copy ON → OFF		Used to copy the set attribute. Copy OFF → ON :The "OFF" attribute is copied to the "ON" attribute. Copy ON → OFF :The "ON" attribute is copied to the "OFF" attribute. The contents to be copied differ depending on the selected item.	<input type="radio"/>	<input type="radio"/>
	All Settings	Copies all text attributes.		
	Direct Comment Only	Copies only direct comment. Setting is allowed only when Direct Comment is selected at both ON and OFF.		

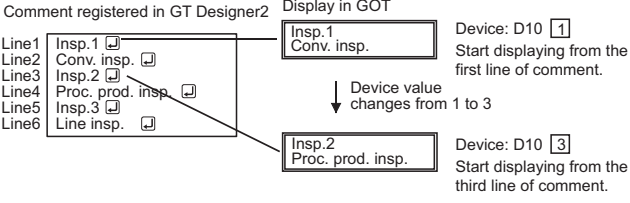
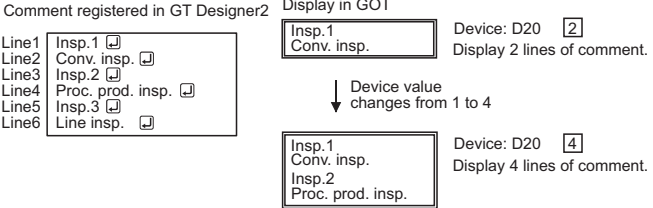
3 Extended tab (GOT-A900 series only)

Set the method of displaying security, offset and comment (Display Mode/Line No. of Display Start, etc.)
This tab is displayed when Extended is checked at the bottom of the dialog box.



Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (Section 5.7 Offset Function) After checking, set the offset device. (Section 5.1 Device Setting) Data length is fixed to 16 bits.	○	×
Display Mode	Select a desired display mode when displaying a comment with the level display overlapped. Transparent : Displays the comment on the level display.  XOR : In order to identify the level and comment, the comment is displayed in color different from the level color based on XOR.  This is effective when GOT is Monochrome type/EL type. (App.5 Synthesized Colors Available for XOR)	○	×
Blink Scope	Select a blink area. Text : Makes the comment blink. Text and Plate : Makes the comment and plate blink.	○	×

(Continued to next page)


Items	Description	A	F
Line No. of Display Start	<p>Check this item to change the line No. of display start when multiple comments have been set.</p> <p>Fixed : Select this item to set the line No. of display start by direct input.</p> <p>Device : Select this item to display comments of which line No. is the same as the device value to be set. After selecting, set the device. (☞ Section 5.1 Device Setting)</p> <p>Comment registered in GT Designer2</p>  <p>The created comment will not be displayed if the line No. out of the range is specified for it. In this case, confirm the line No. specified for that comment.</p>	○	×
Number of Lines	<p>Check this item to change the line No. of display start when multiple comments have been set.</p> <p>Fixed : Select this item to set the line No. of display start by direct input.</p> <p>Device : Select this item to display comments from which line No. is the same as the device value to be set.</p> <p>After selecting, set the device. (☞ Section 5.1 Device Setting)</p> <p>Comment registered in GT Designer2</p>  <p>If the fixed/device value is "0", the comment will not be displayed.</p>	○	×

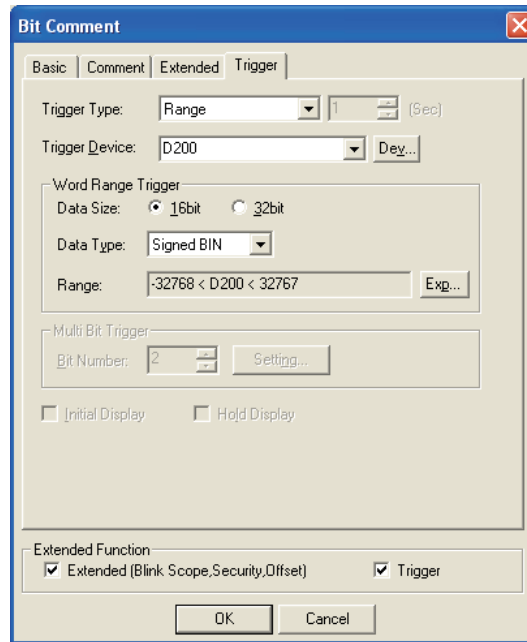
4 Trigger tab (GOT-A900 series only)

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



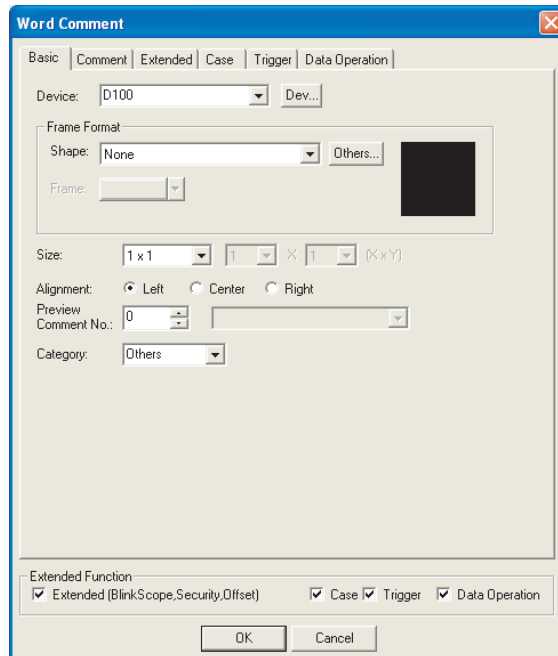
Basic Comment Extended **Trigger**

Items	Description	A	F
Trigger Type	Select trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger	○	×
Trigger Device	Specify the device used for the trigger.	○	×
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	○	×
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
Data Type	Select the data type of word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data Size].	○	×
Range	Click on the [Range] button and set conditional expression for the word device range.	○	×
Multi Bit Trigger	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click on the [Setting] button and set the bit devices and their triggers.	○	×
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	○	×
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied. If not checked, the object will be deleted when the trigger is not satisfied.	○	×

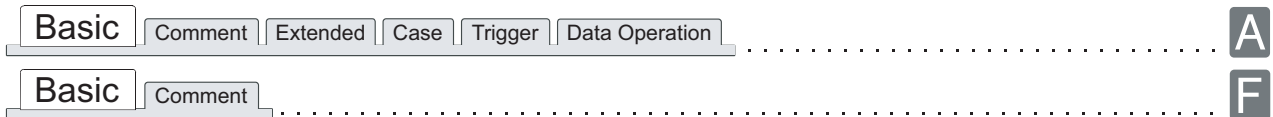
7.5.3 Setting items of word comment

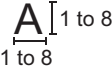
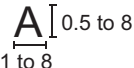
1 Basic tab

Set a view format of the device to be monitored and comment (Shape/Size/Alignment).



(Example: When setting GOT-A900 series)



Items		Description	A	F
Device		Set the device to be monitored. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Frame	Select the shape color.	<input type="radio"/>	<input type="radio"/>
	Bg Transparent	Select this when the background is to be transparent.	<input checked="" type="checkbox"/>	<input type="radio"/>
Size		Select the size of comment to be displayed (0.5 to 8). GOT-A900 series:  1 to 8 GOT-F900 series:  1 to 8	<input type="radio"/>	<input type="radio"/>
Alignment		Select the position to display the text value.	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Basic

Comment

Extended

Case

Trigger


Data Operation

A

Basic

Comment

F

Items	Description	A	F
Preview Comment No.	Displays the comment with specified comment No. on the GT Designer2 screen.	<input type="radio"/>	<input type="radio"/>
Use 6 × 8 dot font	Font is displayed in size of 6 × 8 dots. (Characters only)	<input checked="" type="checkbox"/>	<input type="radio"/>
Category	When allocating category to the object, select a proper category.  GT Designer2 Version <input type="checkbox"/> Operating Manual	<input type="radio"/>	<input type="radio"/>

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH

7

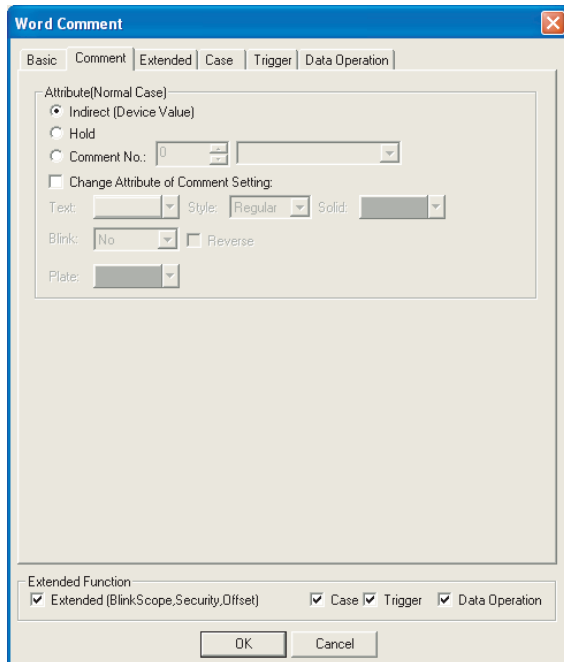
NUMERICAL/ CHARACTER DISPLAY

8

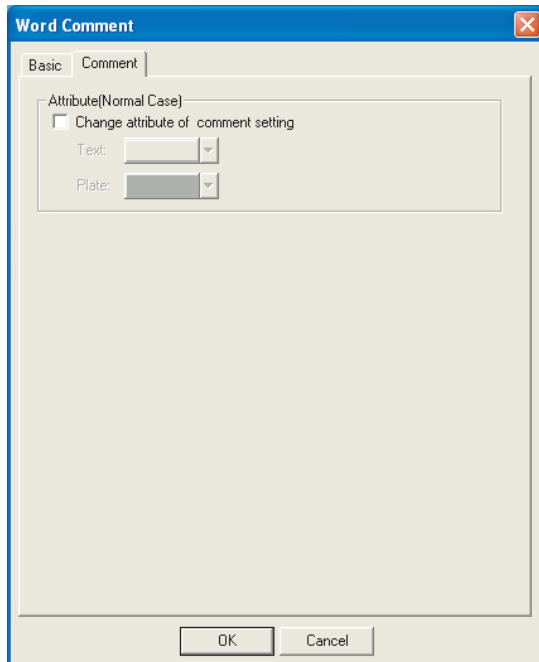
ALARM

2 Comment tab

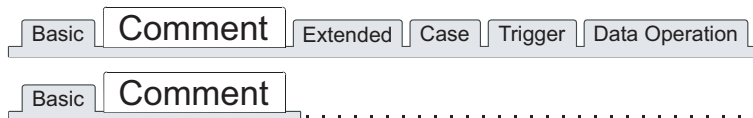
Set the comment to be displayed and its attributes.



In the case of GOT-A900 series

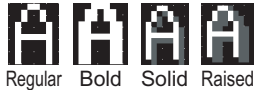


In the case of GOT-F900 series




A

F

Items	Description	A	F
Attribute [Normal case]	Sets display attribute of comment. To change the display attribute in this setting, it is necessary to set state in the case tab.		
	Indirect [Device Value] : Check this item to display comment No. corresponding to monitor device value.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Hold : Check this item to hold currently displayed comment. Comment No. : Check this item to display the registered comment data. After this, set the displayed comment No. The comment is not displayed when comment No. is set as 0.	<input type="radio"/>	<input checked="" type="checkbox"/>
Change Attribute of Comment Setting	Check this item to display with the display attribute different from the one set during comment registration.	<input type="radio"/>	<input type="radio"/>
Text	Select the color of text to be displayed.	<input type="radio"/>	<input type="radio"/>
Style	Select the view format of the text (Regular/Bold/Solid/Raised). 	<input type="radio"/>	<input checked="" type="checkbox"/>
Solid	Select the solid color when [Solid] or [Raised] is set in [Style]	<input type="radio"/>	<input checked="" type="checkbox"/>
Blink	Select the blinking pattern of the Comment.		
	No : Not blink.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Low : Blinks every 1 second.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	<input type="radio"/>	<input checked="" type="checkbox"/>
Reverse	Check this item to reverse comment. This item can be set at "Regular" in "Style" category.	<input type="radio"/>	<input checked="" type="checkbox"/>

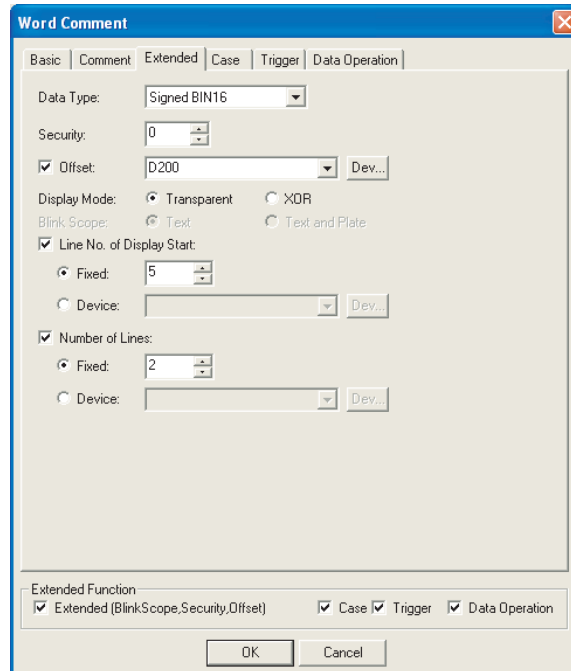
(Continued to next page)

Items	Description	A	F
Plate	Select the background color for the inside display area of the comment. 	○	○

3 Extended tab (GOT-A900 series only)

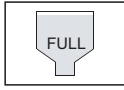
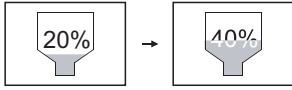
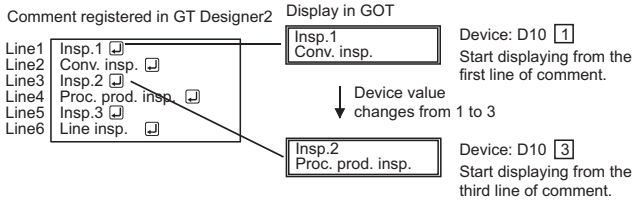
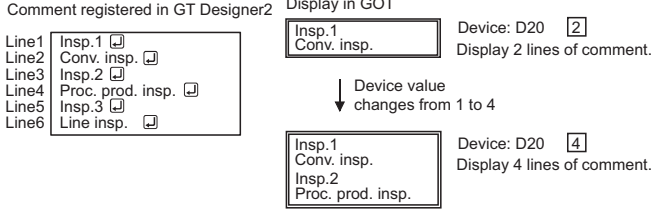
Set the data type, security, and offset of monitor device and the method of displaying comment (Display Mode/Line No. of Display Start).

This tab will be displayed when Extended is checked at the bottom of this dialog box.




Items	Description	A	F
Data type	Select the data type of the word device to be monitored. Word (BIN16) : Comments will be displayed based on the word device (BIN16) binary value. Word (BCD16) : Comments will be displayed based on the word device (BCD16) binary coded decimal value.	<input type="radio"/>	×
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	<input type="radio"/>	×
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting) Data length is fixed to 16 bits.	<input type="radio"/>	×

(Continued to next page)


Items	Description	A	F
Display Mode	<p>Select a desired display mode when displaying a comment with the level display overlapped.</p> <p>Transparent : Displays the comment on the level display.</p>  <p>XOR : Displays the comment in XOR-combined color.</p>  <p>Level can be distinguished from the comment. This is effective when GOT is Monochrome type/EL type. (☞ App.5 Synthesized Colors Available for XOR)</p>	○	x
Blink scope	<p>Select a blink area.</p> <p>Text : Makes the comment blink.</p> <p>Text and Plate : Makes the comment and plate blink.</p>	○	x
Line No. of Display Start	<p>Check this item to change the line No. of display start when multiple comments have been set.</p> <p>Fixed : Select this item to set the line No. of display start by direct input.</p> <p>Device : Select this item to display comments of which line No. is the same as the device value to be set.</p> <p>After selecting, set the device. (☞ Section 5.1 Device Setting)</p>  <p>The created comment will not be displayed if the line No. out of the range is specified for it. In this case, confirm the line No. specified for that comment.</p>	○	x
Number of Lines	<p>Check this item to change the line No. of display start when multiple comments have been set.</p> <p>Fixed : Select this item to set the line No. of display start by direct input.</p> <p>Device : Select this item to display comments of which line No. is the same as the device value to be set.</p> <p>After selecting, set the device. (☞ Section 5.1 Device Setting)</p>  <p>If the fixed/device value is "0", the comment will not be displayed.</p>	○	x

4 Case tab (GOT-A900 series only)

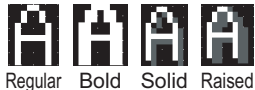

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

 Section 5.4 State Setting

Basic | Comment | Extended | **Case** | Trigger | Data Operation

Items	Description	A	F
State *1	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	<input checked="" type="checkbox"/>
New State	Creates a new state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete State	Deletes a specified state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Previous/Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Up/Down	Changes the priority of the current state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	<input type="radio"/>	<input checked="" type="checkbox"/>
Device State	Select the display change conditions according to state. Bit : Select it when changing the display according to the ON/OFF status of bit device. After selecting, set the bit device and device status (ON/OFF).  Section 5.1 Device Setting Word : Select it when changing the display according to the value of word device. After selecting, set the conditional expression of word device value in [Range].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Set the range of word device values for display change using a conditional expression.	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Items		Description	A	F	
State *1	Attribute	Select the method of displaying comment. Indirect [Device value] : Display the comment corresponding to the word device value. Hold : After it is selected, the comment display is held even if state condition is satisfied. Comment No. : Specify the comment to be displayed. After this, set the parts/screen to be displayed. Parts/screen will not be displayed when parts No. is set to 0.	<input type="radio"/>	<input checked="" type="checkbox"/>	
		Change Attribute of Comment Setting	<input type="radio"/>	<input checked="" type="checkbox"/>	
		Text	Select the color of text to be displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
		Style	Select the view format of the text (Regular/Bold/Solid/Raised).  Regular Bold Solid Raised	<input type="radio"/>	<input checked="" type="checkbox"/>
		Solid	Select the solid color when [Solid] or [Raised] is set in [Style]	<input type="radio"/>	<input checked="" type="checkbox"/>
		Blink	Select the blinking pattern of the Comment. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	<input type="radio"/>	<input checked="" type="checkbox"/>
		Reverse	Check this item to reverse comment. This item can be set at "Regular" in "Style" category.	<input type="radio"/>	<input checked="" type="checkbox"/>
Plate	Select the plate color when the condition to display state is satisfied. 	<input type="radio"/>	<input checked="" type="checkbox"/>		

For details of *1, refer to the following.

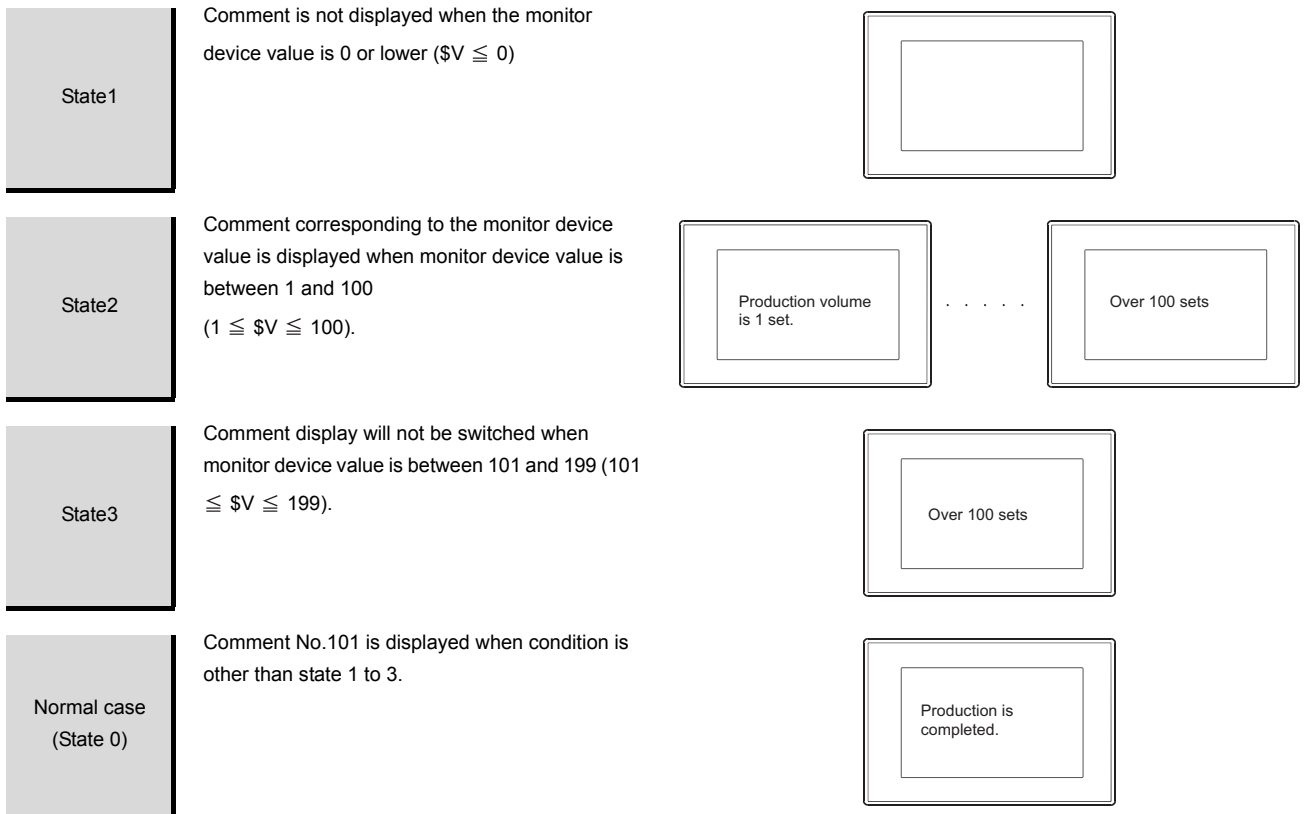
*1 State

- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.
- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Monitored device : D100
 Data view format : Signed decimal, 16bit length
 Registered comment : Comment No.1The production volume is 1 set
 Comment No.100 ... Over 100 sets
 Comment No.101 ... Production completed

Operation priority for repeated setting	State No.	Display range	Display comment
High	1	$\$V \leq 0$	No.0
↓	2	$1 \leq \$V \leq 100$	Indirect
	3	$101 \leq \$V \leq 199$	Hold
Low	Ordinary (State0)	---	No.101

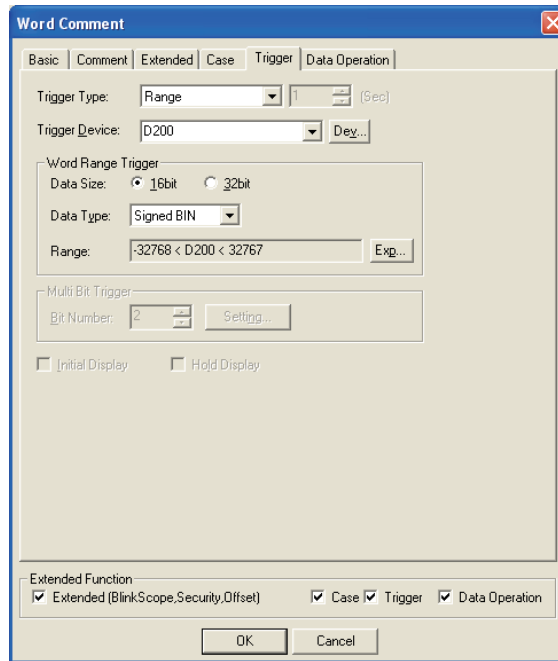
* \$V represents the monitor device value.



5 Trigger tab (GOT-A900 series only)

The setting items of trigger tab are the same with bit comment.
Refer to the following for the details of setting items.

 Section 7.5.2 Setting items of bit comment

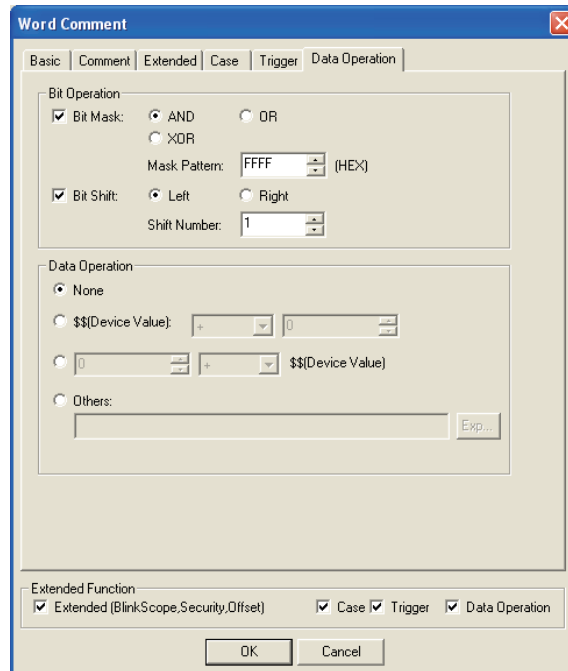


6 Data operation tab (GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic Comment Extended Case Trigger **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

7.5.4 Precautions

This section provides the precautions for using comment display function.

1 Precautions for drawing

- (1) Maximum arranged number of objects set on one screen
 - GOT A900 series: 256 comments
 - GOT-F900 series: 50 comments

- (2) Precautions for using cascading level display

Following restrictions are applied for cascading comment display and level display.

 - (a) Only one comment can be cascaded to one level function.
At arranging two or more comments, the second or later comments are not displayed.
 - (b) Comment cannot be set to blink (flickering display).
 - (c) Comment cannot be reversed.
 - (d) A comment extended off the display frame of a level is not XOR-combined.
 - (e) At setting a frame figure to a comment, the level is displayed only inside the frame figure.
 - (f) The display is updated only at changing the monitor device value of the level display.
The display is not updated at changing the monitor device value set to the comment display.

- (3) Precautions for comment registration

Make sure to follow the basic precautions before registering comments for comment display.

 Section 4.1 Comment Registration

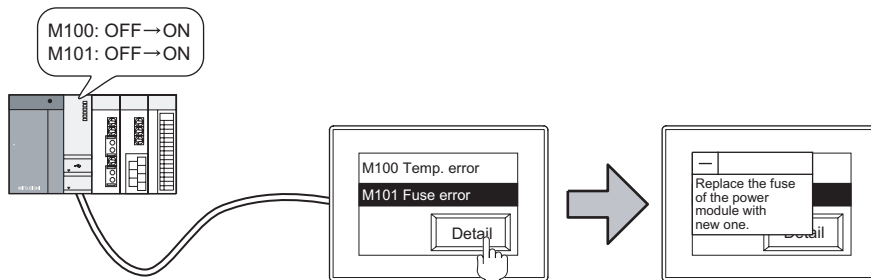
8. ALARM



8.1 User Alarm Display



User alarm is a function that displays user-created comments as alarm messages when an alarm occurs. When multiple devices turn on, the comments are displayed as alarm messages in the set display order.



Remark

Comments to be displayed as user alarm

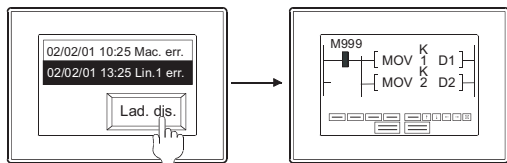
The comments must be registered in advance.

➔ Section 4.1 Comment Registration

Example:

Start the ladder monitor function from alarm list

➔ Set by Touch Switch (Section 6.2.4)

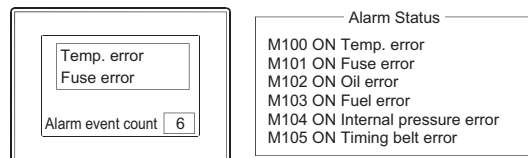


Displays the ladder monitor function by touch operation.

Monitor the ladder status of device corresponding to the alarm occurrence causes

Displaying the number of alarms occurred

➔ Set on the Device tab (GOT-A900 series only)



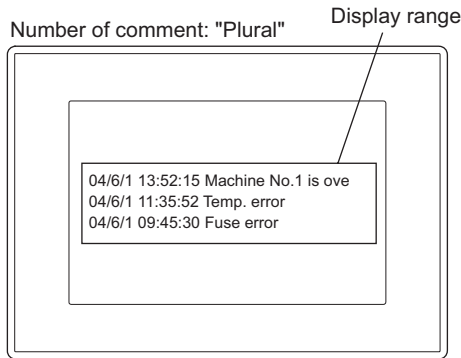
The number of all alarms occurred is displayed on the alarm list display.

8.1.1 Before setting user alarm

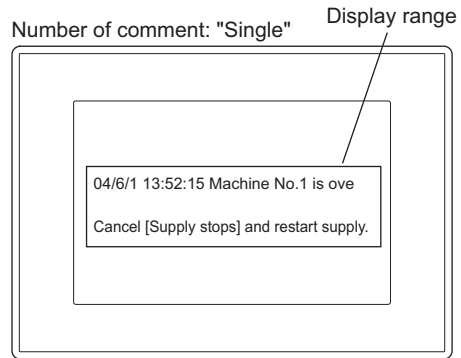
This function displays alarm occurrence time and user-registered comments as alarm messages.

1 Number of displayed alarms

Select whether to display multiple alarm occurrences (with plural comments) or only one (with single comment).



One alarm is displayed in one line.
The text out of the line will not be displayed.
If a comment is longer than two lines, only the first line is displayed.



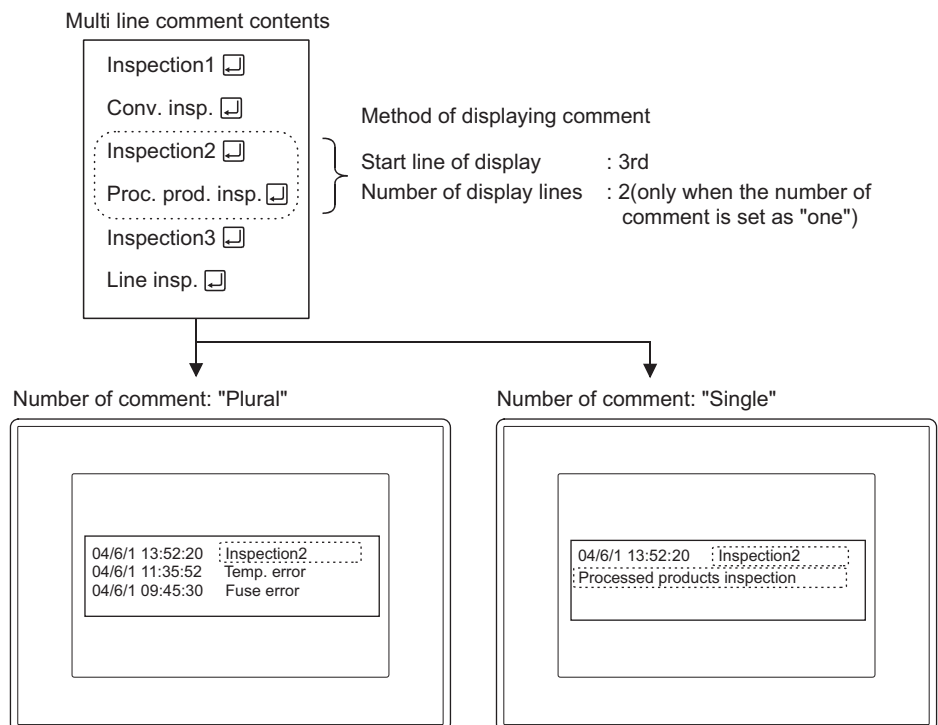
The texts will be continuously displayed in the second line.
Even if the comment size exceeds two lines, the texts from the second line can be displayed, providing it does not exceed the display range.

Remark

Display method for multi line comment (☞ Section 8.1.3 4 Extended tab)

Any line of the multi line comment can be specified to display.

Example: Display any line of the 6-line comment that has been registered



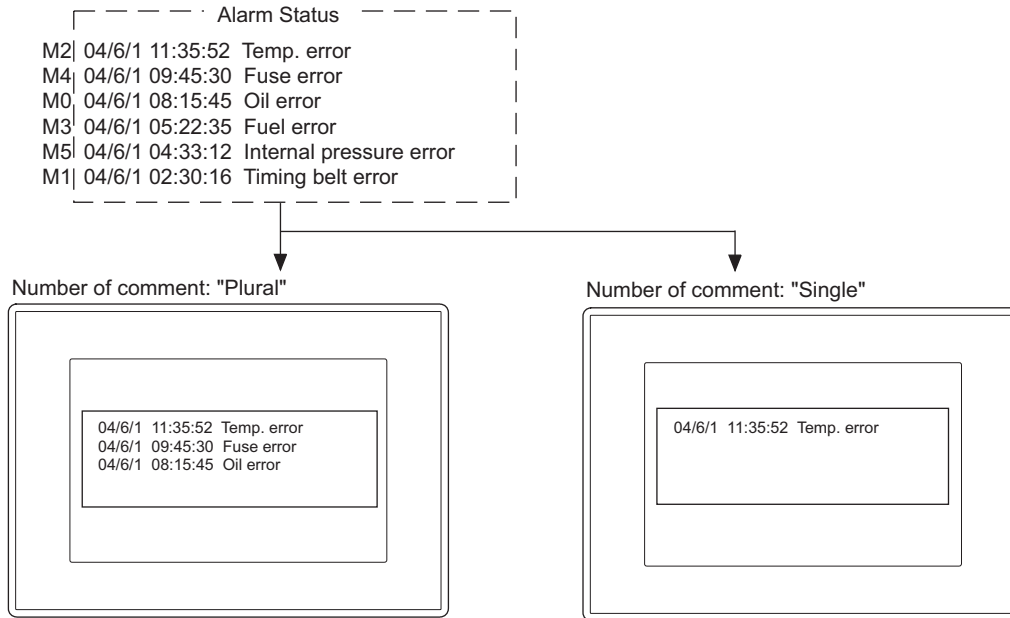
Only one line can be randomly specified to be displayed. The range of lines to be displayed can be specified.

2 Sort

Set the order to display alarm occurrences.

It can be set by the device No. order (ascending/descending) and alarm occurrence order (Oldest /Latest).

Example: Display alarms by "Latest" sort

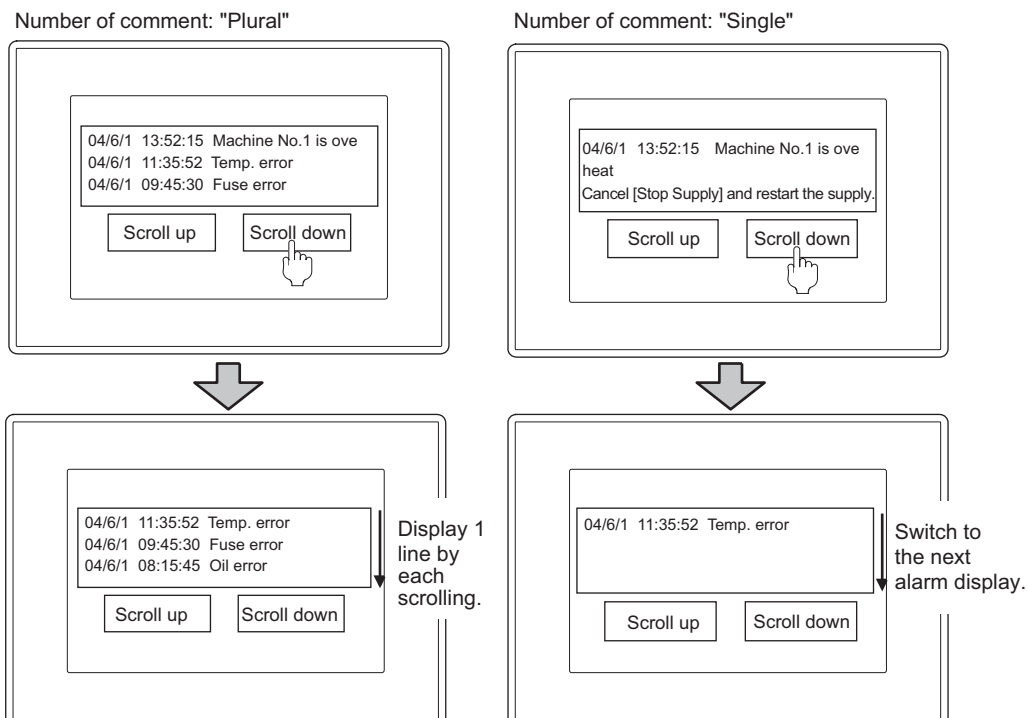


3 Scroll on

Checking if the alarm comment exceeds the display range is done by scrolling the user alarm with touch switches

Create the touch switches for user alarm.

Section 8.1.4 Touch switch for displaying user alarm



4 Details of display (only for [Plural] number of comment)

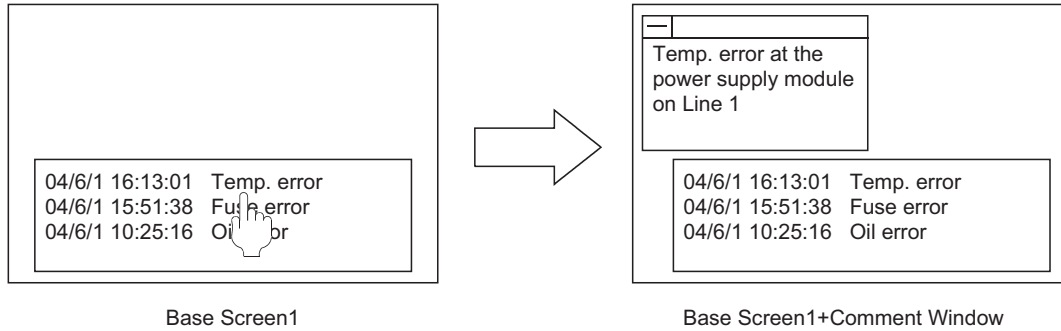
(1) Applicable screen (Section 8.1.3 2 Device tab (GOT-A900 series only))

To display the cause and corrective action of alarm in details, select a screen from the following three types.

(a) Comment window

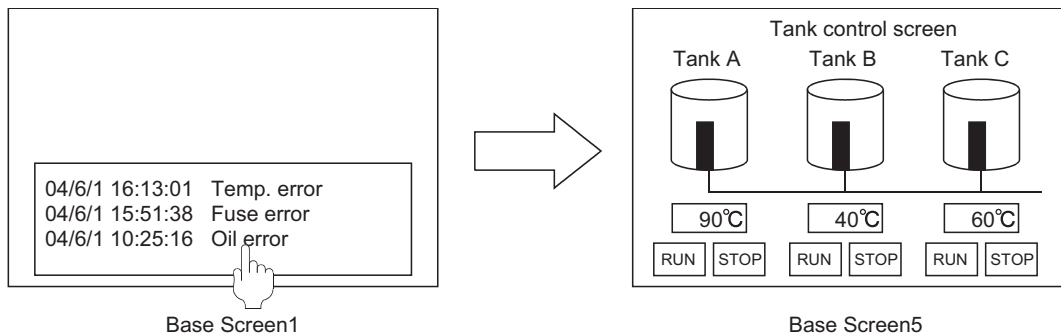
Display the user-registered comment in a comment window.

The comment different from that in user alarm comment can be displayed as a detailed comment.



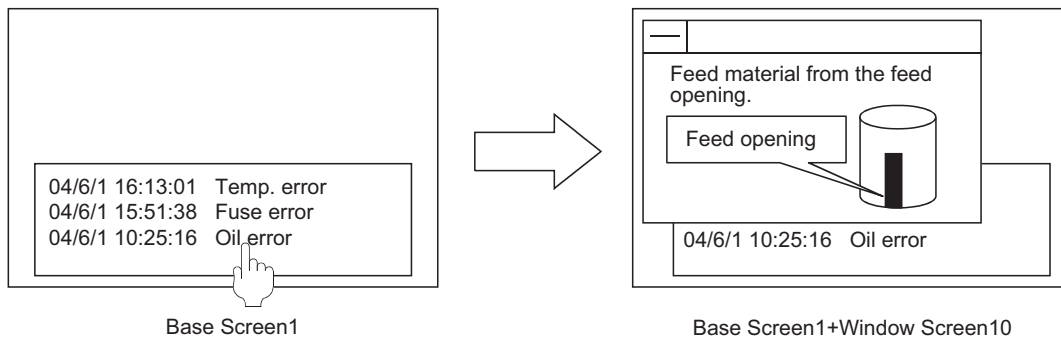
(b) Base screen

Display the specified base screen.



(c) Window screen (GOT-A900 series only)

Display the specified window screen (overlap window 1).



(2) Screen that includes user alarm and the corresponding detailed alarm type screen.

Screen that includes user alarm	Detailed alarm display type screen		
	Comment window	Base screen	Window screen
Base screen	Simultaneous display	Switch	Simultaneous display
Overlap window 1		Simultaneous display	Switch
Overlap window 2			Simultaneous display
Superimpose window			Simultaneous display

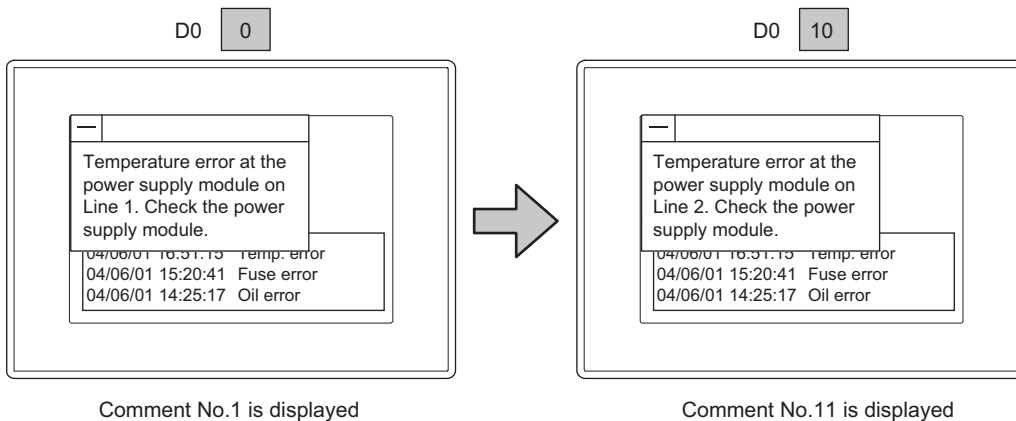
* Switch : Switch the screen that includes user alarm to the corresponding detailed alarm display type screen.
 Simultaneous display: Display the detailed alarm display type screen keeping the screen that includes user alarm on the display.

(3) Specifying a comment No. to be displayed or offset value for screen No. (Offset for Detailed No.)
 By setting 'Offset for Detailed No.' on the Device Tab, an offset value for details display described below can be specified: (Section 8.1.3 2 Device tab (GOT-A900 series only))

- No. of the comment that will be displayed on the comment window
- No. of the Base screen and Window screen

While monitoring by the GOT, the comment No. or screen No. can be switched using the device.
 Example: When the device for "Offset for Detailed No." is set to "D0", and the following comments are registered

Comment No.	Comment
1	Temperature error at the power supply module on Line 1. Check the power supply module.
2	Replace the fuse of the power supply module on Line 1.
⋮	⋮
11	Temperature error at the power supply module on Line 2. Check the power supply module.
12	Replace the fuse of the power supply module on Line 2.





To match the user alarm display with details screen:

By using "Offset for Detailed No." the comment on the user alarm cannot be changed.

An offset value for comment No. on the user alarm should be specified in "Offset for Comment No." on the Extended tab.

(Section 8.1.3 **4** Extended tab)

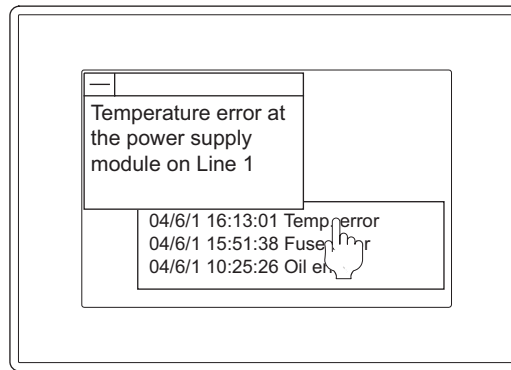
Match display the user alarm with the comment on the details screen by using "Offset for Detailed No. and "Offset for Comment No.".

(4) Display method

Select the method for details display from the following two types.

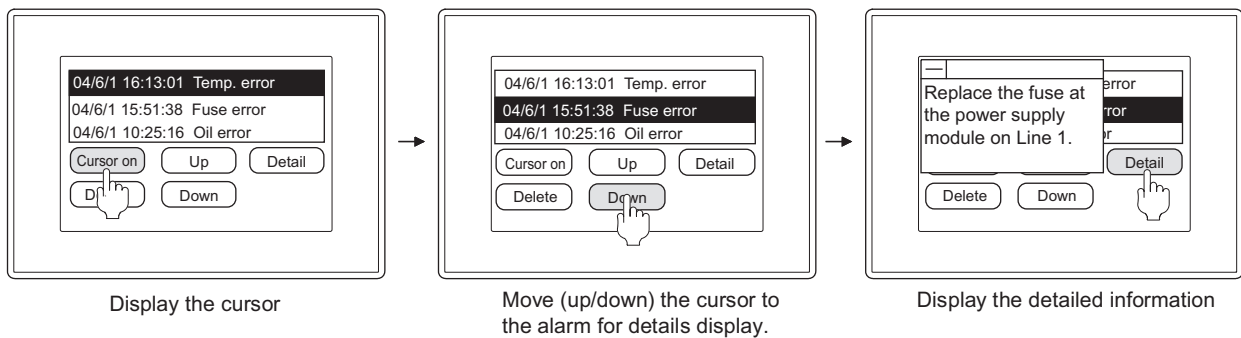
(a) One touch (Set in the device tab)

Touch the alarm list directly to display the detailed information.



(b) Touch switch (Section 8.1.4 Touch switch for displaying user alarm)

Create touch switches for user alarm to display the detailed information.



5 Store memory

Check "Store Memory" when collecting the information on alarm occurrence date/time even when a screen including no user alarm is displayed.

The GOT monitors the alarm occurrence status at all times and stores the information in the GOT internal memory.

"Store memory" settings are provided as shown below.

GOT-A900 Series :Trigger tab

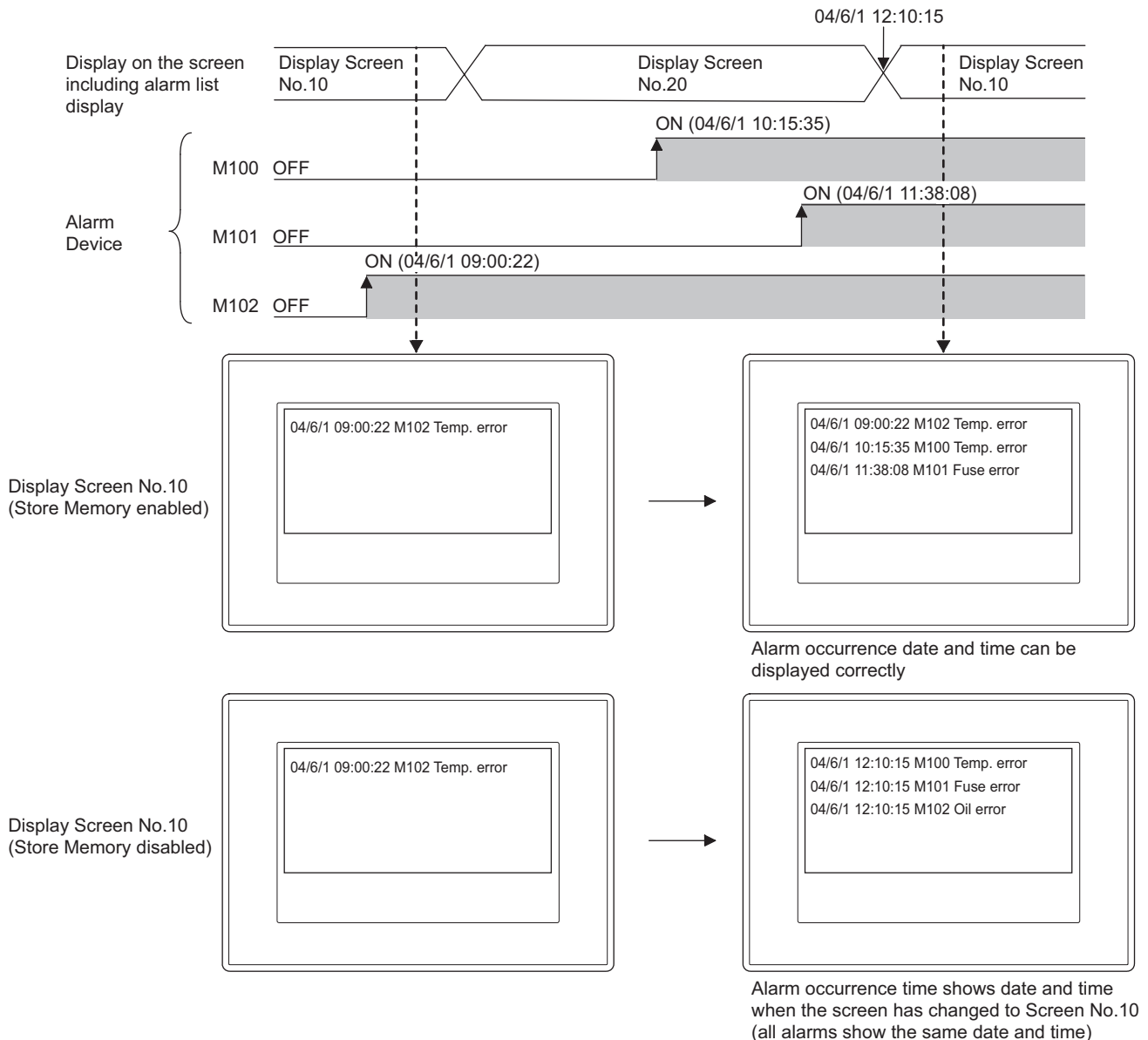
GOT-F900 Series :Other tab

With the settings made, the alarm occurrence date/time is displayed as follows:

Store Memory enabled: The alarms are displayed with the date and time when the alarm actually occurred.

Store Memory disabled: The alarms are displayed with the time and date when the screen is displayed.

Example: The following shows differences of the user alarm display according to the "Store memory" settings (enabled or disabled) when the screen switches and the alarm devices turn ON/OFF at the timing below.



- (1) The timing when the data stored in memory is cleared.



The data stored in memory is cleared when the GOT is reset or powered off.

- (2) The timing when the alarm occurrence date/time is cleared with the Store Memory disabled.

When "Store Memory" is disabled, alarm occurrence time information is not collected at any of the timings below, causing the collected alarm occurrence time to be cleared:

- The screen including the user alarm is hidden and then displayed again.
- The screen is switched to the base screen while the user alarm is on the superimpose window.
- The security switching is made.
- The machine No. switching is made.
- The offset switching is made.

8.1.2 Placement and settings

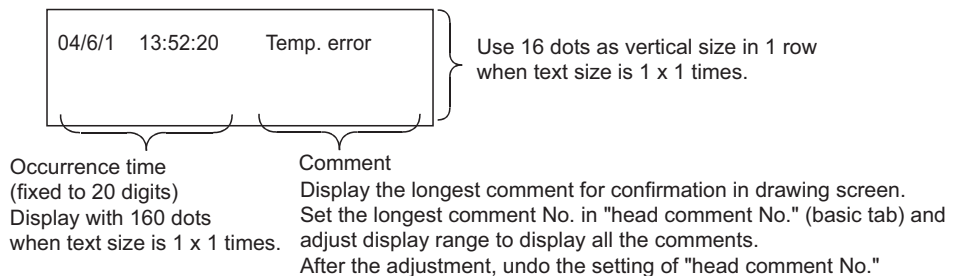
- 1 Carry out either or the following operations.
 - (1) In case of GOT-A900 series
 - Select [Object] → [Alarm List] → [User Alarm] from the menu
 -  Click on [User Alarm]
 - (2) In case of FOT-F900 series
 - Select [Object] → [Alarm List] from the menu
 -  Click on [Alarm List]
- 2 Click on the position where user alarm to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged user alarm to display the setting dialog box.
For the setting method, refer to the explanation on the next page.
- 4 After setting user alarm, set the touch switch for scrolling user alarm up/down and to display the alarm detailed information.

 Section 8.1.4 Touch switch for displaying user alarm

Point

Method of adjusting display range

Method of adjusting display range Adjust the display range as following when the comment cannot be displayed completely.



Hint!

Easier setting method

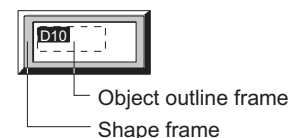
Using the property sheet enables direct on-screen object setting.


 GT Designer2 Version Operating Manual

Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

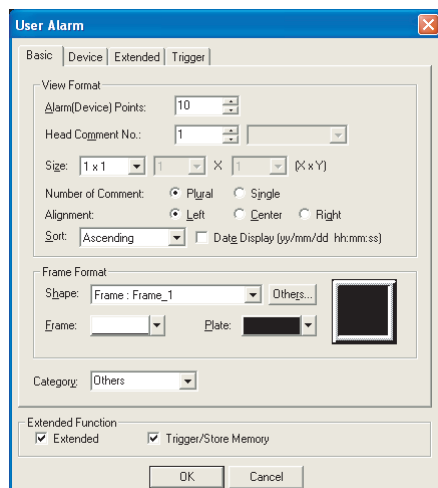


 Section 5.3.3 Object size change

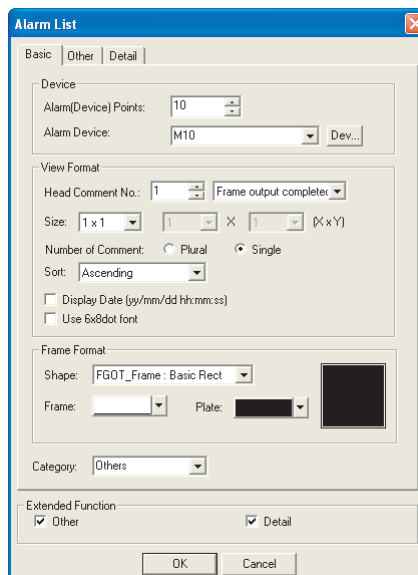
8.1.3 Setting items

1 Basic tab

Set the number of monitor devices and view format (number of comments/sort/shape).



In the case of GOT-A900 series



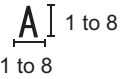
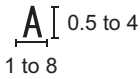



In the case of GOT-F900 series

Basic Device Extended Trigger

Basic Other Detail

Items		Description	A	F									
View Format	Device	Device as many alarms are set continuously starting from the specified device. (☞ Section 5.1 Device Setting)	×	○									
	Alarm (Device) Points	Set the number of monitor devices. [GOT-A900 series] The devices that can be set are different on the settings made in [Device No.] of device tab. • In [Continuous] setting : 8129 devices • In [Random] setting : 512 devices [GOT-F900 series] Up to 256 devices can be set.	○	○									
	Head Comment No.	Set the comment to be displayed when an alarm occurs. (Setting range: 1 to 32767) The comment No. set here is assigned in head device of device tab. Continuous No. will be set respectively according to the number of monitor devices from the comment No. of head comment No. Example: Head device: M10, head comment No.: 1 <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="padding-right: 20px;">Monitor device</td> <td style="padding-right: 20px;">Comment No.</td> <td style="border-left: 1px solid black; padding-left: 10px;">Head comment No.</td> </tr> <tr> <td>M100.....</td> <td>1 Temp.error</td> <td rowspan="3" style="border-left: 1px solid black; padding-left: 10px;">The comment of continued No. is set from head comment No.</td> </tr> <tr> <td>M101.....</td> <td>2 Fuse error</td> </tr> <tr> <td>M102.....</td> <td>3 Oil error</td> </tr> </table>	Monitor device	Comment No.	Head comment No.	M100.....	1 Temp.error	The comment of continued No. is set from head comment No.	M101.....	2 Fuse error	M102.....	3 Oil error	○
Monitor device	Comment No.	Head comment No.											
M100.....	1 Temp.error	The comment of continued No. is set from head comment No.											
M101.....	2 Fuse error												
M102.....	3 Oil error												

(Continued to the next page)

Items	Description	A	F																											
Size	<p>Select the size of text to be displayed.</p> <p>When (1 × 1) is set, the font size is 8 × 16 dots.</p> <p>When displaying comments that is set to high quality font in comment registration as high quality font, set the font size to the multiple of even number.</p> <p>If set to the multiple of odd number, it will not be displayed as high quality font.</p> <p>GOT-A900 series  1 to 8</p> <p>GOT-F900 series  0.5 to 4</p>	○	○																											
Number of Comment	<p>Set the number of comments to be displayed.</p> <p>Plural :Display plural comments in frame.</p> <p>Single :Display only one comment in frame.</p>	○	×																											
Alignment	<p>Select the position to display the text.</p> <p>Left:  Center:  Right: </p>	○	×																											
Sort	<p>Select the sort of comment.</p> <p>Ascending : display according to the order of the smallest to the biggest.</p> <p>Descending : display according to the order of the biggest to the smallest</p> <p>Oldest : display according to the order of the oldest to the latest</p> <p>Latest : display according to the order of the newest to the oldest.</p> <p>When monitor is set randomly, [Ascending] [Descending] will be based on the setting order of device.</p> <p>Example: When making following settings in device tab.</p> <table border="1"> <thead> <tr> <th colspan="2">Alarm Device:</th> <th>Display comment</th> </tr> <tr> <th></th> <th>Device</th> <th></th> </tr> </thead> <tbody> <tr> <td>1</td> <td>M100</td> <td>.....Temp. error</td> </tr> <tr> <td>2</td> <td>M101</td> <td>.....Fuse error</td> </tr> <tr> <td>3</td> <td>M102</td> <td>.....Oil error</td> </tr> </tbody> </table> <p>Displayed in [Ascending]</p> <table border="1"> <tr> <td>M100 ON</td> <td>Temp. error</td> </tr> <tr> <td>M101 ON</td> <td>Fuse error</td> </tr> <tr> <td>M102 ON</td> <td>Oil error</td> </tr> </table> <p>Displayed in [Decending]</p> <table border="1"> <tr> <td>M102 ON</td> <td>Oil error</td> </tr> <tr> <td>M101 ON</td> <td>Fuse error</td> </tr> <tr> <td>M100 ON</td> <td>Temp. error</td> </tr> </table> <p>When [Oldest] or [Latest] is selected, set [Store Memory] on the Trigger tab for collecting data of the alarm occurrence date.</p>	Alarm Device:		Display comment		Device		1	M100Temp. error	2	M101Fuse error	3	M102Oil error	M100 ON	Temp. error	M101 ON	Fuse error	M102 ON	Oil error	M102 ON	Oil error	M101 ON	Fuse error	M100 ON	Temp. error	○	○
Alarm Device:		Display comment																												
	Device																													
1	M100Temp. error																												
2	M101Fuse error																												
3	M102Oil error																												
M100 ON	Temp. error																													
M101 ON	Fuse error																													
M102 ON	Oil error																													
M102 ON	Oil error																													
M101 ON	Fuse error																													
M100 ON	Temp. error																													
Date Display	<p>Check this item to display date when an alarm occurs.</p> <p>Date is displayed in the form of "yy/mm/dd: hh: mm: ss"</p> <p>(Year is displayed with the last 2 digits, and hour is displayed in the 24-hour system.)</p> <table border="1"> <tr> <td>04/06/01</td> <td>09:30:40</td> <td>Temp. error</td> </tr> <tr> <td>Space</td> <td>Space</td> <td></td> </tr> <tr> <td colspan="2">20 digits</td> <td>Comment</td> </tr> </table>	04/06/01	09:30:40	Temp. error	Space	Space		20 digits		Comment	○	○																		
04/06/01	09:30:40	Temp. error																												
Space	Space																													
20 digits		Comment																												
Use 6 × 8dot Font	Font is displayed in size of 6 × 8dots. (Characters only)	×	○																											

(Continued to the next page)

Basic

Device

Extended

Trigger




A

Basic

Other

Detail

F

Items		Description	A	F
Frame Format	Shape	<p>Set a frame for the object. When [None] is selected, no frame will be displayed.</p> <p>By clicking on the <input type="checkbox"/> Others button, figures other than those in the list box or library figures can be selected. ( Section 5.3.2 Object shape setting)</p>	x	<input type="radio"/>
	Frame	Select the shape, i.e., frame/plate color.	<input type="radio"/>	<input type="radio"/>
	Plate		<input type="radio"/>	<input type="radio"/>
Category		<p>When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)</p>	<input type="radio"/>	<input type="radio"/>

1 OVERVIEW

2 SPECIFICATIONS

3 COMMON SETTING

4 PREPARATORY OPERATION FOR OBJECT SETTING

5 COMMON SETTINGS FOR OBJECTS

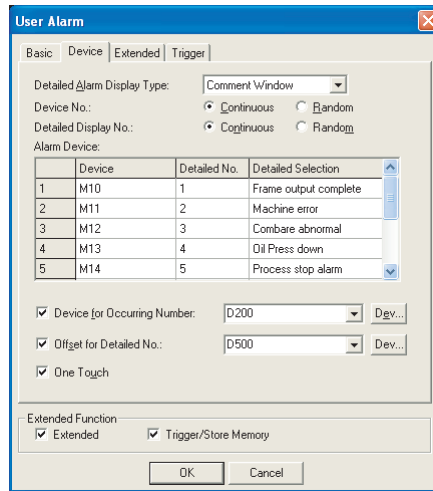
6 LAMP, SWITCH

7 NUMERICAL/ CHARACTER DISPLAY

8 ALARM

2 Device tab (GOT-A900 series only)

Set the monitor device and the detailed alarm display type when an alarm occurs.



Basic **Device** Extended Trigger

Items	Description	A	F
Detailed Alarm Display Type	<p>Select the method of displaying the detailed alarm comment information. This setting is usable only when [Plural] is selected in [Number of Comment].</p> <p>Not Display :No detailed information to be displayed.</p> <p>Comment Window *1:A comment window is displayed to provide detailed information. A registered comment is used for the window.</p> <p>Base screen :The detailed information is displayed on a base screen. The base screen specified by detailed displayed No. of the alarm device is used.</p> <p>Window screen :Display the window screen (Overlap window1) by details display. Display the window screen that is set in the detailed No. of alarm device.</p>	○	×
Device No.	<p>Select the method of setting the device to be monitored.</p> <p>Continuous :Devices are consecutively numbered from the set device.</p> <p>Random :Devices are numbered at random.</p>	○	×
Detailed Display No.	<p>Select the method of displaying the comment window/base screen/window screen used for providing detailed information of alarm.</p> <p>Continuous :Devices are consecutively numbered starting from the set comment No./base screen No./window screen No.</p> <p>Random :Devices are numbered at random.</p>	○	×
Alarm Device	Setting the screen No. for monitor device and detailed display.	○	×
Device	Set the device to be monitored. (☞ Section 5.1 Device Setting)	○	×
Detailed No.	Number the comment/base screen/window screen used for displaying the detailed information when an alarm occurs (when the specified device condition is satisfied.)	○	×
Detailed Selection	<p>Select the comment to be displayed in details when selecting [Comment Window] in [Detailed alarm display type].</p> <p>The comment can be displayed when confirming the comment contents.</p>	○	×

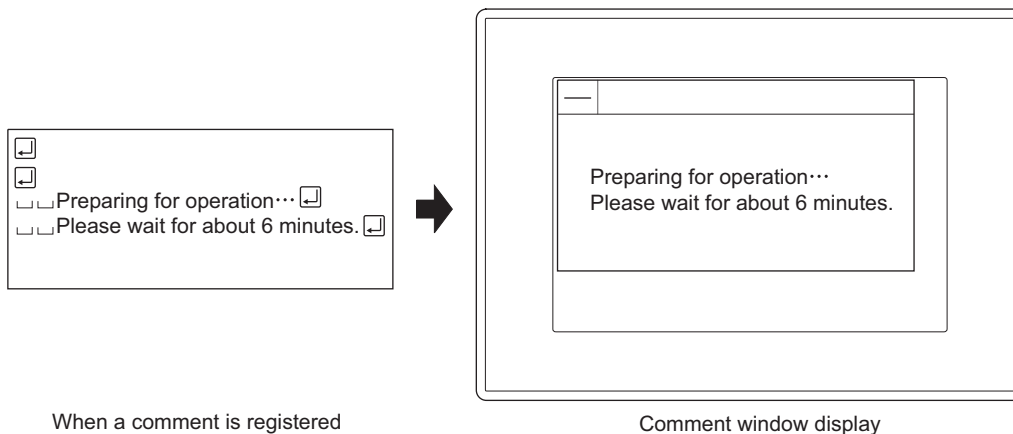
(Continued to next page)

Items	Description	A	F
Device for Occurring Number	Check this item to store the number of alarms (the number of bit devices that have turned ON) in the word device. After checking, set the device to store alarms. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Offset for Detailed No.	Check this item to switch the detailed information on screen according to the value of one device. The comment No./base screen No./window screen No. set as the detailed No. of alarm device is added to the device (offset device) value set here. (The data size of the set device is fixed to 16 bits) For the details about offset function, refer to the following. (☞ Section 5.7 Offset Function)	<input type="radio"/>	<input checked="" type="checkbox"/>
One Touch	Check this item to display the detailed display screen by touching any row of the user alarm. (This setting is usable in the basic tab when [Plural] is set in [Comment Number])	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

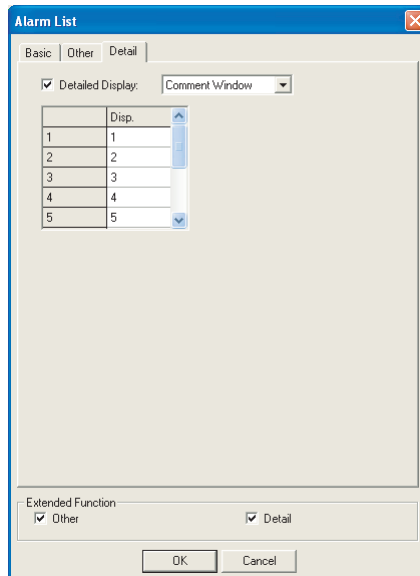
*1 Display Method of Comment Window

- (1) Numver of characters available for comment window
 - A960GOT, A97*GOT, A985GOT
39 characters × 11 lines (429 characters)
 - A95*GOT, A956WGOT
23 characters × 7 lines (161 characters)
- (2) Comment window is displayed on top-left of base screen
The operation of moving and closing the window is the same as that of the window screen.
- (3) Comment text is displayed as follows
 - Text size: fixed to 1 × length, 1 × width
 - The setting reverse, blink and style are not supported, regardless of the comment registration settings.
- (4) The comment lines are displayed in the comment window as follows.
 - Comments are displayed from top-left to right in the comment window.
 - If the comment exceeds the display range of the comment window, it is continued starting a new line.
 - To place the comment in the center of the comment window, make adjustment using the line feed for the comment.



3 Detailed tab (GOT-F900 series only)

Check the Extended Function at the bottom of dialog box to display this tab.



Items	Description	A	F
Detailed Display *1	Select a detailed display screen type for displaying the alarm details, of which comment is on the screen as the corresponding device has turned ON. This setting is usable only when the number of displayed comment is plural (set in the basic tab).		
	No display :No detailed display	×	○
	Comment Window :Displays in details on the dedicated comment window screen for the alarm list.		
	Base Screen :Display in details on the base screen with specified base screen No.		

*1 Detailed Display

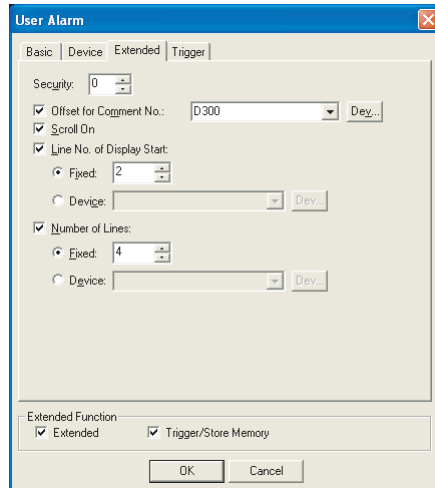
The detailed error information is displayed on the base screen/comment window.

Section 8.1.1 Before setting user alarm

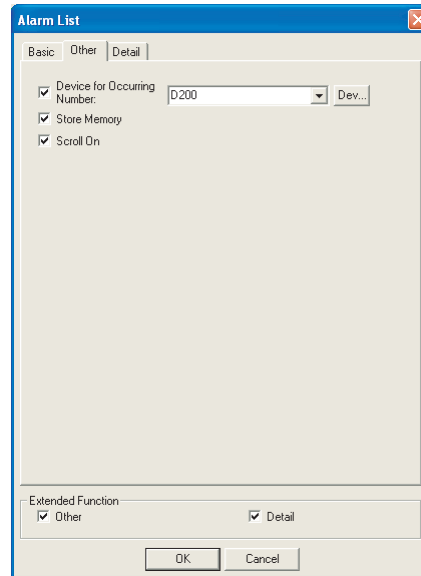
4 Extended tab

Set the security, offset.

Check the Extended Function at the bottom of dialog box to display this tab.



In case of GOT-A900 series



In case of GOT-F900 series



A



F

Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset for Comment No.	Check this item to switch the comment on the user alarm according to the device value. The device (offset device) value set here is added to the comment No. that has been set in "Head Comment No." on the Basic tab. (The data size of the device is fixed to 16 bits.) For details on offset function, refer to the following. (☞ Section 5.7 Offset Function)	○	×
Device for Occuring Number	Check this item to store the current number of bit devices being monitored in the word device. After checking, click on Device button to set the store device. (☞ Section 5.1 Device Setting)	×	○

(Continued to next page)


Items	Description	A	F
Store Memory	<p>Check this item to store the date when the monitor device turns ON while the screen including alarm list display is not being displayed, i.e., the screen is switched from the one including alarm list display to another, and then returned to the first one.</p> <p>When the data is not stored into the memory and the alarm list display screen is displayed again, all the data time stamp displayed in the alarm list will be as same as the displayed time.</p> <p>M1 00/5/31 12:00:15 Conveyor check M2 00/5/31 13:30:25 Products check</p> <p>Switch screen → 00/5/31 14:00:33 M5 ON Screen Alarm</p> <p>00/5/31 14:14:00 Switch screen</p> <p>Memory is stored ↓ M1 00/5/31 12:00:15 Conveyor check M2 00/5/31 13:30:25 Products check M5 00/5/31 14:00:33 Conveyor error M5 is the date and time of ON.</p> <p>Memory is not stored ↓ 00/5/31 14:14:00 Conveyor check 00/5/31 14:14:00 Products check 00/5/31 14:14:00 Conveyor error M5 is the date and time when the alarm list is displayed.</p>	x	o
Scroll On	<p>Check this item to operate the user alarm by using a touch switch for which key code has been set for user alarm.</p> <p>After checking, arrange above touch switch.</p> <p>(☞ Section 8.1.4 Touch switch for displaying user alarm)</p> <p>Note that this item is not available in the following cases:</p> <ul style="list-style-type: none"> • If the data list and alarm history are set to be displayed on the same screen • If multiple user alarms including the one with [Scroll On] checked are placed on a single screen. 	o	o
Line No. of Display Start	<p>Check this item to specify the display start line of the multiple-line comment.</p> <p>Then, set the number of the line.</p> <p>Fixed :Set by direct input (1 to 32767)</p> <p>Device :Select this option to set the device value to the start line No.</p> <p>Then, set the device. (☞ Section 5.1 Device Setting)</p> <p>When comment appears as blank, check if the value set as the start line No. is within the number of created comment lines.</p>	o	x
Number of Lines	<p>Specify the number of lines of the multiple-line comment.</p> <p>This option is available only when "Number of Comments" is set to "Single" (set in the Basic tab).</p> <p>Then, set the value of each line.</p> <p>Fixed :Set by direct input. (1 to 32767)</p> <p>Device :Select this option to set the device value to the number of comment lines.</p> <p>Then, set the device. (☞ Section 5.1 Device Setting)</p>	o	x

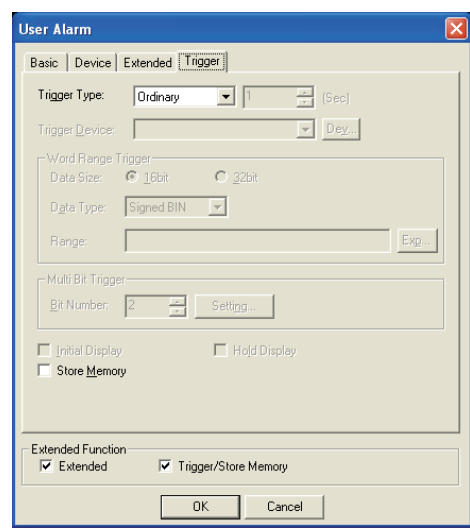
5 Trigger tab (GOT-A900 series only)

Set conditions for displaying the object, i.e., trigger.


Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details about trigger setting, refer to the following.

 Section 5.5 Trigger Setting



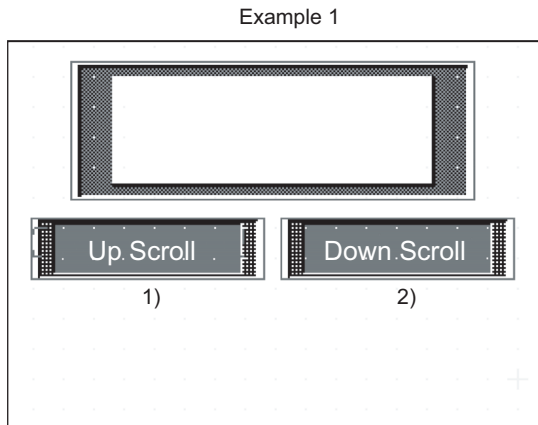
Basic | Device | Extended | **Trigger**

Items		Description	A	F
Trigger Type		Select the trigger for displaying which the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger	○	×
Trigger Device		Specify the device used for the trigger.	○	×
Word Range Trigger		When [Range] is selected in [Trigger Type], set the following items	○	×
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
	Data Type	Select the data type of word device (Signed BIN/Unsigned BIN/Real) Real can be set only if [32bit] is selected in [Data Size].	○	×
	Range	Click on the [Exp...] button and set conditional expression for the word device range.	○	×
Multi Bit Trigger	Bit Number	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used as trigger. After setting, click on the [Setting] button and set the bit devices and their triggers.	○	×
Initial Display		When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object display needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	○	×
Hold Display		When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied. If not checked, the object will be deleted when the trigger is not satisfied.	○	×
Store Memory		Check this item to collect the alarm occurrence time while the screen where user alarm has not been set is displayed. ( Section 8.1.1 5 Store memory) The alarm occurrence status are always monitored and stored to the GOT internal memory. After checking, set the cycle to collect data (1 to 3600 s) in [Trigger Type].	○	×

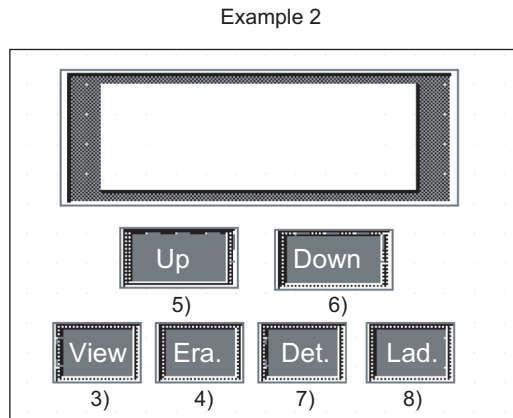
8.1.4 Touch switch for displaying user alarm

Set the touch switches for operating user alarm.

For the touch switches, create by setting the following key codes to them or read from the GT Designer2 library.



Switch display by the Up/Down Scroll key.
Touching the user alarm enables the details display screen. (Set by checking [One Touch] of Device tab.)



Move cursor by the Up/Down Move key to start the details display screen of alarm specified by cursor and the ladder monitor screen.

Function	Function	Key code
1) Up Scroll ^{*1, *2}	Scroll to the upper part of the display.	00F2H
2) Down Scroll ^{*1, *2}	Scroll to the lower part of the display.	00F3H
3) Display (cursor)	Display the cursor.	FFB0H
4) Erase (cursor)	Erase the cursor.	FFB1H
5) Up Move	<ul style="list-style-type: none"> Move the cursor up when the cursor is displayed. Move to the next page when the cursor is not displayed. 	FFB2H
6) Down Move	<ul style="list-style-type: none"> Move the cursor down when the cursor is displayed. Move to the next page when the cursor is not displayed. 	FFB3H
7) Details	Display the screen of details.	FFB8H
8) Ladder ^{*2}	Search the alarm device and display on the ladder monitor screen. (Automatically search the specified device ladder and display it.)	FFBCH

*1 It will not act when the cursor is displayed.

*2 Not supported by GOT-F900 series.



To use the touch switches for user alarm

When using the touch switches for user alarm, make sure to check [Scroll] on the Extended tab.



For the setting method of the touch switch

For details, refer to the following.

Section 6.2.7 Setting items of key code switch

8.1.5 Precautions

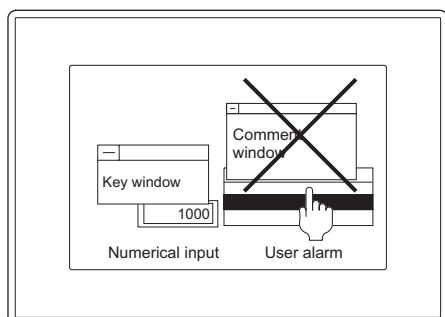
This section provides the precautions to be taken when using user alarm.

1 Drawing precautions


- (1) Maximum number of alarm list objects set in one screen
 - GOT-A900 series :24
 - GOT-F900 series :1
- (2) Maximum number of devices applicable for monitoring
 - Continuously specified device : 8192 devices (GOT-A900 series)
: 256 devices (GOT-F900 series)
 - Randomly specified device : 512 devices (GOT-A900 series only)
- (3) When [Store Memory] is checked
 - (a) Up to 16 alarm list display objects with "Store memory" set can be set for each project.
 - (b) Up to 8192 alarm list objects can be set in the whole projects as the devices applicable for monitoring by [Store Memory]. The preset number of alarm lists display is not relevant.
- (4) The character display of the line on which the cursor is currently displayed
The characters of the line on which the cursor is currently displayed are not displayed when the screen pattern color or [Plate] of the Basic tab is set to White.
(Characters will be hidden since the color of the text and cursor are the same with the screen color.)
To display the characters of the line on which the cursor is currently displayed, set the screen pattern color or [Plate] of the Basic tab to other than White.
- (5) Precautions when selecting [Random] for [Device No.]
When selecting [Random] for [Device No.], set the same quantity of alarm devices as the value specified for [Alarm (Device) Points].
If the number of set alarm devices is less than the value specified for [Alarm (Device) Points], all the user alarms are not displayed on a GOT.

2 Precautions for use

- (1) Display of comment window
When key window is on display, the comment window cannot be displayed.
Make sure to erase the key window before displaying the comment window.



- (2) Display of occurrence time
The occurrence time may not be displayed due to the connection type and connection destination.
(GOT-F900 series uses the clock function built-in GOT.)

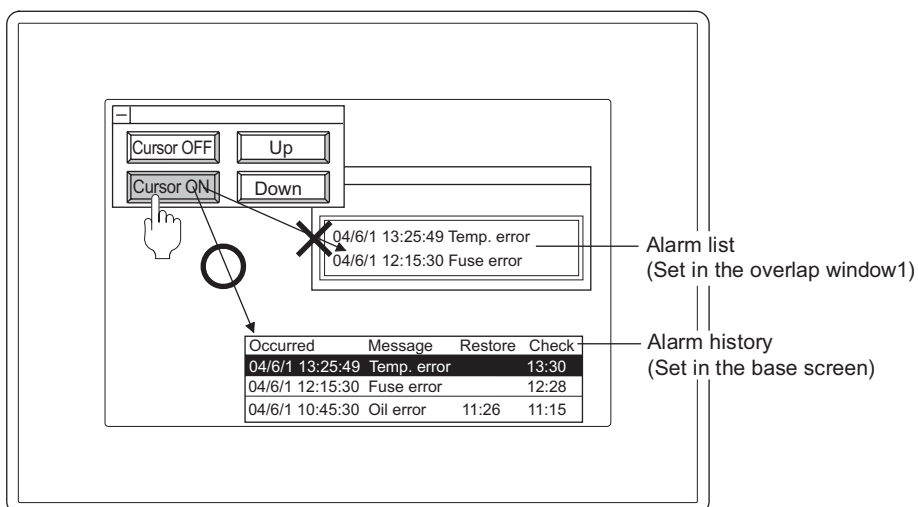
 Section 2.4 Clock Function

- (3) Cursor color for alarm list (for GOT-F900 only)
 When touching the touch key for which the key code (FFB0H) has been set, the cursor will be displayed in black at the top of the alarm list.
 Therefore, if the screen background is black, the cursor is invisible. Make sure to set the alarm list object and plate in the color other than black.
- (4) When used with other objects
 After checking [Scroll] in the extended tab (settings to use touch switch for user alarm), the following objects cannot be set in the same screen.
- Data list function object
 - Alarm history function object
- (5) Touch switch for user alarm
- (a) Setting screen
 Make sure to set the touch switch for user alarm and user alarm in the same screen.
 If not, the touch switch may operate instead of the user alarm, when both alarm history and data list are displayed.
- (b) Setting only the touch switch on another screen
 To set only the touch switch for user alarm on another screen, make the setting by referring to the following priority order:

- Priority order corresponding to the touch switch screen
 - Screen for which touch switch has been set
 - Base screen
 - Call screen 1 to 5
 - Superimpose window
 - Overlap window1
 - Overlap window2



Example: When touch switch has been set for other screens (overlap window2)



As the base screen has higher priority, operates it as the touch switch of alarm history.

- (6) Comment display line range (GOT-F900 series only)
 Only the first line of each comment is displayed.
 The second and later lines of each comment are not displayed.

- (7) Precautions in using the F920GOT-K
"Occurred date" and "Time" are not available in the F920GOT-K.
If these items are set, a screen error will occur.

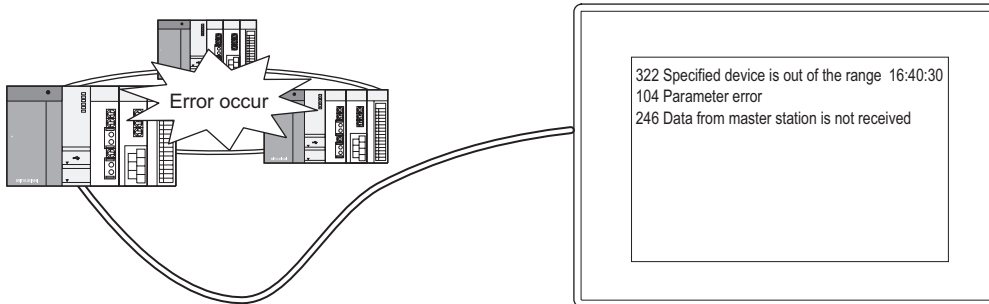


8.2 System Alarm Display



System alarm is a function used to display error codes and error messages when error occurs in the GOT, PLC CPU or the network.

Displaying system alarm allows a user to check how the error occurred and its cause.



Remark

Comments to display

Comments to display in system alarms do not need registration (Registered in GOT).

8.2.1 Before setting system alarm

1 Types of system alarm

System alarm has the following three types:

- 1) GOT error : Displays a GOT error as an alarm
- 2) CPU error : Displays a PLC CPU error as an alarm
- 3) Error detected by communication module : Displays a network error as an alarm
(Only when connected with MELSECNET or CC-Link)

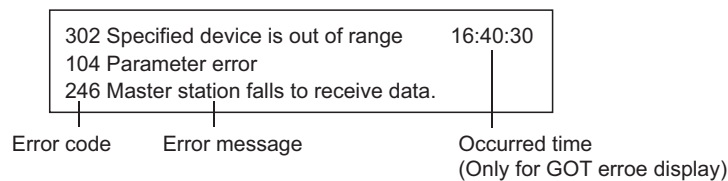
2 Method of collecting data

Even while the screen that does not include system alarm is displayed, data are always collected every 3 seconds and stored into GOT.

3 Displayed information

The error code, error message as well as error time will be displayed in system alarm.

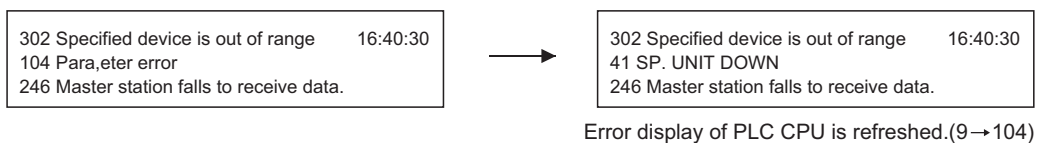
The error code and error message for display are provided by default within GOT. Therefore, they do not need to be created by user.



4 Method of displaying alarm

- (1) Maximum number of alarms can be displayed
Each system alarm is displayed in one line type; up to 3 lines can be displayed.
The alarm display is updated when new alarm is detected.

Example: When new alarm (Parameter error) is detected by PLC CPU



- (2) Display priority
When the display range is lower than 2 lines, alarms will be displayed in the following order.
 - 1) GOT error
 - 2) CPU error
 - 3) Error detected by communication module

When the number of alarm occurrence exceeds the display range, the lower priority alarms will not be displayed.

The error code, error message and error time beyond a single line will not be displayed.

5 Factors for each alarm type and corrective actions for error codes

Alarm type	Factors	How to read error code	Reference manual												
Alarm detected by GOT	GOT communication error, hardware error	Not corrective action is required (It is required to calculate error code and read it again)	A985GOT/A975GOT/A970GOT/A960GOT Users Manual A950GOT/A951GOT/A953GOT/A956GOT Users Manual												
Alarm detected by PLC CPU *1	The error code is stored to D9008 of connection destination CPU (ACPU)	Not corrective action is required (It is required to calculate error code and read it again)	ACPU Users Manual (Refer to the items of explanation for special link relay)												
	The error code is stored to FXCPU	The special relay No. of FXCPU are as follows. <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;"><u>Error code</u></td> <td style="text-align: center;">→</td> <td style="text-align: center;"><u>Special relay No.</u></td> </tr> <tr> <td style="text-align: center;">100</td> <td></td> <td style="text-align: center;">M8060</td> </tr> <tr> <td style="text-align: center;">:</td> <td></td> <td style="text-align: center;">:</td> </tr> <tr> <td style="text-align: center;">100</td> <td></td> <td style="text-align: center;">M8069</td> </tr> </table> Example: When error code is 100 Carry out the corrective action referring to the explanation of M8060.	<u>Error code</u>	→	<u>Special relay No.</u>	100		M8060	:		:	100		M8069	FXCPU Programming Manual
	<u>Error code</u>	→	<u>Special relay No.</u>												
	100		M8060												
:		:													
100		M8069													
The error code is stored to the CPU manufactured by other company	Refer to the error message to specify the error factors. (ignore the error code.)	PLC CPU manual (other company product)													
The error code is stored to the SD0 of connection destination CPU (QnACPU and QCPU)	Not corrective action is required (It is not required to calculate error code and read it again.)	QnACPU, QCPU Users Manual													
Alarm detected by communication module	Data link special relay (M9200 to M9299) is ON	Execute the following calculation. Error code + 9000 = Referred relay No. for use of link Example: When error code is 210 $210 + 9000 = 9210$ Carry out the corrective action referring to the explanation of M9210.	Type MELSECNET/B, MELSECNET(II) Data Link System Reference Manual (Refer to the items of explanation for special link relay)												
	Network link special relay SB is ON	Execute the following calculation. Error code - 500 = Referred relay No. for use of link (Replace DEC number with hexadecimal number) Example: When the error code is 510 $510 - 500 = 10$ "000AH" Carry out the corrective action referring to the explanation of SB000A.	Type MELSECNET/10 Network System Reference Manual (Refer to the items of explanation for special link relay)												
	CC-Link special relay SB is ON	Execute the following calculation. Error code - 800 = Referred relay No. for use of link (Replace DEC number with hexadecimal number) Example: When the error code is 910 $910 - 800 = 110$ "006EH" Carry out the corrective action referring to the explanation of SB0006E.	CC-Link System Master/Local Module User's Manual (Refer to the items of explanation or special link relay)												

For details of *1, refer to the following.

*1 Alarm detection target for network connection and multi-CPU system connection

(1) For network connection

For network connection, following alarms detected by PLC CPU will be displayed in system alarm.


Connection type		Alarm detection target
Bus connection		PLC CPU of the connection destination
CPU direct connection		
Computer link connection		
MELSECNET connection	MELSECNET/B (II)	Master station
	MELSECNET/10	Control station of host network
CC-Link connection		Master station
Ethernet connection		PLC CPU set as host by GT Designer2

(2) For multi-CPU system connection

For multi-CPU system connection, following alarms detected by PLC CPU will be displayed in system alarm.

Connection type		Alarm detection target
Bus connection		PLC CPU that controls GOT
CPU direct connection		PLC CPU that is connected with GOT
Computer link connection		PLC CPU that controls the computer link module connected with GOT
MELSECNET connection		PLC CPU that controls the network module connected with GOT
CC-Link connection		PLC CPU that controls the CC-Link module connected with GOT
Ethernet connection		PLC CPU that controls the Ethernet module set as host by GT Designer2

8.2.2 Placement and settings

- 1 Carry out either of the following operations.
 - Click on  (System Alarm).
 - Select [Object] → [Alarm List] → [System Alarm] from the menu.
- 2 Click on the position where System Alarm to be located to complete the arrangement.
- 3 Double click on the arranged system alarm to display the setting dialog box.
For the setting method, refer to the explanation on the next page.

Point

Display field adjusting method

To prevent an alarm message from being truncated on display, adjust the display field as follows.

If the GOT screen size is smaller than the value described below, adjust the font size.

302 Specified device is out of range	16:40:30	} Set in 3 rows. (Use 48 dots as vertical size in 3 rows when text size is 1 × 1 times.)
104 Parameter error		
246 Master station fails to receive data.		

Error message (maximum 52 digits) Occurrence time (fixed to 8 digits)
Display with 480 dots when text size is 1 × 1 times.
Increase the size to display the occurrence time at the right end.

Hint!

Easier setting method


Using the property sheet enables direct on-screen object setting.

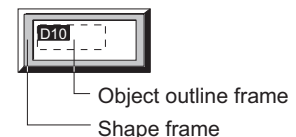
 GT Designer2 Version □ Operating Manual

Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

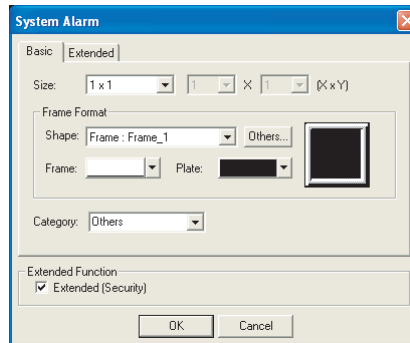
 Section 5.3.3 Object size change



8.2.3 Setting items

1 Basic tab

Set the display format (shape/text size) of system alarm



Basic

Extended

Item		Description	A	F
Size		Select the text size (0.5 to 8) of the error message to be displayed	○	×
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (Section 5.3.2 Object shape setting)	○	×
	Frame	Select the shape, i.e., frame/plate color.	○	×
	Plate	— Shape — Plate	○	×
Category		When allocating category to the object, select a proper category. (GT Designer2 Version□ Operating Manual)	○	×

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY
OPERATION FOR
OBJECT SETTING

5

COMMON SETTINGS
FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/
CHARACTER DISPLAY

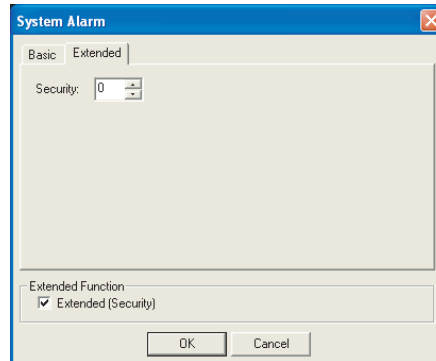
8


ALARM

2 Extended tab

Set the security.

Check "Extended" at the bottom of this dialog box to display this tab.



Item	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". ( Section 5.8 Security Function)	<input type="radio"/>	<input checked="" type="checkbox"/>

8.2.4 Precaution

This section describes precautions for using system alarm.

1 Precautions for drawing

- (1) Maximum number of system alarm that can be set in one screen
 - GOT-A900 series: 1
- (2) When using QCPU in connection with MELSECNET/10 (A7GT-J71LP23/A7GT-J71BR13 only)
 - (a) Setting of GX Developer

Make sure to check [Use Special Relay/Special Register Later Than SM1000, SD1000] of [A Series CPU Exchange Setting] in [PC System Setting] of [PC Parameter Setting] of GX Developer.

When this item is not checked, the error detected by communication module and PLC CPU will not be displayed in system alarm.
 - (b) Use Q00JCPU, Q00CPU, Q01CPU

When using Q00JCPU, Q00CPU and Q01CPU, the error detected by communication module and PLC CPU will not be displayed in system alarm.

(The above [Use Special Relay/Special Register Later Than SM1000, SD1000] of GX Developer cannot be checked in Q00JCPU, Q00CPU and Q01CPU.)

2 Precautions for use

- (1) When using SIEMENS PLC CPU

Alarms detected by PLC CPU are not displayed.
- (2) Deletion of system alarms on GOT

Even if the alarm factors are cleared, message of the alarm detected by GOT will remain in system alarm.

To clear the message, make sure to turn the following bit device of system information function ON.


 - GOT error reset message (system signal1.b13)

 Section 3.5 System Information Setting

- (3) Display of occurrence time

The date and time may not be displayed due to the connection type and PLC CPU of the connection destination.

(GOT-F900 series uses the clock function built-in GOT)

 Section 2.4 Clock Function

- (4) Text and plate color

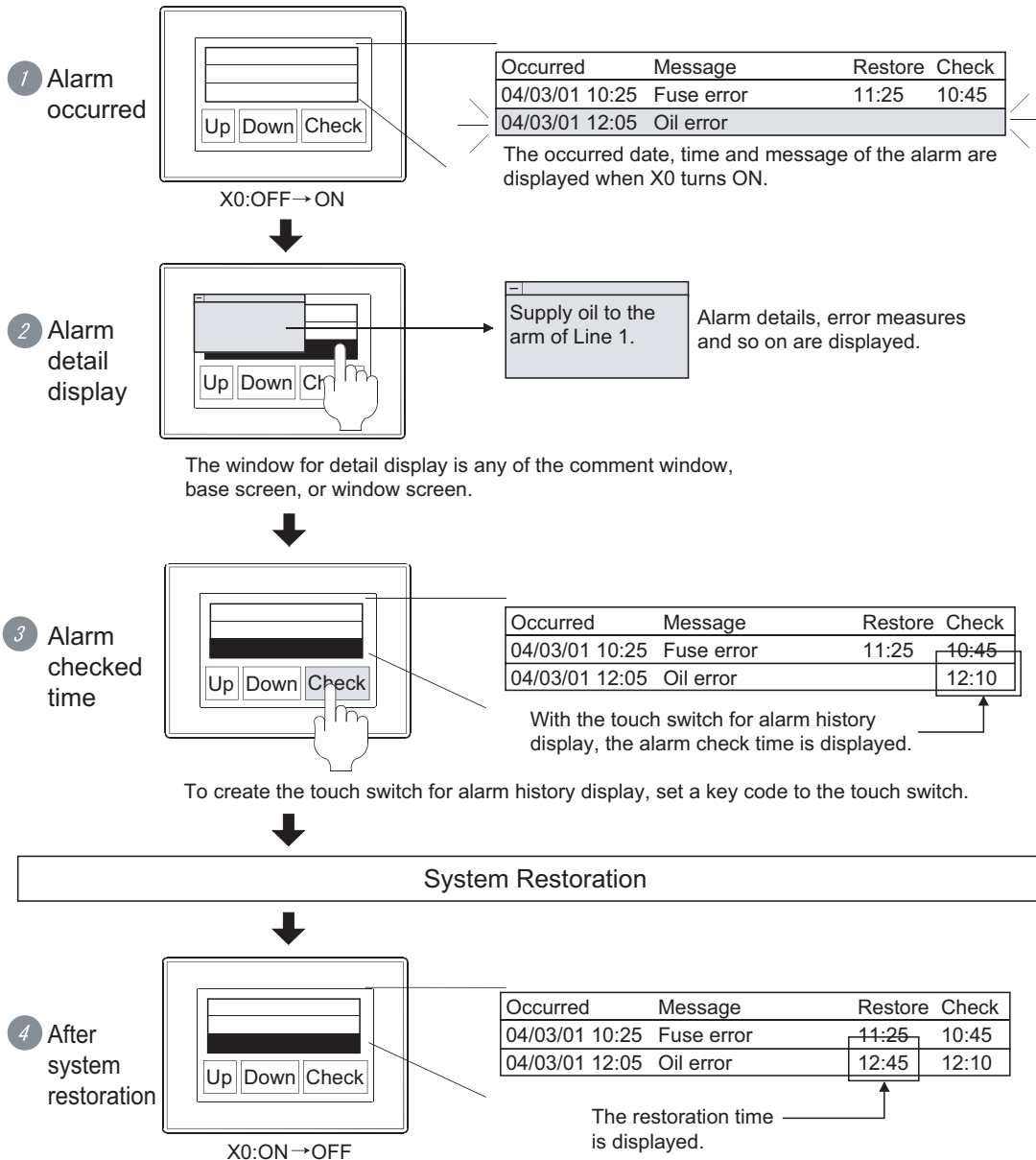
As the text color for system alarm is fixed to white, set the plate color to non-white.



8.3 Alarm History Display



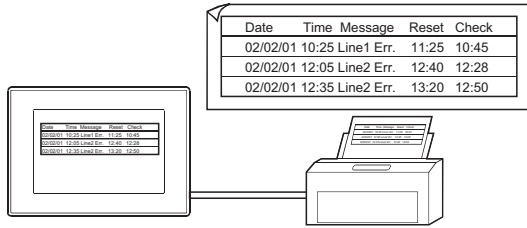
The times and comments of the alarms occurred are stored in the GOT incorporated memory and displayed as a history list when conditions of the device specified for alarm detection are met (Bit OFF to ON/word device range).



Examples

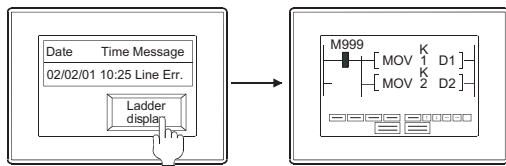
Print out (GOT-A900 series only)

☞ Make setting on Print (Common) tab (GOT-A900 series only)

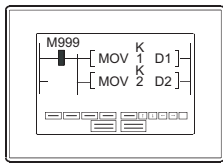


Start ladder monitor function from alarm history display (GOT-A900 series only)

☞ Make setting with Touch Switch (Section 6.2.4)



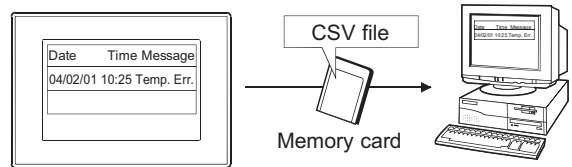
Ladder monitor function is displayed by touch switch



Ladder status of device displayed as alarm history is monitored

Display alarm data on PC

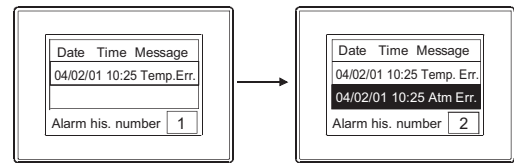
☞ Make setting on Option (Common) tab



The alarm historical data saved to memory card in CSV file format are read by spreadsheet software.

Display number of alarm that have been historical

☞ Make setting on Option (Common) tab



The number of all alarms historical is displayed in alarm history

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/ CHARACTER DISPLAY

8

ALARM

8.3.1 Before setting alarm history display

This section explains functions applicable to the alarm history display.

1 Alarm collection mode

Select either of the two collection modes, historical mode or cumulative mode.

When an alarm occurs, the following information can be collected and displayed.

Occurred	Message	Restore	Check	Cumulate	Count
04/06/01 20:00	Temp. error	-	-	-	1
04/06/01 18:30	Light error	-	18:50	-	2
04/06/01 16:10	Oil error	16:30	16:20	00:20	2

1)
2)
3)
4)
5)
6)

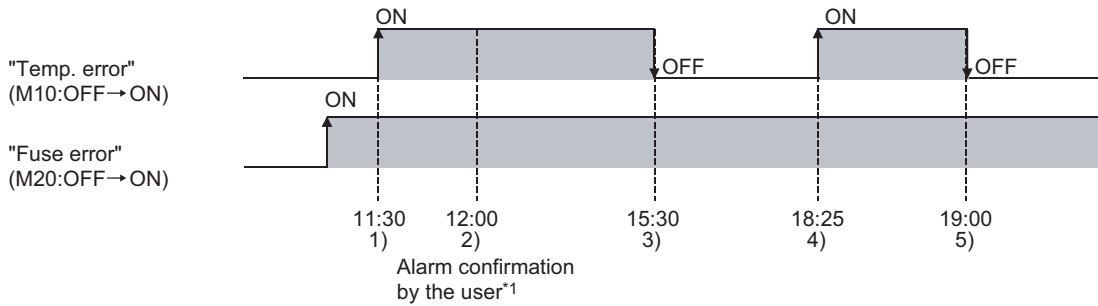
(In the example above, 3), 4), and 5) indicate time only.)

Info displayed	Description	
	Historical mode	Cumulative mode
1) Occurrence	Displays the date and time of the alarm occurrence.	
2) Message	When an alarm occurs, displays the comment assigned to the alarm.	
3) Restore	Displays the date and time of restoration.	
4) Check	Displays the date and time on which alarm occurrence was confirmed. Alarm occurrence is confirmed with the touch switch for alarm confirmation. (☞ Section 8.3.4 Description on touch switches for alarm history display) <div style="text-align: center; margin-top: 10px;"> </div>	
5) Cumulative time	—	Displays the total amount of time for which alarms were generated in the past. <div style="text-align: center;"> $\text{Cumulative time} = t1 + t2 + t3$ </div>
6) Count	—	Displays the number of times of alarm occurrence.

Example: Examples of alarm display

This section shows examples of alarm history display for each collection mode.

(Timing of alarm occurrence)



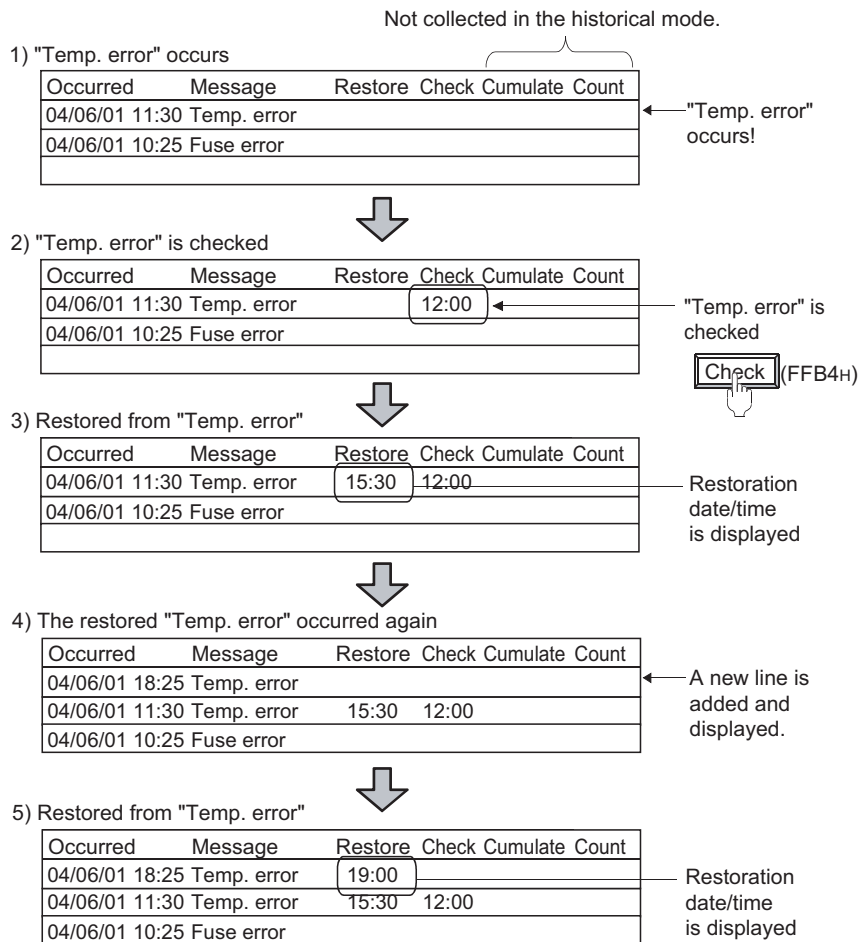
*1 Alarms are confirmed with the touch switch for confirmation.

(☞ Section 8.3.3 Setting items)

(1) Historical mode

The information on alarm occurrence status are collected as history.

Status is added to the history every time an alarm occurs.



(2) Cumulative mode

The information on the latest alarm status, the number of alarms that have occurred and the cumulative alarm occurrence time are collected for each alarm type.

1) "Temp. error" occurs

Occurred	Message	Restore	Check	Cumulate	Count
04/06/01 11:30	Temp. error		00:00	00:00	1
04/06/01 10:25	Temp. error		00:00	00:00	1

← "Temp. error" occurs!



2) "Temp. error" checked

Occurred	Message	Restore	Check	Cumulate	Count
04/06/01 11:30	Temp. error		12:00	00:00	1
04/06/01 10:25	Fuse error		00:00	00:00	1

← "Temp. error" is checked



3) Restored from "Temp. error"

Occurred	Message	Restore	Check	Cumulate	Count
04/06/01 11:30	Temp. error	15:30	12:00	04:00	1
04/06/01 10:25	Fuse error				

← Restoration time and cumulative time are displayed.



4) "Temp. error" occurred again

Occurred	Message	Restore	Check	Cumulate	Count
04/06/01 18:25	Temp. error			04:00	2
04/06/01 10:25	Fuse error				

← The occurrence time when the alarm occurred again is displayed on the same line of the alarm frequency is increased by one.



5) Restored from "Temp. error"

Occurred	Message	Restore	Check	Cumulate	Count
04/06/01 18:25	Temp. error		19:00	04:35	2
04/06/01 10:25	Fuse error				

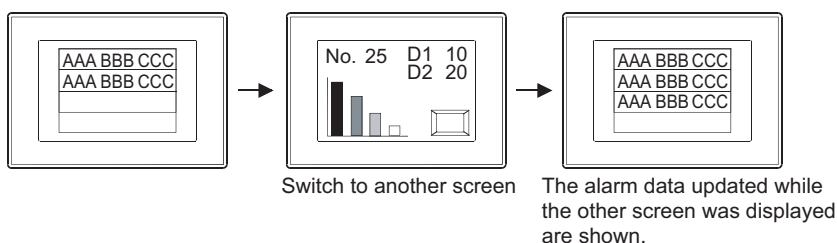
← Restoration time is displayed. The time during which the alarm has been generated is added to the cumulative time.

2 Collecting and holding alarm data

(1) Collecting alarm data

The GOT collects alarm data at any time and saves the data in the GOT internal memory.

Alarm data are constantly collected and updated even while the monitor screen not including alarm history display is displayed.



(2) Deleting alarm data


Alarm data are deleted at the following timing.

(a) Power-off or reset of the GOT

(b) Following setting of Utility

- Setup
- Message change (Japanese/English) using the system message switch button

- (c) Project data download/upload, OS installation, drive information delete and drive format, or acquisition of built-in memory information.
- (d) Clear trigger device
Turning on the device specified at "History Clear" (on the Option (Common) tab) deletes all the alarms in the restored status.
- (e) Key operations of the switches for alarm history display (touch switches)
Alarms in the restored status can be deleted using the following touch switches.
 - (FFB6H): Delete the alarms in the restored status one by one.
 - (FFB7H): Delete all the alarms in the restored status.

 Section 8.3.4 Description on touch switches for alarm history display

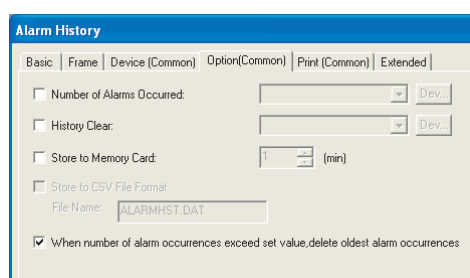
- (f) When the number of alarms occurred has exceeded the upper limit (when the collection mode is "Historical")

In the case where "When number of alarm occurrences exceeds set value, delete oldest alarm occurrences" was check-marked on the Option (common) tab, if the number of alarms occurred has exceeded the upper limit, the older alarms are deleted from the oldest one.

[Upper limit in total number of alarms occurred]

- When the number of monitor devices is 1024 or less :
Alarm historical data can be displayed up to 1024
- When the number of monitor devices is 1025 or more :
Alarm historical data as many as the monitor device points can be displayed.

[Operation setting for the case where the maximum number of alarms is exceeded]



Alarm History dialog box (Option (Common) tab))

- (3) Holding alarm data under power failure
 - In the case of GOT-A900 series
Alarm data can be held even if the GOT is powered off by saving them to the memory card.
 - In the case of GOT-F900 series
Alarm historical data can be saved in the built-in RAM memory and held in the built-in RAM battery.
For F920GOT-K, E²PROM memory is used.

3 Detail display

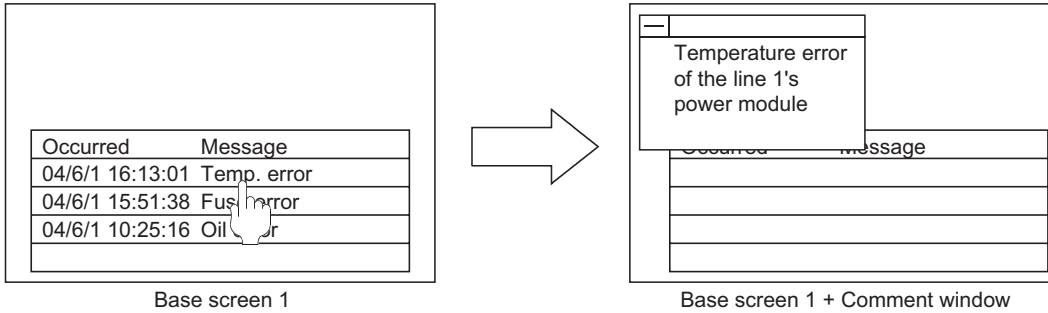
(1) Usable screens (☞ Set in device tab)

To display alarm causes and corrective actions in details, any of the following 3 screen types can be selected.

(a) Comment window

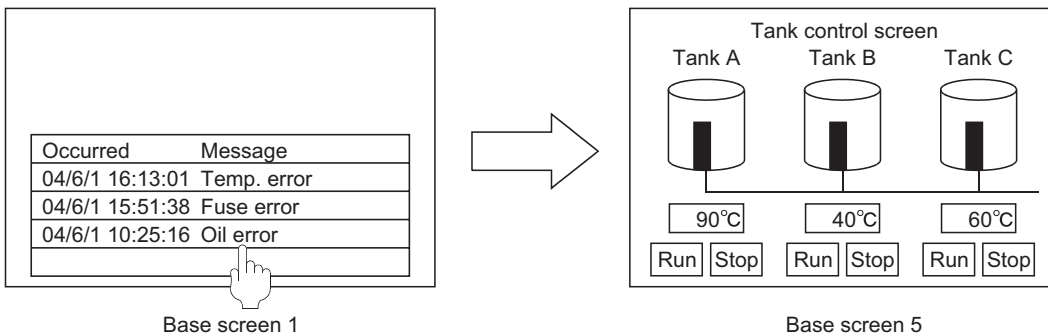
Comment registered by the user are displayed on the comment window.

More detailed comment such as details and corrective actions can be displayed on the comment window.



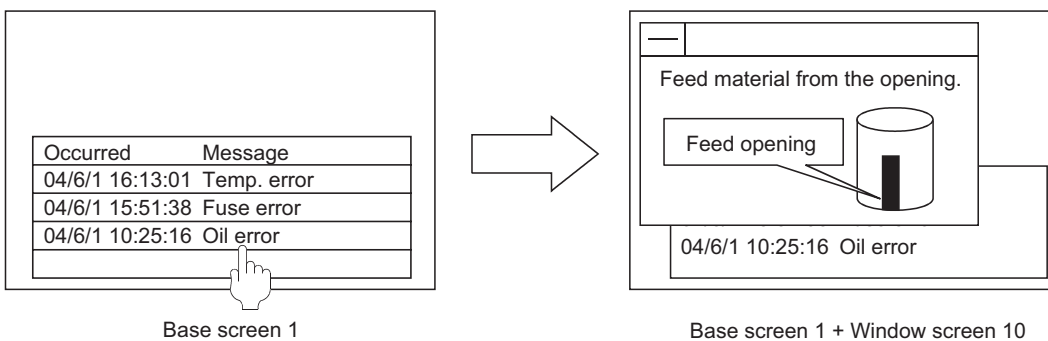
(b) Base screen

The specified base screen is displayed.



(c) Window screen (GOT-A900 series only)

The specified window screen (overlap window 1) is displayed.

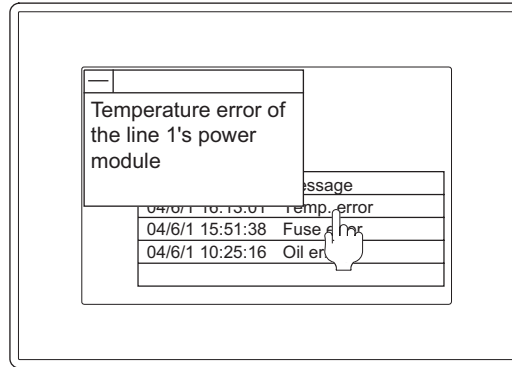


(2) Display method

Select either of the following 2 methods for detail display.

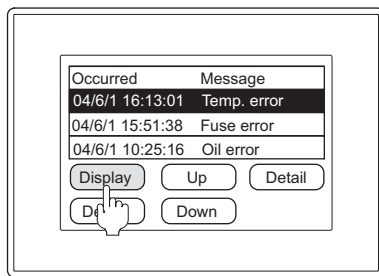
(a) One touch (☞ Set in basic tab)

Display the detail display by touching the alarm history display item directly.

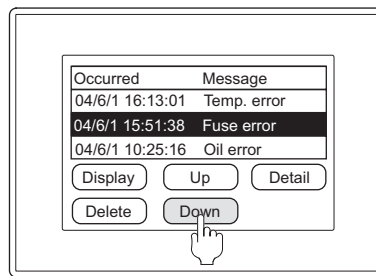


(b) Touch switch (☞ Section 8.3.4 Description on touch switches for alarm history display)

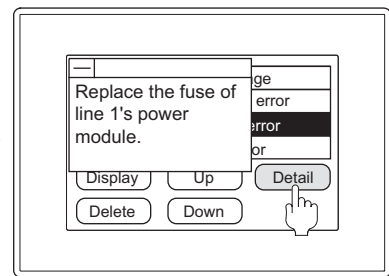
Create a touch switch for alarm history to display the detailed data.



Display the cursor




Move the cursor (using Up or Down) to the target alarm.



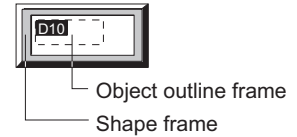
Make the details displayed


8.3.2 Placement and setting

- 1 Carry out either of the following operations.
 - Select [Object] → [Alarm History] from the menu
 - Click  (Alarm History)
- 2 Click on the desired position completes the arrangement of the alarm history display.

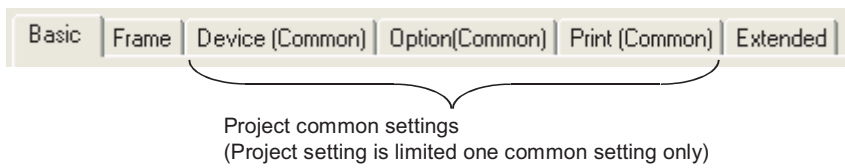
Remark

Method of adjusting objects in which figure frame is set
Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

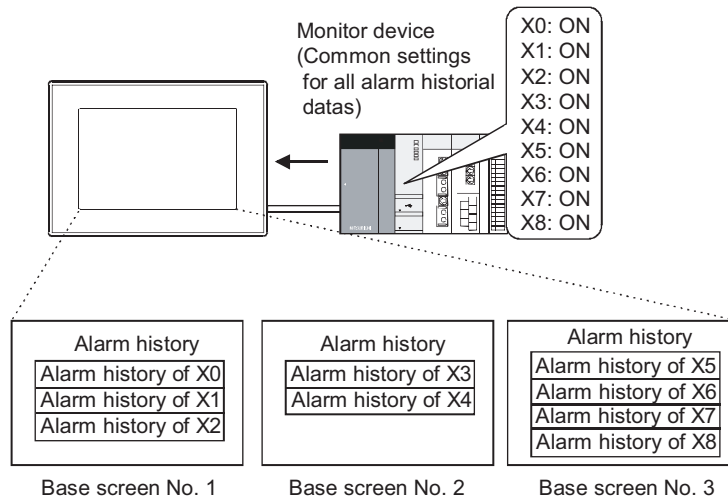


 Section 5.3.3 Object size change

- 3 Double click on the arranged alarm history display, and make setting in the displayed dialog box with reference to the following explanation.
The settings whose tab names are marked with (Common) in the dialog box are common settings in project.



As shown in the following example, although monitor devices are set in the same way for all alarm history displays, different display formats (number of display rows/alarm frame color) can be set for each display.



Different settings for the number of row and frame color are available for each alarm history.



Easier setting method

Using the property sheet enables direct on-screen object setting.

 GT Designer2 Version □ Operating Manual




Common settings of alarm history

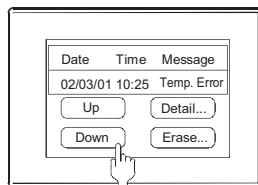
The common settings of alarm history can be set as follows.

- Select [Common] → [Alarm History] from the menu.
- Select [Project] → [Common Settings] → [Alarm History] from project workspace

4 Setting touch switches for alarm history

Set the touch switches that are used for alarm history display such as cursor display, movement, detailed alarm display.

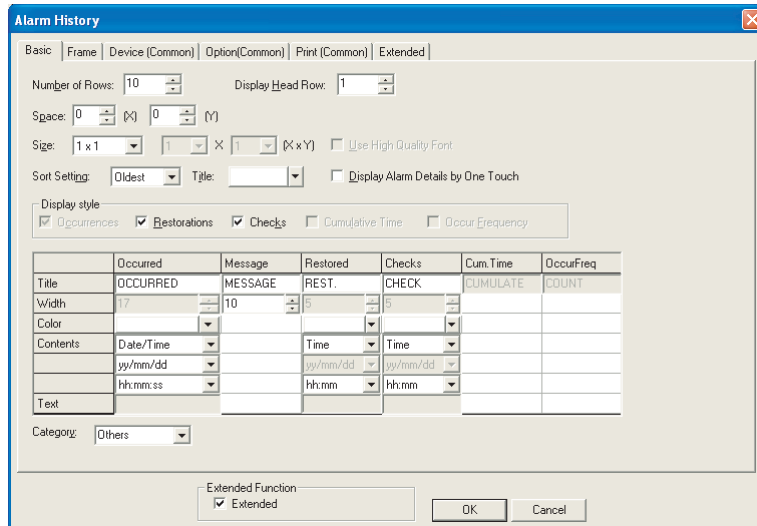
 Section 8.3.4 Description on touch switches for alarm history display



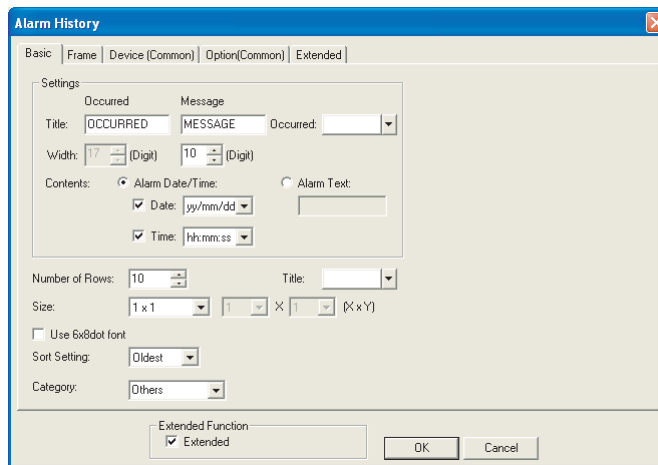
8.3.3 Setting items

1 Basic tab

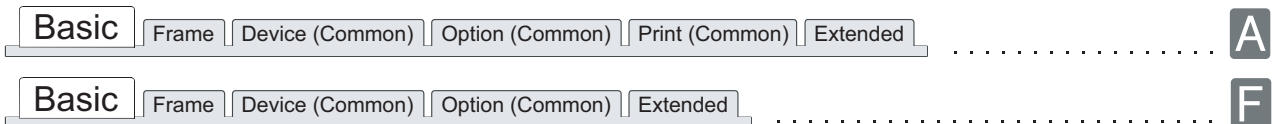
Set the display details (e.g. style, format, order of the display.)



In case of GOT-A900 Series



In case of GOT-F900 Series



Item	Description	A	F
Title	Input the title names of view items individually.	×	○
Occurred	Select the text color of date, time and message in alarm display rows (display rows).	×	○

(Continued to the next page)

Basic

Frame

Device (Common)

Option (Common)

Print (Common)

Extended

A

Basic

Frame

Device (Common)

Option (Common)

Extended

F

Item	Description	A	F																									
Contents	Alarm Date/Time	Input the title names of view items individually.	× ○																									
	Date	Select the text color of date, time and message in alarm display rows (display rows).	× ○																									
	Time	Select the format or text for alarm date/time display so that it will be displayed in "Occurred" when an alarm occurs.	× ○																									
	Alarm Text	When displaying the date, check this item and select the format.	× ○																									
Number of Rows	<p>Set the number of rows displayed for each screen. (Up to 27 rows) Example: When this is set to 3</p> <table border="1"> <thead> <tr> <th>Occurred date</th> <th>Time</th> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>04/11/05</td> <td>10:25</td> <td>Temp. error</td> <td>11:25</td> <td>10:45</td> </tr> <tr> <td>04/11/05</td> <td>12:05</td> <td>Oil error</td> <td>12:25</td> <td>12:28</td> </tr> <tr> <td>04/11/06</td> <td>08:30</td> <td>Fuse error</td> <td>09:45</td> <td>09:40</td> </tr> </tbody> </table> <p>Display rows (not including the title line)</p>	Occurred date	Time	Message	Restore	Check	04/11/05	10:25	Temp. error	11:25	10:45	04/11/05	12:05	Oil error	12:25	12:28	04/11/06	08:30	Fuse error	09:45	09:40	○	○					
Occurred date	Time	Message	Restore	Check																								
04/11/05	10:25	Temp. error	11:25	10:45																								
04/11/05	12:05	Oil error	12:25	12:28																								
04/11/06	08:30	Fuse error	09:45	09:40																								
Display Head Row *1	<p>When triggers of more than one specified device are satisfied, set from which alarm data are to be displayed in order of alarm occurrence. (1 to 1024) When alarms have occurred less frequently than set in "Display Head Row", the lines later than the last alarm log appear blank. Example: When this is set to 4</p> <table border="1"> <thead> <tr> <th>Occurred date</th> <th>Time</th> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>04/11/05</td> <td>10:25</td> <td>M3 No</td> <td>11:25</td> <td>10:45</td> </tr> <tr> <td>04/11/05</td> <td>12:05</td> <td>M3 No</td> <td>12:25</td> <td>12:28</td> </tr> <tr> <td colspan="5">-----</td> </tr> <tr> <td colspan="5">Alarm No.4 and later are displayed</td> </tr> </tbody> </table> <p>Alarm occurred items 1) M0 ON 2) M0 ON 3) M0 ON 4) M0 ON 5) M0 ON ...</p> <p>Alarm occurred order</p>	Occurred date	Time	Message	Restore	Check	04/11/05	10:25	M3 No	11:25	10:45	04/11/05	12:05	M3 No	12:25	12:28	-----					Alarm No.4 and later are displayed					○	×
Occurred date	Time	Message	Restore	Check																								
04/11/05	10:25	M3 No	11:25	10:45																								
04/11/05	12:05	M3 No	12:25	12:28																								

Alarm No.4 and later are displayed																												
Space	<p>Set how much space is kept between the ruled line of the table and the characters such as time display.</p> <p>X : 0 to 32 dots (Available in 1-dot units) Y : 0 to 32 dots (Available in 8-dot units)</p> <p>According to the setting of "Size" (magnification of character size), the actual horizontal space is as follows: "Magnification of character size × set value in Space" (Example) When "Size" is set to 2 and "Space" to 8, space of 16 dots is ensured.</p>	○	×																									
Size	<p>Select a size of the character displayed on the alarm history display (magnification of horizontal size (X) × vertical size (Y)). When X × Y is 1 × 1, the character size is 8 × 16 dots (X × Y).</p> <p>GOT-A900 series GOT-F900 series</p> <p> 1 to 8 times 0.5 to 4 times</p> <p>1 to 8 times 1 to 8 times</p>	○	○																									
Use 6 × 8 dot font	Font is displayed in size of 6 × 8 dots. (Characters only)	×	○																									
Use High Quality Font	<p>Check the checkbox when displaying characters in the high-quality font. (Only when the character size is set to 2 × 2, 4 × 4, 6 × 6, or 8 × 8 (horizontal vertical)) To display HQ font characters, set the HQ font in the Comment setting.</p>	○	×																									
Sort Setting	<p>Select the display order of alarm items.</p> <p>Oldest : Displays the alarm data in order of occurrence starting from the oldest data. Latest : Displays the alarm data in order of occurrence starting from the latest data.</p>	○	○																									
Title	Select the title color.	○	×																									

(Continued to the next page)

Basic

Frame

Device (Common)

Option (Common)

Print (Common)

Extended

A

Basic

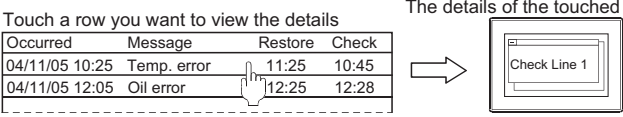
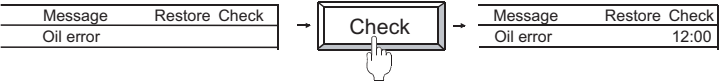
Frame

Device (Common)

Option (Common)

Extended

F

Item	Description	A	F																							
Display Alarm Details by One Touch	<p>Check this item to display the detailed display screen by touching any row of the alarm history.</p> <p>Touch a row you want to view the details  The details of the touched row are displayed.</p> <table border="1"> <thead> <tr> <th>Occurred</th> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>04/11/05 10:25</td> <td>Temp. error</td> <td>11:25</td> <td>10:45</td> </tr> <tr> <td>04/11/05 12:05</td> <td>Oil error</td> <td>12:25</td> <td>12:28</td> </tr> </tbody> </table>	Occurred	Message	Restore	Check	04/11/05 10:25	Temp. error	11:25	10:45	04/11/05 12:05	Oil error	12:25	12:28	<input type="radio"/>	<input checked="" type="checkbox"/>											
Occurred	Message	Restore	Check																							
04/11/05 10:25	Temp. error	11:25	10:45																							
04/11/05 12:05	Oil error	12:25	12:28																							
Display style	<p>Check the items to be displayed on the alarm history display.</p> <table border="1"> <thead> <tr> <th>Occurrences</th> <th>Restorations</th> <th>Checks</th> <th>Cumulative Time</th> <th>Occur. Frequency</th> </tr> <tr> <th>Occurred</th> <th>Message</th> <th>Restore</th> <th>Check</th> <th>Cumulate</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>02/11/05 10:25</td> <td>Conveyer 1 error</td> <td>11:25</td> <td>10:45</td> <td>01:00</td> <td>1</td> </tr> <tr> <td>02/11/05 12:05</td> <td>Conveyer 2 error</td> <td>12:25</td> <td>12:28</td> <td>00:20</td> <td>5</td> </tr> </tbody> </table>	Occurrences	Restorations	Checks	Cumulative Time	Occur. Frequency	Occurred	Message	Restore	Check	Cumulate	Count	02/11/05 10:25	Conveyer 1 error	11:25	10:45	01:00	1	02/11/05 12:05	Conveyer 2 error	12:25	12:28	00:20	5	<input type="radio"/>	<input checked="" type="checkbox"/>
Occurrences	Restorations	Checks	Cumulative Time	Occur. Frequency																						
Occurred	Message	Restore	Check	Cumulate	Count																					
02/11/05 10:25	Conveyer 1 error	11:25	10:45	01:00	1																					
02/11/05 12:05	Conveyer 2 error	12:25	12:28	00:20	5																					
Occurrences	The date and time of the alarm occurred and the comment associated with the alarm are displayed. (This item is always check-marked.)	<input type="radio"/>	<input checked="" type="checkbox"/>																							
Restorations	Check the checkbox when displaying the date and time of restoration from an alarm (when the specified device condition is changed from "met" to "not met").	<input type="radio"/>	<input checked="" type="checkbox"/>																							
Checks	<p>Check the checkbox to display the time at which alarm occurrence was confirmed.</p> <p>The time at which the Check switch was touched after alarm occurrence is displayed.</p> <p> Section 8.3.4 Description on touch switches for alarm history display)</p> <table border="1"> <thead> <tr> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>Oil error</td> <td></td> <td></td> </tr> </tbody> </table> <p>→ <input checked="" type="checkbox"/> Check →</p> <table border="1"> <thead> <tr> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>Oil error</td> <td></td> <td>12:00</td> </tr> </tbody> </table>	Message	Restore	Check	Oil error			Message	Restore	Check	Oil error		12:00	<input type="radio"/>	<input checked="" type="checkbox"/>											
Message	Restore	Check																								
Oil error																										
Message	Restore	Check																								
Oil error		12:00																								
Cumulative Time	<p>Check the checkbox when displaying the time that elapsed from alarm occurrence until restoration in minutes.</p> <p>To set this item, select "Cumulative" in "Mode" on the Device (Common) tab.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>																							
Occur Frequency	<p>Check the checkbox when displaying how many times alarms were generated.</p> <p>To set this item, select "Cumulative" in "Mode" on the Device (Common) tab.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>																							
View Format	Set the view format of the items set in [Display style].	<input type="radio"/>	<input checked="" type="checkbox"/>																							
Title	Input the title name for each view item.	<input type="radio"/>	<input checked="" type="checkbox"/>																							
Width	<p>Set the number of digits (column width) for each item.</p> <p>Example: When message width is set to 12</p> <table border="1"> <thead> <tr> <th>Occurred</th> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>04/11/05 10:25</td> <td>Oil error</td> <td>11:25</td> <td>10:45</td> </tr> </tbody> </table> <p>Displayed with a width of 12 digits</p> <p>Occurred :Set automatically based on the setting of "Contents" shown below. (A value is set in the range of 1 to 20 if "Content" is "String.")</p> <p>Message :1 to 80 digits</p> <p>Restored/Checks :Set automatically based on the setting of "Contents" shown below. (A value is set in the range of 1 to 20 if the "Contents" is "String.")</p> <p>Cum. Time :Fixed to 8 digits</p> <p>OccurFreq :Fixed to 8 digits</p>	Occurred	Message	Restore	Check	04/11/05 10:25	Oil error	11:25	10:45	<input type="radio"/>	<input checked="" type="checkbox"/>															
Occurred	Message	Restore	Check																							
04/11/05 10:25	Oil error	11:25	10:45																							
Color	Select the title color for each view item.	<input type="radio"/>	<input checked="" type="checkbox"/>																							

(Continued to the next page)

Basic

Frame

Device (Common)

Option (Common)

Print (Common)

Extended

A

Basic


Frame

Device (Common)

Option (Common)

Extended

F

Item	Description	A	F
Contents*2	Select this item to set the view format for date and time of alarm occurrence. Date/Time :Displays data and time. (After selection, select the view format for data and time) Date :Displays date only. (After selection, select the view format for date) Time :Displays time only. (After selection, select the view format for time) String :Displays the specified character string. (After selection, input the character string to the [Text] below.)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Input characters to display the date and time of the alarm occurred (when triggers of specified device are satisfied) as a specified character string. Select [String] in [Contents] to set this item. Maximum 20 characters can be input.	<input type="radio"/>	<input checked="" type="checkbox"/>
Text		<input type="radio"/>	<input checked="" type="checkbox"/>
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version <input type="checkbox"/> Operating Manual)	<input type="radio"/>	<input type="radio"/>

For details of *1, *2, refer to the following.

1

OVERVIEW

2

SPECIFICATIONS

3

COMMON SETTING

4

PREPARATORY OPERATION FOR OBJECT SETTING

5

COMMON SETTINGS FOR OBJECTS

6

LAMP, SWITCH

7

NUMERICAL/ CHARACTER DISPLAY

8

ALARM

*1 Display Head Row

If the number of alarms becomes higher than the numbers set to [Display Head Row] while alarm history is displayed on the GOT, [Display Head Row] setting will not be valid.

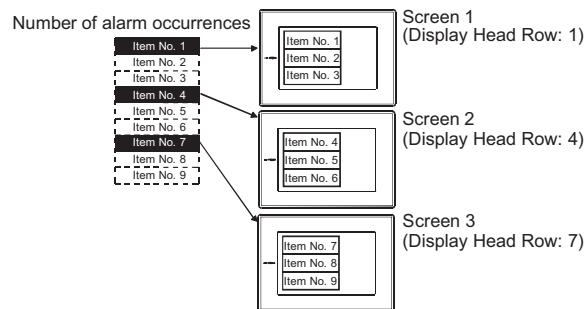
To enable [Display Head Row] setting, switch the screen, and then return the screen to the alarm history display screen.



Hint!

Application example of Display Head Row

If different [Display Head Row] are set on screens, different alarm history display can be displayed for each screen.

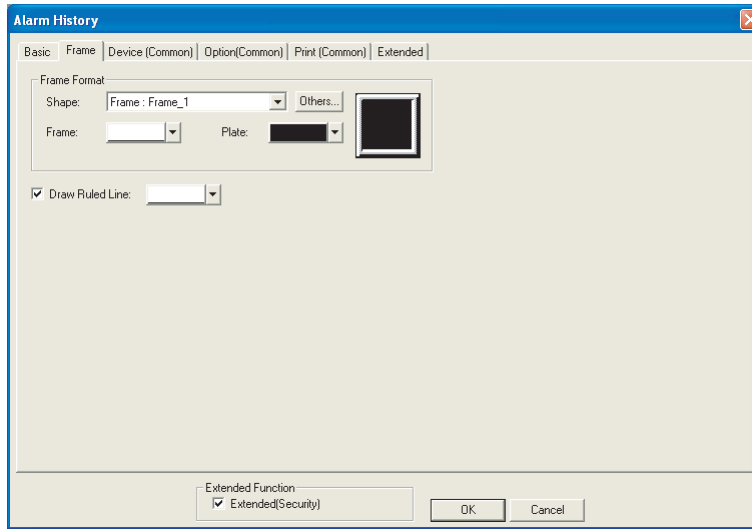


*2 View format of alarm date/time

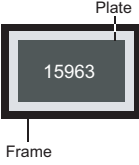
- View format of date
Year is displayed by the last 2 digits of the year.
(Example) Nov. 25, 2004
[yy/mm/dd] : 02/11/25 (8 digits)
[mm/dd/yy] : 11/25/02 (8 digits)
[dd/mm/yy] : 25/11/02 (8 digits)
[mm/dd] : 11/25 (5 digits)
- View format of time
Time is displayed by 24-hour format.
(Example) 9: 50: 48a.m.
[hh: mm: ss] : 09: 50: 48 (8 digits)
[hh: mm] : 09: 50 (5 digits)
- Display format of date/time
A one-digit space is inserted between the date and time.
04/11/25_09:50:48 (17 digits)
└──────────┬──────────
 Space (1 digit)

2 Frame tab

Set the frame, ruled line/ vertical line for alarm history.



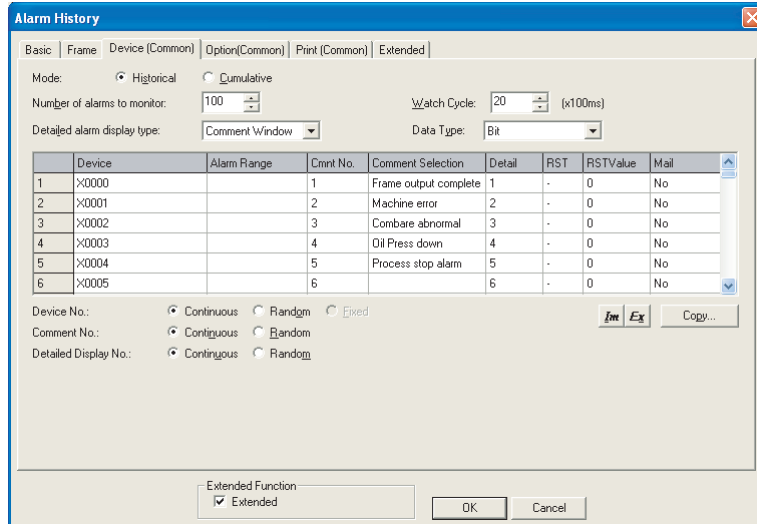
(Example : In the case of GOT-A900 series)

Basic		Frame	Device (Common)	Option (Common)	Print (Common)	Extended	A	F															
Basic		Frame	Device (Common)	Print (Common)	Extended																		
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)					○	○															
	Frame	Select the shape, i.e., frame/plate color. 					○	○															
	Plate						○	○															
Draw Ruled Line		Check this item to draw ruled lines for alarm history. After checking, select a color for the ruled line. <table border="1"> <thead> <tr> <th>Occurred date</th> <th>Time</th> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>04/11/05</td> <td>10:25</td> <td></td> <td>11:25</td> <td>10:45</td> </tr> <tr> <td>04/11/05</td> <td>10:25</td> <td></td> <td>11:25</td> <td>10:45</td> </tr> </tbody> </table>					Occurred date	Time	Message	Restore	Check	04/11/05	10:25		11:25	10:45	04/11/05	10:25		11:25	10:45	○	×
Occurred date	Time	Message	Restore	Check																			
04/11/05	10:25		11:25	10:45																			
04/11/05	10:25		11:25	10:45																			

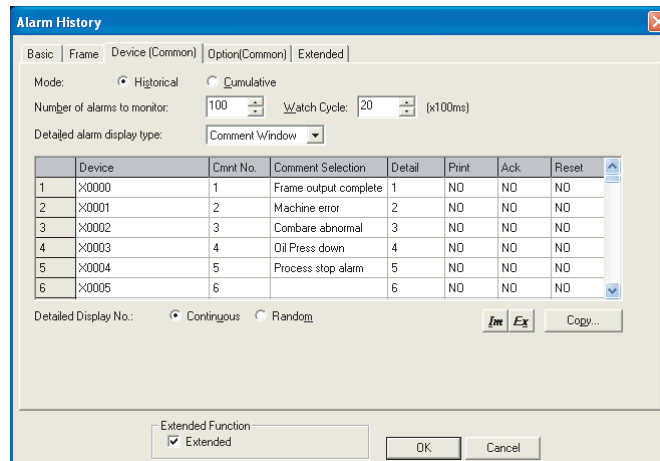
3 Device (Common) tab

Set the collecting method of alarm data and the device.


The setting on this tab is reflected for display of all the alarm historical data.



In case of GOT-A900 series



In case of GOT-F900 series

Item	Description	A	F
Mode	<p>Select a collection mode of the alarm history display function.</p> <p>Historical :Corrects alarm data as history. If an alarm in the restored status occurs again, the alarm data is collected as a new alarm.</p> <p>Cumulative :The latest alarm status, the cumulative period of time the alarm has been generated, and the cumulative number of times of the alarm occurrences are calculated. If any alarm in the restored status occurs again, the occurrence frequency increases, and the previous alarm information (occurrence date/time, restored time, and checked time) is updated to the latest one.</p> <p>For differences in the collection modes, refer to the following.</p> <p> Section 8.3.1 1 Alarm collection mode</p>	<input type="radio"/>	<input type="radio"/>
Number of alarms to monitor	<p>Set the number of monitor device points.</p> <p>The number of points available for setting varies in types of monitor devices.</p> <p>Bit device/bit specification for word device :1 to 3072 points</p> <p>Word device (16bit) :1 to 1024 points (ON status is recognized according to value case)</p> <p>Word device (32bit) :1 to 512 points (ON status is recognized according to value case)</p>	<input type="radio"/>	<input type="radio"/>
Watch Cycle	<p>Set the cycle in which the GOT monitors the specified devices of the PLC CPU.</p> <p>Cycle can be set from 600ms to 80s in the units of 100ms.</p>	<input type="radio"/>	<input type="radio"/>
Detailed alarm display type	<p>Select a method for displaying alarm details.</p> <p>Set the comment No./base screen No. and window screen No. in "Detail" field of the monitor device list.</p> <p>No Display :No details are displayed.</p> <p>Comment Window^{*1} :Created comments are displayed on the window screen for alarm history.</p> <p>Base Screen :The detailed information is displayed on the base screen.</p> <p>Window Screen :Displays the window screen on overlap window 1. (GOT-A900 series only)</p>	<input type="radio"/>	<input type="radio"/>
Data Type	<p>Select a data type of the device monitored.</p> <p>Bit :Select this when monitoring a bit device by the ON/OFF change.</p> <p>Bit Of Word :Select this when monitoring a word device by ON/OFF of specified bits.</p> <p>Signed BIN16 :The word device value is handled as a signed 16-bit binary.</p> <p>Unsigned BIN16 :The word device value is handled as an unsigned 16-bit binary.</p> <p>Signed BIN32 :The word device value is handled as a signed 32-bit binary.</p> <p>Unsigned BIN32 :The word device value is handled as an unsigned 32-bit binary.</p> <p>BCD16 :The word device value is handled as a 16-bit BCD (binary-coded decimal).</p> <p>BCD32 :The word device value is handled as a 32-bit BCD (binary-coded decimal).</p> <p>Real :The word device value is handled as a floating-point real number.</p> <p>After selecting any of the above, specify the devices monitored in the Device column of the alarm setting list below.</p>	<input type="radio"/>	<input checked="" type="radio"/>

(Continued to the next page)

Item	Description	A	F												
Alarm setting list	Set the devices specified for alarms, conditions for alarm occurrences, and operation when an alarm occurs.	<input type="radio"/>	<input type="radio"/>												
Device	Set the device to be monitored. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>												
Alarm Range*2	When setting a device as a word device, click the <input type="button" value="Exp"/> button to set the range of the word device values for the alarm data display.	<input type="radio"/>	<input checked="" type="radio"/>												
Cmnt. No.	Set a comment No. used for the device specified. <table border="1" style="margin: 5px auto;"> <thead> <tr> <th>Occurred</th> <th>Message</th> <th>Restore</th> <th>Check</th> </tr> </thead> <tbody> <tr> <td>04/11/05 10:25</td> <td>Temp. error</td> <td>11:25</td> <td>10:45</td> </tr> <tr> <td>04/11/05 12:05</td> <td>Oil error</td> <td>12:25</td> <td>12:28</td> </tr> </tbody> </table> <p style="text-align: center;">☞ Set a comment No. of the message to be displayed in this area.</p>	Occurred	Message	Restore	Check	04/11/05 10:25	Temp. error	11:25	10:45	04/11/05 12:05	Oil error	12:25	12:28	<input type="radio"/>	<input type="radio"/>
Occurred	Message	Restore	Check												
04/11/05 10:25	Temp. error	11:25	10:45												
04/11/05 12:05	Oil error	12:25	12:28												
Comment Selection	The comment corresponding to the "Cmnt. No." is displayed. Any comment registered can be selected. If a comment is selected here, the "Cmnt. No." is switched automatically.	<input type="radio"/>	<input type="radio"/>												
Detail	Set the comment No., window screen No., and base screen No. for displaying detailed data when an alarm occurs (when specified device conditions are met).	<input type="radio"/>	<input type="radio"/>												
Print	When an alarm factor turns ON, GOT will print out the alarm occurred data/time and message.	<input checked="" type="radio"/>	<input type="radio"/>												
Ack	Even if an alarm factor changes from ON to OFF, without ACK (acknowledge), it can be displayed as an alarm status on the alarm list screen.	<input checked="" type="radio"/>	<input type="radio"/>												
Reset	If "Yes" is selected, the corresponding alarm is selected in the alarm display. Pressing the reset touch switch resets the alarm device.	<input checked="" type="radio"/>	<input type="radio"/>												
RST	Select whether or not to enable the alarm resetting (turning off or resetting the specified device by the touch switch for resetting). After checking this item, set up a reset value if the device is a word device. (☞ Section 8.3.4 Description on touch switches for alarm history display)	<input type="radio"/>	<input checked="" type="radio"/>												
RSTValue	Set a value written into the word device (reset value) when the GOT is reset by the touch switch for alarm history display.	<input type="radio"/>	<input checked="" type="radio"/>												
Mail	Select a mail-sending mode. No :No mails are sent. Occur :The occurred date/time and comment of the alarm is sent by email when an alarm occurs (when the conditions of the device are met). Restore :The restored date/time and comment of the alarm is sent by email when an alarm is restored (when the conditions of the device are not met). Both :The occurred or restored data/time and comment of the alarm is sent by email when an alarm occurs or an alarm is restored.	<input type="radio"/>	<input checked="" type="radio"/>												
Device No.	Select a device setting method. Continuous :Set devices continuously starting from the device specified. Random :Set devices one by one. Fixed :Set more than one alarm range with the same word device when the word device is set. When "Random" is selected, it is not allowed to set a bit device and the word device bits together as monitoring devices.	<input type="radio"/>	<input checked="" type="radio"/>												
Comment No.	Select how to set the comment No. Continuous :Set comment No. continuously starting from the comment No. specified. Random :Set comment No. one by one.	<input type="radio"/>	<input checked="" type="radio"/>												

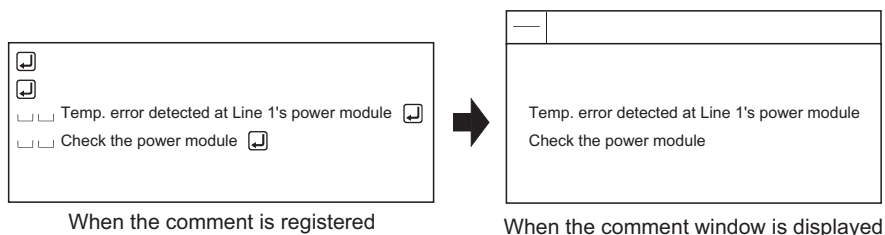
(Continued to the next page)

Item	Description	A	F
Detailed Display No.	Select how to set the comment No. , window screen, or base screen for detail display. Continuous :Set numbers continuously starting from the comment No., window screen No., or base screen No. Random :Set numbers one by one.	<input type="radio"/>	<input type="radio"/>
Copy ^{*3}	When copying the set data to another field, click the <input type="button" value="Copy"/> button.	<input type="radio"/>	<input type="radio"/>
<input type="button" value="Im"/> (Import) ^{*4}	Reads the alarm history setting that was edited in a CSV file into GT Designer2.	<input type="radio"/>	<input type="radio"/>
<input type="button" value="Ex"/> (Export) ^{*4}	Saves the alarm history setting that was set by GT Designer2 in a CSV file.	<input type="radio"/>	<input type="radio"/>

For details of *1 to *4, refer to the following.

*1 Displaying the comment window

- (1) Number of characters available for comment window
 - A960GOT, A97*GOT, A985GOT : 39 characters × 11 lines (429 characters)
 - A95*GOT, A956WGOT : 23 characters × 7 lines (161 characters)
- (2) Comment window is displayed on top-left of base screen
 The operation of moving and closing the window is the same as that of the window screen.
- (3) Comment text is displayed as follows
 - Text size: fixed to 1 × length, 1 × width
 - The setting reverse, blink style are not supported, regardless of the comment registration settings.
- (4) The comment lines are displayed in the comment window as follows.
 - Comments are displayed from top-left to right in the comment window.
 - If the comment exceeds the display range of the comment window, it is continued starting a new line.
 - To place the comment in the center of the comment window, make adjustment using the line feed for the comment.



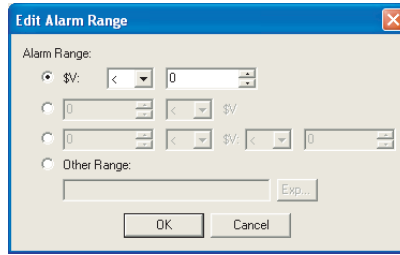
When the comment is registered

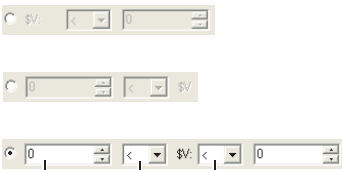
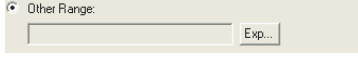
When the comment window is displayed

***2 Alarm range**

Edit Alarm Range dialog box

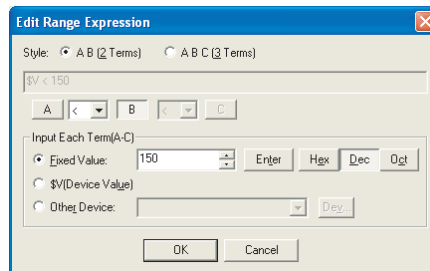
Set a range of word device values for displaying alarms.



Item	Description
Alarm Range	<p>Set a range of word device values for displaying alarms using a conditional expression.</p> <ul style="list-style-type: none"> Select any of the following conditional expressions. Set a conditional expression by a combination of a device value (\$V) and constants.  <p>Constant Device value for alarm display (\$V) Relational operator</p> <ul style="list-style-type: none"> To set an expression other than the above 3 patterns, select "Other Range" and then click the "Exp..." button. <p>When the Edit Range Expression dialog box appears, set any conditional expression. In a conditional expression set by a user, the value of another word device can be set as a condition.</p> 
0 (Constant)	Enter a value in decimal.
< (Relational operator)	<p>Set a relational operator for the conditional expression.</p> <ul style="list-style-type: none"> < : The value of the left term is less than that of the right term == : The value of the left term is equal to that of the right term <= : The value of the left term is equal to or less than that of the right term != : The value of the left term is not equal to that of the right term
\$V	Indicates the value of the device used for alarm display.
Exp... *1	Clicking this displays the edit range expression dialog box.

For details of *1, refer to the following.

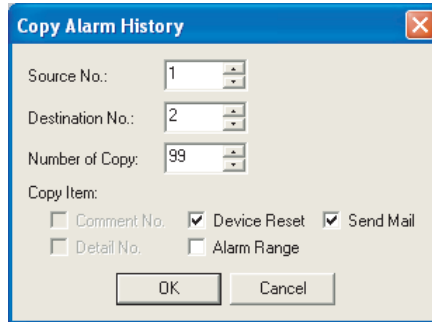
*1 Edit Range Expression dialog box



Item	Description
Style	<p>Select a format of the conditional expression.</p> <p>A B (2 Terms) : Sets a range of the condition using 2 terms.</p> <p>A B C (3 Terms) : Sets a range of the condition using 3 terms.</p>
	By clicking the , , or button, set a constant or variable of the term in "Input Each Term (A-C)."
	<p>Set a relational operator of the conditional expression.</p> <p>< : The value of the left term is less than that of the right term</p> <p>== : The value of the left term is equal to that of the right term</p> <p><= : The value of the left term is equal to or less than that of the right term</p> <p>!= : The value of the left term is not equal to that of the right term</p>
Input Each Term (A-C)	<p>Set each of the terms of the conditional expression.</p> <p>Fixed Value :Set a constant. Select this item, enter a value and click the button. Select the data type of the numerical value by the , , or button.</p> <p>\$V (Device Value) :Set the word device by which an alarm is displayed.</p> <p>Other Device :Set s value of device other than the word device set for alarm display as a term of the conditional expression. Section 5.1 Device Setting)</p>

*3 Copy

This section explains how to copy the set alarm history items to other place.

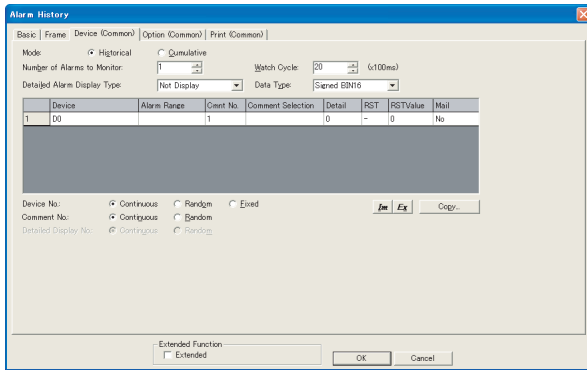


Item	Description	A	F
Source No.	Set the alarm history No. that will be copied.	○	○
Destination No.	Set the alarm history No. that will be a copy destination.	○	○
Number of Copy	Set the number of copies.	○	○
Copy Item	Check the relevant items.	○	○
Comment No.	Copies comment No. of the source.	○	○
Detailed No.	Copies the detailed display No. of the source.	○	○
Device Reset	Copies the device reset settings of the source.	○	○
Alarm Range	Copies the range setting of the source.	○	○
Send Mail	Copies the send mail settings of the source.	○	×

*4 Import/Export

The exported CSV file can be edited using such as the spreadsheet software. The CSV file, after editing, can be imported to and opened by GT Designer2.

Example: Importing and exporting in CSV file



Exported in CSV file

Device	Alarm Range	Crmt No.	Detail	RST	RST Value	Mail
D0		1		0-		0 No
Device No.	Continuous					
Comment No.	Continuous					
Detailed Display No.	Continuous					



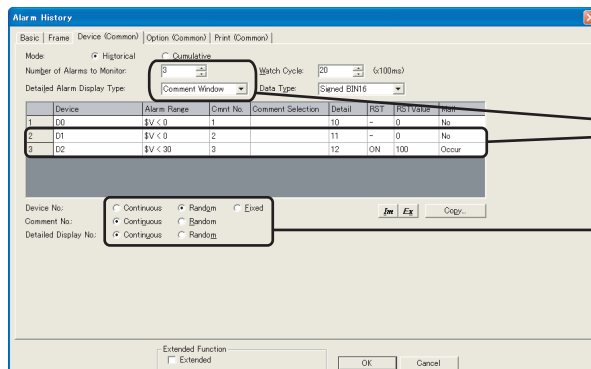
Editing the exported file

Device	Alarm Range	Crmt No.	Detail	RST	RST Value	Mail
D0	\$V < (0)	1	10 -			0 No
D1	\$V < (0)	2	11 -			0 No
D2	\$V < (30)	3	12 ON		100	Occur
Device No.	Random					
Comment No.	Continuous					
Detailed Display No.	Continuous					

Add the setting using applications such as Microsoft® Excel.



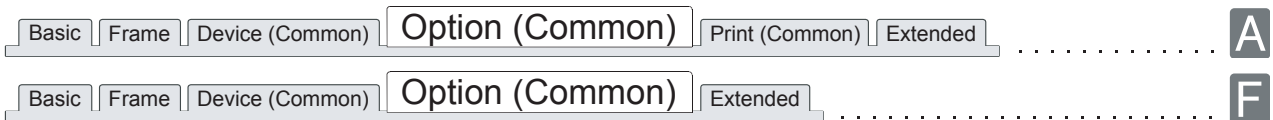
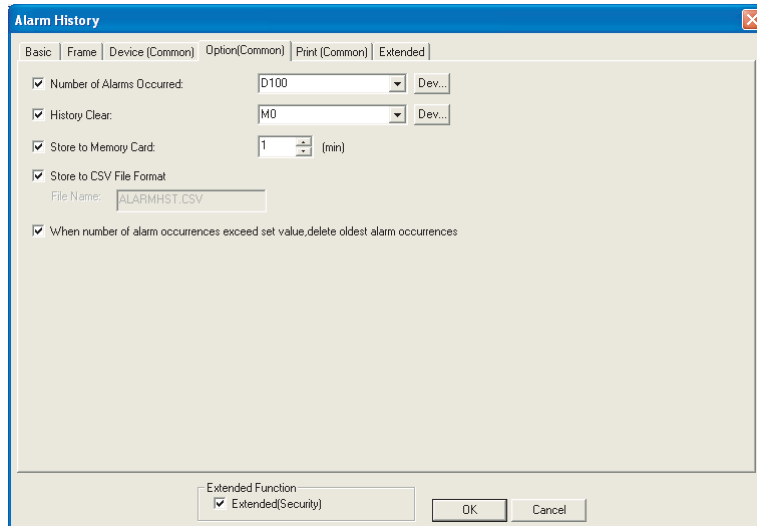
Importing to GT Designer2



The added contents are displayed.

4 Option (Common) tab

Set the history retention (history clear, saved to memory card) for alarm history. The settings on this tab will be reflected in all alarm history display.



Item	Description	A	F
Number of Alarms Occurred	<p>Check this item to store the number of alarms currently occurred and restored to a word device. After checking, click on [Dev...] button and set the device. (☞ Section 5.1 Device Setting)</p> <p>The cycle for GOT to monitor the history clear trigger device is the same as [Watch Cycle] set on the Device (Common) tab.</p>	○	○
History Clear	<p>Check the checkbox when forcibly deleting the restored-state alarm data by changing the specified device status from OFF to ON. After checking the box, click on the [Dev...] button to set the device to be used as a history clear trigger. (☞ Section 5.1 Device Setting)</p> <p>The cycle in which the GOT monitors the history clear trigger device is the same as "Watch Cycle" set on the Device (Common) tab.</p> <p>Alarm data can be cleared by the touch switch (the switch for history clearance) as well. (☞ Section 8.3.4 Description on touch switches for alarm history display)</p>	○	○
Store to Memory Card*2	<p>Check this item to save alarm historical data to PC card. After checking, select the storage cycle in one-minute unit within a range from 1 minute to maximum 60 minutes. Data can be stored to memory card using the alarm history switch. (☞ Section 8.3.4 Description on touch switches for alarm history display)</p>	○	×
Store to CSV File Format*1	<p>Check the checkbox when saving alarm data to the memory card in the CSV file format. This is selectable only when "Store to Memory Card" is check-marked.</p>	○	×
File Name	<p>The file name is displayed.</p> <p>Using the CSV file format: Displayed as ALARMHST.CSV Not using the CSV file format: Displayed as ALARMHST.DAT</p>	○	×

For details of *1 to *3, refer to the following.

(Continued to the next page)

Item	Description	A	F
When number of alarm occurrences exceed set value, delete oldest alarm occurrences	Check this item to delete the oldest alarm when the number of alarm occurrences exceeds a certain value (GOT-A900 series: 1024 or 3072, GOT-F900 series: 1000) and in the case of the triggers of the newly specified device are satisfied.	○	×
When number of alarm occurrences exceed 1000, delete oldest alarm occurrences	(Section 8.3.5 Precautions) If this item is not checked, when the number of alarm occurrences exceeds a certain value, new alarm data cannot be added.	×	○

***1 Saving data in the CSV format**

(1) Data stored

Alarm data are converted into a CSV file data as follows.

The CSV file can be read and displayed on a PC by spreadsheet software.

Example) In case of [Mode] : [Cumulative]

	A	B	C	D	E	F	G
Number of alarms occurred	1	Number of Alarm History	2			Not collected in historical mode	
Number of restored-state alarms	2	Number of Recovery record	1				
Number of checked alarms	3	Number of Check record	2				
	4	DATE	TIME	MESSAGE	RECOVERY	CHECK	BREAK TIME
	5	2004/5/29	11:40:30	Temp. error	11:50:30	11:45:25	0:10
	6	2004/5/29	11:31:30	Fuse error			0:00
		Occurrence date/time (may be displayed differently (e.g. "2004/5/29") depending on the spreadsheet software setting.)	Comment	Restoration date/time	Check date/time	Cumulative time	Occurrence frequency

(2) Updating stored data

Data collected on the alarm history display are overwritten to the CSV file at the user-specified cycles (1 to 60s).

Because the alarm data deleted on the alarm history display are deleted in the CSV file as well, do not delete the alarm to be kept in the CSV file.

Remark

When all of alarm history data are deleted

If the alarm history is stored to a CSV file after all data have been deleted with the touch switch **Delete All** (FFB7H) or "History Clear," the CSV file is left blank.

	A	B	C	D	E
1	Number of Alarm History	2			
2	Number of Recovery record	1			
3	Number of Check record	2			
4	DATE	TIME	MESSAGE	RECOVERY	
5	2004/5/29	11:40:30	Temp. error	11:50:30	
6	2004/5/29	11:31:30	Fuse error		

Stored to a CSV file with alarm history deleted

	A	B	C	D	E
1					
2					
3					
4					
5					
6					

Nothing is stored.

*2 Storing erroneous alarm information data

If the memory card is faulty or the files are different from those in the memory card, the GOT internal device (error detection common information: GS252.b0) turns ON to disable the alarm information to be stored (Device data collection is continued).

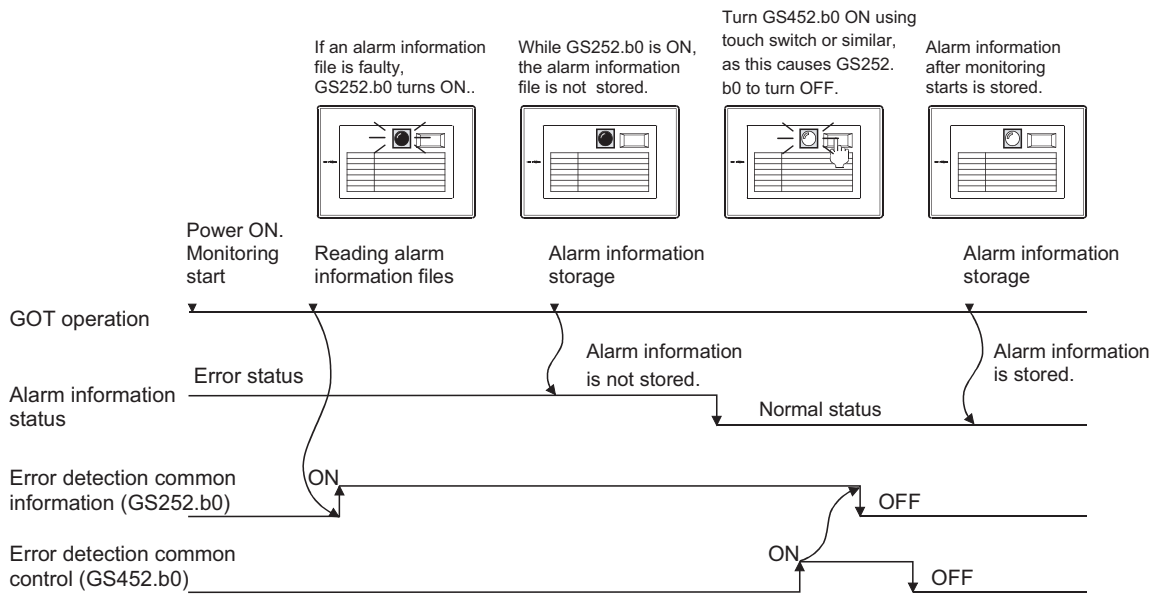
If the storage operation is done in this situation, the system alarm will occur.

If GS252.b0 turns ON, replace the memory card or check the data within the card.

Turning ON the GOT internal device (error detection common control: GS452.b0) will turn GS252.b0 OFF. This allows the file storage to be resumed.

For details of GOT internal devices, refer to the following.

☞ Section 2.6.1 GOT internal devices



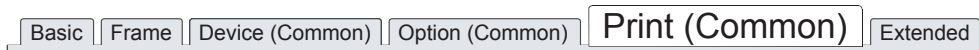
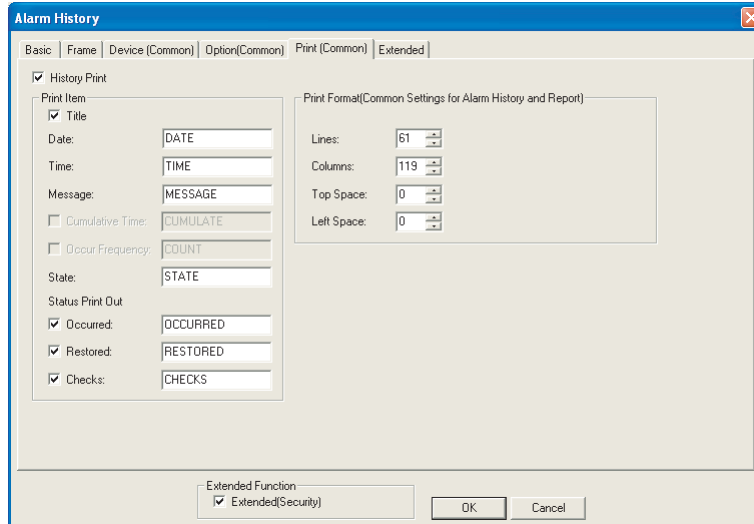
Application of error detection common information

An overlap window (for file error detection) can be displayed by detecting GS252.b0 with script function.

5 Print (Common) tab (GOT-A900 series only)

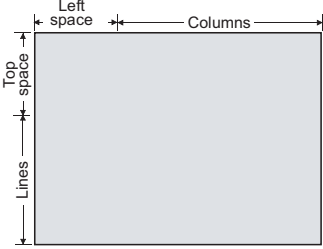
Set the print item and print format for printing of the alarm history.

Alarm historical data are printed based on these settings, separately from the settings on the basic tab.



Item	Description	A	F
History Print	<p>Check this item to print out the alarm history.</p> <p>History print is real time executed at the timing of alarm occurrence, restoration and check.</p> <p>GOT is capable of accepting 100 lines of print at a time.</p> <p>When the print data exceeds the limit of 100 lines as the following cases, the exceeded data will not be printed.</p> <ol style="list-style-type: none"> When print of data exceeding 100 lines is requested during [Printer Error]. When more than one print request exceeding the limit of 100 lines data are issued concurrently. 	○	×
Print Item	<p>Check this item to print out the following items.</p> <p>After checking, input the title corresponding to each item.</p> <p>Date : Input the title name for the date column.</p> <p>Time : Input the title name for the time column.</p> <p>Message : Input the title name for the message column.</p>	○	×
	<p>Check this item to print out the input cumulative time data.</p> <p>After checking, input the title name for the cumulative time column.</p> <p>When making this setting, set the alarm history mode to [Cumulation] of the Device (Common) tab.</p>	○	×
	<p>Check this item to print out the input occur frequency item.</p> <p>After check, input the corresponding title name to occur frequency.</p> <p>When making this setting, please set the alarm history mode of device (common) tab in [Cumulation].</p>	○	×
	<p>Input the title name for the state column.</p>	○	×
Status Print Out	<p>Set the timing to print out alarm historical data.</p> <p>After checking each item, input the title name to be printed out at each timing.</p> <p>Occurred :Printed out when an alarm occurs.</p> <p>Restored :Printed out when the alarm is restored.</p> <p>Checks :Printed out when displayed data are checked (when touching the check/all check switch).</p>	○	×

(Continued to the next page)

Item	Description	A	F
Print Format	<p>Set the number of lines (1 to 127) and columns (1 to 255), and the space for the top (the number of lines) and the left (the number of characters) of the printout.</p>  <p>This setting is common to the print format for the report function.</p>	○	×

Point

Precautions for print format setting

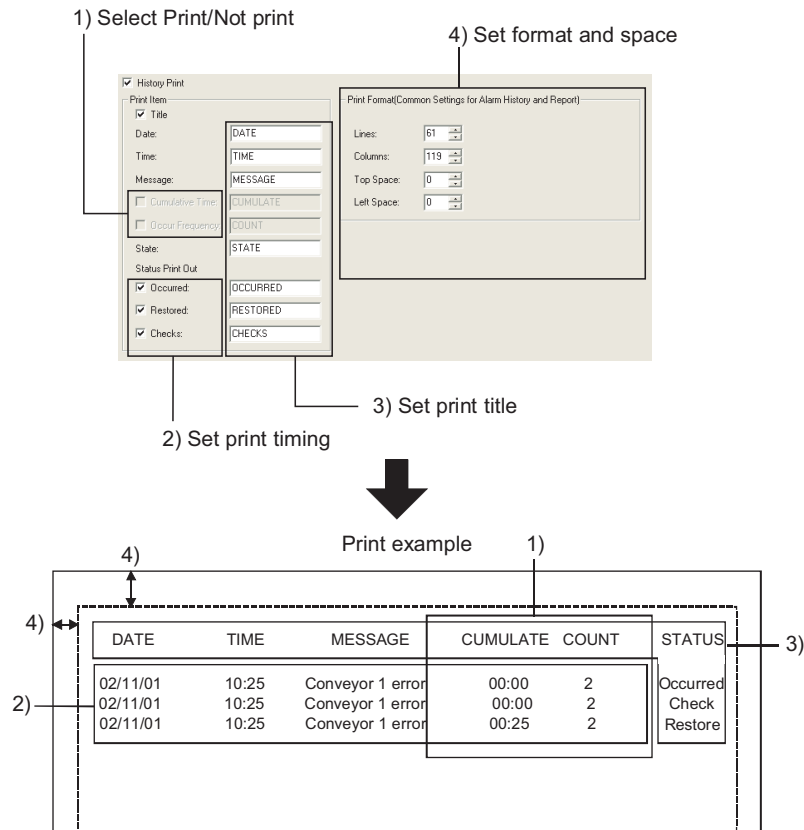
The print format must be set according to the print range of the printer in use. For the precautions of print format setting, refer to the following.

☞ Section 3.6 Print Format Setting

Remark

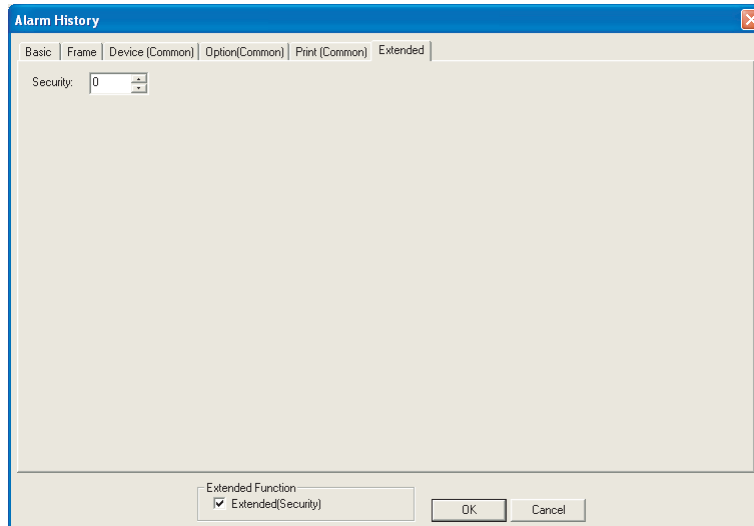
Printing result of alarm history

The print setting items of alarm history during printing are as follows.

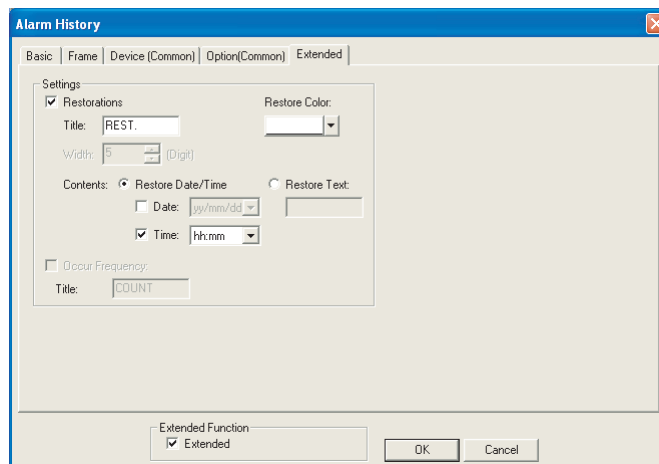


6 Extended tab


Setting of this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.



In case of GOT-A900 series



In case of GOT-F900 series

Item	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". ( Section 5.8 Security Function)	<input type="radio"/>	<input checked="" type="checkbox"/>
Restorations	Check this item to display the date and time of alarm restoration (Triggers of specified device are satisfied/not satisfied). Title : Input the title name for the item to be displayed. Restore Color : Select the text color for the date, time and message displayed on alarm display lines (display rows).	<input checked="" type="checkbox"/>	<input type="radio"/>
Contents	Select the alarm date/time format or the text to be displayed on the column of restorations when alarm is restored.	<input checked="" type="checkbox"/>	<input type="radio"/>
Restore Date/Time	Date : In the case of displaying date, check this and select the format. Time : In the case of displaying time, check this and select the format.	<input checked="" type="checkbox"/>	<input type="radio"/>
Restore Text	Input the text to display it specified when an alarm occurs (Triggers of specified device are satisfied). When setting this item, select [Text] from [Contents]. (Then, input the text into [Text].)	<input checked="" type="checkbox"/>	<input type="radio"/>
Occur Frequency	Check this item to display the number of alarm occurrence (Triggers of specified device are satisfied). When setting this item, set the history mode to in [Cumulative Mode] on the Device (Common) tab. Title: Input the title name for the occur frequency column to be displayed.	<input checked="" type="checkbox"/>	<input type="radio"/>

8.3.4 Description on touch switches for alarm history display

Set touch switches used for the cursor display/movement, detailed display of alarm data on the alarm history display.

Touch switch for alarm history display can be read from the library for GT Designer2.







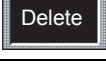

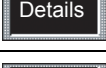


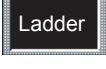
Also, text on the touch switch and its shape can be changed by the user.





By setting a key code to touch switch, a user can create a touch switch for alarm history display.

Example: Touch switch for alarm history display registered in library

Occurred date	Time	Message	Restore	Check
02/09/24	09: 31: 32		09: 31	09: 31
02/09/24	09: 31: 32		09: 31	09: 31

Display	Up Move	Confirm	Delete	Details	Save
Erase	Down Move	Delete All	Confirm	Reset	Ladder

Function	Description	Key code	Example
	Displays the cursor	FFB0H	—
	Erases the cursor	FFB1H	—
	<ul style="list-style-type: none"> Move the cursor up when it is displayed. Move to previous page when cursor is hidden. 	FFB2H	(1)
	<ul style="list-style-type: none"> Move the cursor down when it is displayed. Return to next page when cursor is hidden. 	FFB3H	
 *1	Displays the date and time of the selected and check item	FFB4H	(2)
	Displays the date and time of all check data	FFB5H	—
 *1	Deletes the display of selected alarm data	FFB6H	(3)
	Deletes the display of all alarm data	FFB7H	—
 *1	Displays detailed display screen of an alarm data	FFB8H	—
 *1*3	Changes the state of the specified device to OFF state/the reset value	FFB9H	(4)
	Save current alarm data to memory card	FFBBH	—
 *1*2	Coil-searches the alarm devices of the alarm lines and displays the ladder monitor screen. (Automatically searches and displays the ladder of the specified device)	FFBCH	—

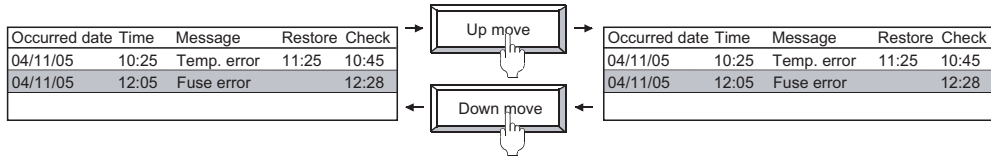
*1 Use together with ,  and ,  touch switches.

*2 It is not available for GOT-F900 series.

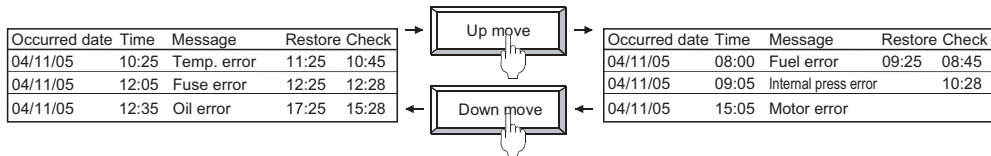
*3 When using RST touch switch, set "RST" and "RST value" fields in the "Device (Common)" tab.

- (1) Up move/Down move
Action is different depending if the cursor is displayed or not.

Example1: When alarm display cursor is displayed
Move cursor position

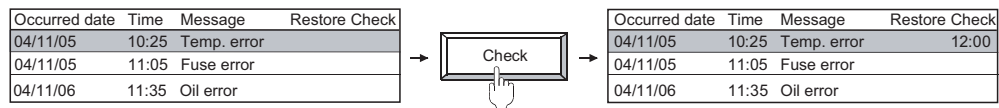


Example2: When alarm history cursor is not displayed
Page up/down alarm items.



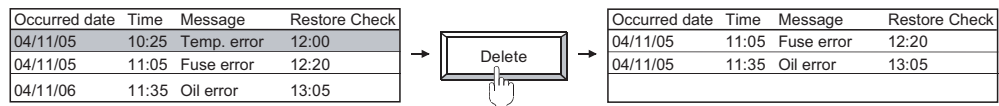
- (2) Check date display of selected alarm (GOT-A900 series only)
Displays the check date of the selected (cursor display) alarm data.

Example:



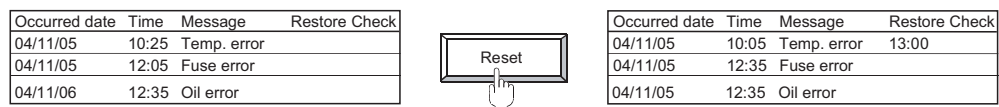
- (3) Deletion of selected alarm items display
Deletes the selected (cursor display) alarm data.
The alarm data that has not been not restored cannot be deleted.

Example:



- (4) Reset of specified device
Change the state of the selected alarm data device to OFF status/the reset value to display the restore date and time (the first timing date and time in the watch cycle after the switch input).

Example:

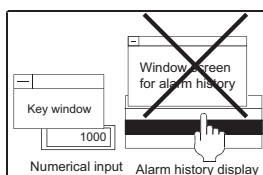


8.3.5 Precautions

This section describes precautions to be taken when using alarm history display.

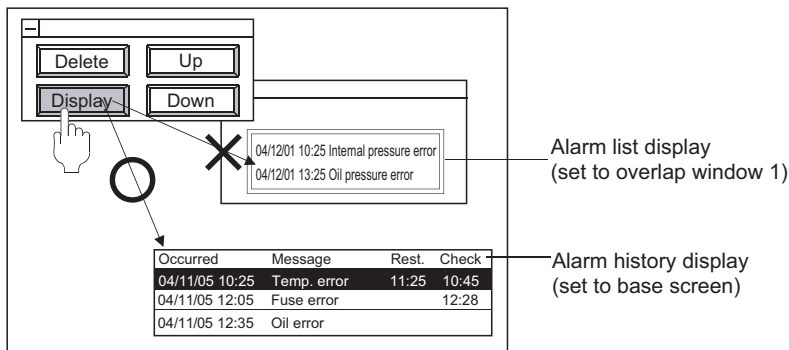
1 Precautions for drawing

- (1) Maximum number of alarm history displayable for one screen
GOT-A900 series/GOT-F900 series: 1
- (2) Applicable screen
The alarm history is settable for the base screen only.
- (3) Monitor device setting
Only one monitor device and its device name can be set for each project.
On each of plural screens, the alarm history function can be set for each object, but monitor devices have to be the same.
- (4) Devices to be set
Only one set device and its device name can be set for each project.
On each of plural screens, the alarm history function can be set for each object, but set devices have to be the same.
- (5) Number of alarm historical data that can be displayed
The number of alarm historical data available for GOT display varies according to the number of devices to be monitored.
If [When number of alarm occurrences exceed set value, delete oldest alarm occurrences] has been checked on the Option (Common) tab, historical data will be erased from the oldest when the following limit is exceeded.
 - When the number of monitor devices is 1024 or less:
Alarm historical data can be displayed up to 1024.
 - When the number of monitor devices is 1025 or more:
Alarm history data as many as the monitor device points can be displayed.
- (6) The comment window while the key window is on the screen
Erase the key window to display the comment window.



- (7) When using other objects at the same time
- (a) The following objects cannot be set on the screen where the alarm history function has been set.
- Data list function object
 - Alarm list (user alarm) display function object with the up/down scroll function setting
- (b) Precautions for the case when the alarm history and alarm list are displayed simultaneously
If the touch switches for alarm list (user alarm) are set for any other screen, they can function for the alarm history.

Example: When the touch switches for alarm list are set for the other screen (overlap window2)



As the base screen has higher precedence, the touch switches function for alarm history.

- (8) Display of occurred time, check time and restore time
The time may not be displayed depending on the type of PLC CPU and/or the connection method.

☞ Section 2.4 Clock Function

- (9) The character display of the line on which the cursor is currently displayed
The characters of the line on which the cursor is currently displayed are not displayed when the screen pattern color or [Plate] of the Frame tab is set to White.
(Characters will be hidden since the color of the text and cursor are the same with the screen color.)
To display the characters of the line on which the cursor is currently displayed, set the screen pattern color or [Plate] of the Frame tab to other than White.
- (10) Timing when alarm history file contents are newly created (overwritten)
When the setting screen of the Alarm history is opened, and after that closed with the OK button, if the project data is downloaded to the GOT, the alarm histories have been saved in the GOT cannot be viewed. (Whether setting is changed or not on the setting screen, the above operation disables viewing of the past alarm histories.)
Moreover, when the alarm history is saved to the memory card of the above GOT, the history data are cleared. (The file contents are saved in a new file (overwritten).)
At this time, the CSV file is also overwritten and saved.

To view alarm histories also after changing the alarm history setting, make a setting to save alarm histories in a CSV file beforehand, and back up the CSV file before performing the above operation. By backing up the CSV file, even if an alarm on the GOT is cleared or overwritten, the alarm history can be viewed on such as a personal computer.
(For data mismatch prevention, the alarm history data file (extension: DAT) cannot be displayed on the GOT where the new project data has been downloaded.)

(11) Timing when alarm history file content is newly created (overwritten)

When the setting screen of alarm history is opened and closed with the button, if the project data is down loaded to the GOT, the alarm histories that have been saved in the GOT in the past cannot be viewed. (Either when any setting change is made or when no setting change is made, the above operation disables viewing of the past alarm histories.)

Moreover, when the memory card save of alarm history is executed in the above GOT, history data are cleared. (The file content is saved in a new file (overwritten).)

At this time, the CSV file is also overwritten and saved.

To view alarm histories even after changing the alarm history settings, make a setting to save alarm histories in a CSV file in advance, and back up the CSV file before performing the above operation. By backing up the CSV file, even if an alarm is cleared or overwritten on the GOT, the alarm history can be viewed on a personal computer etc.

(For data mismatch prevention, the alarm history data file (extension: DAT) cannot be displayed on the GOT where the new project data is downloaded.)

2 Precautions for OS

(1) Extended function OS (specific for GOT-A900 series)

Be sure to install the extended function OS (CSV) to GOT when using the CSV format file.

3 Precautions for hardware

(1) Required optional device

To use the alarm history function, the following devices are required.

GOT in use		Required device
A985GOT (-V), A97*GOT, A960GOT		None
A956WGOT	When using PC card	SRAM type : Memory card interface module Compact flash PC card : Not required
	When printing history	Printer interface module
A95*GOT	When using PC card	SRAM type : Memory card interface module Compact flash PC card : Not used
	When printing history	Printer interface module

4 Number of files that can be stored in PC card (when using A985GOT/A97*GOT/A960GOT/A956WGOT/A95*GOT)


Following table shows the upper limit for the number of object files (including other object files) that can be stored.

PC card memory capacity	Number of files
1M, 2M	128
4M	256
16M(A9GTMEM-10MF ^{*1}), 32M(A9GTMEM-20MF ^{*1}), 64M(A9GTMEM-40MF ^{*1})	512

*1 Memory capacity differs according to the hardware versions of flash PC card.
It can be checked on the rated plate of flash card.

5 File data capacity

For the file data capacity that can be stored in a memory card when the alarm history display function is working, refer to the following.

 Section 2.3 Specifications of Available Object Functions



8.4 Floating Alarm



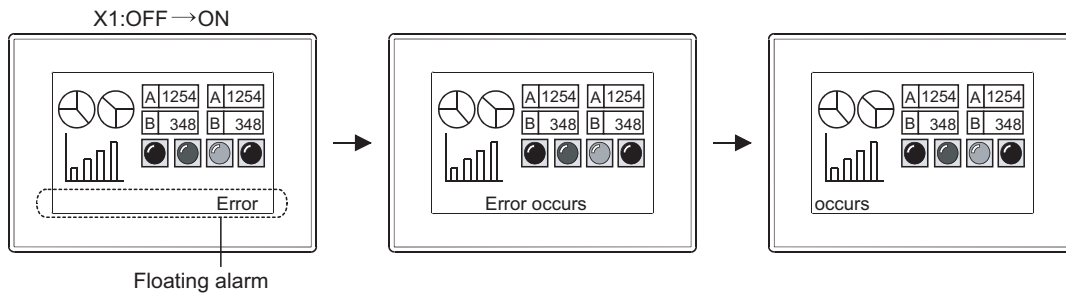
This section explains the floating alarm function.

When the corresponding bit device turns ON, this function causes the alarm text to scroll across the base screen from the right to the left. This cycle is repeated until the bit device turns OFF. The comment is displayed on the bottom of the base screen.

Comment appears at the bottom of the base screen.

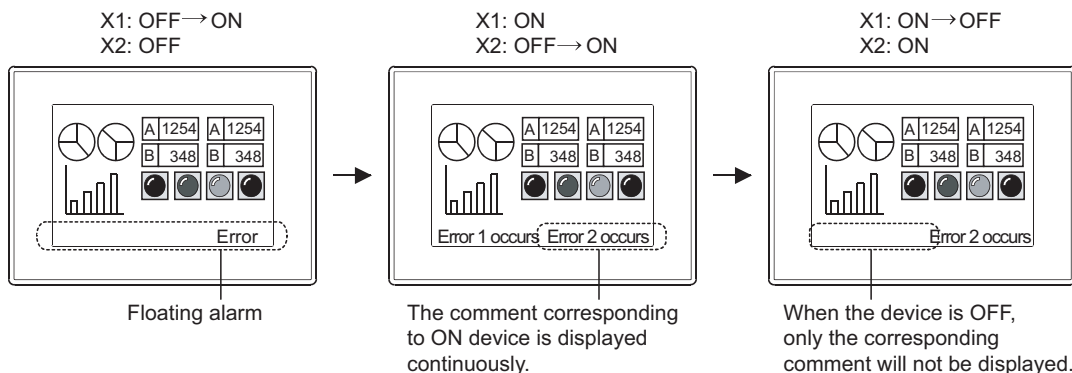
1 When only one bit device turns ON

The comment corresponding to the device that has turned ON scrolls across the screen from the right to the left.



2 When multiple bit devices turns ON

The comments corresponding to the device that have turned ON scroll across the screen from the right to the left in the error occurrence order.



Remark

Comments displayed by floating alarm function

To display comments by floating alarm function, register the comments in advance.




Section 4.1 Comment Registration

8.4.1 Settings

- 1 Select [Common] → [Floating Alarm] from the menu.
- 2 As the setting dialog box is displayed, make the settings with reference to the following explanations.

Remark

When setting in the project workspace

Double click on  Floating Alarm in the project workspace to display the setting dialog box.

8.4.2 Setting items of floating alarm

Set the device to be monitored and the comment corresponding to that device.
The following are common settings on all base screens.

Floating Alarm (GOT-A900 series)

Device Points: 5 Display Order: Occurred

Device No.: Continuous Random

	Device	Cmnt No.	Comment
1	X0000	1	
2	X0001	2	
3	X0002	3	
4	X0003	4	
5	X0004	5	

Size: 1 x 1 X 1 (X x Y)

Storage Device: D100 Dev...

Buttons: Delete All, OK, Cancel

(In the case of GOT-A900 series)

Floating Alarm (GOT-F900 series)

Device Points: 5 Display Order: Ascending

Display Location: Lower

Report Method: Ticker

	Device	Cmnt No.	Comment
1	X0000	1	
2	X0001	2	
3	X0002	3	
4	X0003	4	
5	X0004	5	

Size: 1 x 1 X 1 (X x Y)

Buttons: Delete All, OK, Cancel

(In the case of GOT-F900 series)

Items	Description	A	F
Device Points	Set the number of bit devices that execute floating alarm. The maximum number of devices that can be set are as follows. For GOT-A900 Series When monitoring bit devices of continuous No. : 512 devices When monitoring bit device of discontinuous No. : 255 devices For GOT-F900 Series When monitoring bit devices of continuous No. : 256 devices	○	○
Device No.	Select the method of setting device. Continuous : Automatically set the specified number of devices continuously starting from the set device. Random : Set the specified number of devices at random.	○	×
Monitor device List	Set the device to be monitored and the comment corresponding to that device.	○	○
Device	Set the device to be monitored. (Section 5.1 Device Setting)	○	○
Cmnt No.	Set the comment number corresponding to the set device. When multiple devices are set, the same number of continuous comment Nos. are automatically set starting from the head comment No.	○	○
Comment	The comment corresponding to comment No. is displayed.	○	○
Size	Select the size of comment to be displayed (X x Y).	○	○
Display Location	Set the floating alarm display position to either among "Upper", "Middle" and "Lower" of the screen. Input a comment in only one line. If a comment is input in two or more lines and "Upper" or "Lower" is selected, characters of the comment are cut in half when displayed.	×	○

(Continued to next page)


Items	Description	A	F
Storage Device	<p>Check this item to store the number of specified bit devices that are ON into word device.</p> <p>After checking, set the device to be monitored. (☞ Section 5.1 Device Setting)</p> <p>If numerical display is used to monitor the set device, the number of occurred alarms can be checked.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">Occurrence number</p> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 2px;">3</div> <p style="text-align: center;">Line1 abnormal</p> </div> <p style="text-align: center; font-size: small;">If set device is numerically displayed, alarm occurrence number can be checked.</p>	○	×
Delete All	Clicking on this item deletes all the settings.	○	×

8.4.3 Precautions

This section explains the precautions for using floating alarm function.

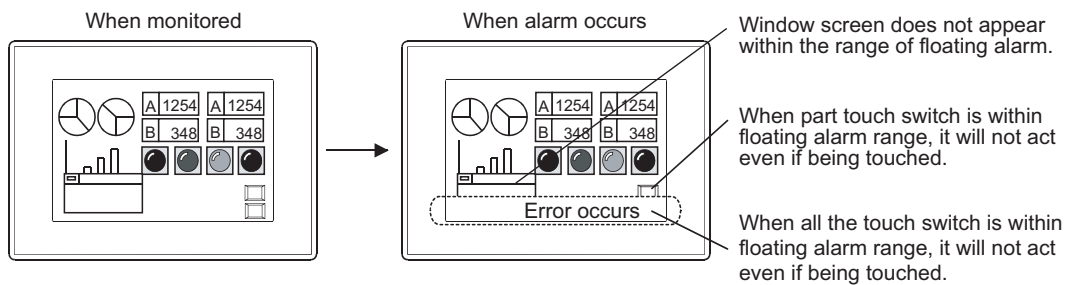
1 Precautions for drawing

- (1) Number of floating alarm function objects that can be set
Only one floating alarm function object can be set for each project.
However, the same floating alarm function object can be simultaneously set for multiple base screens.
In this case, the comment of floating alarm can be set to be displayed/hidden for each base screen.

 Section 4.5 Auxiliary Settings

- (2) Floating alarm
The position for comment of floating alarm is fixed at the bottom of the base screen.
It cannot be changed.
- (3) Precautions for setting
Even when floating alarm function object is set, the comment cannot be displayed on GT Designer2.
Make the settings in order that the comment of floating alarm will not overlap with other objects or window screens.
As the comment of floating alarm is designated to appear in front of other objects and window screens, if other objects or window screens are located on the bottom of the screen, the message will be hidden or input cannot be done when an alarm occurs.

Example: When the comment of floating alarm overlaps with touch switch/window screen



- (4) Display of comment
 - (a) Floating alarm function is disabled if the comment in which "Reverse", "Blink" or "Use high quality font" has been set.
 - (b) The comment for floating alarm function must be entered in one line.
 - In the case of GOT-A900 series
If created in multiple lines, the comment will be displayed as one line and the remaining comment will be shown as text.
 - In the case of GOT-F900 series
If a comment is input in two or more lines and "Display Location" is set to "Upper" or "Lower", characters of the comment are cut in half horizontally, and only upper or lower half portions are displayed.

9. PARTS



9.1 Parts Display



This function displays the registered parts and base screen/window screen according to the device status.

Remark

Parts displayed in parts display

There are two different parts that are displayed in parts display, and they must be registered in advance.

- (1) Parts data registered on GT Designer2 (registered part)


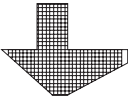




☞ Section 4.2 Parts Registration

- (2) Parts data registered on GT Designer2 (registered part)

BMP file stored on PC card (BMP file part)

☞ Section 4.3 Storing a BMP file part in the PC card

1 Applicable parts types

Type	Description	Remarks
Parts	<p>The figures registered as parts are displayed.</p> <p>Example: Registrable figures as parts</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Figures</p> </div> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>ABC</p> <p>Text</p> </div> <div style="text-align: center;">  <p>BMP file</p> </div> </div>	<ul style="list-style-type: none"> • Parts must have been registered in advance. ☞ • Section 4.2 Parts Registration • Section 4.3 Storing a BMP file part in the PC card
Mark	<p>The color of the figure registered as a part is displayed according to the change of the device value.</p> <p>The used memory capacity inside of the GOT are saved since different images can be displayed by a single part.</p> <div style="display: flex; justify-content: center; align-items: center; gap: 20px;"> <div style="text-align: center;"> <p>White</p>  <p>D100 = 0</p> </div> <div style="text-align: center;"> <p>Blue</p>  <p>D100 = 50</p> </div> <div style="text-align: center;"> <p>Red</p>  <p>D100 = 100</p> </div> </div> <p>The color changing is displayed in the white area.</p>	<ul style="list-style-type: none"> • BMP format parts cannot be used. • Draw the color-changed area in white.

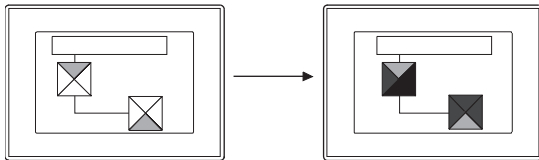
(Continued to next page)

Type	Description	Remarks
Base screen	<p>The figures on any base screens and window screens are displayed.</p> <p>Base Screen 1 Base Screen 20 Screen display</p> <p>The figure on Base Screen 20 is overlaid on Base Screen 1.</p>	<ul style="list-style-type: none"> The objects set on the base screens and window screens are not displayed.
Window screen		

Application example

Display different images of the same part
(Parts display (bit/word/fixed))

Basic Tab Setting

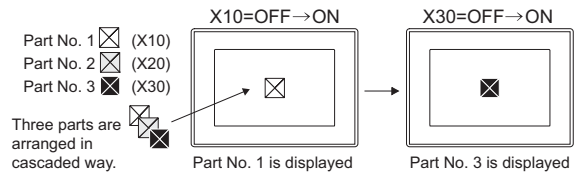


Only the white part of parts changes.

Cascade multiple parts.

(Parts display (fixed))


Basic Tab Setting



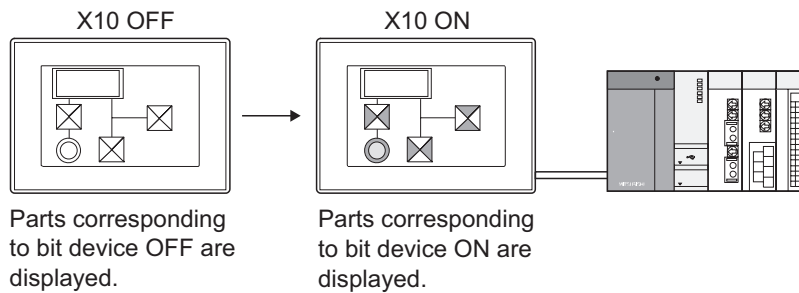
9.1.1 Parts displaying method


This section describes the parts displaying method of Parts Display.

1 Parts switching method

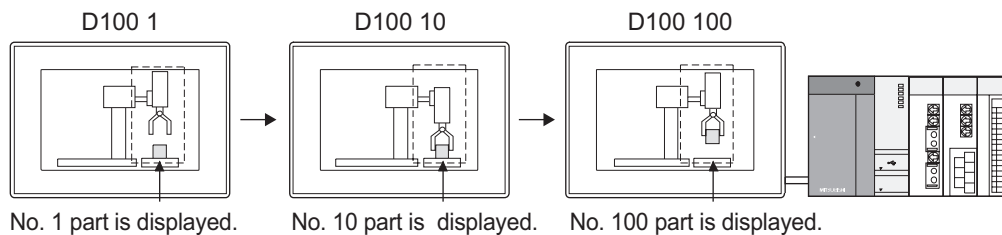
- (1) Bit parts display  (☞ Section 9.1.3 Setting items of bit parts display)

This function is used to display the parts/base screen/window screen corresponding to bit device ON/OFF.



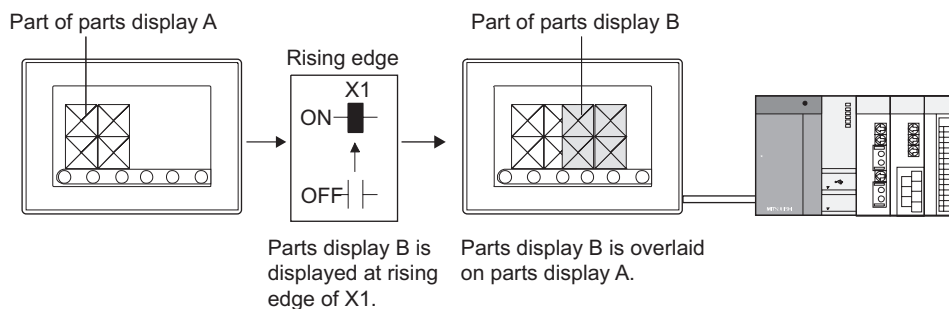
- (2) Word parts display  (☞ Section 9.1.4 Setting items of word parts display)

This function is used to display the parts/base screen/window screen corresponding to word device value.



- (3) Fixed parts display  (☞ Section 9.1.5 Setting items of fixed parts display)


This function displays the parts/base screen/window screen at rising/falling edge of a bit device. Only one type of part can be displayed, but the part can be overlaid on the other parts display.



2 Displaying method of the BMP file stored in the PC card

The BMP file parts stored in the PC card can be displayed by specifying a number from 9001 to 9999 for the parts No.

To display a BMP file part in the PC card by specifying parts No. of 9001 to 9999, make the setting in the following procedure.

- 1 Store a BMP file to be displayed as parts in the PC card.
 Section 4.3 Storing a BMP file part in the PC card

- 2 Turn ON the GS450.b8.

Parts No.	When GS450.b8 is ON	When GS450.b8 is OFF
9001 to 9999	The BMP file part in the PC card is displayed.	The part registered by the GT Degisner2 is displayed.

- 3 The BMP file parts in the PC card will be displayed when the parts displaying condition (Parts No. : 9001 to 9999) is met on Parts Display/Parts Movement.

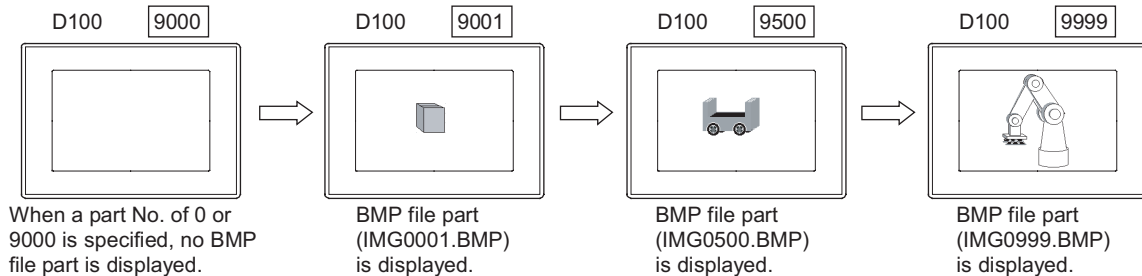
The display example in the case where the following BMP file parts are stored on the PC card is shown below.



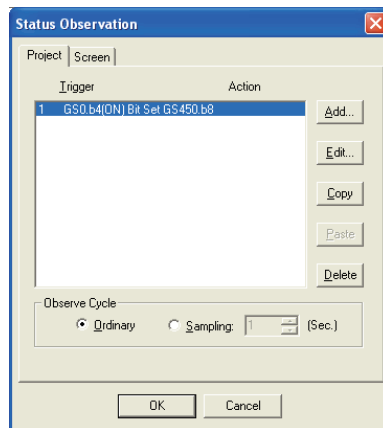
Example: BMP file parts are displayed in parts display (word)

When any of the part numbers from 9001 to 9999 is entered in a word device, the corresponding BMP file part is displayed.

• Word device for parts display : D100



- (1) When specifying a parts No. out of 9001 to 9999
The parts registered by the GT Designer2 will be displayed even when the GS450.b8 is ON.
- (2) When switching the parts display to the display of the BMP file parts of the corresponding parts No. in the PC card
To display the BMP file parts of the corresponding parts No. in the PC card while displaying parts of parts No. of 9001 to 9999 registered by the GT Designer2, operate as follows.
 - ① Turn ON the GS450.b8.
 - ② Specify the parts No. 0 or 9000 to hide the parts currently displayed.
 - ③ Specify the parts No. of the BMP file parts in the PC card to be displayed.
- (3) The example of turning on the GS450.b8 automatically after the GOT powering on
The following shows the example of turning on the GS450.b8 automatically after the GOT is powered on by using the status observation function.
It is convenient for displaying the BMP file parts in the PC card after powering on the GOT.
On the status monitor function, set the internal device (Ordinary ON device: GS0.b4) to store "1" to GS450.b8 when the Trigger is ON.
After the GOT is powered on, "1" is stored into GS450.b8 by the status monitor function.



- Make setting on the status monitor.
- Set the first line of the status monitor function. ("1" is stored into GS450.b8 immediately after the GOT is switched ON.)*¹
- Set the condition monitor cycle to [Ordinary].

*1 At a GOT startup, to display or parts movement parts may not be changed to BMP image parts. (Switch the screen change parts.)
Design screens considering the characteristics of BMP image parts.



3 Parts No.

The displayable parts or the motions differ depending on the parts No.
The displayable parts for each parts No. are shown in the following table.

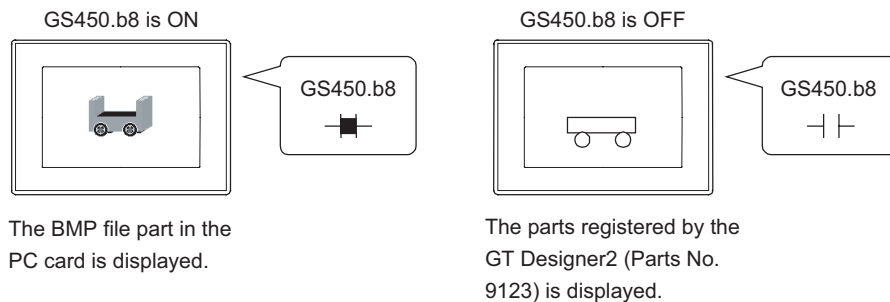
Parts No.	When GS450.b8 is ON		When the GS450.b8 is OFF	
	Parts registered by the GT Designer2	BMP file parts in the PC card	Parts registered by the GT Designer2	BMP file parts in the PC card
0	—*1	—*1	—*1	×
1 to 8999	○	×	○	×
9000	×	—*1	○	×
9001 to 9999	×*2	○	○	×
10000 to 32767	○	×	○	×

○: Displayable ×: Not displayable —: Hidden




- *1 When [Indirect (Device Value)] in the [Attribute (Normal Case)] of the Word Parts Movement has been set, the parts will not be hidden. (The current display is retained.)
For the method of hiding parts with the Word Parts Movement, refer to the [Attribute (Normal Case)] of the Word Parts Movement.

( Section 9.2.5  1 Setting items of word parts movement)

- *2 The parts cannot be displayed even if they have been registered by the GT Designer2.
Example: When a part registered by the GT Designer2 has been registered for the parts No. 9123



9.1.2 Arrangement and settings

- 1 Carry out either of the following operations
 - Click on  [Bit Parts Display]/  [Word Parts Display]/  [Fixed Parts Display]
 - Select [Object] → [Parts Display] → [Bit Parts]/[Word Parts]/[Fixed Parts] from the menu.
- 2 Click on the position where the part to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged part to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.



GT Designer2 Version □ Operating Manual



Remark

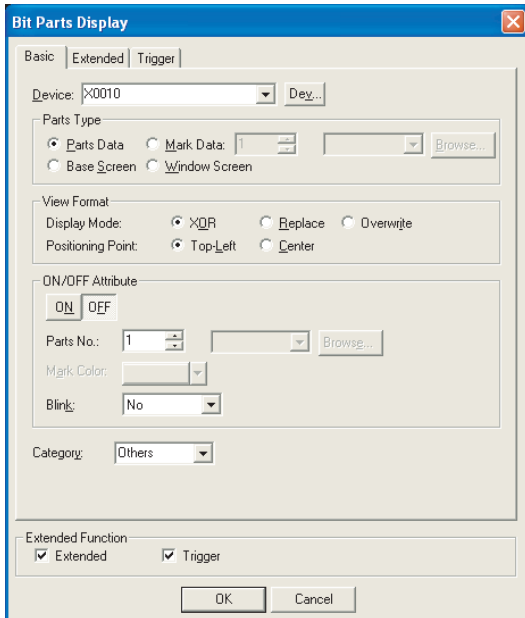
Part image displayed when the part is arranged.

- (1) When parts are displayed
 - In the case of bit parts display
Parts of which status is set in ON/OFF attribute of basic tab are displayed.
 - In the case of word parts display
Parts of which part No. is set in [Preview No.] of basic tab are displayed.
- (2) When base screen and window screen are displayed as parts
"X" mark indicating position is displayed.

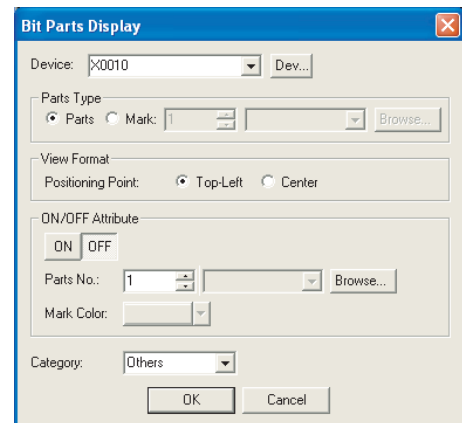
9.1.3 Setting items of bit parts display

1 Basic tab

In basic tab, the [Parts Type] and [Parts No.] during ON/OFF are set.
The setting of this screen is for GOT-F900 series only.



In the case of GOT-A900 series

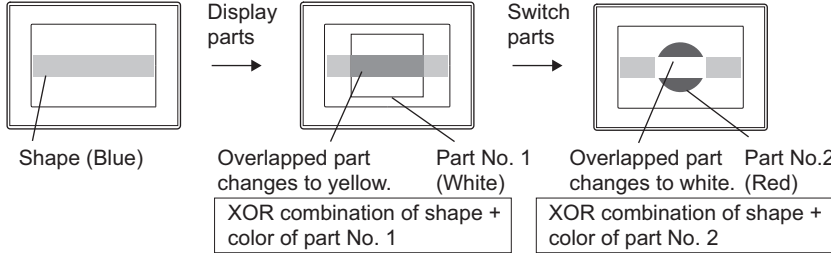
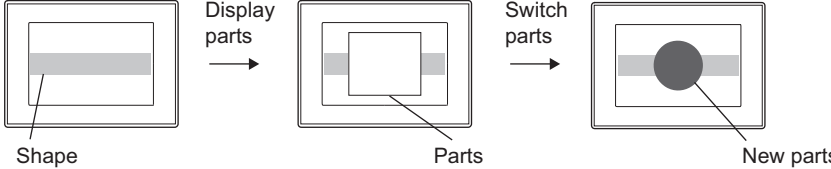
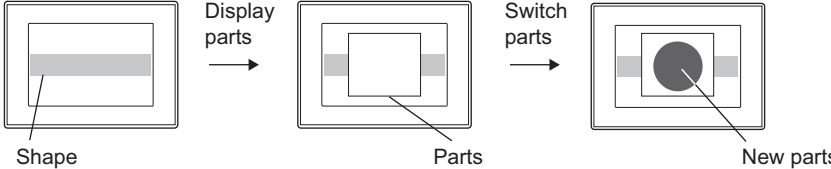
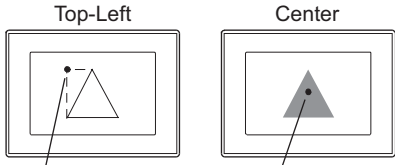


In the case of GOT-F900 series


Basic Extended Trigger

Items	Description	A	F
Device	Set the device to be monitored. (☞ Section 5.1 Device Setting)	○	○
Parts Type	Select the type of part to be displayed.	○	○
Parts Data	The registered part is displayed.	○	○
Mark Data	Changes the white part of the registered part into the different color according to the device change. After selecting this item, set the [Parts No.]. The type of registered part can be checked by clicking on Browse button. Refer to the following for the parts displayed by Mark. (☞ Section 4.2 Parts Registration)	○	○
Base Screen	Displays the registered base screen as part.	○	×
Window Screen	Displays the registered window screen as part.	○	×

(Continued to next page)

Items	Description	A	F
View Format	<p>Select the method of displaying parts when they are switched.</p> <p>XOR :Distinguishes between overlapping parts by showing different colors in the overlapping portion of the parts. For the XOR combination of the overlapped colors, refer to the following. (☞ App.5 Synthesized Colors Available for XOR)</p>  <p>Shape (Blue) → Display parts → Overlapped part changes to yellow. Part No. 1 (White) → Switch parts → Overlapped part changes to white. Part No.2 (Red)</p> <p>XOR combination of shape + color of part No. 1 XOR combination of shape + color of part No. 2</p> <p>Replace :Replaces the previous part with the newer part. • Please note this item is not available when the [Parts Type] is for the [Base Screen] or [Window Screen]. (☞ Basic tab [Parts Type])</p>  <p>Shape → Display parts → Parts → Switch parts → New parts</p> <p>Overwrite :Displays the new part/base screen/window screen over the previously displayed part.</p>  <p>Shape → Display parts → Parts → Switch parts → New parts</p>	○	x
Positioning Point	<p>Select the reference point to display parts/base screen/window screen.</p> <p>Top-Left : Set the display position at the top left of the part/base screen/window screen. Center : Set the display position at the center of the part/base screen/window screen. Example:</p>  <p>Top-Left Center</p> <p>Set display position Set display position</p>	○	○

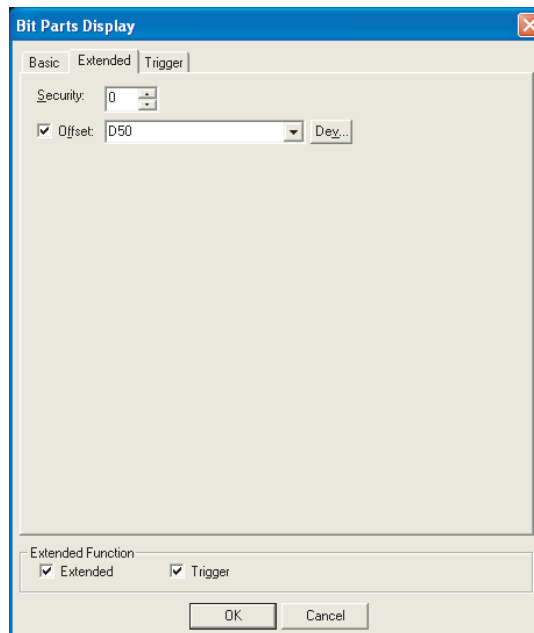
(Continued to next page)

Items	Description	A	F
ON	Click on this item to set the part/base screen/window screen to be displayed the device turns ON.	<input type="radio"/>	<input type="radio"/>
OFF	Click on this item to set the part/base screen/window screen to be displayed the device turns OFF.	<input type="radio"/>	<input type="radio"/>
ON/OFF Attribute	<p>Parts No.</p> <p>Set the part/base screen/window screen No. to be displayed. The registered part/base screen/window screen can be checked by clicking on <input type="button" value="Browse"/> button. Set zero in "Parts No." to erase the part. Set the [Parts No.] condition when the device bit is OFF to "0" in order to display the part only when the device bit is ON.</p>	<input type="radio"/>	<input type="radio"/>
Mark Color	Select the color to be switched from the white area of the part when [Mark] has been set in [Parts Type].	<input type="radio"/>	<input type="radio"/>
Blink	<p>Select the blinking pattern of the parts.</p> <p>No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.</p>	<input type="radio"/>	<input checked="" type="radio"/>
Category	<p>When allocating category to the object, select a proper category.</p> <p> GT Designer2 Version <input type="checkbox"/> Operating Manual)</p>	<input type="radio"/>	<input type="radio"/>

2 Extended tab (for GOT-A900 series only)

Set the security and offset.

This tab will be displayed when the extended function at the bottom of the dialog box is checked.




Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (Section 5.7 Offset Function) After checking, set the offset device. (Section 5.1 Device Setting)	○	×

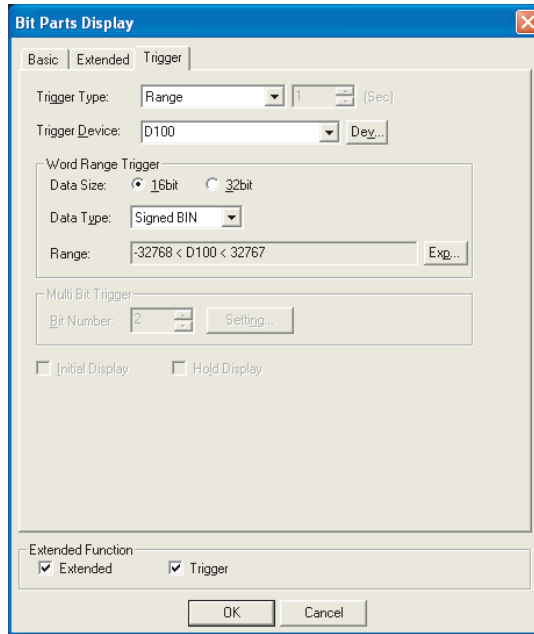
3 Trigger tab (for GOT-A900 series only)

Set conditions for displaying the object.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



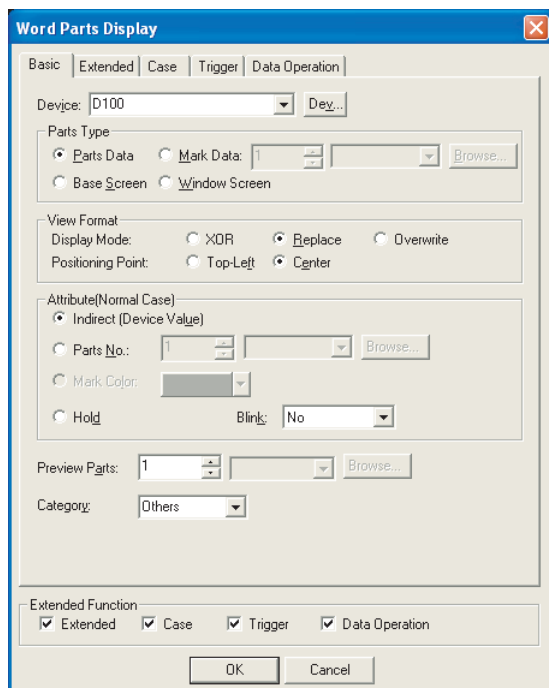
Basic | Extended | **Trigger**

Items	Description	A	F
Trigger Type	Select the trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. <ul style="list-style-type: none"> • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger 	○	×
Trigger Device	Specify the device used for the trigger.	○	×
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	○	×
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
Data Type	Select the data type of word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data size].	○	×
Range	Click on the [Exp] button and set conditional expression for the word device range.	○	×
Multi Bit Trigger	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click on the [Setting] button and set the bit devices and their conditions.	○	×
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the conditions are not satisfied.	○	×
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the conditions are not satisfied. If not checked, the object will be deleted when the conditions become invalid.	○	×

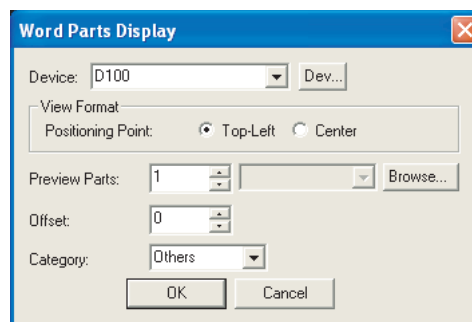
9.1.4 Setting items of word parts display

1 Basic tab

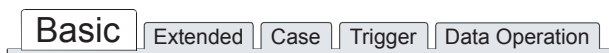
Here the parts type and parts No. displayed corresponding to word device value is set. The setting of this screen is for GOT-F900 series only.



In the case of GOT-A900 series

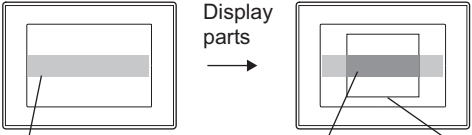
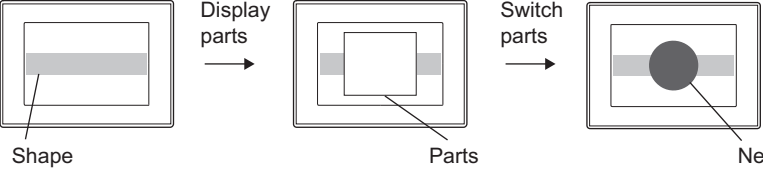
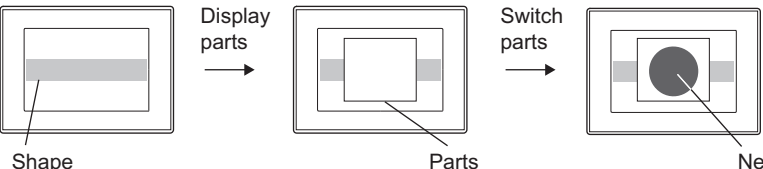
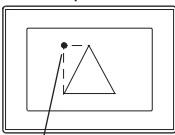
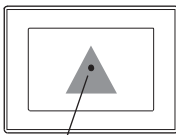


In the case of GOT-F900 series




Items	Description	A	F
Device	Set the device to be monitored. (☞ Section 5.1 Device Setting) The default of a written data format is signed BIN. To write by the other data format, change the setting in "Data Form" on the Extended tab.	<input type="radio"/>	<input type="radio"/>
Parts Type	Select the type of part to be displayed.	<input type="radio"/>	<input type="radio"/>
Parts Data	The registered part is displayed.	<input type="radio"/>	<input type="radio"/>
Mark Data	Changes the white part of the registered part into the different color according to the device change. After selecting this item, set the [Parts No.]. The type of registered part can be checked by clicking on Browse button. Refer to the following for the parts displayed by Mark. (☞ Section 4.2 Parts Registration)	<input type="radio"/>	<input checked="" type="checkbox"/>
Base Screen	Displays the registered base screen as part.	<input type="radio"/>	<input checked="" type="checkbox"/>
Window Screen	Displays the registered window screen as part.	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Items	Description	A	F
View Format	<p>Select the method of displaying parts when they are switched.</p> <p>XOR :Distinguishes between overlapping parts by showing different colors in the overlapping portion of the parts. For the XOR combination of the overlapped colors, refer to the following. (☞ App.5 Synthesized Colors Available for XOR)</p>  <p>Display parts → Switch parts</p> <p>Shape (Blue) Overlapped part changes to yellow. Part No. 1 (White) Overlapped part changes to white. Part No.2 (Red)</p> <p>XOR combination of shape + color of part No. 1 XOR combination of shape + color of part No. 2</p> <p>Replace :Replaces the previous part with the newer part. • Please note this item is not available when the [Parts Type] is for the [Base Screen] or [Window Screen]. (☞ Basic tab [Parts Type])</p>  <p>Display parts → Switch parts</p> <p>Shape Parts New parts</p> <p>Overwrite :Displays the new part/base screen/window screen over the previously displayed part.</p>  <p>Display parts → Switch parts</p> <p>Shape Parts New parts</p>	○	×
Positioning Point	<p>Select the reference point to display parts/base screen/window screen.</p> <p>Top-Left : Set the display position at the top left of the part/base screen/window screen. Center : Set the display position at the center of the part/base screen/window screen. Example:</p>  <p>Top-Left</p> <p>Set display position</p>  <p>Center</p> <p>Set display position</p>	○	○

(Continued to next page)

Items	Description	A	F
Attribute (Normal Case)* ¹	Set the display attribute of parts. Use the state (Range Setting tab) for switching to multiple parts except "Indirect (Device value)". Indirect (Device value) :Displays the parts/base screen/window screen No. corresponding to the word device value. Set zero in the word device value to erase the part. Parts No. :Select this item at displaying the registered parts/base screen/window screen by specifying it. Click the <input type="button" value="Browse"/> button to check the registered parts/base screen/window screen. Set zero in "Parts No." to erase the part. Mark Color :At selecting "Mark" in "Parts Type" category, select the displayed color to change in the white area of the registered part. Hold :Select this item to hold the currently displayed parts/base screen/window screen.	○	×
	Select the blinking pattern of the parts. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	○	×
Preview Parts	Displays the part of specified No. on the GT Designer2 screen.	○	○
Offset	Specify the offset corresponding to monitor device value. For example, if the offset is set to 10 and current monitor device value is 100, the part No. 110 is displayed.	×	○
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)	○	○

For details of *1, refer to the following.

*1 Parts switching method

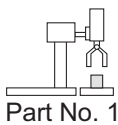
Set on State (Case tab) except "Indirect (Device value)" in "Attribute (Normal case)" category.
 The following describes how to change the displayed part depending on the "Attribute (Normal case)" and State settings.

"Attribute (Normal case)" type	State setting	
	Set	Not set
[Indirect (Device Value)]	The part is displayed as below depending on the condition set to the state. <ul style="list-style-type: none"> When trigger is satisfied The part set to the state is displayed. When trigger is not satisfied The displayed part is changed depending on the monitored device value. 	Set the state if required. The displayed part is changed depending on the monitored device value. Set the state to change the part except the above condition.
[Parts No.]	The part is displayed as below depending on the condition set to the state. <ul style="list-style-type: none"> When trigger is satisfied The part set at the state is displayed. When trigger is not satisfied The part set at "Attribute (Normal case)" is displayed. 	Set the state at any time. Only one type of part is kept displayed without state settings. It cannot be switched to any other part.
[Mark Color]		
[Hold]	The part is displayed as below depending on the condition set to the state. <ul style="list-style-type: none"> When trigger is satisfied The part set at the state is displayed. When trigger is not satisfied The part set at the state is kept displayed. 	Set the state at any time. Nothing is displayed without state settings.

Example: When "Attribute (Normal case)" is set to "Parts No."
 Set the following on each tab.

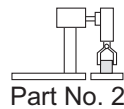
Basics tab

[Device]: D10
 [Parts Type]: [Parts Data]
 [Attribute (Normal Case)]: [Parts No.1]
 (Displayed part)

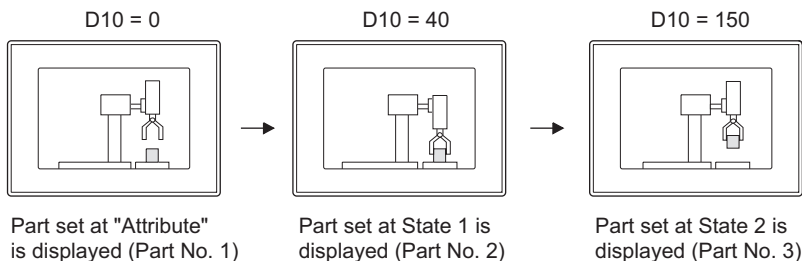
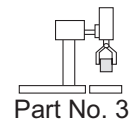


Range Setting tab

State 1
 [Range] : 1 <= D10 <= 100
 [Attribute] : Parts No.2



State 2
 [Range] : 100 < D10
 [Attribute] : Parts No.3



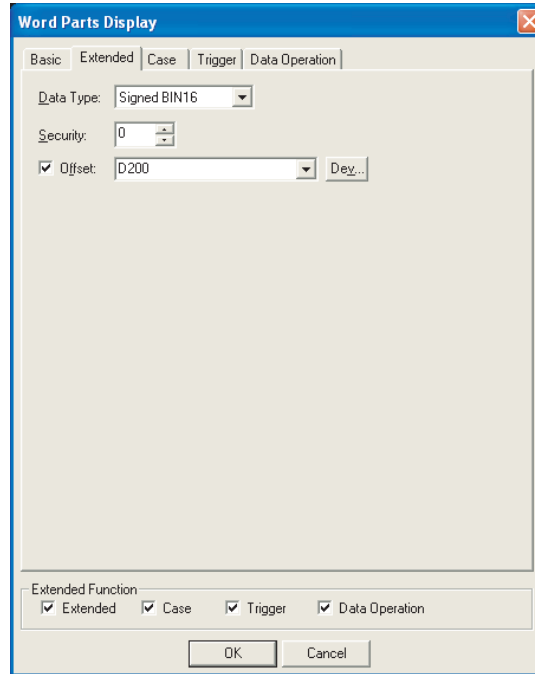
Refer to the following section for details of the state.

➡ Section 5.4 State Setting

2 Extended tab (for GOT-A900 series only)

Set the data type, security and offset of monitor device.


This tab is displayed when the extended function at the bottom of the dialog box is checked.

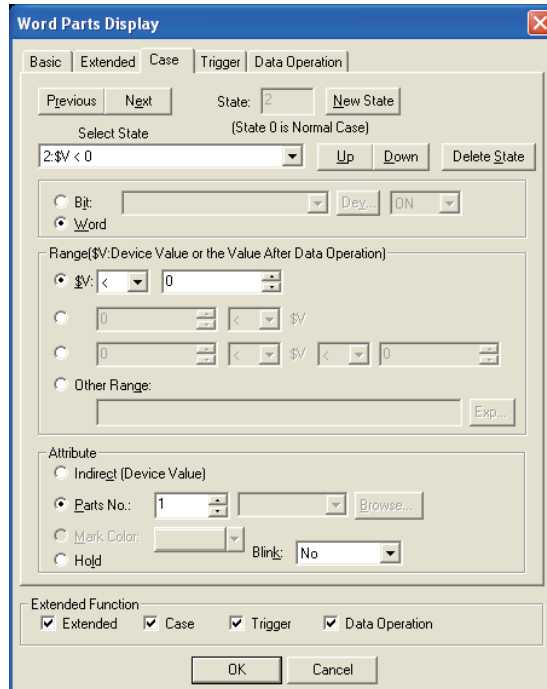



Items	Description	A	F
Data Type	Select the data type of the word device to be monitored. Signed BIN16 :Treats the word device value as a signed binary value. Unsigned BIN16 :Treats the word device value as an unsigned binary value. BCD16 :Treats the word device value as a 16-bit BCD (binary decimal) value.	○	×
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×

3 Case tab (for GOT-A900 series only)

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

 Section 5.4 State Setting



Items	Description	A	F
State ^{*1}	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	×
New State	Creates a new state.	<input type="radio"/>	×
Delete State	Deletes a specified state.	<input type="radio"/>	×
Previous/Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	×
Up/Down	Changes the priority of the current state.	<input type="radio"/>	×
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	<input type="radio"/>	×
Device	Select the condition to change the display according to the state. Bit :Select it when changing the display according to the ON/OFF status of bit device. After selecting, set the bit device and device status (ON/OFF). ( Section 5.1 Device Setting) Word :Select it when changing the display according to the value of word device. After selecting, set the conditional expression of word device value in [Range].	<input type="radio"/>	×
Range	Set the range of word device values for display change using a conditional expression.	<input type="radio"/>	×

(Continued to next page)

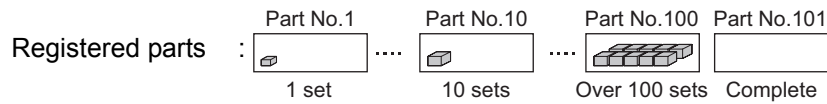
Items		Description	A	F
State *1	Attribute	Select the display method of parts. Indirect (Device value) :Display the parts/base screen/window screen corresponding to word device value. Set zero in the word device value to erase the part. Parts No. :Select this item at displaying the registered parts/base screen/window screen by specifying it. After selection, set the parts/base screen/window screen to be displayed. Set zero in "Parts No." to erase the part. Mark Color :When [Mark] selecting in [Parts Type], select this item to switch the white of the parts to other color. Hold :Select this item to hold the currently displayed parts/base screen/window screen.	○	×
	Blink	Select the blinking pattern of the parts. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	○	×

For details of *1, refer to the following.

*1 State

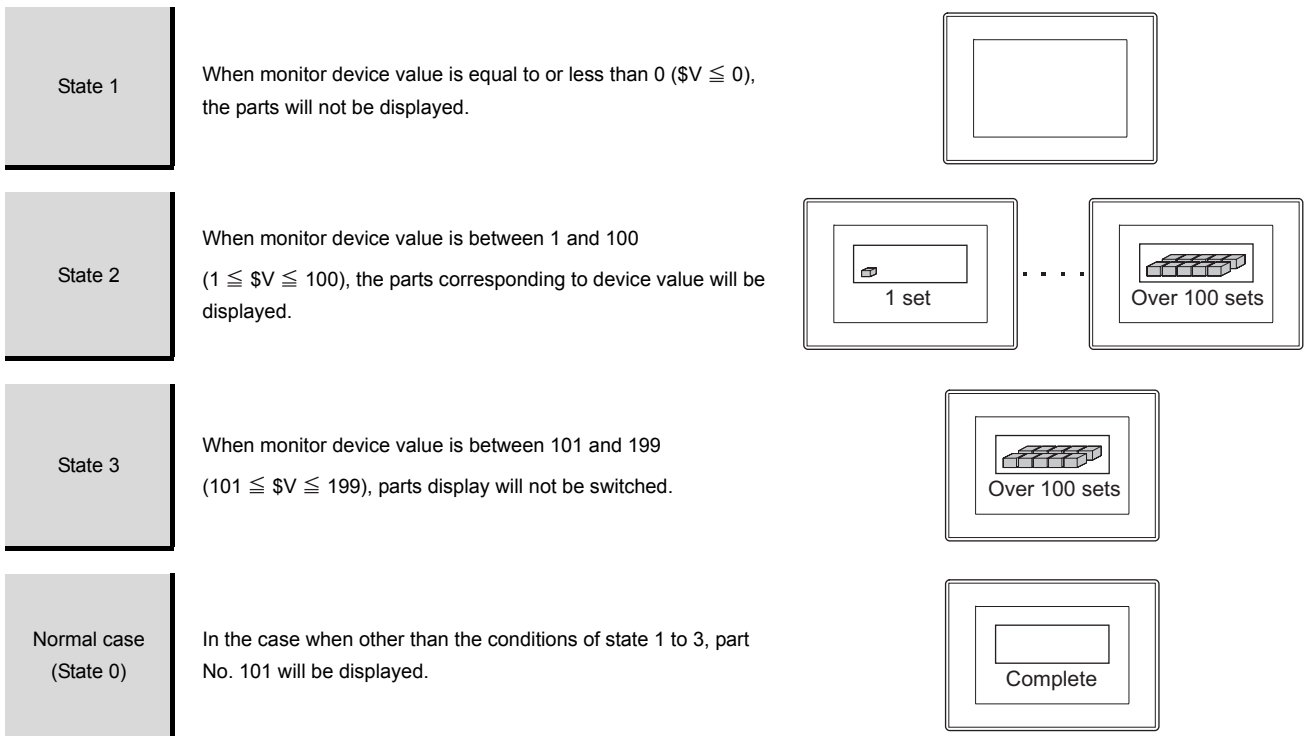
- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.
- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Monitor device : D100
Data view format : Signed decimal, 16-bit signed decimal




Action priority for setting overlap conditions	State No.	Display range	Display parts
High	1	$\$V \leq 0$	No.0
↓	2	$1 \leq \$V \leq 100$	Indirect
	3	$101 \leq \$V \leq 199$	Hold
Low	Normal case (State 0)	-	No.101

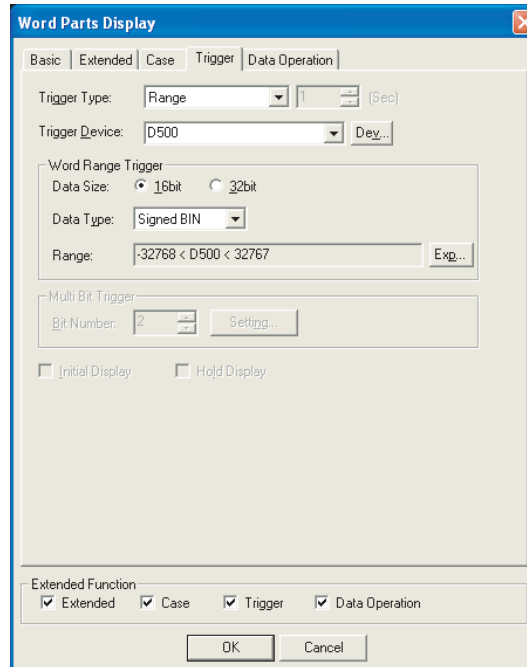
*\$V indicates monitor device value



4 Trigger tab (for GOT-A900 series only)

The setting items of the trigger tab are the same with bit parts display.
For details of setting items, refer to the following.

 Section 9.1.3 Setting items of bit parts display

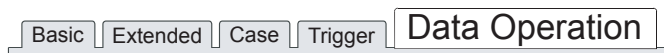
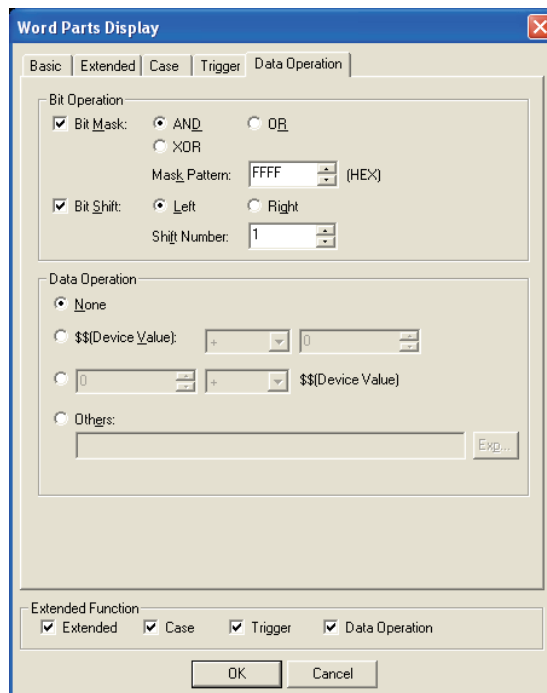


5 Data Operation tab (for GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function

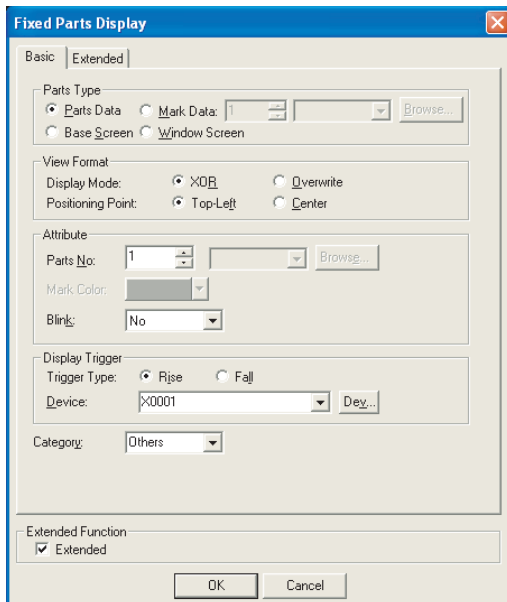


Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

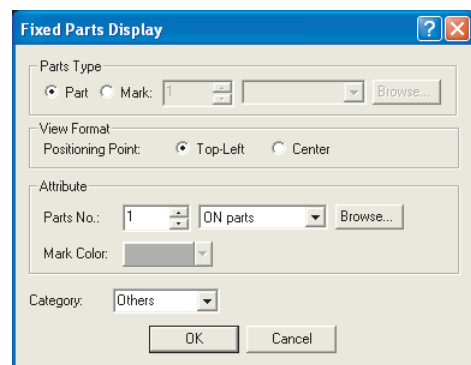
9.1.5 Setting items of fixed parts display

1 Basic tab

Directly specify and set the parts/base screen/window screen to be displayed.
The setting of this screen is only applicable to GOT-F900 series.



In the case of GOT-A900 series



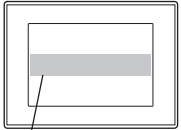
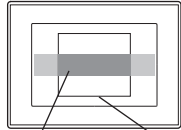
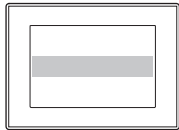
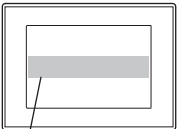
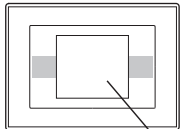
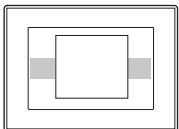
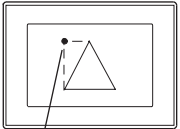
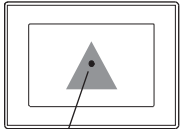
In the case of GOT-F900 series

Basic

Extended

Items	Description	A	F
Parts Type	Select the type of part to be displayed.	<input type="radio"/>	<input type="radio"/>
Parts Data	The registered part is displayed.	<input type="radio"/>	<input type="radio"/>
Mark Data	Changes the white part of the registered part into the different color according to the device change. After selecting this item, set the [Parts No.]. The type of registered part can be checked by clicking on Browse button. Refer to the following for the displayed parts by Mark. (Section 4.2 Parts Registration)	<input type="radio"/>	<input type="radio"/>
Base Screen	Displays the registered base screen as part.	<input type="radio"/>	<input checked="" type="checkbox"/>
Window Screen	Displays the registered window screen as part.	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Items	Description	A	F
View Format	<p>Select the method of displaying parts when they are switched.</p> <p>XOR :The parts/base screen/window screen by XOR combination is overlaid on a figure or other part display. The parts/base screen/window screen is erased at the disabled display condition. For the XOR combination of the overlapped colors, refer to the following. (☞ App.5 Synthesized Colors Available for XOR)</p> <p>Example: Display condition: Rising edge of M100</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Shape (Blue)</p> </div> <div style="text-align: center;"> <p>When display condition is enabled (M100: OFF → ON)</p>  <p>Overlapped part changes to yellow. XOR combination of figure + part No. 1 colors</p> </div> <div style="text-align: center;"> <p>When display condition is disabled (M100: ON → OFF)</p>  <p>Part is erased.</p> </div> </div> <p>Overwrite :The parts/base screen/window screen is overlaid on a figure or other part display. The parts/base screen/window screen is kept displaying without regarding to the display condition.</p> <p>Example: Display condition: Rising edge of M100</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Shape</p> </div> <div style="text-align: center;"> <p>When display condition is enabled (M100: OFF → ON)</p>  <p>Parts</p> </div> <div style="text-align: center;"> <p>When display condition is disabled (M100: ON → OFF)</p>  <p>Part is kept displayed.</p> </div> </div>	○	×
Positioning Point	<p>Select the reference point to display parts/base screen/window screen.</p> <p>Top-Left : Set the display position at the top left of the part/base screen/window screen. Center : Set the display position at the center of the part/base screen/window screen. Example:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Top-Left</p>  <p>Set display position</p> </div> <div style="text-align: center;"> <p>Center</p>  <p>Set display position</p> </div> </div>	○	○

(Continued to next page)

Items	Description	A	F
Attribute	Set the display attribute of parts. Parts No. : Select this item to display the parts/base screen/window screen and screen during registration. After the selection, set the parts/base screen/window screen No. to be displayed. Mark Color : When the registered parts are [Mark] selected in [Parts Type], select the color to which the white part of the parts will be switched.	○	×
	Blink Select the blinking pattern of the Parts. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	○	×
Display Trigger	Trigger Type Select the trigger by which data is displayed. (☞ Section 5.5 Trigger Setting) • Rise • Fall	○	×
	Device Click on [Dev] button to specify the device to be set as trigger. (☞ Section 5.1 Device Setting)	○	×
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	○	○


2 Extended tab (for GOT-A900 series only)

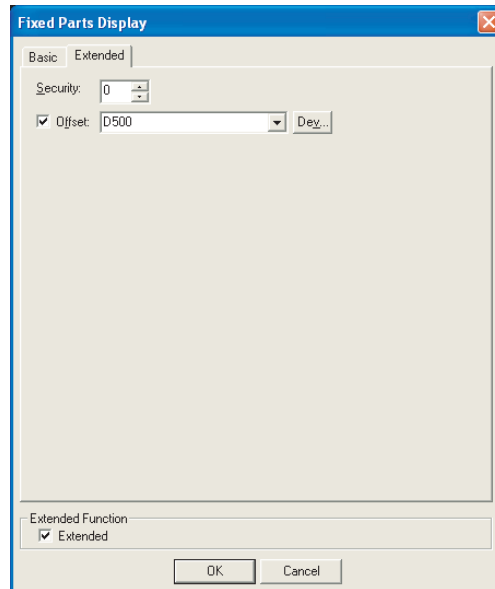
Set the security and offset.

This tab is displayed when the extended function at the bottom of the dialog box is checked.

The setting items of option tab are the same with bit parts display.

For details of setting items, refer to the following.

 Section 9.1.3 Setting items of bit parts display



9.1.6 Precautions


The following provides the precautions when using parts display function.

1 Precautions for drawing


- (1) Maximum number of parts display objects settable on one screen
 - For GOT-A900 series: 256
 - For GOT-F900 series: 50

- (2) Precautions for registering parts
Refer to the following for the precautions for registering parts.

- (a) When using registered parts

 Section 4.2 Parts Registration

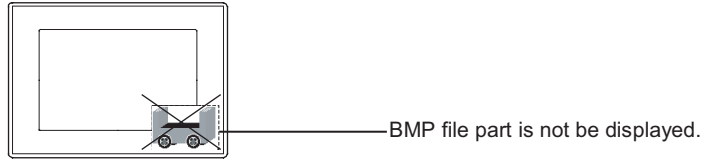
- (b) BMP file stored on PC card (BMP file part)

 Section 4.3 Storing a BMP file part in the PC card

(3) Setting parts display and parts movement

The BMP file part will not be displayed if it has been set in the display position where it will extend off the screen.

Check the display position on the Preview.



2 Precautions for hardware

(1) GOT with restrictions on use

BMP image parts cannot be used as the A95* handy GOT does not support PC card.

3 Precautions for use

(1) Parts erasure

To erase the part, use "Parts" or "Mark" setting in "Parts Type" category.

The part set to "Base Screen" or "Window Screen" in "Parts Type" category is not erased even if setting to zero.

(The part will be erased by redisplaying current screen after switching to another screen.)

(2) Reading the BMP file

The monitor screen pauses during a file reading.

(3) The partway-displayed BMP file parts

In the process of a file displaying, the display may be paused with the image partway-displayed.

In such a case, display the parts again or check the BMP file.

(4) While displaying the BMP file parts of the PC card

Do not remove the PC card from the GOT while displaying the BMP file parts of the PC card.

(5) Discontinuing to use the BMP file parts of the PC card

Turn the GOT internal device (GS450.b8) OFF.

The BMP file parts of the PC card can be displayed even if the PC card is removed without the operation above. The reason is the below.

The BMP file part displayed on the GOT is retained in the GOT built-in memory. (Only one BMP file part can be retained.)

If the BMP file part of the same parts No. is specified subsequently, the BMP file part retained in the GOT built-in memory will be displayed. Accordingly, the part registered by the GT Designer2 is not displayed.



9.2 Parts Movement



It is the function to change parts position and display (movement) according to the value of word device.
The parts to be displayed can be switched in movement.

Parts movement can be displayed by the following 2 types of devices.

- Position device : The device storing parts move destination.
- Parts switching device : The device to switch the types of parts to be displayed.

Remark

Parts displayed in parts display

There are two different parts that are displayed in parts display, and they must be registered in advance.


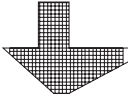




- (1) Parts data registered on GT Designer2 (registered part)

☞ Section 4.2 Parts Registration

- (2) Parts data registered on GT Designer2 (registered part)
BMP file stored on PC card (BMP file part)

☞ Section 4.3 Storing a BMP file part in the PC card

1 Applicable parts types

Type	Description	Remarks
Parts	<p>The figures registered as parts are displayed.</p> <p>Example: Registrable figures as parts</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Figures</p> </div> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>ABC</p> <p>Text</p> </div> <div style="text-align: center;">  <p>BMP file</p> </div> </div>	<ul style="list-style-type: none"> • Parts must have been registered in advance. ☞ • Section 4.2 Parts Registration • Section 4.3 Storing a BMP file part in the PC card
Mark	<p>The color of the figure registered as a part is displayed according to the change of the device value.</p> <p>The used memory capacity inside of the GOT are saved since different images can be displayed by a single part.</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="text-align: center; margin-right: 20px;"> <p>White</p>  <p>D100 = 0</p> </div> <div style="text-align: center; margin-right: 20px;"> <p>Blue</p>  <p>D100 = 50</p> </div> <div style="text-align: center;"> <p>Red</p>  <p>D100 = 100</p> </div> </div> <p>The color changing is displayed in the white area.</p>	<ul style="list-style-type: none"> • BMP format parts cannot be used. • Draw the color-changed area in white.

9.2.1 Moving and displaying parts

1 Move way of parts (control with position device)

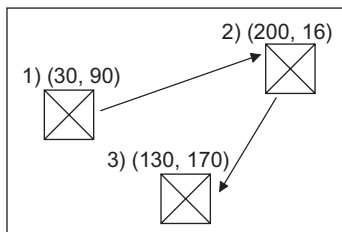
The following three types of move ways can be selected.

(1) Position

Display parts at the position (dot notation).

Specify the display position using 2 points indicated by the word device values in X/Y axis, respectively.

The display position can be changed in dot unit by changing the value of position device.



Position device (X coordinate): D100

1)	30
----	----

 →

2)	200
----	-----

 →

3)	130
----	-----

 Position device (Y coordinate): D101

1)	90
----	----

 →

2)	16
----	----

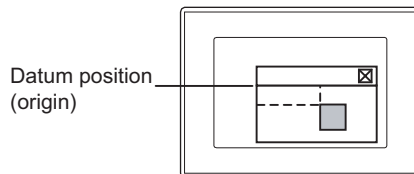
 →

3)	170
----	-----

(a) Datum position

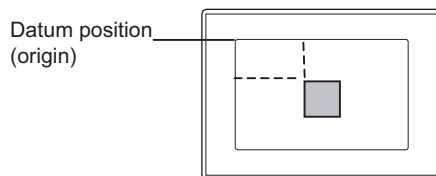
A part displayed in the overlap window has the datum position at the upper left corner of the overlap window.

Example: Overlap window

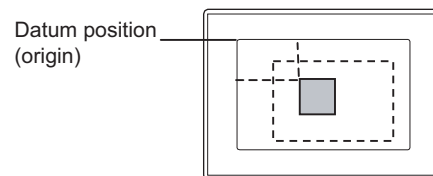


In other cases (base screen, superimpose window, etc.), the upper left corner of the displayed base screen is taken as the datum position.

Example: Base screen



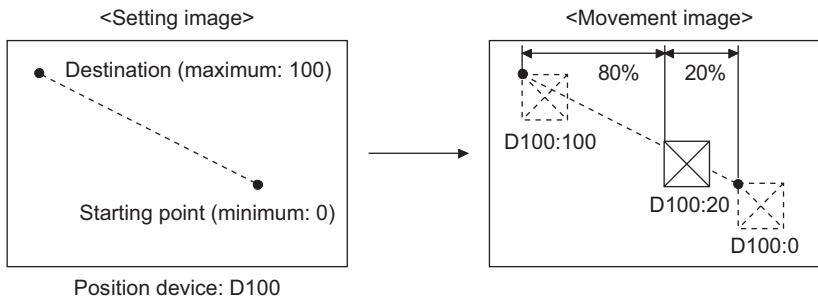
Example: Set overlay screen, superimpose window, etc.



(2) Line

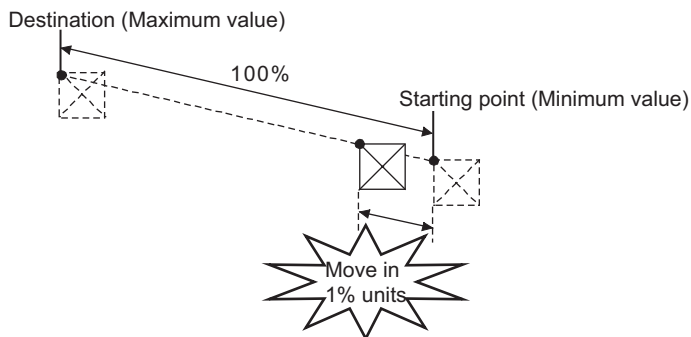
Move parts along lines between starting point and destination that have been set.

Set the starting point as minimum value, and the maximum value for the destination, in order to display the parts using this method.

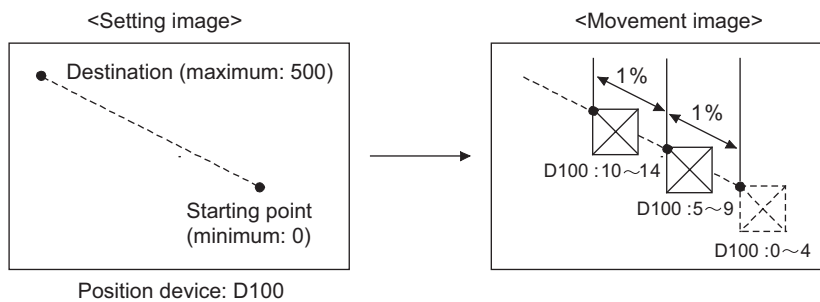


(a) Part moving distance

A part is moved in the range of 0 to 100% in 1% units.



For example, if "0" is set for the starting point (minimum value) and "500" for the destination (maximum value), the part moves when a position device value is an integral multiple of "5".

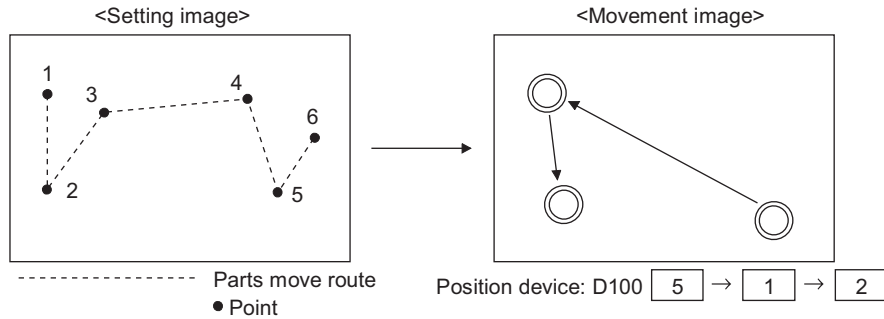


(3) Point

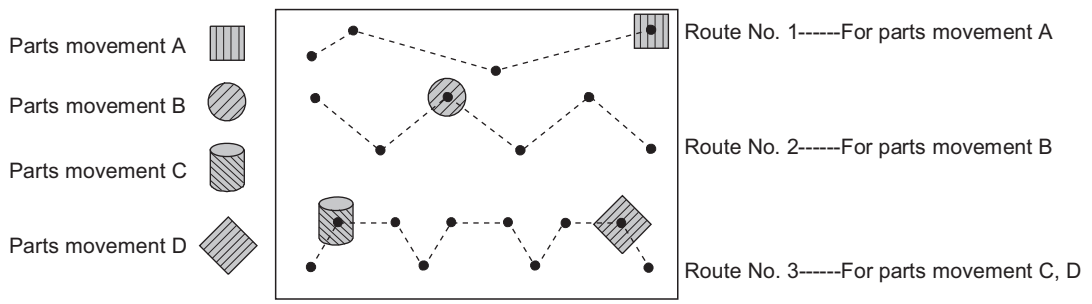
Display parts at preset display position (point).

Point setting is made by registering a line connecting multiple points (parts move route).

Parts are displayed at the place indicated by the point No. that is the same as the value of position device.



Up to 30 Parts move routes can be set in one screen. This setting is made for each screen. The parts move route can be used for moving multiple parts.

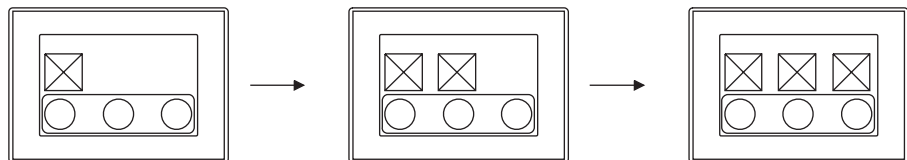


Remark

Locus


Movement locus that keeps the locus can be set in each move way.

☞ The setting of parts movement setting dialog box (basic tab)

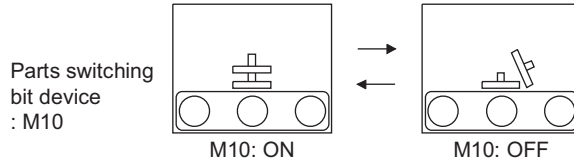


2 Parts switching method (control with parts switching device)

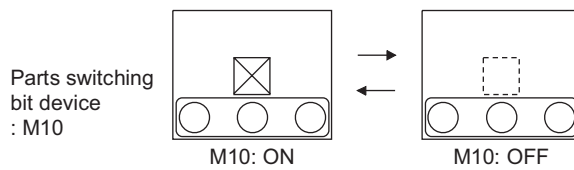
The following 3 switching methods can be selected.


- (1) Bit parts movement  (☞ Section 9.2.4 Setting items of bit parts movement)
Switches to display 2 types of parts.

(a) Switch different parts according to ON/OFF of bit device.

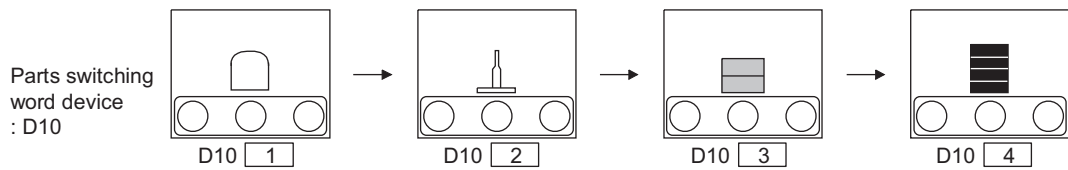


(b) Displays/hides parts according to ON/OFF of bit device.

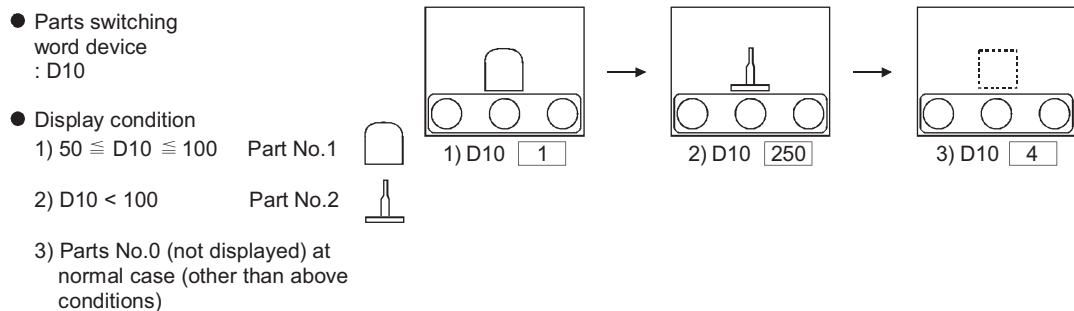



- (2) Word parts movement  (☞ Section 9.2.5 Setting items of word parts movement)
Switches to display more than 3 types of parts.

(a) Switch to display parts of which parts No. is the same as the word device value.

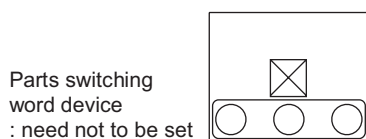


(b) Switch parts type according to the range and condition of word device value.



- (3) Fixed part movement  (☞ Section 9.2.6 Setting items of fixed parts movement)

Only one type of parts is displayed.
Parts switching device is not set.

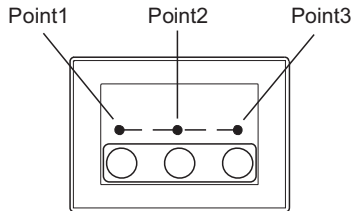


3 Parts movement example

Execute parts movement display by position device and parts switching device.

1) Position device (D10)
Move way: Point

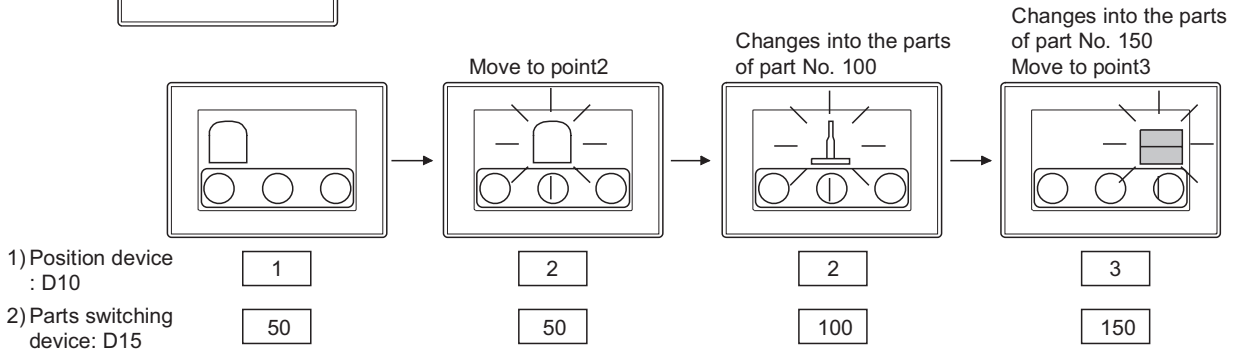
2) Parts switching device (D15)
Switching way: Parts movement



Part No. 50 :

Part No. 100 :

Part No. 150 :



4 The setting order of parts movement

When setting the object of parts movement, select parts switching way, then parts move way.

1 Select parts switching way

Select from the menu. (☞ Section 9.2.3 Arrangement and setting)

The switching method cannot be changed after setting the object of parts movement.

2 Select parts move way

Set in the dialog box that is displayed after selecting parts switching way.

The move method can be changed even after setting the object of parts movement.



When setting the move way of parts movement in [Point] within [Part Move Route] dialog box.

Make sure to set parts move route in advance before setting object of parts movement.

(☞ Section 9.2.2 Setting of parts move route (common setting for each screen))

5 Displaying method of the BMP file stored in the PC card

The BMP file parts stored in the PC card can be displayed by specifying a number from 9001 to 9999 for the parts No.

To display a BMP file part in the PC card by specifying parts No. of 9001 to 9999, make the setting in the following procedure.

- 1 Store a BMP file to be displayed as parts in the PC card.

☞ Section 4.3 Storing a BMP file part in the PC card

- 2 Turn ON the GS450.b8.

Parts No.	When GS450.b8 is ON	When GS450.b8 is OFF
9001 to 9999	The BMP file part in the PC card is displayed.	The part registered by the GT Degisner2 is displayed.

- 3 The BMP file parts in the PC card will be displayed when the parts displaying condition (Parts No. : 9001 to 9999) is met on Parts Display/Parts Movement.

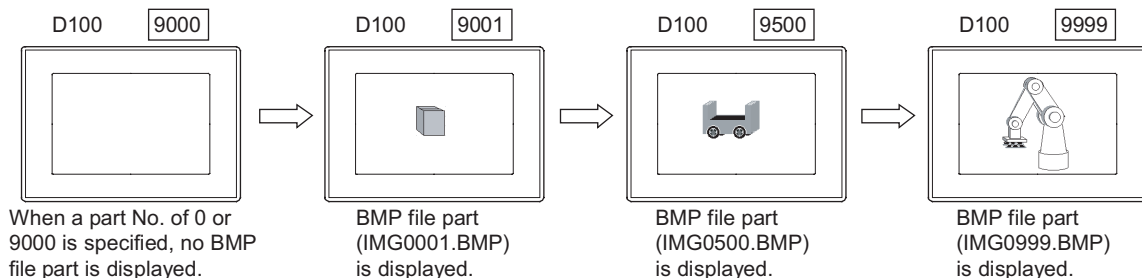
The display example in the case where the following BMP file parts are stored on the PC card is shown below.



Example: BMP file parts are displayed in parts display (word)

When any of the part numbers from 9001 to 9999 is entered in a word device, the corresponding BMP file part is displayed.

- Word device for parts display : D100

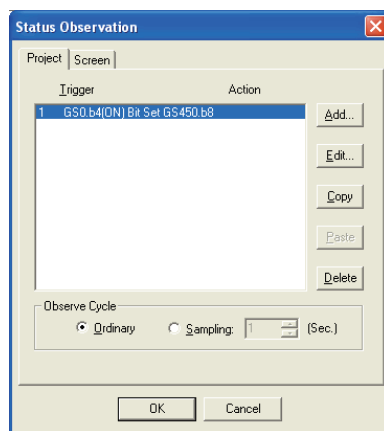


- (1) When specifying a parts No. out of 9001 to 9999
The parts registered by the GT Designer2 will be displayed even when the GS450.b8 is ON.
- (2) When switching the parts display to the display of the BMP file parts of the corresponding parts No. in the PC card
To display the BMP file parts of the corresponding parts No. in the PC card while displaying parts of parts No. of 9001 to 9999 registered by the GT Designer2, operate as follows.

- 1 Turn ON the GS450.b8.
- 2 Specify the parts No. 0 or 9000 to hide the parts currently displayed.
- 3 Specify the parts No. of the BMP file parts in the PC card to be displayed.

- (3) The example of turning on the GS450.b8 automatically after the GOT powering on
The following shows the example of turning on the GS450.b8 automatically after the GOT is powered on by using the status observation function.
It is convenient for displaying the BMP file parts in the PC card after powering on the GOT.

On the status monitor function, set the internal device (Ordinary ON device: GS0.b4) to store "1" to GS450.b8 when the Trigger is ON.
After the GOT is powered on, "1" is stored into GS450.b8 by the status monitor function.



- Make setting on the status monitor.
- Set the first line of the status monitor function. ("1" is stored into GS450.b8 immediately after the GOT is switched ON.)*¹
- Set the condition monitor cycle to "Ordinary".

*1 At a GOT startup, to display or parts movement parts may not be changed to BMP image parts. (Switch the screen change parts.)
Design screens considering the characteristics of BMP image parts.



6 Parts No.

The displayable parts or the motions differ depending on the parts No.
The displayable parts for each parts No. are shown in the following table.

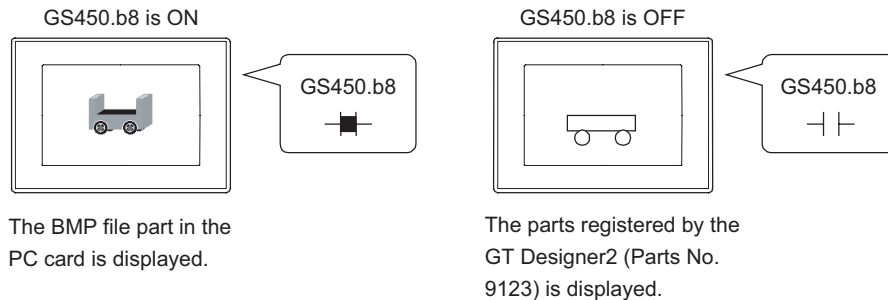
Parts No.	When GS450.b8 is ON		When the GS450.b8 is OFF	
	Parts registered by the GT Designer2	BMP file parts in the PC card	Parts registered by the GT Designer2	BMP file parts in the PC card
0	—*1	—*1	—*1	×
1 to 8999	○	×	○	×
9000	×	—*1	○	×
9001 to 9999	×*2	○	○	×
10000 to 32767	○	×	○	×

○: Displayable ×: Not displayable —: Hidden

- *1 When [Indirect (Device Value)] in the [Attribute (Normal Case)] of the Word Parts Movement has been set, the parts will not be hidden. (The current display is retained.)
For the method of hiding parts with the Word Parts Movement, refer to the [Attribute (Normal Case)] of the Word Parts Movement.

( Section 9.2.5  Setting items of word parts movement)

- *2 The parts cannot be displayed even if they have been registered by the GT Designer2.
Example: When a part registered by the GT Designer2 has been registered for the parts No. 9123

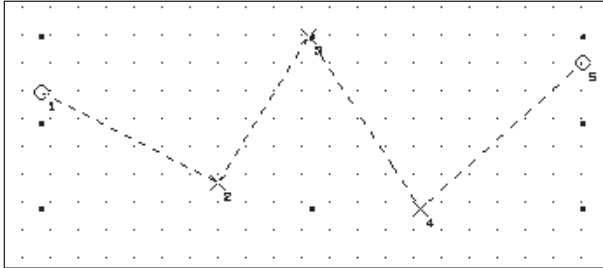


9.2.2 Setting of parts move route (common setting for each screen)

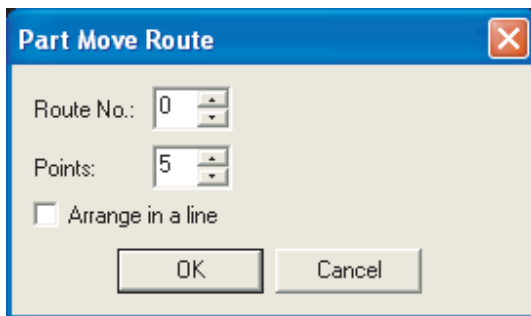
Set parts move route as parts display position when setting parts move way in [Point].

Up to 30 parts move routes can be set in one screen

The parts move route can be used for multiple parts movement.

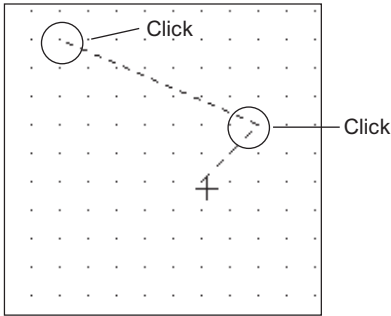


- 1 Select [Object] → [Parts Movement] → [Parts Move Route] from the menu.
- 2 After parts move route dialog box appears, make the following settings and click on the button.

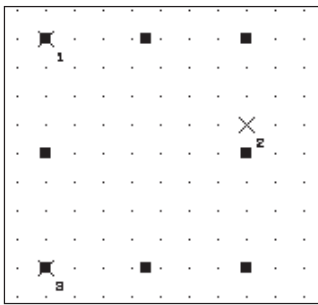


Items	Description	A	F
Route No.	Set route No. (0 to 29) of parts move route to be created.	○	×
Points	Set points (1 to 100) movement position (position to display parts).	○	×
Arrange in a line	<p>Check this item to move parts in a line. When arranging in a line, points proportion set in [Points] will be arranged automatically according to the setting of starting point and destination.</p> <p>Example: Points: Set to 5</p> <p>Set the start point and destination point (2 to 4: automatic arrangement)</p>	○	×

- 3 As the mark (+) will appear on drawing screen, click on the mark to arrange Point 1. Click on the positions as many as the number of set points for arrangement.



- 4 Point No. will appear at the set position after setting.

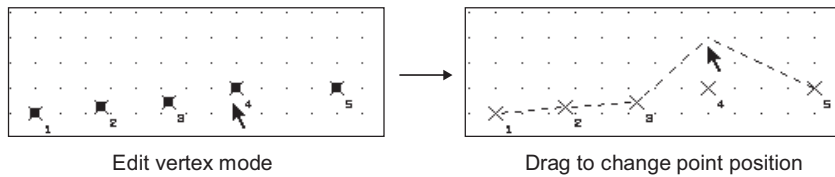


Remark

The correction of parts move route

- (1) Change the point position

- 1 Click to select parts move route, right click on the route to [Edit Point]
- 2 The route is now in "Edit Vertex" mode. Drag a point of the selected route to the destination position. Thus, the point position can be changed. Vertex mode.






- (2) Change the [Points] and [Route No.]

Double click on the parts move route to display the setting dialog box. Then change the [Points] and [Route No.] in the corresponding items.

9.2.3 Arrangement and setting

1 Carry out any of the following operations

- Click on  [Bit Parts Movement] /  [Word Parts Movement] /  [Fixed Parts Movement.].
- Select [Object] → [Parts Movement] → [Bit Parts] / [Word Parts] / [Fixed Parts] from menu.

2 As the setting dialog box appears, make the settings with reference to the following explanation.

Point

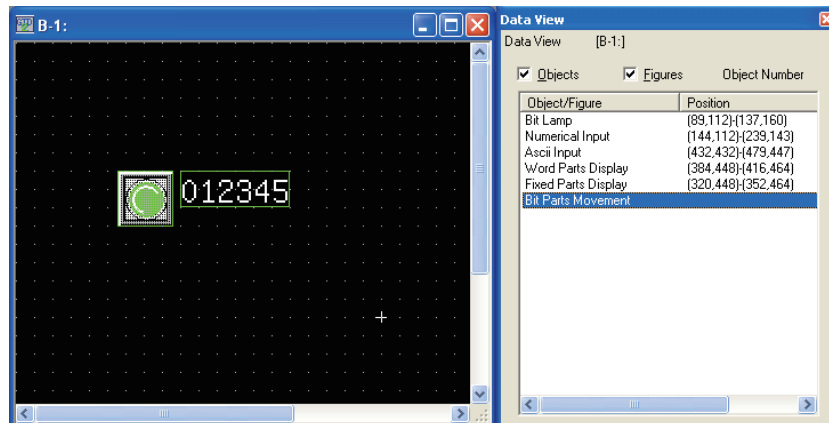
When changing the settings of parts movement

Parts movement cannot be arranged on screen when movement type is [Position], [Point].

Carry out the following method when changing the settings of the preset parts movement.

(1) Edit using data view

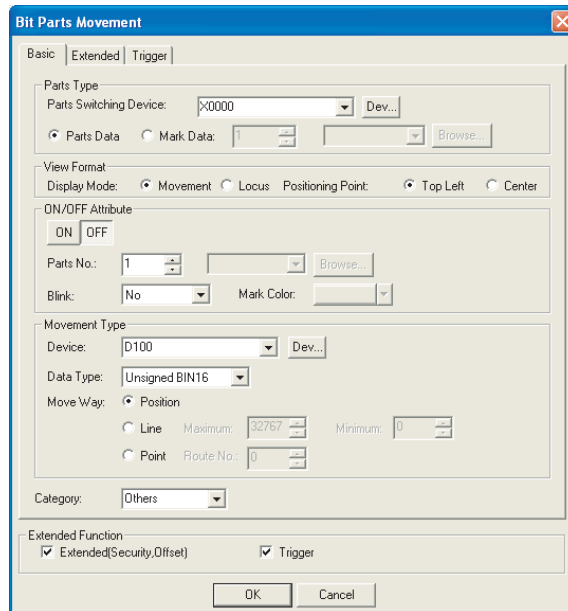
Double click on the parts movement displayed in data view to display the setting dialog box.





9.2.4 Setting items of bit parts movement

1 Basic tab (bit)

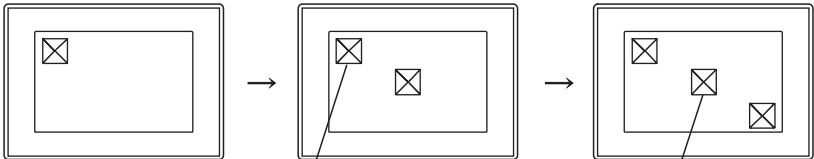
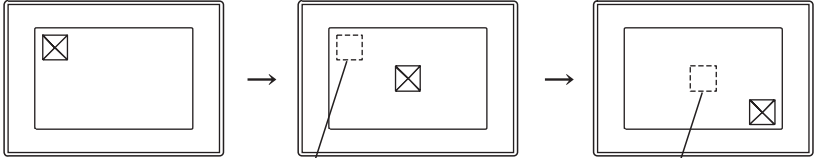
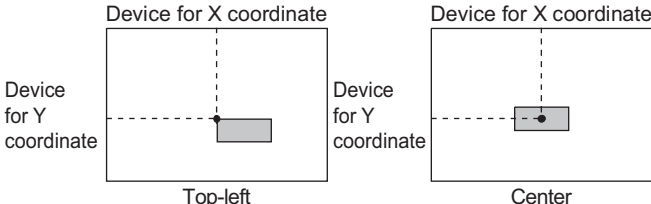
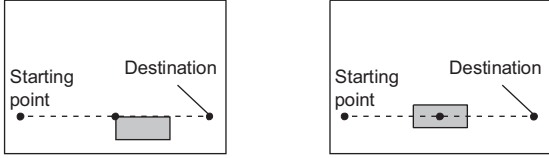
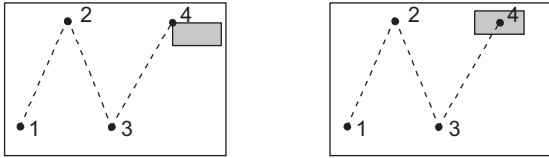
Set the parts move way and the parts to be displayed when the device turns ON/OFF.







Basic Extended Trigger

Items	Description	A	F
Parts Switching Device	<p>Set the device to switch the part to be displayed. With this setting, the part to be displayed can be switched even while the parts are moving. (☞ Section 5.1 Device Setting)</p> <p>Example:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>X10: ON</p>  <p>Display part No.1</p> </div> <div style="text-align: center;"> <p>X10: OFF</p>  <p>Display part No.10</p> </div> </div>	○	×
Parts Type	<p>Select the part to be moved.</p> <p>Parts Data :Displays the registered part Mark Data :Changes the white part of the registered part into the different color according to the parts switching device change. After selecting, set the [Parts No.] to be displayed as mark. The registered part can be checked by clicking on [Browse] button. Refer to the following for the parts displayed by Mark. (☞ Section 4.2 Parts Registration)</p>	○	×

(Continued to next page)

Items	Description	A	F
Display Mode	<p>Select the method of displaying parts during parts movement.</p> <p>Locus :Displays the moving parts while showing the images of previous display on the screen.</p> <p>Movement :Displays the moving parts without showing the images of previous display on the screen.</p> <p>Example:</p> <p>When selecting [Locus]</p>  <p>The previous display The previous display</p> <p>When selecting [Movement]</p>  <p>Erase the previous display Erase the previous display</p>	○	x
View Format	<p>Select the base point to display the part.</p> <p>Top-left :Displays the part with reference to the upper-left position to that part.</p> <p>Center :Displays the part with reference to the center of that part.</p> <p>Example:</p> <p>When [Position] is selected in [Move Way] (X coordinate device: 320, Y coordinate device: 240)</p>  <p>Device for X coordinate Device for X coordinate</p> <p>Device for Y coordinate Device for Y coordinate</p> <p>Top-left Center</p> <p>When [Line] is selected in [Move Way] (Device: D100=50)</p>  <p>Starting point Destination point Starting point Destination point</p> <p>Top-left Center</p> <p>When [Point] is selected in [Move Way] (Device: D200=4)</p>  <p>Top-left Center</p>	○	x


(Continued to next page)

Items	Description	A	F	
ON/OFF Attribute	ON	Click on this item to set the part to be displayed when the device turns ON	<input type="radio"/>	×
	OFF	Click on this item to set the part to be displayed when the device turns OFF	<input type="radio"/>	×
	Parts No.	Set the pat No. to be displayed. The registered part can be checked by clicking on [Browse] button. Set 0 in "Parts No." to erase the part. (Set the part No. when the device is OFF to "0" in order to display the part only when the device is ON.)	<input type="radio"/>	×
	Blink	Select the blinking pattern of the Parts. No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.	<input type="radio"/>	×
	Mark Color	Select the color to be switched from the white area of the part when [Mark] has been set in [Parts Type].	<input type="radio"/>	×
Movement Type* ¹	<p>Select the movement type.</p> <p>Position : Select this item to display the moving part using two word device values as X/Y coordinate points respectively. Set the devices to store the position From the set device, 2 device points are set continuously for X • Y position storage. (The set device is for X storage) ( Section 5.1 Device Setting)</p> <p>Line*² : Select this item to display the moving part in the line of which starting point and end point have been set. Se the minimum value to the starting point, and maximum value to the end point.</p> <p>Point : Select this item to display the part at the position (point) specified in advance. Then, set the parts movement route No. (0 to 29). The parts movement route must be set on the corresponding screen in advance. ( Section 9.2.2 Setting of parts move route (common setting for each screen))</p>	<input type="radio"/>	×	
	Device	<p>After selecting the [Movement Type], set the position device to store the movement destination of parts. ( Section 5.1 Device Setting)</p> <p>The setting items differ according to the settings made in [Movement Type].</p> <p>Position : Sets the device to store the value of X and Y coordinate. From the set device, 2 device points are set continuously for X • Y position storage. (The set device is for X storage)</p> <p>Line : Sets the device storing the relative value corresponding to the starting point and ending point.</p> <p>Poin : Sets the device to store the display position (point).</p>	<input type="radio"/>	×
	Data Type	When selecting [Line] from [Movement Type], select the data type of word device (signed BIN16/unsigned BIN16). (Fixed to unsigned BIN16 when selecting [Position], [Point])	<input type="radio"/>	×
Category	<p>When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)</p>	<input type="radio"/>	×	

For details of *1, *2, refer to the following.

*1 Movement Type

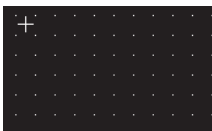
Select the movement type when moving parts.
Refer to the following for the details about parts movement type.

 Section 9.2.1 **1** Move way of parts (control with position device)

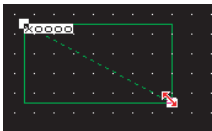
*2 Line

Set the line as the parts move range when the movement type is set as [Line].
Execute the following operations after making settings in the setting dialog box.

- 1 Click on the start position in drawing screen.



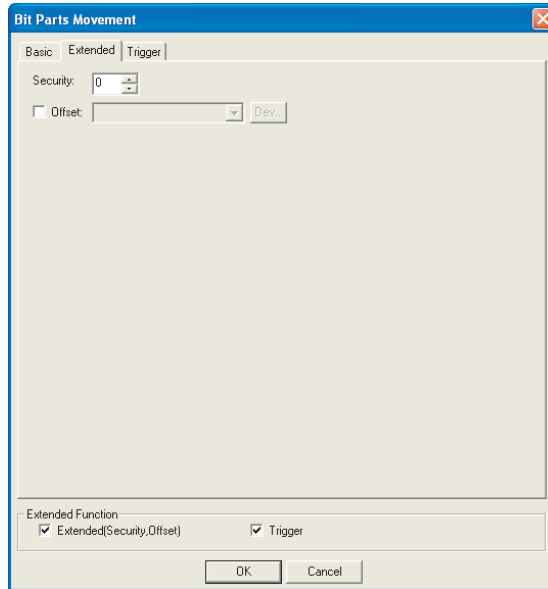
- 2 Set the line as the parts move range after moving cursor and clicking on the destination.



2 Extended tab (bit)

It is to set the security and offset.

Check the Extended Function at the bottom of dialog box to display this tab.




Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×

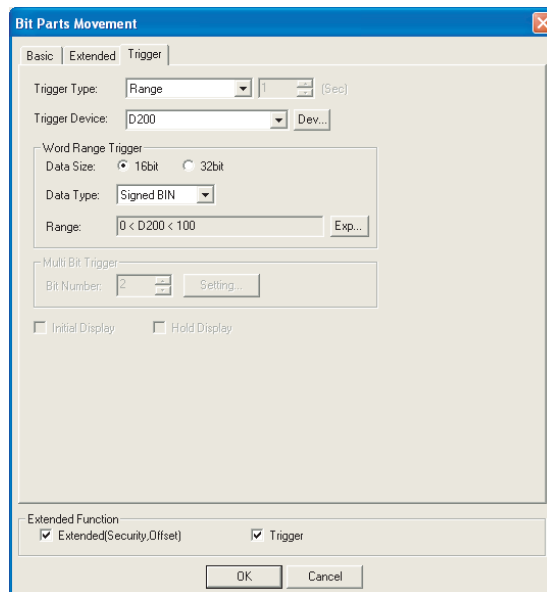
3 Trigger tab (bit)

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



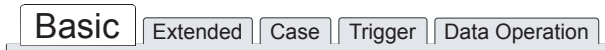
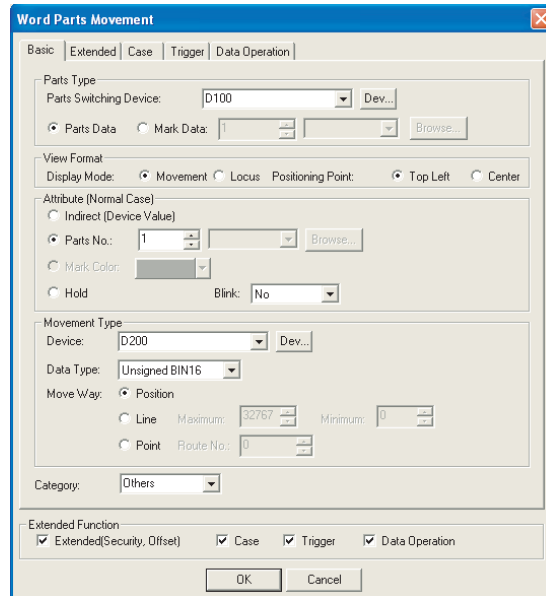
Basic Extended **Trigger**

Items	Description	A	F	
Trigger Type	Select the trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. <ul style="list-style-type: none"> • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger 	○	×	
Trigger Device	Specify the device used for the trigger.	○	×	
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	○	×	
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
	Data Type	Select the [Data Type] of word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data Size].	○	×
	Range	Click on the [Exp] button and set conditional expression for the word device range.	○	×
Multi Bit Trigger	Bit Number	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used as trigger. After setting, click on the [Setting] button and set the bit devices and their triggers	○	×
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	○	×	
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied. If not checked, the object will be deleted when the trigger is not satisfied.	○	×	

9.2.5 Setting items of word parts movement

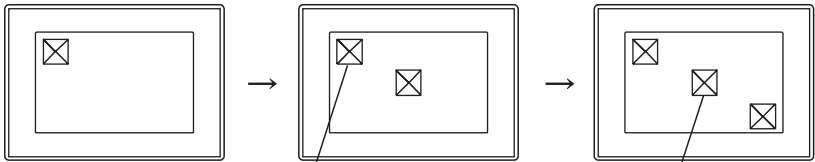
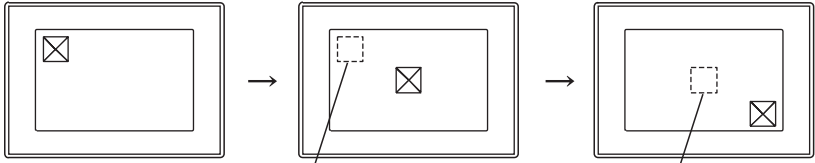
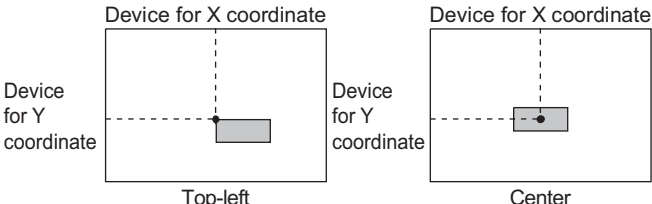
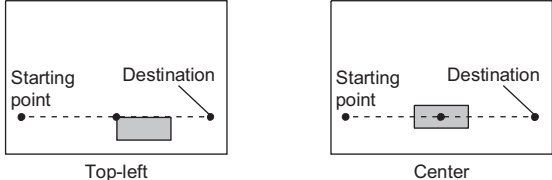
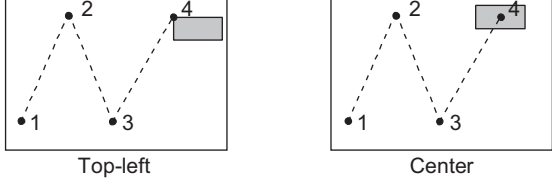
1 Basic tab (word)

Set move way of parts, the parts type and Parts No. to be displayed according to word device value.






Items	Description	A	F
Parts Switching Device	<p>Set the device to switch the part to be displayed.</p> <p>(Section 5.1 Device Setting)</p> <p>With this setting, the part to be displayed can be switched even while the parts are moving.</p> <p>The default of a written data format is signed BIN. To write by the other data format, change the setting in "Data Form" on the Extended tab.</p> <p>Example:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>D10: 1</p> <p>Display part No.1</p> </div> <div style="text-align: center;"> <p>D10: 2</p> <p>Display part No.2</p> </div> <div style="text-align: center;"> <p>D10: 3</p> <p>Display part No.3</p> </div> </div>	○	×
Parts Type	<p>Select the part to be moved.</p> <p>Parts Data :Displays the registered part</p> <p>Mark Data :Changes the white part of the part into the different color according to the parts switching device change.</p> <p>After selecting, set the [Parts No.] to be displayed as mark.</p> <p>The registered part can be checked by clicking on Browse button.</p> <p>Refer to the following for the parts displayed by Mark.</p> <p>(Section 4.2 Parts Registration)</p>	○	×



(Continued to next page)

Items	Description	A	F
Display Mode	<p>Select the method of displaying parts during parts movement.</p> <p>Locus :Displays the moving parts while showing the images of previous display on the screen.</p> <p>Movement :Displays the moving parts without showing the images of previous display on the screen.</p> <p>Example:</p> <p>When selecting [Locus]</p>  <p>The previous display The previous display</p> <p>When selecting [Movement]</p>  <p>Erase the previous display Erase the previous displa</p>	○	×
View Format	<p>Select the base point to display the part.</p> <p>Top-left :Displays the part with the reference to the upper-left position to that part.</p> <p>Center :Displays the part with the reference to the center of that part.</p> <p>Example:</p> <p>When [Position] is selected in [Move Way] (X coordinate device: 320, Y coordinate device:240)</p>  <p>Top-left Center</p> <p>When [Line] is selected in [Move Way] (Device: D100=50)</p>  <p>Top-left Center</p> <p>When [Point] is selected in [Move Way] (Device: D200=4)</p>  <p>Top-left Center</p>	○	×

(Continued to next page)

Items	Description	A	F
Attribute (Normal Case) ^{*3}	<p>Set the display attribute of parts. Use the state (Range Setting tab) for switching to multiple parts except "Indirect (Device value)".</p> <p>Indirect [Device Value] :Displays the parts/base screen/window screen No. corresponding to the word device value. The current display is hold at setting 0 (Setting 0 or 9000 when specifying the BMP file parts in the PC card.) in the parts switching device. The part will be erased by redisplaying current screen after switching to another screen. (Example)</p>  <p>Display the parts with parts No. 100 Monitor device value</p> <p>Parts No. :Select this time to specify and display the registered part. After this, set the [Parts No.] to be displayed. Set 0 in Parts No. to erase the part.</p> <p>Mark Color :At selecting "Mark" in "Parts Type" category, select the displayed color to change in the white area of the registered part.</p> <p>Hold :Select this item to hold current parts display.</p>	○	×
Blink	<p>Select the blinking pattern of the Parts.</p> <p>No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.</p>	○	×
Movement Type ^{*1}	<p>Select the movement type.</p> <p>Position :Select this item to display the moving part using two word device values as X/Y coordinate points respectively. Set the devices to store the position From the set device, 2 device points are set continuously for X * Y position storage. (The set device is for X storage) ( Section 5.1 Device Setting)</p> <p>Line^{*2} :Select this item to display the moving part in the line of which starting point and end point have been set. Se the minimum value to the starting point, and maximum value to the end point.</p> <p>Point :Select this item to display the part at the position (point) specified in advance. Then, set the parts movement route No. (0 to 29). The parts movement route must be set on the corresponding screen in advance. ( Section 9.2.2 Setting of parts move route (common setting for each screen))</p>	○	×

(Continued to next page)


Items	Description	A	F
Device	<p>After selecting the [Movement Type], set the position device to store the movement destination of parts.</p> <p>( Section 5.1 Device Setting)</p> <p>The setting items differ according to the settings made in [Movement Type].</p> <p>Position : Sets the device to store the value of X and Y coordinate. From the set device, 2 device points are set continuously for X • Y position storage. (The set device is for X storage)</p> <p>Line : Sets the device storing the relative value corresponding to the starting point and ending point.</p> <p>Point : Sets the device to store the display position (point).</p>	○	×
Data Type	When selecting [Line] from [Movement Type], select the data type of word device (signed BIN16/unsigned BIN16). (Fixed to unsigned BIN16 when selecting [Position], [Point])	○	×
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)	○	×

For details of *1 to *3, refer to the following.

*1 Movement Type

Select the movement type when moving parts.

Refer to the following for the details about parts movement type.

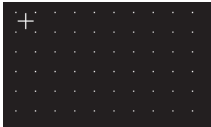
( Section 9.2.1 **1** Move way of parts (control with position device)

*2 Line

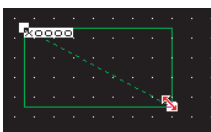
Set the line as the parts move range when the movement type is set as [Line].

Execute the following operations after making settings in the setting dialog box.

- 1 Click on the start position in drawing screen.



- 2 Set the line as the parts move range after moving cursor and clicking on the destination.



*3 Parts switching method

Set on State (Case tab) except [Indirect (Device value)] in [Attribute (Normal case)] category.

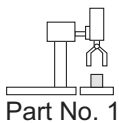
The following describes how to change the displayed part depending on the "Attribute (Normal case)" and State settings.

"Attribute (Normal case)" type	State setting	
	Set	Not set
[Indirect (Device Value)]	<p>The part is displayed as below depending on the condition set to the state.</p> <ul style="list-style-type: none"> When trigger is satisfied The part set to the state is displayed. When trigger is not satisfied The displayed part is changed depending on the parts switching device value. 	<p>Set the state if required.</p> <p>The displayed part is changed depending on the parts switching device value.</p> <p>Set the state to change the part except the above condition.</p>
[Parts No.]	<p>The part is displayed as below depending on the condition set to the state.</p> <ul style="list-style-type: none"> When trigger is satisfied The part set at the state is displayed. When trigger is not satisfied The part set at [Attribute (Normal case)] is displayed. 	<p>Set the state at any time.</p> <p>Only one type of part is kept displayed without state settings. It cannot be switched to any other part.</p>
[Mark Color]		
[Hold]	<p>The part is displayed as below depending on the condition set to the state.</p> <ul style="list-style-type: none"> When trigger is satisfied The part set at the state is displayed. When trigger is not satisfied The part set at the state is kept displayed. 	<p>Set the state at any time.</p> <p>Nothing is displayed without state settings.</p>

Example: When [Attribute (Normal case)] is set to [Parts No].
Set the following on each tab.

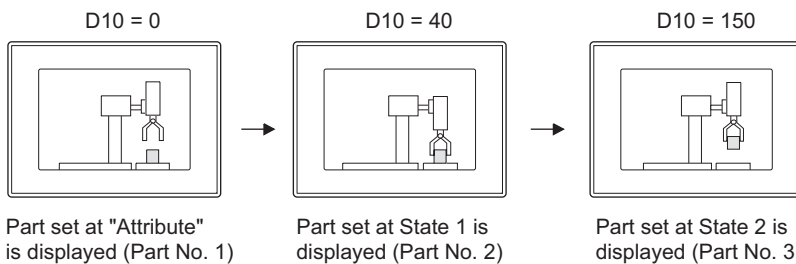
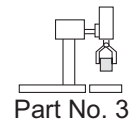
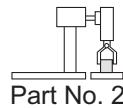
Basics tab

[Parts Switching Device]: D10
[Parts Type]: [Parts Data]
[Attribute (Normal Case)]: [Parts No.1]
(Displayed part)



Range Setting tab

State 1	State 2
[Range] : 1 <= D10 <= 100	[Range] : 100 < D10
[Attribute] : Parts No.2	[Attribute] : Parts No.3



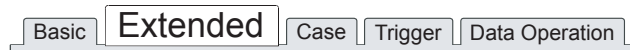
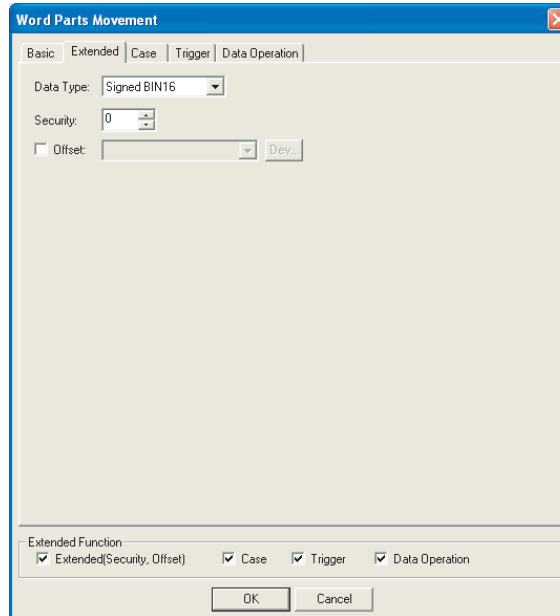
Refer to the following section for details of the state.

☞ Section 5.4 State Setting

2 Extended tab (word)

Set the data type, security and offset of monitor device.


Check "Extended Function" at the bottom of the dialog box to display this tab.

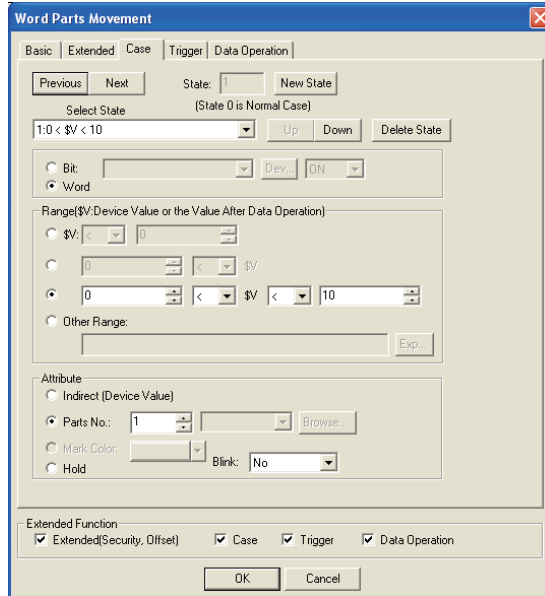


Items	Description	A	F
Data Type	<p>Select the data type of the parts switching dvice.</p> <p>Signed BIN :Treats word device value as a signed binary value.</p> <p>Unsigned BIN :Treats word device value as an unsigned binary value.</p> <p>BCD 16 :Treats word device value as 16-bit BCD (binary decimal) value.</p> <p>This setting item is not available for the following devices. Position device (set in [Move Way] within the basic tab. [Range] device set in [Trigger Type] within the trigger tab.</p>	○	×
Security	<p>When using the security function, set the security level (1 to 15). When not using the function, set it to "0".</p> <p>(Section 5.8 Security Function)</p>	○	×
Offset	<p>Check this item when executing monitor by switching between multiple devices.</p> <p>(Section 5.7 Offset Function)</p> <p>After checking, set the offset device.</p> <p>(Section 5.1 Device Setting)</p>	○	×


3 Case tab (word)

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

 Section 5.4 State Setting



Basic Extended **Case** Trigger Data Operation

Items	Description	A	F
State ^{*1}	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	<input checked="" type="checkbox"/>
New State	Creates a new state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete State	Deletes a specified state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Previous/Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Up/Down	Changes the priority of the current state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	<input type="radio"/>	<input checked="" type="checkbox"/>
Device	Select the display change conditions according to state. Bit :Select it when changing the display according to the ON/OFF status of bit device. After selecting, set the bit device and device status (ON/OFF).  Section 5.1 Device Setting Word :Select it when changing the display according to the value of word device. After selecting, set the conditional expression of word device value in [Range].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Set the range of word device values for display change using a conditional expression.	<input type="radio"/>	<input checked="" type="checkbox"/>

(Continued to next page)

Items		Description	A	F
State *1	Attribute	<p>Select the method of displaying parts.</p> <p>Indirect (Device Value) :Displays the parts/base screen/window screen No. corresponding to the word device value. The current display is hold at setting zero in the parts switching device. The part will be erased by redisplaying current screen after switching to another screen.</p> <p>Parts No. :Select this time to specify and display the registered part. After selection, set the displayed parts No. Set 0 in "Parts No." to erase the part.</p> <p>Hold :Select this item to hold current parts display even though state condition is satisfied.</p> <p>Mark Color :Select this item to change the white part of the registered part into the different color when mark-selecting in [Parts Type].</p>	○	×
	Blink	<p>Select the blinking pattern of the Parts.</p> <p>No : Not blink.</p> <p>Low : Blinks every 1 second.</p> <p>Middle : Blinks every 0.5 seconds.</p> <p>High : Blinks every 0.2 seconds.</p>	○	×

For details of *1, refer to the following.

*1 State

- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.
- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Parts switching device : D100

Data view format : Signed decimal 16-bit signed decimal

Registered parts : Parts No. 1 Parts No. 10 Parts No. 11 Parts No. 12



The operation priority for setting overlap conditions.

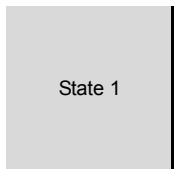
High



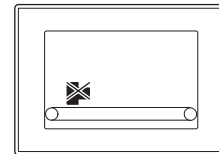
Low

State No.	Display range	Display parts
1	M10 ON	No.11
2	1<=\$V<=9	Indirect
3	10<=\$V	Hold
Normal Case (State 0)	---	No.12

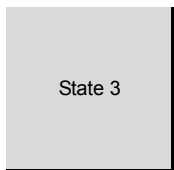
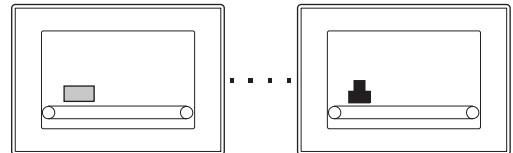
*\$V indicates the value of monitor device.



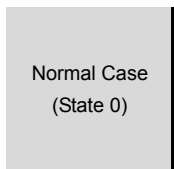
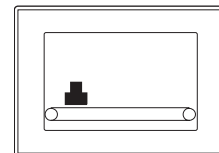
Display parts No.11 when M10 is ON.



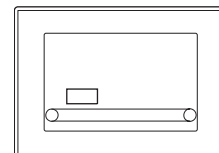
Display the parts corresponding to parts switching device value when the value is between 1 and 9 (1<=\$V<=9).



Do not switch parts display when parts switching device value is 10 or greater (10<=\$V).




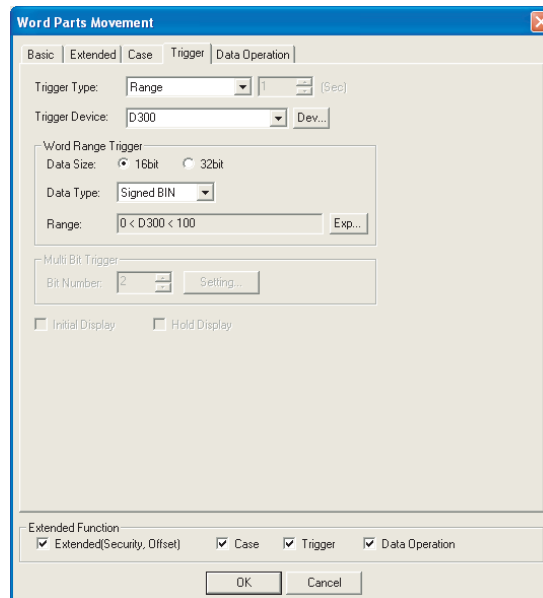
Display parts No.12 in the condition other than state 1 to 3.



4 Trigger tab (word)

The setting items of trigger tab are the same as bit parts movement.
For details of setting items, refer to the following.

 Section 9.2.4 Setting items of bit parts movement

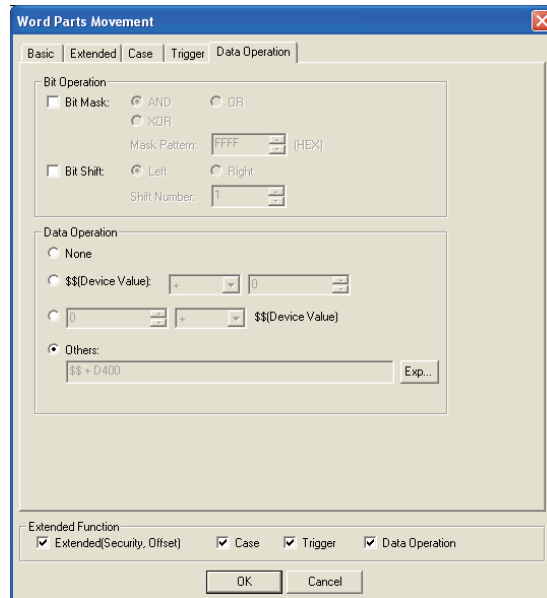


5 Data Operation tab (word)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic Extended Case Trigger Data Operation

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	○	×
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	○	×
Data Operation		Select an operational expression format for data operation.	○	×

9.2.6 Setting items of fixed parts movement

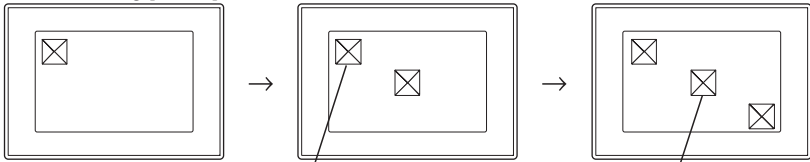
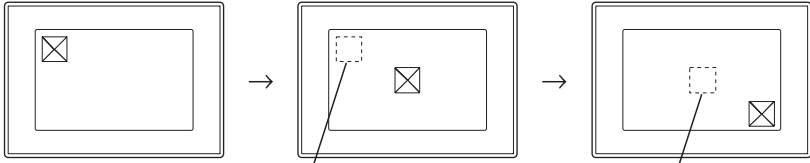
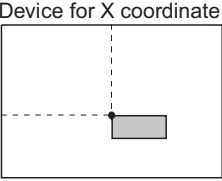
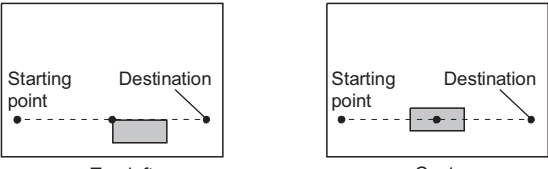
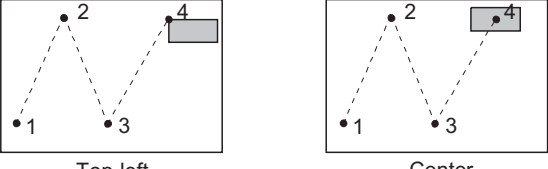
1 Basic tab (fixed)

Directly specify and set the parts move way as well as the parts to be display.





Basic Extended Trigger

Items	Description	A	F
Parts Type	<p>Select the part to be moved.</p> <p>Parts Data :Displays the registered part</p> <p>Mark Data :Changes the white part of the part into the different color according to the parts switching device change. After selecting, set the [Parts No.] to be displayed as mark. The registered part can be checked by clicking on Browse button. Refer to the following for the displayed parts by Mark. (☞ Section 4.2 Parts Registration)</p>	○	×

(Continued to next page)

Items	Description	A	F
<p>Display Mode</p>	<p>Select the method of displaying parts during parts movement.</p> <p>Locus :Displays the moving parts while showing the images of previous display on the screen.</p> <p>Movement :Displays the moving parts without showing the images of previous display on the screen.</p> <p>Example: When selecting [Locus]</p>  <p>The previous display The previous display</p> <p>When selecting [Movement]</p>  <p>Erase the previous display Erase the previous displa</p>	<p>○</p>	<p>×</p>
<p>View Format</p> <p>Positioning Point</p>	<p>Select the base point to display the part.</p> <p>Top-left :Displays the part with reference to the upper-left position to that part.</p> <p>Center :Displays the part with reference to the center of that part.</p> <p>Example: When [Position] is selected in [Move Way] (X coordinate device: 320, Y coordinate device:240)</p>  <p>Device for X coordinate Device for X coordinate</p> <p>Device for Y coordinate Device for Y coordinate</p> <p>Top-left Center</p> <p>When [Line] is selected in [Move Way] (Device: D100=50)</p>  <p>Starting point Destination point Starting point Destination point</p> <p>Top-left Center</p> <p>When [Point] is selected in [Move Way] (Device: D200=4)</p>  <p>Top-left Center</p>	<p>○</p>	<p>×</p>

(Continued to next page)


Items	Description	A	F
Attribute	<p>Set the display attribute of parts.</p> <p>Parts No. :Select this item to display parts in registration. Set the parts No. to be displayed after the selection. Click on <input type="button" value="Browse"/> button to specify the registered parts.</p> <p>Mark Color :Select the color to change from white color of the part. mark-selecting registered parts in [Parts Type].</p>	○	×
	<p>Blink</p> <p>Select the blinking pattern of the Parts.</p> <p>No : Not blink. Low : Blinks every 1 second. Middle : Blinks every 0.5 seconds. High : Blinks every 0.2 seconds.</p>	○	×
Movement Type ^{*1}	<p>Select the movement type.</p> <p>Position :Select this item to display the moving part using two word device values as X/Y coordinator points respectively. Set the devices to store the position From the set device, 2 device points are set continuously for X • Y position storage. (The set device is for X storage) ( Section 5.1 Device Setting)</p> <p>Line^{*2} :Select this item to display the moving part in the line of which\ starting point and end point have been set. Se the minimum value to the starting point, and maximum value to the end point.</p> <p>Point :Select this item to display the part at the position (point) specified in advance. Then, set the parts movement route No. (0 to 29). The parts movement route must be set on the corresponding screen in advance. ( Section 9.2.2 Setting of parts move route (common setting for each screen))</p>	○	×
	<p>Device</p> <p>After selecting the [Movement Type], set the position device to store the movement destination of parts. ( Section 5.1 Device Setting)</p> <p>The setting items differ according to the setting made in [Movement Type].</p> <p>Position :Sets the device to store the value of X and Y coordinate. From the set device, 2 device points are set continuously for X • Y position storage. (The set device is for X storage)</p> <p>Line :Sets the device storing the relative value corresponding to the starting point and ending point.</p> <p>Point :Sets the device to store the display position (point).</p>	○	×
	<p>Data Type</p> <p>When selecting [Line] from [Movement Type], select the data type of word device (signed BIN16/ unsigned BIN16). (Fixed to unsigned BIN16 when selecting [Position], [Point])</p>	○	×
Category	<p>When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)</p>	○	×

For details of *1, *2, refer to the following.

*1 Movement Type

Select the movement type when moving parts.

Refer to the following for the details about parts movement type.

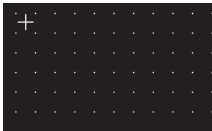
 Section 9.2.1 **1** Move way of parts (control with position device)

*2 Line

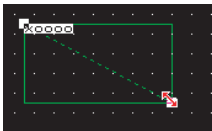
Set the line as the parts move range when the movement type is set as [Line].

Execute the following operations after making settings in the setting dialog box.

- 1 Click on the start position in drawing screen.




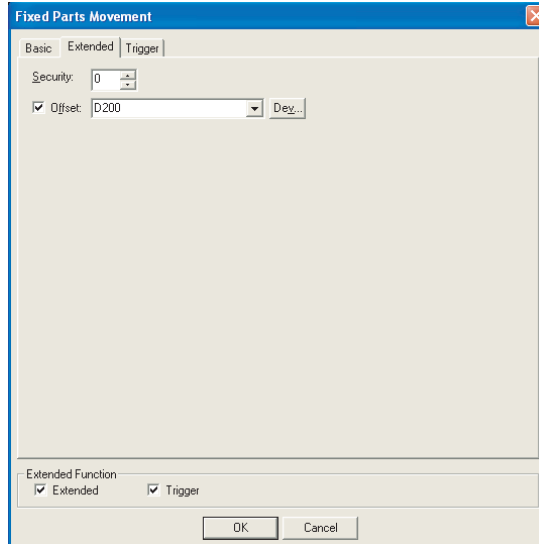
- 2 Set the line as the parts move range after moving cursor and clicking on the destination.



2 Extended tab (fixed)


The setting items of extended tab are the same as bit parts movement. Refer to the following for the details about the setting items.

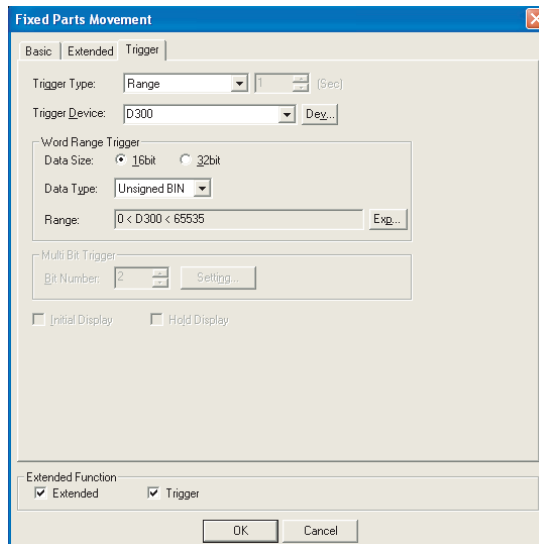
 Section 9.2.4 Setting items of bit parts movement



3 Trigger tab (fixed)

The setting items of trigger tab are the same as bit parts movement. Refer to the following for the details about the setting items.

 Section 9.2.4 Setting items of bit parts movement



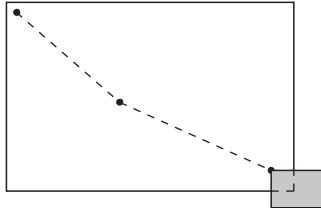
9.2.7 Precautions

This section provides the precautions for using parts movement function.

1 Precautions for drawing

- (1) The maximum number of parts movement objects can be set for one screen
 - GOT-A900 series: 256
- (2) Display position of parts
If the display position of parts out of screen is set in Designer2, parts will not be movement-displayed. The previous display will be held.

Example) In the case of movement type [Point]



Parts out of the screen will not be displayed.

- (3) Precautions for registering parts
Refer to the following for the precautions of registering parts.
 - (a) When using registered parts
 - ☞ Section 4.2 Parts Registration
 - (b) BMP file stored on PC card (BMP file part)
 - ☞ Section 4.3 Storing a BMP file part in the PC card

2 Precautions for use

- (1) The value stored in position device
If the value stored in position device exceeding the display range (position, out of the range of maximum to minimum, point No.), parts will not be movement-displayed. The previous display will be held.

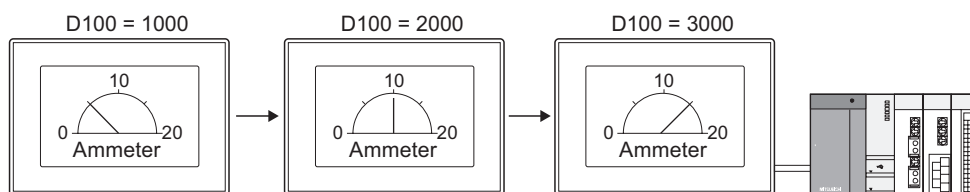
10. GRAPH, METER



10.1 Panelmeter



This function enables meter display (needle display) of the word device value relative to the preset upper/lower limit value.



10.1.1 Required knowledge for panelmeter setting

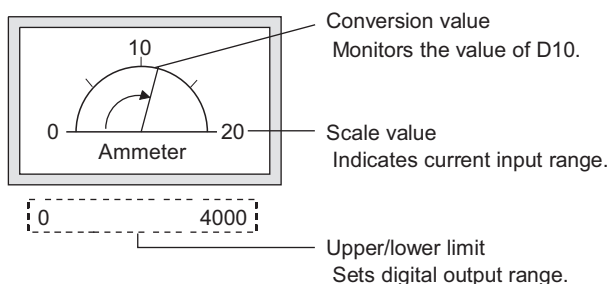
Panelmeter setting method

Basic functions of the panelmeter are set on the following tabs of ① to ③.

The following example is used to explain the general procedure for the panelmeter setting.

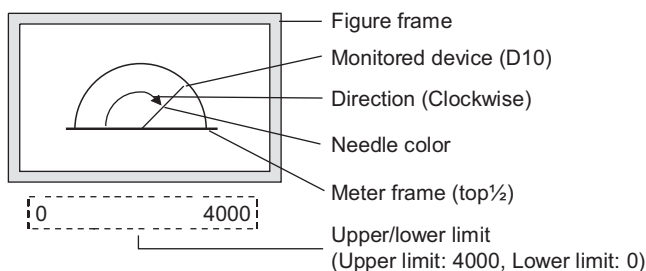
Example: Panelmeter that indicates analog/digital conversion value for 12mA

- Current input range : 0 to 20mA
- Digital output range : 0 to 4000
- Conversion value : D10



① Basic tab

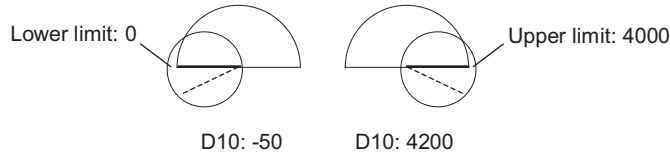
Set the meter type, needle color, shape, i.e., frame and upper/lower limit.



Remark

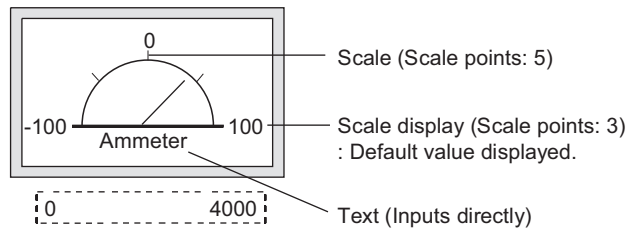
Display of value exceeding upper/lower limit

If the monitor device value exceeds the upper/lower limit value, the graph shows it as the upper/lower limit value.



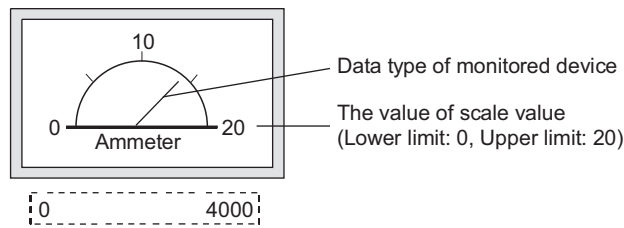
2 Scale/Text tab

Sets the scale and name plate (text) for the panelmeter.




3 Extended tab

Changes the scale values and the data type of the monitored device.



10.1.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Panelmeter].
 - Select [Object]→[Panelmeter] from the menu.
- 2 Click on the position where the panelmeter is to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged panelmeter to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.



GT Designer2 Version □ Operating Manual



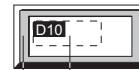
Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].



5.3.3 Object size change

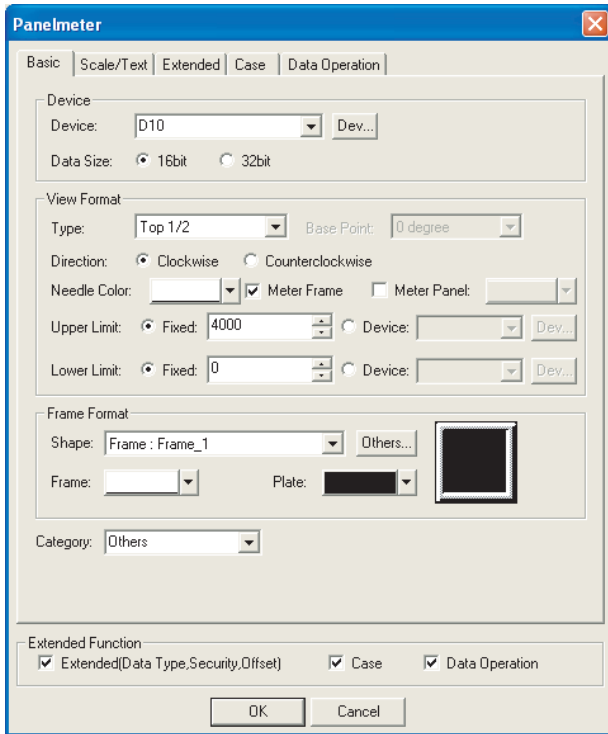


Object outline frame
Shape frame

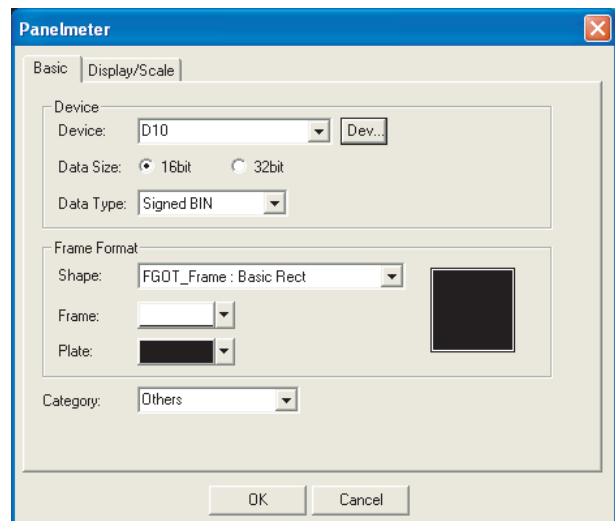
10.1.3 Setting items

1 Basic tab

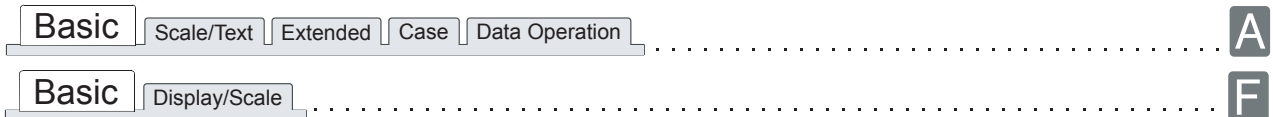
Set the type and view format (upper/lower limit value, display frame) for the panelmeter.



In the case of GOT-A900 series



In the case of GOT-F900 series

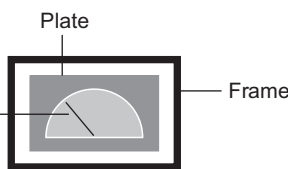
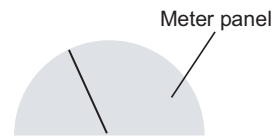
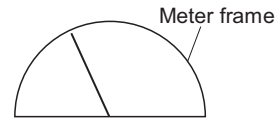
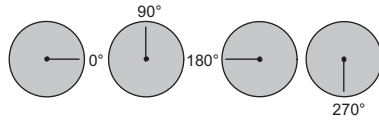


Items		Description	A	F
Device	Device	Set the device to be monitored. (Section 5.1 Device Setting) For GOT-A900 series, the device data format is preset to "Signed BIN (Treats it as signed binary value)" as a default. The device data format is changed on the extended tab.	<input type="radio"/>	<input type="radio"/>
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input type="radio"/>
	Data Type	Select the data type of the word device to be monitored. Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value.	<input checked="" type="radio"/>	<input type="radio"/>
View Format	Type*1	Select the panelmeter type. <div style="display: flex; flex-wrap: wrap; justify-content: space-around; text-align: center;"> <div>Top¼ </div> <div>Bottom¼ </div> <div>Left¼ </div> <div>Right¼ </div> <div>Top-left¼ </div> <div>Top-right¼ </div> <div>¾ </div> <div>Bottom-left¼ </div> <div>Bottom-right¼ </div> <div>Top½ </div> <div>Bottom½ </div> <div>Left½ </div> <div>Right½ </div> <div>Full circle </div> </div>	<input type="radio"/>	<input checked="" type="radio"/>

(Continued to next page)

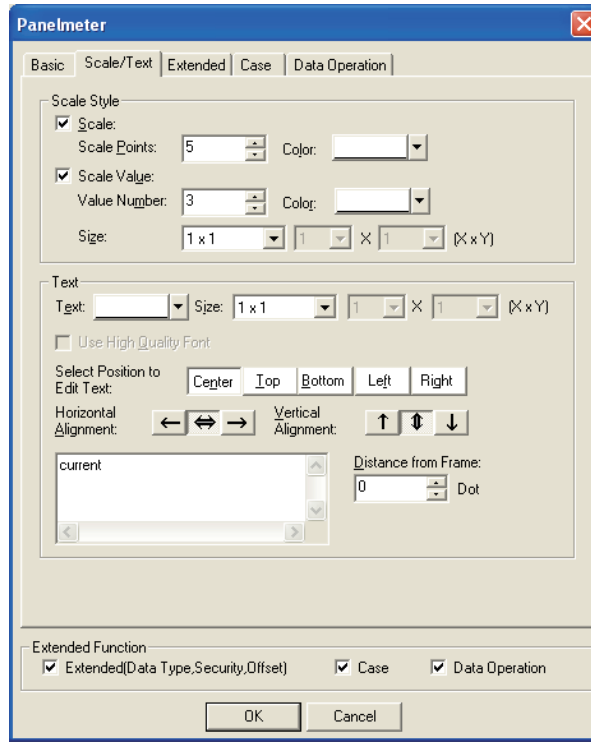
Items	Description	A	F
View Format	Base Point	<input type="radio"/>	<input checked="" type="checkbox"/>
	Direction*1	<input type="radio"/>	<input checked="" type="checkbox"/>
	Needle Color*1	<input type="radio"/>	<input checked="" type="checkbox"/>
	Meter Frame	<input type="radio"/>	<input checked="" type="checkbox"/>
	Meter Panel*1	<input type="radio"/>	<input checked="" type="checkbox"/>
	Upper Limit*1	<input type="radio"/>	<input checked="" type="checkbox"/>
	Lower Limit*1	<input type="radio"/>	<input checked="" type="checkbox"/>
Frame Format	Shape	<input type="radio"/>	<input type="radio"/>
	Frame	<input type="radio"/>	<input type="radio"/>
	Plate	<input type="radio"/>	<input type="radio"/>
Category		<input type="radio"/>	<input type="radio"/>

*1 In the GOT-F900 series, set Display/Scale tab.



2 Scale/Text tab (GOT-A900 series only)

Set the details of the panelmeter (scale upper/lower limit) and the text to be displayed at the center or on the top, bottom, left or right.



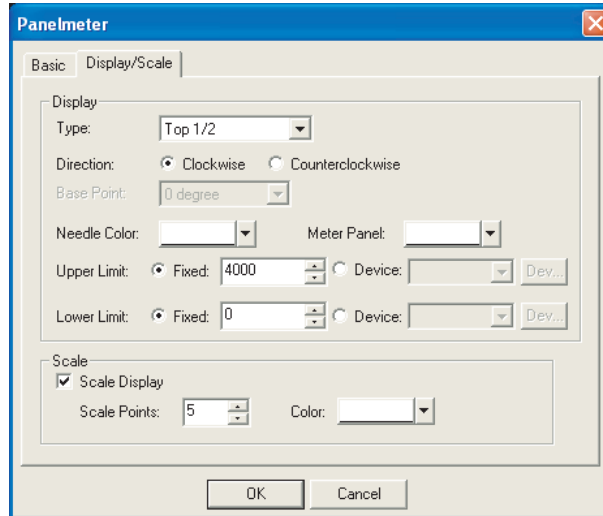
Basic **Scale/Text** Extended Case Data Operation

Items	Description	A	F
Scale Style	<p>Set the scale and scale value to the panelmeter.</p>	○	×
Scale	<p>Check this item to display the scale. After checking, set the number of scale points (2 to 11) and the scale color. Once this is set, the space between each scale tick is automatically defined.</p>	○	×
Scale Value	<p>Check this item to display the scale by using numeric values. Set the number of numeric values (2 to 11) in [Value Number] and numeric size (0.5 to 8) in [Size]. The default numeric values are set within the range -100 to 100. When changing the numeric value, set the upper limit/lower limit values for the scale value in the extended tab.</p>	○	×

(Continued to next page)

Items		Description	A	F
Text	Text	Select the color of text to be displayed.	<input type="radio"/>	×
	Size	Select the size of text size to be displayed (0.5 to 8).	<input type="radio"/>	×
	Use High Quality Font	Check this item when using high quality font to display the text. (Only when display size X, Y is set to any of 2, 4, 6 or 8.)	<input type="radio"/>	×
	Select Position to Edit Text	This selects the display position of text. Five patterns of text can be displayed simultaneously. The following positions (A to E) can be set by the combined use of Select Position to Edit Text (Center/Top/Bottom/Left/Right) and Horizontal/Vertical Alignment.	<input type="radio"/>	×
	Horizontal Alignment	Select Position to Edit Text A: Center B: Up C: Bottom D: Left E: Right	<input type="radio"/>	×
	Vertical Alignment		<input type="radio"/>	×
	Distance from Frame	Set the number of dots for the distance between the text and object shape, i.e., frame. (Up to 100 dots)		<input type="radio"/>
Text	Input the text to be displayed on the panelmeter. (Up to 32 characters) Press the <input type="text" value="Enter"/> key to input a new line at the end of the first line.	<input type="radio"/>	×	

3 Display/Scale tab (GOT-F900 series only)

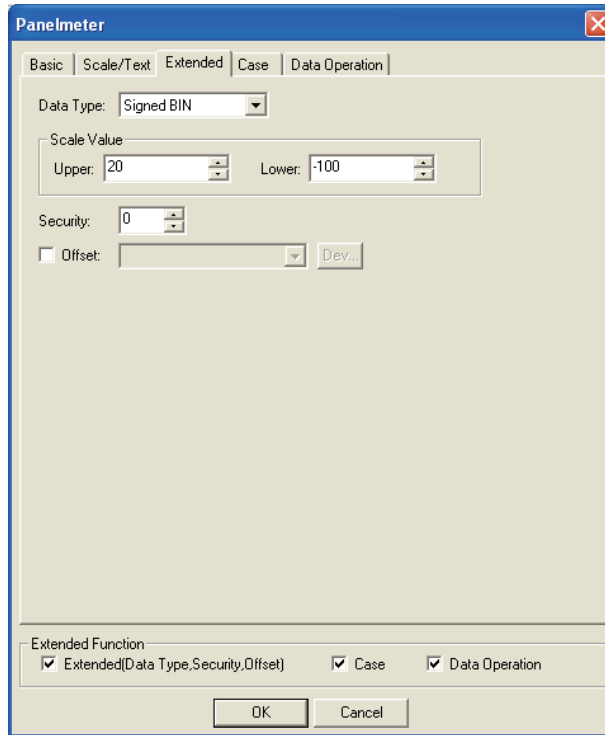


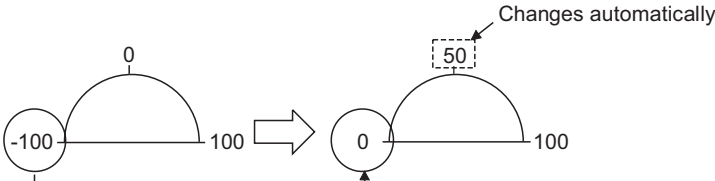
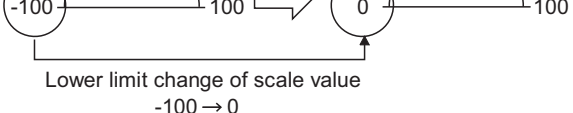
Basic Display/Scale

Items		Description	A	F
Display	Type	Select the type for the panelmeter.	×	○
	Direction	Select the direction of the needle according to the monitor device value. The base point of panelmeter changes with the direction. Clockwise : Clockwise rotation Counterclockwise : Counterclockwise rotation	×	○
	Base Point	When the full circle is selected for [Type], select the meter needle reference point (the position where device lower limit value is displayed) for meter needle.	×	○
	Needle Color	Select the needle color of the panelmeter. (The needle thickness is fixed to 3 dots.)	×	○
	Meter Panel	Select the panel color of the panelmeter.	×	○
	Upper Limit	Select whether the device value range (Lower/Upper limit) is displayed based on the setting by fixed values or specified device values. Fixed : Sets the fixed values as the upper/lower limit values Device : Sets the device values as the upper/lower limit values. (Section 5.1 Device Setting)	×	○
Lower Limit	The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance.	×	○	
Scale	Scale Display	Check this item to display the scale. After checking, set the number of scale points (2 to 50) and the scale color. Once this is set, the space between each scale tick is automatically defined.	×	○

4 Extended tab (GOT-A900 series only)


Set the security level, offset values, data type of the monitor device and upper/lower limit of scale value. Check "Extended" at the bottom of the dialog box to display this tab.

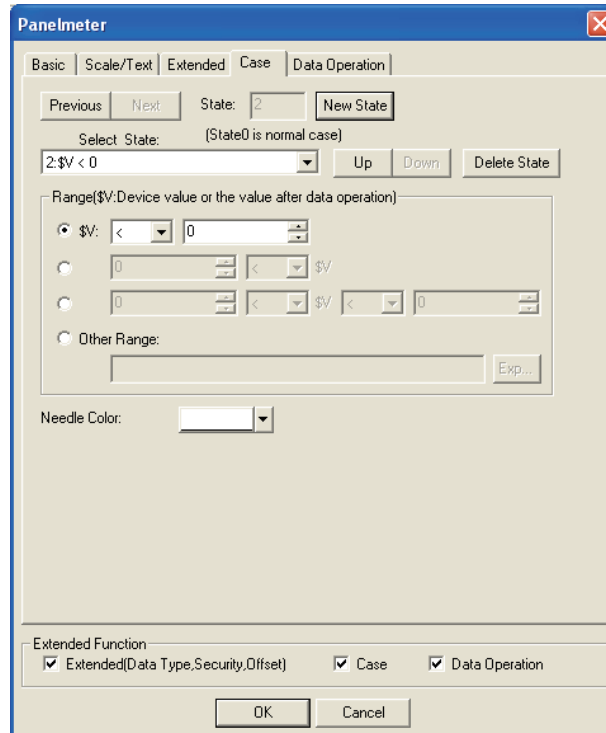


Items		Description	A	F
Data Type		Select the data type of the word device to be monitored. Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. Real : Treats word device value as floating point type real number. BCD : Treats word device value as BCD (binary decimal) value.	○	×
Scale Value	Upper	Before changing a scale value, set the upper/lower limit values. Example: Change the lower limit value. 	○	×
	Lower		○	×
Security		When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset		Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×

5 Case tab (GOT-A900 series only)

Set the change properties of the panelmeter needle color according to the device state.
For details of state, refer to the following.

 Section 5.4 State Setting



Basic Scale/Text Extended **Case** Data Operation

Items	Description	A	F
State*1	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	○	×
New State	Creates a new state.	○	×
Delete State	Deletes a specified state.	○	×
Previous/Next	Switches the currently editing state to the previous or next state.	○	×
Up/Down	Changes the priority of the current state.	○	×
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	○	×
Range	Set the range of word device values for display change using a conditional expression.	○	×
Needle Color	Select the needle color that is displayed corresponding to the set condition.	○	×

For details of *1, refer to the following.

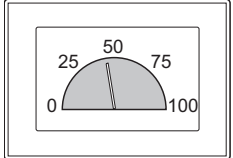
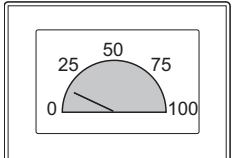
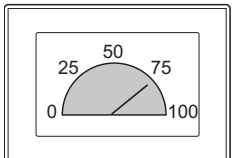
*1 State

- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.
- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Monitored Device: D100

Operation priority for setting overlap condition	State No.	Display range	Needle Color
High	1	$21 \leq \$V \leq 60$	Yellow
↓	2	$\$V \leq 20$	Red
Low	Normal case (State 0)	—	Blue

* \$V indicates the monitored device value.

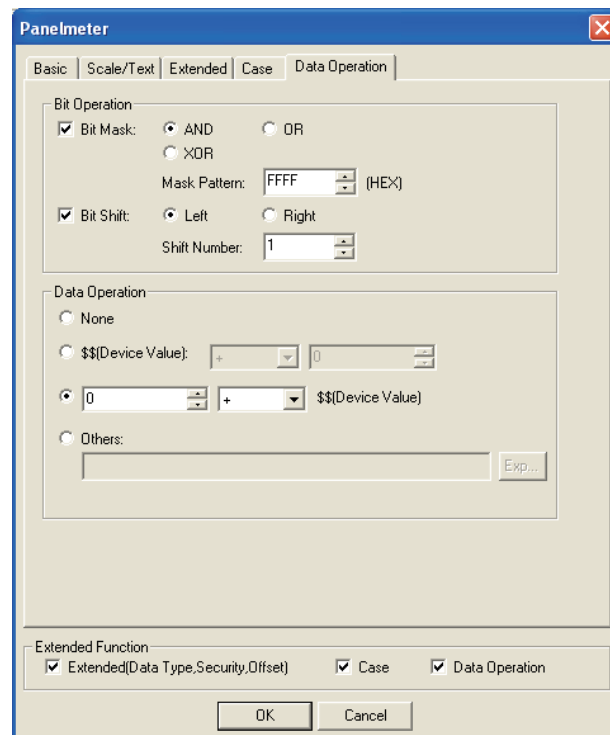
State 1	When the device value is between 21 and 60 (21 \$V 60), the needle color will be yellow.	
State 2	When the device value is 20 or below (\$V 20), the needle color will be red.	
Normal case (State 0)	When the condition is other than state 1,2 the needle color will be blue.	

6 Data Operation tab (GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic Scale/Text Extended Case Data Operation

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	×
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	×
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	×

10.1.4 Precautions

The following is the precautions for using the panelmeter function.

1 Precautions for drawing

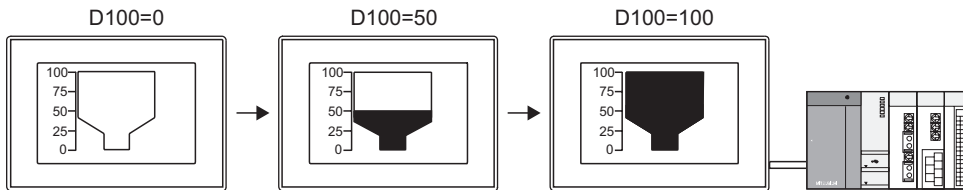
- (1) Maximum number of panelmeter objects settable on one screen
 - GOT-A900 series: 256
 - GOT-F900 series: 50



10.2 Level



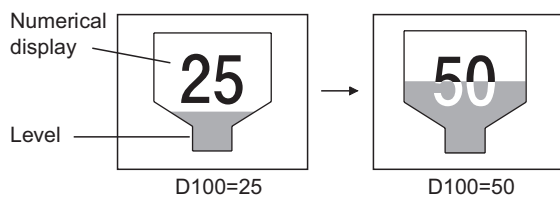
This function is used to fill the specified range (level) equivalent to the device value, corresponding to the percentage of the difference between the upper/lower limit values. With this function, the device value can be shown as a level in any closed figure.



Example:

When combined with the numerical display function

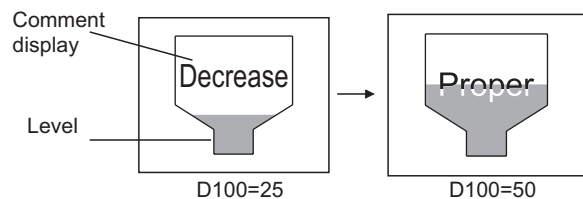
➞ Section 7.1 Numerical Display/Numerical Input



Numeric value is displayed in the XOR-combined color.

When combined with the comment display function

➞ Section 7.5 Comment Display



Text of comment display is changed according to level, and displayed in XOR-combined color. Refer to the following for setting details.

➞ Section 10.2.3 3 *1 State

10.2.1 Required knowledge for level setting

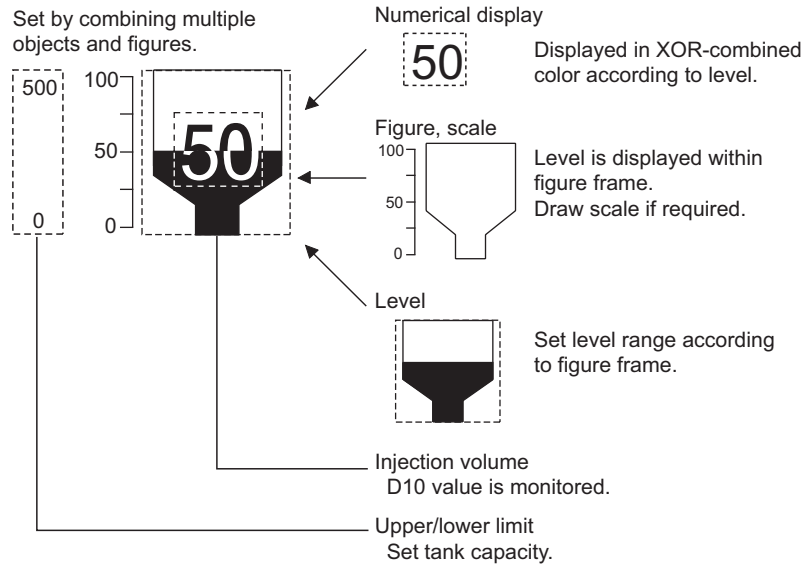
A level object can be overlapped with figures and numerical/comment display objects. The following example explains how to make the settings for overlapping a level object with figures and numerical display objects.

Example: Level for tank Injection volume

Tank capacity : 0 to 500 liter

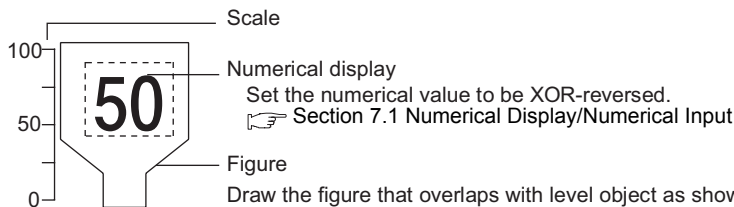
Injection volume: D10

Injection rate : 0 to 100%



1 Setting figure, scale and numerical display

Make the settings for figure, scale and numerical display before arranging the "level" object.

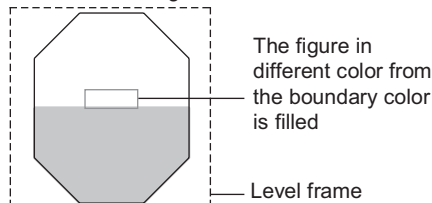


Draw the figure that overlaps with level object as shown below.

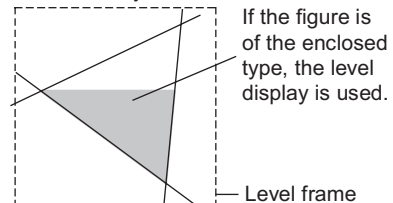
- Use the boundary color set in the basic tab.
- Draw the figure in enclosed shape.

Example: Figure drawn for level display

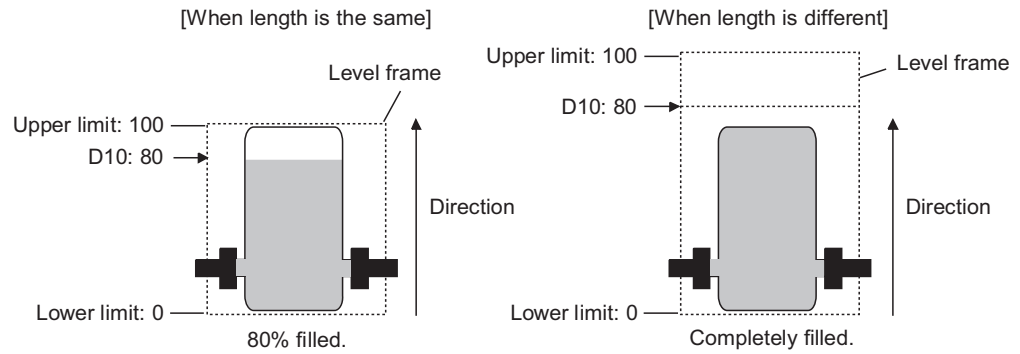
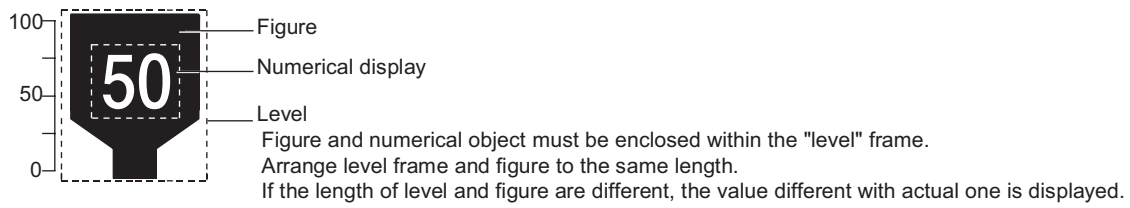
Drawn by vertex,
circular or oval figure



Drawn by line

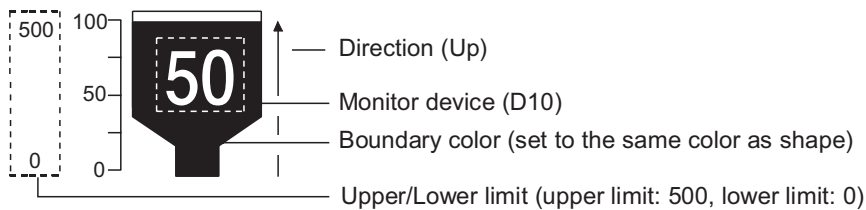


2 Level and figure overlapped



3 Basic Tab

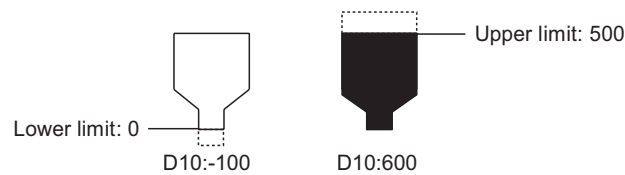
Set the direction, boundary color and upper/lower limit of level.



Remark


Display the value out of the upper/lower limit

When the monitor device value exceeds upper limit, it will be displayed as the new upper limit. When falling below lower limit, it will not be displayed.



10.2.2 Arrangement and settings

1 Carry out either of the following operations.

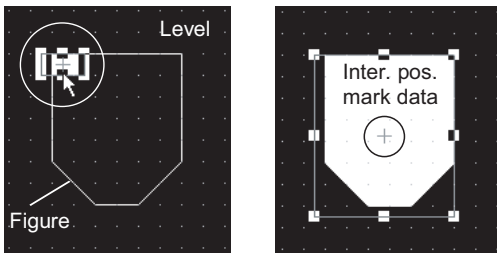
- Click on  [Level Graph].
- Select [Object] → [Level] from the menu.

2 Click on the level arrangement position to arrange the level.

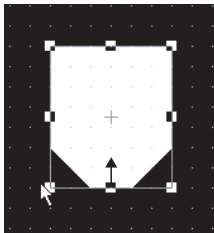
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)

3 To display the level within a figure, adjust the dotted frame in order that it will fit the figure.

If the internal position mark (+) is overlapped with the figure and then reversed, this means the level display has been arranged.



4 Adjust the dotted line of level display in order that it will fit the outline of the figure.



5 Double click on the arranged level object to display the setting dialog box. Make the settings with reference to the following explanation.



Easier setting method

Using the property sheet enables direct on-screen object setting.



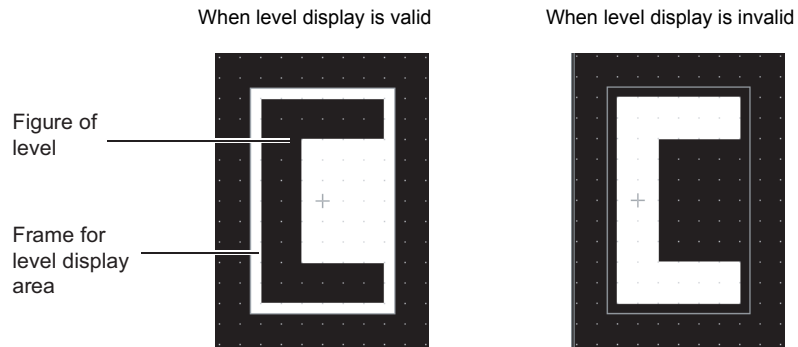
GT Designer2 Version □ Operating Manual

Remark

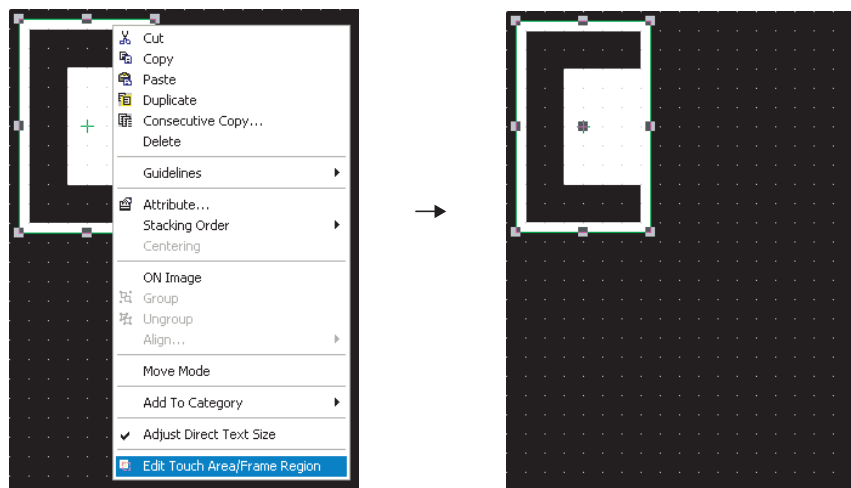
When internal position mark (+) are not overlapped with the figure


When internal position marks are not overlapped with the figure, move the internal position mark according to the following procedure.

The level display is not applicable to the figure that is not overlapped with internal position mark.



- 1 Right-click the dotted frame for the level display, and then click [Edit Touch Area/Frame Region].



Internal position mark data change from + to .

- 2 Drag the internal position mark in order it will overlap with the figure.

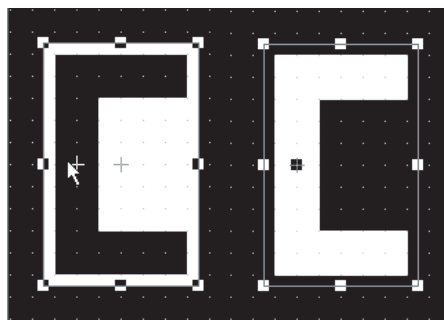
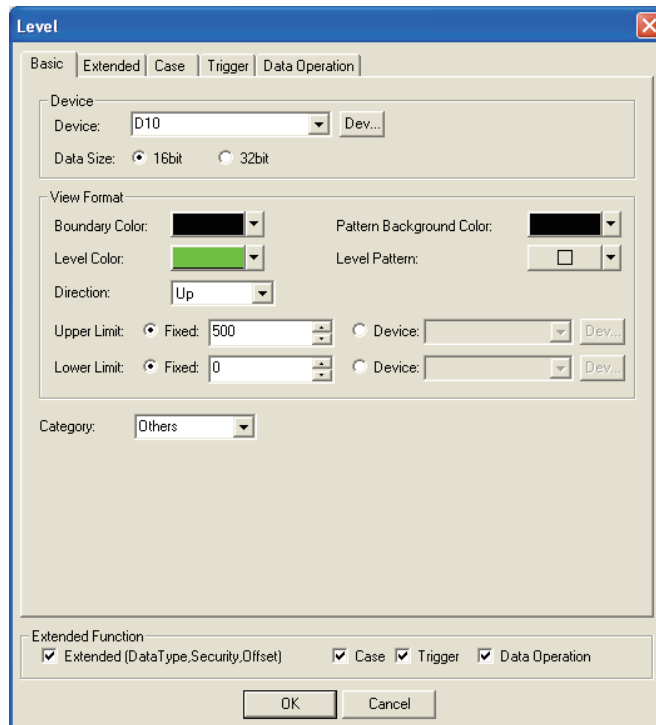


Figure is reversed and level display is valid.

10.2.3 Setting items

1 Basic tab




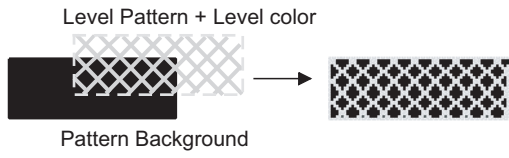










Set the upper/lower limit and display attribute (color, direction) for monitor device and level.



Basic Extended Case Trigger Data Operation

Items		Description	A	F
Device	Device	Set the device to be monitored. (Section 5.1 Device Setting) For GOT-A900 series, the device data format is preset to "Signed BIN (Treats it as signed binary value)" as a default. The device data format is changed on the extended tab.	○	×
	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	×
View Format	Boundary Color	Set the frame line color of the figure for level display. The level without the frame line is not displayed inside of the figure. Example 1: When the boundary color is the same as the figure frame line color Example 2: When the boundary color differs from the figure frame line color Level display is valid / Level display is invalid	○	×
	Level Color	Select filling color for level display.	○	×

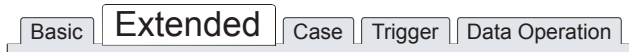
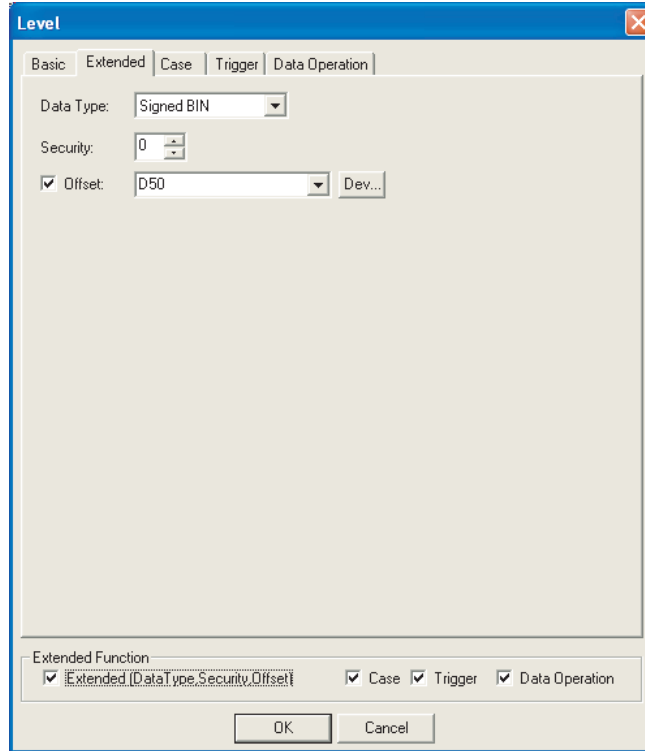
(Continued to next page)

Items		Description	A	F
View Format	Level Pattern	Select the pattern and background color for level display. The selected pattern in the level color is displayed on the background color.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Pattern Background Color	Example: Pattern Background :  Level Pattern :  Level color :   Level Pattern + Level color Pattern Background	<input type="radio"/>	<input checked="" type="checkbox"/>
	Direction	Select the direction the color changes when the monitor device value increases. [Right]  →  [Left]  →  [Up]  →  [Down]  → 	<input type="radio"/>	<input checked="" type="checkbox"/>
	Upper Limit	Select whether the device value range (upper/lower limit) for level display is displayed based on the setting by fixed values or specified device values. Fixed : Sets the fixed values as the upper/lower limit values. Device : Sets the device values as the upper/lower limit values. ( Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
	Lower Limit	The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance.		
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input checked="" type="checkbox"/>	

2 Extended tab

Set the security and offset.


Check Extended Function at the bottom of dialog box to display this tab.

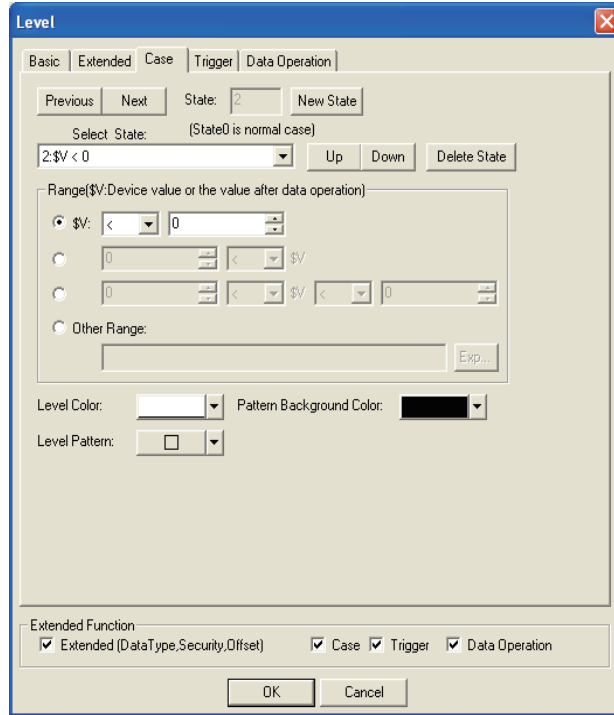





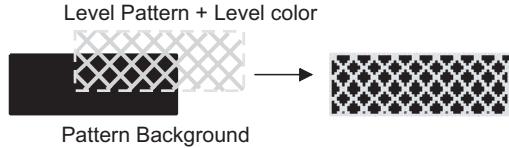
Items	Description	A	F
Data Type	Select the data type of the word device to be monitored. Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. BCD : Treats word device value as BCD (binary decimal) value. Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].)	○	×
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting)	○	×

3 Case tab

The attribute can be changed on this setting depending on the device status.
For details of states, refer to the following.

 Section 5.4 State Setting



Items	Description	A	F
State*1	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	<input checked="" type="checkbox"/>
New State	Creates a new state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete State	Deletes a specified state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Previous /Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Up/Down	Changes the priority of the current state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Set the range of word device values for display change using a conditional expression.	<input type="radio"/>	<input checked="" type="checkbox"/>
Level Color	Select the filling color for level.	<input type="radio"/>	<input checked="" type="checkbox"/>
Level Pattern	Select the pattern and background color for level display. The selected pattern in the level color is displayed on the background color.	<input type="radio"/>	<input checked="" type="checkbox"/>
Pattern Background Color	Example: Pattern Background :  Level Pattern :  Level color :   Level Pattern + Level color Pattern Background	<input type="radio"/>	<input checked="" type="checkbox"/>

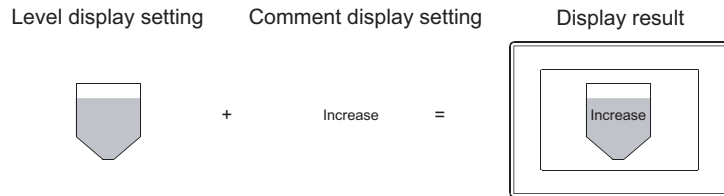
For details of *1, refer to the following.

*1 State

- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.
- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Level object and comment are combined.

Set the same condition (display range) to the level display and comment display, and change the level color and display comment simultaneously.



• <u>Level</u>		• <u>Comment display</u>	
Monitor device	: D100	Monitor device	: D100
Direction	: Up	Display mode	: Transparent
Upper limit	: 100	Register comment	: Comment No. 1 Increase
Lower limit	: 0		Comment No. 2 Decrease
			Comment No. 3 Proper

Operation priority for setting overlap condition	State No.	Display range	Level	Comment display
			Level color	Display comment
High	1	71<=\$V	Red	Increase
↓	2	\$V<=30	Yellow	Decrease
Low	Normal case (State 0)	———	Light blue	Proper

* \$V represents the monitor device value

State 1	When the device value is 71 or greater (71 \$V), the level color will appear as red and the text, "Increase", will be displayed.	
State 2	When the device value is 20 or less (\$V 20), the level color will appear as yellow and the text, "Decrease" will be displayed.	
Normal case (State 0)	Under the condition other than the range of state 1, 2, the level color will appear as light blue and the text, "Proper", will be displayed as text.	

4 Trigger Tab

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

☞ Section 5.5 Trigger Setting

Basic Extended Case **Trigger** Data Operation

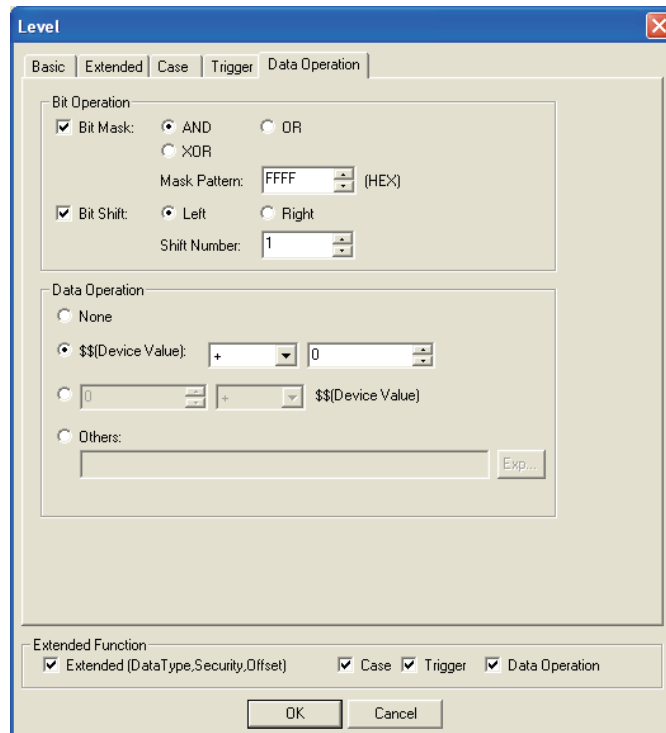
Items	Description	A	F
Trigger Type	Select the trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. • Ordinary • OFF • Fal • Range • ON • Rise • Sampling • Bit Trigger	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger Device	Specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Type	Select the data type of word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data Size].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Click on the [Range] button and set conditional expression for the word device range.	<input type="radio"/>	<input checked="" type="checkbox"/>
Multi Bit Trigger	When [Multi Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click on the [Setting] button and set the bit devices and their triggers.	<input type="radio"/>	<input checked="" type="checkbox"/>
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied. If not checked, the object will be deleted when the trigger is not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>

5 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic Extended Case Trigger Data Operation

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation.</p> <p>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND.</p> <p>OR :Carries out logical OR.</p> <p>XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable bit shift operation.</p> <p>Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift</p> <p>Right :Right shift</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

10.2.4 Precautions





This section provides the precautions when using the level function.

1 Maximum number of level objects settable on one screen: 256

2 Precautions when numerical/comment display object is arranged on a level object



(1) Precautions for arrangement

(a) To display XOR-combined level display and numerical display/comment display

Result	Description	Display example
 Possible	The XOR-combined numerical display and comment display is displayed with XOR display mode.	 Numerical display Level
 Impossible	The numerical display and comment display extended off the level range are not XOR-combined.	 Numerical display Level


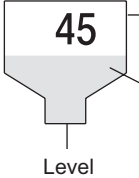
○ : Can be displayed as expected, × : Cannot be displayed as expected

(b) To display numerical value/comment unaffected by level

Result	Description	Display example
 Possible	The numerical display/comment display is unaffected by the level with transparent mode.	 Numerical display Level


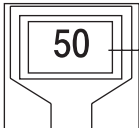
○ : Can be displayed as expected, × : Cannot be displayed as expected

(c) To display multiple numerical displays/comment displays over level

Result	Description	Display example
 Impossible	<p>Only one numerical display/comment display is displayed.</p> <p>The second or later numerical displays/comment displays are not displayed.</p>	 Numerical display :Displayed. Level Comment display :Not displayed.

○ : Can be displayed as expected, × : Cannot be displayed as expected

(d) With figure frame to numerical display/comment display

Result	Description	Display example
 Impossible	Normal display may not be displayed normally.	 Numerical display Level

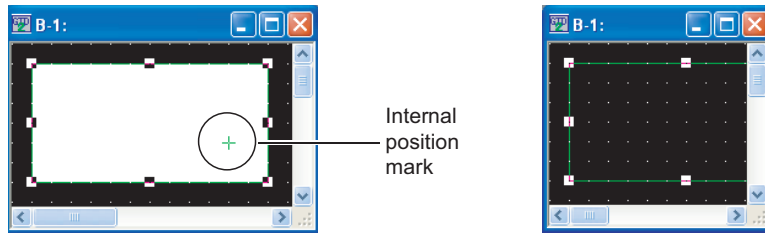
○ : Can be displayed as expected, × : Cannot be displayed as expected

(2) Precautions for use

- (a) The numerical/comment display will be updated when the level is updated.
The settings (trigger) to update the display for numerical display/comment display is not relevant.
- (b) Numerical display/Comment display is not blinked or reversed.

3 Display on the drawing screen

If internal position mark is not displayed on the drawing screen, the level will not be filled.

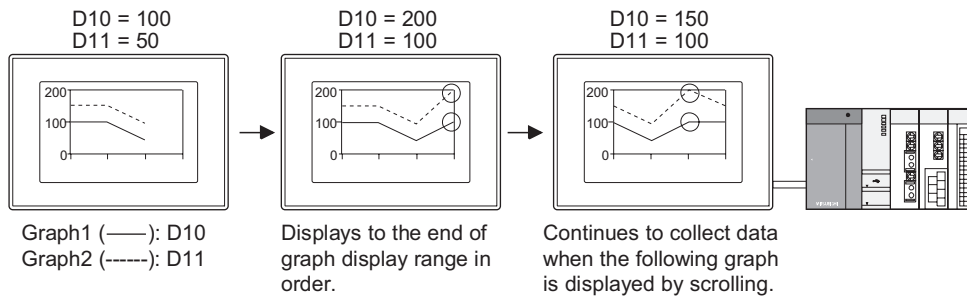




10.3 Trend Graph



This function is used to collect word device data continuously and display it in trend graph.



10.3.1 Required knowledge for trend graph setting

1 Setting method of trend graph

The basic functions of trend graph are set on the following ① to ④ tab.

The following example explains the general procedures for setting trend graph.

Example: Trend graph for the comparison between Plan and Actual

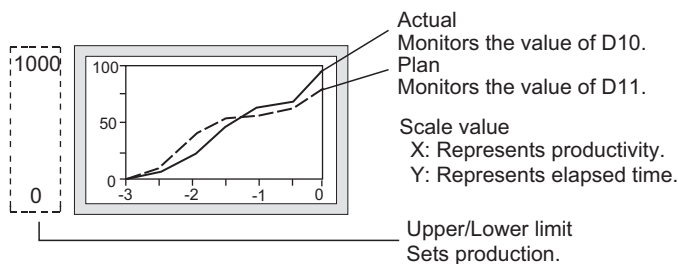
Productivity : 0 to 100%

Time : 0 to 3

Production : 0 to 1000

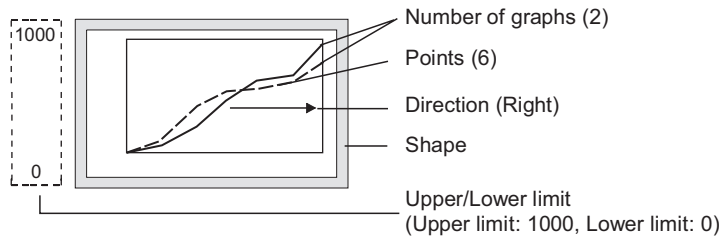
Plan (Graph 1) : D10

Actual (Graph 2) : D11



1 Basic tab

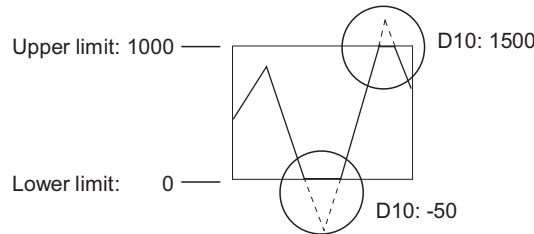
Set the number of graphs, upper/lower limit, number of points and figure.



Remark

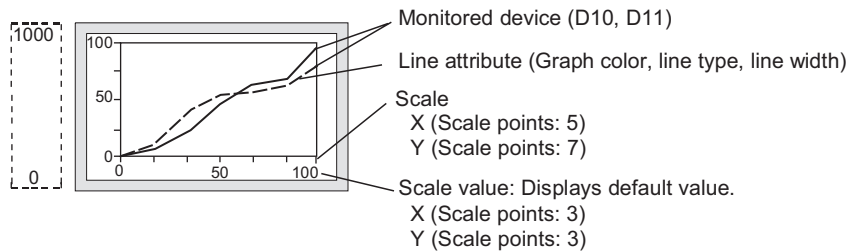
Displaying the value exceeding upper/lower limit

When the monitor device value exceeds upper/lower limit, it will be displayed as new upper/lower limit on the graph.



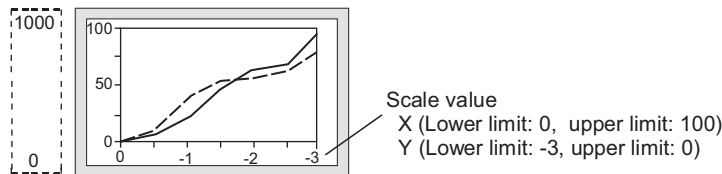
2 Device/Scale tab

Set the device to be monitored, line attribute and scale.



3 Extended tab (in the case of GOT-A900 series)

Change the numeric value used as scale.



4 Trigger tab (in the case of GOT-A900 series)/other tab (in the case of GOT-F900 series)

Set the timing of collecting data.

The default timing of collecting data is set in 1 second (1000ms) cycle.

2 Store memory

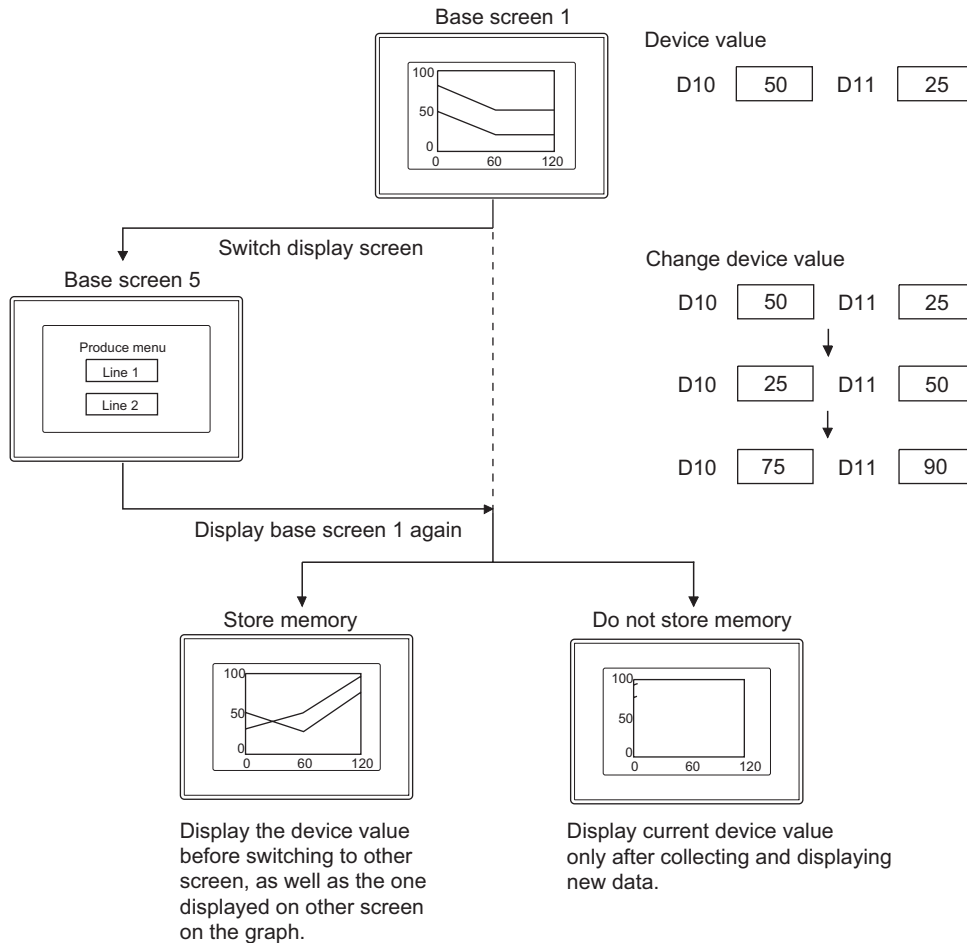
The trend graph collects data only when the screen including the graph is displayed. When switching to other screen, the collected data will be cleared.

Make sure to check [Store Memory] to collect data even after switching to other screen.

The status of device value is usually monitored and stored in the internal memory of GOT.

Set [Store Memory] on basic tab.

Example: Monitored device: D10, D11




Timing of erasing the display stored in memory

The data stored in memory will be erased according to the following timing.

- When the condition for clearing trigger is enabled
- When GOT is reset or power supply is OFF.
- Download of project
- Display of build-in memory information
- Execution of utility setup and message display switching (display language switching)

10.3.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Trend Graph].
 - Select [Object] → [Graph] → [Trend Graph] from the menu.
- 2 Click on the position where the trend graph is to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged trend graph to display the setting dialog box. Make the settings with reference to the following explanation.



Easier setting method

Using the property sheet enables direct on-screen object setting.

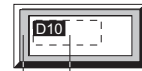
 GT Designer2 Version □ Operating Manual



Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

 5.3.3 Object size change



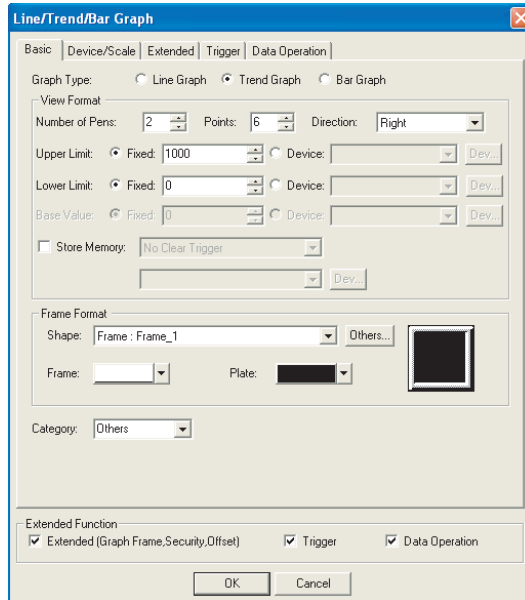
Object outline frame
Shape frame

10.3.3 Setting items

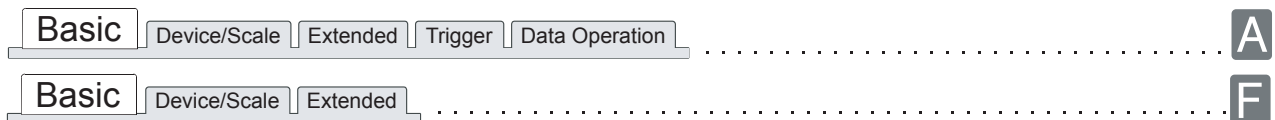
This dialog box is common to the settings for displaying the three types of graphs (line/trend/bar graph). This section provides the explanation about setting trend graph.

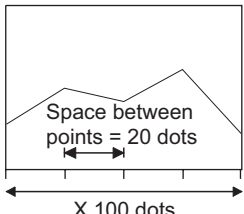
1 Basic tab

Set the graph type (line/trend/bar graph), number of graphs, upper/lower limit and object shape.

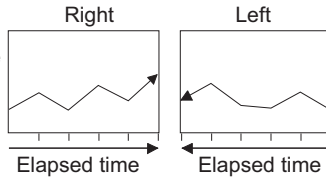



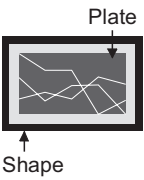



(Example: In the case of GOT-A900 series)



Items		Description	A	F
Graph Type		Select the graph to be set (line graph/trend graph/bar graph). This section explains the setting for trend graph.	<input type="radio"/>	<input type="radio"/>
View Format	Number of Pens	Set the number of graphs to be displayed. GOT-A900 series : 1 to 8 GOT-F900 series : 1 to 4	<input type="radio"/>	<input type="radio"/>
	Points	Set the points (the number of collected data) to be displayed on the graph. GOT-A900 series : up to 100 (2 to 100) points can be set. GOT-F900 series : up to 50 (0, 2 to 50) points can be set. The space between each point is automatically specified by the set points and display range of X. Example: Points: 5 	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

Items		Description	A	F
View Format	Direction	Select the direction for graph. 	<input type="radio"/>	<input type="radio"/>
	Upper Limit	Select whether the device value range (Lower/Upper limit) for trend graph is displayed based on the setting by fixed values or specified device values. Fixed : Sets the fixed values as the upper/lower limit values Device : Sets the device values as the upper/lower limit values. ( Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
	Lower Limit	The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance.	<input type="radio"/>	<input type="radio"/>
	Base Value	Not available for trend graph.	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	Store Memory	Check this item to continually collect data when the screen in which trend graph is not set is displayed. The data as many as the number of points for the graph are stored in the GOT internal memory. Select the timing to erase the data stored in the GOT internal memory. No Clear Trigg : Does not clear the data stored in the GOT internal memory. Clear ON Trigger Rise : Clears the data stored in the GOT internal memory when the bit device rises (turns ON).*1 Clear ON Trigger Falls : Clears the data stored in the GOT internal memory when the bit device falls (turns OFF).*1 When [Clear Trigger Rise] or [Clear Trigger Fall] is selected, set the bit device for the clear trigger. ( Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the <input type="text" value="Others"/> button, figures other than those in the list box or library figures can be selected. ( 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Frame	Select the shape, i.e., frame/plate color.	<input type="radio"/>	<input type="radio"/>
	Plate		<input type="radio"/>	<input type="radio"/>
Category	When allocating category to the object, select a proper category. ( GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>	

For details of *1, refer to the following.

*1 Timing for recognizing clear trigger

The timing of recognizing clear trigger in GOT is same as that set on [Trigger Type] (trigger tab).
When [Sampling], [ON Sampling], [OFF Sampling] is set in [Trigger Type], the device ON/OFF status set for clear trigger must be retained longer that the cycle set in [Trigger Type].

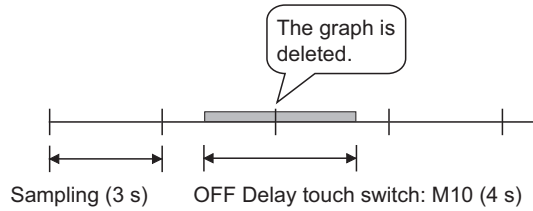
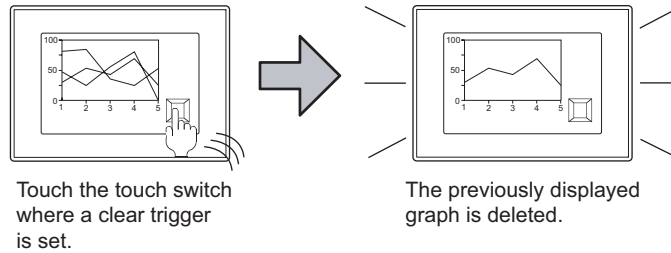
Example of data retention for a period longer than that specified for "Trigger Type"

Clear trigger :Set the timing to "Rise" and the device to "M10".

Trigger type :Set "Sampling (3 s)."

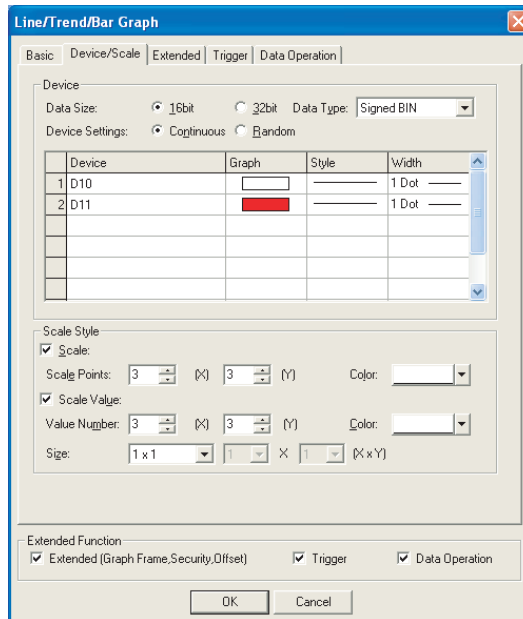
Touch switch :Set the device to "M10", and the action to "bit momentary" and "OFF Delay (4 s)."

The "sampling (3 s)" trigger type condition is met during the time from pressing the touch switch until the clear trigger (M10) is turned off by the OFF delay (4 s), and the graph is deleted.

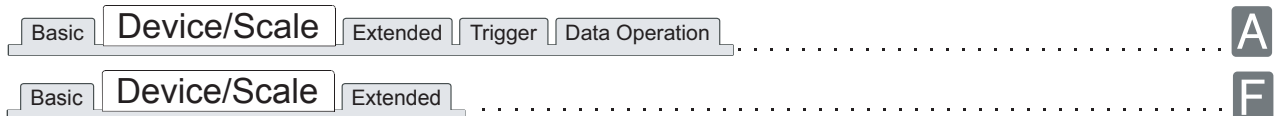


2 Device/Scale tab

Set the display attribute (graph color/width/type/scale) of graph and monitor device.

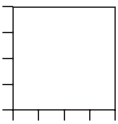
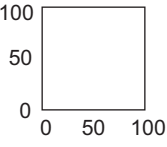
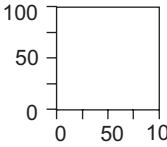


(Example: In the case of GOT-A900 series)



Items		Description	A	F
Device	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input type="radio"/>
	Data Type	Select the data type of the word device to be monitored. <ul style="list-style-type: none"> In the case of GOT-A900 series <ul style="list-style-type: none"> Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. BCD : Treats word device value as BCD (binary decimal) value. Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].) In the case of GOT-F900 series <ul style="list-style-type: none"> Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. 	<input type="radio"/>	<input type="radio"/>
	Device Settings	When displaying more than two graphs, select the method of setting the device to be monitored in each graph. <ul style="list-style-type: none"> Continue : The device to be monitored in the first graph will be set as the head device. The devices will be consecutively assigned to the second and later graph. Random : One device to be monitored is set for each graph. 	<input type="radio"/>	<input checked="" type="radio"/>
	Display Attribute View	Set the graph attributes. Click on each item of the list in [Device] to display the setting dialog box. Then, make the settings as follows: <ul style="list-style-type: none"> Device : Enter the word device name here, or click on the [Dev] button and select a word device from the given options to set the word device for monitoring. (See Section 5.1 Device Setting) Graph : Select the graph color. Style : Select the graph style. Width : Select the graph width (1 to 7 dots). 	<input type="radio"/>	<input type="radio"/>

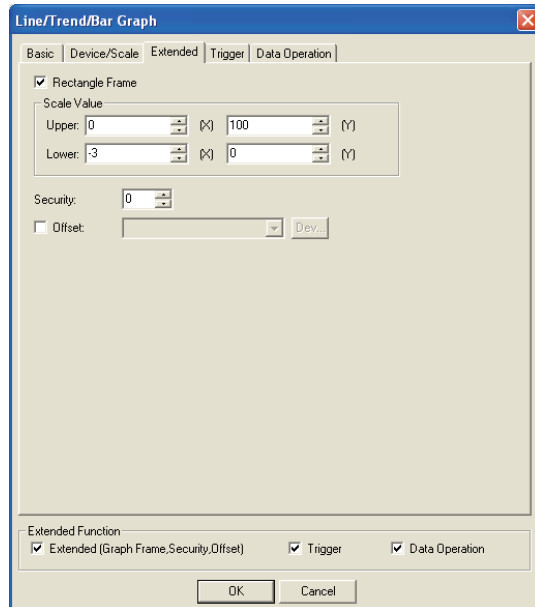
(Continued to next page)

Items	Description	A	F
Scale Style	<p>Set the scale and scale value to the trend graph.</p> <p>Example:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Scale (X: 5) (Y: 5)</p> </div> <div style="text-align: center;">  <p>Scale value (X: 3) (Y: 3)</p> </div> <div style="text-align: center;">  <p>Scale is displayed in combination with scale value.</p> </div> </div>	<input type="radio"/>	<input type="radio"/>
Scale	<p>Check this item to display the scale.</p> <p>After checking, set the number of horizontal and vertical scale points (GOT-A900 series: 0, 2 to 11; GOT-F900 series: 0, 2 to 50) and the scale color.</p> <p>Once this is set, the space between the scale ticks are automatically defined.</p> <p>A scale is not displayed at setting "0" to the number of scale points. Therefore, a scale can be displayed in the horizontal or vertical direction only.</p>	<input type="radio"/>	<input type="radio"/>
Scale Value	<p>Check this item to display the scale by using numeric values.</p> <p>Set the number of numeric values (0, 2 to 11) in [Value Number] and numeric size (0.5 to 8) in [Size].</p> <p>The default numeric values for both height and width are set to any of 0 to 100.</p> <p>When changing the numeric value, set the upper limit/lower limit values for the scale value in the extended tab.</p> <p>A scale is not displayed at setting "0" to the number of scale points. Therefore, a scale can be displayed in the horizontal or vertical direction only.</p>	<input type="radio"/>	×

3 Extended tab (for GOT-A900 series only)

Set the security and offset and the upper/lower limit of scale value.

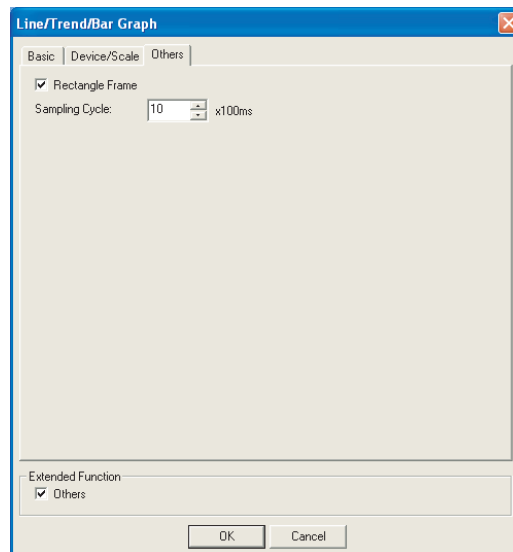
Check Extended Function at the bottom of dialog box to display this tab.

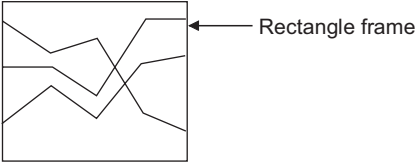


Items		Description	A	F
Rectangle Frame		<p>Check this item to display the frame, i.e., shape for the graph.</p>	○	×
Scale Value	Upper	<p>Before changing a scale value, set the upper/lower limit values. Set the scale value for height (Y axis) and width (X axis). Example: Change the upper limit of the scale value on Y</p>	○	×
	Lower		○	×
Security		<p>When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)</p>	○	×
Offset		<p>Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting) Data length is fixed to 16 bits. This setting cannot be set with "Store Memory" (Basic tab).</p>	○	×

4 Other tabs (for GOT-F900 series only)

Check Extended Function at the bottom of dialog box to display this tab.




Items	Description	A	F
Rectangle Frame	<p>Check this item to display the frame, i.e., shape for the graph.</p> 	×	○
Sampling Cycle	Read the monitor device data for each setting sampling from PLC CPU and then display them.	×	○

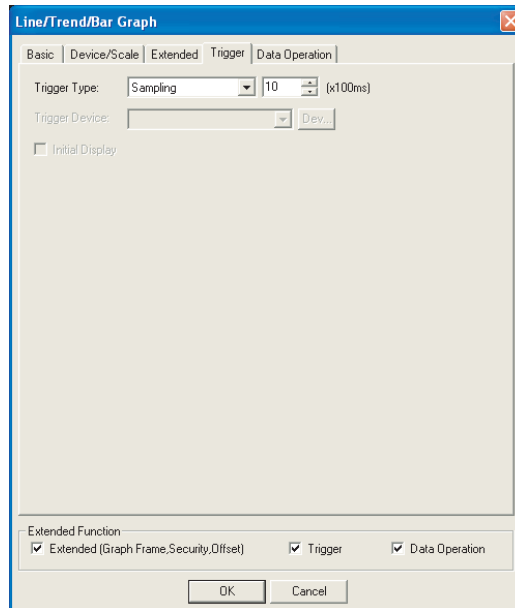
5 Trigger tab (for GOT-A900 series only)

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



Basic Device/Scale Extended **Trigger** Data Operation

Items	Description	A	F
Trigger Type*1	Select the trigger for displaying the object. Set sampling (0.1 to 3600 seconds) with 100ms as unit when selecting [Sampling] [ON Sampling] [OFF Sampling]. • Rise • Fall • Sampling • ON Sampling • OFF Sampling	○	×
Trigger Device	Specify the device used for the trigger.	○	×
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	○	×

For details of *1, refer to the following.

* 1 Causes and measures when the graph display is not updated in the set sampling cycle.

(1) Setting of Sampling

When data cannot be collected or graph display cannot be updated in the set sampling cycle, the trend graph will be displayed with the value different from actual one.

To display the trend graph correctly, check whether the trend graph is displayed based on the actual device value, and make adjustment to prolong setting sampling.

(2) Updated timing at setting "ON Sampling" or "OFF Sampling"

When "ON Sampling" or "OFF Sampling" is set, there are cases the graph is not updated in the set sampling cycle.

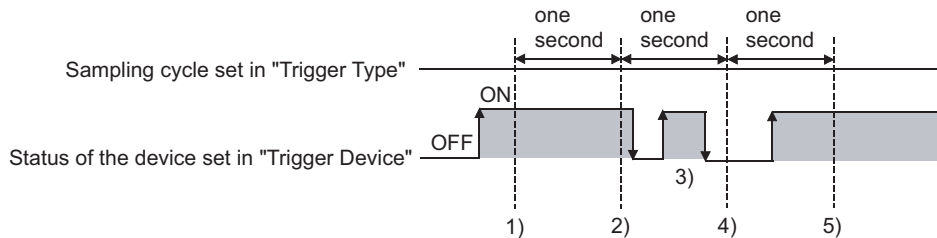
The causes for this problem and the measures to be taken are explained below.

(a) Causes

The status of the device is checked at the each sampling cycle set in the "Trigger Type".

When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling cycle to one second)



At the timing of 1), the trend graph is updated.

At the timing of 2), the trend graph is updated.

At the timing of 3), the trend graph is not updated because is unmatchable to Sampling.

At the timing of 4), the trend graph is not updated because is unmatchable to the device condition.

At the timing of 5), the trend graph is updated.

(b) Measures

The sampling cycle set using the "Trigger Type" is not depending on the status of the device.

(The sampling cycle is not changed even if turning on or off the device.)

To start the sampling using the device, set as follows.

- ① Set "Rise" or "Fall" using "Trigger Type".
- ② Program so that turn on or off the device at the timing to update the display using the sequence program.

- (3) Updated timing when setting the either following sampling, "Sampling", "ON Sampling" or "OFF Sampling"

If store memory is used when [Sampling], [ON Sampling] or [OFF Sampling] is set, the graph update timing will differ from the set sampling cycle.

- (a) Without setting store memory

Counting the sampling is started and reset at the following timing.

- At trend graph displaying (displaying by screen switching or security level change etc.)
- At station No. switching
- At security level change

- (b) With setting store memory

Counting the sampling is started and reset at the following timing.

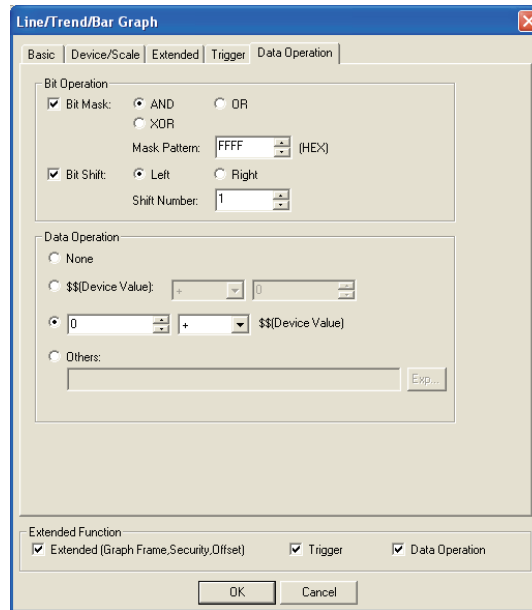
- At starting GOT
- At project download
- At build-in memory information displaying
- At execution of utility setup and message display switching (display language switching)

6 Data operation (for GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic Device/Scale Extended Trigger **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	×
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	×
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	×

10.3.4 Precautions

This section provides the precautions when using the trend graph function.

1 Precautions for drawing

- (1) Maximum number of trend graph objects that can be set for one screen
 - GOT-A900 series: up to 24
 - GOT-F900 series: up to 1

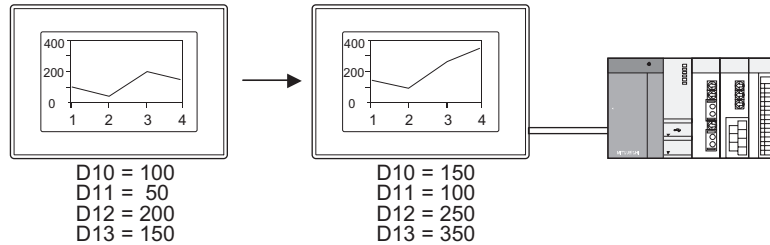
- (2) When using store memory
For the trend graph with store memory set, up to 16 objects can be set on the whole project.

- (3) Precautions in using the F920GOT-K
The trend graph function is not provided in the F920GOT-K.

10.4 Line Graph



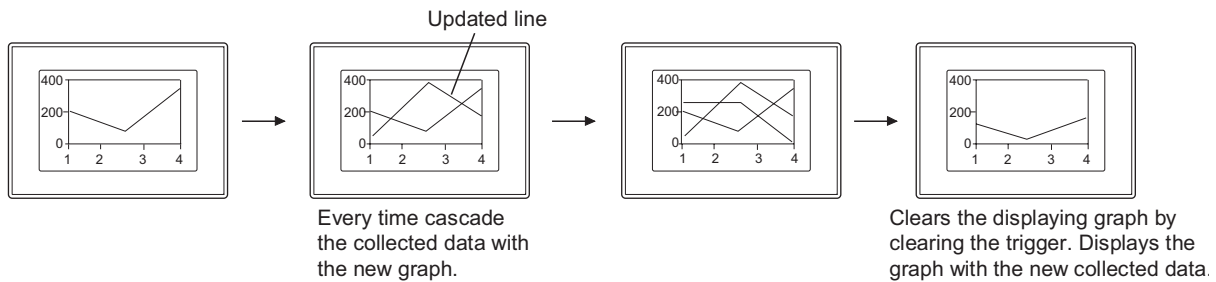
This function enables multiple word device data to be collected in batch and displayed in a line graph.



Example:

Compare the data with the ones previously collected. (Display the locus)

☞ Set on Extended tab.



10.4.1 Required knowledge for line graph setting

Method for line graph setting

Set the basic function of the line graph on the following tabs, 1 to 3.

The following line graph example explains the general procedure for the line graph setting.

Example: Line graph for displaying production quantity of multi production line.

Achievement ratio: 0 to 100%

Production quantity: 0 to 6000

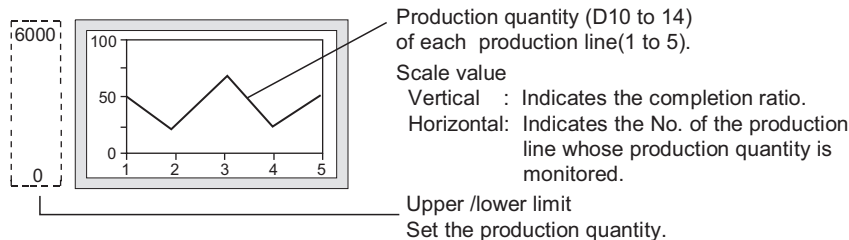
Actual quantity (line 1): D10

(line 2) : D11

(line 3) : D12

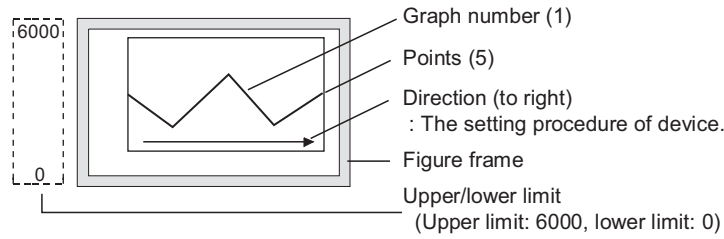
(line 4) : D13

(line 5) : D14



1 Basic tab

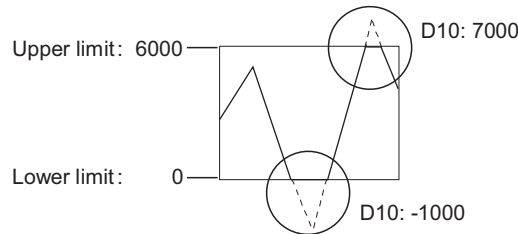
Set the number of graphs, the upper and lower limit values, the number of points and the shape.



Remark

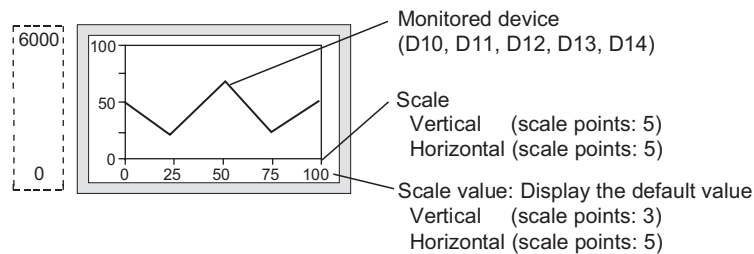
Display of values beyond the upper/lower limit.

When a value of the monitored device exceeds the upper or lower limit, it is displayed numerically on the graph.



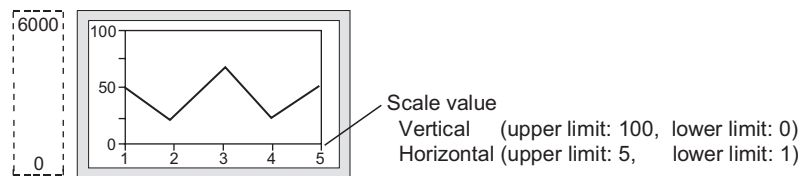
2 Device/Scale tab

Set the monitored devices and the scale.




3 Extended tab

Scale values can be changed on this tab.



10.4.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Line Graph].
 - Select [Object] → [Graph] → [Line Graph] from the menu.
- 2 Click on the position where the line graph is to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **ESC** key.)
- 3 Double click on the arranged line graph to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.



GT Designer2 Version □ Operating Manual



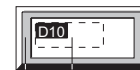
Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].



5.3.3 Object size change



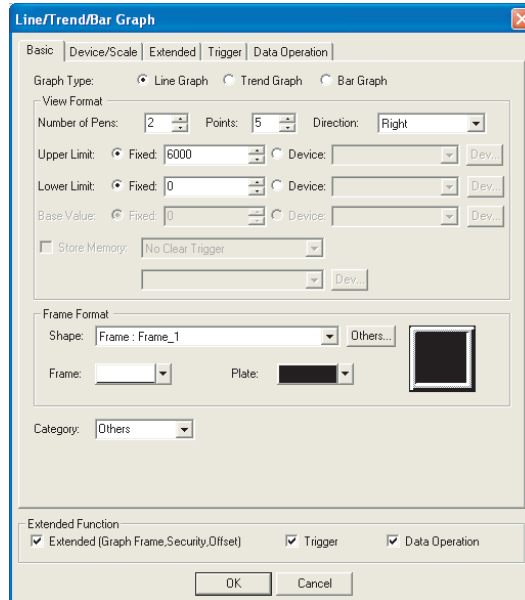
Object outline frame
Shape frame

10.4.3 Setting items

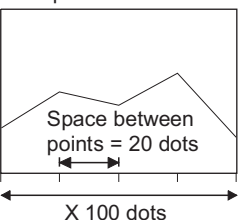
This dialog box is common to the settings for displaying the three types of graphs (line/trend/bar). This section provides the explanation about setting a line graph.

1 Basic tab

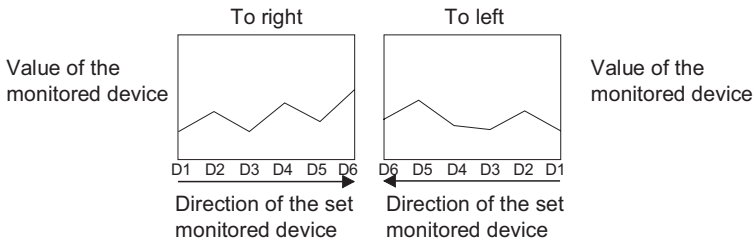
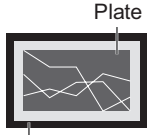
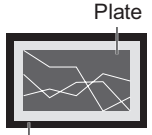
Set the graph type (line/trend/bar graph), number of graphs, upper and lower limit and object shape.



(Example: In the case of GOT-A900 series)

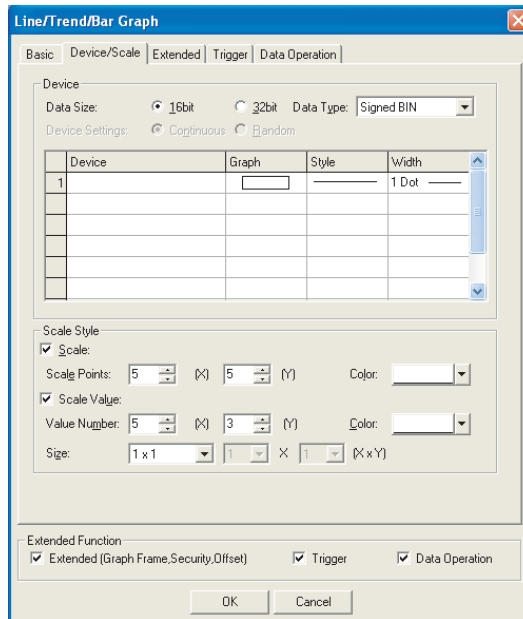
Basic		Device/Scale	Extended	Trigger	Data Operation	A	F	
Basic		Device/Scale	Extended	F				
Items	Description					A	F	
Graph Type	Select the graph to be set (line graph/trend graph/bar graph). This section explains the setting for line graph.					○	○	
View Format	Number of Pens	Set the number of graphs to be displayed. GOT-A900 series : 1 to 8 GOT-F900 series : 1 to 4					○	○
	Points	Set the points (the number of monitored devices) to be displayed in one graph. GOT-A900 series : 2 to 500. GOT-F900 series : 2 to 50. The space between points is automatically decided by the set points and the display range of X. Example: Points : 5 					○	○

(Continued to next page)

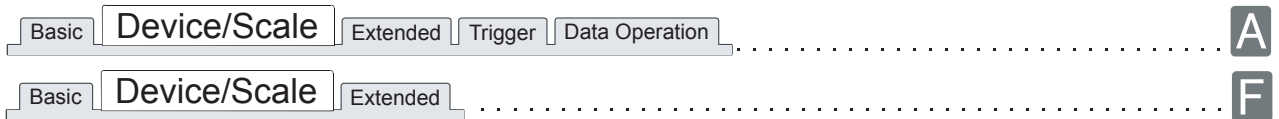
Items	Description	A	F
View Format	Direction Select the setting direction for the graph. 	<input type="radio"/>	<input type="radio"/>
	Upper Limit Select whether the device value range (Lower/Upper limit) for line graph is displayed based on the setting by fixed values or specified device values. Fixed : Sets the fixed values as the upper/lower limit values. Device : Sets the device values as the upper/lower limit values. (☞ Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
	Lower Limit The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance.	<input type="radio"/>	<input type="radio"/>
	Base Value Not available for line graph.	—	—
	Store Memory Not available for line graph.	—	—
Frame Format	Shape Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (☞ 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>
	Frame Select the shape, i.e., frame/plate color. 	<input type="radio"/>	<input type="radio"/>
	Plate 	<input type="radio"/>	<input type="radio"/>
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input type="radio"/>

2 Device/Scale tab

Set the display attribute (graph color/width/type, scale) and devices to be monitored.

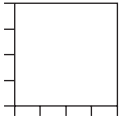
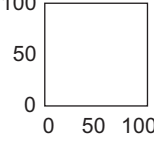
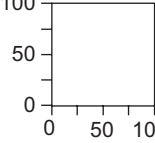


(Example: In the case GOT-A900 series)



Items		Description	A	F
Device	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	○	○
	Data Type	Select the data type of the word device to be monitored. <ul style="list-style-type: none"> In the case of GOT-A900 series <ul style="list-style-type: none"> Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. BCD : Treats word device value as BCD (binary decimal) value Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].) In the case of GOT-F900 series <ul style="list-style-type: none"> Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. 	○	○
	Device Settings	Not available for line graph.	—	—
	Display Attribute View	Set the graph attributes. Click on each item of the list in [Device] to display the setting dialog box. Then, make the settings as follows: <ul style="list-style-type: none"> Device : Click on the [Dev] button and set a word device to be monitored. *1 Graph : Select the graph color. Style : Select the graph style. Width : Select the graph width (GOT-A900 series only). 	○	○

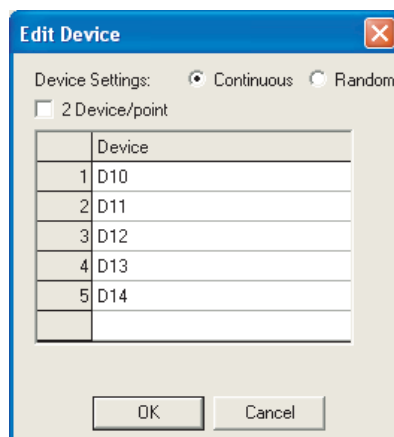
(Continued to next page)

Items	Description	A	F
Scale Style	<p>Set the scale and scale value to the line graph.</p> <p>Example:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Scale display (X: 5) (Y: 5)</p> </div> <div style="text-align: center;">  <p>Scale value display (X: 3) (Y: 3)</p> </div> <div style="text-align: center;">  <p>Combine the scale display and scale value display</p> </div> </div>	<input type="radio"/>	<input type="radio"/>
Scale	<p>Check this item to display the scale.</p> <p>After checking, set the number of horizontal and vertical scale points (GOT-A900 series: 0, 2 to 11; GOT-F900 series: 0, 2 to 50) and the scale color.</p> <p>Once this is set, the space between the scale ticks are automatically defined.</p> <p>A scale is not displayed at setting "0" to the number of scale points.</p> <p>Therefore, a scale can be displayed in the horizontal or vertical direction only.</p>	<input type="radio"/>	<input type="radio"/>
Scale Value	<p>Check this item to display the scale by using numeric values.</p> <p>Set the number of numeric values (0, 2 to 11) in [Value Number], the color in [Color] and numeric size (0.5 to 8) in [Size].</p> <p>The default numeric values for both X and Y axes are set to any of 0 to 100.</p> <p>When changing the numeric values, set the upper limit/lower limit values for the scale value in the extended tab.</p> <p>A scale is not displayed at setting "0" to the number of scale points.</p> <p>Therefore, a scale can be displayed in the horizontal or vertical direction only.</p>	<input type="radio"/>	×

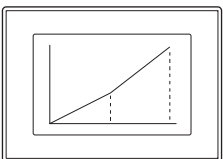
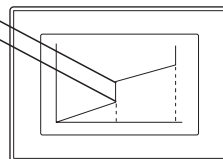

For details of *1, refer to the following.

*1 Edit device dialog box

Set the devices to be monitored in the Edit Device dialog box.



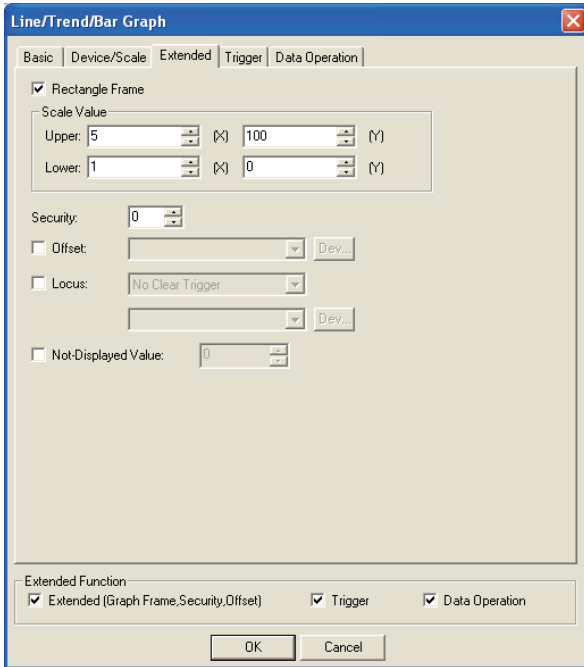
(Example: In the case of GOT-A900 series)

Items	Description	A	F
Device Settings	Select the setting method in [Device List] described below. Continue : The device to be monitored at the first point in the graph will be set as the head device, and any other device will be consecutively assigned to the second and later points. Random : Devices to be monitored are set at random.	<input type="radio"/>	<input checked="" type="checkbox"/>
2 Device/point	Check this item to display a point using 2 devices.  1 device/point Display 2 devices by one point.  2 devices/point	<input type="radio"/>	<input checked="" type="checkbox"/>
Device List	Click on the desired item in the list to set the monitor device by direct input or clicking on the <input type="button" value="Dev"/> button.  Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>

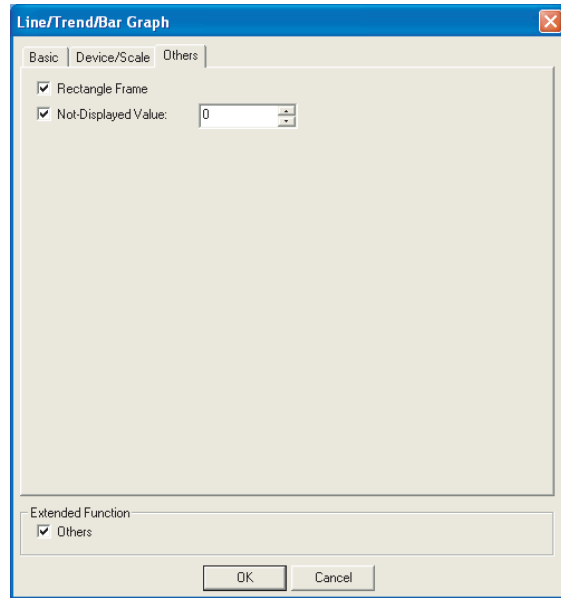
3 Extended tab

Set the security, offset, graph display method (locus, not-displayed value setting) and upper and lower limit scale values.

Check Extended Function at the bottom of dialog box to display this tab.



(Example : when setting GOT-A900 series)



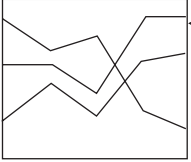
(Example : when setting GOT-F900 series)

Basic Device/Scale **Extended** Trigger Data Operation

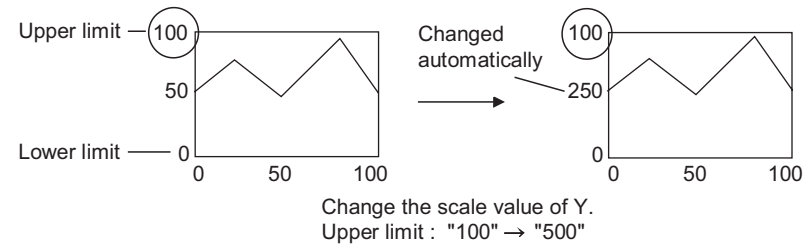
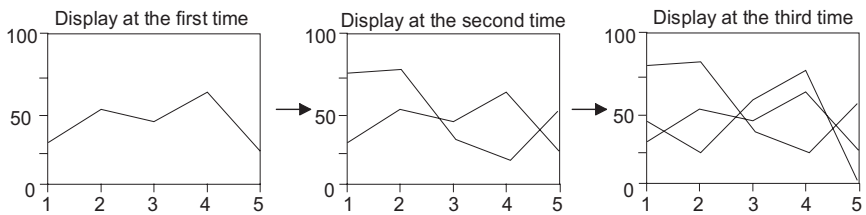
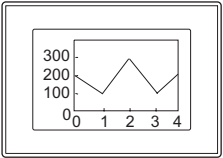
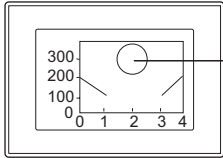
A

Basic Device/Scale **Others**

F

Items	Description	A	F
Rectangle Frame	<p>Check this item to display the frame, i.e., shape for the graph.</p> 	○	○

(Continued to next page)

Items	Description	A	F
Scale Value	Upper Before changing a scale value, set the upper/lower limit values. Set the scale value for vertical (Y axis) and horizontal (X axis) lines. Example: Change the upper limit scale value on Y	<input type="radio"/>	<input checked="" type="checkbox"/>
	Lower  Change the scale value of Y. Upper limit : "100" → "250"	<input type="radio"/>	<input checked="" type="checkbox"/>
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (Section 5.8 Security Function)	<input type="radio"/>	<input checked="" type="checkbox"/>
Offset	Check this item when executing monitor by switching between multiple devices. (Section 5.7 Offset Function) After checking, set the offset device. (Section 5.1 Device Setting) Data length is fixed to 16 bits. This setting cannot be set with "Locus".	<input type="radio"/>	<input checked="" type="checkbox"/>
Locus	Check this item when cascading the updated line graph and the previous graph. The previous graph is stored in the GOT internal memory.  Display the cascaded 1, 2, 3 data contents. Select the timing of clearing locus after the check. No clear trigger : Does not erase the locus. Clear trigger rise : Erases the locus with the rise (turns ON) of bit device.*1 Clear trigger fall : Erases the locus with the fall (turns OFF) of bit device.*1 When selecting [Clear Trigger Rise] or [Clear Trigger Fall], set the bit device to be used for the clear trigger. (Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Not-Displayed Value	Check this item when setting the value without line connection. After checking, set the not-displayed value. Example: When setting not-displayed value  Set "300" to the not-displayed value.  The line connecting 1 to 3 is not displayed.	<input type="radio"/>	<input type="radio"/>

For details of *1, refer to the following.

*1 Clear ON trigger recognition timing

The timing when the GOT recognizes a clear ON trigger is the same as the timing set in "Trigger Type" (Trigger tab).


When "Sampling", "ON sampling" or "OFF sampling" has been set in "Trigger Type", hold the ON/OFF status of the device set to clear trigger at the sampling set in "Trigger Type" or longer.

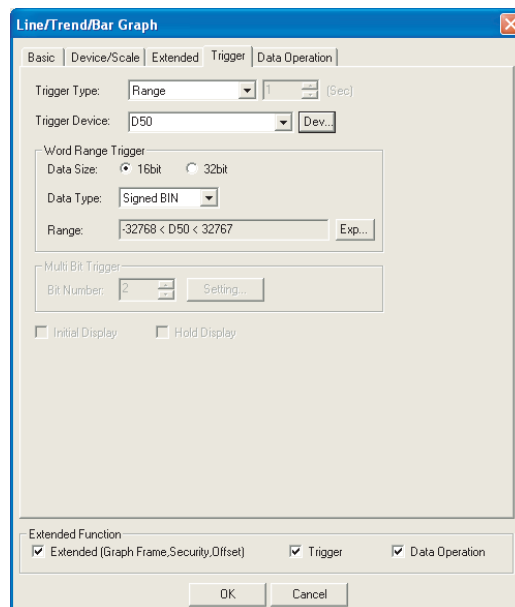
4 Trigger tab (GOT-A900 series only)

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



Items	Description	A	F
Trigger Type	<p>Select the trigger for displaying the object.</p> <p>When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit.</p> <ul style="list-style-type: none"> • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Multi bit trigger <p>The trigger is displayed as follows, when [Locus] is set on the Extended tab.</p> <p>When [Sampling], [ON Sampling] or [OFF sampling] is selected, set the sampling cycle (1 to 3600 seconds) by second.*1</p> <ul style="list-style-type: none"> • Rise • Fall • Sampling • ON sampling • OFF sampling 	○	×
Trigger Device	Specify the device used for the trigger.	○	×
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	○	×
	Data Size	○	×
	Data Type	○	×
	Range	○	×
Multi Bit Trigger	<p>When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger.</p> <p>After setting, click on the [Setting] button and set the bit devices and their triggers.</p>	○	×
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	○	×
Hold Display	<p>When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied.</p> <p>If not checked, the object will be deleted when the trigger is not satisfied.</p> <p>This setting cannot be set with "Locus".</p>	○	×

For details of *1, refer to the following.

*1 Causes and measures when the graph display is not updated in the set sampling cycle.

(1) Updated timing at setting "ON Sampling" or "OFF sampling"

When "ON sampling" or "OFF sampling" is set, there are cases the graph is not updated in the set sampling cycle.

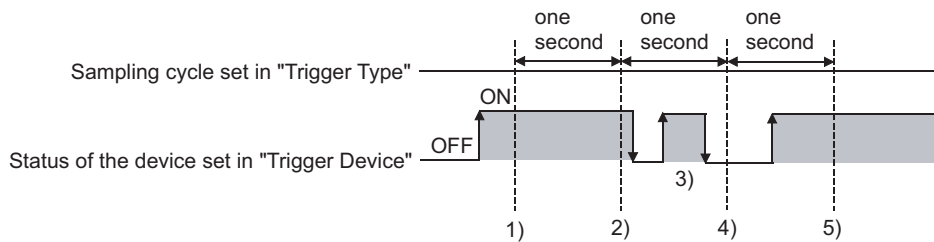
The causes for this problem and the measures to be taken are explained below.

(a) Causes

The status of the device is checked at the each sampling cycle set in the "Trigger Type".

When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling cycle to one second)



At the timing of 1), the line graph is updated.

At the timing of 2), the line graph is updated.

At the timing of 3), the line graph is not updated because is unmatched to Sampling.

At the timing of 4), the line graph is not updated because is unmatched to the device condition.

At the timing of 5), the line graph is updated.

(b) Measures

The sampling cycle set using the "Trigger Type" is not depending on the status of the device.

(The sampling cycle is not changed even if turning on or off the device.)

To start the sampling using the device, set as follows.

- ① Set "Rise" or "Fall" using "Trigger Type".
- ② Program so that turn on or off the device at the timing to update the display using the sequence program.

(2) Updated timing when setting the either following sampling cycle, "Sampling", "ON Sampling" or "OFF Sampling"

If locus display is used when "Sampling", "ON Sampling" or "OFF Sampling" is set, the graph update timing will differ from the set sampling cycle.

(a) Without setting locus

Counting the sampling cycle is started and reset at the following timing.

- At line graph displaying (displaying by screen switching or security level change etc.)
- At security level change

(b) With setting locus

Counting the sampling cycle is started and reset at the following timing.

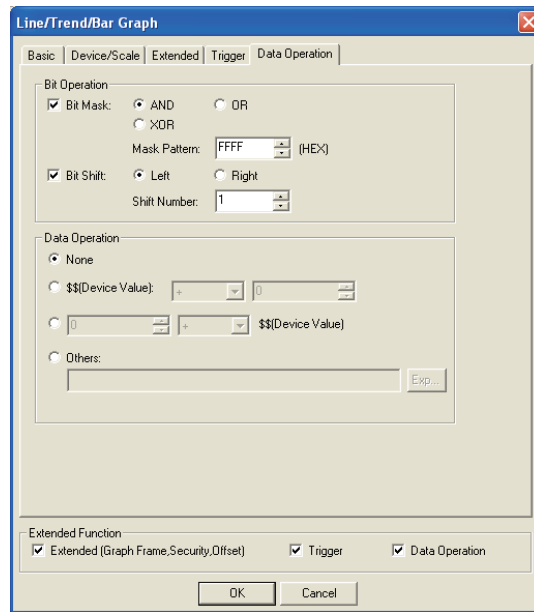
- At starting GOT
- At project download
- At build-in memory information displaying
- At execution of utility setup and message display switching (display language switching)

5 Data operation tab (GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic | Device/Scale | Extended | Trigger | **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation.</p> <p>After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND.</p> <p>OR :Carries out logical OR.</p> <p>XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable bit shift operation.</p> <p>Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift</p> <p>Right :Right shift</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

10.4.4 Precautions

This section provides the precautions when using line graph function.

1 Precautions for drawing

- (1) The maximum number of line graph objects that can be set for one screen.
 - GOT-A900 series: 32
 - GOT-F900 series: 1

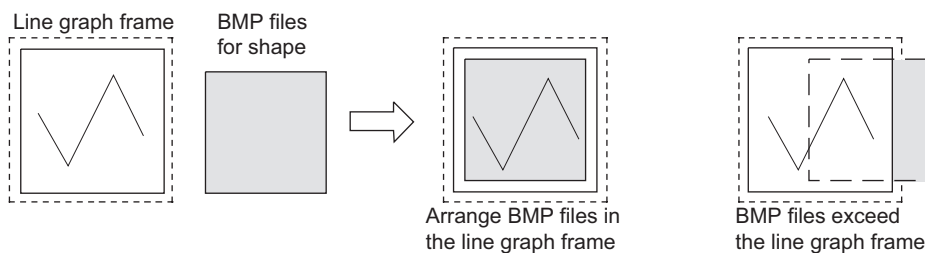
2 Precautions for the line graph which locus has been set.

- (1) Only one object can be set for the whole project.
When the base screen arranged with line graph is multi-displayed in other base screen with the Set overlay screen function, only the first line graph can be displayed and the second and later will not be displayed.
- (2) The setting is available for the base screen only.
- (3) When setting the line graph size, do not exceed the max. size of the overlap window.
Line graph will not be displayed in the area exceeding the max size of the overlap window.
Refer to the following for the max. size of the overlap window.

(☞ 2.1.2 Window screen specifications)

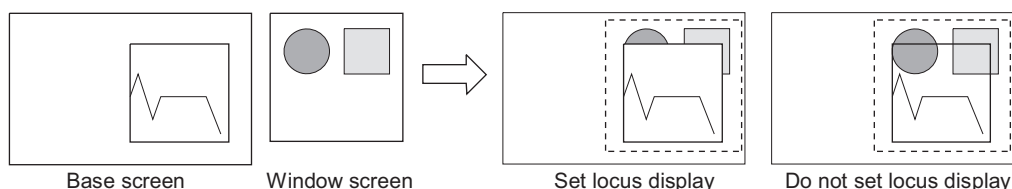
- (4) The Overlap Window 2 and the test window (☞ Section 13.2 Test Function) cannot be displayed on the base screen arranged with line graph.
- (5) The offset function and the station number switching function are not available.
- (6) Pay attention to the following when a line graph is overlaid on a shape.
 - (a) The BMP file pasted to the screen cannot exceed the line graph frame.
Otherwise, the area that is not overlapped in the line graph frame will not be displayed.

Example:



- (b) When using shapes filled with color, arrange the frame of the shape (the boundary line of paint area) within the line graph frame. Otherwise, the shape will not be painted normally.
- (c) Since the shape set in the overlay screen is not displayed, it must be directly placed over and as the background for the line graph.
- (d) Do not use the superimpose window because shapes within the superimpose window will not be displayed as background.

Example:

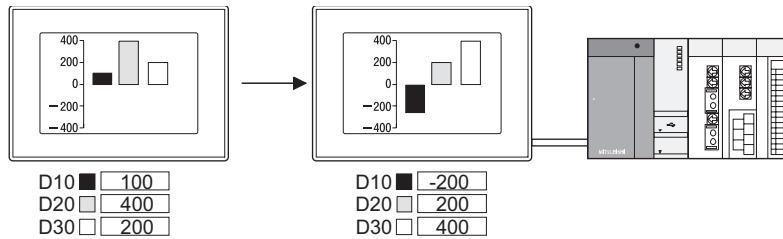




10.5 Bar Graph



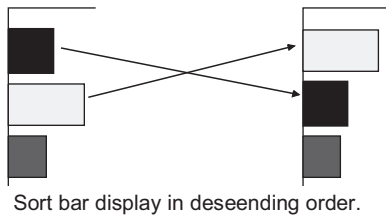
This section explains the function for collecting word device data and displaying them as a bar graph.



Example

Change bar display

Extended Tab



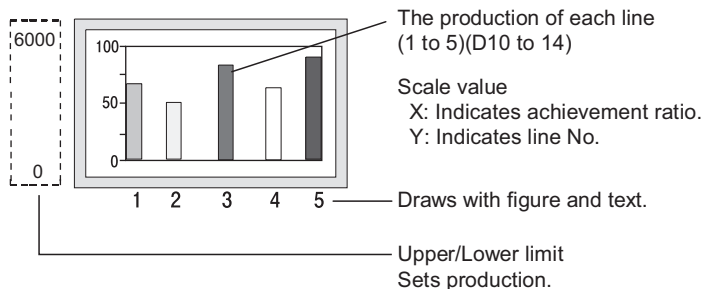
Bar display can be sorted in ascending/descending order based on the device values

10.5.1 Required knowledge for bar graph setting

Set the basic function of the bar graph on the following tab, 1 to 3. The following example explains the general procedures for setting a bar graph.

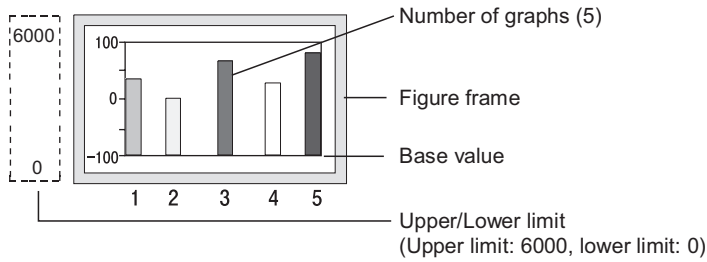
Example: Bar graph displaying production quantity of multiple lines

- Achievement ratio : 0 to 100%
- Production quantity : 0 to 6000
- Actual quantity (Line 1) : D10
- (Line 2) : D11
- (Line 3) : D12
- (Line 4) : D13
- (Line 5) : D14



1 Basic tab

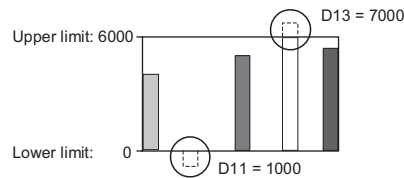
Set the number of graphs, figure frame (object shape), base value and upper and lower limit values.



Remark

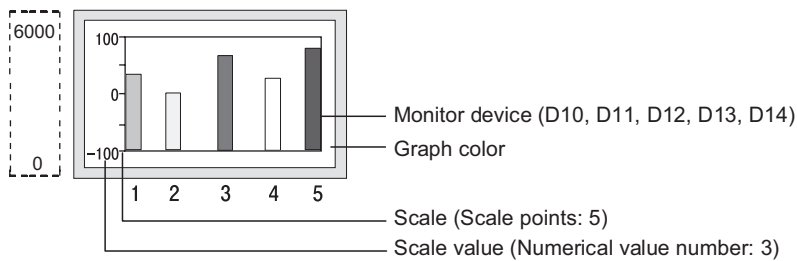
Display of values beyond the upper/lower limit

When a monitor device value exceeds the upper/lower limit, it will be displayed numerically on the graph.



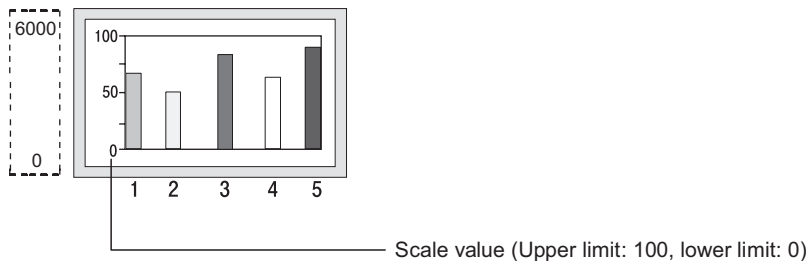
2 Device/Scale tab

Set monitor device, graph color, scale and scale value.




3 Extended tab

Scale values can be changed on this tab.



10.5.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Bar Graph].
 - Select [Object] → [Graph] → [Bar Graph] from the menu.
- 2 Click on the position where the bar graph is to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or use **[ESC]** key.)
- 3 Double click on the arranged bar graph to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.


 GT Designer2 Version □ Operating Manual

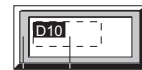


Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

 Section 5.3.3 Object size change



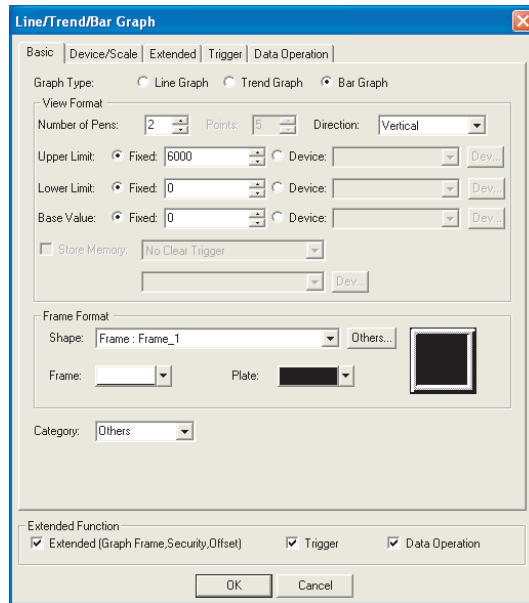
Object outline frame
Shape frame

10.5.3 Setting items

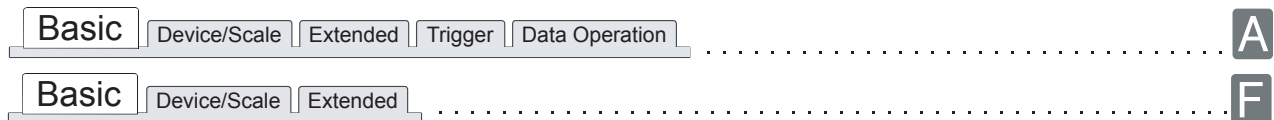
This dialog box is used in common among three types of graph (line/trend/bar graph). This section provides the explanations of setting of bar graph.

1 Basic tab

Set the graph type (line/trend/bar graph), number of graphs, upper limit/lower limit/base value and object shape, i.e., frame.

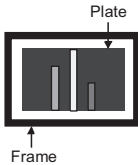


(Example: In the case of GOT-A900 series)



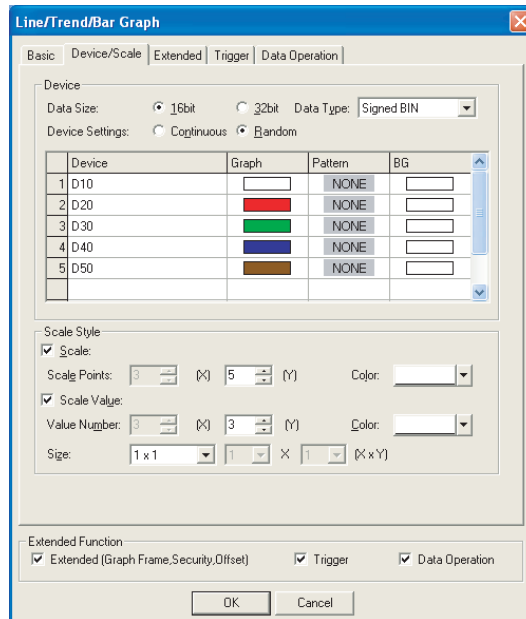
Items	Description	A	F
Graph Type	Select the graph to be set (line graph/trend graph/bar graph). This section explains the setting for bar graph.	<input type="radio"/>	<input type="radio"/>
View Format	Number of Pens	<input type="radio"/>	<input checked="" type="checkbox"/>
	Points	—	—
	Direction	<p>Select the setting method of monitor device.</p> <ul style="list-style-type: none"> GOT-A900 series: Select either of X direction or Y direction. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Y direction:</p> </div> <div style="text-align: center;"> <p>X direction:</p> </div> </div> <ul style="list-style-type: none"> GOT-F900 series: Select either Y direction (Up/Down) or X direction (Right/Left). 	<input type="radio"/>

(Continued to next page)

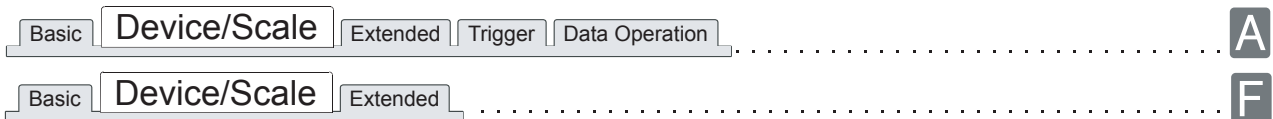
Items		Description	A	F
View Format	Upper Limit	Select whether the device value range (Base value, Lower/Upper limit) for the bar graph is displayed based on the setting by fixed values or specified device values. Fixed : Sets the fixed values as the upper limit/lower limit/base values Device : Sets the device values as the upper limit/lower limit/base values. (☞ Section 5.1 Device Setting)	○	○
	Lower Limit			
	Base Value	The range available for this setting depends on the data format of the device to be monitored. Set the data format in advance (on the Device/Scale tab).		
	Store Memory	Not available for bar graph.	—	—
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (☞ Section 5.3.2 Object shape setting)	○	○
	Frame	Select the shape, i.e., frame/plate color.	○	○
	Plate		○	○
Category	When allocating category to the object, select a proper category. (☞ GT Designer2 Version□ Operating Manual)	○	○	

2 Device/Scale tab

Set graph display attribute (graph color/scale) and monitor device.



(Example: When setting in GOT-A900 series)



Items		Description	A	F
Device	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input type="radio"/>
	Data Type	Select the data type of the word device to be monitored. <ul style="list-style-type: none"> In the case of GOT-A900 series <ul style="list-style-type: none"> Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. BCD : Treats word device value as BCD (binary decimal) value Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].) In the case of GOT-F900 series <ul style="list-style-type: none"> Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. 	<input type="radio"/>	<input type="radio"/>
	Device Settings	When displaying more than two graphs, select the method of setting the device to be monitored in each graph. <ul style="list-style-type: none"> Continue : The device to be monitored in the first graph will be set as the head device. The devices will be consecutively assigned to the second and later graph. Random : One device to be monitored is set for each graph. (For A-900 series only) 	<input type="radio"/>	<input checked="" type="radio"/>

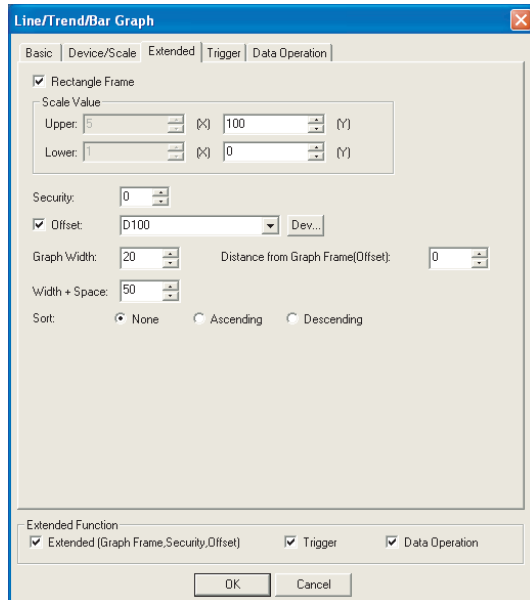
(Continued to next page)

Items	Description	A	F
Device Display Attribute View	<p>Set the graph attributes. Click on each item of the list in [Device] to display the setting dialog box. Then, make the settings as follows:</p> <p>Device : Enter the word device name here, or click on the [Dev] button and select a word device from the given options to set the word device for monitoring. (☞ Section 5.1 Device Setting)</p> <p>Graph Color : Select the graph color.</p> <p>Pattern : Select the filling pattern of the graph.</p> <p>Background : Select the background color of the graph.</p> <p>Example:</p>	<input type="radio"/>	<input type="radio"/>
Scale Style	<p>Set the scale and scale values to the bar graph.</p>	<input type="radio"/>	<input type="radio"/>
Scale	<p>Check this item to display the scale. After checking, set the number of horizontal and vertical scale points (GOT-A900 series: 0, 2 to 11; GOT-F900 series: 0, 2 to 50) and the scale color. Once this is set, the space between the scale ticks are automatically defined.</p>	<input type="radio"/>	<input type="radio"/>
Scale Value	<p>Check this item to display the scale by using numeric values. Set the number of numeric values (0, 2 to 11) in [Value Number], the color of numeric display in [Color] and the numeric size (0.5 to 8) in [Size]. The default numeric values are set within the range from -100 to 100. When changing the numeric value, set the upper limit/lower limit values for the scale value on the extended tab.</p>	<input type="radio"/>	<input checked="" type="radio"/>

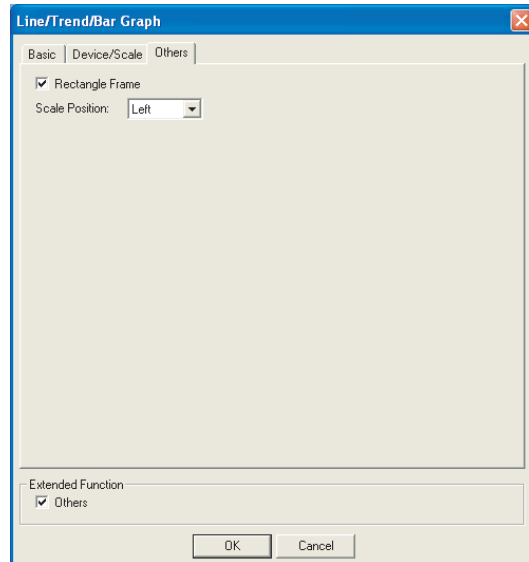
3 Extended tab

Set the security level, offset and upper/lower limit of the scale values.

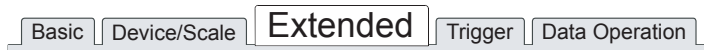
Check Extended Function at the bottom of the dialog box to display this tab.



In the case of GOT-A900 series




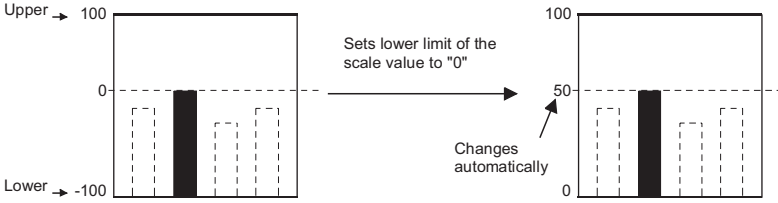
In the case of GOT-F900 series



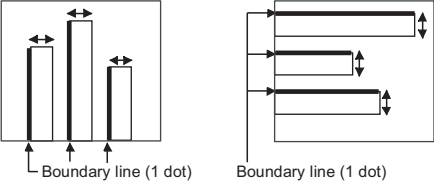
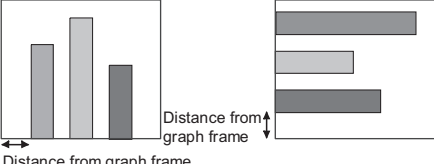
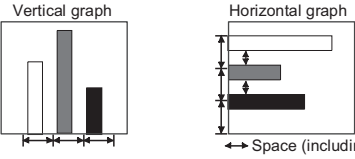
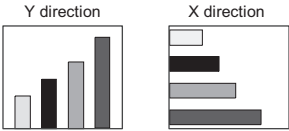
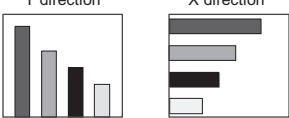
A



F

Items		Description	A	F
Rectangle Frame		Check this item to display the frame, i.e., shape for the graph. 	○	○
Scale Value	Upper	Before changing a scale value, set the upper/lower limit values. Example: Changes lower limit of scale value. 	○	×
	Lower			
Scale Position		Select the position (left, right, up, down) for displaying scale.	×	○
Security		When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Offset		Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting) Data length is fixed to 16 bits.	○	×

(Continued to next page)


Items	Description	A	F
Graph Width	<p>Set the graph width (1 to 500 dots) of the bar graph to be displayed. The graph width includes the 1 dot on the boundary line (Vertical bar: Left side, Horizontal bar: Upper side)</p>  <p>Boundary line (1 dot) Boundary line (1 dot)</p> <p>↔ Graph width: including the boundary line</p>	○	×
Distance from Graph Frame (Offset)	<p>Set the space between graph OP and the selected position to edit text in bar graph that is near the OP (1 to 100 dots).</p>  <p>Distance from graph frame</p>	○	×
Width + Space	<p>Set the space between bar graphs (including graph width) (1 to 500 dots).</p>  <p>Vertical graph Horizontal graph</p> <p>Space (including)</p>	○	×
Sort	<p>Sorting the bars. Select the sorting type and check the corresponding check box.</p> <p>None : Sort is invalid. (Bars are displayed in the device setting order.) Ascending : Arrange from small value to large value. Descending : Arrange from large value to small value.</p> <p>[Ascending]</p>  <p>Y direction X direction</p> <p>[Descending]</p>  <p>Y direction X direction</p>	○	×

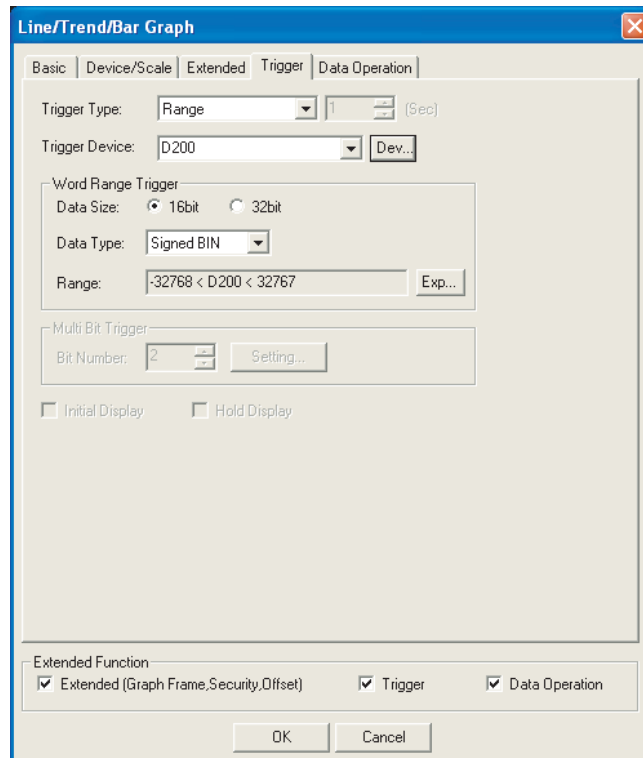
4 Trigger tab (GOT-A900 series only)

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting




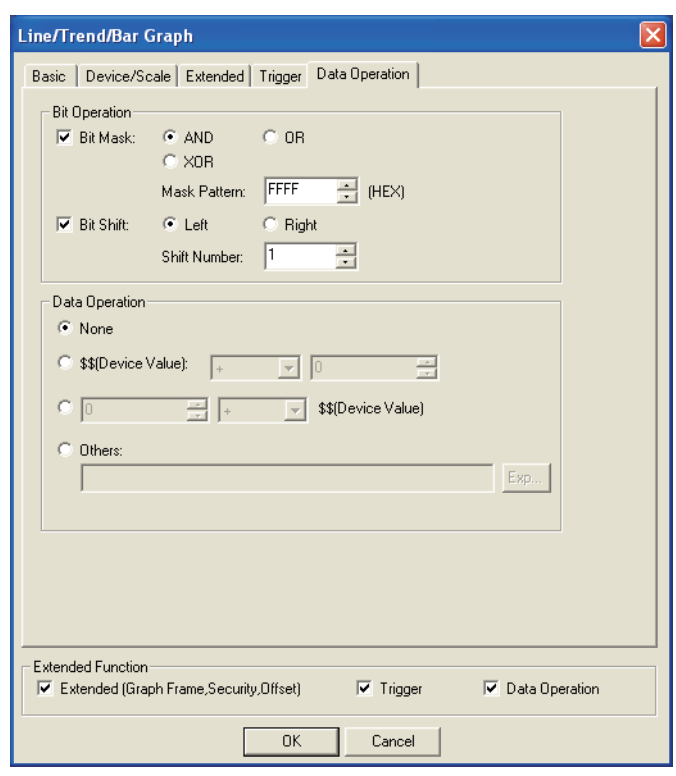
Items	Description	A	F
Trigger Type	Select the trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger Device	Specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Date Type	Select the data type of the word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data Size].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Click on the [Range] button and set conditional expression for the word device range.	<input type="radio"/>	<input checked="" type="checkbox"/>
Multi Bit Trigger	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the triggers. After setting, click on the [Setting] button and set the bit devices and their triggers.	<input type="radio"/>	<input checked="" type="checkbox"/>
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied. If not checked, the object will be deleted when the trigger is not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>

5 Data operation tab (GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic | Device/Scale | Extended | Trigger | **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern]. AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number]. Left :Left shift Right :Right shift	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

10.5.4 Precautions

This section provides the precautions when using the bar graph function.

1 Precautions for drawing

- (1) The maximum number of bar graph objects settable on one screen
 - GOT-A900 series: up to 256
 - GOT-F900 series: up to 50

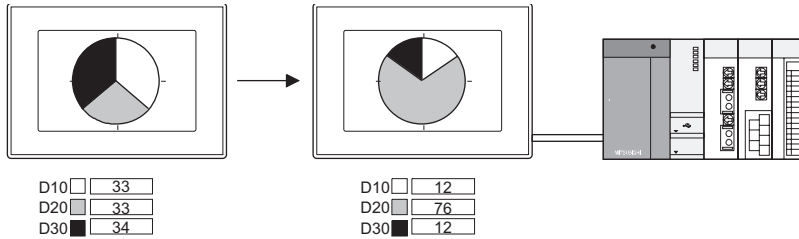


10.6 Statistics Graph

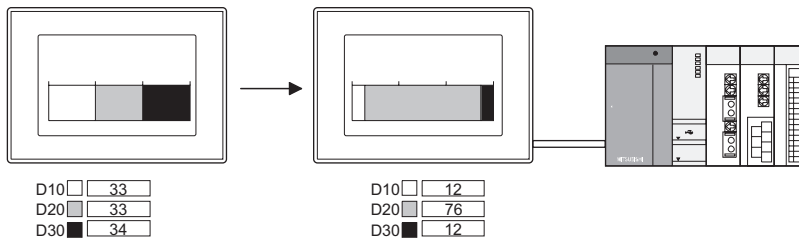


The statistics pie/bar graph shows the data ratio of multiple word devices to the total data value.

1 Statistics pie graph



2 Statistics bar graph



Application example

Displaying the graph with the data list on one screen

Section 7.2 Data List

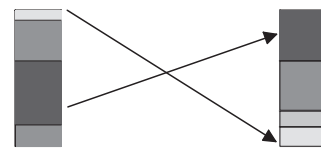


No.	Ma. name	Target vol.	Prod. vol.
1	Ma. 1	5000	2000
2	Ma. 2	5000	1200
3	Ma. 3	5000	1000

Device status can be displayed more effectively by including the line graph legend.

Sorting the corresponding graph sections according to device values

Set in Extended Tab



The sections are sorted in the ascending/descending order of device values.

10.6.1 Required knowledge for statistics graph setting

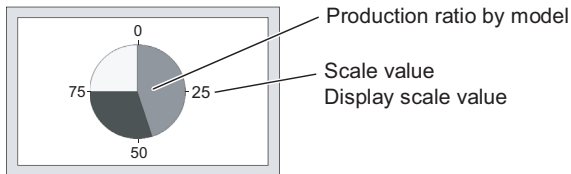
The following ① to ② tabs can be used for setting statistics graph basic function.
The procedure for setting the statistics graph is shown as follows.

Example: Statistics pie graph displaying the production ratio by model

Type A : D10

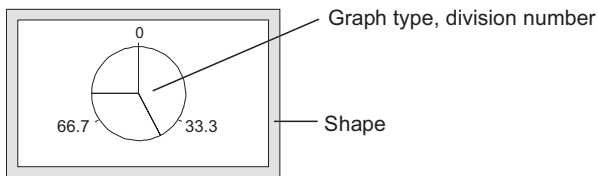
Type B : D11

Type C : D12



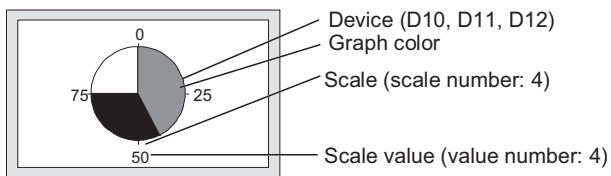
① Basic tab

It is to set the graph type, division number (number of divided sections) and shape.





② Device/Scale tab

It is to set the monitor device, graph color, scale and scale value.



10.6.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on   [Statistics Pie Graph/Statistics Bar Graph].
 - Select [Object] → [Graph] → [Statistics Pie Graph]/[Statistics Bar Graph] from the menu.
- 2 Click on the position where the statistics graph is to be located to complete the arrangement. (After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged statistics graph to display the setting dialog box. Make the settings with reference to the following explanation.



Hint!

Easier setting method

Using the property sheet enables direct on-screen object setting.


 GT Designer2 Version □ Operating Manual

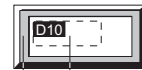


Remark

Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

 Section 5.3.3 Object size change

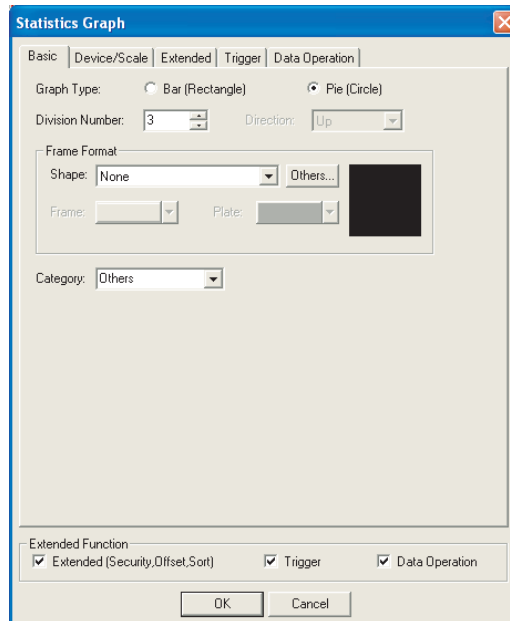


Object outline frame
Shape frame

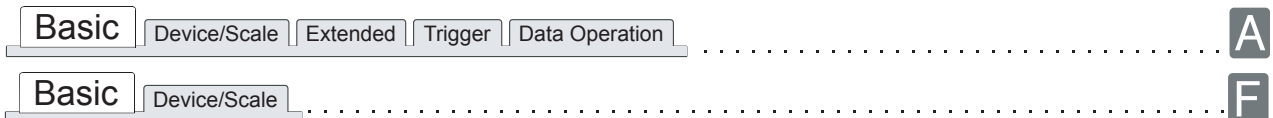
10.6.3 Setting items

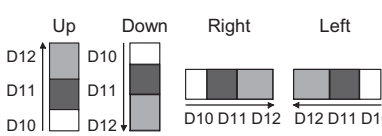
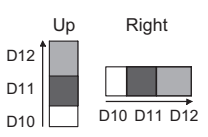

1 Basic tab

It is to set the graph type (statistics bar graph, statistics pie graph), division number (number of divided sections) and shape.

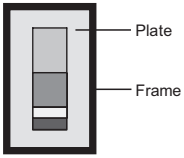



(Example: In the case of GOT-A900 series)



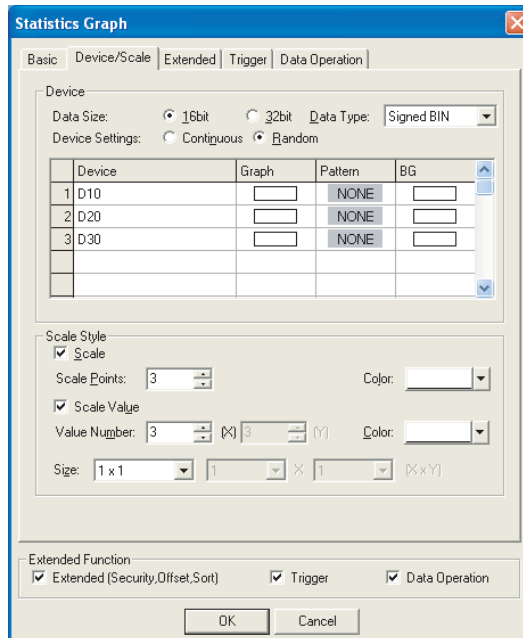
Items	Description	A	F
Graph Type	Select the statistics graph type (statistics bar graph/statistics pie graph).	<input type="radio"/>	<input type="radio"/>
Division Number	Set the number of word devices to be monitored GOT-A900 series : 2 to 32 word devices GOT-F900 series: 1 to 8 word devices	<input type="radio"/>	<input type="radio"/>
Direction	Select the setting direction of device to be set in [Statistics Bar Graph]. GOT-A900 series  GOT-F900 series 	<input type="radio"/>	<input type="radio"/>
Frame Format	Shape	<input type="radio"/>	<input type="radio"/>
	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected.  Section 5.3.2 Object shape setting)	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

Items		Description	A	F
Frame Format	Frame	Select the shape, i.e., frame/plate color. 	<input type="radio"/>	<input type="radio"/>
	Plate		<input type="radio"/>	<input type="radio"/>
Category		When allocating category to the object, select a proper category.  GT Designer2 Version□ Operating Manual	<input type="radio"/>	<input type="radio"/>

2 Device/Scale tab




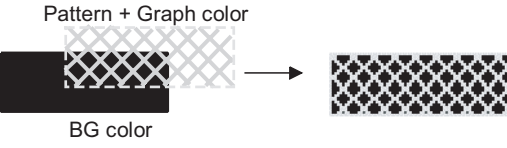
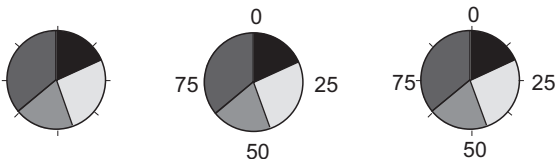
It is to set monitor device and graph display attribute (graph color, scale).



(Example: In the case of GOT-A900 series)

Items		Description	A	F
Device	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input type="radio"/>
	Data Type	Select the data type of the word device to be monitored. • In the case of GOT-A900 series Signed BIN : Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary value. BCD : Treats the word device value as a BCD (binary decimal) value. Real : Treats the word device value as a floating point type real number. (Only when selecting [32bit] for [Data Size].) • In the case of GOT-F900 series Signed BIN : Treats the word device value as a signed binary value. Unsigned BIN : Treats the word device value as an unsigned binary value.	<input type="radio"/>	<input type="radio"/>

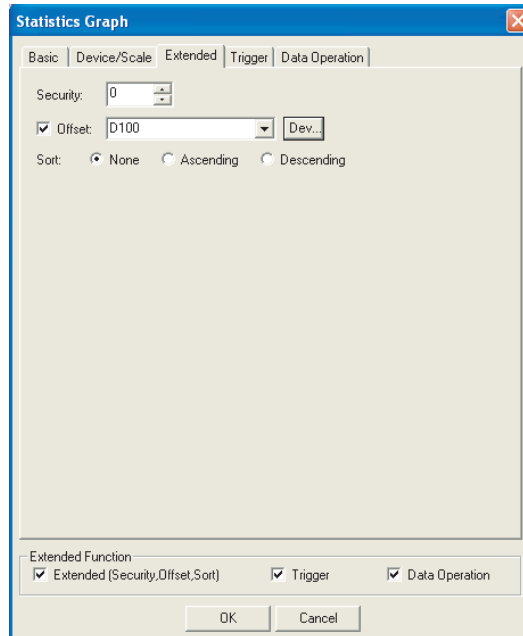
(Continued to next page)

Items		Description	A	F
Device	Device Settings	Select the method of setting the device to be monitored. Continuous : Set the devices as many as the number of divided sections continuously. Random : Set the devices as many as the number of divided sections randomly.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Display Attribute List	Set the graph attributes. Click on each item of the list in [Device] to display the setting dialog box. Then, make the settings as follows: Device : Enter the word device name here, or click on the <input type="button" value="Dev"/> button and select a word device from the given options to set the word device for monitoring. (☞ Section 5.1 Device Setting) Graph Color : Select the graph color. Pattern : Select the filling pattern of the graph. (for GOT-A900 series only) BackGround : Select the background color of the graph. (for GOT-A900 series only) Example: BG :  Pattern :  Graph color :  Pattern + Graph color :  BG color	<input type="radio"/>	<input type="radio"/>
Scale Style		Set the scale and scale value of statistics graph. Example:  Scale points: 8 Scale value: 4 Combined display of scale and scale value	<input type="radio"/>	<input type="radio"/>
	Scale	Check this item to display the scale. After checking, set the number of scale points (GOT-A900 series: 2 to 11, GOT-F900 series: 0, 2 to 50) and the scale color. Once this is set, the space between each scale tick is automatically defined.	<input type="radio"/>	<input type="radio"/>
	Scale Value	Check this item to display the scale numerically. After checking, set the number of numeric values (2 to 11) in [Value Number], numeric color in [Color] and numeric size (0.5 to 8) in [Size].	<input type="radio"/>	<input checked="" type="checkbox"/>

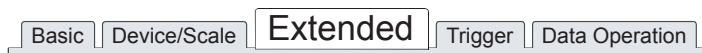
3 Extended tab (For GOT-A900 series only)





Set the security, offset and the order displaying graphs (sort).

Check the Extended Function at the bottom of dialog box to display this tab.



(Example: In the case of GOT-A900 series)




Items	Description	A	F
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	<input type="radio"/>	<input checked="" type="checkbox"/>
Offset	Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting) Data length is fixed to 16 bits.	<input type="radio"/>	<input checked="" type="checkbox"/>
Sort	Sorting the graph sections. Select the sorting type and check the corresponding check box. None : Sort is invalid. (Graph sections are displayed in the device setting order.) Ascending : Arrange from small value to large value. Descending : Arrange from large value to small value. [Ascending] Bar graph  Pie graph  [Descending] Bar graph  Pie graph 	<input type="radio"/>	<input checked="" type="checkbox"/>

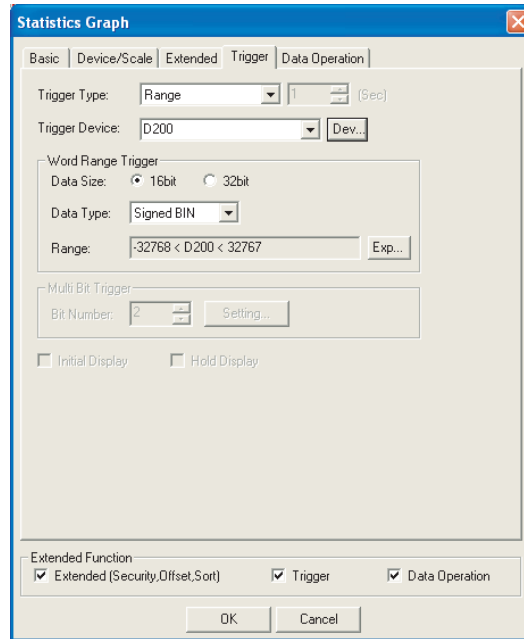
4 Trigger tab (For GOT-A900 series only)

Set conditions for displaying the object, i.e., trigger.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of trigger, refer to the following.

 Section 5.5 Trigger Setting



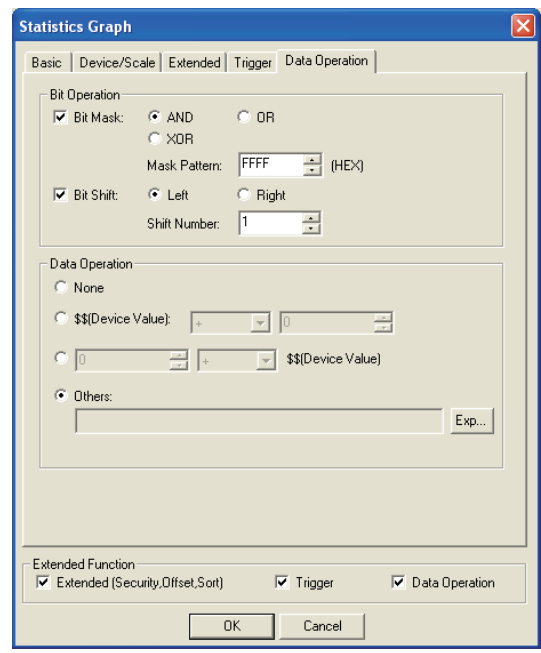
Items	Description	A	F
Trigger Type	Select trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. • Ordinary • ON • OFF • Rise • Fall • Sampling • Range • Bit Trigger	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger Device	Specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Type	Select the data type of word device (Signed BIN/Unsigned BIN/Real). Real can be set only if [32bit] is selected in [Data Size].	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Click on the [Range] button and set conditional expression for the word device range.	<input type="radio"/>	<input checked="" type="checkbox"/>
Multi Bit Trigger	When [Bit Trigger] is selected in [Trigger Type], set the number of bit devices (2 to 8) to be used for the trigger. After setting, click on the [Setting] button and set the bit devices and their triggers.	<input type="radio"/>	<input checked="" type="checkbox"/>
Initial Display	When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
Hold Display	When [ON] or [OFF] is selected in [Trigger Type], check this item if the object display needs to be held even though the trigger is not satisfied. If not checked, the object will be deleted when the trigger is not satisfied	<input type="radio"/>	<input checked="" type="checkbox"/>

5 Data operation tab (For GOT-A900 series only)

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

☞ Section 5.6 Data Operation Function



Basic | Device/Scale | Extended | Trigger | **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern]. AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number]. Left :Left shift Right :Right shift	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

10.6.4 Precautions

This section provides the precautions for using statistics graph function.

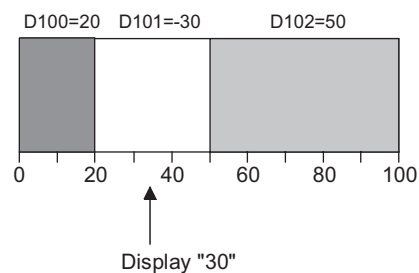
1 Precautions for drawing

- (1) Maximum number of statistics graph objects settable on one screen
 - GOT-A900 series: 32
 - GOT-F900 series: 1
- (2) Precautions in using the F920GOT-K
The statistics graph function is not provided in the F920GOT-K.

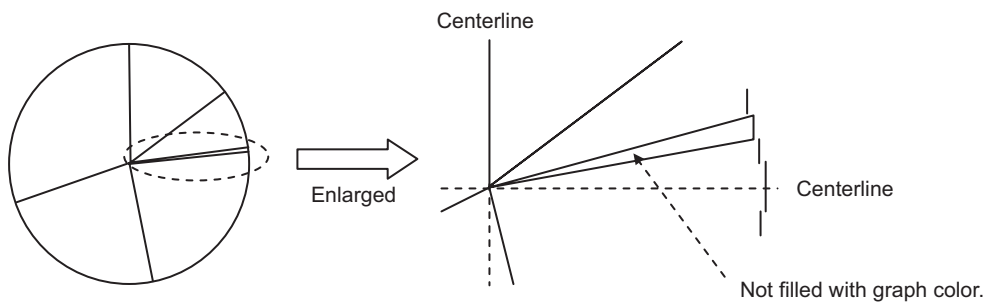
2 Precautions for use

- (1) For statistic graph, the absolute value is displayed when monitor device value is a negative number.

Example: When D101 is "—30"



- (2) Filling circle graph with graph color
When one device value of a circle graph is extremely smaller than the entire graph, the graph may not be filled with the graph color correctly.





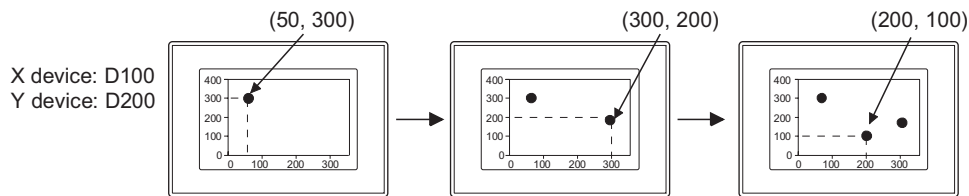
10.7 Scatter Graph



By taking the values of 2 word devices as X and Y coordinates, a corresponding point is displayed on the graph.

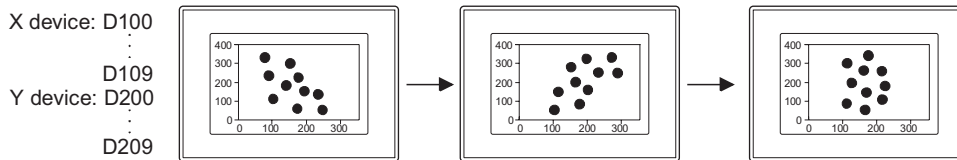
1 Sample

Two word device values are collected, and then displayed as a point on the graph. This graph is updated to the new one with the previously displayed point(s) remained. (Locus)



2 Batch

Multiple data of 2 word device values are collected together and displayed as corresponding points. When refreshing the data, the previously displayed point(s) can be either kept or erased depending on the setting selection.



10.7.1 Required knowledge for scatter graph setting

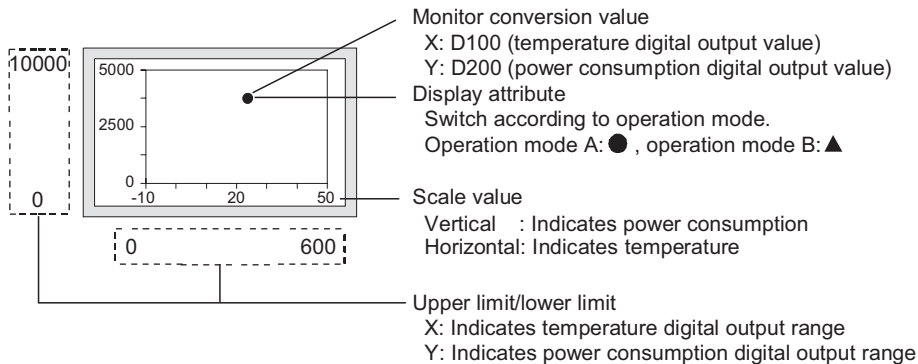
1 Setting method of scatter graph

Set basic function of the scatter graph on the following tabs 1 to 5.

The following example explains the general setting procedure.

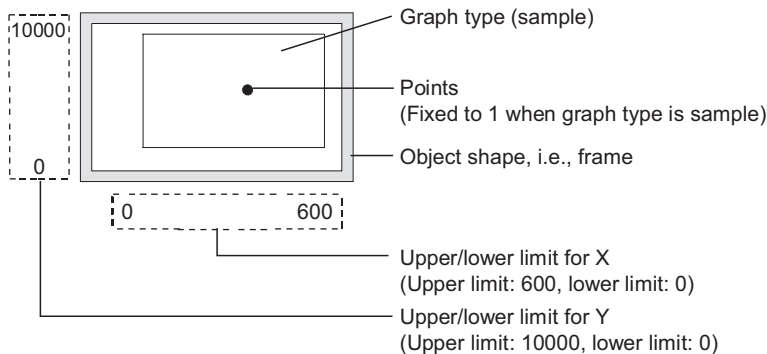
Example: A scatter graph to display power consumption and temperature during line operation

Digital output range for temperature	: 0 to 600
Digital output range for power consumption	: 0 to 10000
Power consumption variation range	: 0 to 5000W
Temperature variation range	: -10 to 50°C
Conversion value (Digital output value of temperature)	: D100
Conversion value (Digital output value of power consumption)	: D200



1 Basic tab

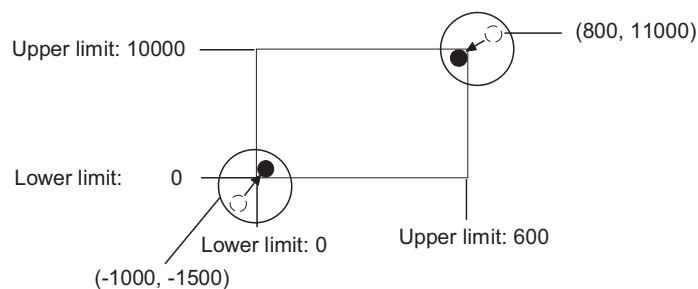
Set the graph type, upper/lower limit values and object shapes.



Remark

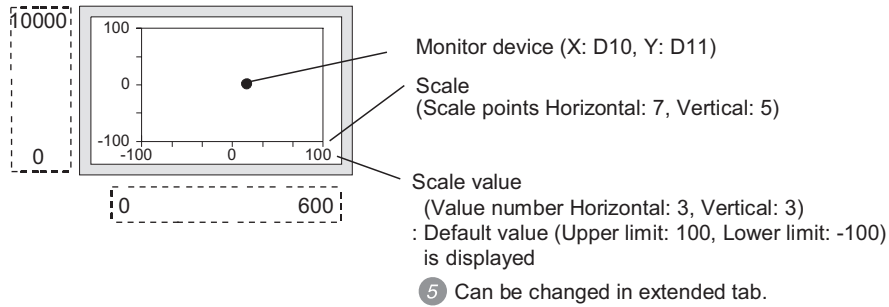
Display of values beyond the upper/lower limit

When a value of the monitored device exceeds the upper or lower limit, it will be displayed numerically on the graph.



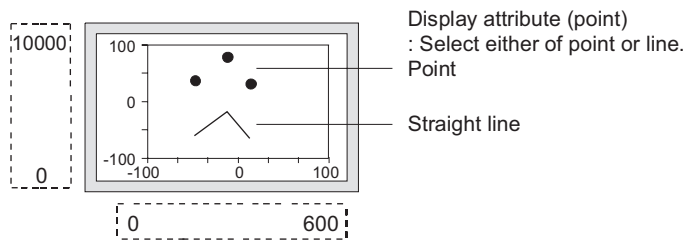
2 Device/Scale tab

Set the monitor devices, scale, and scale values.



3 Attribute tab

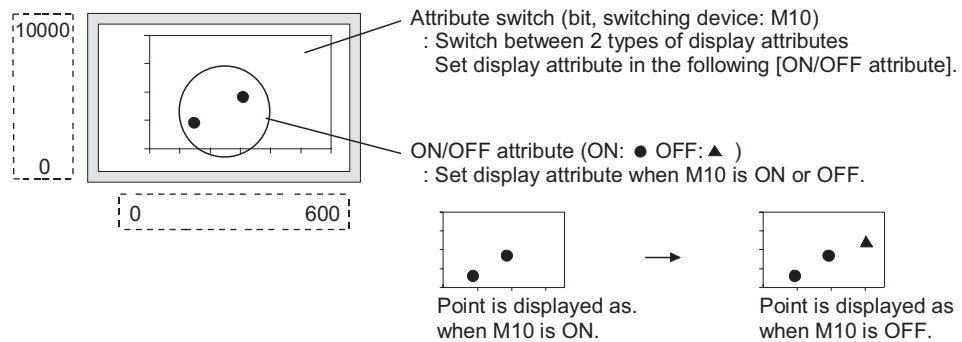
Set the type (point/line) of graph display attribute.



4 Trigger tab

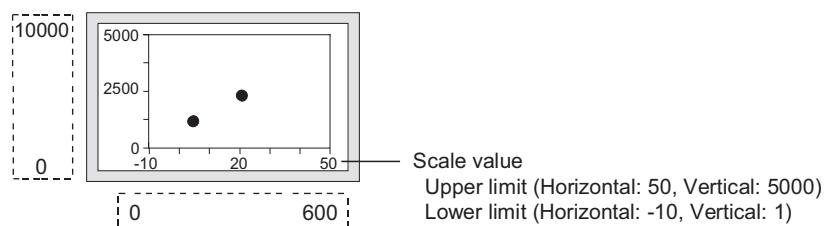
Set the graph display method.

- Switch display attribute : Make setting on this to change the display attribute set in 3 according to the condition of a specified switching device.
- Data collection timing : Set the sampling of data to 600 seconds in this case. The default value is set to 1 second.



5 Extended tab

Change the scale values.



2 Store memory

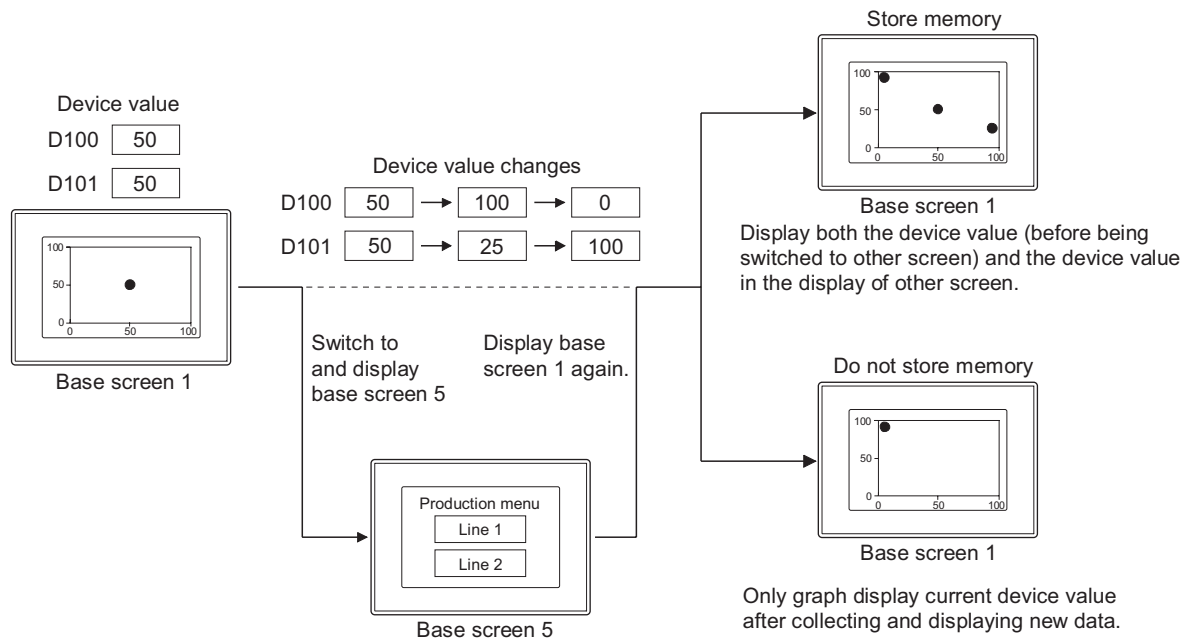
Check the store memory before collecting data after the screen has been switched to another. Be sure to save device values into the internal memory of GOT.

The contents stored in the memory will be erased in the case of GOT reset or power OFF. The setting for Store Memory is made on the Extended tab.

When no setting is made for Store Memory, the scatter graph executes data collection only when displaying the screen with the graph arranged. If switched to other screen, the collected data will be cleared.

Example: Screen switching operation

Graph type [Sample], X-device: D100, Y-device: D101



- (1) The maximum sampling results which can be stored in the memory
Up to 2000 points displayed in scatter graph can be saved in the internal memory. The following shows the upper limit for each graph type of the scatter graph (sample, batch).

- Sample 2000 times
- Batch $\left(\frac{2000}{\text{Points}} \right)$ times (Round off the part after decimal point)

For the case that the number of displayed points exceed 2000, make setting for [Operation at frequency over time] on the Extended tab.

- Interrupt Interrupts data collection
- Initialize and continue . . . Clears the internal memory, erase the scatter graph display and collects data again.



Hint!

Displaying an error message when the sampling number reaches the maximum

An error message can be displayed when the storage sampling number has reached the maximum.

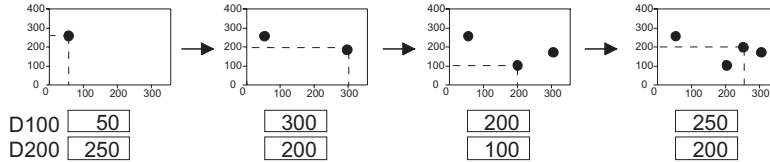
(Section 8.1 User Alarm Display)

- (2) Conditions for when the stored memory data is erased
 - (a) When the clear trigger condition is satisfied
 - (b) When the number of sampling data available for storage in memory exceeds the maximum
 - (c) (Only when setting [Operation at frequency over time] to [Initialize and continue])
 - (d) When GOT is reset or power supply is turned OFF
 - (e) Download of project
 - (f) Display of build-in memory information
 - (g) Execution of utility setup and message display switching (display language switching)

3 Accumulate/Average

The accumulation frequency and the average/maximum/minimum of the data collected in the scatter graph can be written to devices.

Example: X-device: D100, Y-device: D200



Contents to be written		Value that has been written
Accumulation Frequency		4
X	Average Value	200
	Maximum	300
	Minimum	50
Y	Average Value	187
	Maximum	250
	Minimum	100

Remark

(1) Average value

(a) The fractions below the decimal point of the average value are rounded off. If the data type (set on the Device/Scale tab) of the monitor device is real, however, fractions below the decimal point will be written.

(b) Since the average value is calculated on the basis of the average values of every sampling, it is probable to have an error.

(2) Maximum and minimum values

When the value of the monitor device exceeds the upper or lower limit of the scatter graph, the upper or lower limit value will be written as the maximum or minimum accordingly.

(1) Upper limit of sampling number available for accumulation frequency/average value

The upper limit of the sampling number that can be counted as accumulation frequency/average value varies according to the data type (set on the Device/Scale tab) of the monitor device.

[Data Type of Monitor Device]

- Unsigned BIN, Signed BIN, Real, BCD (32 bit) : 65535
- BCD (16 bit) : 9999

When the accumulation frequency exceeds the upper limit, please set the operation in [Operation at frequency over time] of the extended tab.

- Interrupt Interrupts the sampling of data.
- Initialize and continue. . . . Initializes the value of the accumulation frequency, and then recollects data.

Hint!

Displaying an error message when the accumulation frequency value exceeds the upper limit

When the accumulation frequency value exceeds the upper limit, an error message can be displayed in the alarm list (system alarm).

Section 8.1 User Alarm Display

- (2) Initialization timing of accumulation frequency/average value/maximum/minimum Value "0" is written to the accumulation frequency/average value/maximum/minimum in the following timing.
- (a) When the conditions for the clear trigger (set in the Trigger tab) are satisfied
 - (b) When the accumulation frequency value exceeds the upper limit
(Only when setting [Operation at frequency over time] to [Initialize and continue])
 - (c) When switching the screen
 - When switching the screen (base screen, window screen) with scatter graph arranged
When switching the screen with scatter graph arranged to other screens, the current accumulation frequency/average value will be held. However, when the screen is switched back to the previous screen, the data will be initialized.
 - When switching the base screen
The scatter graph arranged in superimpose window will be initialized when the base screen is switched over.
 - (d) When the security level is changed
 - (e) When the station number is changed

Remark

Executing "the accumulation frequency/average value write" and the "store memory" simultaneously


If the "accumulation frequency/average value" and "store memory" are used simultaneously, the data of accumulation frequency/average value will still be collected even when the screen is switched to others.

However, accumulation frequency/average value can be written until the time that the sampling number for store memory reaches the maximum.

Refer to the following for the maximum sampling number of store memory.

 This section [2](#) Store memory

10.7.2 Arrangement and settings

- 1 Carry out either of the following operations.
 - Click on  [Scatter Graph].
 - Select [Object] → [Graph] → [Scatter Graph] from the menu.
- 2 Click on the position where the scatter graph is to be located to complete the arrangement.
(After arrangement, release the arrangement mode by right-clicking the mouse or using **[ESC]** key.)
- 3 Double click on the arranged scatter graph to display the setting dialog box. Make the settings with reference to the following explanation.



Easier setting method

Using the property sheet enables direct on-screen object setting.

 GT Designer2 Version □ Operating Manual



Method of adjusting objects in which figure frame is set

Adjust the display position of object and the shape after enabling [Edit Touch Area/Frame Region].

 5.3.3 Object size change

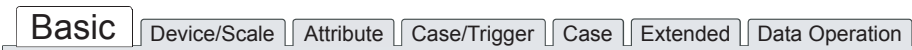
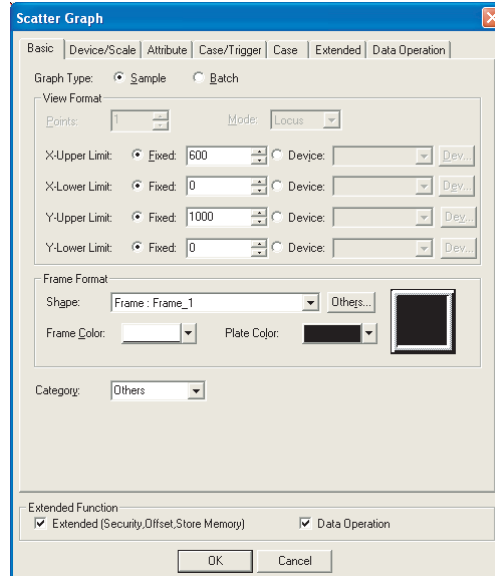


Object outline frame
Shape frame

10.7.3 Setting items

1 Basic tab

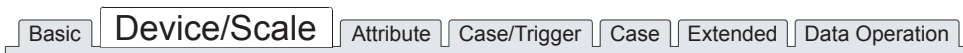
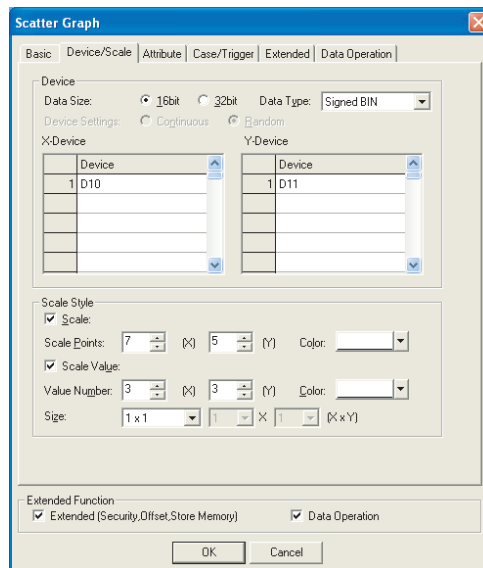
Set the graph type, upper limit/lower limit and shape.

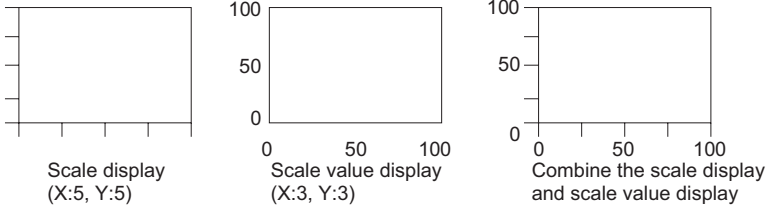


Items		Description	A	F
Graph Type		Select the graph type (sample/batch).	<input type="radio"/>	<input checked="" type="radio"/>
View Format	Points	Set the points (2 to 500) to be displayed in the graph of [Batch].	<input type="radio"/>	<input checked="" type="radio"/>
	Mode	Select how to update the graph display of [Batch]. Replacement : Only displays the graph of the latest data. Locus : Displays the latest data with the previous displayed graph overlapped.	<input type="radio"/>	<input checked="" type="radio"/>
	X: Upper Limit/ Lower Limit Y: Upper Limit/ Lower Limit	Select whether to set the range (upper limit/lower limit of X/Y) of device displayed in scatter graph in fixed value or in the value of the specified device. Fixed : Set a fixed value to the upper limit/lower limit. Device : Set a device value as the upper limit /lower limit. (Section 5.1 Device Setting) The range of the upper limit/lower limit that can be set depends on the data type of the monitor device. Set the data type (set in the Device/Scale tab) in advance.	<input type="radio"/>	<input checked="" type="radio"/>
Frame Format	Shape	Set a frame for the object. When [None] is selected, no frame will be displayed. By clicking on the Others button, figures other than those in the list box or library figures can be selected. (5.3.2 Object shape setting)	<input type="radio"/>	<input checked="" type="radio"/>
	Frame Color	Select the shape, i.e., frame/plate color.	<input type="radio"/>	<input checked="" type="radio"/>
	Plate Color	 Frame color	<input type="radio"/>	<input checked="" type="radio"/>
Category		When allocating category to the object, select a proper category. (GT Designer2 Version□ Operating Manual)	<input type="radio"/>	<input checked="" type="radio"/>

2 Device/Scale tab

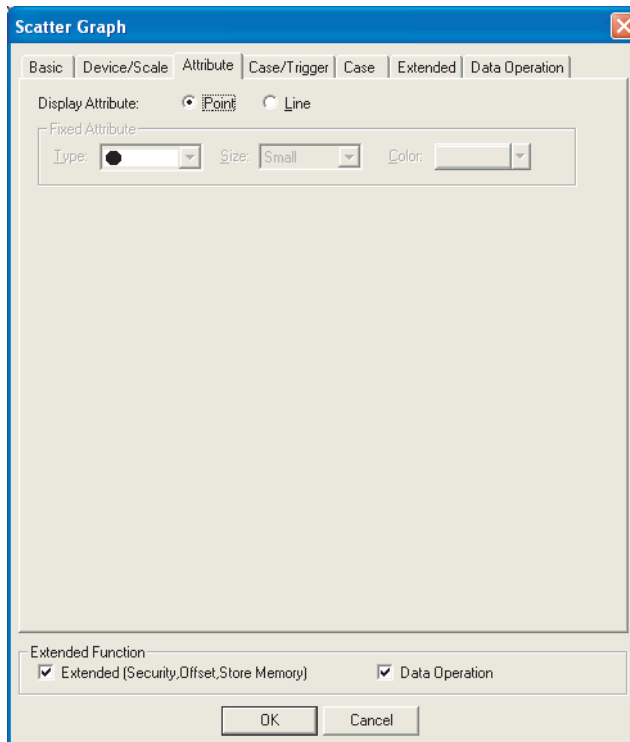
Set the devices to be monitored and the scale displayed in the graph.

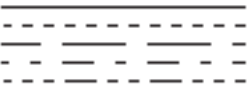


Items		Description	A	F
Device	Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	×
	Data Type	Select the data type of the word device to be monitored. Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. Real : Treats word device value as floating point type real number. BCD : Treats word device value as BCD (binary decimal) value. (Only when selecting [32bit] for [Data Size].)	<input type="radio"/>	×
	Device Settings	Select the setting method for monitoring devices when [Batch] is used. Continue : The device to be monitored at the first point in the graph will be set as the head device. Random : Devices to be monitored are set at random.	<input type="radio"/>	×
	X-Device/ Y-Device	Input the device directly for each of X and Y axes, or click on the ▼ button to set the monitor word device. (Section 5.1 Device Setting)	<input type="radio"/>	×
Scale Style	Set the scale and scale values for the scatter graph. Example: 	<input type="radio"/>	×	
Scale	Check this item to display the scale. After checking, set the number of scale points (i.e. tick marks) (2 to 11) and the scale color. Once this is set, the space between each scale tick is automatically defined.	<input type="radio"/>	×	
Scale Value	Check this item to display the scale by using numeric values. Set the number of numeric values (2 to 11) in [Value Number], the color in [Color] and numeric size (0.5 to 8) in [Size]. The default numeric values for both X and Y axes are set within the range from -100 to 100. When changing the numeric values, set the upper limit/lower limit values for the scale value in the extended tab.	<input type="radio"/>	×	

3 Attribute tab

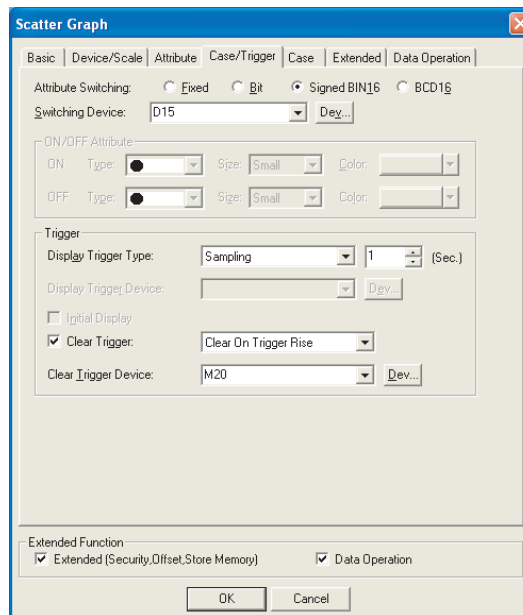
Set the display attribute (type of point/line) of scatter graph.



Items	Description	A	F
Display Attribute	Select the display attribute (point/line) of scatter graph.	<input type="radio"/>	<input checked="" type="checkbox"/>
Fixed Attribute	Set display attribute for the case that [Fixed] is selected for [Attribute Switching] on the Trigger tab.	<input type="radio"/>	<input checked="" type="checkbox"/>
Type	Select the type of the point/line that indicates coordinate position. Type of point : ● ■ ▲ + ○ □ △ × Type of line :  When the line is set to a type other than the solid line, it may not be displayed properly if it is positioned close to other point/line.	<input type="radio"/>	<input checked="" type="checkbox"/>
Size	Select the size of the point (large, medium, small)/line (1 to 7).	<input type="radio"/>	<input checked="" type="checkbox"/>
Color	Select the display color of the point/line.	<input type="radio"/>	<input checked="" type="checkbox"/>


4 Case/Trigger tab

Set the display attribute switching of scatter graph, updating of graph display and timing of erasure.



Items	Description	A	F
Attribute Switching	<p>Select the switching display attributes for the scatter graph (type, size and color of point/line)</p> <p>Fixed : The display attribute is not switched. The display attribute set on the Attribute tab is used.</p> <p>Bit : The display attribute is switched depending on the bit device conditions ON/OFF.</p> <p>Signed BIN16 : The display attribute is switched between multiple settings depending on the word device value (16-bit binary value).</p> <p>BCD16 : The display attribute is switched between multiple settings depending on the word device (16-bit BCD (Binary Coded Decimal)).</p> <p>When [Bit] is selected, set the display attribute in [ON/OFF Attribute] of this tab. When [Signed BIN16] or [BCD16] is selected, set it on the Case tab.</p> <p>Example1: Attribute switching: [Bit], Switching device: M10</p> <p>M10: ON Points are displayed as ●.</p> <p>M10: OFF Points are displayed as ▲.</p> <p>Example2: Attribute switching: [Signed BIN16], Switching device: D10</p> <p>D10 = 1 Points are displayed as ●.</p> <p>D10 = 10 Points are displayed as ▲.</p> <p>D10 < 100 Points are displayed as ■.</p>	○	×
Switching Device	<p>Set the device for display switching.</p> <p> Section 5.1 Device Setting)</p>	○	×

(Continued to next page)

Items	Description	A	F
ON/OFF Attribute	Set the display attribute for ON/OFF statuses of the display-switching bit device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Type	Select the type of the point/line that indicates coordinate position. Type of point : ● ■ ▲ + ○ □ △ × Type of line :  When the line is set to a type other than the solid line, it may not be displayed properly if it is positioned close to other point/line.	<input type="radio"/>	<input checked="" type="checkbox"/>
Size	Select the size of the point (large, medium, small) /line (1 to 7).	<input type="radio"/>	<input checked="" type="checkbox"/>
Color	Select the display color of the point/line.	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger	Display Trigger Type*1 Select the trigger for displaying the object. When [Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit. (👉 Section 5.5 Trigger Setting) <ul style="list-style-type: none"> • Sampling • Fall • OFF sampling • Rise • ON sampling 	<input type="radio"/>	<input checked="" type="checkbox"/>
	Display Trigger Device Specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Initial Display When [Rise] or [Fall] is selected in [Trigger Type], check this item if the object needs to be displayed only at the initial time after screen switching even though the trigger is not satisfied.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Clear Trigger*2 Check this item to set the trigger for erasing the display of graphs. After checking, select the timing of erasing graph display. Rise : Erases the graph at rise (turns ON) of bit device. Fall : Erases the graph at fall (turns OFF) of bit device. The clear trigger will clear graph display stored in memory and the accumulation frequency/average value.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Clear Trigger Device Assigning a device to function as a clear trigger. (👉 Section 5.1 Device Setting) When the trigger type is set to [Sampling], [ON Sampling] or [OFF Sampling], make sure to hold the clear trigger device status for more than the sampling cycle set in [Trigger Type].	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, *2, refer to the following.

*1 Causes and measures when the graph display is not updated in the set sampling cycle.

(1) Updated timing at setting "ON Sampling" or "OFF sampling"

When "ON Sampling" or "OFF Sampling" is set, there are cases the graph is not updated in the set sampling cycle.

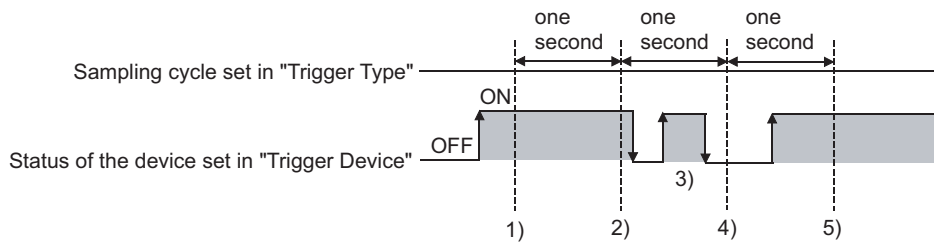
The causes for this problem and the measures to be taken are explained below.

(a) Causes

The status of the device is checked at the each sampling cycle set in the "Trigger Type".

When the device condition is not satisfied at checking, the display is not updated.

(When setting both "Trigger Type" to "On Sampling" and sampling cycle to one second)



At the timing of 1), the scatter graph is updated.

At the timing of 2), the scatter graph is updated.

At the timing of 3), the scatter graph is not updated because is unmatchable to Sampling.

At the timing of 4), the scatter graph is not updated because is unmatchable to the device condition.

At the timing of 5), the scatter graph is updated.

(b) Measures

The sampling cycle set using the "Trigger Type" is not depending on the status of the device.

(The sampling cycle is not changed even if turning on or off the device.)

To start the sampling using the device, set as follows.

- ① Set "Rise" or "Fall" using "Trigger Type".
- ② Program so that turn on or off the device at the timing to update the display using the sequence program.

(2) Updated timing when setting the either following sampling cycle, "Sampling", "ON Sampling" or "OFF Sampling"

If store memory is used when "Sampling", "ON Sampling" or "OFF Sampling" is set, the graph update timing will differ from the set sampling cycle.

(a) Without setting store memory

Counting the sampling cycle is started and reset at the following timing.

- At scatter graph displaying (displaying by screen switching or security level change etc.)
- At security level change

(b) With setting store memory

Counting the sampling cycle is started and reset at the following timing.

- At starting GOT
- At project download
- At build-in memory information displaying
- At execution of utility setup and message display switching (display language switching)

*2 Clear ON trigger recognition timing

The timing when the GOT recognizes a clear ON trigger is the same as the timing set in "Trigger Type" (Trigger tab).

When "Sampling", "ON sampling" or "OFF sampling" has been set in "Trigger Type", hold the ON/OFF status of the device set to clear trigger at the sampling set in "Trigger Type" or longer.

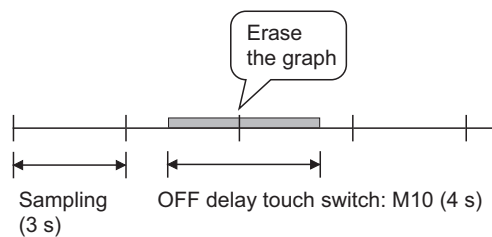
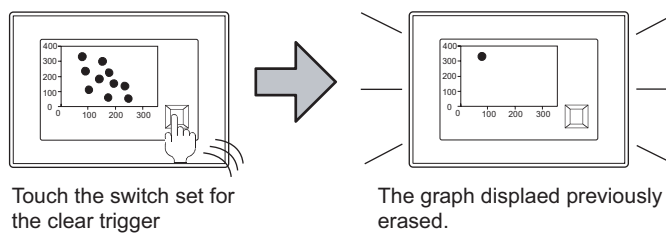
Example of holding the display for the sampling period set by [Display Trigger Type] or longer

Clear Trigger : Set rise timing and M10 for the device

Display Trigger Type : Set to sampling (3 s)

Touch Switch : Set M10 for the device, bit momentary for Action and 4 s for OFF Delay

The condition of [Display Trigger Type]: Sampling (3 s) is met after pressing touch switch until the clear trigger (M10) turns off by the OFF Delay (4 s), and the graph is erased.




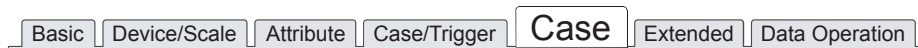
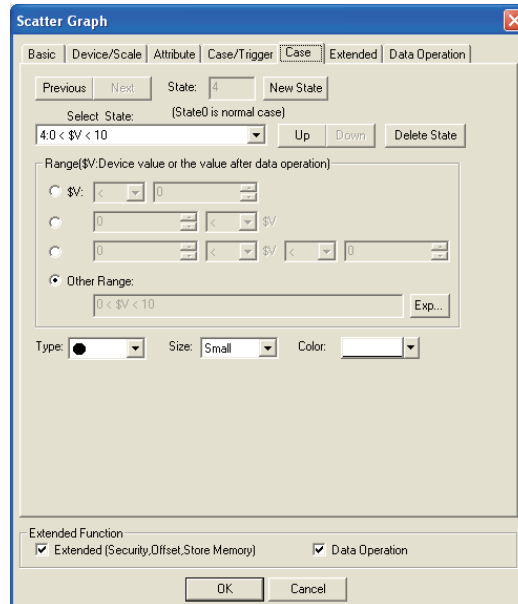
5 Case tab


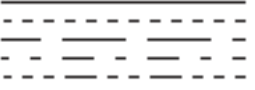
Set the attributes according to the state of device state condition.

This tab will be displayed only when [Attribute Switching] of the Trigger tab is set to [Signed BIN16] or [BCD16].

Refer to the following for details of state.

 Section 5.4 State Setting



Items	Description	A	F
State*1	Make the setting for display conditions and object display for each state. Up to 64 states can be set (including the normal case). (State No. 0 indicates the normal case)	<input type="radio"/>	<input checked="" type="checkbox"/>
New State	Creates a new state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete State	Deletes a specified state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Previous/Next	Switches the currently editing state to the previous or next state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Up/Down	Changes the priority of the current state.	<input type="radio"/>	<input checked="" type="checkbox"/>
Select State	Displays the list of preset states. Selecting any state from the list can make it active on the tab.	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Set the range of word device values for display change using a conditional expression.	<input type="radio"/>	<input checked="" type="checkbox"/>
Type	Select the type of the point/line that indicates coordinate position. Type of point :  Type of line :  When the line is set to a type other than the solid line, it may not be displayed properly if it is positioned close to other point/line.	<input type="radio"/>	<input checked="" type="checkbox"/>
Size	Select the size of the point (large, medium, small) /line (1 to 7).	<input type="radio"/>	<input checked="" type="checkbox"/>
Color	Select the display color of the point/line.	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

*1 State

- (1) Display for condition other than those set on the Case tab
When the state is in condition other than those set on the Case tab, it is displayed with the display attribute set on the Basic tab.
- (2) Display when conditions are overlapped
When conditions are overlapped, a state with smaller No. has priority.

Example: Graph type: Sample,
Switching device: D10

Operation priority
for setting overlap
condition.

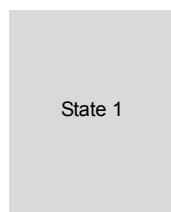
State No.	Display range	Type	Size	Color
1	$8 \leq \$V \leq 12$	□	Big	White
2	$13 \leq \$V \leq 18$	▲	Small	Black
Normal case (State 0)	—	●	Big	Black

High

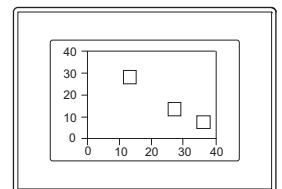
↓

Low

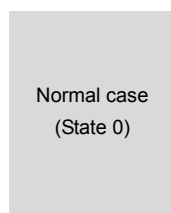
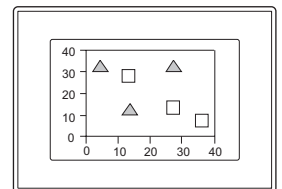
*\$V indicates the value of the monitor device.



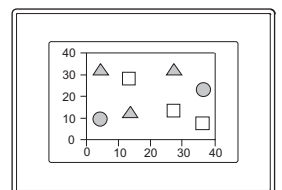
When the value of the switching device is between 8 and 12 ($8 \leq \$V \leq 12$), it will appear as big white quadrangle (□).



When the value of the switching device is between 13 and 18, it will appear as small black triangle (▲).



When other conditions except for the conditions of state 1 to 3 happen, it will appear as big black circle (●).

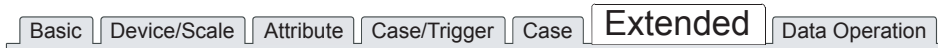
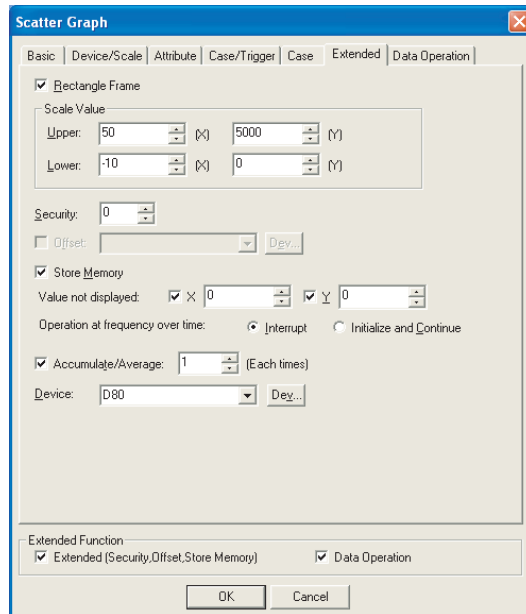


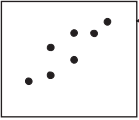
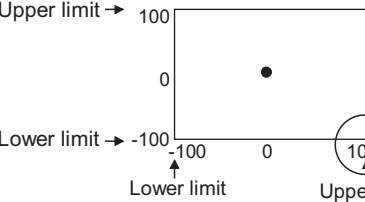
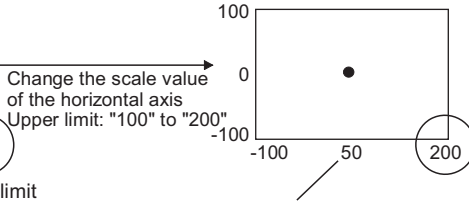
6 Extended tab

This tab allows the following attributes to be set:

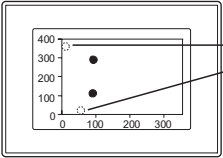
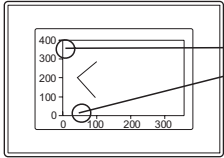
Scale values, security, offset, and the write of collection data's accumulation data.

When the Extended Function at the bottom of the dialog box is checked, the tab is displayed.



Items		Description	A	F
Rectangle Frame		<p>Check this item to display the frame, i.e., shape for the graph.</p> 	○	×
Scale Value	Upper	<p>When changing a scale value, set the upper/lower limit values. Set the scale value for vertical (Y axis) and/or horizontal (X axis) line. Example: Change the upper limit scale value on Y</p>	○	×
	Lower	<p>Upper limit → 100</p>  <p>Lower limit → -100</p> <p>Lower limit Upper limit</p> <p>Change the scale value of the horizontal axis Upper limit: "100" to "200"</p>  <p>Changed automatically</p>	○	×
Security		<p>When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)</p>	○	×
Offset		<p>Check this item when executing monitor by switching between multiple devices. (☞ Section 5.7 Offset Function) After checking, set the offset device. (☞ Section 5.1 Device Setting) This setting cannot be set with "Store Memory" (Extended tab).</p>	○	×

(Continued to next page)

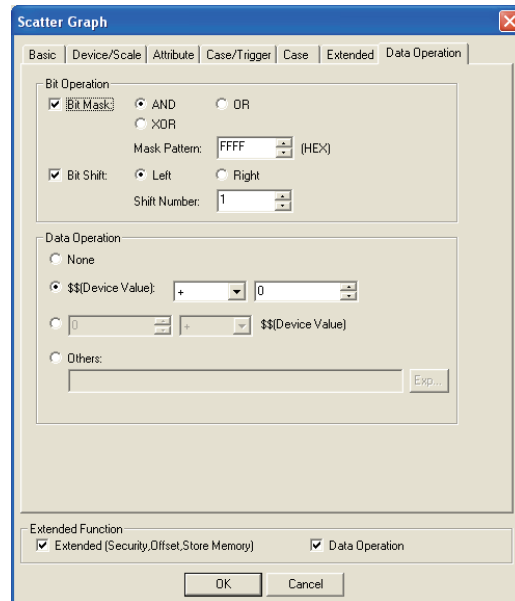
Items	Description	A	F																																
Store Memory	Check this item to enable data collection during display of the screen without a scatter graph. Data of the points displayed in the graph are stored in the internal memory of GOT.	<input type="radio"/>	x																																
Value not displayed	<p>Check this item when setting the not-displayed value for X and/or Y of the scatter graph. Example: [0] is set as not-displayed value for X and Y</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Graph of [Point]</p> </div> <div style="text-align: center;">  <p>Graph of [Line]</p> </div> </div>	<input type="radio"/>	x																																
Operation at frequency over time	<p>Select the operation when the following functions exceed the maximum sampling number.</p> <ul style="list-style-type: none"> • Store memory : When exceeding the maximum display points (2000 points). • Accumulation frequency : When accumulation frequency exceeds 65535/average value/maximum/minimum (9999). <p>Interrupt : Interrupts the data collection, and does not update the graph display.</p> <p>Initialize and Continue : After erasing the graph display and initializing the memory and accumulation frequency/average value/maximum/minimum, continues data collection.</p>	<input type="radio"/>	x																																
Accumulate/Average	<p>Check this item when the accumulation frequency/average value/maximum/minimum of collected data needs to be written into devices. Not-displayed value set in the scatter graph display is not included. Set the writing interval of the accumulation frequency/average value/maximum/minimum into device by specifying the number of update times. While the accumulation frequency/average value/maximum/minimum is written, the display of objects will be delayed, if the interval of the store memory and trigger is short. In this case, set a long Write interval.</p>	<input type="radio"/>	x																																
Device	<p>Set the head bit device to which the accumulation frequency/average value is written. According to the data size (16bit/32bit) of the monitor device, the device range varies as follows. Example: The device that has been set: n</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Write contents</th> <th>When setting 16 bit (using 7 word)</th> <th>When setting 32 bit (using 14 word)</th> </tr> </thead> <tbody> <tr> <td>Accumulation frequency</td> <td>n</td> <td>n, n + 1</td> </tr> <tr> <td rowspan="3">X</td> <td>Average value</td> <td>n + 1</td> </tr> <tr> <td>Maximum</td> <td>n + 2, n + 3</td> </tr> <tr> <td>Minimum</td> <td>n + 4, n + 5</td> </tr> <tr> <td rowspan="3">Y</td> <td>Average value</td> <td>n + 3</td> </tr> <tr> <td>Maximum</td> <td>n + 6, n + 7</td> </tr> <tr> <td>Minimum</td> <td>n + 4, n + 9</td> </tr> <tr> <td></td> <td>Maximum</td> <td>n + 5</td> </tr> <tr> <td></td> <td>Minimum</td> <td>n + 10, n + 11</td> </tr> <tr> <td></td> <td></td> <td>n + 6</td> </tr> <tr> <td></td> <td></td> <td>n + 12, n + 13</td> </tr> </tbody> </table>	Write contents	When setting 16 bit (using 7 word)	When setting 32 bit (using 14 word)	Accumulation frequency	n	n, n + 1	X	Average value	n + 1	Maximum	n + 2, n + 3	Minimum	n + 4, n + 5	Y	Average value	n + 3	Maximum	n + 6, n + 7	Minimum	n + 4, n + 9		Maximum	n + 5		Minimum	n + 10, n + 11			n + 6			n + 12, n + 13	<input type="radio"/>	x
Write contents	When setting 16 bit (using 7 word)	When setting 32 bit (using 14 word)																																	
Accumulation frequency	n	n, n + 1																																	
X	Average value	n + 1																																	
	Maximum	n + 2, n + 3																																	
	Minimum	n + 4, n + 5																																	
Y	Average value	n + 3																																	
	Maximum	n + 6, n + 7																																	
	Minimum	n + 4, n + 9																																	
	Maximum	n + 5																																	
	Minimum	n + 10, n + 11																																	
		n + 6																																	
		n + 12, n + 13																																	

7 Data operation tab

Operational expression is set on this tab when monitoring the device by computing the device values. Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function



Basic Device/Scale Attribute Case/Trigger Case Extended **Data Operation**

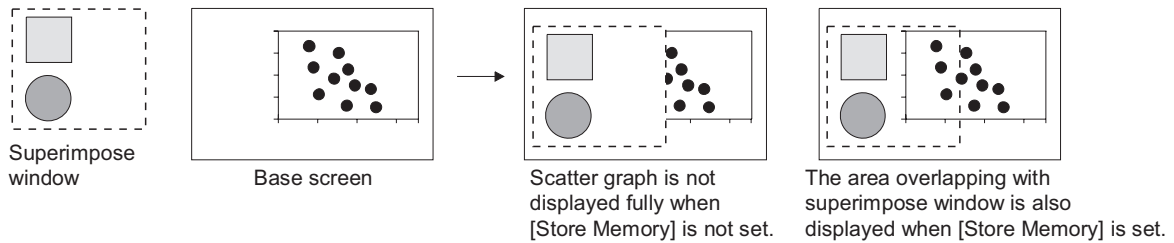
Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	×
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	×
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	×

10.7.4 Precautions

This section provides the precautions for using the scatter graph function.

1 Precautions for drawing

- (1) The maximum number of scatter graph objects settable on one screen
GOT-A900 series: 24
- (2) When using store memory
For the scatter graph with [Store Memory] set, up to 16 graph objects can be set in a whole project.
- (3) Precautions when displaying superimpose window
Set the superimpose window not to overlap with a scatter graph.
The scatter graph area where the superimpose window is overlapped is not displayed.
Setting [Store Memory] enables full display of the scatter graph in such a case.





10.8 Sampling

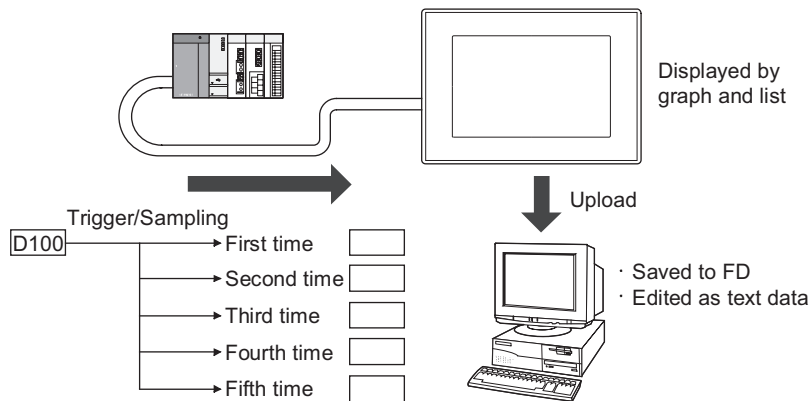


It is the function to collect PLC word device value according to clock function built-in GOT in a certain cycle or when the bit device turns ON/OFF.

The sampling results can be displayed in list or graph format on GOT.

They can be read to GT Designer2 and then stored into FD, or edited on PC as text data.

They can be printed using the printer that is connected to GOT.




10.8.1 Settings

- 1 Select [Common] → [Sampling] from the menu.
- 2 As the setting dialog box is displayed, make the settings with reference to the following explanation.

Remark

When setting in the project workspace

The setting dialog box will be displayed by double clicking on  Sampling in the project workspace.

10.8.2 Setting items

Set the sampling function.

Items	Description	A	F
Use sampling	Check this item to use sampling function.	x	○
Device	Set the device to be monitored. (☞ Section 5.1 Device Setting)	x	○
Trigger	The specified device data are collected when the trigger is satisfied. Device : Data are collected when the specified bit device rises (ON)/falls (OFF). Cycle : Data are collected at the specified interval.	x	○
Start/End	Set the timing to start or end sampling. Data is collected if the end trigger is not satisfied.	x	○
Device	Start : Starts sampling when the specified bit device rises (ON)/falls (OFF). End : Ends sampling when the specified bit device rises (ON)/falls (OFF).	x	○
Time	Start : Set the time to start sampling. End : Set the time to end sampling.	x	○
Frequency	End : Ends sampling after getting the data as specified times.	x	○

10.8.3 Precautions

This section provides the precautions for using sampling function.

1 Maximum number of sampling function objects

Only one object can be set for each project.

2 Sampling operation

- (1) Even when the trigger is satisfied, sampling cannot be done if the start trigger has not been satisfied.
Also, sampling cannot be done after the end trigger is satisfied.
- (2) To restart sampling, make sure to clear the sampling data in GOT system menu.
- (3) Up to 2000 sampling results are stored even when other than [Frequency] is set as end trigger.
When sampling is performed more than 2000 times, the stored data will be cleared from the oldest one.
- (4) Starting sampling requires maximum 500ms after the trigger is satisfied
Therefore, sampling may not be performed normally if the time interval between triggers has been set to short.

3 Precautions about hardware

- (1) Incompatible GOT
Sampling function is not supported by F920GOT-K, F930GOT and F930GOT-K.

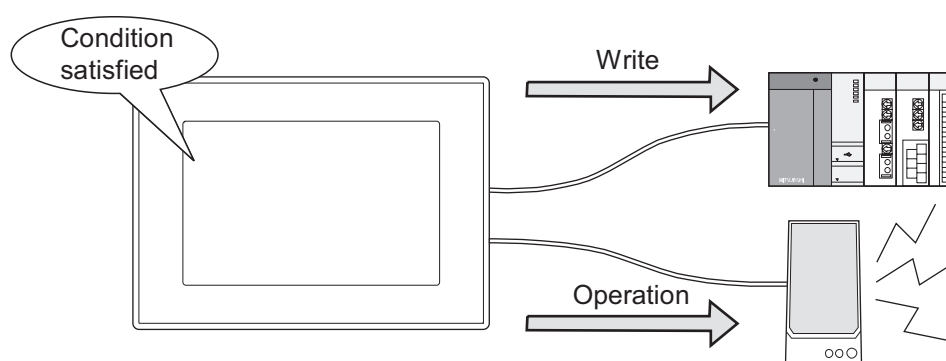
11. TRIGGER → ACTIONS



11.1 Status Observation Function



This function enables operations such as turning a device ON/OFF, writing a value and outputting a sound when the specified conditions are satisfied.



1 Settable conditions

Up to 2 settings are available for the following conditions.

- Bit device ON/OFF
- The range specification of word device values (GOT-A900 series only)

2 Write or other operations allowed when conditions are satisfied

- Turning ON a bit device when the condition is satisfied
- Turning ON/OFF a bit device
- Reversing a bit device status
- Writing a value into a word device
- Outputting sounds through the external speaker (GOT-A900 series only)

3 Types of status observation functions

The status observation functions can be set with the following two types of monitoring methods

- Status observation common to the entire project
As the specified condition is satisfied, devices are always monitored.
- Status monitor for each screen
As the specified condition is satisfied, devices are monitored only when GOT displays the corresponding screen



Remark

About the sounds output through status observation.

Sounds to be output through status monitor needs to be registered at first.


☞ Section 12.5 Sound

11.1.1 Settings

- 1 Select [Common] → [Status Observation] from the menu.
- 2 The setting dialog box will appear. Make the settings with reference to the following explanation.

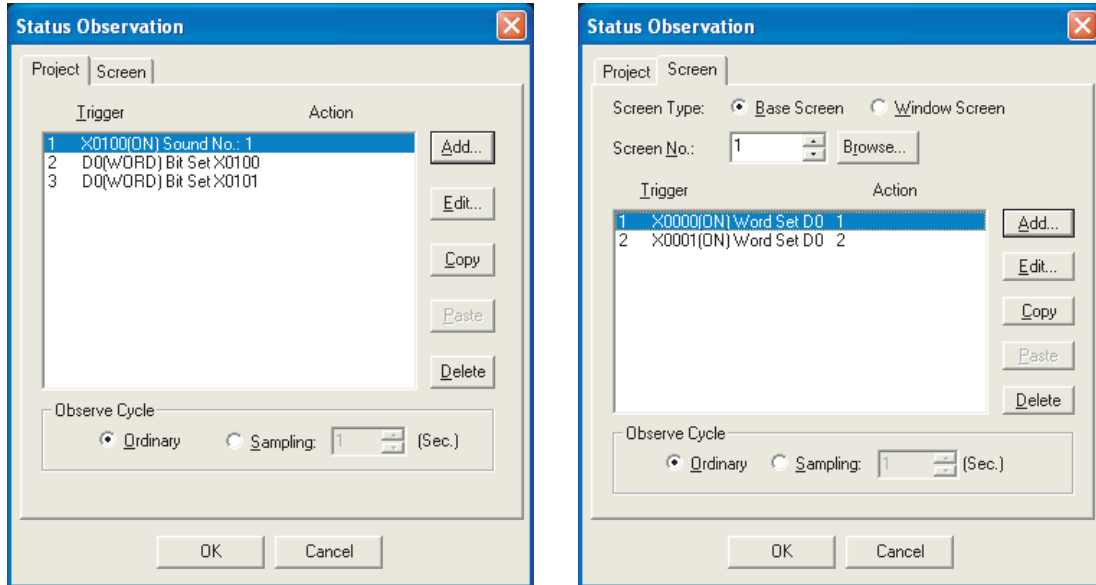
Remark

When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on  Status Observation on the project work space.

11.1.2 Setting items

Project tabSetting the status observation function common to the entire project
 Screen tabSetting the status observation function for each screen



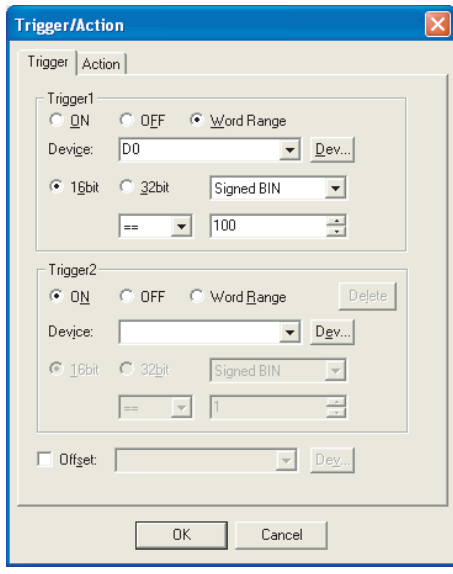
Items	Description	A	F
Screen Type (for Screen tab only)	Select a screen for setting the status observation function. Then select a screen No. Base Screen :Select this when setting the status observation function on a base screen. Window Screen :Select this when setting the status observation on a window screen.	<input type="radio"/>	<input checked="" type="radio"/>
Screen No. (for Screen tab only)	Set the screen No. where the status observation function is set. Click on the Browse button to confirm the screen image.	<input type="radio"/>	<input type="radio"/>
List of Status Observation Function data	Displays status observation function data (Trigger/Action)	<input type="radio"/>	<input type="radio"/>
Add	Adds new status observation function data. GOT-A900 series :Setting of up to 512 data is available GOT-F900 series :Setting of up to 40 data is available Click on this button, and a dialog box for setting trigger/action appears. This section 1 [Trigger/Action] dialog box In GOT-A900 series, the device NW No. and station No. set in trigger must be set as the same when setting plural status observation function data.	<input type="radio"/>	<input type="radio"/>
Edit	Changes the selected status observation function data. Click on the button, and a dialog box for setting trigger/ action appears. This section 1 [Trigger/Action] dialog box	<input type="radio"/>	<input type="radio"/>
Copy	Copies the selected status observation function data.	<input type="radio"/>	<input type="radio"/>
Paste	Pastes the copied status observation function data to the end of the list.	<input type="radio"/>	<input type="radio"/>
Delete	Deletes the selected status observation function data.	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

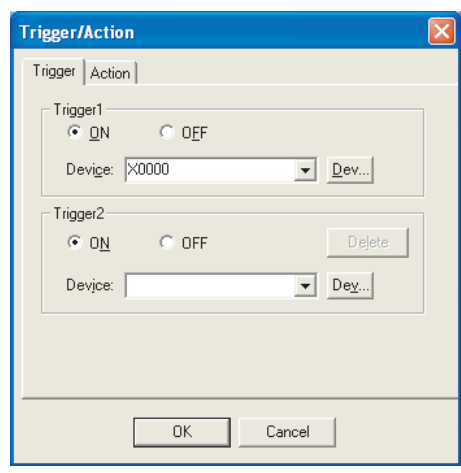
Items	Description	A	F
Observe Cycle	<p>Select the observation cycle for the status observation function.</p> <p>Ordinary (In the case of GOT-A900 series): The status of the device set from the Trigger tab is monitored when END processing is completed of the sequence program scan time/link scan time.</p> <p>Ordinary (In the case of GOT-F900 series case): Monitors the trigger device status every 200ms to 300ms.</p> <p>Sampling :The status of the device set from the Trigger tab is monitored at the set sampling cycle (1 to 60 s).</p>	○	○

1 [Trigger/Action] dialog box

- (1) Trigger tab
Set the trigger to execute the status observation function.



In the case of GOT-A900 series





In the case of GOT-F900 series

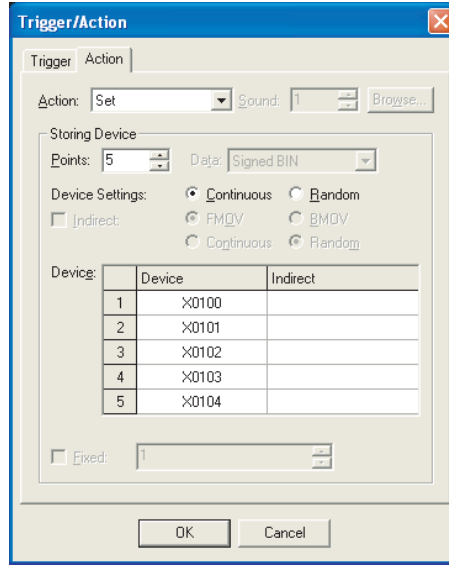
Trigger Action A F

Items	Description	A	F
Trigger1/Trigger2	<p>Set the trigger to execute the status observation function. Up to 2 triggers can be set. (Setting 1 trigger only is allowed) In the case of 2 triggers, when both of triggers are satisfied, the status observation function is executed.</p> <p>ON :Operation is executed when bit device turns ON. OFF :Operation is executed when bit device turns OFF. Word range :Operation is executed when the word device value is within the set range (GOT-A900 series only).</p> <p>After setting the trigger, assign the device that is used as a trigger. (☞ Section 5.1 Device Setting) In the case of a word device, set the data size, data type and specified range of values.</p>	○	○
Data Size	After checking, set the offset device.	○	×
Data Type	<p>Select the data type of the word device to be monitored.</p> <p>Signed BIN :Treats the word device value as a signed binary value. Unsigned BIN :Treats the word device value as an unsigned binary value. BCD :Treats the word device value as a BCD value. Real :Treats the word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].)</p>	○	○
Specified Range of Word Device Value	<p>Set the word device value range for trigger conditions. To the word device value, set the [operator] in the left, and the [fixed value] in the right. Example: [$<$], [100].....Executes operation when the word device value is less than 100. [$=$], [100].....Executes operation when the word device value is equal to 100. [\neq], [100].....Executes operation when the word device value is not equal to 100.</p>	○	×

(Continued to next page)

Items		Description	A	F
Trigger1/ Trigger2	Delete (Only for Trigger2)	Deletes the set data of Trigger2.	<input type="radio"/>	<input type="radio"/>
	Offset (Only allowed in setting of status observation function for each screen)	Check this item when executing monitor by switching between multiple devices.  Section 5.7 Offset Function After checking, set the offset device.  Section 5.1 Device Setting Data size is fixed as 16 bits.	<input type="radio"/>	<input type="radio"/>

- (2) Action tab
Setting the action data for the status observation function



(Example: In the case of GOT-A900 series)

		A F	
Trigger	Action		
Items	Description	A	F
Action	Type of action settings for the status observation function. Momentary :Momentary triggers the bit device ON for an instance. SET :The bit device is turned ON RST :The bit device is turned OFF ALT :The current bit device status is inverted (OFF ↔ ON). Data SET (16bit) :Writes a value into the word device (16bit). Data SET (32bit) :Writes a value into the word device (32bit). Sound :Outputs sounds. (GOT-A900 series only) Set the file No. of output sounds. Sound can be selected from the list by clicking on the Browse button. (☞ Section 12.5 Sound)	○	○
Storing Device	Set the target device that will result from the action type when the status observation trigger is satisfied.	○	○
Points	Set the number of action devices (Points) when the trigger is satisfied. The maximum points of devices depend on the setting of [Action]. Momentary, SET, RST, ALT : 40 points DataSET(16bit) : 20 points. DataSET(32bit) : 10 points.	○	×
Data	Select the data type in which data are written into devices when [DataSET (16bit/32bit)] is set in [Action]. Signed BIN :Treats the word device value as a signed binary value. Unsigned BIN :Treats the word device value as an unsigned binary value. BCD :Treats the word device value as a BCD value. (GOT-A900 series only) Real :Treats the word device value as a floating point type real number. (GOT-A900 series only)	○	○

(Continued to next page)

Items	Description	A	F
Storing Device	Device Settings Continuous :Select this item to set the specified number of devices continuously and starting from the set device automatically Random :Select this item to randomly set the specified number of devices.	<input type="radio"/>	<input type="radio"/>
	Indirect *1 Check this item to enable writing other word device value into this word device when the trigger is satisfied. When 2 or more points are set in [Points], select the action (FMOV/BMOV) of the word device to which the current value is written.	<input type="radio"/>	<input type="radio"/>
	Device Set the target device for when the trigger is satisfied. (☞ Section 5.1 Device Setting) GOT-A900 series :Setting of the head devices will automatically set the subsequent devices when [Continuous] is set in [Device Settings] and [Indirect]. When [Random] is set, click on each column to set the device. GOT-F900 series :Setting of the head devices will automatically set the subsequent devices.	<input type="radio"/>	<input type="radio"/>
	Fixed *1 Check this item to enable writing a fixed value into the word device when the trigger is satisfied.	<input type="radio"/>	<input type="radio"/>

For details of *1, refer to the following.

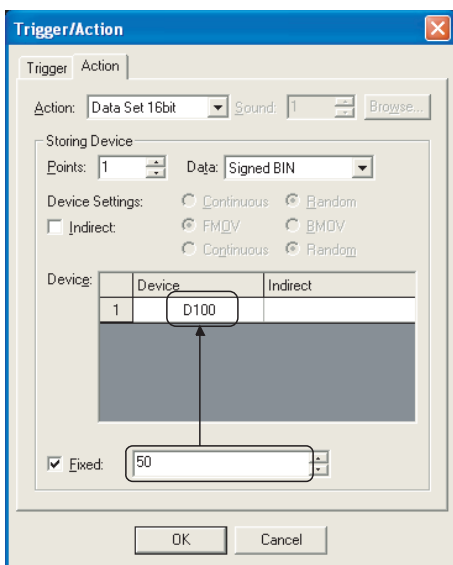
* 1 Fixed and Indirect

If [Fixed] and [Indirect] are set, the fixed value or other word device value can be written into the preset device.

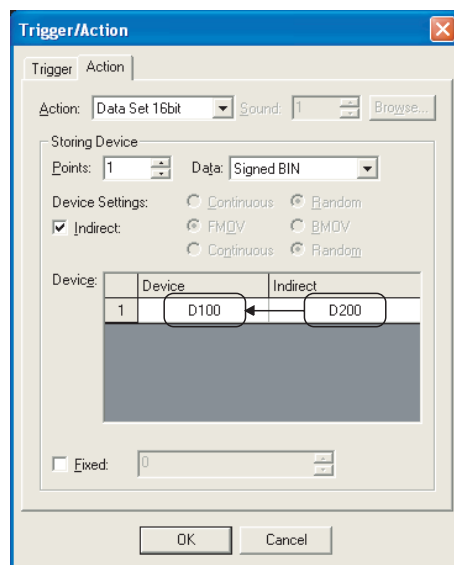
Both of the [Fixed] and [Indirect] settings can be set concurrently.

(1) Fixed

(2) Indirect

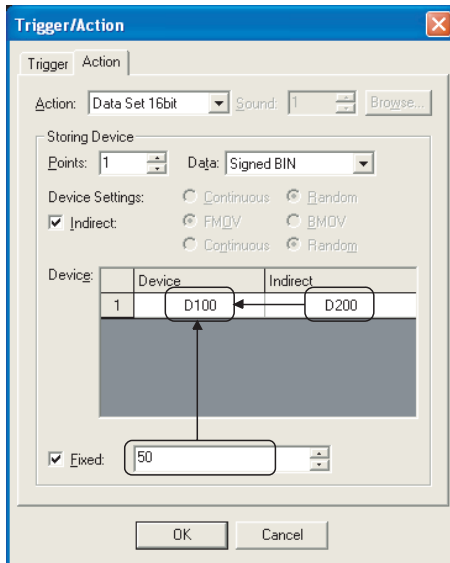


Write fixed value(50) into D100 when trigger is satisfied.



Write value of D200 into D100 when trigger is satisfied.

(3) Fixed + Indirect



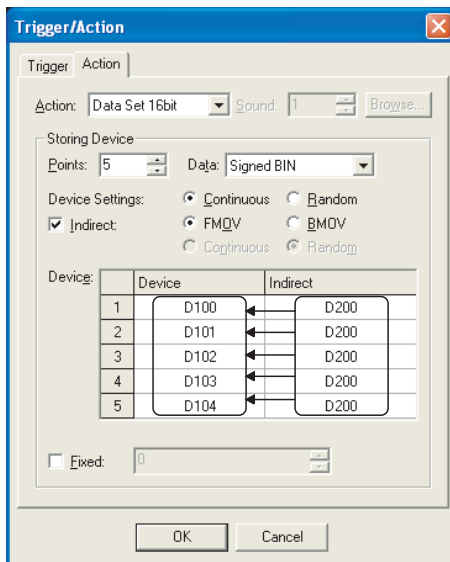
Write value of D200 + fixed (50) into D100 when trigger is satisfied.

When 2 or more setting device points are set under the indirect setting (as shown in above (2), (3)), select the write action to the device. (When [Fixed] is set, the fixed value is added to the written value.)

FMOV : When the trigger is satisfied, writes the current value of the word device specified in [Indirect] to the set device.

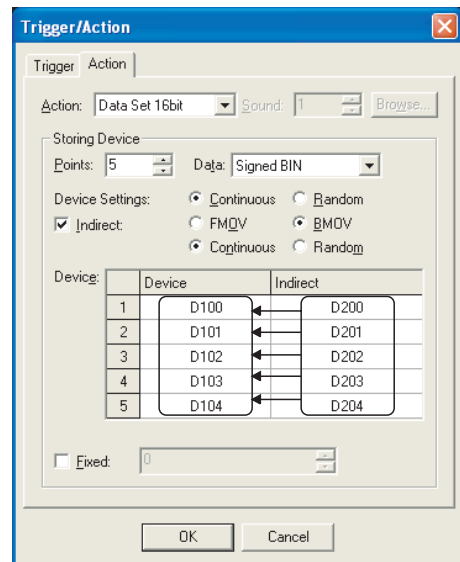
BMOV : When the trigger is satisfied, writes the current values of multiple word devices specified in [Indirect] to the set device.

(1) FMOV



When trigger is satisfied, writes D200 value into D100 to D104.

(2) BMOV



When trigger is satisfied, writes values of D200 to D204 into D100 to D104 respectively.

11.1.3 Precautions

This section provides the precautions for using status observation function.

1 Precautions for drawing

- (1) The maximum number of status observation function data that is settable for the whole project
 - GOT-A900 series : 512
 - GOT-F900 series : 40

- (2) The maximum number of status observation function data that is settable for one screen.
 - GOT-A900 series : 512
 - GOT-F900 series : 40

- (3) The maximum number of write action data
 - Momentary, RST, SET, ALT : 40
 - DataSET (16bit) : 20
 - DataSET (32bit) : 10

- (4) Precautions for setting
When data size exceeds 64k bytes, the status observation function setting becomes disabled.
In this case, [Data size exceeds restriction] message is displayed at the end of the setting. Change the settings to make the data size less than 64k bytes.

- (5) When the setting of the observe cycle is not correct, (e.g. incomplete data collection owing to timing delay)
And the object with the offset function specified is set on the screen, trigger device monitored in the status observation function will be delayed.
If this happens, the observe cycle setting may not function normally owing to data collection omission resulting from timing delay.
Set the observe cycle to [Ordinary] to execute normal data collection.

- (6) Trigger device
The status of the device executing the status observation function (trigger device) must be held for the time of the status observation cycle or longer.

- (7) When outputting sound
Refer to the precautions for the sound function when outputting sound.

 Section 12.5 Sound

- (8) Influence on GOT response time (specific for GOT-F900 series)
When many points are set (applicable to the following conditions) and/or multiple status observation functions are activated, GOT response time may be prolonged.
- (a) When a bit device write with only one condition, especially [Momentary] is set, and when the number of the write points or the set triggers for the momentary action are too many.
 - (b) When many triggers are satisfied and multiple writings are frequently being executed. (Especially when the watch cycle is set to [Ordinary] or the cycle interval is short.)

Influence on GOT

- (a) Influence on the parts and functions operated in fixed cycle
Periodically operating functions may not be operated as set.
For example, the Observe cycle (status observation), sampling function, alarm history, list function, current time and trend graph function may be affected.
 - (b) Influence on screen data transfer
[Errors in main unit processing] message may appear in the drawing software when the screen is automatically switched to the PC transfer screen to execute the screen data transfer.
In this case, switch to the [PC transfer] screen through key operation to enable the screen data transfer.
 - (c) Influence on monitor, screen switch and key operation
For the screen switch, monitor and key operation, the operation may be delayed as well.
- (9) Influence to 2-port interface function (specific for GOT-F900 series)
A communication error may occur on a peripheral device when the ladder monitor, device batch or monitor registration, etc. is executed on the peripheral device.



11.2 Recipe Function

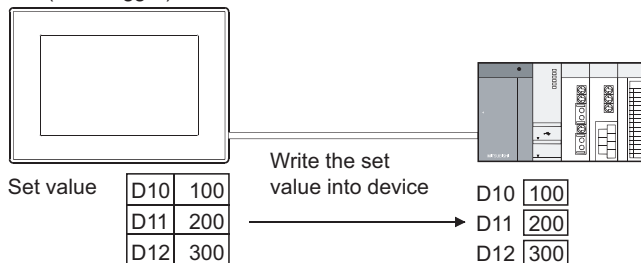


This function enables reading/writing of a value from/to the specified device according to the operation status of the device.

1 Writing to device (without Memory card)

The values set with GT Designer2 are saved in the built-in Memory (user area) of GOT and then written to the PLC CPU according to the operation status of the device. Conditions required for production can be set or changed easily.

X10(write trigger) OFF → ON

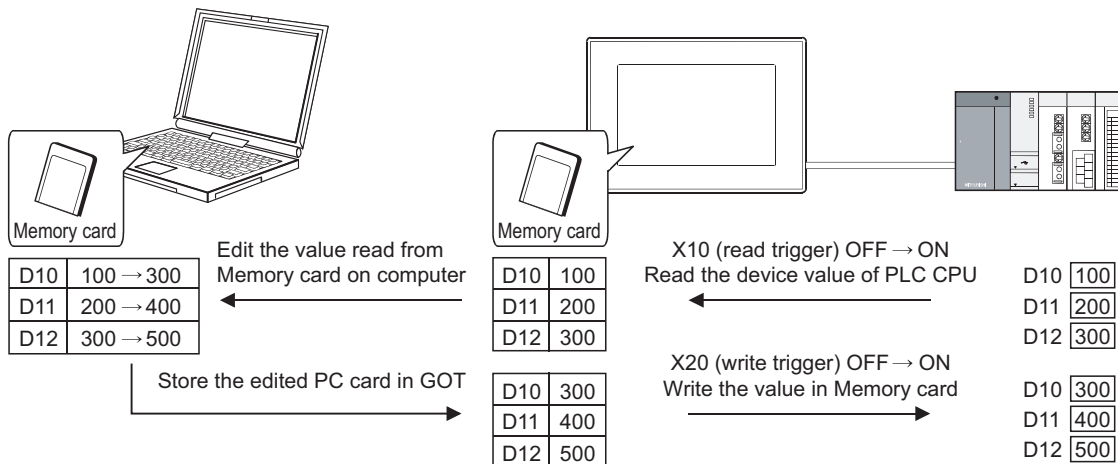


2 Read from/Write to device (with Memory card)

The values read from the PLC CPU device are saved on a Memory card as a CSV file. (For GOT-F900 series, they are saved in GOT.)

The saved CSV file is useful for project management and production management, because it can be edited on a computer.

Data of Memory card (e.g. data edited on a computer) can also be written into the PLC.



Remark

CSV file saved on Memory card (specific for GOT-A900 series)

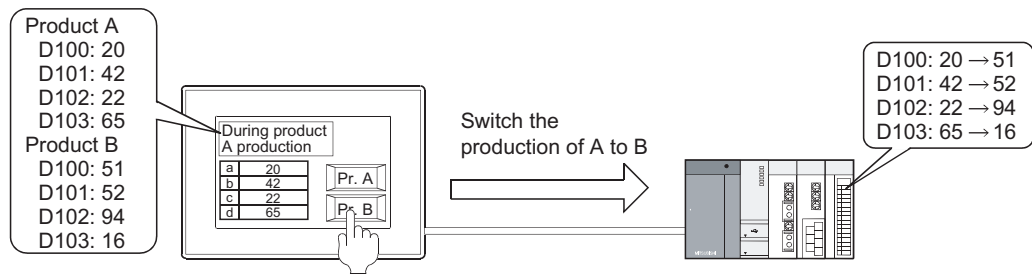
Every time the recipe is set, the CSV file will be created inside the Memory card.

Recipe name	File name (can be randomly changed)
Recipe operation 1	RECIP001.CSV
Recipe operation 2	RECIP002.CSV
Recipe operation 3	RECIP003.CSV

Example:

Change the quantity of used materials according to the products

☞ Make setting in the recipe setting dialog box




11.2.1 Settings

- 1 Select [Common] → [Recipe] from the menu.
- 2 As the setting dialog box will appear, make the settings with reference to the following explanation.

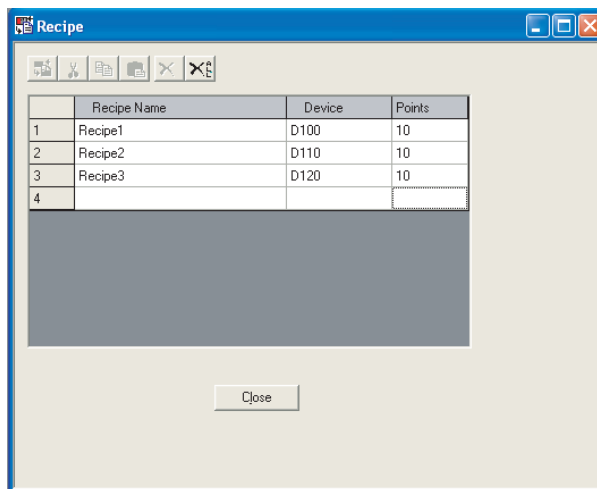
Remark

When making the setting on the project work space








The setting dialog box can be displayed by double-clicking on  Recipe in the project work space.

11.2.2 Setting items

Set the operation details of each recipe function.

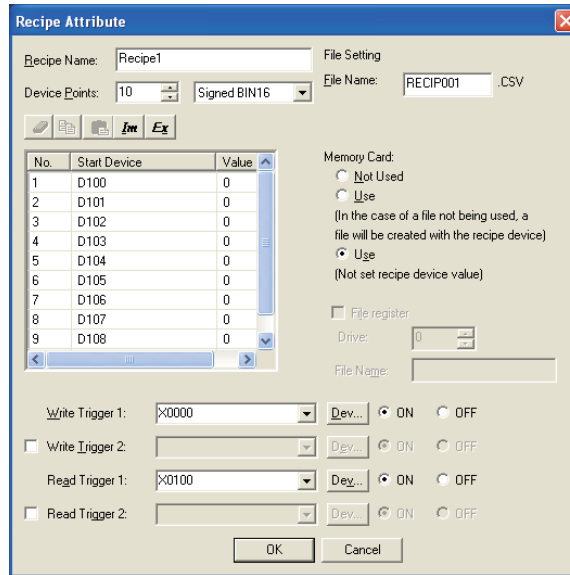


In the case of GOT-A900 series

Items	Description	A	F
Recipe operation View	<p>Displays the list of the preset recipe function data. If plural recipe functions are set, a recipe function data can be selected by clicking on the No. on the left. The preset recipe function data can be edited using the following icons.</p> <p> (Edit) :Edits the operation details of the selected recipe function data ( This section 1 Recipe setting)</p> <p> (Cut) :Cuts the selected recipe function data</p> <p> (Copy) :Copies the selected recipe function data</p> <p> (Paste) :Pastes the cut/copied recipe function data in the end of the view display</p> <p> (Delete) :Deletes the selected recipe function data</p> <p> (Delete all) :Deletes all the set recipe functions data</p>	○	○










1 Recipe setting

Set the operation details of the recipe function.

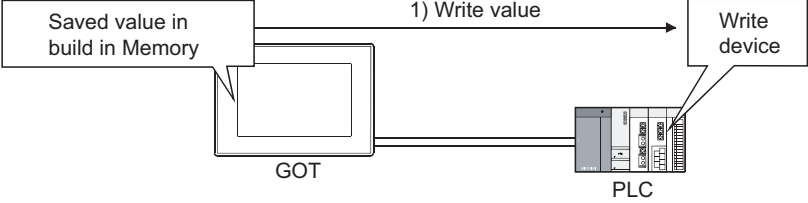
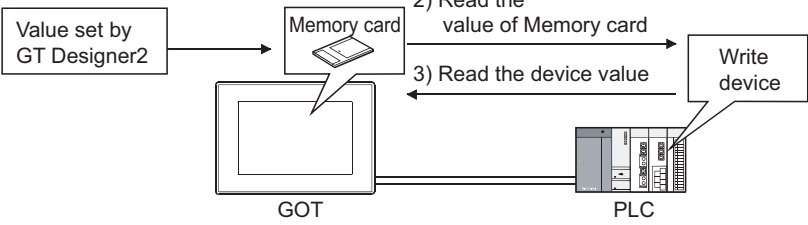
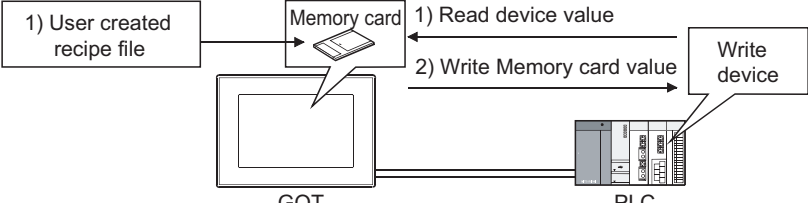


Items	Description	A	F
Recipe name	Set a recipe name. Up to 32 characters can be entered.	<input type="radio"/>	<input type="radio"/>
Points	Set data type and points of the device to be read and written when executing the recipe function.	<input type="radio"/>	<input type="radio"/>
Device Points	Set the points of device to be read and written. Set the specified number of devices consecutively starting from the head device. The points that can be set depend on the data types of devices as follows: GOT-A900 series: 16bit (signed/unsigned) : Up to 8192 points *1 32bit (signed/unsigned) : Up to 4096 points *1 GOT-F900 series: 16bit (signed/unsigned) : Up to 4000 points *1	<input type="radio"/>	<input type="radio"/>
Data type	Select the data type of the devices. GOT-A900 series : Signed BIN16 : Process the word device value of 16bit in signed way Unsigned BIN16 : Process the word device value of 16bit in unsigned way Signed BIN32 : Process the word device value of 32bit in signed way Unsigned BIN32 : Process the word device value of 32bit in unsigned way GOT-F900 series : Signed BIN16 : Process the word device value of 16bit in signed way Unsigned BIN16 : Process the word device value of 16bit in unsigned way	<input type="radio"/>	<input type="radio"/>

(Continued to next page)

Items	Description	A	F
Recipe Edit buttons	 (Erase) : Erases the column (s) of the selected number (s).  (Copy) : Copies the column (s) of the selected number (s).  (Paste) : Pastes the cut/copied column (s) of the selected number (s) to the end of the list.  (Import) ^{*2} : Reads the setting of the recipe that was edited in a CSV file into GT Designer2.  (Export) ^{*2} : Saves the setting of the recipe that was set by GT Designer2 as a CSV file.	○	○
Device List	The devices that are read/written when the recipe function is executed are displayed in a list.	○	○
Start Device	Set the head device of the devices that are read/written when the recipe function is executed.	○	○
Value	Input the device value to be written to the PLC when the condition is satisfied.	○	○
Write Trigger1	Set a device that will execute data write and its trigger condition (ON/OFF) for the recipe function. ( Section 5.1 Device Setting)	○	○
Write Trigger2	Check this item to enable data write when both of two conditions are satisfied. Set the device and its trigger conditions (ON/OFF) ( Section 5.1 Device Setting) With Write Trigger 1 and 2 set, data write is executed only when the both device conditions are satisfied.	○	×
Read Trigger1	Set a device and its trigger conditions (ON/OFF) that will execute data read for the recipe function. ( Section 5.1 Device Setting)	○	○
Read Trigger2	Check this item to enable data read when both of two conditions are satisfied. Set the device and its trigger conditions (ON/OFF). ( Section 5.1 Device Setting) With Read Trigger 1 and 2 set, data read is executed only when the both device conditions are satisfied.	○	×
File Setting	Set the file name saved in PC card when using a PC card. (Up to 8 alpha-numerical characters can be used.) The default is set to "RECIP*.CSV". (*: No. of recipe setting)	○	×

(Continued to next page)

Items	Description	A	F
Memory Card	Select to use or not use a Memory card for the recipe function.		
	<p>Not Used : Writes the value saved in the built-in Memory of GOT (the value set in GT Designer2) into the device.</p>  <p>Use (In the case of a file not being used, a file will be created with the recipe device) : Create a recipe file with the value setting in GT Designer2 when there is not any recipe file in the Memory card at starting up. Initially, writing by the set value can be executed.</p> <p>1) Write value when starting GOT</p>  <p>Use (Not set recipe device value) : Does not create any recipe file if there is no recipe files in Memory card when starting GOT. Because the value setting in GT Designer2 is not needed, data volume transferred to GOT can be decreased and the download time can be shortened.</p> 	○	×
	<p>Check this item to specify a file register name when a device executing read/write is set in the file register (R, ER, ZR). (Only when the PLC type is set as [MELSEC-QnA/Q, MELDAS C6*]/[MELSEC-Q (multi.)/Q Motion] in GT Designer2) When no file register has been specified, the file register with the file name specified by QCPU in the "END" process.</p>	○	×
Drive	Select the drive No. of the PLC CPU.	○	×
File Name	Set a file name. (Up to 8 characters can be input.)	○	×

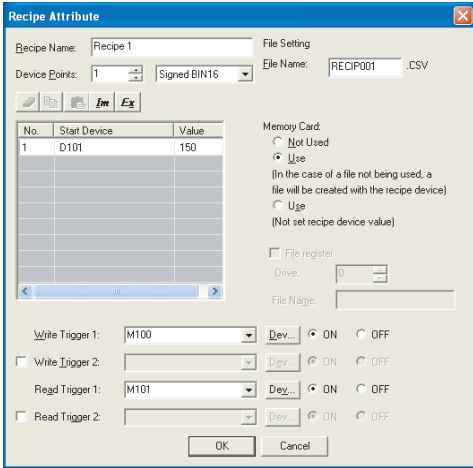
*1: Applicable to each setting for GOT-A900 series, to total points in each project for GOT-F900 series.

For details of *2, refer to the following.

*2 Import/Export

The exported CSV file can be edited using such as the spreadsheet software. The CSV file, after editing, can be imported to and opened by GT Designer2.

Example: Importing and exporting in CSV file



Exported in CSV file

Recipe	Device Points	Device Type
	5	Signed BIN16
Device	Device Value	
D101	150	
D102	200	
D103	222	
D104	240	
D105	258	



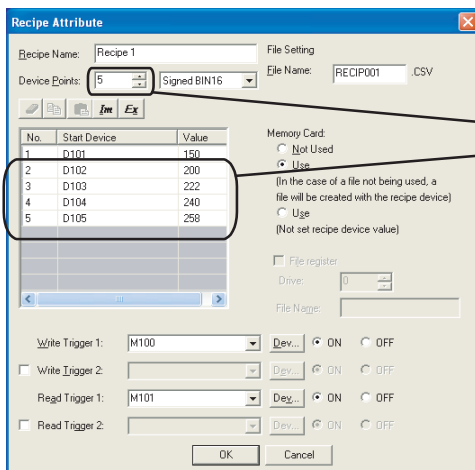
Editing the exported file

Recipe	Device Points	Device Type
	5	Signed BIN16
Device	Device Value	
D101	150	
D102	200	
D103	222	
D104	240	
D105	258	

Add the setting using applications such as Microsoft® Excel.



Importing to GT Designer2



The added contents are displayed.

(1) Setting items of Memory card

Available operation of the recipe function depends on the selected item.
Select the item corresponding to a desired operation of the recipe function.

<Operation of recipe function according to the selected items> ○ : Applicable × : N/A

Items		Recipe function operation to be used		
		Write only	Read only	Read/Write
Memory card	Not used	○	×	×
	Use (In the case of a file not being used, a file will be created with the recipe device)	○ *2	△ *1 *2	○ *2
	Use (Not set recipe device value)	○ *3	○ *3	○ *3

*1: It is advisable to select "Use (not set recipe device value)" when executing read operation only.
*2: Since value setting is necessary, GOT memory capacity for the set values is required.
*3: It is necessary for the user to create a recipe file.
(After initially reading the PLC CPU device, reuse the recipe file created in Memory card in GOT.)

(2) Memory card check when using recipe function

GOT executes the following operation according to the status of the Memory card.

- (a) When recipe file is not valid or corrupted
A system alarm "351:Recipe file error. Confirm content of recipe file." occurs and recipe operation is stopped.
- (b) When no Memory card is installed in the GOT
A system alarm "352:Recipe file make error. Reboot GOT after inserting memory card." occurs.



Precautions when executing recipe function

(1) Many read/write devices are set

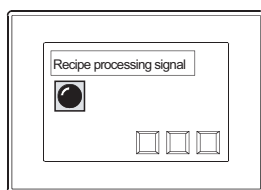
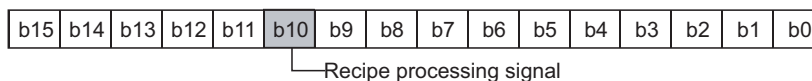
Other processing such as monitoring of other object function or key input will not be executed until the completion of the recipe function.

<How to check the execution of the recipe function>

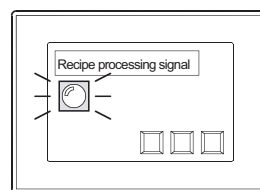
It is possible to check whether or not the recipe function is executed by setting the lamp, which monitors the recipe processing signal (system signal 2), on the GOT screen.

 Section 3.5 System Information Setting

System signal 2



The lamp is lit while the recipe function is executed.



The lamp goes off at the completion of the recipe function.

11.2.3 Precautions

This section provides the precautions for using the recipe function.

1 Precautions for drawing

- (1) Setting number of recipes in a project
 - GOT-A900 series : 256 pcs.
 - GOT-F900 series : 256 pcs.
- (2) The maximum number of write action data
 - GOT-A900 series : 8192 points (Data type of device: 16bit) ^{*1}
4096 points (Data type of device: 32bit) ^{*1}
 - GOT-F900 series : 4000 points (Data type of device: 16bit) ^{*1}

^{*1} is applicable to each setting for GOT-A900 series, to total points in each project for GOT-F900 series.

2 Precautions for OS

- (1) Extended function OS (specific for GOT-A900 series)
Be sure to install the extended function OS (recipe) to GOT when using the recipe function.
Be sure to install the extended function OS (CSV) to GOT when using the CSV format file.

3 Precautions for hardware

- (1) GOT operating restrictions
Read operation is not available for the A95* handy GOT as it does not accept the Memory card.
- (2) Required optional devices and GOT
The following are needed when using the recipe function.

GOT		Required accessories
A985GOT, A97*GOT, A960GOT		Memory board
A956WGOT		Memory board
	When using Memory card	SRAM type: Memory card interface module Compact flash PC card: NO additional devices required
A95* GOT		GOT of memory extension type (A95*GOT-*BD-M3)
	When using Memory card	SRAM type: Memory card interface module Compact flash PC card: N/A

4 Precautions for use

- (1) CSV file saved in Memory card
Only one CSV file can be stored in Memory card for one recipe function.
For the CSV file data, only the read data are saved and historical data are not saved.
(Old data will be overwritten.)
When historical data are necessary, save data in the computer every time the recipe function is executed.

- (2) Number of recipe files that can be saved in Memory card (When using A985GOT/A97*GOT/ A960GOT/A956WGOT/A95*GOT)


The maximum number of recipe files (including other object files) that can be set in a Memory card differs with memory capacity as follows:

Memory card memory capacity	Number of files
1M, 2M	128
4M	256
16M (A9GTMEM-10MF*1), 32M (A9GTMEM-20MF*1), 64M (A9GTMEM-40MF*1)	512

*1 Memory capacity differs according to the hardware versions of flash PC card.
The memory can be checked on the rated plate of flash card.

- (3) File data size

Refer to the following for the data size stored into a memory card when the recipe function is used.

 Section 2.3 Specifications of Available Object Functions



11.3 Time Action Function



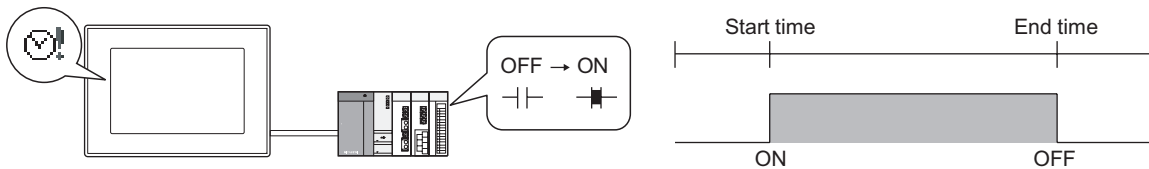
This function performs any of the following actions 1 to 4 when the set day of week/time of day is reached.

The operation initialization of the GOT-A900 series is determined by the PLC CPU clock settings (day-of-the-week and time).

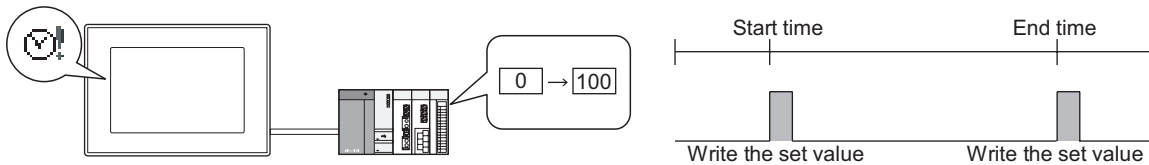
When the GOT is connected to a network, the initialization is determined by the data and time in master station or control station.

The operation initialization for the GOT-F900 series (except F920GOT-K) is determined by its own internal clock settings.

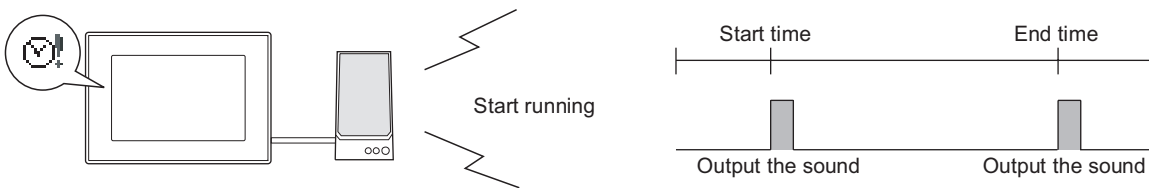
1 Turns bit device ON/OFF.



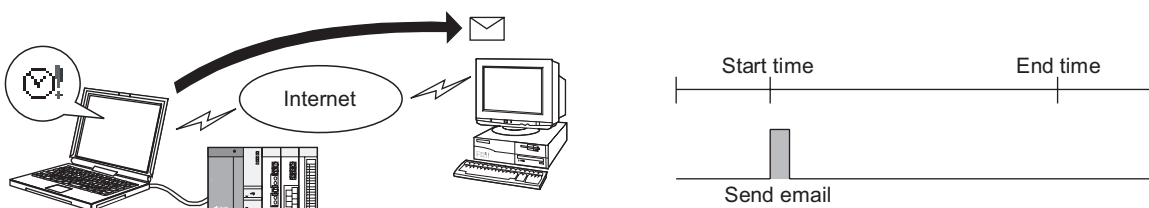
2 Writes value to word device. (specific for GOT-A900 series)



3 Outputs sound. (An external speaker is required) (specific for GOT-A900 series)



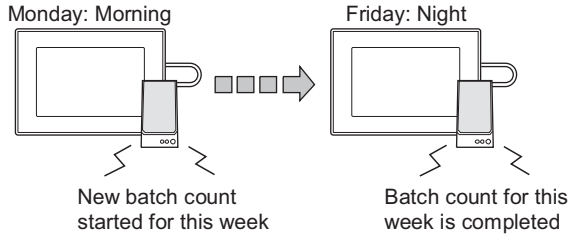
4 Sends various data such as alarm history data/recipe file/screen image by email (specific GT SoftGOT2)



Example:

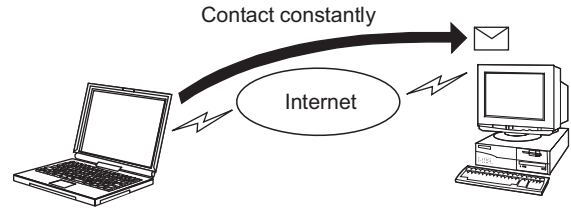
Play sound1 on Monday morning and sound2 on Friday evening

☞ Set on the Time tab and Action tab



Send alarm history data by email every evening

☞ Set on the Time tab and Action tab




11.3.1 Settings

- 1 Select [Common] → [Time Action] from the menu.
- 2 As the setting dialog box will appear, make the settings with reference to the following explanation.

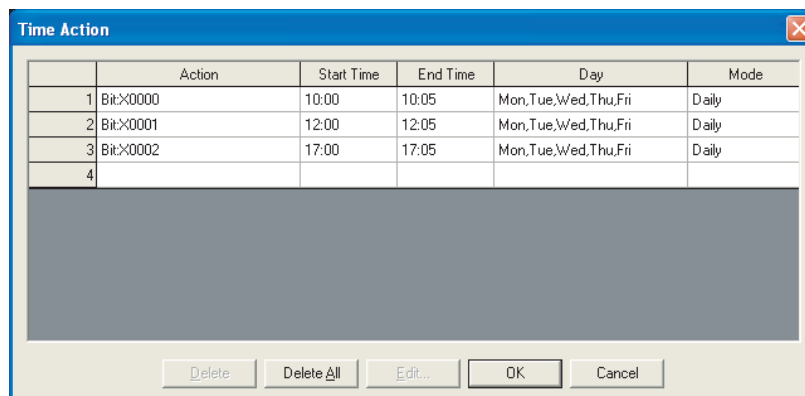
Remark

When making the setting on the project work space

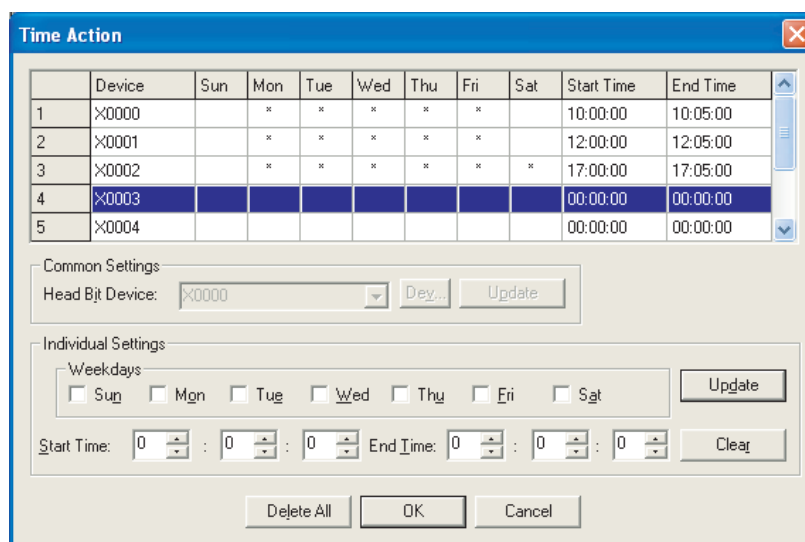
The setting dialog box can be displayed by double-clicking on  in the project work space.

11.3.2 Setting items

Set the action, start time and end time for the time action.



In the case of GOT-A900 series



In the case of GOT-F900 series

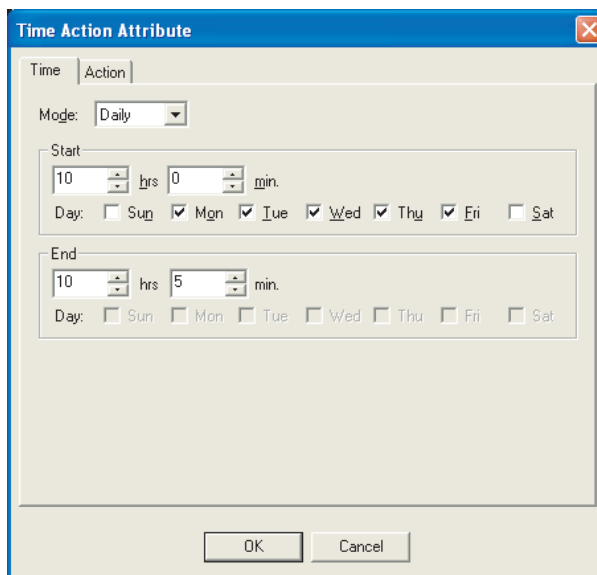
Items	Description	A	F	
Delete	Time action setting will be deleted by clicking on the [Delete] button after selecting the time action to be deleted on the list.	○	×	
Delete All	All the time action settings will be deleted by clicking the [Delete All] button.	○	○	
Edit *1	Time action setting is available by clicking on the [Edit] button after clicking (selecting) the No. of the row to be set/edited on the list.	○	×	
Common Settings	Set the head device (occupying 8 points) to be turned ON/OFF in the time action function. Clicking on the [Device] button to set the head bit device. Clicking on the [Update] button register the common settings.	×	○	
Individual Settings	Set the day-of-the-week and time when the time action function is selected. Setting the start time and end time to different days (exceeding 24 hours) is not allowed. Clicking on the [Update] button to register the settings. Clicking on the [Clear] button to delete the settings of the currently selected row (channel).	×	○	
	Weekdays	Select the days from Sunday through Saturday to be set.	×	○
	Start Time	The bit device is turned ON corresponding to the selected No. at the set time.	×	○
	End Time	The bit device is turned OFF corresponding to the selected No. at the set time.	×	○

For details of *1, refer to the following.

*1 Edit settings (GOT-A900 series only)

■ Time tab

Set the day-of-the-week and time when the time action function is to be used.



Items	Description	A	F
Mode	Set the mode type for the time action function. VDaily :Time action is executed only on the specified day-of-the-week/time. Through :Time action is executed continuously for the specified number of days.	○	×
Start/End	Select the day-of-the-week and time when the time action function starts/ends. Start :Set the day/time when the time action starts. When the mode is set as [Daily], multiple days can be set. End :Set the day/time when the time action ends. Only when the mode is set as [Through], the day-of-the-week setting is available.	○	×

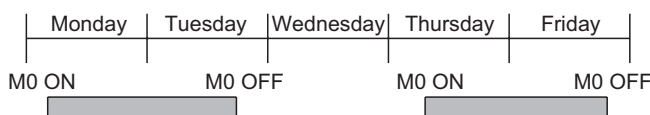


Hint!

Setting the same time action twice a week

When Through is set, a single action only can be executed once in a week. To set a single action executed twice a week by Through, please set the time function with different start/end time twice (■ Mode of Time tab: set in Day).

- Turn M0 ON in AM of Monday, and turn M0 OFF in PM of Tuesday (Set this in time action1)
- No action on Wednesday
- Turn M0 ON in AM of Thursday, and turn M0 OFF in PM of Friday (Set this in time action2)



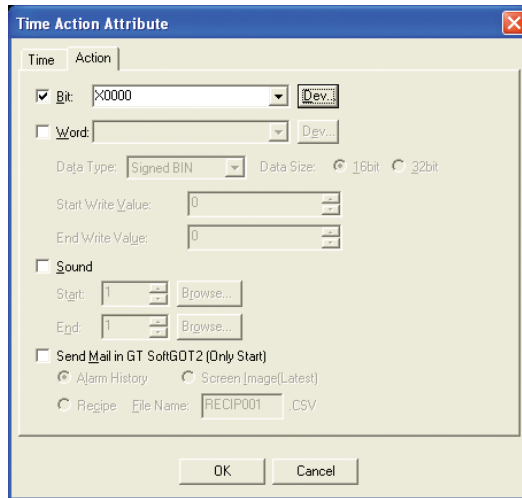
Remark

When actual day-of-the-week does not match the date controlled by PLC CPU

Even if the day-of-the-week data of the PLC CPU is incorrect, GOT will calculate the correct day of the week from the date data of the PLC CPU and execute the time action function on the day.

■ Action tab

Set the condition trigger executing the time action function.



Time **Action**

Items	Description	A	F
Bit	Check this item to turn bit device ON/OFF at the start/end time. Set the bit device to be turned ON/OFF.	<input type="radio"/>	×
Word	Check this item to write the specified value to word device. Set the word device to which the value is written.	<input type="radio"/>	×
Data Type	Select the data type of the word device for value write. Signed BIN : Treats word device value as a signed binary value. Unsigned BIN : Treats word device value as an unsigned binary value. BCD : Treats word device value as BCD (binary decimal) value. Real : Treats word device value as floating point type real number. (Only when selecting [32bit] for [Data Size].)	<input type="radio"/>	×
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	×
Start Write Value	Set the value to be written to the specified word device at the start time.	<input type="radio"/>	×
End Write Value	Set the value to be written to the specified word device the at end time.	<input type="radio"/>	×
Sound	Check this item to output sound at the start/end time. Click on the Browse button to select the sound to be played from the list. (Section 12.5 Sound)	<input type="radio"/>	×
Start	Set the sound No. of the sound file to be played at the start time	<input type="radio"/>	×
End	Set the sound No. of the sound file to be played at the end time	<input type="radio"/>	×
Send Mail in GT SoftGOT2 (Only Start)	Check this item to send the following data by e-mail at the start time. Select the contents to be sent by e-mail. One type of data can be sent for each time action. Alarm history : Sends alarm history data (CSV file). Recipe : Sends recipe data (CSV file). Screen image : Sends screen image (BMP file). Refer to the following manual for the details of send data. GT SoftGOT2 Version1 Operating Manual	<input type="radio"/>	×

11.3.3 Precautions

This section provides the precautions for using the time action function.

1 Precautions for drawing

- (1) Number of points settable for the time action function
GOT-A900 series : 32
GOT-F900 series : 8
- (2) Precautions for multiple time action function settings
Do not set different time actions to the same day-of-the-week and time. Otherwise GOT may work abnormally.

2 Precautions about hardware

- (1) System configuration not applicable for the time action function
The time action function is not applicable if there are no time data in the connected PLC CPU. As GT SoftGOT2 and GOT-F900 series (except F920GOT-K) do not use the time data of PLC CPU, the time action function can be used even if there are no time data in the connected PLC CPU.

☞ Section 2.4.2 PLC CPU with clock function (GOT-A900 series only)

Remark

Communication board with built-in clock function (specific for GOT-A900 series)

If the communication board (A9GT-RS2T) with built-in clock function is installed in GOT-A900 (except A95*GOT/A956WGOT), the time action function can be executed when PC is connected.

(The clock function of the communication board is not available in the case of computer link connection (including connection with the PLC made by other company))

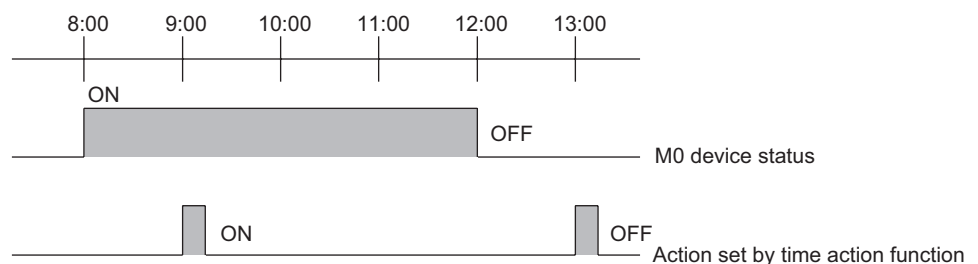
- (2) Mail sending
The mail sending in the time action function is applicable for GT SoftGOT2 only.

3 Precautions for use

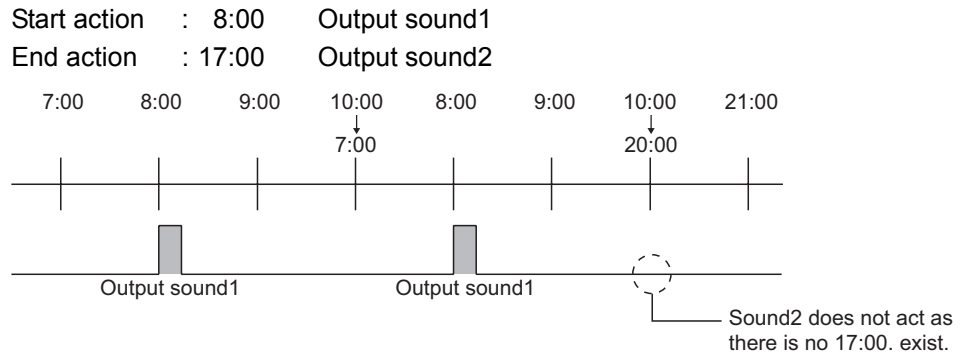
- (1) During operation of time action function
Time action function may be affected if the clock setting on the PLC CPU or the preset device status is changed.

Attention must be paid to change the clock setting and the set device status.

Example1: When the set bit device (M0) is turned ON before the time action is executed
The action is not executed at the time set by the time action function



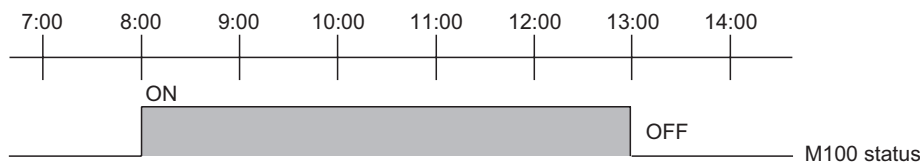
Example2: When the time of PLC CPU is changed
 The action is executed at the next start time.
 It will not be executed if the change is made after the start/end action time.



- (2) When outputting sound
 Refer to the precautions for the sound function when outputting sound.

☞ Section 12.5 Sound

- (3) Time action of GOT-F900 series
 [SET] (sets) the specified bit device when the time of the clock built in GOT-F900 series comes to the preset start time.
 It [RST] (resets) the specified bit device if it comes to the preset end time.



Remark

Action lasting more than one day (24 hours)

Assign ON action of the device to time action No.1 and OFF action to No.2 by programming with sequence program combining No.1 and No.2 (totally 2 points) time actions.

Example: Turn ON at 09:00 on Monday and OFF at 17:00 on Friday

- For No.1 (M100), check only Monday. Set the start time to 09:00 and the end time to 09:01.
- For No.2 (M101), check only Friday. Set the start time to 17:00 and the end time to 17:01
- Program by sequence program so that the device to be turn ON will be SET (set) by M100 and RST(reset) by M101.

- (4) When the screen data of the software DU-WIN is read
 Comments on time action set by the software DU-WIN are deleted.

12. EXTERNAL INPUT/OUTPUT



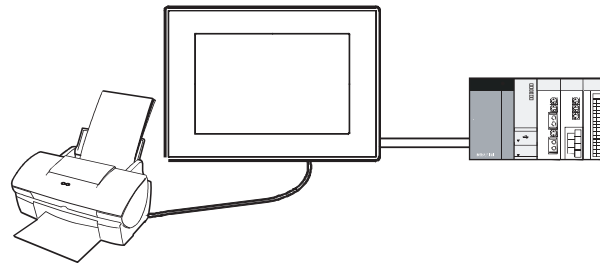
12.1 Report Function



It is the function that collects and prints the data of production management and status. Following information can be printed with this function.

- Word device value
- Comment corresponding to the device status

02/11/25 16: 53:24		
Line	Operation status	Production volume
MC-1	RUN	10
	RUN	20
MC-2	RUN	60
	RUN	80
MC-1	HALT	10
	RUN	80
	RUN	90



Comment corresponding to device status Word device value



Remark

Comment to be printed

The comment must be registered in advance



Section 4.1 Comment Registration

Select the timing for printing the collected data from the following two options.

1 Real/Cont

The data are printed as soon as they are collected.

It is selectable whether to print on the changed (next) page or not.

2 Log/Page

Data collection timing and print timing can be specified. This function collects and prints data at the specified timing.

The collected data are stored in memory card. The stored data will be printed based on the change page setting at the specified timing.



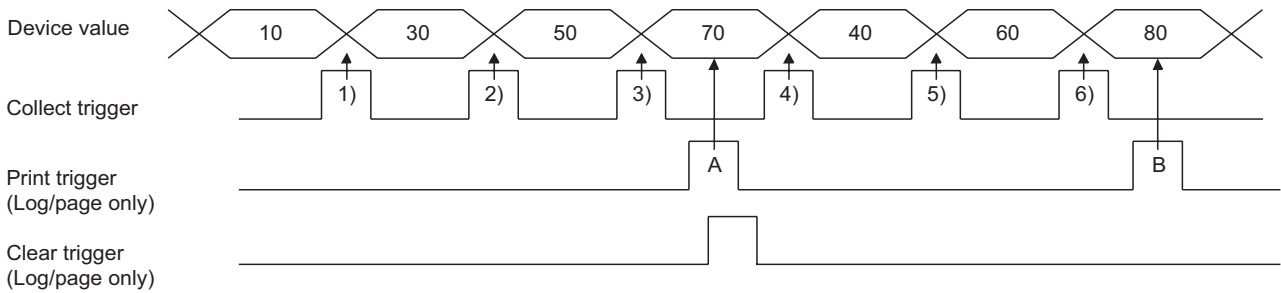
Point

When using Log/Page

Memory card is required for using [Log/Page].

3 [Real/Cont] and [Log/Page]

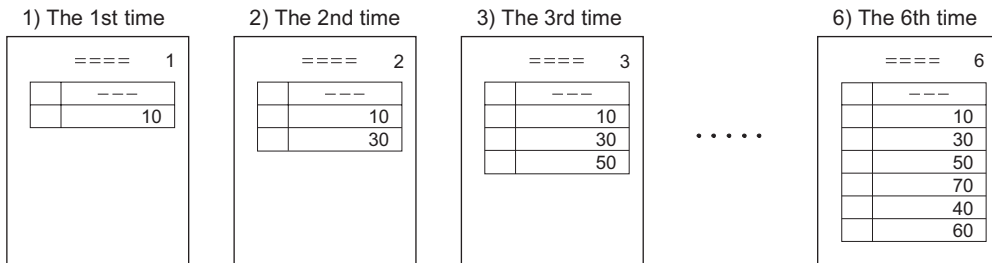
Following shows the comparison between operations of [Real/Cont] and [Log/Page] settings.



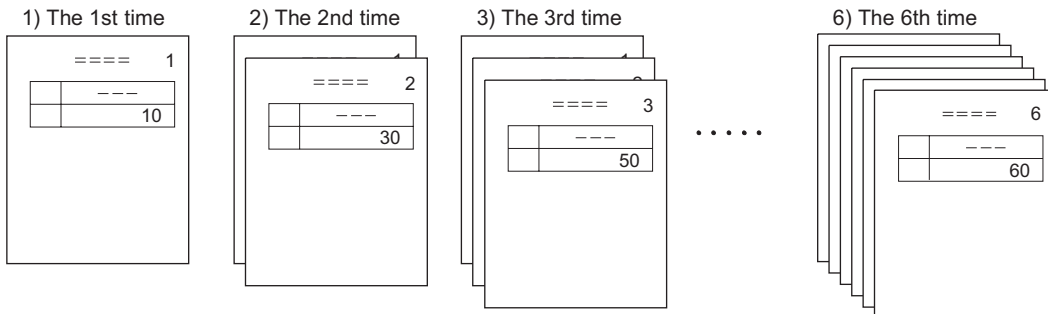
Real/Cont

Data are printed at each collect trigger.

Change page: Never



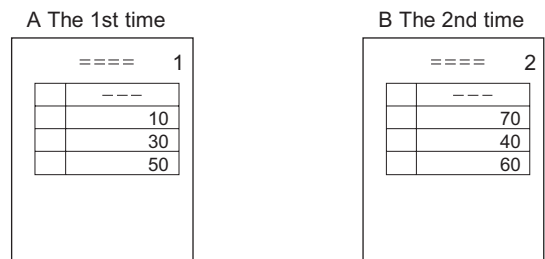
Change page: Done



Log/Page

Data stored in memory card are printed at each print trigger.

Those data are deleted at each delete trigger.



Print the remained data after clearing the collected data with clear trigger.

12.1.1 Arrangement and settings

1 Print format

Create the print format on the report screen. Up to 8 formats (8 screens) can be registered. This section provides the general procedure for print format setting.

1 Create report screen (☞ Section 12.1.2 Report screen creation (screen property))

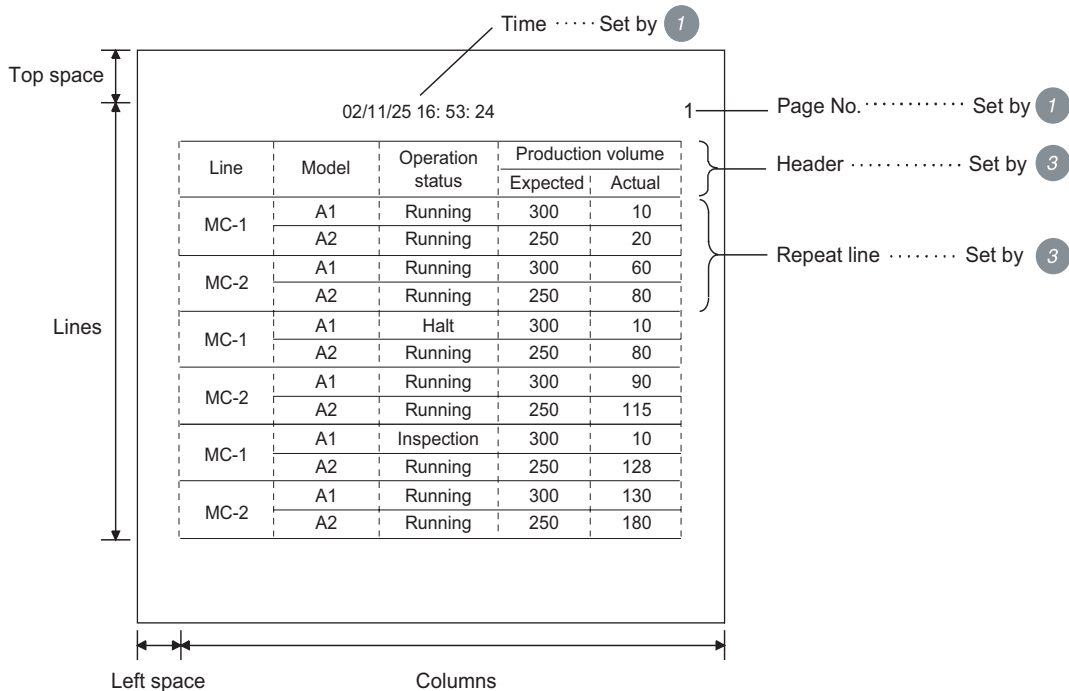
Create a report screen and make the report function settings on that screen.

Screen property dialog box setting		Real/Cont	Log/Page
Basic tab	Screen No., title etc.	○	○
Type/Trigger tab	Report style (Real/Cont/Log/Page) Collect trigger, Print trigger, Page No., Time	○	○
Logging tab	Method of storing data to memory card, Print operation, Delete trigger	-	○

○ : Required - : Not required

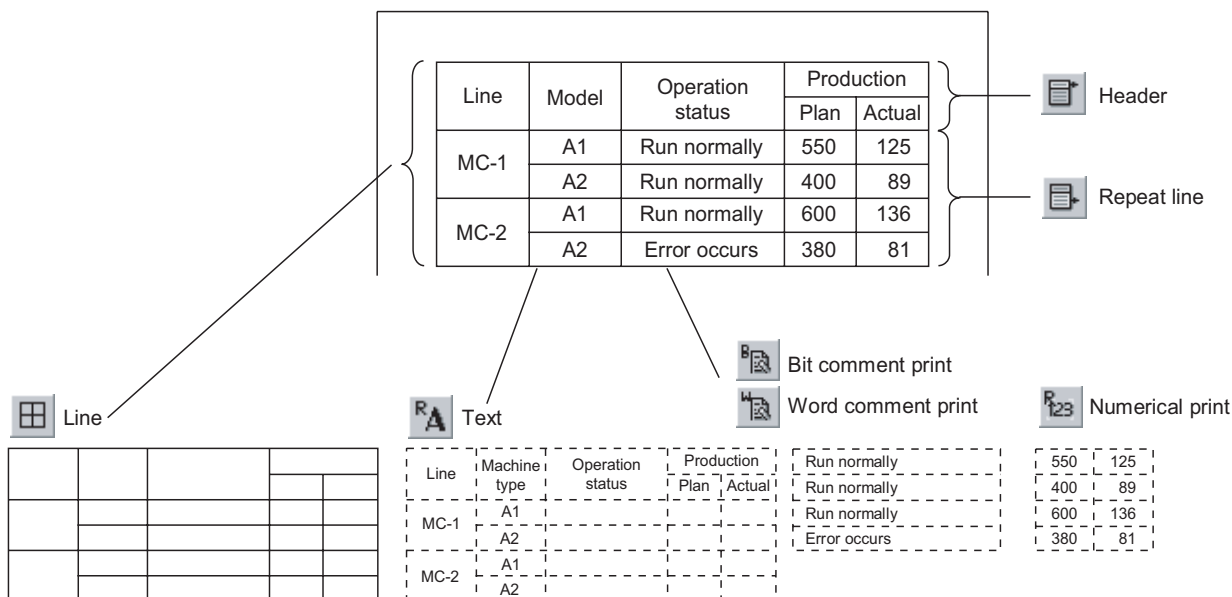
2 Set print range (☞ Section 12.1.3 Setting common to each report (report setting))








Set on the report setting dialog box the number of lines and columns, margin, according to the printable area of the printer to be used.



3 Set print layout (☞ Section 12.1.4 Print layout setting)

Open the created report screen to set the print layout.



-  Line Used to draw a report table. ☞ Section 12.1.4 2
-  Text Used to draw fixed texts in the table. ☞ Section 12.1.4 3
-  Numerical print Used to arrange the object that prints the word device value. ☞ Section 12.1.4 4
-  Bit comment print Used to arrange the comment to be changed according to the ON/OFF status of bit device. ☞ Section 12.1.4 5
-  Word comment print Used to arrange the comment to be changed according to word device value. ☞ Section 12.1.4 6
-  Header Used to set the header part of the report table. ☞ Section 12.1.4 7
-  Repeat line Used to set the part to be repeatedly printed in the report table. ☞ Section 12.1.4 7



Edit of created report screen

As the base screen, the created report screen can be copied and deleted for each screen.

Refer to the following manual for screen editing operation.

☞ GT Designer2 Version □ Operating Manual

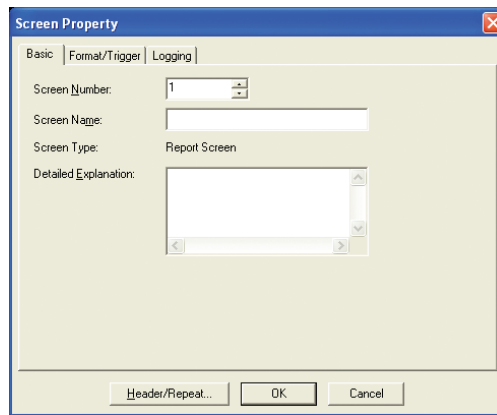
12.1.2 Report screen creation (screen property)

This section explains how to create a report screen.

- 1 Select [Screen] → [New Screen] → [Report Screen] from the menu.
- 2 As the setting dialog box will appear, make the settings with reference to the following explanation.
- 3 Click on button to display the set report screen.

1 Basic tab

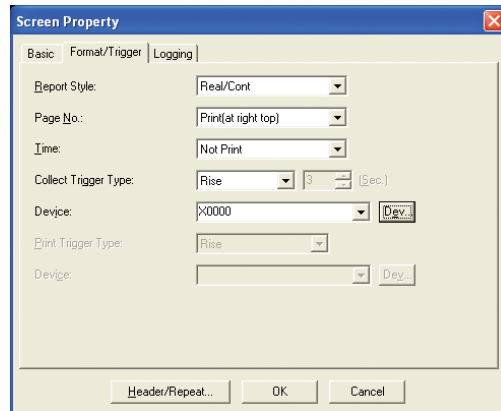
Set the screen No. and screen name.



Items	Description	A	F
Screen Number	Select the report screen No.	○	×
Screen Name	Enter the title of report screen as necessary. Up to 32 characters can be entered.	○	×
Detailed Explanation	Enter the explanation of the newly created report as necessary. Up to 512 characters can be entered.	○	×
Header/Repeat	Set the header and repeat lines. Section 12.1.4 7 Set header/repeat line)	○	×

2 Format/Trigger tab

Select the report style (Real/Cont and Log/Page) to set collect trigger and print trigger.



Items	Description	A	F
Report Style	Select the report style (Real/Cont and Log/Page).	<input type="radio"/>	<input checked="" type="checkbox"/>
Page No.	Select whether to print page No. (upper right) on the paper.	<input type="radio"/>	<input checked="" type="checkbox"/>
Time ^{*1}	Select whether to print time (at upper center/upper left/upper right). Time is displayed using the format of yy(year)/mm(month)/dd(day)/hh(hour): mm(minute): sec(second). 02/11/24 17:38:04 (fixed 17 digits) Space	<input type="radio"/>	<input checked="" type="checkbox"/>
Collect Trigger Type ^{*2}	Select the timing to collect data. Rise : Collect when the bit device turns ON. Fall : Collect when the bit device turns OFF. Sampling : Collect at a fixed interval and store the data into memory card. Then, set the data sampling (data collecting) interval (3 to 3600 s). This setting is available only when report style is set as [Log/Page]. Set the bit device to be collect trigger when [Rise] or [Fall] is selected. (Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Print Trigger Type ^{*2}	Select the timing to print the data stored in memory card. This setting is available only when report style is set as [Log/Page]. Rise : Print when the bit device turns ON. Fall : Print when the bit device turns OFF. Then, set the bit device to be print trigger. (Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="checkbox"/>
Header/Repeat	Set the header and repeat lines. (Section 12.1.4 7 Set header/repeat line)	<input type="radio"/>	<input checked="" type="checkbox"/>

*1 Time printing

Time printing may be unavailable according to the connection method or the PLC CPU.

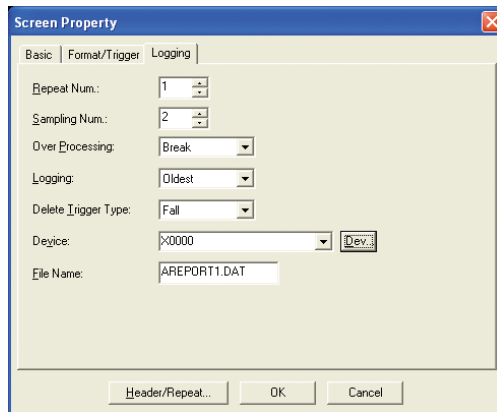
(Section 2.4 Clock Function)

*2 Devices to be set as collect trigger or print trigger

Make sure to set different devices as collect trigger or print trigger for each report screen.

3 Logging tab


Make the setting of report style [Log/Page] (method of storing data to memory card, print action).



Basic | Format/Trigger | Logging

Items	Description	A	F																								
Repeat Num.	<p>Set the number of times (0 to 499) for repeated printing. Repeat line can be set in report screen. (☞ Section 12.1.4 Print layout setting) When printing all the data stored in memory card, set the number, that is the result of subtracting 1 from [Sampling Num.], to [Repeat Num.]. Example: when the settings are [Sampling Num.: 3] and [Repeat Num.: 2]</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Collect data</p> <table border="1"> <tr><td colspan="2">PC card</td></tr> <tr><td>1st sampling</td><td>Line 1 10 Line 2 50</td></tr> <tr><td>2nd sampling</td><td>Line 1 15 Line 2 82</td></tr> <tr><td>3rd sampling</td><td>Line 1 20 Line 2 78</td></tr> </table> <p>Sampling times: 3</p> </div> <div style="text-align: center;"> <p>Print result</p> <table border="1"> <tr><td colspan="2">Production list</td></tr> <tr><td>Line</td><td>Vol.</td></tr> <tr><td>Line 1</td><td>10</td></tr> <tr><td>Line 2</td><td>50</td></tr> <tr><td>Line 1</td><td>15</td></tr> <tr><td>Line 2</td><td>82</td></tr> <tr><td>Line 1</td><td>20</td></tr> <tr><td>Line 2</td><td>78</td></tr> </table> <p>Print repeat lines and repeat times (2 lines)</p> </div> </div> <p style="text-align: center;">Repeated times: 2</p>	PC card		1st sampling	Line 1 10 Line 2 50	2nd sampling	Line 1 15 Line 2 82	3rd sampling	Line 1 20 Line 2 78	Production list		Line	Vol.	Line 1	10	Line 2	50	Line 1	15	Line 2	82	Line 1	20	Line 2	78	○	×
PC card																											
1st sampling	Line 1 10 Line 2 50																										
2nd sampling	Line 1 15 Line 2 82																										
3rd sampling	Line 1 20 Line 2 78																										
Production list																											
Line	Vol.																										
Line 1	10																										
Line 2	50																										
Line 1	15																										
Line 2	82																										
Line 1	20																										
Line 2	78																										
Sampling Num.	<p>Set the number of times (1 to 500) to collect data. Make settings according to capacity of the memory card. (☞ Section 2.3 Specifications of Available Object Functions)</p>	○	×																								
Over Processing	<p>Select the processing method when sampling data was executed more than the number of times set in [Sampling Num.].</p> <p>Overwrite : Continue the sampling and overwrite the data in the order collected (sampled). Break : Interrupt the data sampling. When restarting data sampling, clear all the data stored in memory card by clear trigger.</p>	○	×																								
Logging	<p>Select the order of printing the data stored in memory card.</p> <p>Oldest : Print from the oldest data. Latest : Print from the latest data.</p>	○	×																								

(Continued to next page)

Items	Description	A	F
Delete Trigger Type	Select the timing to delete all the data stored in memory card. Rise : Delete when bit device turns ON. Fall : Delete when bit device turns OFF. Power ON : Delete when GOT starts. Print : Delete after printing. Set the bit device as clear trigger when [Rise] or [Fall] is selected. (☞ Section 5.1 Device Setting)	○	×
File Name	Enter the file name of collected data to be stored in memory card. Files can be created on each report screen. Name the file using alphabets (upper case) and/or numerals (0 to 9). Example: AREPORT.DAT [Name (up to 8 characters). Extension (up to 3 characters)]	○	×
Header/Repeat	Set the header and repeat lines. (☞ Section 12.1.4  Set header/repeat line)	○	×

12.1.3 Setting common to each report (report setting)


Set the common information of report function.
 The setting items are common to all the report screens.

- 1 Select [Common] → [Report Settings] from the menu.
- 2 As the setting dialog box will appear, make the settings with reference to the following explanation.
- 3 Click on button to complete the setting of report function.



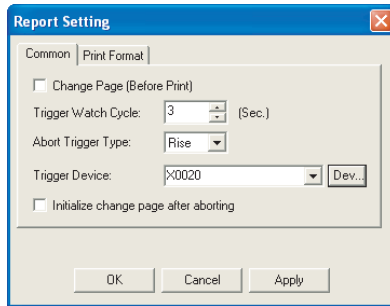
Remark

When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on  Report in the project workspace.

1 Common tab

Set the trigger watch cycle; abort trigger type and action for changing page during printing.



Common Print Format

Items	Description	A	F
Change Page (Before Print)	<p>Check this item in order that change page will be always executed before printing when [Real/Cont] is set. Otherwise, change page print will not be executed after printing each object function (report function, alarm history function and hardcopy function etc.)</p> <p>This setting is not relevant to [Log/Page], change page is always executed before printing.</p> <p>Checked</p> <p>Print report on the changed (next) page.</p> <p>Hard copy print</p> <p>Not checked</p> <p>Print report without changing the page.</p> <p>Hardcopy print</p>	○	×
Trigger Watch Cycle	<p>Set the cycle for GOT to monitor the device ON/OFF status that has been set in each trigger (collect trigger/abort trigger/print trigger/delete trigger).</p> <p>Make the settings in order that the device set for each trigger will keep the ON/OFF status longer than the period set by trigger watch cycle.</p> <p>GOT may not recognize the device ON/OFF status, if the period of device ON/OFF is shorter than the trigger sampling.</p> <p>Bit device of collect trigger (trigger action: Rise)</p> <p>Trigger watch cycle (3s)</p> <p>Unrecognized (OFF→OFF)</p> <p>Recognized (OFF→ON)</p> <p>Unrecognized (OFF→OFF)</p> <p>Recognized (OFF→OFF)</p>	○	×

(Continued to next page)

Items	Description	A	F
Abort Trigger Type	Select the method of interrupting the printing operation. Rise : Interrupt printing when the set device turns ON. Fall : Interrupt printing when the set device turns OFF. None : Abort trigger is not set. After selecting, set the device to be trigger. (☞ Section 5.1 Device Setting)	○	×
Initialize change page after aborting *1	Check this item to clear the print lines counted by GOT. Check this item to restart printing from the changed (next) page after printing operation is interrupted once. It is unnecessary to check this item to continue printing from the interrupted position. This setting is invalid if the following setting is made. <ul style="list-style-type: none"> • When [Change Page (Before Print)] in report setting dialog box is checked (☞ Section 12.1.2 Report screen creation (screen property)) • When report style [Log/Page] in the screen property dialog box is checked (☞ Section 12.1.3 Setting common to each report (report setting)) 	○	×

For details of *1, refer to the following.

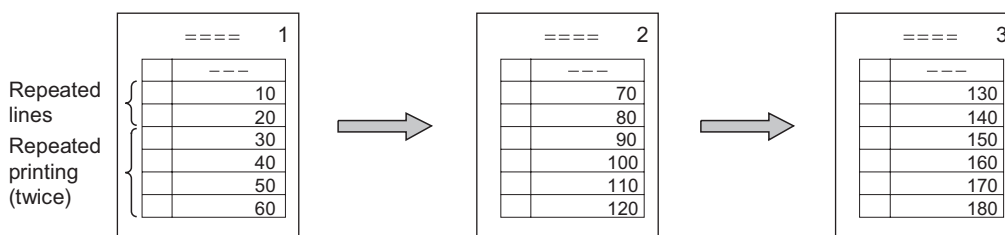
*1 Initialize change page after aborting (Effective example when report print is interrupted)

When printing operation is interrupted once, and then printing is started from the changed (next) page, the print line shift can be avoided by checking [Initialize change page after aborting] in advance.

Example: Operation example after interrupting report print

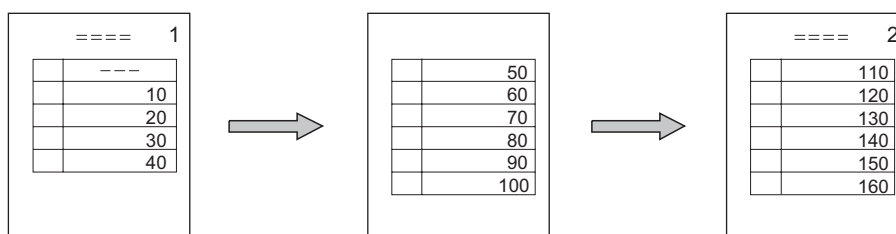
Number of first print lines : 2
 Repeated frequency : Twice

Usually



Change page after printing repeated lines twice (repeated lines: 6).

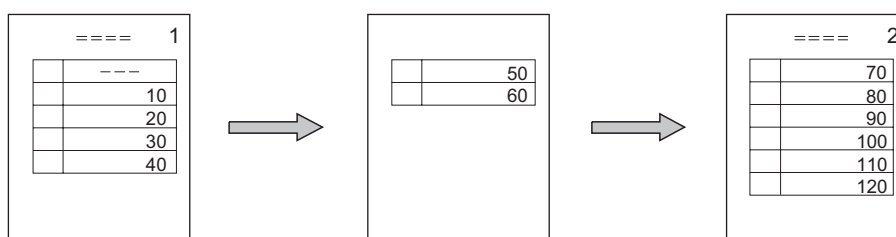
Checked



Abort trigger occurs after printing repeated lines once.

After page change, print the repeated lines twice, and then change page.

Not checked



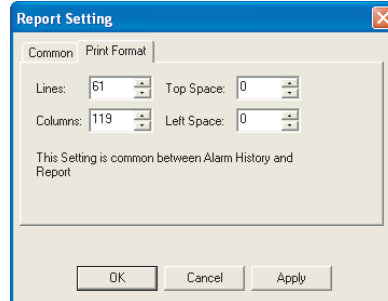
Abort trigger occurs after printing repeated lines once.

If two lines are printed after page change, GOT judges that repeated lines are printed twice, and then changes page.

2 Print Format tab

Set print format (number of lines and columns, top margin, left margin), according to the printable area of the printer.

This setting defines the size of created report screen.



Common Print Format

Items	Description	A	F																																																															
Lines/Columns/Top Space/ Left Space	<p>Set the number of lines (1 to 127) and columns (1 to 255), and the space for the top (the number of lines) and the left (the number of characters) of the printout.</p> <thead> <tr> <th>Line</th> <th>Machine type</th> <th>Operation status</th> <th>Production vol. Planned</th> <th>Actual</th> </tr> </thead> <tbody> <tr><td>MC-1</td><td>A1</td><td>Running</td><td>300</td><td>10</td></tr> <tr><td></td><td>A2</td><td>Running</td><td>250</td><td>20</td></tr> <tr><td>MC-2</td><td>A1</td><td>Running</td><td>300</td><td>60</td></tr> <tr><td></td><td>A2</td><td>Running</td><td>250</td><td>80</td></tr> <tr><td>MC-1</td><td>A1</td><td>Halt</td><td>300</td><td>10</td></tr> <tr><td></td><td>A2</td><td>Running</td><td>250</td><td>80</td></tr> <tr><td>MC-2</td><td>A1</td><td>Running</td><td>300</td><td>90</td></tr> <tr><td></td><td>A2</td><td>Running</td><td>250</td><td>115</td></tr> <tr><td>MC-1</td><td>A1</td><td>Running</td><td>300</td><td>10</td></tr> <tr><td></td><td>A2</td><td>Running</td><td>250</td><td>128</td></tr> <tr><td>MC-2</td><td>A1</td><td>Running</td><td>300</td><td>130</td></tr> <tr><td></td><td>A2</td><td>Running</td><td>250</td><td>180</td></tr> </tbody>	Line	Machine type	Operation status	Production vol. Planned	Actual	MC-1	A1	Running	300	10		A2	Running	250	20	MC-2	A1	Running	300	60		A2	Running	250	80	MC-1	A1	Halt	300	10		A2	Running	250	80	MC-2	A1	Running	300	90		A2	Running	250	115	MC-1	A1	Running	300	10		A2	Running	250	128	MC-2	A1	Running	300	130		A2	Running	250	180
Line	Machine type	Operation status	Production vol. Planned	Actual																																																														
MC-1	A1	Running	300	10																																																														
	A2	Running	250	20																																																														
MC-2	A1	Running	300	60																																																														
	A2	Running	250	80																																																														
MC-1	A1	Halt	300	10																																																														
	A2	Running	250	80																																																														
MC-2	A1	Running	300	90																																																														
	A2	Running	250	115																																																														
MC-1	A1	Running	300	10																																																														
	A2	Running	250	128																																																														
MC-2	A1	Running	300	130																																																														
	A2	Running	250	180																																																														

 ○ | × |

Print format setting

Refer to the following for the methods to calculate the width (number of columns + maximum set value of left margin) and length (Number of lines + maximum set value of top margin) based on the printable area of the printer.



Section 3.6 Print Format Setting

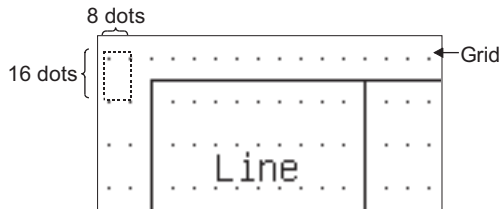
12.1.4 Print layout setting

Arrange figures and objects to be printed on the created report screen.

1 Before creating report screen

Arrange figures and objects on report screen based on grid.

Grid : Displayed in the fixed unit of 16 dots (vertical) x 8 dots (horizontal).
Space between figures/objects : Arranged in the unit of 16 dots (vertical) and 8 dots (horizontal).



Hint!

(1) Grid display

Set the grid color as black when the grid is indistinct.

Grid color can be changed on the [View] tab in [Preferences] dialog box (Select [Project] → [Preferences] from the menu).

(2) Arrange the figures and objects to be printed


By using toolbar, report screen can be created more efficiently.

Report function toolbar can be displayed in [Toolbars] of [Preferences] dialog box (Select [Project] → [Preferences] from the menu).

2 Draw lines and quadrangle

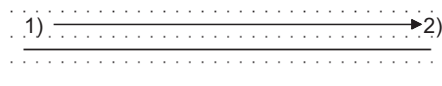
(1) Drawing method

1 Carry out either of the following operations.

- Click on  [Line]
- Select [Shape] → [Line] from the menu.

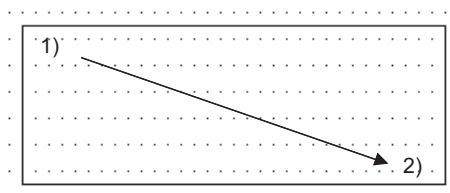
2 Drag from the starting point (1)) to the end point (2)) of line/quadrangle, release the left key on mouse, and line/ quadrangle will be displayed.

Draw line



Draw by dragging from starting point vertically/horizontally.

Draw quadrangle



Draw by dragging from starting point sideways.



Point

Arranging the line/quadrangle

Make sure not arrange text and line/quadrangle in order they will overlap.


(2) Precautions

- (a) Line attributes cannot be changed. (Style: Full line, Width; 1 dot, Color: Black)
- (b) Vertical line will be printed as broken line.

3 Text arrangement

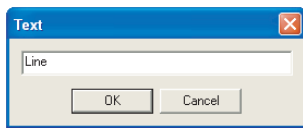
(1) Arrangement method

① Carry out either of the following operations.

- Click on  [Text]
- Select [Shape] → [Text] from the menu.

② Click on the position to arrange text.

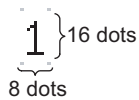
③ As [Text] dialog box will appear, enter text there.



④ Click on button, and the entered text will be arranged in the screen.

(2) Precautions

- (a) Page change cannot be done for text arranged on report screen.
- (b) Text attributes (style, text color, etc.) cannot be changed.
- (c) Character is displayed in the unit of 16 × 8 dots.




- (d) Up to 255 characters can be printed. (When [Columns] is set to the maximum value)

4 Numerical print arrangement

(1) Arrangement method

1 Carry out either of the following operations

- Click on the  [Numerical Print]
- Select [Object] → [Numerical Print] from the menu

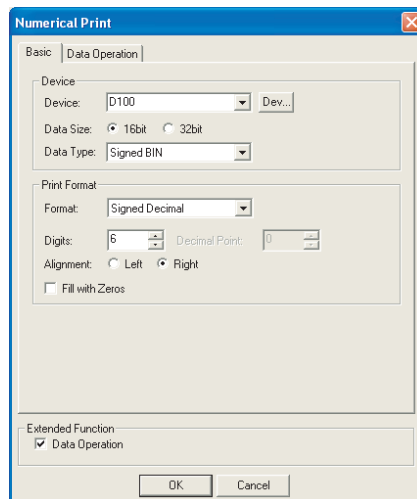
2 Click on the position to arrange numerical print object.

3 Double click on the arranged numerical print object to display [Numerical Print] dialog box. Make settings with the reference to the following explanation.

(2) Numerical print dialog box

(a) Basic tab

Set the print format and the device for printing value.



Basic

Data Operation

Items	Description	A	F
Device	Device	○	×
	Data Size	○	×
	Data Type	○	×

Set the word device for printing device value.
 (See Section 5.1 Device Setting)

Select the data size (16 bits/32 bits) of the word device for printing.

Select the data type of device.

Signed BIN : Treats word device value as a signed binary value.
 Unsigned BIN : Treats word device value as an unsigned binary value.
 Real : Treats word device value as a real.
 (Only when [Data Size] selection is [32 bit].)

(Continued to next page)

Items	Description	A	F
Print Format	Format Select the print format of word device for printing. Signed Decimal : Print the value in signed decimal. Unsigned Decimal : Print the value in unsigned decimal. Real : Print the value in floating point type real. Binary : Print the value in binary. Hexadecimal : Print the value in hexadecimal.	<input type="radio"/>	<input type="checkbox"/>
	Digits Set the number of digits for numeric value to be printed. The following are the number of digits that can be set in [Form]. Real : 1 to 32 digits (minus (—), decimal point and decimal part are included) Hexadecimal : 1 to 8 digits Binary : 1 to 32 digits Unsigned Decimal : 1 to 13 digits (minus (—) is included)	<input type="radio"/>	<input type="checkbox"/>
	Decimal Point When REAL is selected in [Print Format], set the number of digits (1 to 32) for the decimal part.	<input type="radio"/>	<input type="checkbox"/>
	Alignment Select how to align objects within the print area. Left Alignment : Align to the left of the print area. Right Alignment : Align to the right of the print area.	<input type="radio"/>	<input type="checkbox"/>
	Fill with Zeros When [Right Alignment] is selected in [Alignment] and displaying zeros on the left to the numeric value is needed, check this item. Example (In the case of five digits) <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div style="border: 1px dashed black; padding: 2px 10px;">5</div> Zero not suppressed </div> <div style="text-align: center;"> <div style="border: 1px dashed black; padding: 2px 10px;">00005</div> Zero suppressed </div> </div>	<input type="radio"/>	<input type="checkbox"/>

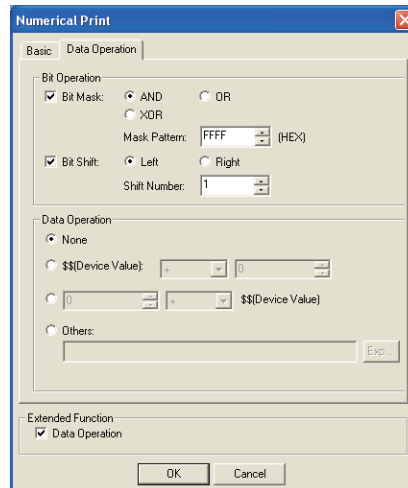
(b) Data Operation tab

Operational expression is set on this tab when monitoring the device by operating the device values.

Setting on this tab is displayed by checking the corresponding extended function at the bottom of the dialog box.

For the details of data operation, refer to the following.

 Section 5.6 Data Operation Function




Basic **Data Operation**

Items		Description	A	F
Bit Operation	Bit Mask	<p>Check this item to enable the bit mask operation. After checking, select the mask operation type, and set the pattern value to be masked in hexadecimal in [Mask Pattern].</p> <p>AND :Carries out logical AND. OR :Carries out logical OR. XOR :Carries out exclusive logic OR.</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
	Bit Shift	<p>Check this item to enable bit shift operation. Select the shift direction and set the number of bits to shift in [Shift Number].</p> <p>Left :Left shift Right :Right shift</p>	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Operation		Select an operational expression format for data operation.	<input type="radio"/>	<input checked="" type="checkbox"/>

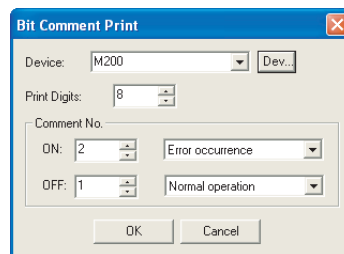
5 Bit comment print arrangement


(1) Arrangement method

- 1 Carry out either of the following operations
 - Click on  [Bit Comment Print]
 - Select the [Object] → [Comment Print] → [Bit Comment Print] from the menu.
- 2 Click on the position to arrange the comment print object.
- 3 Double click on the arranged comment print object.
- 4 As the setting dialog box will appear, make the settings with reference to the following explanation.

(2) Bit Comment Print dialog box

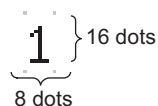
Set the print format and the device for printing comment.



Items		Description	A	F
Device		Set the bit device for printing comments ( Section 5.1 Device Setting)	○	×
Print Digits		Set the number of digits for the comment to be printed Up to 255 digits can be set.	○	×
Comment No.	ON/OFF	Set the comment No. (0 to 32767) to be printed when the bit turns ON/OFF. The comment will not be printed when setting comment No. to 0. (To print comment only when the bit turns ON, set the comment No. when the bit turns OFF to 0)	○	×

(3) Precautions


- (a) Only the first line of multi-line comment is printed.
- (b) The text attribute (style, text color etc.) cannot be changed.
- (c) Character is displayed in the size of 16 dots × 8 dots.



- (d) Up to 255 characters can be printed. (When [Columns] is set to the maximum value)

6 Word comment print arrangement

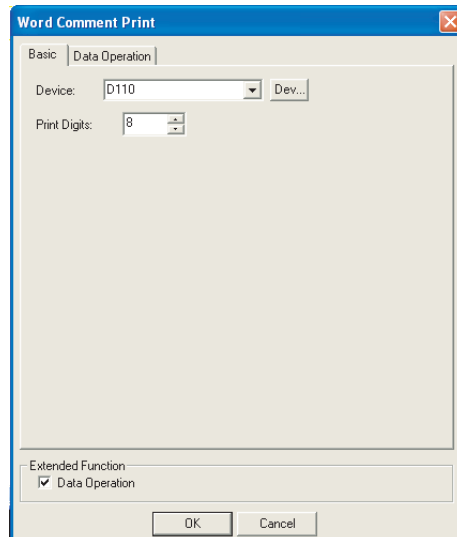
(1) Arrangement method

- 1 Carry out either of the following operations
 - Click on  [Word Comment Print]
 - Select the [Object] → [Comment Print] → [Word Comment Print] from the menu.
- 2 Click on the position to arrange the comment print object.
- 3 Double click on the arranged comment print object.
- 4 As the setting dialog box will appear, make the settings with reference to the following explanation.

(2) Word Comment Print dialog box


(a) Basic tab

Set the print format of comment and the device to print comment.




Basic

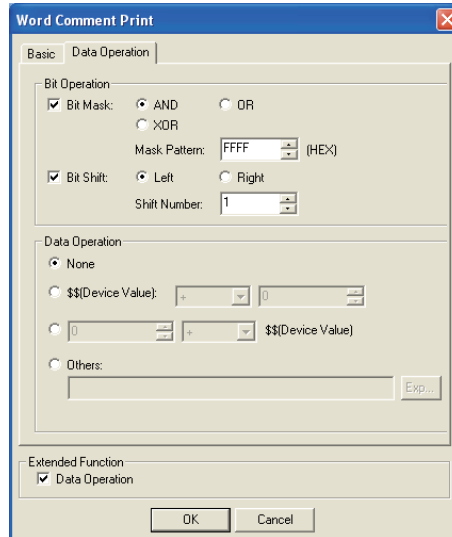
Data Operation

Items	Description	A	F
Device	Set the word device for printing comment. Print the comment of which No. corresponding to the set word device value. ( Section 5.1 Device Setting)	○	×
Print Digits	Set the number of digits for the comment to be printed Up to 255 digits can be set.	○	×

(b) Data Operation tab

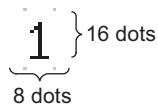
The setting items of data operation tab are the same as numerical print. Refer to the following for the details of the setting items.

 4 Numerical print arrangement



(3) Precautions

- (a) Only the first line of multi-line comment is printed.
- (b) The text attribute (style, text color etc.) cannot be changed.
- (c) Character is displayed in the size 16 dots × 8 dots.




- (d) Up to 255 characters can be printed. (When [Columns] is set to the maximum value)


7 Set header/repeat line

Set print range (header/repeat line) on the report screen.

Line	Model	Operation Status	Production vol.	
			Expected	Actual
MC-1	A1	Running	300	10
	A2	Running	250	20
MC-2	A1	Running	300	60
	A2	Running	250	80

[Print example]

 Header Maximum 10 lines
The range for the header of each page that can be printed only once.

 Repeat line Maximum 20 lines
Lines repeatedly printed when collect trigger acts.

Line	Model
MC-1	A1
	A2
MC-2	A1
	A2
MC-1	A1
	A2
MC-2	A1
	A2

[Print repeatedly]

Remark


Printable area

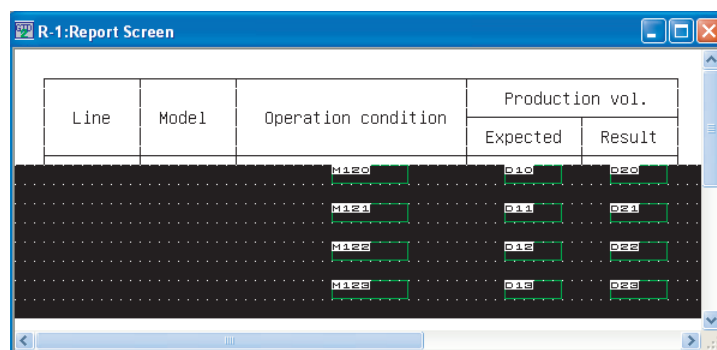
Number of Lines : Up to 30 lines can be printed/collected for 1 timing.



Number of Columns : Columns as many as the number set in the "Columns" of print format can be printed.

 Section 12.1.3 Setting common to each report (report setting)

(1) Setting method

- ① Carry out either of the following operations.
 - Click on the  [Selection: Report Line] on the tool bar
 - Select [Edit] → [Object of Selection] → [Report Line] from the menu.
- ② Drag and select the area specified for the header and repeat line on the report screen.



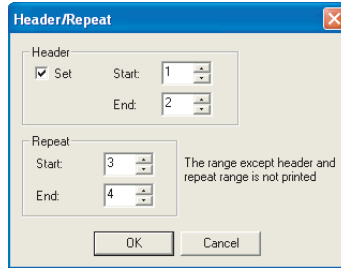
- ③ Carry out either of the following operations.
 - When setting the header: Click on the  [Header] on the tool bar
 - When setting the repeat line: Click on the  [Repeat Lines] on the tool bar
- ④ The selected range for header and repeat line will be set.
The header area is shown by cyan frame, and repeat line area is shown by yellow frame.

Remark

Set the header/repeat line on the dialog box.

Header/repeat line can be set on the dialog box too.

Select the [Screen] → [Header/Repeat] to display the setting dialog box. Make the settings with reference to the following explanation.



Items		Description	A	F
Header	Set	Check this item to set the header in the report screen. Uncheck it to cancel the header. Set the start line and end line. Up to 10 lines can be set as the header in the range of 1 to 30 lines (for whole screen).	○	×
Repeat		Set the start line and end line of the repeat lines. Up to 20 lines can be set as the repeat lines in the range of 1 to 30 lines (for whole screen).	○	×

(2) Precautions

- (a) Numerical print and comment print objects cannot be set within header.

12.1.5 Precautions

This section provides the precautions for using report function.

1 Precautions for drawing

- (1) Maximum number of the report screens that can be set for 1 project
8 screens
- (2) Maximum number of numerical print and comment print objects on report screen
256

2 Precautions for OS

- (1) Extended function OS
Make sure to install the extended function OS in GOT when using report function.

3 Precautions for hardware

- (1) Incompatible GOT
 - (a) A95* handy GOT is incompatible.
 - (b) [Log/Page] setting is not available because A95* handy GOT is not compatible with the printer and PC card.
- (2) Required extended devices and GOT
Following devices or GOT are required when using report function.

GOT	Required devices
A985GOT(-V), A97*GOT, A960GOT	None
A956WGOT	Printer interface module
A95*GOT	Memory expansion type GOT (A95*GOT-*BD-M3) Printer interface module

4 Precautions for use

- (1) When the print trigger of other object/other report screen occurs during report print.
After a report print is completed once, the other object/other report screen will be printed.
However, if the same print trigger occurs before the report print, that was executed when the former report trigger occurred, is completed, the latter print trigger will be handled as invalid.



Check the report function operation

The printing status by report function and the printed report screen can be checked using the system information.

Controlling the relevant signals by PLC CPU prevents the overlap of print trigger occurrence timing.

Section 3.5 System Information Setting

- (1) Report function-relevant signals of system information

- (a) Report output signal (system signal2(b8))

ON : Report function is printing

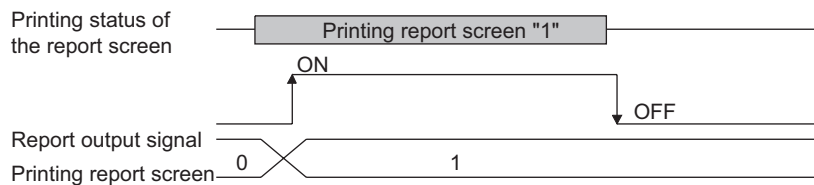
OFF : Printing by report function is completed or interrupted

- (b) Currently Printed Report Screen (write device)

Write the report screen No. being printed to PLC CPU.

After printing, the written report screen No. is kept until the next report screen will be printed, instead of being cleared.

- (2) Operation of the system information function when printing the report screen.



- (2) When data collection timing is overlapped (Log/Page only)
After a data collection is completed once, the data of other report screen, that was delayed because its collection timing overlapped with the completed one, will be collected.
However, when the same collect trigger occurs before the data collection, that was executed when the former collect trigger occurred, is completed, the latter collect trigger will be handled as invalid.
- (3) Delete trigger
Execution of the delete trigger deletes the contents of the report file but does not delete the report file.
To delete the report file, do so using a personal computer or format the memory card.
- (4) The number of collected data stored in memory card
(A985GOT/A97*GOT/A960GOT/A956WGOT/A95*GOT)
The maximum number of object files (including other object files) that can be set in a memory card differs with the memory capacity as follows:

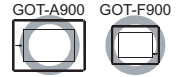
Memory card memory capacity	Number of files
1M, 2M	128
4M	256
16M(A9GTMEM-10MF ^{*1}), 32M(A9GTMEM-20MF ^{*1}), 48M(A9GTMEM-40MF ^{*1})	512

^{*1} Memory capacity differs according to the hardware versions of flash PC card.

The memory can be checked on the rated plate of flash card.

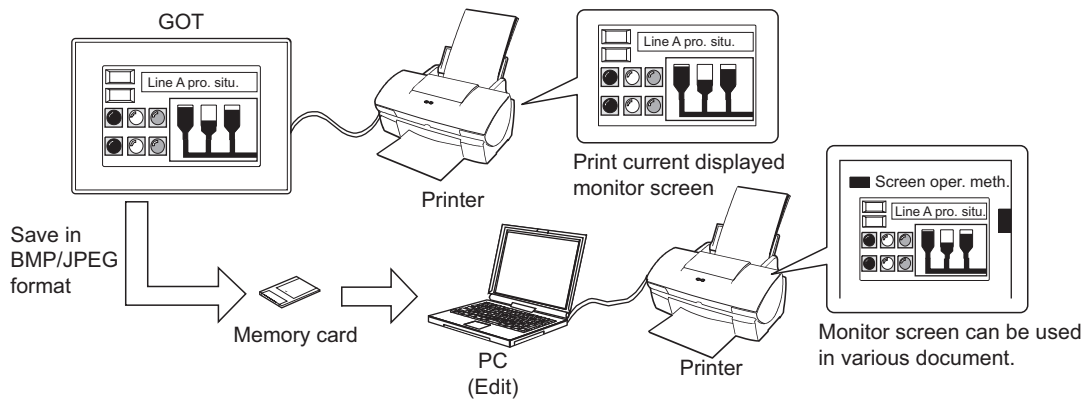


12.2 Hard Copy



This function is used to save the currently displayed GOT monitor screen to memory card in BMP/JPG file format or print it out with a printer.

This function can be executed by bit device's ON/OFF or touching the touch switch (extension: Hard copy). The BMP/JPEG files saved in memory card can be used for various documents on the computer. (Specific for GOT-A900 series)



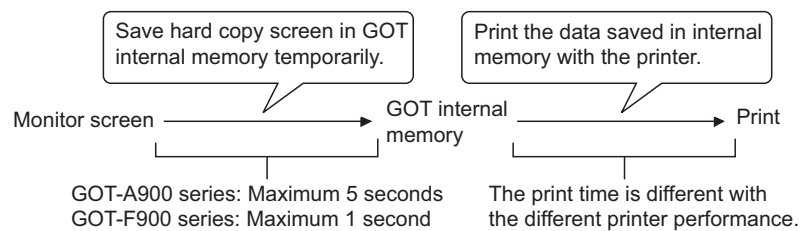
GOT status during execution of hard copy function

When the hard copy function is executed, GOT will interrupt the monitor screen display for approx. 5 seconds or less.

Also, print time will be displayed because more priority is given to the monitor screen display. (In the case of bus connection, print delay time will be much longer.)

👉 App.4 Printing Time of Hard Copy Function (Reference Value)

The hard copy function is executed as shown below.




12.2.1 Settings

- 1 Select [Common] → [Hard Copy] from the menu.
- 2 The setting dialog box will appear. Make the settings with reference to the following explanation.

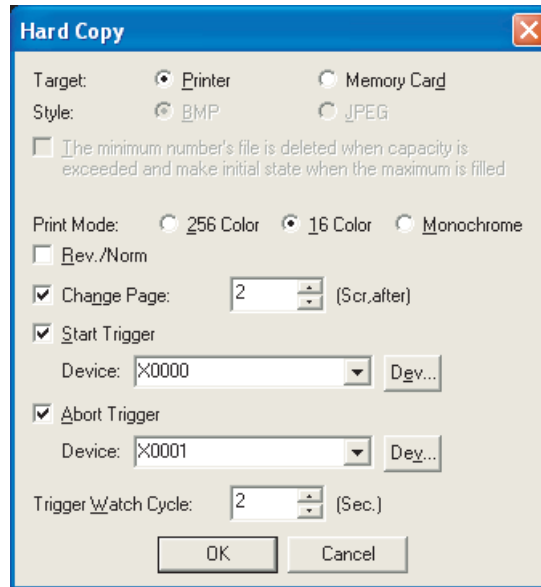
Remark

When making the setting on the project work space

The setting dialog box can be displayed by double-clicking on  Hard Copy on the project work space.

12.2.2 Setting items

Set the output target and the style of the hard copy.



Items	Description	A	F									
Target ^{*1}	Select the output target (Printer/Memory card)	○	×									
Style	Select the format (BMP/JPEG) of the saved file when [Memory card] is selected in [Target]. ([JPEG] is not available for GOT-A960 series.)	○	×									
The minimum number's file is deleted when capacity is exceeded and make initial state when the maximum is filled ^{*2}	<p>Select the processing method for the case in which memory card capacity is insufficient or the file of the maximum file number (9999) exists.</p> <p>Not checked : New monitor screen will not be saved in memory card when memory card capacity is insufficient or the more than the max. number files (9999) exists.</p> <p>Checked : Execute the following operation according to the memory card status.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">File number in the memory card</th> <th style="width: 40%;">With spare capacity in the memory card</th> <th style="width: 40%;">No spare capacity in the memory card</th> </tr> </thead> <tbody> <tr> <td>When file No. 9999 does not exist.</td> <td>Creates the file with the number next to the existing largest file number in the memory card</td> <td>Deletes the file of the smallest No. and creates a file with the number next to the largest one.</td> </tr> <tr> <td>When file No. 9999 exists.</td> <td colspan="2">Deletes all the data in memory card and create a new No.1 file. (Data-deletion timing can be confirmed in the system information (system signal 2 area).)</td> </tr> </tbody> </table>	File number in the memory card	With spare capacity in the memory card	No spare capacity in the memory card	When file No. 9999 does not exist.	Creates the file with the number next to the existing largest file number in the memory card	Deletes the file of the smallest No. and creates a file with the number next to the largest one.	When file No. 9999 exists.	Deletes all the data in memory card and create a new No.1 file. (Data-deletion timing can be confirmed in the system information (system signal 2 area).)		○	×
File number in the memory card	With spare capacity in the memory card	No spare capacity in the memory card										
When file No. 9999 does not exist.	Creates the file with the number next to the existing largest file number in the memory card	Deletes the file of the smallest No. and creates a file with the number next to the largest one.										
When file No. 9999 exists.	Deletes all the data in memory card and create a new No.1 file. (Data-deletion timing can be confirmed in the system information (system signal 2 area).)											
Print Mode ^{*3}	Select the print color (256 colors/16 colors/monochrome).	○	×									
Rev./Norm ^{*3}	Check this item to reverse and print monochrome area of the monitor screen.	○	○									
Change Page	Check this item to move to the next page after the monitor screen is printed out. Set the number of printing screens before changing the page.	○	○									
Start Trigger	Set the device to start the hard copy.	○	○									
Abort Trigger	Set the device to interrupt print.	○	○									
Trigger Watch Cycle	Set the watch cycle of start trigger and abort trigger in the unit of second within a range from 2 to 60 seconds. The bit device, used as a start or abort trigger, must stay ON or OFF longer than the Trigger Watch Cycle.	○	○									

For details of *1 to *3, refer to the following.

*1 Target

Files will be automatically created under the following file names when BMP/JPEG files are output to memory card.

The BMP/JPEG files saved in the memory card can be retrieved with image processing software for computers.

The number of screens saved in PC card	File name	
	In BMP format	In JPEG format
Screen 1	SNAP0001.BMP	SNAP0001.JPG
Screen 2	SNAP0002.BMP	SNAP0002.JPG
Screen 3	SNAP0003.BMP	SNAP0003.JPG
:	:	:
Screen 9999	SNAP9999.BMP	SNAP9999.JPG

*2 The minimum No.'s file is deleted when capacity is exceeded and make initial state when the maximum is filled.

When this item has been checked, whether the number of file saved in memory card is close to the upper limit or not can be checked by the following bit device status of the system information function. (Specific for GOT-A900 series)

- Hard copy sub-signal (system signal2 "b12")
The file number of screen data (file No.) is ON from 9900 to 9999.

 Section 3.5 System Information Setting

*3 Print Mode and Rev./Norm

The [Print Mode]/[Rev./Norm] setting can be online-changed by the following bit device status of the system information function. (Specific for GOT-A900 series)

- Hard copy setting enable signal (system signal 1 "b10")
The output setting of hard copy can be changed by turning ON this signal in the system information. Turn ON this signal before executing the hard copy function.
In this case, it must be turned ON earlier than the time (about 300ms) of identifying the GOT internal processing.
- Hard copy black-white print signal (system signal 1 "b11")
ON : Changes hard copy print mode into [Monochrome]
OFF : Changes hard copy print mode into [Color (256 colors/16 colors)]
- Hard copy black-white inversion signal (system signal 1 "b12")
ON : Reverses and outputs the monochrome area of monitor screen.
OFF : Keeps the original monochrome display of monitor screen and outputs as it is.

 Section 3.5 System Information Setting

12.2.3 Precautions

This section provides the precautions for using the hard copy function.

1 Precautions for drawing

- (1) Number of settable points for the hard copy function
Only one hard function is available for one project.
- (2) Start/Interrupt setting of the hard copy
When using a touch switch to turn ON the device used for start trigger/abort trigger, the device must be kept ON for five seconds or more.
When a touch switch (bit momentary) is used, make the delay setting (OFF delay) for the touch switch so that it will stay ON longer than the Trigger Watch Cycle.

2 Precautions for OS


- (1) Extended function OS
Install the extended function OS (ESC printer/PLC printer/Chinese (Big5/GB) printer) in GOT when using hard copy function. (It is not required when using GT SoftGOT2, GOT-F900 series)

3 Precautions for hardware

- (1) GOT inapplicable for this function
F920GOT-K, A950 handy GOT and F940 handy GOT are not applicable.

4 Precautions for use

- (1) Bit devices of start trigger and abort trigger
The bit device, used as a start or abort trigger, set in Trigger Watch Cycle must stay ON or OFF longer than the Trigger Watch Cycle.
- (2) 256-color print
 - (a) Only the GOT (A985GOT, A975GOT, A956GOT) with 256 color monitor display (TFT type) is capable of printing with 256 colors.
The 256-color type A95*GOT will choose the 16 nearest colors for printing.
 - (b) Memory card is required for the 256-color print (470K free space required).
Memory card is not required for the print other than the 256-color print.
- (3) Printer
The print of monitor screen cannot be executed when the hard copy starts with the printer power OFF.
Ensure that the printer is powered ON.
Otherwise, a system alarm will occur (340 (A printer error occurs or the power supply is OFF)).
(Starts printing when the printer turns ON.)

- (4) Timing of hard copy execution
- (a) While the hard copy function (saving or printing the monitor screen into GOT internal memory or saving it to memory card) is being executed, another hard copy function cannot be activated.
Execute the next hard copy after printing the previous one or saving it to memory card.
The completion of the operation can be confirmed in the system information (system signal2)
-  Section 3.5 System Information Setting
- (b) The hard copy function may not be started if the GOT screen is being operated.
In such a case, execute the hard copy function again after the GOT screen operation.
- (5) Video window, RGB screen
- (a) The image displayed in the video window is printed in 256 colors
RGB screen cannot be printed.
- (b) When GOT is in the screen save condition, the video image cannot be hard-copied correctly.
Confirm that GOT is not in the screen save condition before hard-copying the monitor screen displaying video image.
- (6) When using GOT-F900 series
- (a) Only the user-created screen (the screen displayed in the screen mode) is available for hard copy.
The system screen (in the HPP mode, alarm mode, sampling mode, other mode) cannot be printed.
- (b) GOT-F900 series are capable of monochrome print only.
Other display colors are printed as follows:
Black, red, blue, green : Black
White, purple, yellow, cyan : White
(In the case of 256-color display, colors similar to each of the above 8 colors are printed as white or black)
- (7) The number of files that can be saved in memory card (A985GOT/A97*GOT/A956WGOT/A95*GOT)
The maximum number of object files (including other object files) that can be set in a memory card differs with the memory capacity as follows:

Memory capacity of PC card	File number
1M, 2M	128
4M	256
16M(A9GTMEM-10MF ^{*1}), 32M(A9GTMEM-20MF ^{*1}), 48M(A9GTMEM-40MF ^{*1})	512

*1 Memory capacity differs according to the hardware versions of flash PC card.
It can be checked on the rated plate of flash card.



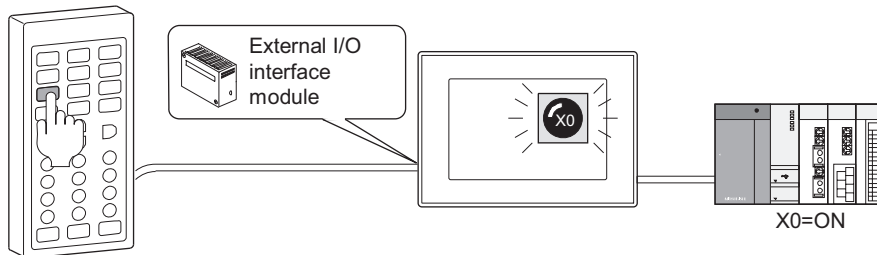
12.3 Operation Panel



1 In the case of GOT-A900 series

The operation panel is connected to GOT externally, and then various kinds of input (touch input, numerical input, screen switching, etc.) are operated from the operation panel.

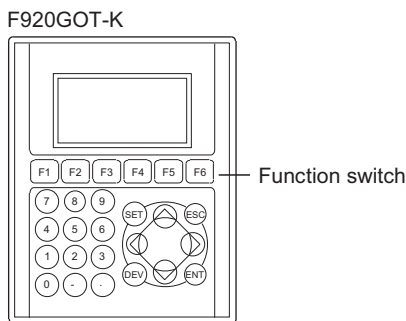
The operation panel can be used with the external I/O interface module installed to GOT.



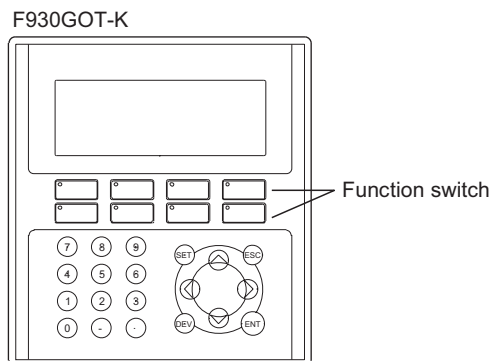
Input key to set X0 as ON.

2 In the case of GOT-F900 series

(1) The function switches of GOT F920GOT-K, F930GOT-K with keyboard can be set.

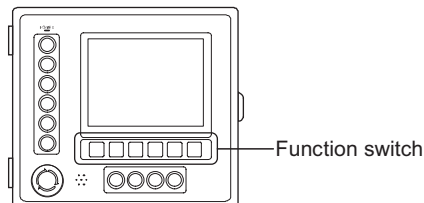


There are 6 built-in function switches (F1 to F6).



There are 8 built-in function switches with LED (green) (F1 to F8).

(2) The function switches of electronic operation terminal ET-900 series can be set.



There are 6 function switches with LED (green/red) (F0 to F5).

12.3.1 Required knowledge for operation panel setting

1 Available operation panels

- (1) In the case of GOT-A900 series

Refer to the following manuals for the operation panels that can be used.

 GOT-A900 Series User's Manual (Connection System Manual).

- (2) In the case of GOT-F900 series

In GOT-F900 series, function switches of F920GOT-K, F930GOT-K, or ET-900 are set through the operation panel.

Refer to the following manuals for the details.

 GOT-F900 Series HARDWARE MANUAL (Connection)

2 Description about settings of keys on the operation panel

To the operation panel keys, actions and key codes can be set.

- (1) Action


More than one setting as shown below can be assigned to one key on the operation panel.

GOT-A900 series		GOT-F900 series		Precedence for multiple settings
Momentary *1	: 20	Momentary *1	: 50	High
Set	: 20	Set	: 50	
Reset	: 20	Reset	: 50	
Alternate	: 20	Alternate	: 50	
Word set	: 20	Word set	: 50	
Base screen switching *1	: 1	Base screen switching	: 1	
Window screen switching *1 (Overlap window1)	: 1	Recipe transfer	: 50	↓
Window screen switching *1 (Overlap window2)	: 1	Data change	: 50	
Window screen switching *1 (Superimpose)	: 1			
Station number switch	: 1			Low
Total	: 105	Total	: 50	

*1 If the momentary function and the window switch function are set to one operation panel key, switching the screen is not available while the key is being pressed.

After the operation panel key is released (bit OFF output), the screens will be switched.

- (2) Key code (specific for GOT-A900 series)
The key code can be set for each object.
- The key codes for alphanumeric input (numerical input, ASCII input)
 - The key codes for object functions (the numerical input, ASCII input, data list, alarm list, alarm history functions)

 App.2 Key Code List

Remark

When the above (1) Action and (2) Key code are set at the same time

(1) Available key codes

The following are the key codes that can be set together with action setting.

- "FFFF_H (no key code)"
- "000D_H (write execution key)"

(2) Precedence for operation

The key codes take precedence over to the action settings.

(3) In the case of GOT-F900 series


The key code setting is not available for GOT-F900 series.

12.3.2 Settings

- 1 Select [Common] → [Operation Panel] in the menu.
- 2 The Setting dialog box will appear. Make the settings reference to the following explanation.

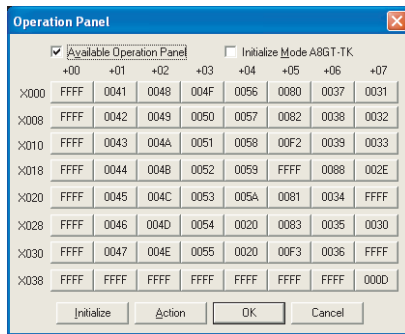
Remark

When making the setting on the project workspace

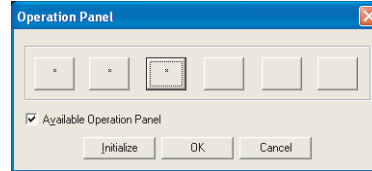
The setting dialog box can be displayed by double-clicking on  in the project workspace.

12.3.3 Setting items

The actions and key code can be set to operation panel keys.



In the case of GOT-A900 series



In the case of GOT-F900 series

Items	Description	A	F																																																																																	
Action/Key code setting *1	<p>Set actions which are executed at ON and key codes to the input signals. When an input signal button is clicked, the action/key code setting dialog box will be displayed. Set the action, trigger and key code. [Arrangements of the input signal buttons] The following shows the arrangement of input signal buttons used in GT Designer2. The key codes for the operation panel produced by Kanaden are preset in the initial state. When using the ten-key panel of the A8GT-TK type, check [Initialize Mode A8GT-TK], and initialize the state, to change it to the one suitable for the A8GT-TK ten-key panel. Make the setting referring to the user-created arrangement of input signals. *2, *3</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>+00</th> <th>+01</th> <th>+02</th> <th>+03</th> <th>+04</th> <th>+05</th> <th>+06</th> <th>+07</th> </tr> </thead> <tbody> <tr> <td>X000</td> <td>X0</td> <td>X1</td> <td>X2</td> <td>X3</td> <td>X4</td> <td>X5</td> <td>X6</td> <td>X7</td> </tr> <tr> <td>X008</td> <td>X8</td> <td>X9</td> <td>XA</td> <td>XB</td> <td>XC</td> <td>XD</td> <td>XE</td> <td>XF</td> </tr> <tr> <td>X010</td> <td>X10</td> <td>X11</td> <td>X12</td> <td>X13</td> <td>X14</td> <td>X15</td> <td>X16</td> <td>X17</td> </tr> <tr> <td>X018</td> <td>X18</td> <td>X19</td> <td>X1A</td> <td>X1B</td> <td>X1C</td> <td>X1D</td> <td>X1E</td> <td>X1F</td> </tr> <tr> <td>X020</td> <td>X20</td> <td>X21</td> <td>X22</td> <td>X23</td> <td>X24</td> <td>X25</td> <td>X25</td> <td>X27</td> </tr> <tr> <td>X028</td> <td>X28</td> <td>X29</td> <td>X2A</td> <td>X2B</td> <td>X2C</td> <td>X2D</td> <td>X2E</td> <td>X2F</td> </tr> <tr> <td>X030</td> <td>X30</td> <td>X31</td> <td>X32</td> <td>X33</td> <td>X34</td> <td>X35</td> <td>X36</td> <td>X37</td> </tr> <tr> <td>X038</td> <td>X38</td> <td>X39</td> <td>X3A</td> <td>X3B</td> <td>X3C</td> <td>X3D</td> <td>X3E</td> <td>X3F</td> </tr> </tbody> </table>		+00	+01	+02	+03	+04	+05	+06	+07	X000	X0	X1	X2	X3	X4	X5	X6	X7	X008	X8	X9	XA	XB	XC	XD	XE	XF	X010	X10	X11	X12	X13	X14	X15	X16	X17	X018	X18	X19	X1A	X1B	X1C	X1D	X1E	X1F	X020	X20	X21	X22	X23	X24	X25	X25	X27	X028	X28	X29	X2A	X2B	X2C	X2D	X2E	X2F	X030	X30	X31	X32	X33	X34	X35	X36	X37	X038	X38	X39	X3A	X3B	X3C	X3D	X3E	X3F	○	×
	+00	+01	+02	+03	+04	+05	+06	+07																																																																												
X000	X0	X1	X2	X3	X4	X5	X6	X7																																																																												
X008	X8	X9	XA	XB	XC	XD	XE	XF																																																																												
X010	X10	X11	X12	X13	X14	X15	X16	X17																																																																												
X018	X18	X19	X1A	X1B	X1C	X1D	X1E	X1F																																																																												
X020	X20	X21	X22	X23	X24	X25	X25	X27																																																																												
X028	X28	X29	X2A	X2B	X2C	X2D	X2E	X2F																																																																												
X030	X30	X31	X32	X33	X34	X35	X36	X37																																																																												
X038	X38	X39	X3A	X3B	X3C	X3D	X3E	X3F																																																																												
	<p>Displays the input signals of ET-900 series (F920GOT-K, F930GOT-K) function switches and the actions set to each operation panel key. Click on the input signal button, the action/key code setting dialog box will be displayed. Set the action and trigger in this dialog box. After the setting, "*" will be displayed on the key.</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>F920GOT-K</td> <td>F1</td> <td>F2</td> <td>F3</td> <td>F4</td> <td>F5</td> <td>F6</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>F930GOT-K</td> <td>F1</td> <td>F2</td> <td>F3</td> <td>F4</td> <td>F5</td> <td>F6</td> <td>F7</td> <td>F8</td> <td>—</td> </tr> <tr> <td>ET-900</td> <td>F0</td> <td>F1</td> <td>F2</td> <td>F3</td> <td>F4</td> <td>F5</td> <td>—</td> <td>—</td> <td>—</td> </tr> </tbody> </table>											F920GOT-K	F1	F2	F3	F4	F5	F6	—	—	—	F930GOT-K	F1	F2	F3	F4	F5	F6	F7	F8	—	ET-900	F0	F1	F2	F3	F4	F5	—	—	—	×	○																																									
F920GOT-K	F1	F2	F3	F4	F5	F6	—	—	—																																																																											
F930GOT-K	F1	F2	F3	F4	F5	F6	F7	F8	—																																																																											
ET-900	F0	F1	F2	F3	F4	F5	—	—	—																																																																											
Initialize *2	<p>GOT-A900 series : Initializes the action/key code setting of the operation panel to be suitable for the key arrangement/input signal of kanaden operation panel. GOT-F900 series : Deletes all of the actions of the operation panel for initialization.</p>	○	○																																																																																	
Action	Clicking this to switch the display on the input signal button between the action and key code.																																																																																			
Key code	<p>When displaying key code : Displays the key code set to the key. <input type="text" value="0042"/></p> <p>When displaying action : Display "*" on the key to which an action is set. <input type="text" value="*"/></p>	○	×																																																																																	
Available Operation Panel	Check this item to make the setting of the currently editing operation panel available. After setting the function of the operation panel, make sure to check this box.	○	×																																																																																	
Initialize Mode A8GT-TK *3	Check this item when initializing the setting of operation panel according to the key arrangement of A8GT-TK ten-key panel. After checking this box, click on the <input type="button" value="initialize"/> button.	○	×																																																																																	

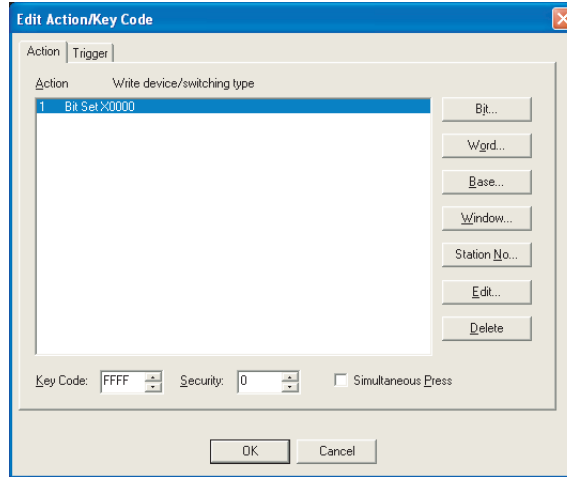
For details of *1 to *3, refer to the following.

*1 Settings of operation panel key

Set the action and trigger for the operation panel key.

(1) Action tab

Set the action data (action, key code) of each operation panel key.



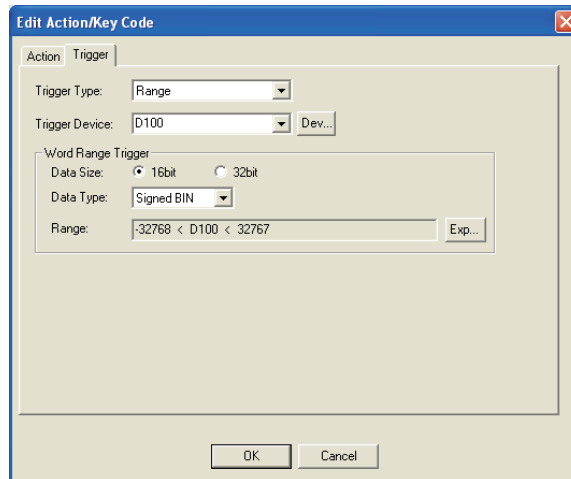
(Example: In the case of GOT-A900 series)



Items	Description	A	F
Action	Set the action to be set to the operation panel key. The set action data are displayed in the list. The setting method and action contents of each action (bit, word, etc.) are the same as the touch switch. (☞ Section 6.2 Touch Switch)	○	○
	Bit	○	○
	Word	○	○
	Base	○	○
	Window	○	×
	Station No.	○	×
	Edit	○	○
	Delete	○	○
Key Code	Set the key code to be set to the operation panel key. (☞ App.2 Key Code List)	○	×
Security	When using the security function, set the security level (1 to 15). When not using the function, set it to "0". (☞ Section 5.8 Security Function)	○	×
Simultaneous Press	Check this item to disable other operation panel key while an operation panel key is pressed.	○	×

- (2) Trigger tab
 Set the action trigger for the operation panel key.
 Check the Extended Function at the bottom of the dialog box to display this tab.
 Refer to the following for the details of trigger.

☞ Section 5.5 Trigger Setting



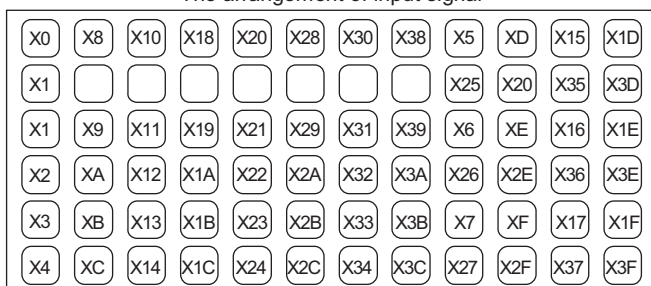
Action **Trigger**

Items	Description	A	F
Trigger Type	Select the trigger to activate the operation panel key. • Ordinary • ON • OFF • Range (specific for GOT-A900 series)	<input type="radio"/>	<input checked="" type="checkbox"/>
Trigger Device	Specify the device used for the trigger.	<input type="radio"/>	<input checked="" type="checkbox"/>
Word Range Trigger	When [Range] is selected in [Trigger Type], set the following items	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Size	Select the [Data Size] (16 bit/32 bit) of the word device.	<input type="radio"/>	<input checked="" type="checkbox"/>
Data Type	Select the data type (signed BIN/unsigned BIN/Real) of word device	<input type="radio"/>	<input checked="" type="checkbox"/>
Range	Click on the Range button to set conditional expression for the word device range.	<input type="radio"/>	<input checked="" type="checkbox"/>

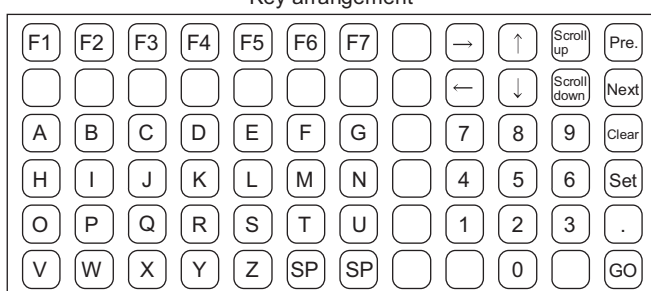
***2 Initialize (GOT-A900 series only)**

Initializes the set data of the operation panel to be suitable for the key arrangement of the Kanaden operation panel.

The arrangement of input signal



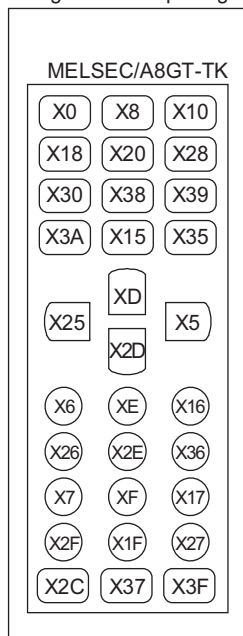
Key arrangement



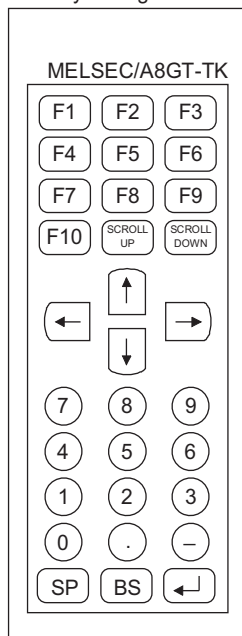
***3 Initialize mode A8GT-TK (GOT-A900 series only)**

Initialize the set data of the operation panel to be suitable for the key arrangement of the A8GT-TK ten-key operation panel.

Arrangement of input signal



Key arrangement



12.3.4 Precautions

This section provides the precautions for using the operation panel function.

1 Precautions for drawing

- (1) The maximum number of the operation panel function settable for the whole project
 - GOT-A900 series : 1
 - GOT-F900 series : 1

2 Precautions for OS

- (1) Extended function OS (specific for GOT-A900 series)
When the operation panel function is used, install the extended function OS to GOT.

3 Precautions for hardware

- (1) Required optional device (specific for GOT-A900 series)
The following devices are needed when using the operation panel function.

GOT used	Required device
A985GOT, A97*GOT, A960GOT, A956WGOT, A95*GOT	External I/O interface module

- (2) GOT with key pad/function keys (specific for GOT-F900 series)
The key pad/function keys are provided for F920GOT-K (key pad), F930GOT-K (key pad) and ET-900 (function key).

4 Precautions for use

- (1) The operation panel function cannot be applied to:
The utility, system monitor function, ladder monitor function, special function module monitor function, list editor function, motion monitor function, servo amplifier monitor function.
- (2) Action of operation panel function
 - (a) Each key executes the set operation with no relation with GOT screen display.
 - (b) When a touch switch on the GOT screen and a key on the operation panel are pressed simultaneously, both instructions are valid. In this case, the operation detected first will be executed first.

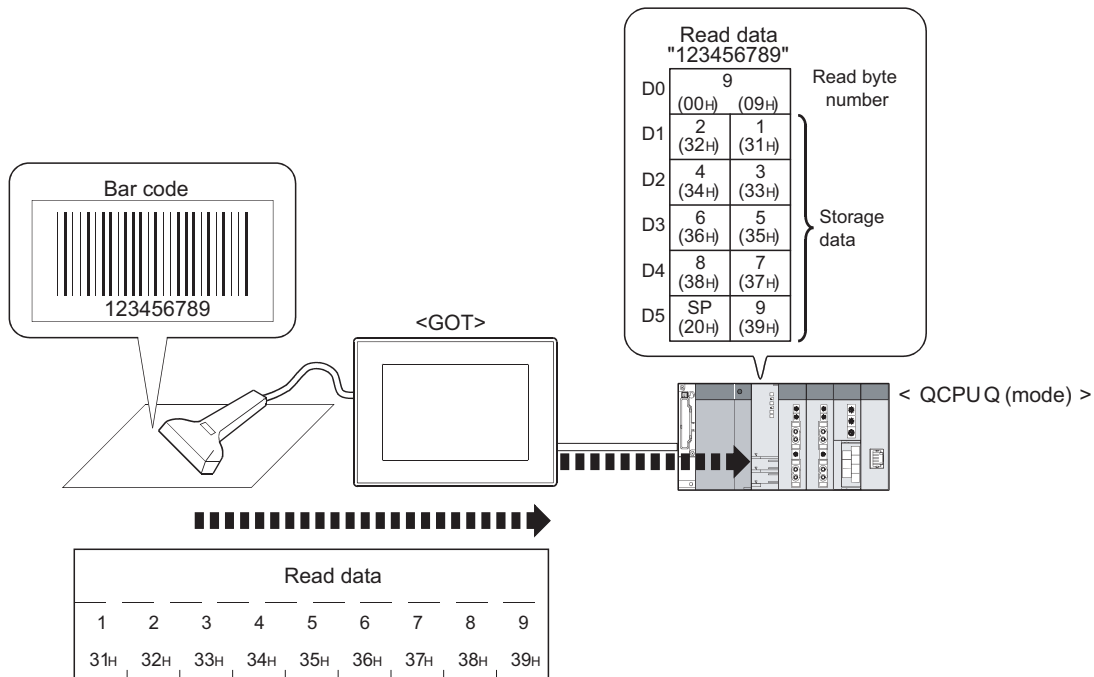


12.4 Bar Code Function



This function is to connect the bar code reader to GOT and write the data read by the bar code reader into PLC CPU.

Bar code reader is connected to the RS-232C interface at the bottom of GOT which is generally used for download of the monitor screen data.



12.4.1 Arrangement and settings

The following explains the required setting and function for using bar code function.

1 Data storage and device points read by bar code reader

- (1) Device that data can be stored
The data can be stored into word device.
Word of bit device cannot be specified.
- (2) Max. No. of device points
Max. 32 points can be set.
(The data read by bar code reader can be stored in max. 31 points of device.)
- (3) Data stored in the device
Data read by the bar code reader is written into PLC CPU devices as ASCII data.
Example: When the read data is "123456789"

(a) When the number of read data is less than the set device points

Setting (Storage device: D0, Data points: 8)

Write device	Stored data	ASCII data
D0	0009H	-
D1	3231H	21
D2	3433H	43
D3	3635H	65
D4	3837H	87
D5	2039H	␣9
D6	2020H	␣
D7	2020H	␣

␣.....Space

- Writes the bytes that have been read
- Writes the read data in the order of increasing bytes
- When byte number of the read data is odd, the space (20H) is written to higher byte of the last data. Also, 20H is written to the device exceed the read data. The set device points of data are written.

(b) When the number of the read data is more than the set device points

Setting (Storage device: D0, Data points: 4)

Write device	Stored data	ASCII data
D0	0009H	-
D1	3231H	21
D2	3433H	43
D3	3635H	65


- Writes the bytes that have been read
- Writes the read data in order of increasing bytes
- Discard the data beyond the set device points

12.4.2 Settings

- 1 Select [Common] → [Bar Code] from the menu.
- 2 As the setting dialog box will appear, make settings with reference to the following explanations.

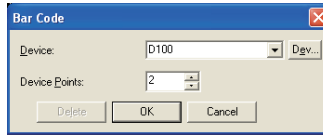
Remark


When making the setting in the project workspace

The setting dialog box can be displayed by double-clicking on  Bar Code in the project workspace.

12.4.3 Setting items of bar code function

Set the device in which the data read by the bar code reader is stored.



Items	Description	A	F
Device	Set the head device of those used for storing the data read by the bar code reader. ( Section 5.1 Device Setting)	<input type="radio"/>	<input type="radio"/>
Device Points	Set the points of device used for storing the read data (2 to 32)	<input type="radio"/>	<input type="radio"/>
Delete	Click the <input type="button" value="Delete"/> button to delete the settings.	<input type="radio"/>	<input type="radio"/>

12.4.4 Precautions

This section provides the precautions for using bar code function.

1 Precautions for drawing

- (1) Number of settable bar code function
Only one bar code function can be set for each project.
- (2) Usage of bar code function based on GOT connection type
GOT-A900 series:
The bar code function is applicable for any connection type of GOT.
However, the bar code function is not available when the transparent function or the servo amplifier monitor function is used.
GOT-F900 series:
The bar code function is available when the built-in RS-232C interface is not used.



Precedence of bar code function, servo amplifier monitor function and transparent function

Only one of the bar code function, servo amplifier monitor function and transparent function can be used.

The precedence is as follows:

High	← Precedence →	Low
Bar code function	Servo amplifier monitor function	Transparent function
Bar code setting in monitor screen data	Extended function OS for servo amplifier monitor function is installed in GOT	No data item

For example, the servo amplifier monitor function cannot be used even though the extended function OS for the servo amplifier monitor function is installed in GOT, when the bar code setting has been made in the monitor screen data downloaded to GOT.

- (3) Bar code that can be read
GOT is not available to two-dimensional code.
For the code that can be read, refer to the following technical news.



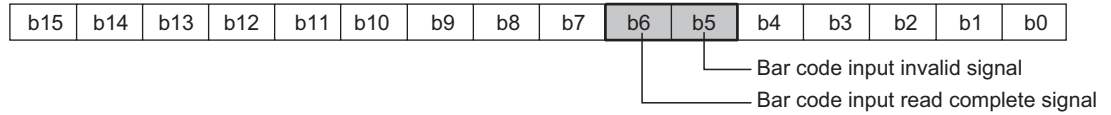
List of valid devices applicable for GOT900 series

(4) System information setting

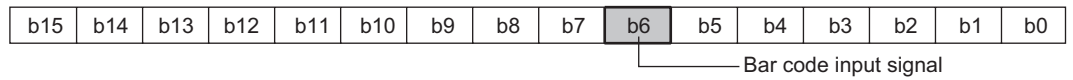
If the following system signals are ON, the data read by the bar code reader is not written to PLC CPU.

(a) GOT-A900 series

System signal 1

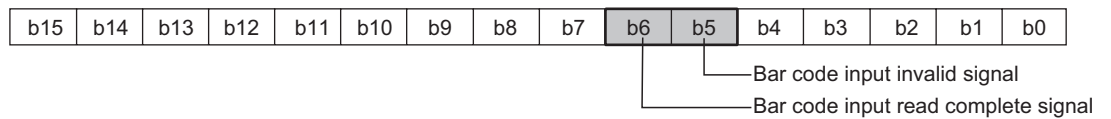


System signal 2

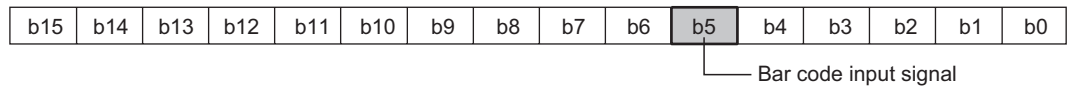


(b) GOT-F900 series

System signal 1



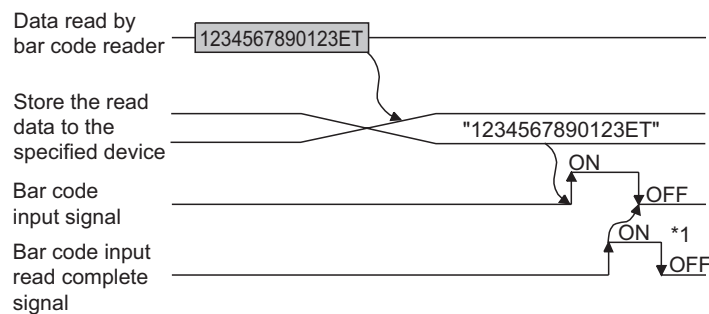
System signal 2



Timing of input signal and input read complete signal

- (1) Bar code input signal (system signal2.b6)
When the data read by the bar code reader are stored in the specified device, this signal is turned ON.
To turn it OFF, turn the bar code input read complete signal ON.
- (2) Bar code input read complete signal (system signal1.b6)
Turning ON this signal turns OFF the bar code input signal.
This signal is to be turned OFF by users.

<Relation between bar code input and signals>



*1 Turn the bar code input signal and the bar code input complete signal OFF after reading bar codes. Otherwise, the bar code reader will not read data next time.

<Sequence program example (for QCPU)>

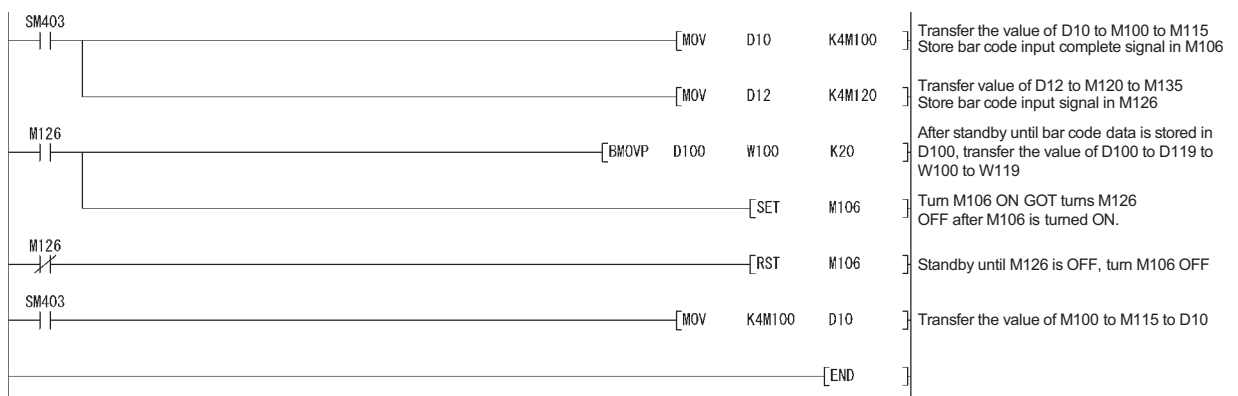
It is advisable to create a sequence program so that the bar code input read complete signal will turn OFF when the bar code input signal is turned OFF.

GT Designer2 setting

- System signal 1 D10 • Device D100
- System signal 2 D12 • Device points 20

Signal for using in sequence program

- Bar code input read complete signal M106
- Bar code input signal M126
- After Run, OFF for 1 scan only SM403




2 Precautions for OS

- (1) Extended function OS (specific for GOT-A900 series)
To use the bar code function, install the extended function OS (bar code) in GOT.

3 Precautions for hardware

- (1) GOT that can not use the bar code function
The bar code function is not available for the GT SoftGOT2, A950 handy GOT, F920GOT-K and F940 handy GOT.
- (2) System configuration
Refer to the following manuals for the system configuration for using the bar code reader.

 GOT-A900 Series User's Manual (Connection System Manual)

 GOT-F900 Series Hardware Manual (Connection)



12.5 Sound



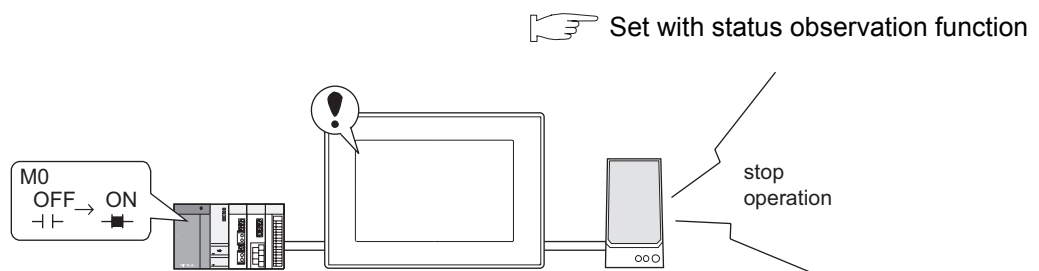
This section explains the function to output sound from the speaker connected to GOT.
Sound output is available for the following functions

- Touch switch function
- Status observation function
- Time action function

For using the sound output function with the GOT, register sound files on the GOT with the settings in this section.

Example:

If the set conditions are satisfied, sounds are output.




If the set conditions are enabled, (M0 changes from OFF to ON), output the specified sound file.

12.5.1 Settings

- 1 Select [Common] → [Sound Files] from the menu.
- 2 As the setting dialog box will appear, make the settings with reference to the following explanation.

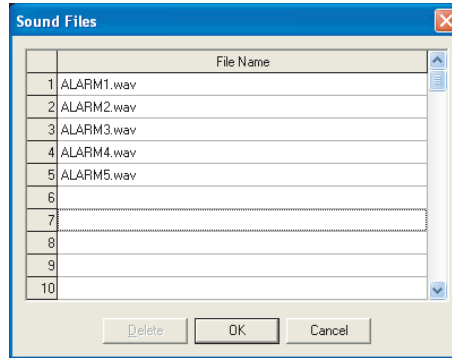
Remark

When making the settings in the project workplace

The setting dialog box can be displayed by double-clicking on  in the project workplace.

12.5.2 Setting items

Register sound files to be output with the GOT.




Items	Description	A	F
Sound Files	Click on the column of file names to select a sound file to be output. Up to 100 sound files can be set.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete	Deletes the selected sound file.	<input type="radio"/>	<input checked="" type="checkbox"/>

12.5.3 Precautions

This section provides the precautions for using the sound function.

1 Precautions for drawing

- (1) The number of sound function data that can be set
Up to 100 sound function data can be set for one project.
- (2) When executing sound output with touch switch
Make the settings in the auxiliary setting to play WAV sound files by touching the touch switch.

 Section 4.5 Auxiliary Settings

- (3) Sound files:
 - (a) The sound files data that can be played in GOT are limited within 8 seconds.
Extra sound part exceeding the limit of 8 seconds will be cut.
 - (b) Any change in data of WAV files that have been set as sound files will not be updated.
To update the change in data, reset it again as WAV sound file in the sound function setting.
 - (c) Sound files available for GOT are in the audio format of "8.000KHz, 16 bits, and mono"; while most of sound files are generally created in different format.
Therefore, in order to use the general sound files for GOT, it is necessary to convert the audio format to "8.000KHz, 16-bit and mono" with general sound editing software such as the sound recorder in Windows® 98.



Hint!

Sound files conversion method with Window® 98 sound recorder

- 1 In Windows®, select [Start] → [Program] → [Accessory] → [Entertainment] → [Sound Recorder] to start the sound recorder. (If there is no Sound Recorder, add it from Windows® 98 Add/Remove Programs)
- 2 Select [File] → [Open], and then select the sound file to be converted.
- 3 Select [File] → [Property], and then click on [Convert Now].
- 4 In the [Sound Selection] dialog box, set the attribute to [8.000KHz, 16-bit, and mono] in the list box.
- 5 Save (Save or Save as) the converted file.

2 Precautions for OS

(1) Extended function OS

Make sure that the extended function OS (sound) is installed in GOT when using the sound function. (The installation is not required when using GT SoftGOT2)

3 Precautions for hardware

(1) Unusable GOT

The sound function is not available for A95*GOT and A956WGOT.

(2) Required optional devices

The following device is required when using the sound output function

GOT	Required device
A985GOT(-V), A97*GOT, A960GOT	Memory board

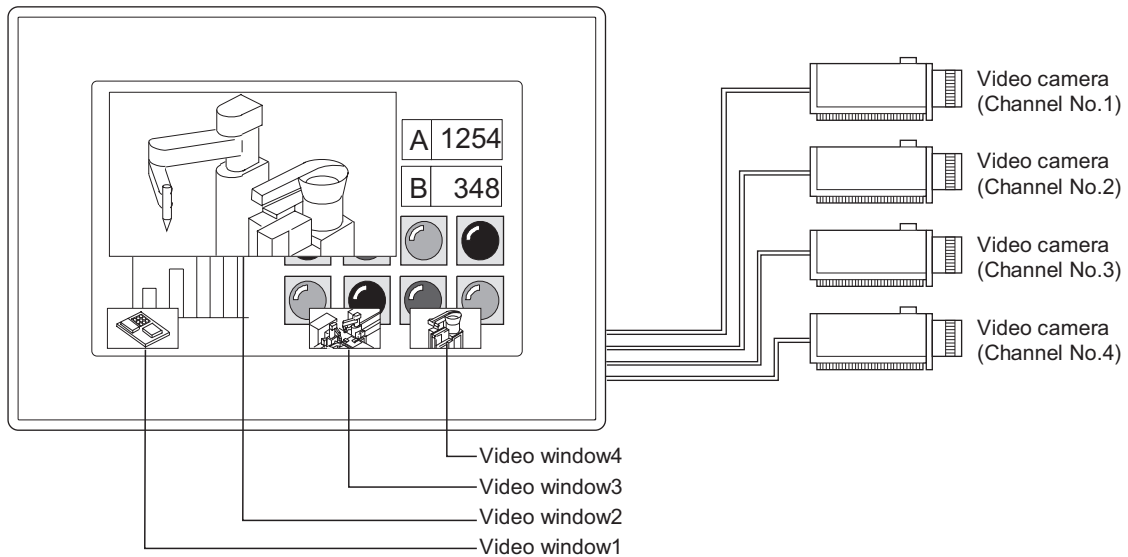
(3) Other devices

The external speaker is required for sound output.

12.6 Video



This section explains the function that displays the image taken by video camera on the video window.
As the video window operates independently of other screens, base screen can be switched while the video window is opened.



Video operates in full mode (☞ This section 5) or clip mode (☞ This section 6).

<Difference between full mode and clip mode>

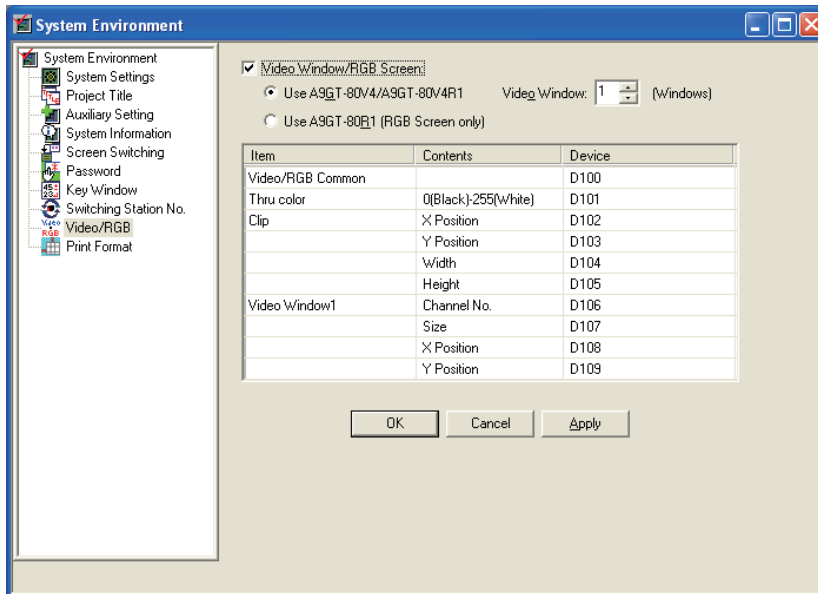
Items	Full mode	Clip mode
Overview	Display the total image	Display a part of the image in its original size.
Video window resolution (dots)	720 × 480 or 640 × 480	64 × 64 to 720 × 480
Display size change	100%, 50%, 25% of the original size	Unchangeable (fixed at 100%)
Number of screens	4	1 (video window only)

1 Method of displaying video window

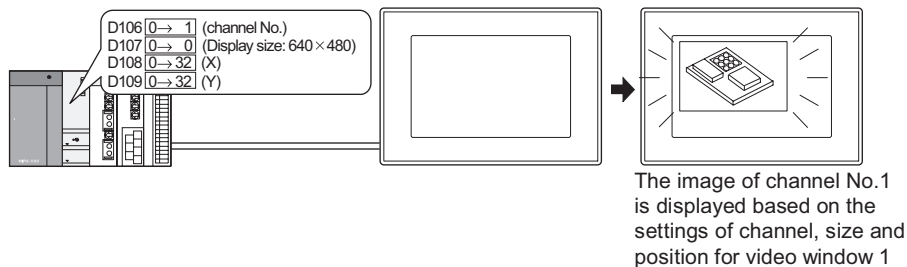
Video window is displayed when 1 to 4 is stored into the video window channel No. device.
Video window is closed when 0 is stored into the video window channel No. device.
(There is no close button on video window)

Example: When the image of channel No.1 is displayed on video window1.

<GT Designer2 setting>



<Operation>

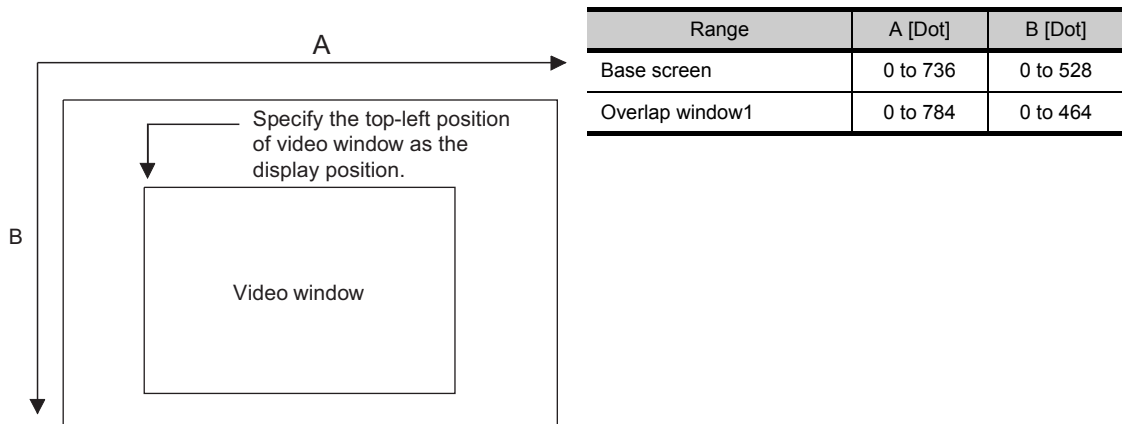


The size and position of video window

The size and position of video window can be controlled based on the device (video window device, video window X/Y device) value.

2 Position of video window

Video window can be arranged on the base screen and overlap window1.
The position of video window can be specified within the following range.



Point

Display of video screen

- (1) Setting of display position
Set the display position with the multiple of 16 (dot).
Even if display position is not set with the multiple of 16 (dot), the screen will be displayed automatically with the multiple of 16.
- (2) Video window on base screen
Even if video window is displayed out of the base screen, it will be arranged to fit to the base screen automatically.
- (3) Video window on window screen
If video window is displayed out of the overlap window1, the video image cannot be displayed.
- (4) Order of laying video screen
Video window can be displayed over or under overlap window (1, 2) or test window according to the video/RGB common device settings.
(☞ Section 12.6.2 Setting items of video)
However, the followings will be displayed over video window.
 - Floating alarm
 - Key window
 - Comment window
 - Confirmation or similar message displayed on GOT

3 Method of moving video window


There are no move buttons in video window.

To move video window, change the device value set in display position (X-coordinate, Y-coordinate). If overlap window is touched to move while multiple windows are being moved frequently, the overlap window may not be moved.


In this case, make sure to move the overlap window by device, or move it after the video window is moved.

4 Arranging video window on overlap window

- (1) Video window can be arranged on overlap window1 only.
- (2) The windows displayed over the overlap window1 will appear over the video window. For the display order of windows, refer to the following.

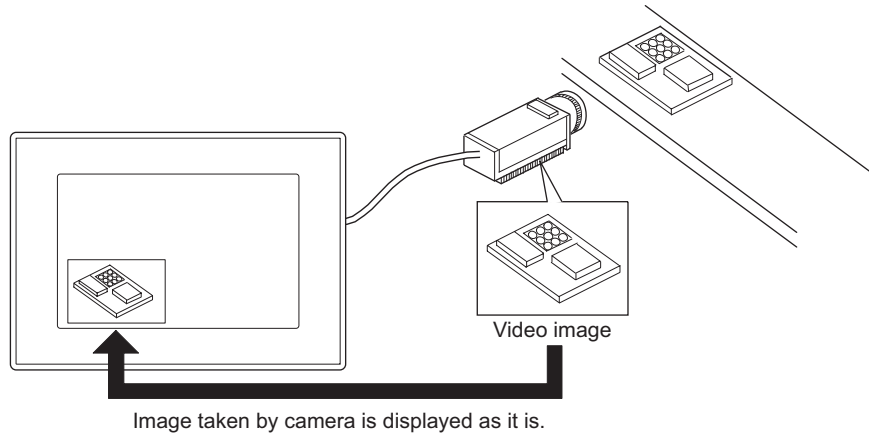
 Section 2.1.3 Whole screen specifications

- (3) When video window is arranged on overlap window1, the video window will automatically execute transparent processing. (Refer to [8](#) for transparent processing.)
Pictures or objects on the overlap window may be displayed visible in the background of video window.
- (4) When video window is displayed, if arrangement setting (base screen/overlap window1) is changed, the video window may be closed temporarily and it will be opened at the specified position (base screen/overlap window1).
- (5) The size of a video window placed over an overlap window is not changed even when the video window is touched.
To change the size of a video window, change the value of the device that has been set for window size change.

 Section 12.6.2 Setting items of video)

5 Full mode

In full mode, the image taken by video camera will be displayed on GOT as it is.
When full mode is applied, up to 4 screens can be displayed simultaneously on a video window.
The image can be switched to other one on one video screen by switching the channel No.



(1) Resolution (number of valid pixels) and display size

In full mode, image can be displayed in 720×480 dots or 640×480 dots. And the size of each image can be changed in 3 levels (100%, 50% and 25%).

Display size	Resolution of 720×480 dots	Resolution of 640×480 dots
100%	720×480 dots	640×480 dots
50%	360×240 dots	320×240 dots
25%	180×120 dots	160×120 dots

*1 The resolution is based on the same setting as channel.

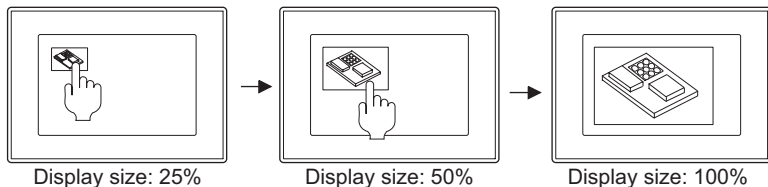
(2) Change display size

The video window size can be changed by the following methods.

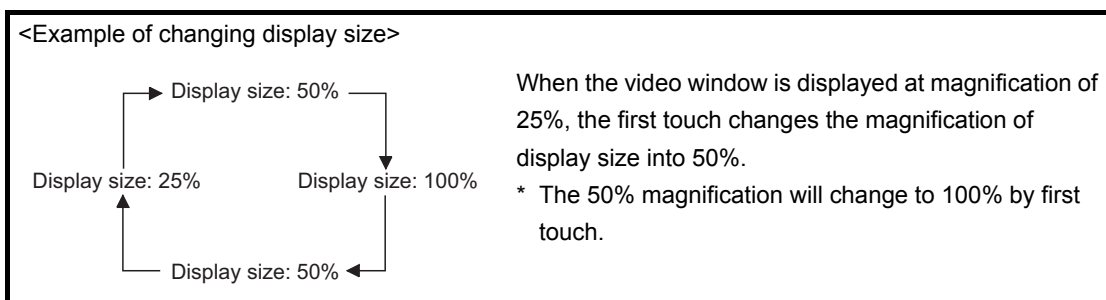
(a) Change by touching video window

(Size change by touching can be disabled by turning [Video/RGB Common] device b4 ON.

(Refer to Section 12.6.2 2)

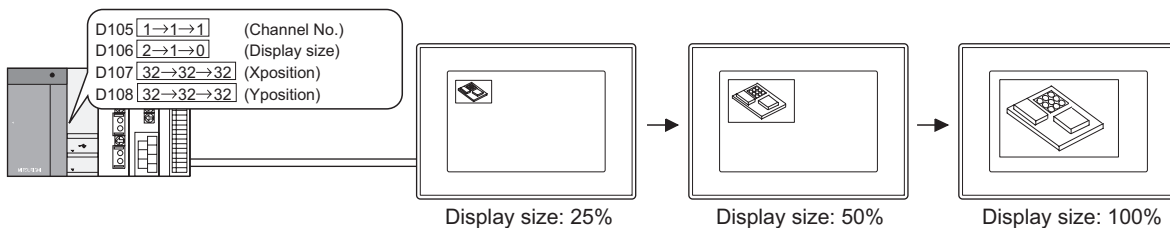


When video window display size is changed by touching, the window will change as follows.



(b) Change by writing value to the display size device

(The magnification will differ according to the written value ••• 0: 100% 1: 50% 2: 25%)

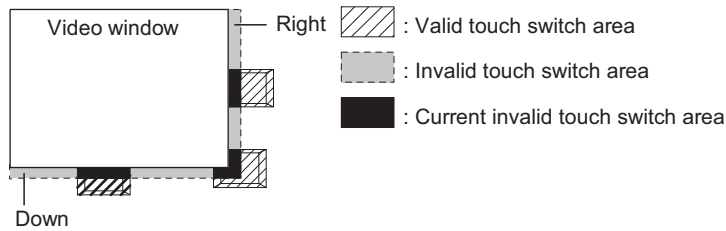


(3) Display of multiple video windows

- (a) The most lately displayed video window is located in the front.
- (b) The video window, of which display position or size is changed, will be located in the front.
- (c) As for overlapped video windows, the hidden one will be brought to the front by touching. If transparent processing is executed, video windows do not operate as above.
- (d) If it is intended to display the image of the same channel on multiple video windows, it will be displayed on the currently specified video window only. Other video windows will be displayed in blue.

(4) Invalid area of the touch switch around video window

According to the size of displayed video window, the following areas are invalid for touch switches.



Display size	Resolution 720 × 480 dots	Resolution 640 × 480 dots
100%	720 × 480 dots (No invalid area)	640 × 480 dots (No invalid area)
50%	360 × 240 dots (Invalid area Right: 8 dots)	320 × 240 dots (No invalid area)
25%	180 × 120 dots (Invalid area Right: 12 dots, Down: 8 dots)	160 × 120 dots (Invalid area Down: 8 dots)



Precautions for full mode

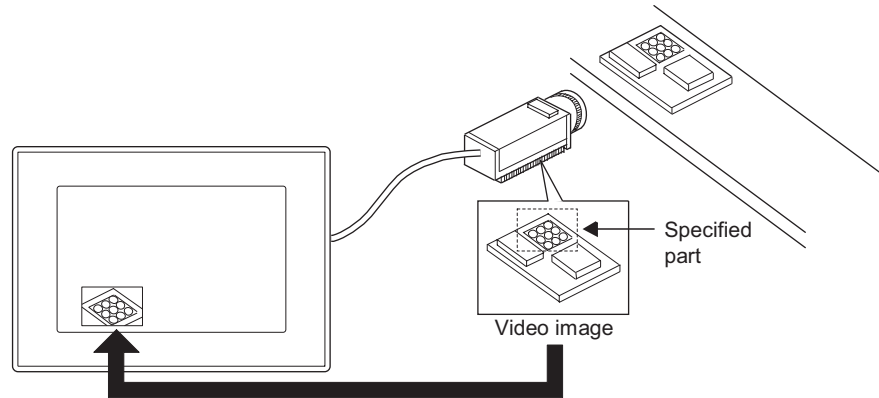
1. When returning the display size to the video window display size by touch operation, the display position will be returned to the video window display position.
2. If the resolution of a video image is higher than the resolution of a video window, a part of the image is not displayed in the video window.
The image display position can be adjusted by changing the setting for the video display setting items of the utility.
3. If the resolution of a video window displayed on the GOT is higher than that of the video image, in the window area where the video image is not displayed, bright points or indefinite colors are displayed.

For the method of selecting video window resolution, refer to Section 12.6.2.

6 Clip mode

This mode is used to specify one part (clip area) of the image taken by video camera to display it in actual size on GOT.

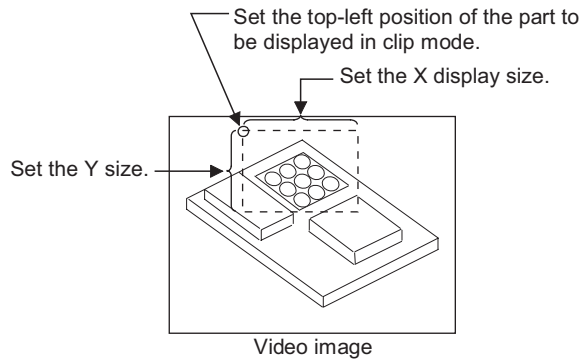
With this mode, the image can be displayed in actual size on the reduced display area of video window. It is applicable for video window 1; inapplicable for video window 2 to 4.



The specified part of video image can be displayed in actual size.

(1) Select clip area

When setting the clip area, specify the top-left position to be displayed on the video image, and Y (64 to 720 dots) and X (64 to 480 dots) size.



Point

Operations of video window 2 to 4 in clip mode

(1) Switched from "Full mode" to "Clip mode"

If full mode is switched to clip mode while video windows 2 to 4 are all opened, these windows will be erased forcibly.

(2) Switched from "Clip mode" to "Full mode"

If clip mode is switched to full mode, video windows 2 to 4 will be displayed based on the set channel No., display position and display size.

7 Still image

The video image displayed in full mode and clip mode can be switched to still image.

When displaying multiple video windows in full mode, all the windows are switched to still image.



Point

Precautions for using still image

(1) Invalid operations for still image

The following operations are invalid for still image.

To validate the operations, switch to animated image at first.

- Change of video window channel
- Change of display position
- Video window display
- Size change
- Erase of video window

(2) Video window on overlap window

Make sure not to move the overlap window, when the video window image arranged on the overlap window is set to still image.

Otherwise, the video image will not be displayed.

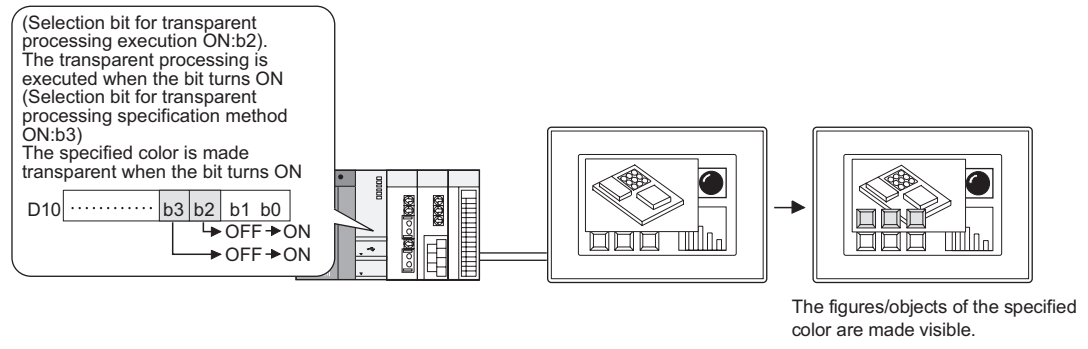
(3) When GOT is powered ON

When still image (when animated/still image selection bit is ON) is used, make sure not to power the GOT ON.

If powered ON, the video image will not be displayed.

8 Transparent processing

Specify the thru color to display the objects and shapes under the video window.
There are two processing methods: [Other Color Transparent] and [Specified Color Transparent].
When multiple video windows are displayed, all the windows execute transparent processing.



Example:

Selection bit for Thru color specification method: b3	Thru color	Display
OFF (make other color transparent)	0 (Black)	The shape and object of color other than black are visible on video window
ON (make the specified color transparent)	0 (Black)	Black shape and object are visible on video window

Point

When video window is arranged on overlap window
When video window is arranged on overlap window, even if the transparent processing selecting bit (b2) is OFF, the transparent processing will be executed automatically.

Hint!

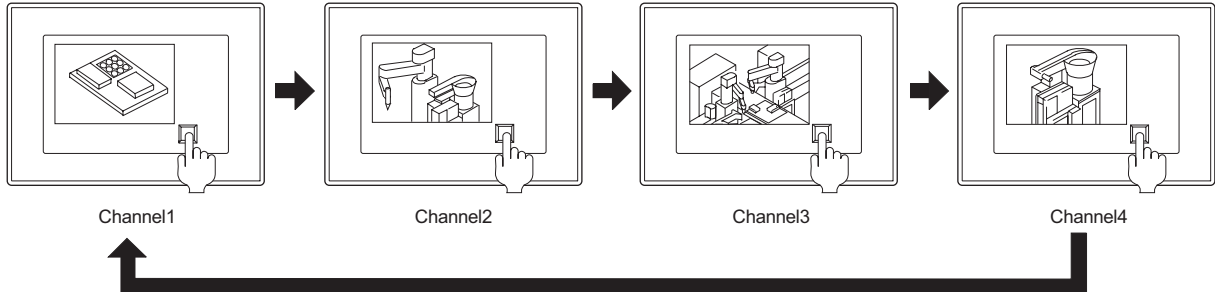
Touch switch and numerical/ASCII input under the video window
By executing the transparent processing, touch switch and numerical/ASCII input function under the video window will be usable.

9 Application example of video window

The following are examples of using video window.

(1) Switching channel by touch switch

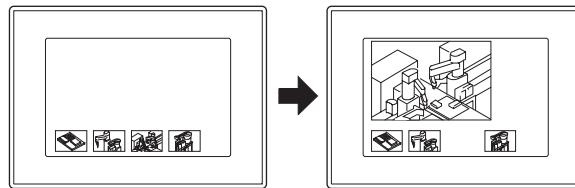
The channel on overlap window1 is switched whenever the touch switch is touched.



Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal (NTSC or PAL)	D106	1 → 2 → 3 → 4 → 1...Repeat (Channel No.)	D108	32 (X-coordinate)
		D107	0 (size)	D109	32 (Y-coordinate)

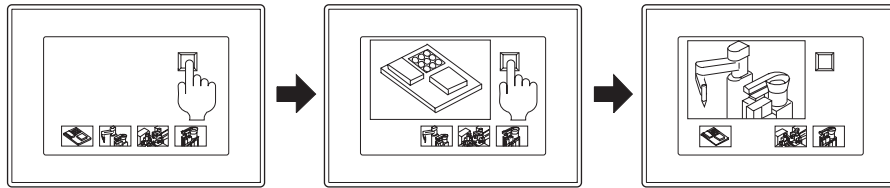
(2) Enlarging screen as necessary

(a) Display the windows in small size at the bottom of screen usually, and enlarge them as necessary. (The size can be changed by sequence program or touch switch)



Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal (NTSC or PAL)	D106	1 (Channel No.)	D114	3 (Channel No.)
		D107	2 (Size)	D115	2 → 0 (Size)
		D108	32 (X-coordinate)	D116	384 → 32 (X-coordinate)
		D109	480 (Y-coordinate)	D117	480 → 0 (Y-coordinate)
		D110	2 (Channel No.)	D118	4 (Channel No.)
		D111	2 (Size)	D119	2 (Size)
		D112	208 (X-coordinate)	D120	560 (X-coordinate)
		D113	480 (Y-coordinate)	D121	480 (Y-coordinate)

(b) Display windows in small size at the bottom of screen, and enlarge them in order as necessary. (The size can be enlarged by touch switch or script)

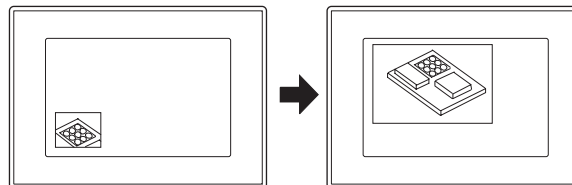


Device	Setting	Device	Setting	Device	Setting
D100	Set video input signal (NTSC or PAL)	D106	1 (Channel No.)	D114	3 (Channel No.)
		D107	2 → 0 → 2 (Size)	D115	2 (Size)
		D108	32 → 32 → 32 (X-coordinate)	D116	384 (X-coordinate)
		D109	480 → 0 → 480 (Y-coordinate)	D117	480 (Y-coordinate)
		D110	2 (Channel No.)	D118	4 (Channel No.)
		D111	2 → 2 → 0 (Size)	D119	2 (Size)
		D112	208 → 208 → 32 (X-coordinate)	D120	560 (X-coordinate)
		D113	480 → 480 → 0 (Y-coordinate)	D121	480 (Y-coordinate)

Create the script that repeats the following operations whenever the touch switch is touched.

- 1) Window1 Small → Big
- 2) Window2 Big → Small
Window2 Small → Big
- 3) Window3 Big → Small
Window3 Small → Big

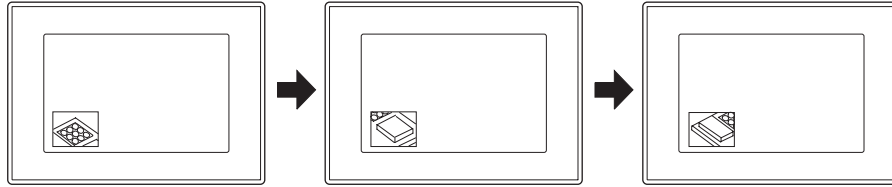
(c) Display only one part of video image at the bottom of screen usually, and display the whole video image as necessary. (The full mode and clip mode can be switched by sequence program or touch switch)



Device	Setting	Device	Setting	Device	Setting
D100	Full mode/Clip mode selection D100.b0 ON → OFF	D101	70 (Clip X-coordinate)	D105	1 (Channel No.)
		D102	50 (Clip Y-coordinate)	D106	0 (Size)
		D103	256 (Clip width)	D107	32 (X-coordinate)
		D104	256 (Clip height)	D108	400 → 32 (Y-coordinate)

(3) Changing display target part of video image

Display the specified part of video image at the bottom of screen usually, and change the display target part as necessary. (The X/Y-coordinate used in clip mode can be changed by sequence program or touch)



Device	Setting	Device	Setting	Device	Setting
D100	Select clip mode	D101	70 → 90 → 80 (Clip X-coordinate)	D105	1 (Channel No.)
		D102	50 → 60 → 20 (Clip Y-coordinate)	D106	0 (Size)
		D103	256 (Clip width)	D107	112 (X-coordinate)
		D104	256 (Clip height)	D108	112 (Y-coordinate)

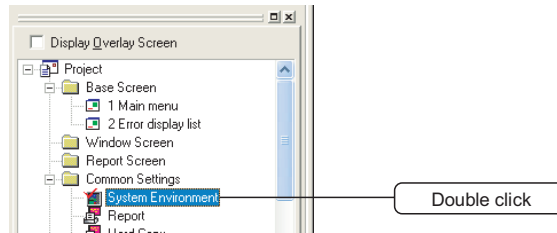
12.6.1 Settings

- 1 Select [Common] → [System Environment] from the menu.
- 2 Select [Video/RGB] on the system environment dialog box.
- 3 As the setting dialog box is displayed, make the setting according to the following explanation.

Remark

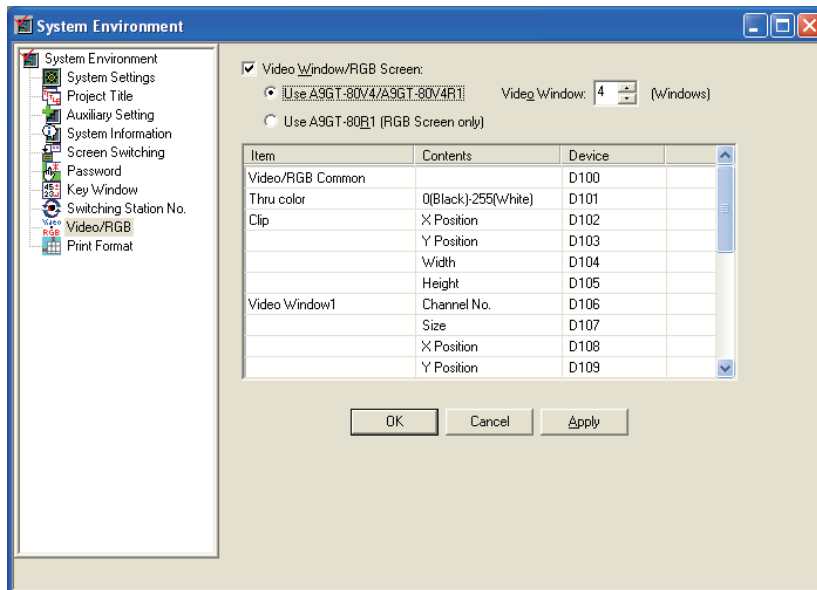
Setting in project workplace

Double click on [System Environment] to display the system environment dialog box. And then, double click on Video/RGB.



12.6.2 Setting items of video

Set the device used for video.
This dialog box is common to Video/RGB.



Items	Description	A	F
Video Window/RGB Screen	<p>Check this item to use video window or RGB screen.</p> <p>In the case of A9GT-80V4/ A9GT-80V4R1: Check this item to use video window only or use both video window and RGB screen. Then, set the number of video windows to be video-displayed.</p> <p>In the case of A9GT-80R1 (specific for RGB screen) Check this item to use RGB screen.</p>	○	×
Video/RGB	<p>Set the device that displays video window/RGB screen.</p> <p>If video/RGB common device is set, the devices will be set in the following items automatically. (When [Use A9GT-80R1 (RGB Screen Only)] is selected, only video/RGB common device is set) The value of the device used for displaying video/RGB screen is handled as 16-bit binary value.</p> <p>For the details about Video/RGB setting list, refer to 1 and 2 in this item.</p>	○	×

1 Device setting items of GT Designer2

Following table explains the device setting items in video/RGB setting list.

Items	Description	Settings
Video/RGB Common *1	----	This device is to control video window and RGB screen operation. (Refer to 2 for details of the device)
Thru Color	0 (Black) - 255 (White)	Specify color when executing transparent processing.
Clip	X position	Specify the X-coordinate to display video image in clip mode
	Y position	Specify the Y-coordinate to display video image in clip mode
	Width	Specify the width of clip image
	Height	Specify the height of clip image
Video Window1 *2	Channel No.	Specify the channel No. to be displayed in video window1. (0 to 4)
	Size *3	Specify the size of video window. (0: 100% display, 1: 50% display, 2: 25% display)
	X position	Specify the X-coordinate to be displayed on video window
	Y position	Specify the Y-coordinate to be displayed on video window

*1 When displaying RGB screen, the settings other than [Video/RGB Common] device are not required.

*2 Set video window 2 to 4 for multiple video windows setting. (The settings are the same as video window1.)




*3 When the display size is changed by touching video window, the set device value will not be changed.

2 Setting items of [Video/RGB Common] device

The following information will be stored in the device specified in [Video/RGB Common].

Control the operation of video window/RGB screen by turning each bit device ON/OFF.

The settings for video window are common to video window 1 to 4.

Bit position	Description	Bit status	Remarks
b0	Full/Clip mode selection	ON : Select clip mode OFF : Select full mode	Valid when displaying video window Changeable when video window is displayed
b1	Video window arrangement screen selection	ON : Select overlap window1 OFF : Select base screen	Execute transparent processing automatically when b1 turns ON
b2	Transparent processing selection	ON : Execute transparent processing OFF : Do not execute transparent processing	 Section 12.6 8 Transparent processing
b3	Thru color specifying method selection	ON : Make specified color transparent OFF : Make other color transparent	
b4	Select whether to change/keep display size when touching video window	ON : Do not change size OFF : Change size	Valid when opening video window Changeable when video window is displayed
b5	Animated/still image selection *1	ON : Still image OFF : Animated image	 Section 12.6 7 Still image
b6	Display priority selection of video windows	ON : Display video window in front of overlap window and test window OFF : Display video window behind the overlap window and test window	Valid when video window is opened Changeable when video window is displayed
b7	Disabled	----	----
b8	Video input signal (type) selection	ON : Input by PAL OFF : Input by NTSC	Valid when opening video window is displayed for the first time after GOT power is turned ON Unchangeable after the above operation
b9	Video image resolution selection	ON : Select 720 × 480 dots OFF : Select 640 × 480 dots	Valid when video window is displayed for the first time after GOT power is turned ON Unchangeable after the above operation
b10 to b14	Disabled	----	----
b15	Display/hide RGB screen *2	ON : Display RGB screen OFF : Display GOT monitor screen	 Section 12.7 RGB

*1 When it is ON with other bits, the operations of other bits will not be reflected. (b5 has a higher priority than other bits)

*2 When the screens of utility, system monitor function, ladder monitor function, special function module monitor function, network monitor function and list editor function are displayed on GOT, they cannot be switched to the RGB screen even if the bit turns ON.

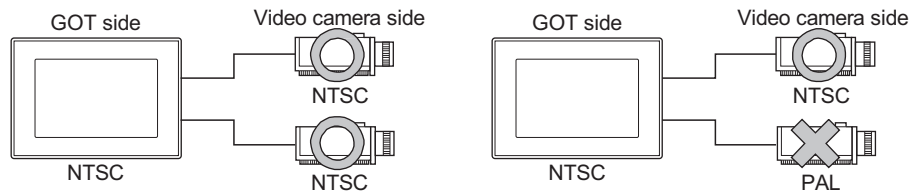
Switch to the RGB screen after all the functions are completed.

12.6.3 Precautions

This section provides the precautions for using video function.

1 Precautions for drawing

- (1) The number of video function objects that can be set.
Only one object can be set for one project.
- (2) Precautions for setting
 - (a) Objects cannot be arranged on video window
 - (b) When using multiple video cameras, make the same video signal (NTSC/PAL) setting for them.
If the video signal is different from that specified in GOT, the video image may not be displayed correctly.
Example:



2 Precautions for hardware

- (1) Required extended device
To use video function, the following device is required.

GOT	Required device
A985GOT-V	Video input interface module Video/RGB hybrid interface module

3 Precautions for use

- (1) Display video image
 - (a) If cable is disconnected or camera is powered OFF and video signal is not input to the specified channel, video image cannot be displayed.
 - (b) The width of the video image is 1.1 x longer compared to the actual image.

12.7 RGB



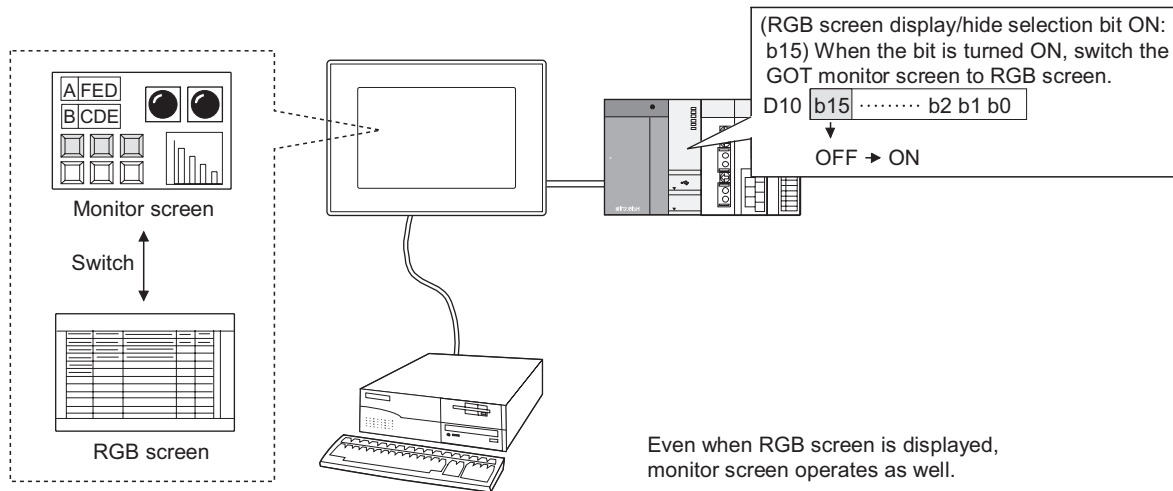
This function is used to display PC screen on GOT.

When using RGB screen, select SVGA (800 × 600 dots) or VGA (640 × 480 dots)

1 Method of displaying RGB screen

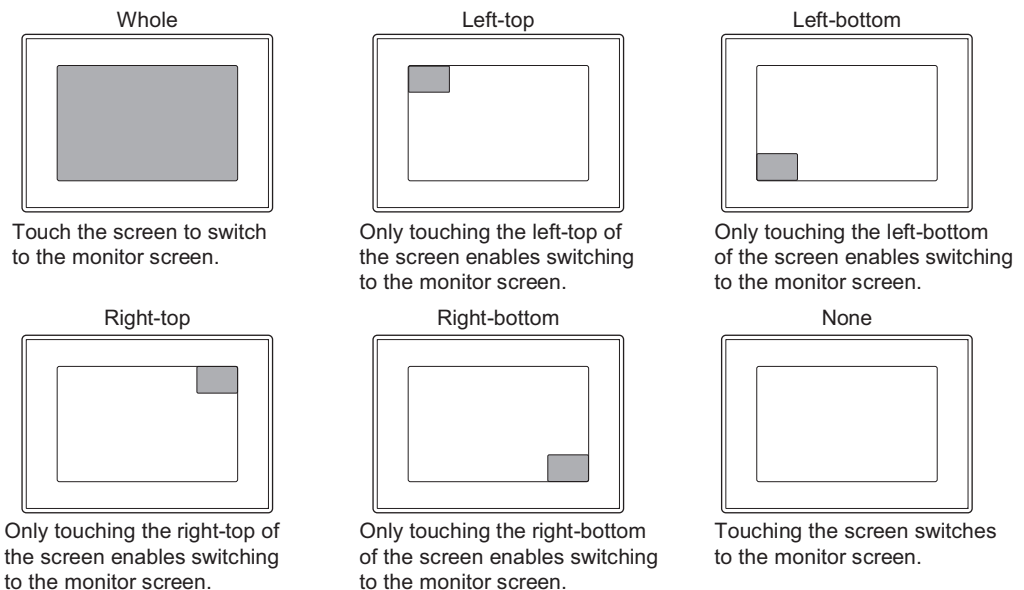
RGB screen is switched to/from GOT monitor screen on PC according to the ON/OFF status of RGB screen display/hide selection bit (the bit device within word device).

(GOT monitor screen and RGB screen cannot be displayed simultaneously.)



- (1) Method of switching the RGB screen to the monitor screen
The monitor screen can be called by touching RGB screen.
Select the valid touch area within the GOT utility.
Refer to the following manual for GOT utility

☞ GOT-A900 Series Operating Manual (Extended • Option Functions Manual)



- (2) Precautions for switching to GOT monitor screen by touching RGB screen
 When switching to GOT monitor screen by touching RGB screen, the selection bit status of RGB screen display/hide will not turned OFF.
 This keeps the selection bit of RGB screen display/hide ON, and RGB screen cannot be called.
 Therefore, when switching to GOT monitor screen by touching RGB screen, make sure to turn OFF the selection bit of RGB screen display/hide.

Using the script function enables the selection bit status of RGB screen display/hide to turn OFF, when the RGB screen is switched to the GOT monitor screen by touching the screen.

The following shows the setting of the above mentioned script function.

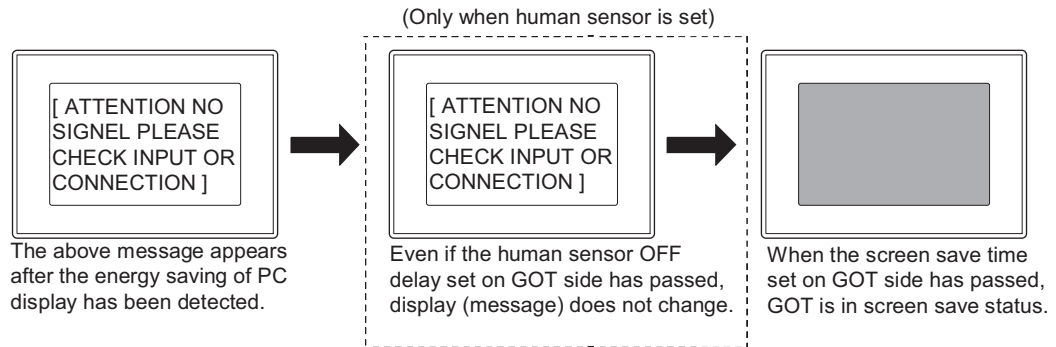
Setting items	Setting data
Screen switching device setting	Video/RGB common device: D100 (RGB screen display/hide selection bit: D100. b15)
System information setting	Write device: set 15 devices starting from D33
Script function setting	Type : Project script
	Trigger : Ordinary
	Data type: 16-bit signed BIN
	Script description: if([b:D100.b15]==ON) //If the selection bit of RGB screen display/hide is ON &&[w:D35]==-1){ //And the base screen No. storage area of system information is -1(RGB screen) [b:TMP0000.b0]=ON ; //Turn ON the flag displayed on RGB screen. } else{ if([b:TMP0000.b0]==ON){ //When switching the RGB screen to the monitor screen [b:D100.b15] = OFF ; //Turn OFF the selection bit of RGB screen display/hide [b:TMP0000.b0] = OFF ; //Turn OFF the flag displayed on RGB screen } } }

2 The screen save of RGB screen

When RGB screen is displayed, GOT screen save function will operate after energy saving function of PC monitor.

While energy saving function of PC monitor is not active, screen save function is disabled even if it has been set for GOT.

Execute RGB screen save is executed as follows.



<Relation between PC status and validity of GOT screen save>

PC status	Validity of GOT screen save
PC screen	Invalid (It is still PC screen)
Screen save action	
Energy saving function operation of the display	Valid (PC screen→Above message→GOT screen save status)

Remark

- (1) Screen save operation during monitoring
Screen save function operates when GOT monitor screen is displayed. Energy saving function of PC display is not relevant.
For the details of GOT screen save function, refer to GOT-A900 series Operating Manual (Extended • Option Functions Manual).
- (2) No RGB signal is input to GOT
When no RGB signal is input to GOT due to cable disconnection or other accident, the same screen as the energy saving PC display appears on the GOT display

3 VGA Display

When using VGA (640 × 480 dots) for display, since the resolution is different from that of A985GOT-V (800 × 600 dots), the margin parts will be displayed in black.

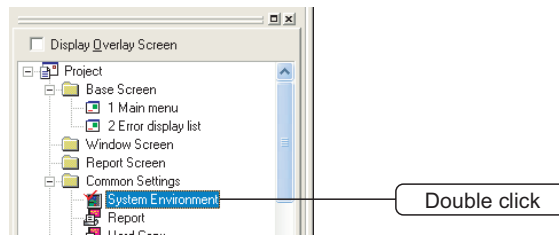
12.7.1 Settings

- 1 Select [Common] → [System Environment] from the menu.
- 2 Select [Video/RGB] from the tree on the system environment dialog box.
- 3 As the setting dialog box is displayed, make the setting according to the following explanation.

Remark

Setting in object workplace

Double click on System Environment to display the system environment dialog box.
And then, double click on [Video/RGB].



12.7.3 Precautions

This section provides the precautions for using RGB function.

1 Precautions for drawing

- (1) The number of RGB function objects that can be set.
Only one object can be set for each project.

2 Precautions for hardware

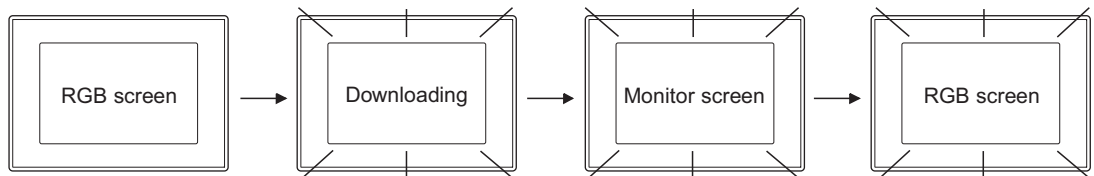
- (1) Required extended device
To use RGB function, the following device is required.

GOT	Required devices
A985GOT-V	RGB input interface module Video/RGB hybrid interface module

3 Precautions for use

- (1) Offline display
GOT screen is displayed offline (when downloading monitor screen data from GT Designer2)
If bit for RGB control is ON when GOT goes from offline to online, the RGB screen will appear after monitor screen is displayed once.

<Example of screen during download>



- (2) Object function when RGB screen is displayed
All the objects will operate even when RGB screen is displayed.
- (3) Hard copy function when RGB screen is displayed
Even though the hard copy function is used when RGB screen is displayed, printing RGB screen or storing BMP file to memory card is disabled.
(When hard copy is executed, the message, ATTENTION NO SIGNAL PLEASE CHECK INPUT OR CONNECTION will be hard-copied.)

13. OTHERS



13.1 Set Overlay Screen Function

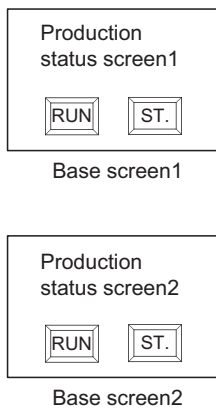


Other base screens or window screens can be called on the base screen and displayed as a single screen by using this function.

Setting the same objects onto multiple screens can save memory capacity.

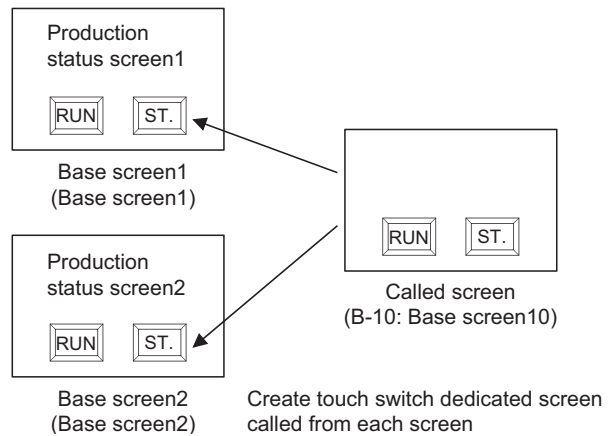
<When not using the set overlay screen function>

Set four touch switches. (2 on production status screen1 and 2 on production status screen2)



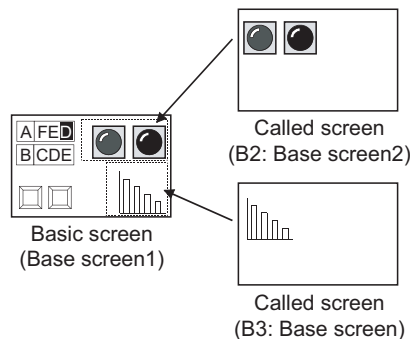
<When using set overlay screen function>

Set two touch switches. (2 on the set overlay screen) Touch switch setting is not required for production status screen1 and 2 because these touch switches have already been registered on the called screen.

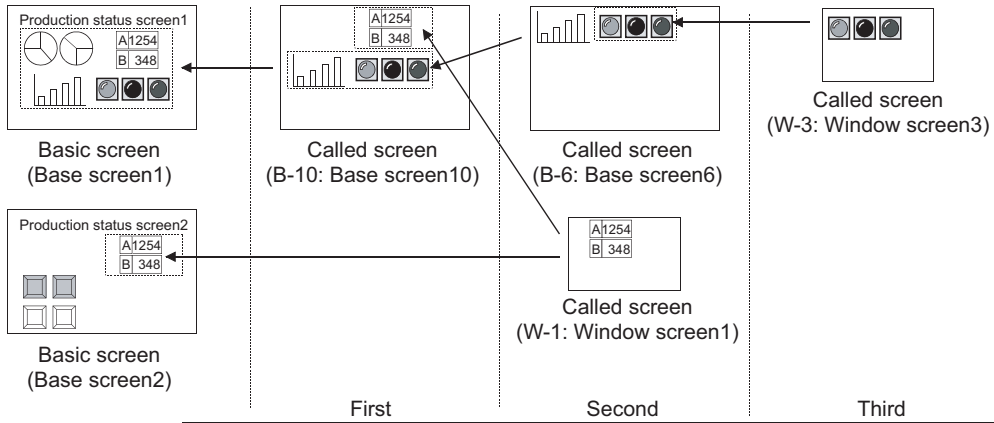


1 Multiple called screens can be displayed

Multiple called screens can be displayed on one basic screen.

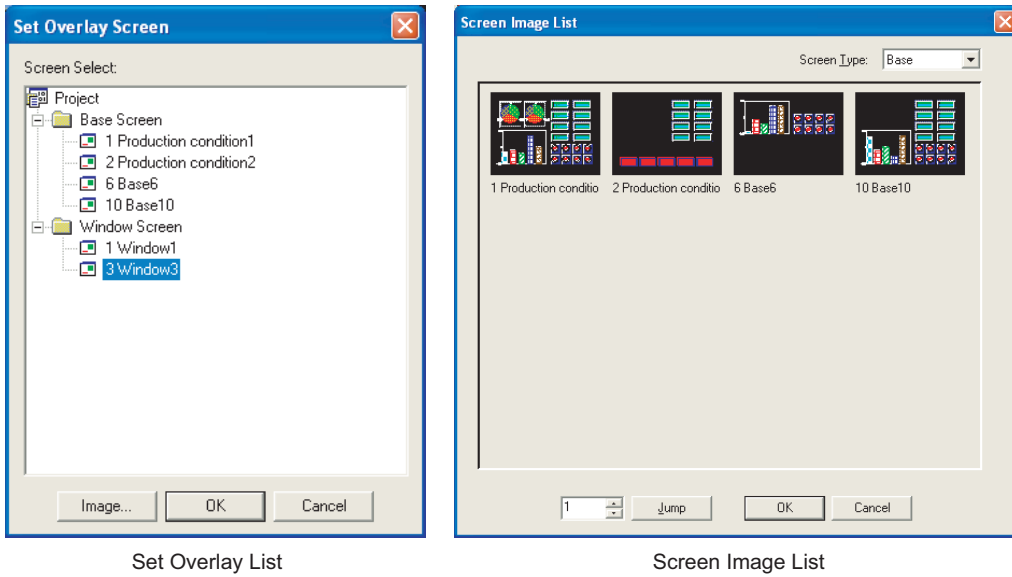


- 2 Up to the 16th nesting can be called (specific for GOT-A900 series)
As up to the 16th nesting can be set, screen setting with high flexibility can be realized.

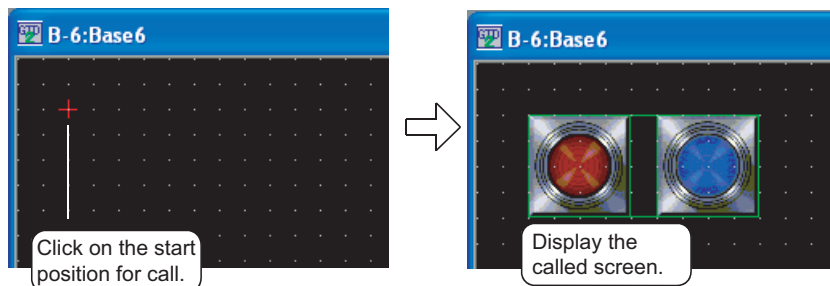


13.1.1 Arrangement and settings

- 1 Activate the basic screen.
- 2 Select [Object] → [Set Overlay Screen] from the menu.
- 3 In the Set Overlay Screen dialog box, select the screens to call up and click on the [OK] button. (Click on the **Image** button to display the Screen Image List dialog box.)



- 4 Arrange the called screen on the basic screen. (It will be arranged in the front for GOT-F900 series.)






(1) Editing of called screens

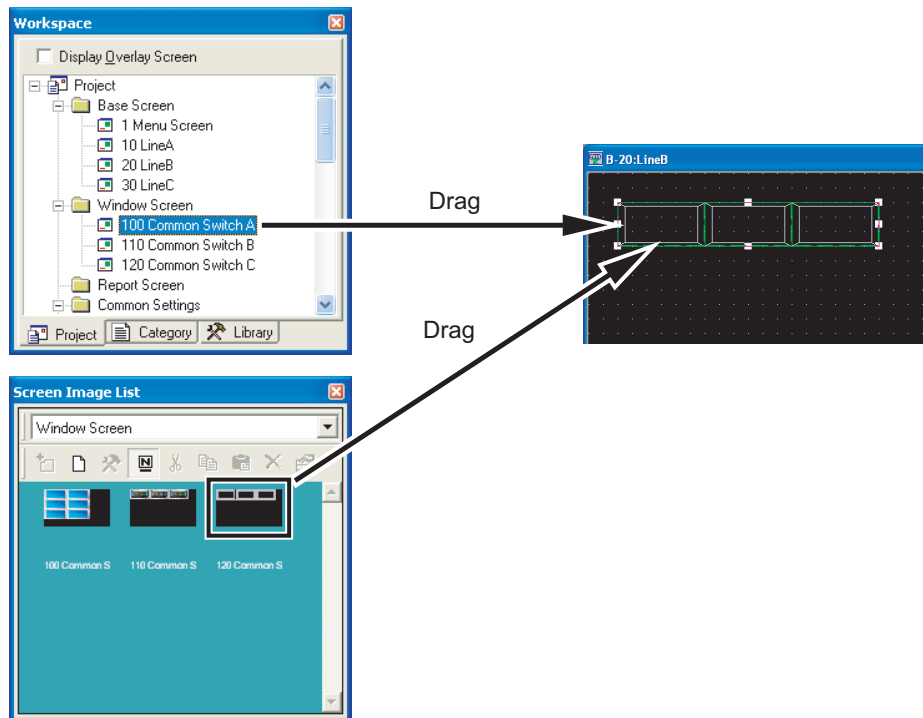
By double-clicking a called screen placed on the basic screen, the called screen can be opened to be edited.

(2) Easy setting method

The screen calling setting can also be made by dragging from the workspace or the Screen Image List window.

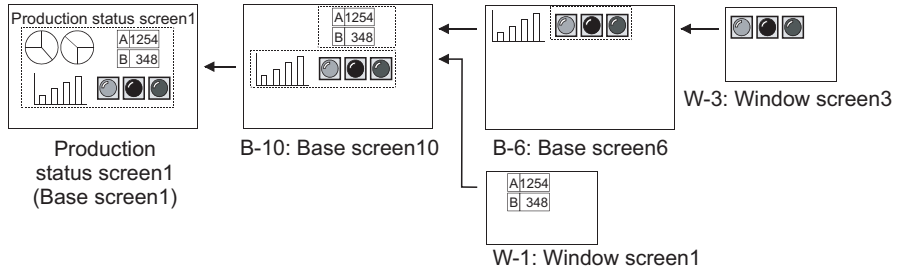
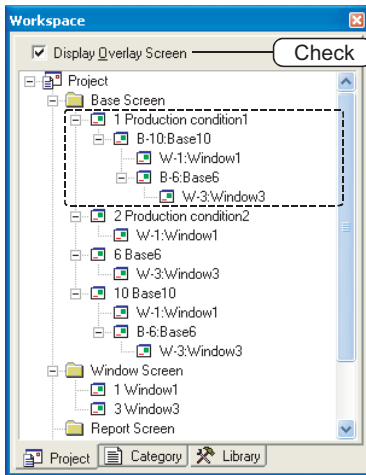
For details of the workspace or the Screen Image List window, refer to the following manual.

 [GT Designer2 Version&drsquare Basic Operation/Data Transfer Manual](#)



13.1.2 Check of the settings

The setting details of the call function can be checked in the project work space.

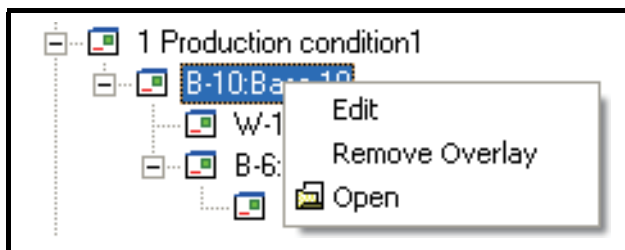


Items	Description	A	F
Display Overlay Screen	<p>Check this item to display the setting of the display overlay screen.</p> <p>When this is set, the called screen names will be displayed in a tree structure.</p> <p>Click on + or - to display or hide the called screen of the lower level.</p> <p>Right click on the called screen name to display the right-click menu*1.</p> <p>When the screen name is enclosed with "<>", the display overlay screen is set as a functional loop; therefore any screens after this point will not be called.</p>	○	×

For details of *1, refer to the following.

*1 Right-click menu

The following table explains the menu items displayed when right clicking the called screen name.



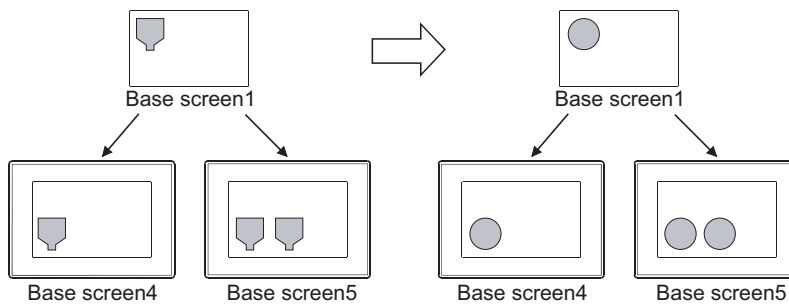
Items	Description	A	F
Edit	The setting of display overlay screen can be changed in the Display Overlay Screen dialog box.	○	○
Remove Overlay	Deletes the setting of the Display Overlay Screen.	○	○
Open	Opens the screen.	○	○

13.1.3 Precautions

This section provides the precautions for using the set overlay screen function.

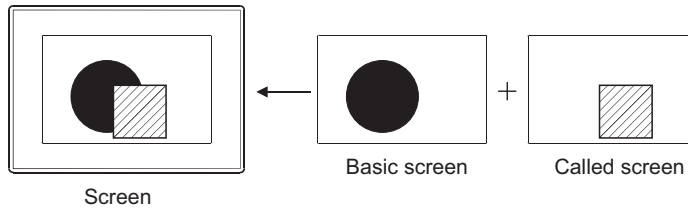
1 Precautions for drawing

- (1) Screen that can be called
GOT-A900 series: Base screen, window screen
GOT-F900 series: Base screen
- (2) Maximum number of called screens (The number of screens that can be called and displayed on the basic screen)
GOT-A900 series: 2047 screens
GOT-F900 series: 5 screens
- (3) Maximum nesting number (nesting of further call to the called screen)
GOT-A900 series: 16 (Not including the basic screen)
GOT-F900 series: Nesting is not available.
- (4) Edit of called screen
 - (a) The called screen cannot be edited on the basic screen.
Edit must be done on the called screen.
 - (b) Once the called screen is edited, it will be reflected to all of the basic screens where the edited screen is called.



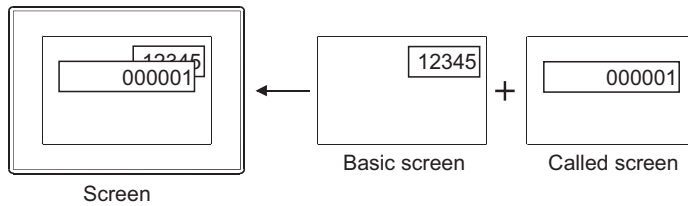
(5) When cascading shapes and objects
GOT-A900 series

Figure



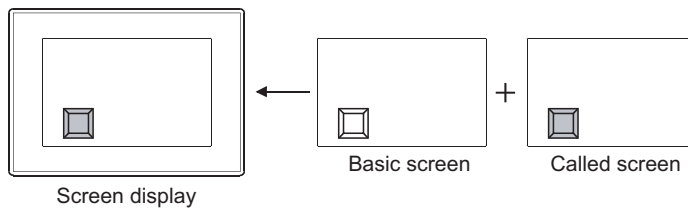
The figure of called screen is displayed in the front.

Object data




Among the objects of basic screen and called screen, the one whose value is changed will be displayed in the front.

Touch switch



Initially, the touch switch corresponding to the latest screen will be displayed in the front. After, the screen where touch switch trigger has changed will be displayed.

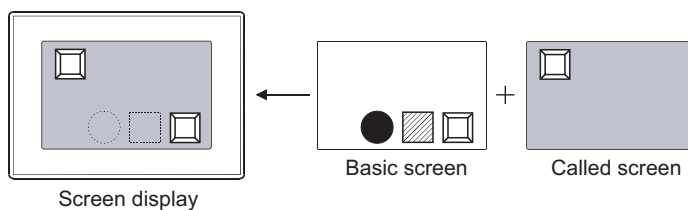
The touch switches on the called screen has different validity of display and action according to the number of called screens and their overlapping state.
(Even if the touch switch is displayed in the front, it may not function properly.)

 This section (9) Touch switch operation

Screen background

The background color of the called screen will be displayed in the front.

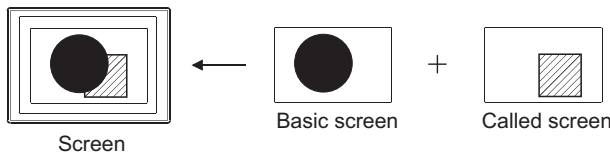
When the background color and the basic screen shape color are overlapped, the shape will not be displayed.



The shape of basic screen will not be displayed

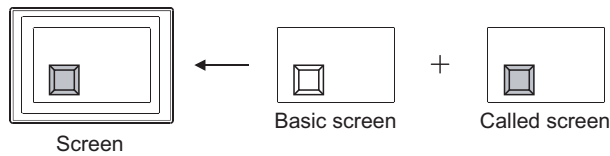
GOT-F900 series

Figure



The figure of called screen is displayed at the back.

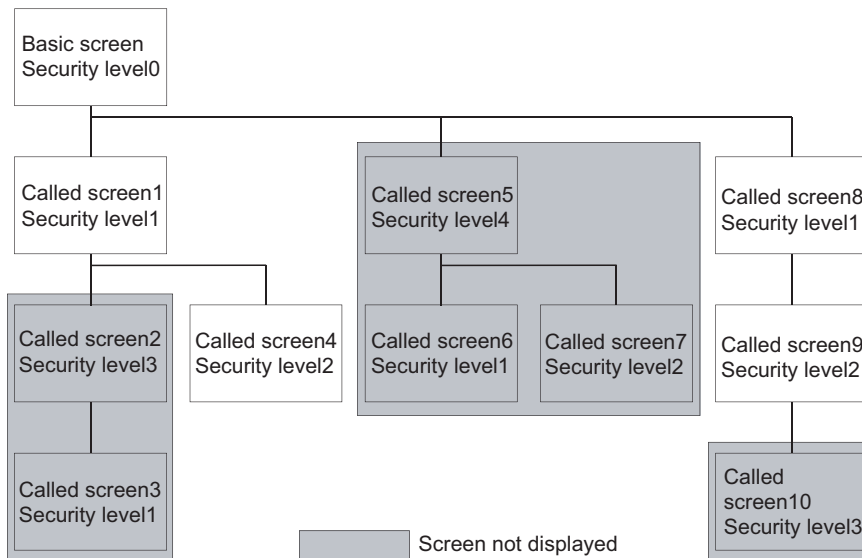
Touch switch



Touch switch of called screen is displayed at the back. When touch switches are overlapped, only the touch switch of basic screen will function by touching.

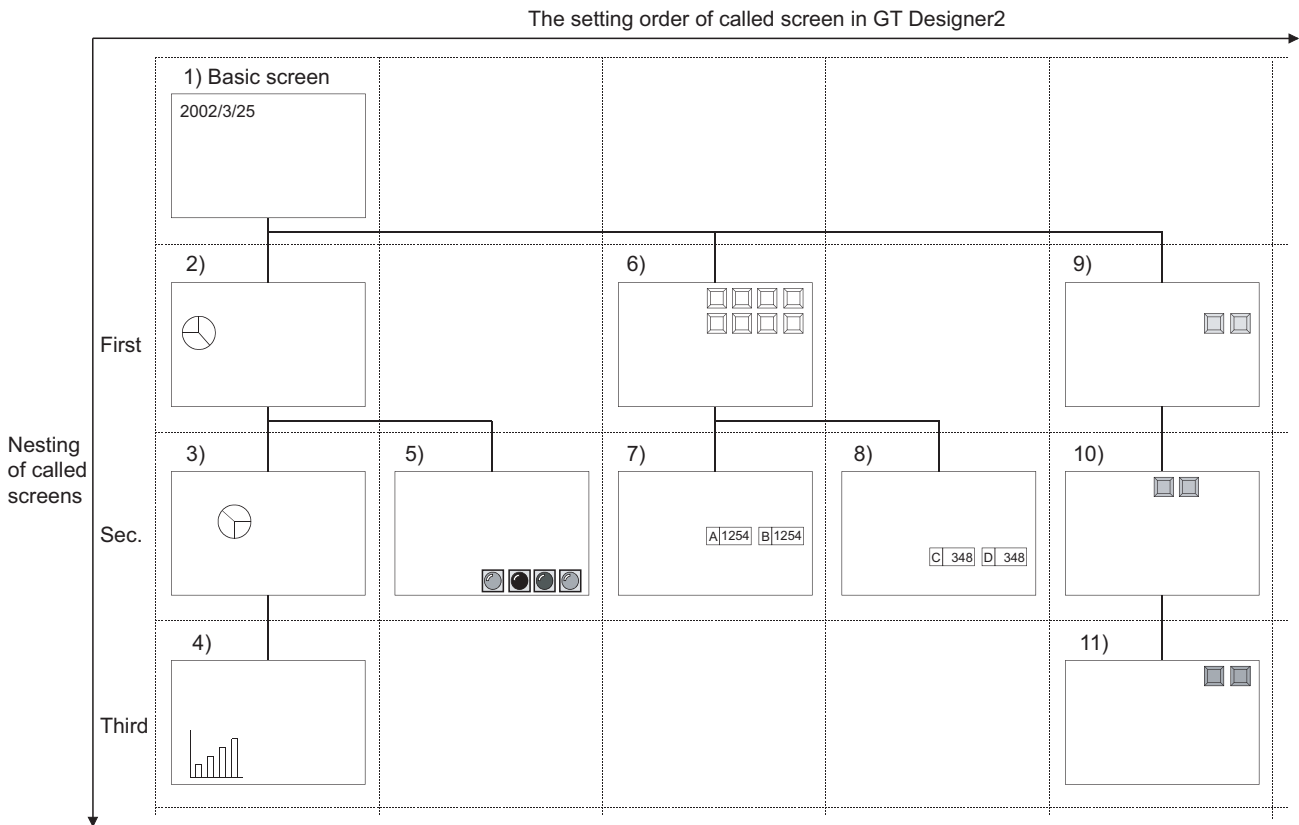
- (6) When exclusive objects (which only one setting is allowed per each screen) are overlapped Do not cascade such objects created by the data list function and the alarm history function. Otherwise, the set numbers of objects are displayed, however, they cannot be displayed correctly because of the function restrictions.
- (7) Display/hide called screen according to the security level and nesting of called screen (GOT-A900 series only)
The security level set in each called screen is valid.
The precautions for security setting in each called screen are as follows.
 - (a) The called screen will not be displayed when the security level of the called screen is higher than that of the password input on the basic screen.
 - (b) The screen display using the nesting structure cannot be called from the screen with security settings enabled.
 - (c) The status observation function and the script function set to the called screen that is not displayed cannot be executed.

Example: Called screens that can be displayed by password of security level2



- (8) Displaying order for calling multiple screens (specific for GOT-A900 series)
 When multiple called screens have been set on one screen, they are displayed in the order of setting in GT Designer2 or called screen nesting.
 Since the current screen is displayed on the previous screen, the screen with the lowest order will be displayed in the front most.
- Precedence for display priority
 1. When multiple called screens are set, they are displayed in the order set in GT Designer2.
 2. For called screens that have been nested, the screen with deeper nesting will be displayed in the front most.
 3. If the above conditions 1 and 2 are both applied, priority is given to the nested called screen.

Example: When setting multiple called screens including nested called screens (1) to 11): Display order)



Point

- (1) Security function, status observation function and script function of called screen
 The security function, status observation function and script function set for each called screen are processed in the same order as the called screen display.
- (2) Check methods of nesting and setting order
 Nesting can be checked in the project workspace.



Section 13.1.2 Check of the settings

The set order can be checked in the data view. (Data are displayed in the order of setting in the data view.)

Refer to the following manual for the data view.

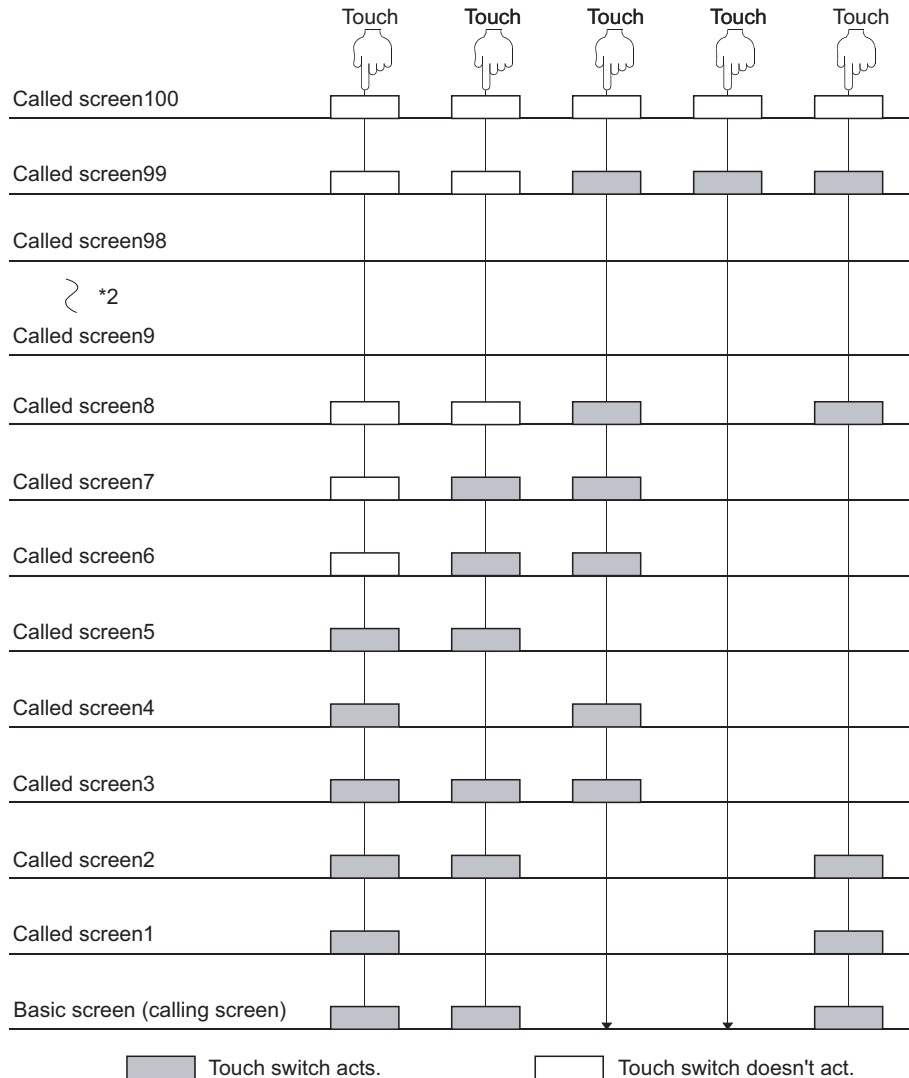


GT Designer2 Version □ Operating Manual

(9) Touch switch operation

When screens are called up to the same screen, operable touch switches are those set on called screen 1 to 99. (The touch switches set on called screen later than 100*1 are not available.)

Note that, when touch switches are overlapped, up to touch switches on the sixth screen from the basic screen will function.



*1: The called screen number of GOT-F900 series is 1 to 5.

*2: Indicates no overlapping of touch switches are observed in the called screens 9 to 98.

- When touch switches of different called screens are overlapping one another, the upper most touch switch will be executed.

Therefore, touching it in short time may not be enough to activate all of them.

(Make an appropriate setting such as lamp display so that a lamp will light up when the touch switch on the bottom is activated.)

- If the simultaneous press keys are overlapping one another, then they will not be functioning, even if the upper most key is touched.

Remark

Touch switch overlapping

Multiple actions can be set for one touch switch even if the set overlay function is not used.

☞ Section 6.2 Touch Switch

13.2 Test Function



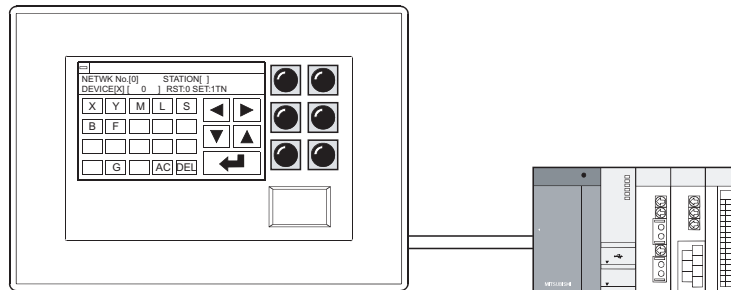
This section explains the test function that displays test window on monitor screen and changes device value.

This function is applicable for maintenance and inspection using monitor screen, providing the following functions.

Test function provides following operations.

- Bit device ON/OFF
- Change the current value of word device
- Change the set value of timer/counter
- Change the current value of buffer memory

Arrange touch switch (special function switch) to set the test function.



Remark

Test except when the monitor screen is displayed

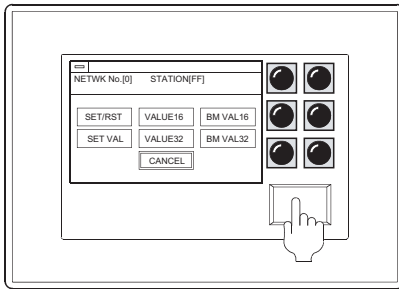
The test window can be displayed to change the device value, as well when the ladder monitor function, system monitor function or special function module monitor function is used.

Refer to the following manuals for the test methods of various functions.

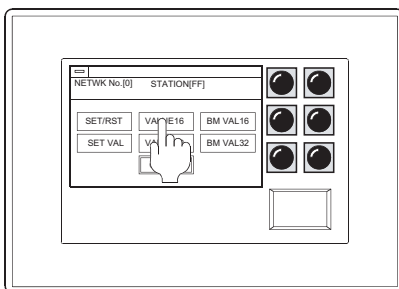
GOT-A900 series Operating Manual (Extended • Option Functions Manual)

1 Method of operating test window

This section explains how to operate the test window.

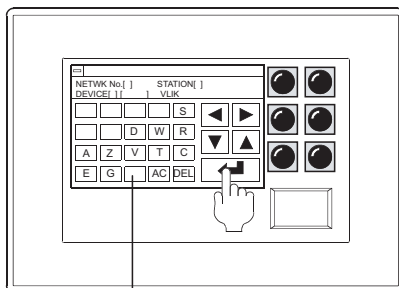


1 Touch the touch switch to display the test window.



2 Select the device type to be changed

- SET/RST : Set/reset the bitdevice.
- Current value 16/Current value 32 : Change the currentvalue of word device.
- Set value : Change the set valueof T.C.
- BIN Value 16/BIN Value 32 : Change the currentvalue of buffermemory.



3 Specify the network No., device and value of the device of which value is to be changed.

◀, ▶ Change the input area by keys.

- In the case of data link system
 - Network No. : 0
 - Station No. : FF (host), 0 (master station)
1 to 64 (local station)
- In the case of network system
 - Network No. : 0 (self loop), 1 to 255 (specified loop)
 - Station No. : FF (host), 0 (control station),
1 to 64 (normal station)

Change keys according to input area.

4 Define the value change by the definition key

13.2.1 Arrangement and settings

Refer to the following section for arrangement and settings of the touch switch.

☞ Section 6.2.1 Arrangement and settings


13.2.2 Setting items

Refer to the following section for setting items of the touch switch.

☞ Section 6.2.4 Setting items of special function switch

13.2.3 Precautions

This section provides the precautions for using test function.
Refer to the following section for the precautions other than described in this section.

 Section 6.2.12 Precautions

1 Precautions for drawing

- (1) When setting line graph
When locus type line graph has been set on base screen, the test window cannot be displayed.
- (2) Windows that cannot be displayed on the same screen
The test window and overlap window 2 cannot be displayed on the same screen.

2 Precautions for hardware

- (1) Inapplicable GOT
The test function cannot be used in GT SoftGOT2, A95*GOT, A956WGOT, A950 Handy GOT and GOT-F900 series.

3 Precautions for use

- (1) PLC CPU control
Executing test function may affect the control of PLC CPU.
Make sure to fully confirm the security before executing the test function.

14. SCRIPT FUNCTION

14.1 Overview

This chapter explains the script functions applicable to the GOT-A900 series.

The script functions are designed to control the GOT display with the GOT's original programs (hereafter abbreviated to "script").

Controlling the GOT display with the GOT side script drastically reduces the load on the system side (e.g. PLC CPU, microcomputer) display.

In addition, the specifications, GT Designer2 settings, program example and troubleshooting of the script functions are explained in this chapter.

14.1.1 Features

1 Ease of system maintenance

As the necessary programs can be created and assigned to GOT with the script functions in advance, the system side handles only machine control programs, facilitating system maintenance.

2 Various screen controls by GOT alone

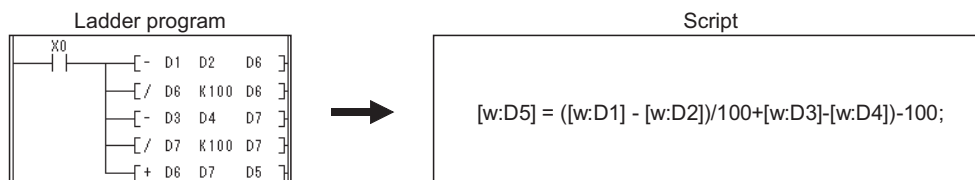
Using the script functions enables the following operations that could not be achieved by GOT alone.

(1) Various object functions are available

- (a) A single lamp represents multiple bit device statuses.
- (b) A specific part is displayed if any of multiple bit devices is ON, and is erased if they are all OFF.
- (c) At the same time as a numeric value is input, a part indicating "Already input" is pasted to the place adjacent to the input value display frame.
- (d) A single touch switch can make multiple operations corresponding to multiple statuses.
- (e) At the same time as the alarm list (system alarm) function detects an error, the corresponding troubleshooting screen appears automatically.

(2) Processing of complicated arithmetic

- (a) A polynomial operation can be more simply represented on a single line as compared with ladder program.



- (b) Not only four fundamental operations but also various application arithmetic functions, such as trigonometric and exponential functions, can be used optionally.

- (3) Expanded applicable fields
 - (a) The date is calculated by entering the start date (month, day and year) and the duration (number of days) after that date.
What is the date 345 days after May 20, 2000? → April 30, 2001
 - (b) The day of the week is calculated by entering the corresponding date (month, day and year).
Which day of the week falls on February 21, 1961? → Tuesday

3 Easy programming language

Script can be created with entry-level programming knowledge, as it is C language-like program.

4 Compatibility with commercially-available programming editors

Commercially-available text editors (e.g. Microsoft® Windows® -standard memo pad, Wordpad) are applicable for programming to improve program productivity.

5 Execution condition selectable for each script

Any of various conditions (any time, periodic, bit OFF to ON/ON to OFF, during bit ON/OFF, periodic during bit ON/OFF) can be selected as a trigger to execute each script, which enables script execution scheduling.

6 Fully useful debugging functions

Since a script is C language-like program, the general C language compiler or debugger (e.g. Microsoft® Visual C++) can be used for its simulation by making slight corrections. This is effective for debugging a complicated script that includes many control statements.

The system monitor function is useful for hardware debugging using GOT.

The test and device monitor functions are available to check conditional branching in a script. By monitoring the GOT special registers (GS), error information and a script in execution can be easily confirmed.

7 Check the validity of the syntax for the created scripts

The validity of the syntax for the created scripts can be checked using GT Designer2 before executing on GOT, which increases the programming efficiency.

8 The script language created on Digital package is convertible

It is possible to convert the script language (D script/global D script) created on Digital package "GP-PRO/PBIII for Windows 95 (Ver. 3.0)" in order to operate it on GOT.

Remark

- (1) Execution condition setting and syntax validity check
Make "execution condition setting" and "syntax validity check" on GT Designer2 at the time of monitor screen creation.
For details, refer to the following.

 Section 14.4 GT Designer2 Settings

- (2) Converting script language created on Digital package
Convert the script language created on Digital package using GT Converter.
Refer to the following for details of convertible data and conversion method.

 GT Converter2 Version □ Operating Manual

14.1.2 Precautions for Use

This section provides the precautions required for using script function.

1 Applicable range of the script functions

Since script functions are designed to control the GOT display, do not use them for machine control that requires the severe timing for execution.

When changing the data within PLC from GOT, create an interlock circuit in a sequence program to ensure that the whole system will operate safely.

2 Stop of the script processing

Any of the following cases disables the corresponding script to be processed, resulting in an error.

- A numerator is divided by a denominator of 0
- A monitor device value cannot be handled as BCD when "16-bit BCD" or "32-bit BCD" is selected as a script data format.

Example: [D0]=[D1]: Current value of D1 is "0x991A"

- An operation result is outside the BCD range when "16-bit BCD" or "32-bit BCD" is selected as a script data format.


Example: 16-bit: Other than 0 to 9999

32-bit: Other than 0 to 99999999


- As the write target device of the while statement, a temporary work (TMP) is not used but the PLC CPU device or GOT internal device (GD) is used.

For details, refer to the following.


- Applicable data range

 Section 14.2.3 Applicable data and representation methods

- Details of while statement

 Section 14.2.2 Control structure

- Corrective actions to be taken when script processing has stopped


 Section 14.7 Troubleshooting

3 Differences in processing result between data formats

Note that any of the following cases will result in an unintended processing.

- When other than "16-bit BCD" and "32-bit BCD" has been selected as script data format, the constant is described that is outside the selected format range.
- When "16-bit unsigned BIN" or "32-bit unsigned BIN" has been selected as the script data format, the negative constant is described.
- When other than "real number" has been selected as script data format, the constant with a decimal point is described.

For details on data format, refer to the following.

 Section 14.2.3 Applicable data and representation methods

4 Instructions for monitor device description

Some PLC CPU includes the monitor devices of which Nos. have to be described in the specific number of digits.

Failure to observe this instruction may cause a malfunction.

For details on describing method, refer to the following.

☞ Section 14.2.3 Applicable data and representation methods

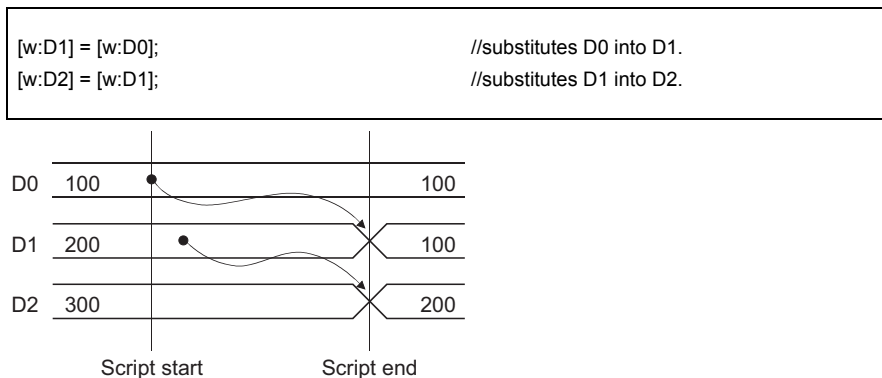
5 Instructions for assignment delay

The script function writes the operation result to the PLC CPU at the end of one script.

Therefore, performing assignment processing as "Example 1" causes a write delay.

Describe a script as "Example 2" and "Example 3" to reduce the frequency of communications with the PLC CPU and avoid influence on monitor processing.

Example 1: Assignment processing using PLC CPU devices

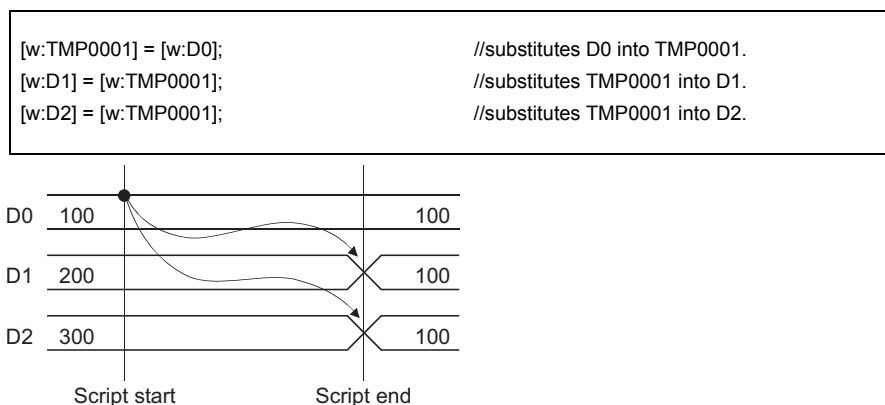


In this script, the D0 value is not reflected on D2 immediately, causing a write delay.

This status persists until this script is processed.

Note that using the GOT internal devices (GD, GB) as the assignment devices will give the same result.

Example 2: Assignment processing using temporary works



Using the temporary works designed for script functions prevents a write delay.

For details on temporary works, refer to the following.

☞ Section 14.2.3 Applicable data and representation methods

Example 3: Assignment processing using GOT internal devices (GD, GB)

```
[w:GD1] = [w:D0];           //substitutes D0 into GD1.  
[w:D1] = [w:GD1];         //substitutes GD1 into D1.  
[w:D2] = [w:GD1];         //substitutes GD1 into D2.
```

Using GOT internal devices (GD, GB) enables the same processing timing as temporary works and prevents a write delay.

When using the GOT internal devices to prevent an assignment delay, cancel the GOT internal device assignment delay in the script setting of GT Designer2.



When GOT internal device is used.

When GOT internal device (GD, GB) assignment delay is cancelled, a link scan will be made on each line including the GOT internal device (GD, GB).

Note that the monitor processing of the GOT may delay when GOT internal devices (GD, GB) are used in many places.

6 Precautions for converting script language created using Digital package

The LS devices described within the script language that is created using Digital package are designed to be free from an assignment delay.

Therefore, when Digital-based script language including LS devices as shown in "Example 1" in (5) is converted, this may result in different operation on GOT.

As shown in "Example 2" in (5), use temporary works in Digital-based script language including LS devices to prevent an assignment delay.

14.2 Specifications

This section explains the specifications of the script functions.

14.2.1 Type

Script functions can be classified into following types.

1 Project script function

This type of script operates for the whole project created using GT Designer2. The project script function is always executable during online processing of GOT. A script is executed when its preset execution condition is satisfied. Up to 256 scripts can be set for one project.



Hint!

Project script application

As operating for the whole project, a project script is useful for the following case:
Example: At the same time when the alarm list (system alarm) function detects an error, the troubleshooting screen is displayed automatically.



Point

Precautions for setting project script

The project script monitor devices are always operating. Therefore, note that increasing the number of monitor points will make the monitor screen slower to appear.

2 Screen script function

This type of script operates for each screen created on GT Designer2. The screen script function is executable only while the corresponding screen appears during online processing of GOT. A script is executed when its preset execution condition is satisfied. These scripts can be set on base screens/window screens (superimpose window, overlap window 1, overlap window 2). Screens called by the screen calling function will also be the targets of script processing. However, screens shown by the part display function will not be the target of script processing. Up to 256 scripts can be set for one screen (including the screen called by the screen calling function).



Point

Precautions for setting screen script

Note that increasing the number of screen script monitor device points will make the monitor screen slower to appear.

14.2.2 Control structure

This section explains the control structure of the script functions.

The following commands (control statements, operators, functions, etc.) are used to program scripts.

Nesting is allowed in if, while and switch statements.

A return statement is used to end a script.

Item	Command	Description
Control statement	if	<p>[Statement example] if (conditional expression) {set of expressions}</p> <p>[Function] Exercises judgment control. Evaluates the (conditional expression), and if its result is true (other than 0), executes the {set of expressions}.</p> <p>[Point] An if statement is the most basic judgment control, which is used to perform specific processing for a given value or to change a program sequence.</p>
	if to else	<p>[Statement example] if (conditional expression) {set of expressions 1} else {set of expressions 2}</p> <p>[Function] Exercises judgment control. Evaluates the (conditional expression), and if its result is true (other than 0), executes the {set of expressions 1}, or if false (0), executes the {set of expressions 2}.</p> <p>[Point] An if statement is the most basic judgment control, which is used to perform specific processing for a given value or to change a program sequence.</p>
	while	<p>[Statement example] while (continuous conditional expression) {set of expressions}</p> <p>[Function] Evaluates the (continuous conditional expression), and if its result is true (other than 0), repeats execution of the {set of expressions}. If the "continuous conditional expression" is false (0), escapes from the while statement without execution.</p> <p>[Point] <ul style="list-style-type: none"> • A while statement is used to perform given processing for up to a specific purpose. (For example, waiting for touch key input) • Making the continuous conditional expression always true (other than 0) results in an infinite loop. • A temporary work must be used as the write target device. </p>
	switch case default break	<p>[Statement example] <pre>switch (term) { case constant : set of expressions;break; case constant : set of expressions;break; default : set of expressions; }</pre> </p> <p>[Function] Creates a control statement using four reserved words of switch, case, break and default. In either of the following cases, executes the "sets of expressions" following the case and default statements.</p> <ul style="list-style-type: none"> • The (term) value matches the "constant" • It does not match the case statement and there is a default statement In either of the following cases, escapes from { } of switch without execution. • There is a break statement within a script • There are no case statements including the "constants" corresponding to the (term) and no default statement. <p>Note that there may be no break and default statements in the control statement.</p> <p>[Point] The switch statement is used when a given variable value requires different processings to be performed.</p>
	return	<p>[Statement example] return;</p> <p>[Function] Ends a script.</p> <p>[Point] A single script can have multiple returns.</p>
	;	<p>[Statement example] ;</p> <p>[Function] Represents the end of a single statement. This symbol is necessary at the end of a single statement.</p>



(Continued to next page)

Item	Command	Description	
Operator	Logical	&& [Function]	[Statement example] if ((relational operation expression) && (relational operation expression)) {...} If two (relational operation expressions) are both true, resulting in 1; if either is false, resulting in 0. (Logical AND operator)
		|| [Function]	[Statement example] if ((relational operation expression) || (relational operation expression)) {...} If either of relational operation expressions is true, resulting in 1; if both are false, resulting in 0. (Logical OR operator)
		! [Function]	[Statement example] if (!(relational operation expression)) {...} If the relational operation expression is 0, resulting in 1; otherwise, resulting in 0. (Logical NOT operator)
	Relational	< [Function]	[Statement example] <Term 1> <term 2> <Term 1> is less than <term 2>. (Left inequality operator)
		<= [Function]	[Statement example] <Term 1> <= <term 2> <Term 1> is less than or equal to <term 2>. (Equivalence left inequality operator)
		> [Function]	[Statement example] <Term 1> > <term 2> <Term 1> is greater than <term 2>. (Right inequality operator)
		>= [Function]	[Statement example] <Term 1> >= <term 2> <Term 1> is greater than or equal to <term 2>. (Equivalence right inequality operator)
		!= [Function]	[Statement example] <Term 1> != <term 2> <Term 1> is not equal to <term 2>. (Non-equivalence operator)
		== [Function]	[Statement example] <Term 1> == <term 2> <Term 1> is equal to <term 2>. (Equivalence operator)
	Arithmetic	+ [Function]	[Statement example] <Term> + <factor> Adds <factor> to <term>. (Addition operator)
		- [Function]	[Statement example] <Term> - <factor> Subtracts <factor> from <term>. (Subtraction operator)
		* [Function]	[Statement example] <Term> * <factor> Multiplies <term> by <factor>. (Multiplication operator)
		/ [Function]	[Statement example] <Term> / <factor> Divides <term> by <factor>. (Division operator)
		% [Function]	[Statement example] <Term> % <factor> Finds a remainder derived from division of <term> by <factor>. (Remainder operator)
	Bit device	& [Function]	[Statement example] <Term> & <factor> Finds the logical product (AND) of <term> and <factor>. (Bit accumulation operator)
		 [Function]	[Statement example] <Term> <factor> Finds the logical add (OR) of <term> and <factor>. (Bit addition operator)

(Continued to next page)

Item	Command	Description	
Operator	Bit device	~ [Statement example] ~ <bit> [Function] Negates (inverts) <bit>. (Complement operator)	
		^ [Statement example] <Term> ^ <factor> [Function] Finds the exclusive logical add (XOR) of <term> and <factor>. (Bit difference operator)	
		<< [Statement example] <Term> << <factor> [Function] Shifts <term> to the left by <factor>. (Left shift operator)	
		>> [Statement example] <Term> >> <factor> [Function] Shifts <term> to the right by <factor>. (Right shift operator)	
	Assignment	= [Statement example] <Device> = <term> [Function] Stores <term> into <device>. (Assignment operator)	
	Device operation	set [Statement example] set (<bit device>) [Function] SETs <bit device>.	
		rst [Statement example] rst (<bit device>) [Function] RSTs <bit device>.	
		alt [Statement example] alt (<bit device>) [Function] Inverts <bit device>.	
	Continuous device operation	bmov [Statement example] bmov (<word device 1>, <word device 2>, <integer>) [Function] Batch-transfers the number of devices specified at <integer>, starting from <word device 1>, to the number of devices specified at <integer>, starting from <word device 2>.	
		fmov [Statement example] fmov (<word device 1>, <word device 2>, <integer>) [Function] Transfers <word device 1> to the number of devices specified at <integer>, starting from <word device 2>.	
	Function	Application arithmetic operation	sin [Statement example] sin (<word device or constant>) [Function] Calculates the sine of the specified <word device or constant>. (Sine) <word device or constant>: To be set in radian units.
			cos [Statement example] cos (<word device or constant>) [Function] Calculates the cosine of the specified <word device or constant>. (Cosine) <word device or constant>: To be set in radian units.
			tan [Statement example] tan (<word device or constant>) [Function] Calculates the tangent of the specified <word device or constant>. (Tangent) <word device or constant>: To be set in radian units.
asin [Statement example] asin (<word device or constant>) [Function] Calculates the arcsine of <word device or constant>. (Arcsine) <word device or constant>: To be set in radian units.			
acos [Statement example] acos (<word device or constant>) [Function] Calculates the arccosine of <word device or constant>. (Arccosine) <word device or constant>: To be set in radian units.			
atan [Statement example] atan (<word device or constant>) [Function] Calculates the arctangent of <word device or constant>. (Arctangent) <word device or constant>: To be set in radian units.			
abs [Statement example] abs (<word device or constant>) [Function] Calculates the absolute value of <word device or constant>. (Absolute value)			

(Continued to next page)

Item	Command		Description
Function	Application arithmetic operation	log	[Statement example] log (<word device or constant>) [Function] Calculates the power (base e) of <word device or constant>. (Natural logarithm)
		log10	[Statement example] log10 (<word device or constant>) [Function] Calculates the logarithm (base 10) of <word device or constant>. (Common logarithm)
		exp	[Statement example] exp (<word device or constant>) [Function] Calculates the power (base e) of <word device or constant>. (Exponent)
		1dexp	[Statement example] 1dexp (<word device 1 or constant 1>, <word device 2 or constant 2>) [Function] Multiplies <word device 1 or constant 1> by 2 to the power of <word device 2 or constant 2>. (Exponential product)
		sqrt	[Statement example] sqrt (<word device or constant>) [Function] Calculates the square root of <word device or constant>. (Square root)
Others	Constant		[Statement example] Constant [Function] Represents a constant (decimal/hexadecimal/BCD/real number). Refer to the following for details of constants.  Section 14.2.3 Applicable data and representation methods
	Device and temporary work		[Statement example] [Device type: device No.] [Function] Represents a PLC CPU device, GOT internal device or temporary work. Refer to the following for details of the devices and temporary works.  Section 14.2.3 Applicable data and representation methods
	Comment	//	[Statement example] // (comment) [Function] A comment for a script can be described in (comment).

14.2.3 Applicable data and representation methods

1 Script data formats

Any of the following seven different data formats can be selected for the script functions.

Note that the selected data format is fixed for each script.

Select the data format using GT Designer2 when the monitor screen is created.

- 16-bit, signed BIN
- 16-bit, unsigned BIN
- 32-bit, signed BIN
- 32-bit, unsigned BIN
- 16-bit BCD
- 32-bit BCD
- 32-bit real number



Hint!

To operate different types of data

Device value of integral number can be calculated as real number by using integral number ↔ real number conversion function for each script.

This section **8** Integer ↔ Real number conversion function.

2 Applicable constants and representation methods

The following four different constants are applicable for the script functions.

Constant	Representation Method
Decimal number	124
Hexadecimal number	0xFF12, 0x14AC67F1
Real number	32.124, 3.2124e + 10
BCD	344

Note that the data format of each script determines the applicable constants and data ranges as shown below.

Data Format	Usable Constant	Applicable Data Range
16-bit, signed BIN	Decimal number	-32768 to 32767
	Hexadecimal number	0 to FFFF
16-bit, unsigned BIN	Decimal number	0 to 65535
	Hexadecimal number	0 to FFFF
32-bit, signed BIN	Decimal number	-2147483648 to 2147483647
	Hexadecimal number	0 to FFFFFFFF
32-bit, unsigned BIN	Decimal number	0 to 4294967295
	Hexadecimal number	0 to FFFFFFFF
16-bit BCD	BCD	0 to 9999
	Hexadecimal number	0 to 270F
32-bit BCD	BCD	0 to 99999999
	Hexadecimal number	0 to 5F5E0FF
32-bit real number	Real number	Signed 13-digit notation (decimal fraction format only) *1
	Hexadecimal number	0 to FFFFFFFF

*1 The real number can be accurate to the millionth place. The ten-millionth and later digits are invalid. For examples of display of a number having ten-millionth and later digits, refer to the following.

Section 5.2 Numeric Data that can be Handled with GOT

3 Applicable devices and representation methods

The devices available for the script functions are the same as those of the other monitor functions. The following table shows the device representations by device type; a station No.-specified device is represented differently from others.

Device Type	Statement Example	Representation Example
Word device	[w: device No. *2]	[w: D100]
Bit device	[b: device No. *2]	[b: X100]
Specified bit of word device	[b: device No.*2. bit position]	[b: D100.01]
Specified word of bit device	[w: device No. *2]	[w: X100]
Station No.-specified device *1	[Network No.-station No.: w: device No. *2]	[0-FF: w: D100]

*1 When the QCPU, QnACPU or ACPUCPU is used, omitting the network No. and station No. monitors the devices of the host station (0-FF).


*2 Depending on the PLC CPU device monitored, the device No. must be described in the following number of digits.

PLC CPU	Device Name	Number of Described Digits (Digits)		Representation Example	Remarks
		Word specified	Bit specified		
OMRON PLC	..	-	2	[b:..2303]	As the channel + relay format is used, the relay part is described in 2 digits.
	LR, AR, HR, WR	-	2	[b: HR207]	
Allen-Bradley PLC	B	6	7	[w: B000003] [b: MB02343]	The file No. is described in 3 digits, the element No. in 3 digits, and the bit position in 1 digit.
	N, TP, TA, CP, CA	6	-	[w: N007255]	The file No. is described in 3 digits, and the element No. in 3 digits.
	TT, TN, CU, CD, CN	-	6	[b: TT004255]	
SIEMENS PLC	D	-	9	[w: D000100000]	The data block (DB) is described in 4 digits, and the data word (DW) in 5 digits.

Remark

Devices that can be monitored on the GOT

Devices that can be monitored on the GOT depend on the monitor target PLC CPU.

 Section 2.6 Supported Devices

4 Applicable temporary works and representation methods

For temporary device area, 1024 points of from TMP0 to TMP1023 are applicable.

One variable is handled as 32 bits, and stores 0 at power-on of the GOT.

Since the temporary device area is a global variable, it can be browsed or updated from any script when multiple scripts are created.

The temporary work representation changes with the specified device type as indicated below.

Device Type	Statement Example	Representation Example
Word device	[w: temporary work No.]	[w:TMP0001]
Bit device	[b: temporary work No. bit position]	[b:TMP1023.01]

Temporary works are used in the following cases.

Example 1: Prevention of a write delay in assignment processing of the PLC CPU (☞ Section 14.1.2 Precautions for Use)

Example 2: Write target device of while statement (☞ Section 14.2.2 Control structure)

Example 3: Variable for operation

When assigning a D0 + 1 value to D1 and assigning a D1 + 1 value to D2

```
[w:TMP0001] = [w:D0]+1;           //substitutes D0+1 into TMP0001.  
[w:D1] = [w:TMP0001];           //substitutes TMP0001 into D1.  
[w:D2] = [w:TMP0001]+1;         //substitutes TMP0001+1 into D2.
```



Temporary work

The temporary work is a 32-bit global variable.

Note that a correct value cannot be read in either of the following cases.

- A value is read in the script of which data format is different from that of the script used to write the value to the temporary work.

Example: Script A (data format: 16-bit unsigned)

```
[w: TMP0000] = 0x1234;
```

Script B (data format: 32-bit unsigned)

```
[w: GD0000] = [w: TMP0000];
```

- A value is read in the script represented (as word device/bit device) differently from the script used to write the value to the temporary work.

Example: Script C (data format: 16-bit unsigned)

```
[w: TMP0000] = 0x3;
```

```
if( [b: TMP0000.b0] == ON) {•••
```

Make sure to write and read a value to and from one temporary work in the same data format and representation.

5 Representing bit device (system define)

Bit devices can be represented as indicated below.

(1) When performing relational operation of bit device

A device value, which is normally represented as "1" or "0", can also be represented as "ON" or "OFF".

```
if([b:X100]==1){[w:D0]=100;} //if X100 is ON, D0 is 100.
```



```
if([b:X100]==ON){[w:D0]=100;} //if X100 is ON, D0 is 100.
```

(2) When performing assignment processing of bit device

A bit device, which is normally represented by assigning "1" or "0", can be also represented by assigning "ON" or "OFF".

```
set([b:X100]); //X100 turns ON.
```

```
[b:X100]=1; //X100 turns ON.
```



```
[b:X100]=ON; //X100 turns ON.
```

6 Replacing devices and constants (user define)

A device or constant used in a script can be replaced with any character string. Make user define setting with the script symbol of GT Designer2.

For details of the setting method, refer to the following.

 Section 14.4 GT Designer2 Settings

Example: When replacing "b:X100" with "LS1_ERROR" using GT Designer2

```
if([LS1_ERROR]==1){[w:D0]=100;} //if X100(LS1_ERROR) is ON, D0 is 100.
```

7 Device offset

The device offset can be specified.

This specification is allowed only in screen script.

(1) Format

Example: When D200 is 5, store 48 in D105.



(2) Applicable device

(a) Base device

The PLC CPU device, GOT internal device, gateway device, and temporary work can be specified.

Only word device is applicable. (Word specification by bit device is not applicable)

(b) Offset device

The PLC CPU device, GOT internal device, gateway device, and temporary work can be specified.

Only word device is applicable. (Word specification by bit device is applicable^{*1})

^{*1} Please set device as the multiple of 16.

(3) Example

Switch the parameter according to operation mode.

- D10 : for switching operation mode
- D100 to D900 : for storing parameter value
- GD500 : base device
- TMP100 : offset device

(a) Script 1 (specify parameter value)

```
[w:GD500]=10;           //parameter value of operation mode1
[w:GD501]=11;
[w:GD502]=12;
:
[w:GD600]=20;           //parameter value of operation mode2
[w:GD601]=21;
[w:GD602]=22;
:
[w:GD700]=30;           //parameter value of operation mode3
[w:GD701]=31;
[w:GD702]=32;
:
```

(b) Script 2 (offset value is determined by the device value for switching operation mode)

```
switch( [w: D10] ){
    case1:[w:TMP100]=0;break;           //when D10 is 0, offset value is 0.
    case2:[w:TMP100]=100;break;         //when D10 is 2, offset value is 100
    case3:[w:TMP100]=200;break;         //when D10 is 3, offset value is 200
}
```


- (c) Script 3 (write parameter according to offset value)

```
bmov([w:GD500[w:TMP100]], [w:D100], 10); //write the device value of (GD500+TEM100) to D100 to D109.
```

Point

When script (b) and script (c) are executed simultaneously or in a single script.
The offset switching is delayed, causing the system to operate abnormally.

(4) Precautions

- (a) Install Standard Monitor OS (GT Designer2 Version1 00A or later) in GOT before using.
([-10] will be stored in script error data (☞ Section 14.7.2 Errors and corrective actions for script execution on GOT))
- (b) When PLC CPU device is used as base device, even if offset device value is changed, the processing will be delayed, causing the system to operate abnormally.
When offset cannot be performed normally, use temporary work or GOT internal device.
When GOT internal device is used, check [Enable internal device (GD/GB) assignment delay].
(☞ Section 14.4 GT Designer2 Settings)

8 Integer ↔ Real number conversion function

In script function, the data type is selected for each script. Once it is set, it cannot be changed (fixed). However, the integer device value can be calculated as real number by using integer ↔ real number conversion function.

(1) Conversion method

Integer ↔ real number conversion is executed by taking GOT internal device (GD) as conversion target.

Integer ↔ real number conversion can be executed by specifying the following devices.

Maximum 4096 devices can be converted once.

For details about GOT internal device, refer to the following.

 Section 2.6.1 GOT internal devices

Point

Device that can be the target of integer ↔ real number conversion

Integer ↔ real number conversion can only be executed by GOT internal devices (GD). To convert the device value of PLC CPU, transmit the device value of PLC CPU to GOT internal device (GD) by script (bmov instruction).

(a) Read device

Device	Function	Description
GS460	Conversion start instruction	Specify the conversion start and conversion method by each bit. b0 : 16 bit unsigned BIN → 32 bit real number b1 : 16 bit unsigned BIN → 32 bit real number b2 to b3 : Disabled b4 : 32 bit real number → 16 bit unsigned BIN b5 : 32 bit real number → 16 bit signed BIN b6 to b14 : Disabled b15 : Execute conversion when it is turned ON.
GS461	Number of conversion devices	Number of devices
GS462	Conversion source head device No.	Specify the head device No. of GOT internal device (GD) that stores the value before conversion.
GS463	Conversion destination head device No.	Specify the head device No. of GOT internal device (GD) that stores the value after conversion.
GS464	Storage error value	When error occurs, specify the device value to be stored in the conversion source device. (Useful for error recognition)

(b) Write device

Device	Function	Description
GS260	Status	Store the conversion completion notification and error occurrence status into each bit. When conversion start instruction (GS460.b15) is turned OFF (0), each bit becomes 0. b0 to b13 : Disabled b14 : It is turned ON when error occurs during conversion processing by GOT. (Store error code in GS261) b15 : It is turned ON when conversion is completed by GOT.
GS261	Error code *1	Store the error during conversion. Store 0 when the conversion is completed normally.

For details of *1, refer to the following.

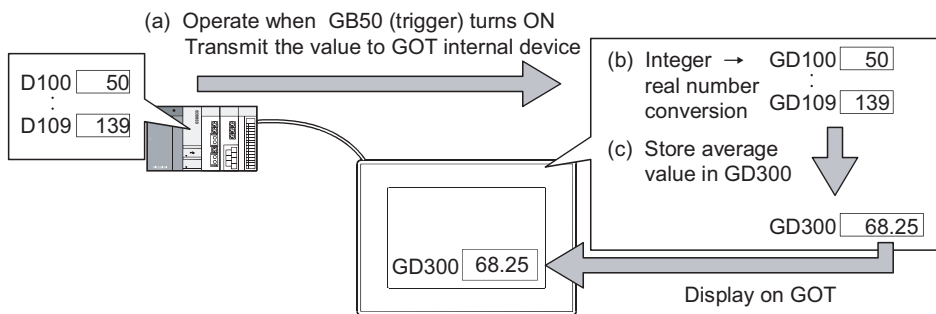
*1 Error code

Error codes stored in GS261 and the error information are as follows:

Error code	Description	Remark
1	Conversion start instruction is not initialized	Conversion processing is not executed.
2	Conversion start instruction is not set correctly.	
3	Number of devices is set out of the range.	
4	Device is out of range.	
5	Conversion source overlaps with conversion destination.	-
6	Not used	
7	Conversion error (overflow, ect.)	Conversion processing continues.

(2) Example

Display the average value of the data (16 bit signed BIN) stored in PLC CPU device as real number on GOT.



(a) Script 1 (conversion start processing)

Transmit the devices (D100 to D109) value of PLC CPU to GOT internal devices (GD100 to GD109) and execute integer → real number conversion.

After conversion is started, script 2 starts.

•Data type: 16 bit signed BIN

• Trigger: GB50 is ON

```

bmov ([w: D100], [w: GD100], 10;
[w: GS461]=10; //Number of object devices to be converted
[w: GS462]=100; //Conversion source head device No.
[w: GS463]=200; //Conversion destination head device No.
[w: GS460]=0X8002; //Conversion starts
set ([b: GB1001]; //Script 2 starts
    
```

(b) Script 2 (conversion completion monitor processing)

Wait the completion of integer → real number conversion.

If error does not occur after conversion is completed, clear the conversion start instruction device simultaneously when starting script 3.

•Data type: 16 bit signed BIN

• Trigger: GB100 is ON

```
if ([b: GS260.15]=1)
{
    //Conversion completed
    if ([b: GS260.14]=0)
    [
        set([b: GB101]): //Conversion is completed normally (script 3 starts)
    ]
}
[w: GS460]=0; //Clear conversion start
rst([b:GB100]); //Clear the start of script 2
}
```

(c) Script 3 (Average calculating processing)

After converting to real number, calculate the average value of GOT internal device and store in GD300.

•Data type: 32 bit real number

• Trigger: GB101 is ON

```
[w: TMP001]=0
[w: TMP001]=[w: TMP001] + [w: GD200];
[w: TMP001]=[w: TMP001] + [w: GD202];
[w: TMP001]=[w: TMP001] + [w: GD204];
[w: TMP001]=[w: TMP001] + [w: GD206];
[w: TMP001]=[w: TMP001] + [w: GD208];
[w: TMP001]=[w: TMP001] + [w: GD210];
[w: TMP001]=[w: TMP001] + [w: GD212];
[w: TMP001]=[w: TMP001] + [w: GD214];
[w: TMP001]=[w: TMP001] + [w: GD216];
[w: TMP001]=[w: TMP001] + [w: GD218];
[w: GD300]=[w:TMP001]/10; //Store the average in GD300 (real number)
rst([b: GB101]); //Clear start of script 3.
```

(3) Precautions

(a) Turn the conversion start instruction (GS460) OFF after conversion completion.

When the device is ON, the conversion cannot be executed even if conversion start instruction is executed.

(b) During integer → real number conversion, figures after the decimal point will be rounded off.

(1.53 → 1)

(When it is out of the real number range, error code will be displayed during operation and the conversion cannot be executed.)

14.2.4 Script execution

This section explains how to execute the script functions.

1 Execution conditions

When an execution condition is satisfied, the script function executes the corresponding script and writes the result to the PLC CPU.

Execution condition is set when the monitor screen is created using GT Designer2.

There are following execution conditions.

- Ordinary
- Rise/Fall
- ON/OFF
- ON/OFF Sampling
- Sampling (1s increments)

2 Execution unit

The script function executes scripts one by one.

If the execution conditions of multiple scripts are satisfied, they are not processed concurrently.

3 Execution sequence

The script functions are executed in the following order.

Function executing Order	Screen Setting Order	Screen Calling Function Laying Order	Script Executing Order Set with GT Designer2	Max. Execution Count	Execution Sequence	
Project script function	—	—	Script A	256	1)	
			Script B		↓	
			⋮			
Screen script function	Base	Base	Script A	256	2)	
			Script B			↓
			⋮			
		First called screen	Script A		256	↓
			Script B			
			⋮			
	⋮		256	↓		
	16th called screen	Script A		256	↓	
		Script B				
		⋮				
Superimpose window	Superimpose window	Script A	256		3)	
		Script B				↓
		⋮				
	First called screen	Script A		256	↓	
		Script B				
		⋮				
⋮		256	↓			
16th called screen	Script A		256	↓		
	Script B					
	⋮					
Overlap window 1	Overlap window 1	Script A		256	4)	
		Script B				↓
		⋮				
	First called screen	Script A	256		↓	
		Script B				
		⋮				
⋮		256		↓		
16th called screen	Script A		256	↓		
	Script B					
	⋮					

(Continued to next page)

Function executing Order	Screen Setting Order	Screen Calling Function Laying Order	Script Executing Order Set on GT Designer2	Max. Execution Count	Execution Sequence
Screen script function	Overlap window 2	Overlap window 2	Script A	256	5) ↓
			Script B		
			⋮		
		First called screen	Script A		
			Script B		
			⋮		
		⋮			
		16th called screen	Script A		
			Script B		
			⋮		

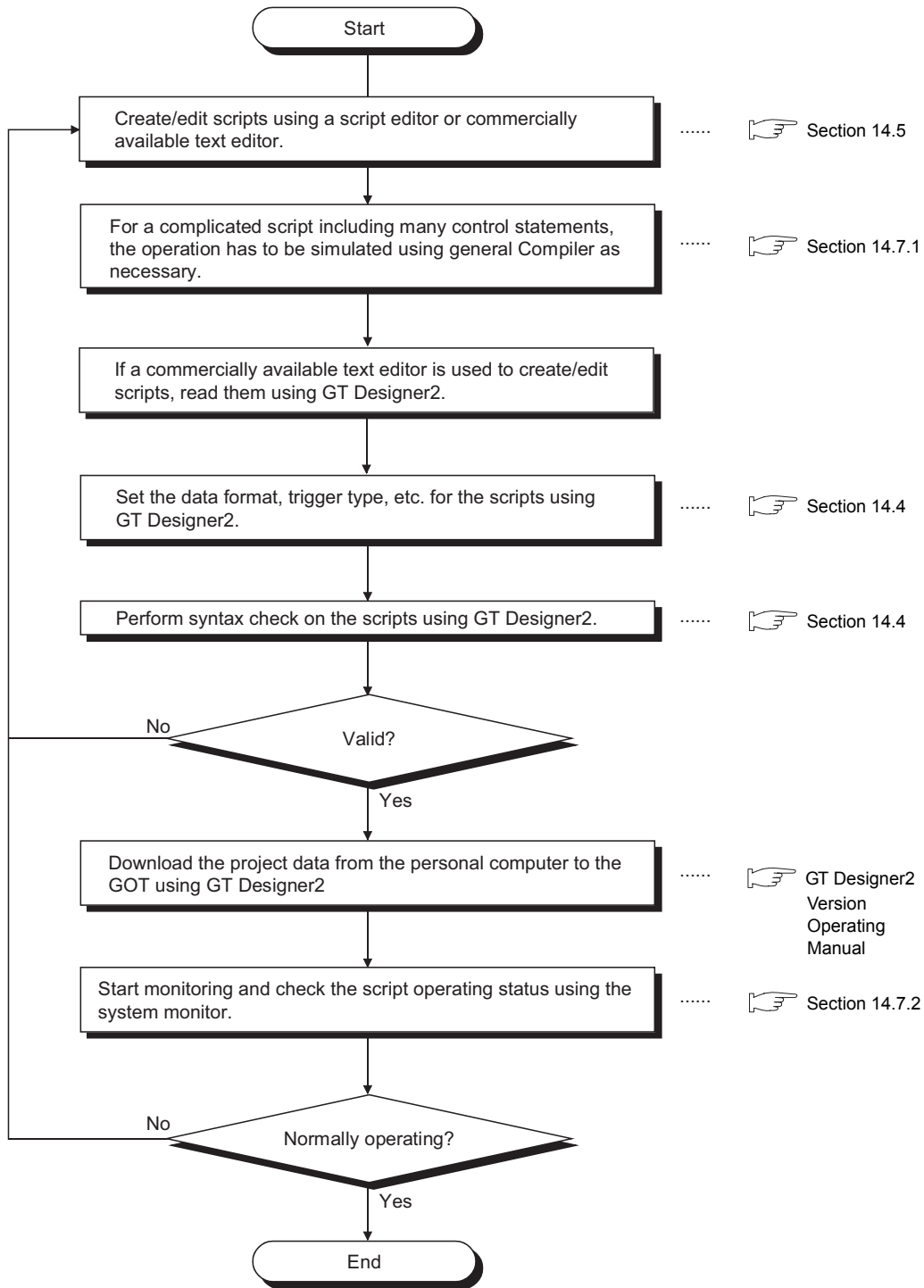
4 Execution status

The following table describes the script statuses and the corresponding processings to be performed.

Script Status	Processing
Waiting for turn	<ul style="list-style-type: none"> A script waits its processing turn in accordance with the execution sequence. When its turn has come, the script "waits for execution".
Waiting for execution	<ul style="list-style-type: none"> Processing changes depending on the execution condition status. Enabled : The corresponding script is "executed". Disabled : The corresponding script "waits for turn" and the next script "waits for execution".
Execution	<ul style="list-style-type: none"> When the script ends, the processing result is written to the PLC CPU and the corresponding script "waits for turn". And, the next script "waits for execution". If an error occurs, the corresponding script "stops" and the next script "waits for execution". If a screen is changed when the screen script function is used, the scripts set on the corresponding screen are all "executed" and then the next script "waits for execution".
Stop	<ul style="list-style-type: none"> The script is kept "stopped" until the error history is cleared.

14.3 Settings and Procedure for Execution

This section provides the settings and procedure for executing the script functions.




14.4 GT Designer2 Settings

14.4.1 Settings

- 1 Select [Common] → [Script] from the menu.
- 2 The setting dialog box will appear. Make the settings with reference to the following explanation.

Remark

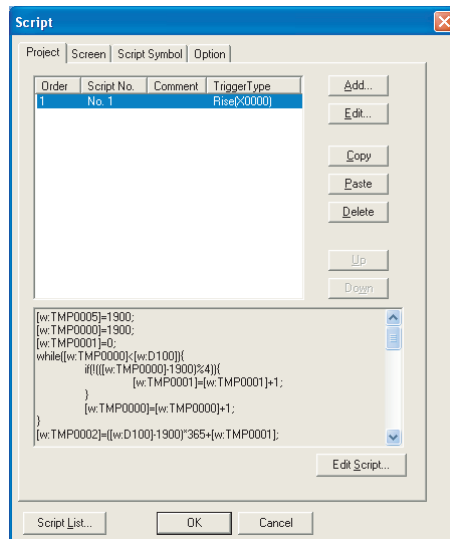
When making the setting on the project work space.

The setting dialog box can be displayed by double-clicking on  Script on the project work space.

14.4.2 Setting items

1 Project tab

Set the script function applicable for the whole projects.

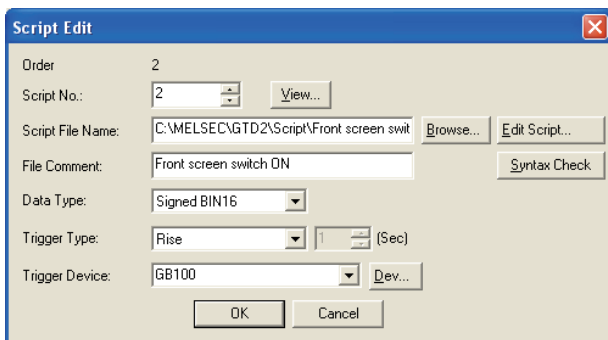


Project | Screen | Script Symbol | Option

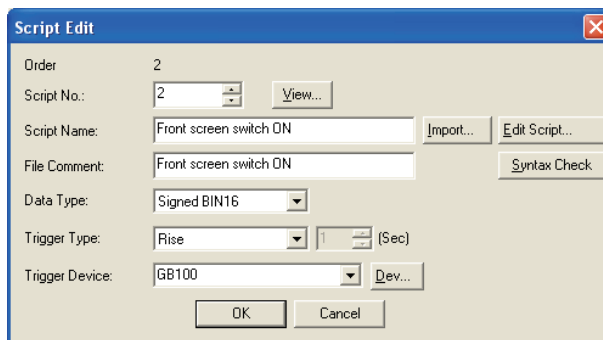
Items	Description	A	F
Script Function List	Display the set script functions in list format. The script for the selected script function is shown below the function list.	<input type="radio"/>	<input checked="" type="checkbox"/>
Add *1	Adds a new script function. Click on this item to display [Edit Script] dialog box. The order of executing script functions will be set according to the order in which they are added.	<input type="radio"/>	<input checked="" type="checkbox"/>
Edit *1	Edits the selected script function.	<input type="radio"/>	<input checked="" type="checkbox"/>
Copy	Copies the selected script function.	<input type="radio"/>	<input checked="" type="checkbox"/>
Paste	Pastes the copied script function to the last line of the script function list.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete	Delete the selected script function	<input type="radio"/>	<input checked="" type="checkbox"/>
Up	Changes the order of executing selected script functions.	<input type="radio"/>	<input checked="" type="checkbox"/>
Down		<input type="radio"/>	<input checked="" type="checkbox"/>
Edit Script	Used to edit the selected project script by the editor selected at [Select Script Editor] in the Option tab. For details of the Option tab and script editor, refer to the following. <ul style="list-style-type: none"> • Option tab ----- This section 4 Option tab • Script Editor ----- This section 7 Project tab 	<input type="radio"/>	<input checked="" type="checkbox"/>
Script List	Displays the registered script files in list format. Script files can be added, registered and edited on the list. This section 5 Script list)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.

*1 Script Edit



(When [External File] is selected in the Option tab)



(When [Project Data] is selected in the Option tab)

Items	Description	A	F
Order	Display the order of the script function under editing.	<input type="radio"/>	<input checked="" type="radio"/>
Script No.	Register the script No. for the current script which is being edited. Click on the View button to confirm the registration No. of other script files. 5 Script list	<input type="radio"/>	<input checked="" type="radio"/>
Script File Name (When [External File] is selected in the Option tab)	Display the drive and folder that include the script file to be executed. If the script file is not registered, click on the Browse button to specify the script file to be executed.	<input type="radio"/>	<input checked="" type="radio"/>
Script Name (When [Project Data] is selected in the Option tab)	Set the name of the script to be executed. Click on the Import button and the script edited in a text file is read out to GT Designer2. When importing the script file, the file name with the extension (".TXT") eliminated from the script file name is displayed at [Script Name].	<input type="radio"/>	<input checked="" type="radio"/>
Edit Script	Used to edit the script selected by [Script File Name] or [Script Name] using the editor selected at [Select Script Editor] in the Option tab. For details of the Option tab and script editor, refer to the following. • Option tab ----- This section 4 Option tab • Script editor ----- This section 1 Project tab	<input type="radio"/>	<input checked="" type="radio"/>
File Comment	Input the comment of the script function being edited.	<input type="radio"/>	<input checked="" type="radio"/>
Syntax Check	Checks the validity of the syntax for the script selected in [Script File Name]. The applicable device type and device range are also checked. Section 14.4.4 Message displayed during syntax check)	<input type="radio"/>	<input checked="" type="radio"/>
Data Type	Select the data type of script to be executed. Signed BIN 16/32 :Treats script data as 16/32 bits signed binary value. Unsigned BIN 16/32 :Treats script data as 16/32 bits unsigned binary value. BCD 16/32 :Treats script data as 16/32 bits BCD (binary coded decimal) value. Real :Treats script data as floating decimal point real number.	<input type="radio"/>	<input checked="" type="radio"/>
Trigger Type	Select the trigger for operating the script. When [Sampling], [ON Sampling] or [OFF Sampling] is selected, set the cycle (1 to 3600 seconds) in 1-second unit.*2 Section 5.5 Trigger Setting) • Ordinary • ON • OFF • Rise • Fall • Sampling • ON Sampling • OFF Sampling	<input type="radio"/>	<input checked="" type="radio"/>
Trigger Device	When [ON], [OFF], [Rise], [Fall], [ON Sampling] or [OFF Sampling] is selected, click on the Device button to set the device to be used for the trigger. Section 5.1 Device Setting)	<input type="radio"/>	<input checked="" type="radio"/>

For details of *2, refer to the following.

*2 Update timing when the trigger type is set to [Sampling], [Cycle during ON] or [Cycle during OFF]

The sampling cycle counting is started when the trigger condition is satisfied.

When the trigger type is set to [Cycle during ON] and the sampling cycle is set to 10 seconds, for example, the script will be executed 10 seconds after the device set at [Trigger Device] turns on. (When the trigger device turns off after 10 seconds, the script will not be executed.)

When the trigger condition is not satisfied, counting of the sampling cycle will be reset.



(1) Script file name

A file name of a script file (excluding extension ".TXT") must be within 32 characters independent of the character type (1-byte character or 2-byte character).

The file name is used for [Script Name] when converting the script data with [Project Data] selected in the Option tab.

If a specified file name is longer than 32 characters, the first 32 characters are taken for the file name and the rest are disregarded.

(2) [Script Name]

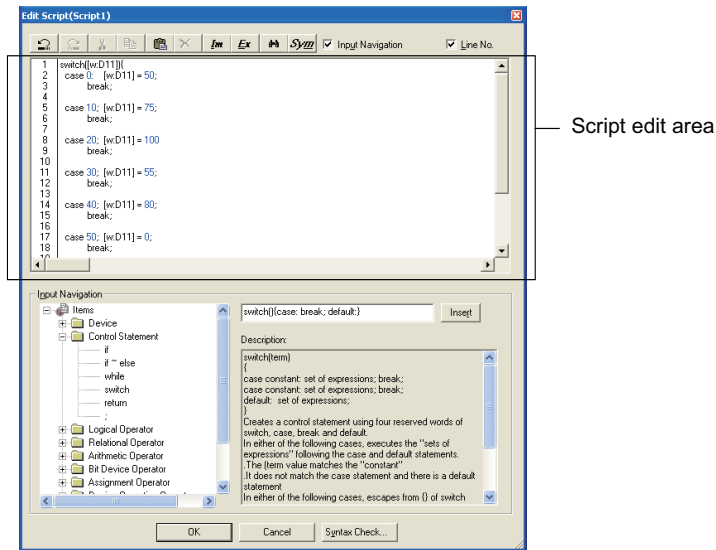
Set a unique script name.

The script name set at [Script Name] is used as the script file name when converting the file with [External File] selected in the Option tab.

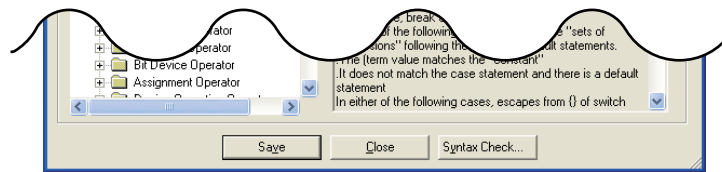
When the script name set for [Script Name] is already existed, set another script names.

(1) Script editor














The script editor is used for editing and importing/exporting scripts.



(When [Project Data] is selected in the Option tab)



(When [External File] is selected in the Option tab)

Items	Description	A	F
Script Edit Area	<p>Scripts can be edited directly.</p> <p> (Undo) : Returns the script edit operation one step.</p> <p> (Redo) : Redoes returned operation.</p> <p> (Cut) : Cuts the selected character string.</p> <p> (Copy) : Copies the selected character string.</p> <p> (Paste) : Pastes the copied or cut character string.</p> <p> (Delete) : Deletes the selected character string.</p> <p> (Import) : Reads out the script edited in a text file to GT Designer2. *¹</p> <p> (Export) : Saves the script edited by GT Designer2 in a text file. *¹</p> <p> (Search) : Displays the search dialog box.</p> <p>Input the search target texts and click the <input type="text" value="Find Next"/> button after selecting the search direction (upward/downward), and the input texts are searched for.</p> <p> (Symbol) : Set script symbols. *²</p> <p>Input Navigation : Checking this item displays [Input Navigation] in the Edit Script dialog box.</p> <p>Line No. : Checking this item displays the line numbers in the script.</p>	○	×
<input type="button" value="Save"/> (When [External File] is selected in the Option tab)	Overwrites the script file with the project script and save it.	○	×
<input type="button" value="Close"/> (When [External File] is selected in the Option tab)	Closes the script editor.	○	×
Input Navigation	<p>Functions, devices, etc. that are inserted to a script can be selected from the tree.</p> <p>An example of how to used [Input Navigation] is shown below.</p> <p> This section  (1) (a) Use example of input navigation</p>	○	×
<input type="button" value="Syntax Check"/>	<p>Checks the syntax, device type and device range.</p> <p> Section 14.4.4 Message displayed during syntax check)</p>	○	×

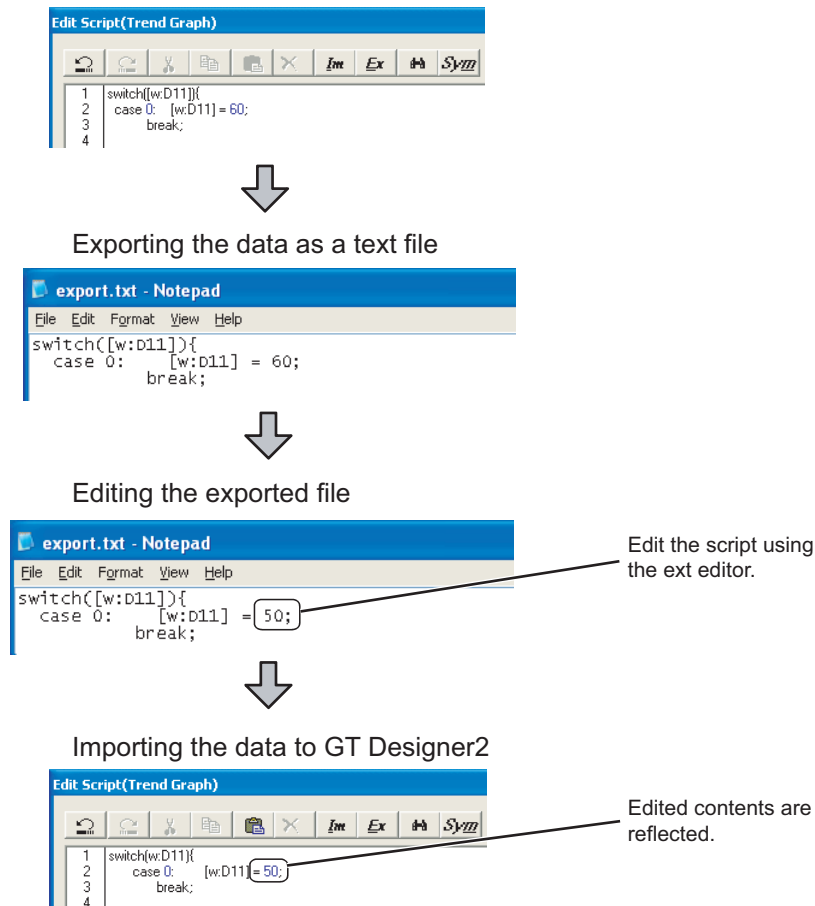
For details of *1, *2, refer to the following.

*1 Import / export

Even if a script is stored in the project data, the exported text file can be used for simulating the operation using a commercially-available general-purpose C compiler and editing the script using a commercially-available text editor.

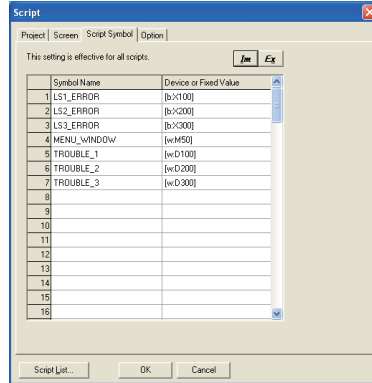
The edited text file can be imported to GT Designer2 to be read.

Example: When editing the script data stored in the project data using a commercially-available text editor



***2 Script symbols**

A script can be described using a character string, instead of a device or fixed value.
 This is possible by setting a device or fixed value to each character string in the Script Symbol window
 (Even when a character string is described in the script, the script operates on GOT.)
 This setting is valid to project scripts and screen scripts.

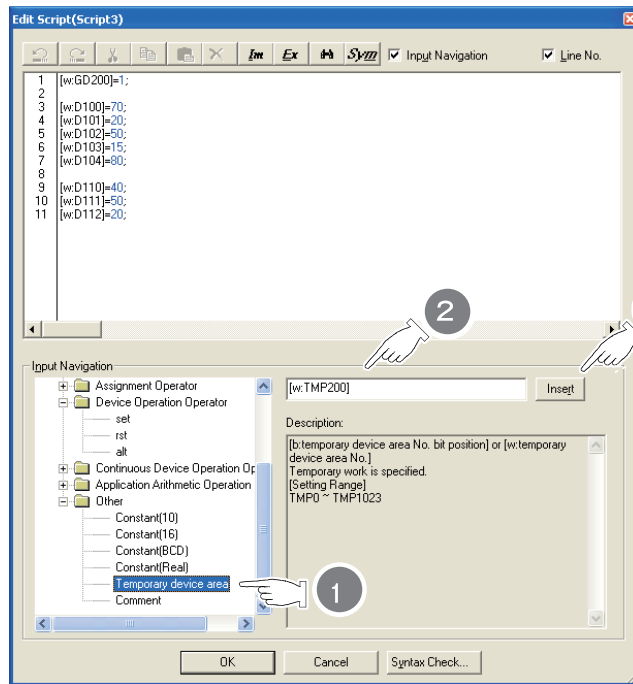


Items	Description
Symbol Name	Setting contents are the same as that made in the Script Symbol tab. For details of the setting, refer to the following. This section 3 Script Symbol tab
Device or Fixed Value	
(Import)	
(Export)	

(a) Use example of input navigation

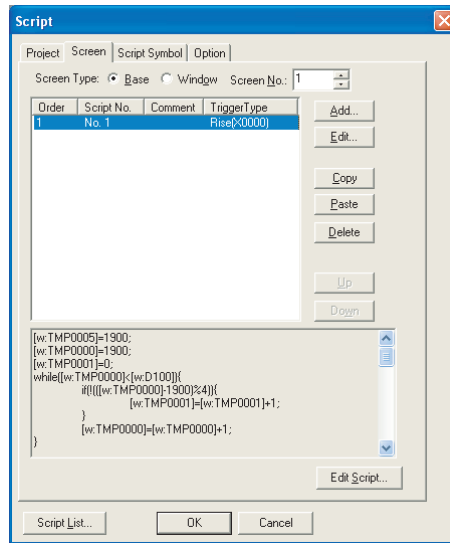
How the input navigation is used is explained below using an example of inserting an assignment statement of the temporary device area to a script.

- 1 Select [Items] → [Other] → [Temporary device area] from the tree.
- 2 Edit the temporary device area number, assignment operator, etc. referring to [Description].
- 3 Click the **Insert** button, and the assignment statement in the temporary device area is inserted to the cursor position in the [Script edit area].



2 Screen tab

Set the script to be executed for each screen.



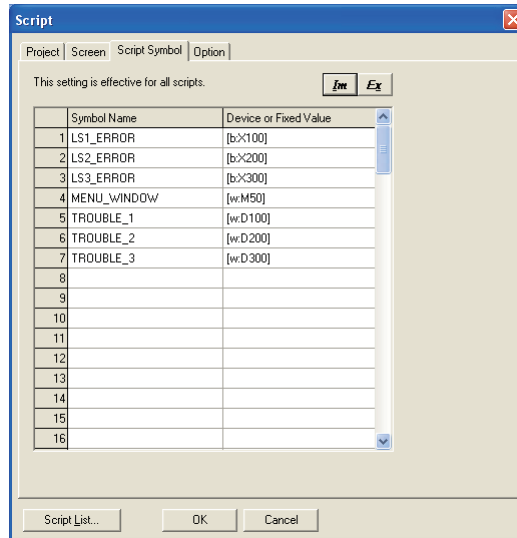
Items	Description	A	F
Screen Type	Set the screen (Base/Window) on which the script function will operate and the screen No.	<input type="radio"/>	<input checked="" type="checkbox"/>
Script Function List	Displays the set script functions in list format. The script for the selected script function is shown below the function list.	<input type="radio"/>	<input checked="" type="checkbox"/>
Add *1	Adds a new script function. Click on this item to display [Edit Script] dialog box. The order of executing script functions will be set according to the order in which they are added.	<input type="radio"/>	<input checked="" type="checkbox"/>
Edit *1	Edits the selected script function.	<input type="radio"/>	<input checked="" type="checkbox"/>
Copy	Copies the selected script function.	<input type="radio"/>	<input checked="" type="checkbox"/>
Paste	Pastes the copied script function to the last line of the script function list.	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete	Deletes the selected script function.	<input type="radio"/>	<input checked="" type="checkbox"/>
Up	Changes the order of executing selected script functions.	<input type="radio"/>	<input checked="" type="checkbox"/>
Down		<input type="radio"/>	<input checked="" type="checkbox"/>
Edit Script	Used to edit the selected screen script using the editor selected at [Select Script Editor] in the Option tab. For details of the Option tab and script Editor, refer to the following. <ul style="list-style-type: none"> • Option tab ----- This section 4 Option tab • Script editor ----- This section 1 Project tab 	<input type="radio"/>	<input checked="" type="checkbox"/>
Script List	Displays the registered script files in list format. Script files can be added, registered and edited on the list. This section 5 Script list)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, refer to the following.




This section **1** *1 Script Edit

3 Script Symbol tab

A script can be described using the character string, instead of the device or fixed value. This method is available by setting a device or fixed value to each character string in this tab screen. (Even when a script file is described using character strings, the scrip operates on GOT.) This setting is made for all scripts.



Project | Screen | **Script Symbol** | Option

Items	Description	A	F
Symbol Name	Input the character string to be described in script files (Up to 32 characters). Up to 100 words can be set. "#" cannot be used.	<input type="radio"/>	<input checked="" type="radio"/>
Device or Fixed Value	Input the device or character string for the symbol name, i.e., character string (Up to 32 characters). Up to 100 words can be set.	<input type="radio"/>	<input checked="" type="radio"/>
 (Import)*1	Reads the script symbol setting, edited in a CSV file/Unicode text file, to GT Designer2.	<input type="radio"/>	<input checked="" type="radio"/>
 (Export)*1	Saves the script symbol setting, made by GT Designer2, as a CSV file/Unicode text.	<input type="radio"/>	<input checked="" type="radio"/>
Script List	Displays the registered script files in list format. Script files can be added, registered and edited on the list.  This section 5 Script list)	<input type="radio"/>	<input checked="" type="radio"/>

For details of *1 refer to the following.

*1 Import/Export

The exported CSV file/Unicode text file can be edited using such as the spreadsheet software.
The CSV file/Unicode text file, after editing, can be imported to and opened by GT Designer2.



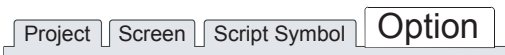
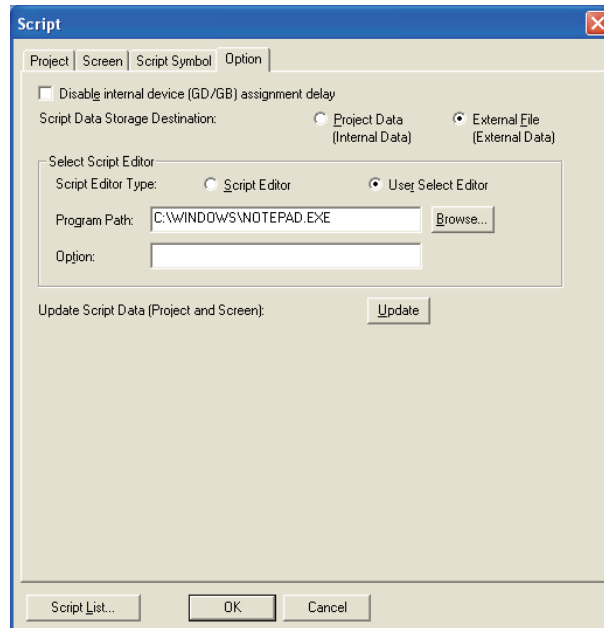
Editing exported files

When "0" is used as the first character of symbol names and device or field values, "0" can be deleted with application functions for editing files, including Microsoft® Excel.

Pay attention to the above for editing exported files.

4 Option tab

Set the text editor for editing script file and the processing when internal device is used.



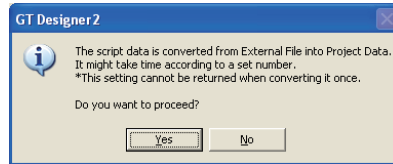
Items	Description	A	F
Enable internal device (GD/GB) assignment delay	Check this item to avoid substitution delay, which occurs when Project script or Screen script is used, by using the GOT internal device (GD, GB). Refer to the following for cautions about substitution delay. Section 14.1.2 5 Instructions for assignment delay)	<input type="radio"/>	<input checked="" type="checkbox"/>
Script Data Storage Destination	Select the area where the script data of project scripts and screen scripts are stored. Project Data : Stores the script data in the project data. If the setting is changed from [External File] to [Project Data], the script data is converted from the script file to the project data. *1 External File : Stores the script data in the script file. If the setting is changed from [Project Data] to [External File], the script data is converted from the project data to the script file. *2	<input type="radio"/>	<input checked="" type="checkbox"/>
Select Script Editor	Select and set the editor used to edit project scripts and screen scripts.	<input type="radio"/>	<input checked="" type="checkbox"/>
Script Editor Type	Select the editor used to edit project scripts and screen scripts. Script Editor : Select this item to use the built-in script editor of GT Designer2 to edit project scripts and screen scripts. User Select Editor : Select this item to use the text editor specified by the user to edit project scripts and screen scripts. Selection of [User Select Editor] is possible only when [External File] is selected for [Script Data Storage Destination].	<input type="radio"/>	<input checked="" type="checkbox"/>
Program Path	When [User Select Editor] is selected for [Script Editor Type], specify the file (such as Notepad (NOTEPAD.EXE) or WordPad (WORDPAD.EXE) of Windows®) used to open the text editor.	<input type="radio"/>	<input checked="" type="checkbox"/>
Option	Specify the options used on the text editor when [User Select Editor] is selected for [Script Editor Type].	<input type="radio"/>	<input checked="" type="checkbox"/>
Update Script Data (Project and Screen)	Update the script data that is read by GT Designer2.	<input type="radio"/>	<input checked="" type="checkbox"/>
Script List	Displays the registered script files in list format. Script files can be added, registered and edited on the list. This section 5 Script list)	<input type="radio"/>	<input checked="" type="checkbox"/>

For details of *1, *2, refer to the following.

*1 Converting the script data from script file to project data

To convert the script data from script file to project data, follow the steps indicated below.

- 1 When the selection for [Script Data Storage Destination] is changed from [External File] to [Project Data], the dialog box as shown below is displayed.

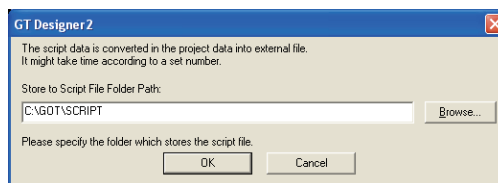


- 2 Click the button and the script data is converted to the project data.

*2 Converting the script data from project data to script file

To convert the script data from project data to script file, follow the steps indicated below.

- 1 When the selection for [Script Data Storage Destination] is changed from [Project Data] to [External File], the dialog box as shown below is displayed.



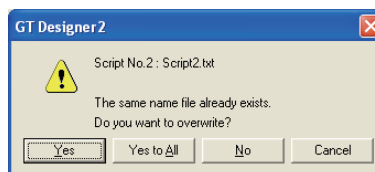
- 2 For [Store to Script File Folder Path], specify the folder where the script is saved.
- 3 Click the button, and the script data is converted to a script file.



File name of the converted script file

When the script data in the project data is converted to a script file, the script file name before conversion is used as the file name of the script file (extension is ".TXT").

If the script name already exists, the dialog box as shown below is displayed.

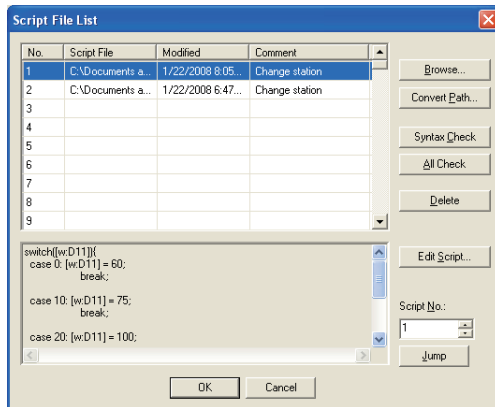


If the dialog box as above is displayed, click the button and change the file name.

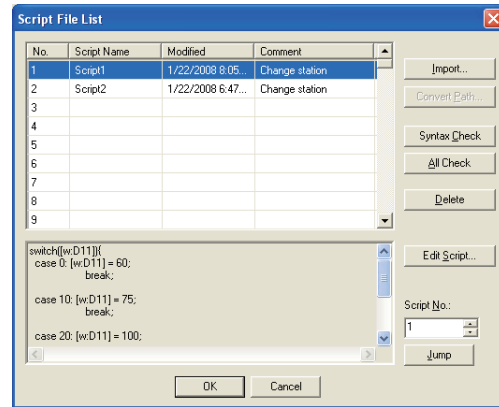
5 Script list

The registered script files to be executed are displayed in list format.

They can be added, registered and edited on this list.



(When [External File] is selected in the Option tab)



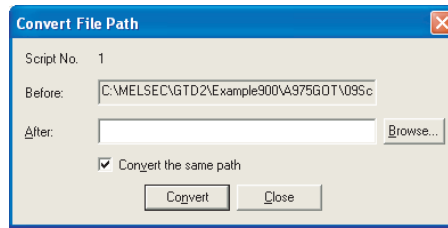
(When [Project Data] is selected in the Option tab)

Items	Description	A	F
Script File List	Displays the registered scripts in a list (script file/script name *1, modified date and comment). The script file specified in the [Script Edit] dialog box is reflected in this dialog box. A comment can be directly input in the Comment column of the list. The contents of the selected script are displayed in the area below the list.	<input type="radio"/>	<input checked="" type="checkbox"/>
Browse (When [External File] is selected in the Option tab)	Registers the selected script.	<input type="radio"/>	<input checked="" type="checkbox"/>
Import (When [Project Data] is selected in the Option tab)	Reads out the script edited in a text file to GT Designer2.	<input type="radio"/>	<input checked="" type="checkbox"/>
Convert Path *2 (When the selection in the Extended tab is [External File])	Changes the path name of the selected script file. Click on <input type="button" value="Convert Path"/> button to specify the path name to be changed.	<input type="radio"/>	<input checked="" type="checkbox"/>
Syntax Check	Checks the validity of the syntax for the selected script or all the registered script. When an error occurs, the error line No. and its details are displayed.	<input type="radio"/>	<input checked="" type="checkbox"/>
All Check	The applicable device type and device range are also checked. (Section 14.4.4 Message displayed during syntax check)	<input type="radio"/>	<input checked="" type="checkbox"/>
Delete	Deletes the selected script file	<input type="radio"/>	<input checked="" type="checkbox"/>
Edit Script	Used to edit the selected script using the editor selected at [Select Script Editor] in the Option tab. For details of the option tab and script editor, refer to the following. • Option tab ----- This section 4 Option tab • Script Editor ----- This section 1 Project tab	<input type="radio"/>	<input checked="" type="checkbox"/>
Jump	Makes the script set in [Script No.] selectable.	<input type="radio"/>	<input checked="" type="checkbox"/>

*1 When [External File] is selected in the Option tab, the path name is displayed. When [Project Data] is selected in the Option tab, the script name is displayed.

For details of *2, refer to the following.

*2 Convert File Path



Items	Description	A	F
Before	Display the old path name of the script file.	○	×
After	Clicking on the Browse button to specify the path name of the script file after the conversion.	○	×
Convert the same path	Check this item to convert all the files that have the same path name except for the file to be changed.	○	×



Registered script path name

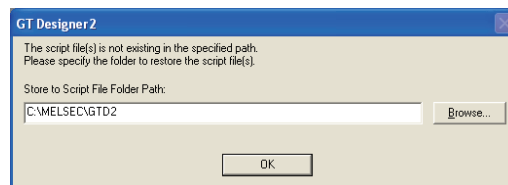
Register script file into the project data folder of GT Designer2. This will update the script path name automatically when the project data folder is moved to other drive/path, which eliminates the necessity to modify the path name.

14.4.3 Precautions

This section provides the precautions for using script function.

1 Precautions for drawing

- (1) Number of script functions that can be set in one project/on one screen
Up to 256 script functions can be set.
- (2) Number of script file that can be registered
Up to 32767 script files can be registered.
- (3) When editing script file
GT Designer2 cannot be operated when editing the script file from the text editor by clicking on the **Edit Script** button from the setting dialog box.
Even if GT Designer2 seems to be in freeze status, it can be operated once the text editor is exited.
- (4) Restoration of a script file
When the project for which [External File] has been set in the Option tab is opened, if the script file does not exist in the set path, GT Designer2 restores the script file.
In this case, set the folder where a script file should be restored at the dialog box as shown below.



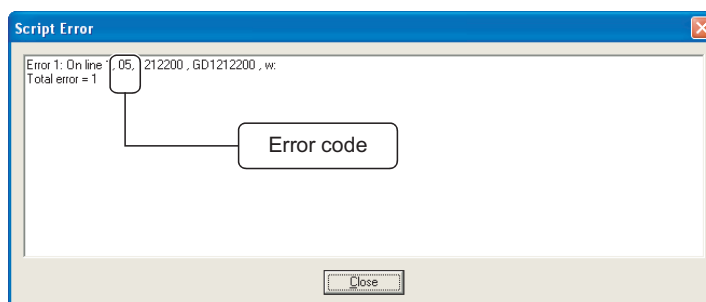
14.4.4 Message displayed during syntax check

1 The dialog box displayed during syntax check

The following dialog box will be displayed during syntax check.

If there is an error in script, the error code will be displayed in the dialog box.

When the error code is displayed, refer to **2** Error code list for the troubleshooting.



2 Error code list

The following list provides the error codes that may be displayed in the script error dialog box.

Error code	Error occurrence causes
0	The configuration error of script
1	The address of device is not an even number
2	Extended file register (ER) setting error (inter-block settings)
3	The bit device made word access.
4	Out of the range of device No. (displayed in HEX. number)
5	Out of the range of device No. (displayed in DEC. number)
6	Out of the range of device No. (displayed in OCT. number address)
7	The setting is not executed with the multiple of 16 when specifying the bit device word.
8	The setting is not within the range of 0 to 15 when specifying word device bit.
9	The set device is out of the range or does not exist.
11	Out of the range of device No.
14	Access to the device disabling bit accessibility by using bit.
15	Access to the device disabling word accessibility by using bit.
16	Octal device are set with odd number.
17	The setting is not executed with the multiple of 16 when specifying the bit device word.
20	The specified CPU does not exist.
21	The specified Word type does not exist.
22	A CPU not included with network settings has been specified.
25	No expression exit between {and}
26	The operator type of expressions table flow
27	The control type table overflow.
28	The switch statement includes no "case".
29	"Default" exist although there is no switch statement.
30	There are multiple "default" settings in switch statements.
31	There are too many switch "case" statements.
32	There are too many "switch break" statements.
33	Switch nest is deep.
34	System memory is insufficient.
35	Parenthesis nest is deep
36	Regarded as invalid statement.
37	No semicolon
38	There are invalid characters.
39	File input is not specified.
40	The specified input file does not exist.
41	The nest of if/while is deep.
45	The CPU incompatible with multi-CPU is specified as multi-CPU.
46	The multi-specified station No. is incorrect.
47	Network specification or station No. specification is incorrect.
48	Set network in GOT internal devices.
101	No closed parenthesis.
111	The bit device is specified for the device with indirect specification.

14.5 Program Examples

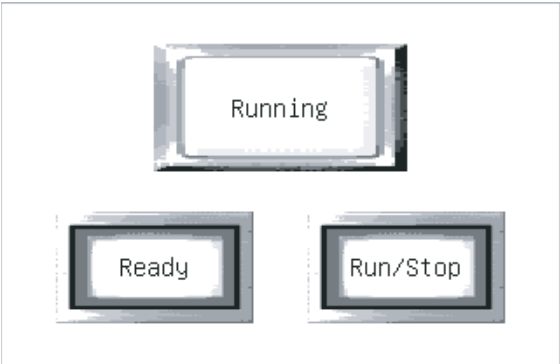
This section explains script program with examples.

14.5.1 Touch switches with interlock function

1 Operation

When the **Ready** and **Run/Stop** keys turn ON, the **Running** lamp is lit.

The system operation is controlled synchronously with the **Running** lamp.

Screen Image	Part Operation Definition
	<p>Running lamp : Indicates the operating status of the system.</p> <p>Ready key : Acts as an interlock for the Run/Stop key.</p> <p>Run/Stop key : Used to switch the operating status (run/stop) of the system.</p>

2 Monitor screen settings

Part Name	Object Type	Setting Item	Setting
Ready key	Touch key function (bit)	Monitor device	M0001
		Operation setting	Bit ALT
Run/Stop key	Touch key function (bit)	Monitor device	M0002
		Operation setting	Bit ALT
Running lamp	Lamp indication function (bit)	Monitor device	M0003 (System operation controlling device)

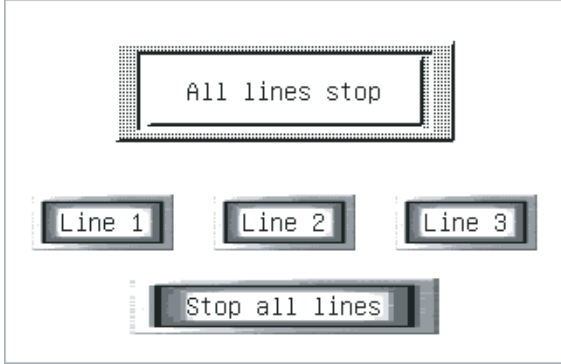
3 Program example

Item	Description
Data format	16-bit, signed BIN
Trigger type	Ordinary
Script	<pre> if ([b: M0001]&[b: M0002]==1){ set([b: M0003]); } else{ rst([b: M0003]); } </pre> <p>//if the ready and run/stop keys both turn ON //the running lamp is lit and the system starts operating.</p> <p>//if not //the running lamp turns off and the system is stopped.</p>

14.5.2 Lamps which change the display attributes under multiple conditions

1 Operation

The operation of each line is controlled with a touch key and the control statuses of three lines are represented by one lamp.

Screen Image	Part Operation Definition
	<p>Control status lamp : The lamp color and comment are changed according to the operating statuses of the lines.</p> <p>Line 1 key : Used to control the operation of line 1.</p> <p>Line 2 key : Used to control the operation of line 2.</p> <p>Line 3 key : Used to control the operation of line 3.</p> <p>Stop all lines key : Used to stop all lines.</p>

2 Monitor screen settings

Part Name	Object Type	Setting Item	Setting
Control status lamp	Lamp display function (word)	Monitor device	D10
		Display method (word)	Display range : \$V==0 Lamp color: 182 Text : All lines stop
			Display range : \$V==1 Lamp color: 3 Text : Line 1 running
			Display range : \$V==2 Lamp color: 224 Text : Line 2 running
			Display range : \$V==3 Lamp color: 227 Text : Line 3 running
			Display range : \$V==4 Lamp color: 28 Text : Lines 1, 2 running
			Display range : \$V==5 Lamp color: 31 Text : Lines 1, 3 running
			Display range : \$V==6 Lamp color: 252 Text : Lines 2, 3 running
Display range : \$V==7 Lamp color: 162 Text : Lines 1, 2, 3 running			
Line 1 key	Touch key function (bit)	Monitor device	X1
		Operation setting	Bit ALT
Line 2 key	Touch key function (bit)	Monitor device	X2
		Operation setting	Bit ALT
Line 3 key	Touch key function (bit)	Monitor device	X3
		Operation setting	Bit ALT
Stop all lines key	Touch key function (bit)	Monitor device	X0
		Operation setting	Bit SET

3 Program example

Item	Description
Data format	16-bit, signed BIN
Trigger type	Ordinary
Script	<pre> if([[b:X1]==OFF]&&[[b:X2]==OFF]&&[[b:X3]==OFF]){ [w:D10]=0; } //if line 1, 2 and 3 are all OFF //stores 0 into D10. if([[b:X1]==ON]&&[[b:X2]==OFF]&&[[b:X3]==OFF]){ [w:D10]=1; } //if line 1 is ON and line 2 and 3 are OFF. //stores 1 into D10 if([[b:X1]==OFF]&&[[b:X2]==ON]&&[[b:X3]==OFF]){ [w:D10]=2; } //if line 2 is ON and line 1 and 3 are OFF. //stores 2 into D10 if([[b:X1]==OFF]&&[[b:X2]==OFF]&&[[b:X3]==ON]){ [w:D10]=3; } //if line 3 is ON and line 1 and 2 are OFF. //stores 3 into D10 if([[b:X1]==ON]&&[[b:X2]==ON]&&[[b:X3]==OFF]){ [w:D10]=4; } //if line 1 and 2 are ON and line 3 is OFF. //stores 4 into D10 if([[b:X1]==ON]&&[[b:X2]==OFF]&&[[b:X3]==ON]){ [w:D10]=5; } //if line 1 and 3 are ON and line 2 is OFF. //stores 5 into D10 if([[b:X1]==OFF]&&[[b:X2]==ON]&&[[b:X3]==ON]){ [w:D10]=6; } //if line 2 and 3 are ON and line 1 is OFF. //stores 6 into D10 if([[b:X1]==ON]&&[[b:X2]==ON]&&[[b:X3]==ON]){ [w:D10]=7; } //if line 1, 2 and 3 are ON. //stores 7 into D10 if ([b:X0]==ON){ rst([b:X1]); rst([b:X2]); rst([b:X3]); rst([b:X0]); } //if all lines stop turns ON //turns OFF line 1. //turns OFF line 2. //turns OFF line 3. //turns OFF all lines stop. </pre>

14.5.3 Password input screen with time limit function

1 Operation

The password enter screen returns to the previous screen if a correct password is not entered within 10 seconds after it appeared.

Screen Image	Part Operation Definition
<p>Screen with Manager key (base screen 3)</p> <p>Screen change ↓ Returns in 10 seconds ↑</p> <p>Enter the manager password</p> <p>0 1 2 3 4 5</p> <p>1 2 3 4 5 Clear</p> <p>6 7 8 9 0 Confirm</p> <p>↓ Password match</p> <p>Manager screen</p> <p>Line 1 Line 2 Line 3</p> <p>Manager screen (base screen 5) appears.</p>	<p>Manager button : Used to shift to the password enter screen (base screen 4).</p> <p>Password enter : Password entered with 1 to 0 keys appears.</p> <p>1 to 0 keys : Used to enter a value.</p> <p>Clear key : Used to clear the entered value.</p> <p>Confirm key : Used to confirm the entered value.</p>

2 Monitor screen settings

Part Name	Object Type	Setting Item	Setting
Manager button	Touch key function	Operation setting	Switching to base screen 4
Password enter	Numerical input function	Monitor device	D10
1 key	Touch key function	Operation setting	Key code [0031H]
2 key	Touch key function	Operation setting	Key code [0032H]
3 key	Touch key function	Operation setting	Key code [0033H]
4 key	Touch key function	Operation setting	Key code [0034H]
5 key	Touch key function	Operation setting	Key code [0035H]
6 key	Touch key function	Operation setting	Key code [0036H]
7 key	Touch key function	Operation setting	Key code [0037H]
8 key	Touch key function	Operation setting	Key code [0038H]

(Continued to next page)

Part Name	Object Type	Setting Item	Setting
[9] key	Touch key function	Operation setting	Key code [0039H]
[0] key	Touch key function	Operation setting	Key code [0030H]
[Clear] key	Touch key function	Operation setting	Key code [0088H]
[Confirm] key	Touch key function	Operation setting	Key code [000DH]

3 Program example

Item	Description
Data format	16-bit, signed BIN
Trigger type	Ordinary
Script	<pre> if([b: GS1.01]==ON){ [w: TMP0001]=[w:GS7]; } //only when the password input screen has appeared //assigns GS7 to TMP0001. if([w: D10]==3238){ [w:D0]=5; [w: D10]=0; } //when the correct password is entered //switches to the manager screen (base screen 5). //clears the password. if([w: GS7]-[w: TMP0001]>=10){ [w: D0]=3; } //if more than 10 seconds have elapsed after the password enter screen //had appeared //returns to the screen with manager button (base screen 3). </pre>



About this program example.

This program example uses GOT special registers (GS).

The GOT special registers (GS) store the GOT's internal data, communication status, script error data and others.

A wide variety of operations can be achieved by correctly using the GOT special registers (GS) together with the script functions.

For details on GOT special registers (GS), refer to the following.

 Section 2.6.1 GOT internal devices

14.6 Precautions for using BMOV

If using the script function BMOV instruction (many times) to read device values from the PLC CPU into the GOT internal devices, this may cause the performance of the GOT display refresh and screen change by use of the touch switch to slow down considerably.

This Section provides guidelines for using the GOT in order to improve the monitoring performance by reducing the number of times to communicate with the PLC CPU using the BMOV instruction.

1 Reducing the communication time when using BMOV instruction


With the script function, the GOT only reads^{*2} a batch of device values from the PLC CPU direct address^{*1}, regardless of script execution condition, or conditional 'if' or 'switch' statements. Also, when using the BMOV instruction to read devices from the PLC CPU, communication with the PLC CPU from the GOT is done one or more times for each instruction^{*2}, depending on the amount of data.

Therefore, in order to reduce the communication time, it is recommend to read a batch of values from the source devices into a TMP (Temporary work) area before transferring the data to the GOT internal devices.


- *1 When device offset is specified, the offset device becomes the direct device address.
- *2 The screen script function applies only to the currently displayed screen on the GOT.

The following counter measures should be taken into consideration.

- (1) The batch of divided blocks are read from the PLC CPU to the GOT internal memory during one communication processing. The script is then customized as to split the batch of devices into separate blocks and transferred to the Temporary work and then to the GOT internal devices, such as GD.

 2 (1) Reading a batch of device values into Temporary work

- (2) The batch of divided blocks (for each 'if' and 'switch' statement) are read from the PLC CPU to the GOT internal memory during one communication processing. The script is then customized as to split the batch of devices according to the 'if' and 'switch' statements and transferred to the Temporary work and then to the GOT internal devices, such as GD.

 2 (2) Reading BMOV in a batch of steps within a script

- (3) When reading a batch of devices from the PLC CPU to the Temporary work, make sure the devices fall within the specified range, as shown in the table below. If the number of words is greater than the specified reference, the number will be automatically divided and then transferred.

Connected PLC CPU	Number of words transferred by BMOV for each communication processing
QCPU (bus connection only)	960 words
Motion controller CPU (Q mode)	
QCPU (other than bus connection)	480 words
QnACPU	
Motion controller CPU (A mode)	
MELDAS C6/C64	64 words
ACPU	
FXCPU	

2 Script solution examples

(1) Reading a batch of device values into Temporary work

This solution saves the communication time by reducing the communication between GOT internal memory and PLC CPU down to just once, where it took 3 times to do the same processing before.

(When transferring from Temporary work to GOT internal devices (e.g., GD), the internal memory^{*1} does not communicate with PLC CPU.)

*1 System area used for communication processing. The user is not permitted access to this area.

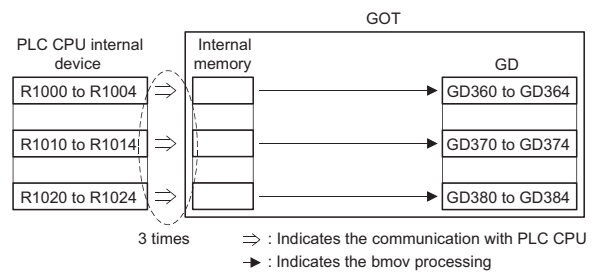
[Normal process]

(a) Processing outline

Device values are transferred from R1000 to R1004, R1010 to R1014 and R1020 to R1024 into GD360 to GD364, GD370 to GD374 and GD380 to GD384, respectively.

(b) Script description

```
bmov([w:R1000],[w:GD360],5);
bmov([w:R1010],[w:GD370],5);
bmov([w:R1020],[w:GD380],5);
```



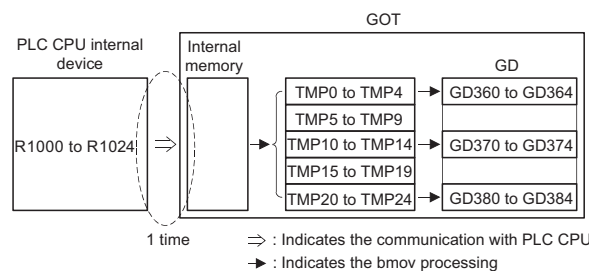
[Solution applied]

(a) Processing outline

Device values are transferred from R1000 to R1024 into TMP0 to TMP24 within GOT at once. Then they are transferred from TMP0 to TMP24 into GD360 to GD364, GD370 to GD374 and GD380 to GD384, respectively, as shown below.

(b) Script description

```
bmov([w:R1000],[w:TMP0],25);
bmov([w:TMP0],[w:GD360],5);
bmov([w:TMP10],[w:GD370],5);
bmov([w:TMP20],[w:GD380],5);
```



(2) Reading BMOV in a batch of steps within a script

This solution saves the communication time by reducing the communication between GOT internal memory and PLC CPU to just once, where it took 10 times to do the same processing before. (When reading internal devices within PLC CPU in 'if' or 'switch' statement, the internal memory communicates with PLC CPU regardless of the execution condition. When transferring from TMP to GOT internal devices (e.g., GD), the internal memory does not communicate with PLC CPU.)

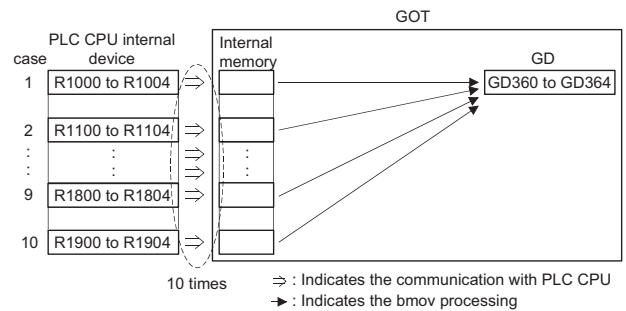
[Normal process]

(a) Processing outline

Device values are transferred from R1000 to R1004, ... and R1900 to R1904 into GD360 to GD364 depending on the amount of data.

(b) Script description

```
switch([w:D1000]){
  case 1:bmov([w:R1000],[w:GD360],5);
    break;
  case 2:bmov([w:R1100],[w:GD360],5);
    break;
  :
  case 9:bmov([w:R1800],[w:GD360],5);
    break;
  case 10:bmov([w:R1900],[w:GD360],5);
    break;
}
rst([b:GB1000]);
```



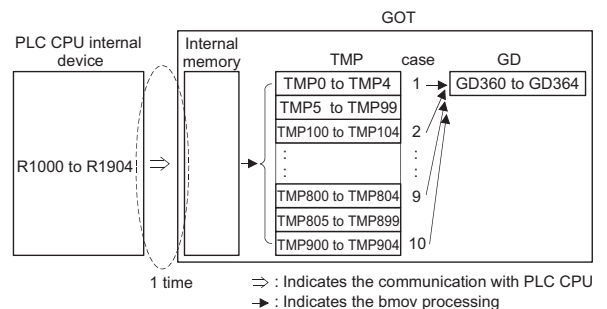
[Solution applied]

(a) Processing outline

A batch of device values is transferred from R1000 to R1904 into TMP0 to TMP904 within GOT once, and then it is transferred from TMP0 to TMP904 into GD360 to GD364 depending on the amount of data.

(b) Script description

```
bmov([w:R1000],[w:TMP0],905);
switch([w:D1000]){
  case 1:bmov([w:TMP0],[w:GD360],5);
    break;
  case 2:bmov([w:TMP100],[w:GD360],5);
    break;
  :
  case 9:bmov([w:TMP800],[w:GD360],5);
    break;
  case 10:bmov([w:TMP900],[w:GD360],5);
    break;
}
rst([b:GB1000]);
```



14.7 Troubleshooting

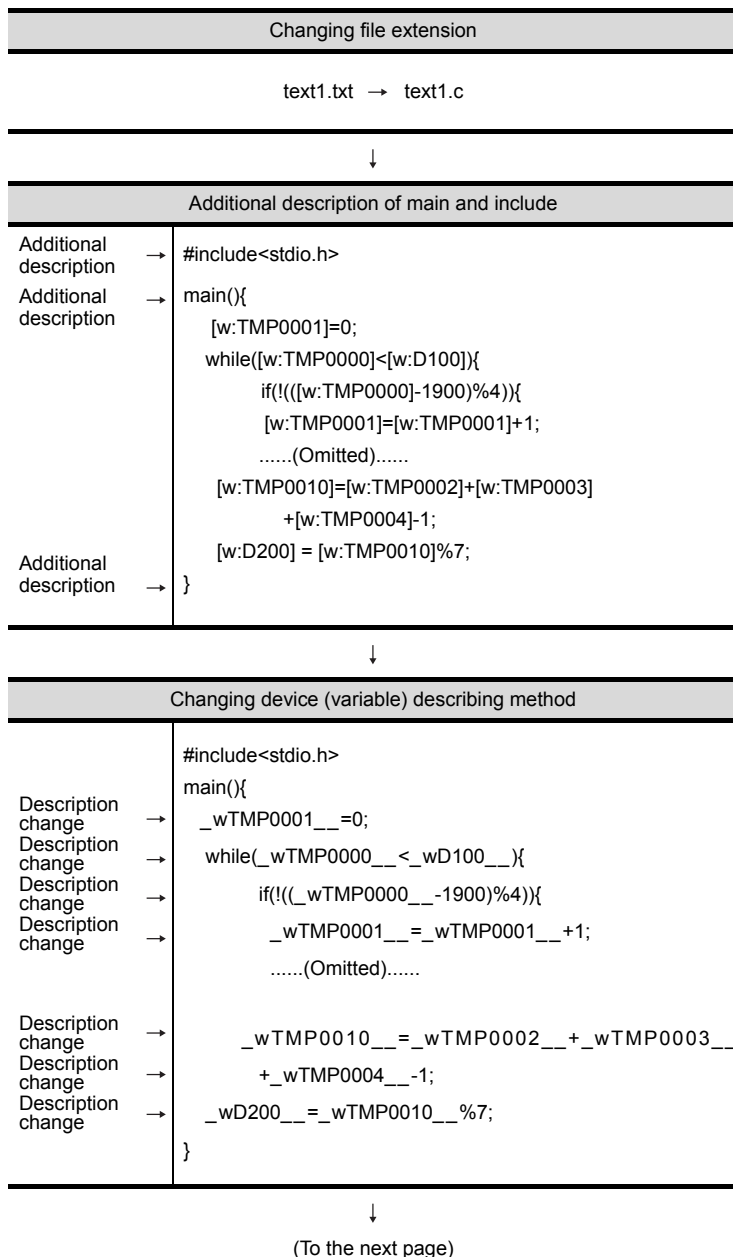
The script function does not display an error message at the time of error. It stops the script in error to prevent the other scripts and various monitor functions from stopping. Therefore, each script must be debugged without fail by reference to the followings.

14.7.1 Simulation using general C language compiler or debugger

Since a script is C language-like program, the general C language compiler or debugger (e.g. Microsoft® Visual C++) can be used for its simulation by making slight corrections.

This is effective for debugging a complicated script that includes many control statements.

Observe the following procedure to perform simulation using the general C language compiler or debugger.



- 1 Change the script file (extension ".txt") created for the GOT into a C language source file (extension ".c").
- 2 Open the C language source file with a commercially-available text editor and create a frame with "main(){ }". Also, describe "#include<stdio.h>" at the beginning.
- 3 Change the device (variable) describing method from that for script function to that for C language. Changing the variables into for C language based on the following definition enables smooth restoration to the GOT script.

Definition 1 "[w:" → "_w"

Definition 2 "[b:" → "_b"

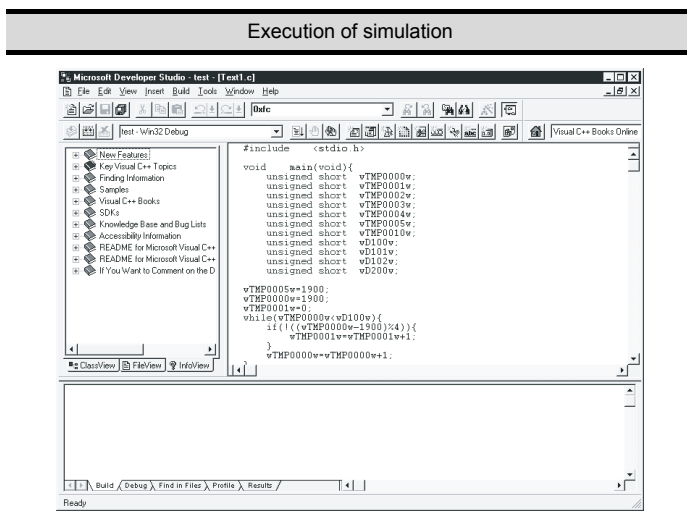
Definition 3 "]" → "__"

Using the batch replacement function of the commercially available text editor is convenient to make changes.

(From the preceding page)



Variable definition (auto variable declaration)	
Description change	→ #include<stdio.h>
Addition	→ void main(void){
Addition	→ unsigned short _wTMP0000__;
Addition	→ unsigned short _wTMP0001__;
Addition	→ unsigned short _wTMP0002__;
Addition	→ unsigned short _wD100__;
	.....(Omitted).....
	_wTMP0001__=0;
	while(_wTMP0000__<_wD100__){
	if(!((_wTMP0000__-1900)%4)){
	_wTMP0001__=_wTMP0001__+1;
	.....(Omitted).....
	_wTMP0010__=_wTMP0002__+_wTMP0003__
	+_wTMP0004__-1;
	_wD200__=_wTMP0010__%7;
	}



- 4 For C language, the variables must be defined prior to use. As only one data format can be selected for one script, the variable types of the C language must be set all the same. Being conscious of the script data format, assign the variables as indicated below.

Script Data Format	Variable Type
Signed BIN 16	short
Unsigned BIN 16	unsigned short
Signed BIN 32	long
Unsigned BIN 32	unsigned long
Real number	float
BCD32/BCD16*1	—

*1 Selecting "32-bit BCD/16-bit BCD" as the script data format disables simulation with the general C language compiler or debugger.

- 5 Perform simulation with the general C language compiler or debugger. (The example shown on the left uses Microsoft® Developer Studio.) The step run, variable watch and other functions specific to debugger are usable.

On completion of debugging, execute the steps 7 to 4 in reverse order to restore the GOT script file.

Point 

- (1) Selecting "32-bit BCD/16-bit BCD" as the script data format disables simulation with the general C language compiler or debugger.
- (2) As dedicated for the script functions, the set, rst, alt, bmov and fmov statements cannot be simulated with the general C language compiler or debugger. Use assignment of 1 or 0 instead of the set or rst statement.
- (3) When the system define (ON, OFF description) of the GOT is used unchanged, the define must be added to the C language source file.
- (4) The assignment delay does not occur during simulation with the general C language compiler or debugger, although it occurs when a script is executed on GOT. Therefore, take the possibility of assignment delay occurrence into consideration when performing simulation.
- (5) By applying the above, a new program created using C language can be used as a GOT script after being debugged.

14.7.2 Errors and corrective actions for script execution on GOT


1 Error checking method

The error data of the script functions is stored into the GOT special registers (GS).
Check the stored data using the system monitor function and various object functions (numerical display, lam indication and others) of the GOT.

- Details of GOT special registers

 Section 2.6.1 GOT internal devices

- Details of system monitor function

 GOT-A900 Series Operating Manual (Extended • Option Functions Manual)

The following types are all items related to GOT special register (GS) script function.

Address	Item Name	Description										
GS14	Script common information (read only)	Stores the data of error occurrence. GS14.00: Turns ON at error occurrence. GS14.07: Turns ON at BCD error occurrence. GS14.08: Turns ON at zero division error occurrence. GS14.12: Turns ON at communication error occurrence (including access to out-of-range device).										
GS15	Script error pointer	The pointer that indicates the area where the latest error code is stored. The latest error code is stored in a 2-word area within the script error data (GS16 to GS47). The value at GS15 cycles as shown below each time an error occurs. "-1" → "16" → "18" → "20" → → "46" → "16" (cycles back to "16".) The relationships between the GS15 value and the error code storing area are shown below. <table border="1"> <thead> <tr> <th>GS15</th> <th>Area where the latest error code is stored</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>GS16 to GS17</td> </tr> <tr> <td>18</td> <td>GS18 to GS19</td> </tr> <tr> <td>...</td> <td>...</td> </tr> <tr> <td>46</td> <td>GS46 to GS47</td> </tr> </tbody> </table>	GS15	Area where the latest error code is stored	16	GS16 to GS17	18	GS18 to GS19	46	GS46 to GS47
GS15	Area where the latest error code is stored											
16	GS16 to GS17											
18	GS18 to GS19											
...	...											
46	GS46 to GS47											
GS16 to 47*1	Script error data	Stores the script No. of error occurrence and the corresponding error codes in due order, starting from the higher addresses of the storage area. When an error occurs, the script No. and error code are stored in 2-word unit as a history. Note that if 15 or more errors occur, the higher addresses are overwritten in order.										

(Continued to next page)

Address	Item Name	Description																
GS48	Script execution pointer	<p>The pointer that indicates the area where the latest script execution number is stored.</p> <p>The latest script execution number is stored in a 1-word area within the script execution numbers (GS49 to GS79).</p> <p>The value at GS48 cycles as shown below each time a project script/screen script is executed.</p> <p>"-1" → "49" → "50" → "51" → → "79" → "49" (cycles back to "49".)</p> <p>The relationships between the GS48 value and the latest script execution number storing area are shown below.</p> <table border="1"> <thead> <tr> <th>GS48</th> <th>Area where the latest script execution number is stored</th> </tr> </thead> <tbody> <tr> <td>49</td> <td>GS49</td> </tr> <tr> <td>50</td> <td>GS50</td> </tr> <tr> <td>...</td> <td>...</td> </tr> <tr> <td>79</td> <td>GS79</td> </tr> </tbody> </table>	GS48	Area where the latest script execution number is stored	49	GS49	50	GS50	79	GS79						
GS48	Area where the latest script execution number is stored																	
49	GS49																	
50	GS50																	
...	...																	
79	GS79																	
GS49 to 79	Script execution number	Stores the script Nos. of the scripts executed as a history.																
GS384	Script common control (write only)	<p>GS384.0 : Clears the script error data (GS16 to GS47) when turned ON.</p> <p>GS384.1 : Re-executes the script that has been suspended due to an error when turned ON.</p>																
GS385	Script monitoring time	<p>Set the monitor time of one script in second unit.</p> <p>If a script does not end the preset time after its start, script processing is stopped. (Error code: 15)</p> <p>The initial setting of "0" is processed as 10 seconds.</p> <table border="1"> <thead> <tr> <th>Setting Example</th> <th>Monitor Time</th> </tr> </thead> <tbody> <tr> <td>0 (default)</td> <td>10 seconds</td> </tr> <tr> <td>1</td> <td>1 seconds</td> </tr> <tr> <td>10</td> <td>10 seconds</td> </tr> <tr> <td>11</td> <td>11 seconds</td> </tr> </tbody> </table>	Setting Example	Monitor Time	0 (default)	10 seconds	1	1 seconds	10	10 seconds	11	11 seconds						
Setting Example	Monitor Time																	
0 (default)	10 seconds																	
1	1 seconds																	
10	10 seconds																	
11	11 seconds																	
GS386	Screen script initial operation	<p>Set whether initial operation will be performed or not when any of the following conditions is satisfied.</p> <ul style="list-style-type: none"> The screen script function is used. The execution condition (trigger type) selected is "Rise/Fall". Switched to the screen including scripts. Security Switching Switching station No. Offset switching <table border="1"> <thead> <tr> <th>Setting Example</th> <th>Trigger Type</th> <th>Bit Value of Trigger</th> <th>Initial Operation</th> </tr> </thead> <tbody> <tr> <td rowspan="2">0</td> <td>Rise</td> <td>ON</td> <td rowspan="2">Performed</td> </tr> <tr> <td>Fall</td> <td>OFF</td> </tr> <tr> <td rowspan="2">Other than 0</td> <td>Rise</td> <td>ON</td> <td rowspan="2">Not performed</td> </tr> <tr> <td>Fall</td> <td>OFF</td> </tr> </tbody> </table>	Setting Example	Trigger Type	Bit Value of Trigger	Initial Operation	0	Rise	ON	Performed	Fall	OFF	Other than 0	Rise	ON	Not performed	Fall	OFF
Setting Example	Trigger Type	Bit Value of Trigger	Initial Operation															
0	Rise	ON	Performed															
	Fall	OFF																
Other than 0	Rise	ON	Not performed															
	Fall	OFF																

*1 According to the error, script No. may be "0".
For the script function error, refer to the following.

Error code list (☞ This section 2)

2 Error code list

Error Code	Error Definition	Corrective Action
1*1	Initialization of project script functions failed.	<ul style="list-style-type: none"> Reduce the number of monitor device points for scripts. Reduce the number of times to execute the project script function.
2*1	Initialization of screen script functions (base) failed.	<ul style="list-style-type: none"> Reduce the number of monitor device points for scripts and base screens. Reduce the number of times to execute screen script function (base).
3*1	Initialization of screen script functions (superimpose window) failed.	<ul style="list-style-type: none"> Reduce the number of monitor device points for scripts and superimpose screens. Reduce the number of times to execute the screen script function (superimpose window) .
4*1	Initialization of screen script functions (overlap window 1) failed.	<ul style="list-style-type: none"> Reduce the number of monitor device points for scripts and overlap window screens 1. Reduce the number of times to execute the screen script function (overlap window 1) .
5*1	Initialization of screen script functions (overlap window 2) failed.	<ul style="list-style-type: none"> Reduce the number of monitor device points for scripts and overlap window screens 2. Reduce the number of times to execute the screen script function (overlap window 2) .
6	The operation result is a value outside the usable data range specified by the data format of the script.	<ul style="list-style-type: none"> Check the processing of the device that was brought outside the data range of the corresponding script, and correct the script.
7*1	The number of times to execute scripts exceeded the limit. And some scripts were left unexecuted.	<ul style="list-style-type: none"> Change the number of times to execute scripts in one project to 256 or less. Change the number of times to execute scripts on one screen to 256 or less.
8	When "16-bit BCD" or "32-bit BCD" was selected as the script data format, the monitor device value could not be handled as BCD.	<ul style="list-style-type: none"> Check whether the device to be monitored is correct. Check the processing of the device which could not be handled as BCD, and correct the script and sequence program.
9	When "16-bit BCD" or "32-bit BCD" was selected as the script data format, the operation result was outside the BCD data range.	<ul style="list-style-type: none"> Check the processing of the device that was brought outside the BCD data range.
10	The numerator was divided by the denominator of 0.	<ul style="list-style-type: none"> Check the factor that caused zero division in the corresponding script, and correct the script.
11*1	Write to a device failed.	<ul style="list-style-type: none"> Check the device description of the corresponding script.
12	Reservation of an internal area for device write failed.	<ul style="list-style-type: none"> Reduce the number of write device points in the corresponding script.
13	The while statement includes the description of a device other than a temporary work.	<ul style="list-style-type: none"> Replace the write device in the while statement with a temporary work.
14	An expression was too complicated to process.	<ul style="list-style-type: none"> Simplify or divide the operation expression in the corresponding script.
15	A script did not end within the script monitoring time.	<ul style="list-style-type: none"> Check whether the corresponding script has gone into an endless loop. Increase the value of script monitoring time (GS385).
16	Access to GOT internal device failed, resulting in error (BCD conversion out of device range) occurrence.	<ul style="list-style-type: none"> Check the corresponding processing to GOT internal device and check the script and PLC program. Check the object script description.
	Access to gateway device failed.	<ul style="list-style-type: none"> Check whether Extended Function OS of gateway function is installed in GOT. Check the cable.

*1 Script No. "0" is stored to GOT special register (GS).

APPENDICES

App.1 Object Display Speed (Reference Value)

The display speeds (reference values: GOT-A900 series) of each object are as listed below.
The actual display speeds depend on the number of objects set on a screen, the shape of a figure drawn, and the frequencies of transient transmission.

Object name			Numerical display	ASCII display	Comment display (Bit)	User alarm	Parts display (Bit)	Lamp display (Bit)	Trend graph display	Line graph display	Level display	Touch key (Bit momentary)	
			Setting condition	6 digits, 16 bit	6 digits	10 characters	—	48×48 dots	48×48 dots	240×120 dots, 8 lines	240×120 dots, 8 lines, 10 points	160×160 dots	—
Display speed (Unit : s)	Bus connection	Consecutive device	0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15	
		Random device	0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15	
	CPU direct connection	Sequential device	0.2	0.2	0.25	0.25	0.5	0.25	0.2	0.8	0.2	0.2	
		Random device	0.2	0.2	0.35	0.5	0.5	0.3	0.2	0.8	0.2	0.2	
	Computer link connection	Sequential device	0.3	0.3	0.3	0.3	0.5	0.3	0.2	0.8	0.2	0.3	
		Random device	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.8	0.2	0.3	
	MELSECNET /10 connection	Cyclic	Sequential device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
			Random device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
		Transient	Sequential device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
			Random device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
	CC-Link connection (Remote device station)	Sequential device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
		Random device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
	CC-Link connection (Intelligent device station)	Cyclic	Sequential device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Random device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
		Transient	Sequential device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
			Random device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
	Ethernet connection	Sequential device		0.2	0.2	0.25	0.25	0.25	0.2	0.2	0.5	0.2	0.3
		Random device		0.2	0.2	0.25	0.5	0.25	0.2	0.2	0.5	0.2	0.4
	QCPU	Bus connection	Sequential device	0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15
			Random device	0.1	0.15	0.15	0.1	0.2	0.2	0.15	0.35	0.1	0.15
CPU direct connection		Sequential device	0.2	0.2	0.25	0.25	0.5	0.25	0.2	0.7	0.2	0.2	
		Random device	0.2	0.2	0.35	0.5	0.5	0.3	0.2	0.7	0.2	0.2	
Computer link connection		Sequential device	0.3	0.3	0.3	0.3	0.5	0.3	0.2	0.7	0.2	0.3	
		Random device	0.3	0.3	0.4	0.5	0.5	0.4	0.2	0.7	0.2	0.3	

(Continued to next page)

Object name		Setting condition	Numerical display	ASCII display	Comment display (Bit)	User alarm	Parts display (Bit)	Lamp display (Bit)	Trend graph display	Line graph display	Level display	Touch key (Bit momentary)		
			6 digits, 16 bit	6 digits	10 characters	—	48×48 dots	48×48 dots	240×120 dots, 8 lines	240×120 dots, 8 lines, 10 points	160×160 dots	—		
Display speed (Unit : s)	QCPU	MELSECNET /10 connection	Cyclic	Sequential device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
				Random device	0.1	0.1	0.25	0.2	0.2	0.2	0.15	0.4	0.1	0.15
			Transient	Sequential device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
				Random device	0.5	0.5	0.6	0.5	0.5	0.6	0.5	2.0	0.4	0.4
		CC-Link connection (Remote device station)	Sequential device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Random device		0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
		CC-Link connection (Intelligent device station)	Cyclic	Sequential device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
				Random device	0.2	0.2	0.2	0.25	0.25	0.3	0.25	0.3	0.2	0.25
			Transient	Sequential device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
				Random device	0.3	0.3	0.4	0.4	0.3	0.35	0.3	1.0	0.4	0.4
		Ethernet connection	Sequential device		0.2	0.2	0.25	0.25	0.25	0.2	0.2	0.5	0.2	0.3
			Random device		0.2	0.2	0.25	0.5	0.25	0.2	0.2	0.5	0.2	0.4
	FXCPU	CPU direct connection	Sequential device		0.3	0.3	0.5	0.5	1.0	0.4	0.5	1.0	0.5	0.5
			Random device		0.3	0.3	0.5	0.5	1.0	0.4	0.5	1.20	0.22	1.06
	Programmable controller by Omron	Sequential device		0.20	0.20	0.20	0.50	0.30	0.30	0.25	0.60	0.26	0.35	
		Random device		0.20	0.20	0.20	0.50	0.36	0.30	0.30	0.80	0.27	0.35	
	Programmable controller by Yasukawa	Sequential device		0.21	0.30	0.35	0.70	0.35	0.35	0.27	0.8	0.2	0.3	
		Random device		1.09	0.68	2.34	10.40	2.42	2.20	0.53	5.72	0.46	2.50	
	Programmable controller by Allen-Bradley	Sequential device		0.3	0.3	0.5	0.5	0.4	0.4	0.5	1.0	0.5	0.5	
	Programmable controller by SHARP	Sequential device		0.3	0.5	0.6	0.5	0.7	0.5	0.5	1.0	0.5	0.5	
	Programmable controller by Toshiba	Sequential device		0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.9	0.4	0.4	
	Programmable controller by SIEMENS	Sequential device		0.3	0.3	0.4	0.7	0.4	0.4	0.5	1.2	0.3	0.4	
Programmable controller by Hitachi	Sequential device		0.3	0.3	0.3	0.5	0.4	0.4	0.3	0.8	0.3	0.3		
Matsushita Electric Works	Sequential device		0.3	0.3	0.3	0.8	0.4	0.4	0.4	0.8	0.3	0.3		

App.2 Key Code List

(1) List of key code for numerical and ASCII input

Key	Key code ^(H)	Key	Key code ^(H)	Key	Key code ^(H)	Key	Key code ^(H)
SP	0020 _H	@	0040 _H	`	0060 _H	→	0080 _H ^{*1}
!	0021 _H	A	0041 _H	a	0061 _H	←	0081 _H ^{*1}
”	0022 _H	B	0042 _H	b	0062 _H	↑	0082 _H
#	0023 _H	C	0043 _H	c	0063 _H	↓	0083 _H
\$	0024 _H	D	0044 _H	d	0064 _H	(Clear)	0088 _H
%	0025 _H	E	0045 _H	e	0065 _H		
&	0026 _H	F	0046 _H	f	0066 _H		
,	0027 _H	G	0047 _H	g	0067 _H		
(	0028 _H	H	0048 _H	h	0068 _H		
)	0029 _H	I	0049 _H	i	0069 _H		
*	002A _H	J	004A _H	j	006A _H		
+	002B _H	K	004B _H	k	006B _H		
,	002C _H	L	004C _H	l	006C _H		
-	002D _H	M	004D _H	m	006D _H		
.	002E _H	N	004E _H	n	006E _H		
/	002F _H	O	004F _H	o	006F _H		
0	0030 _H	P	0050 _H	p	0070 _H		
1	0031 _H	Q	0051 _H	q	0071 _H		
2	0032 _H	R	0052 _H	r	0072 _H		
3	0033 _H	S	0053 _H	s	0073 _H		
4	0034 _H	T	0054 _H	t	0074 _H		
5	0035 _H	U	0055 _H	u	0075 _H		
6	0036 _H	V	0056 _H	v	0076 _H		
7	0037 _H	W	0057 _H	w	0077 _H		
8	0038 _H	X	0058 _H	x	0078 _H		
9	0039 _H	Y	0059 _H	y	0079 _H		
:	003A _H	Z	005A _H	z	007A _H		
;	003B _H	[	005B _H	{	007B _H		
<	003C _H	\	005C _H	|	007C _H		
=	003D _H	]	005D _H	}	007D _H		
>	003E _H	^	005E _H	~	007E _H		
?	003F _H	_	005F _H	|	007F _H		

*1: Cannot be set when the GOT-F900 series is used.

(2) List of key code for objects

(a) Key code for numerical input

Key code ^(H)	Application
0008 _H *	Deletes the least signification digit and shifts the entire digits to the right by one.
000D _H	Write to the destination device (Execute)/Move the cursor
001B _H *	Delete cursor
002D _H	"_"
002E _H	":"
0030 _H to 0046 _H	Input value

* Cannot be set when the GOT-F900 series is used.

(b) Key code for ASCII input

Key code ^(H)	Application
0008 _H *	Deletes the first character and shifts the entire characters to the right by one character.
000D _H	Write to the destination device (Execute)/Move the cursor
001B _H *	Delete cursor
ASCII code	Input characters

* Cannot be set when the GOT-F900 series is used.

(c) Key code for data list display function

Key code ^(H)	Application
00F2 _H *	Scroll up by one line
00F3 _H *	Scroll down by one line

* Cannot be set when the GOT-F900 series is used.

(d) Key code for alarm list display function

Key code ^(H)	Application
00F2 _H *	Scroll up by one line
00F3 _H *	Scroll down by one line
FFB0 _H	Show cursor
FFB1 _H	Hide cursor
FFB2 _H	Move cursor upward (Insert page break when cursor is hidden)
FFB3 _H	Move cursor downward (Insert page break when cursor is hidden)
FFB8 _H	Display detail information
FFBC _H *	Display ladder

* Cannot be set when the GOT-F900 series is used.

(e) Key code for alarm history function

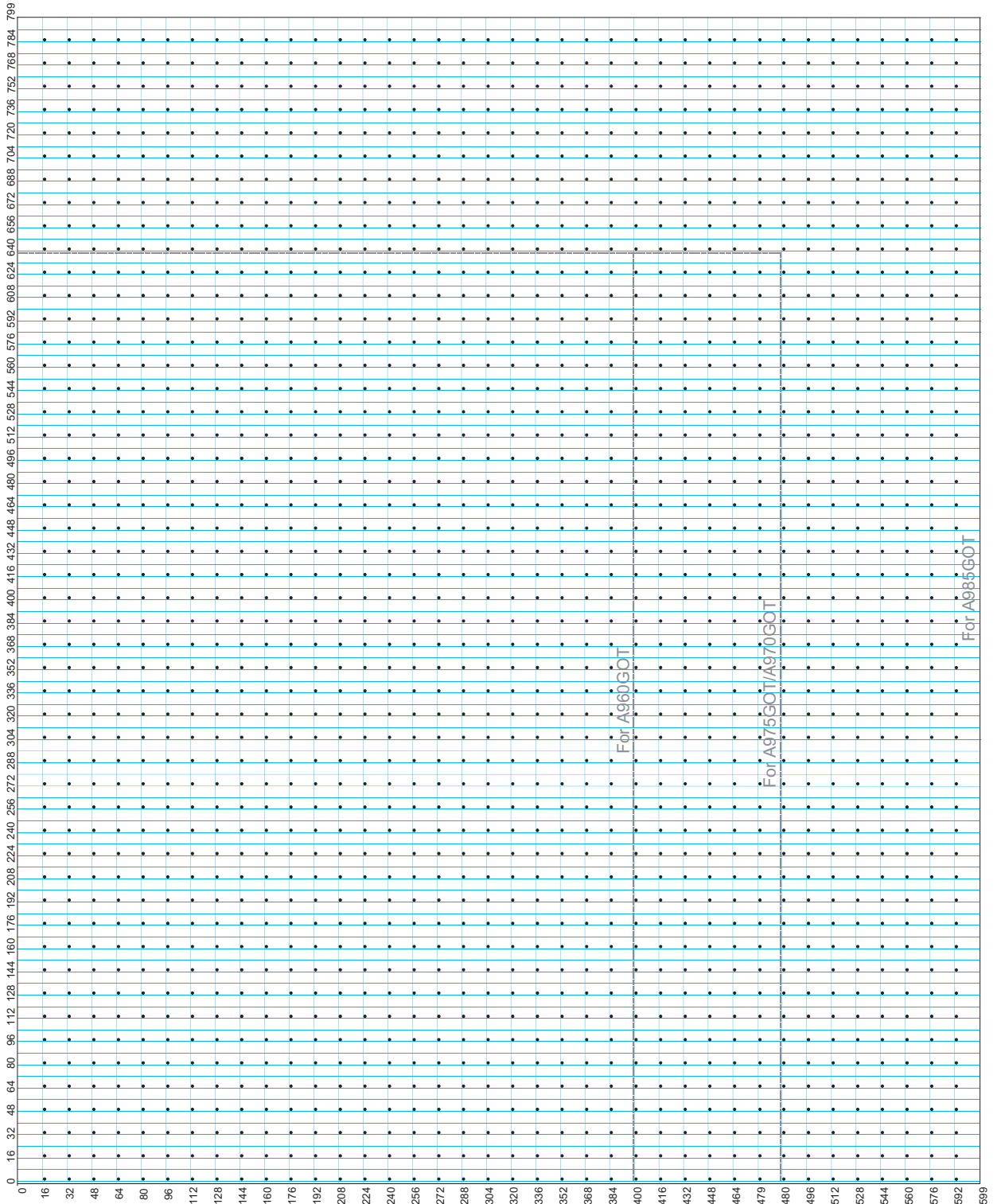
Key code ^(H)	Application
FFB0 _H	Show cursor
FFB1 _H	Hide cursor
FFB2 _H	Move cursor upward (Insert page break when cursor is hidden)
FFB3 _H	Move cursor downward (Insert page break when cursor is hidden)
FFB4 _H *	Display date/time of selected data
FFB5 _H *	Display date/time of all data
FFB6 _H	Clear the selected alarm data
FFB7 _H	Clear all alarm data
FFB8 _H	Display detail information
FFB9 _H *	Reset designated device
FFBB _H	When using GOT-A900 series: Save alarm contents to PC card When using GOT-F900 series: Reset designated device
FFBC _H *	Display ladder

* Cannot be set when the GOT-F900 series is used

FFB6 and FFB7 are supported by GOT-F900 series OS version 3.0 or higher.

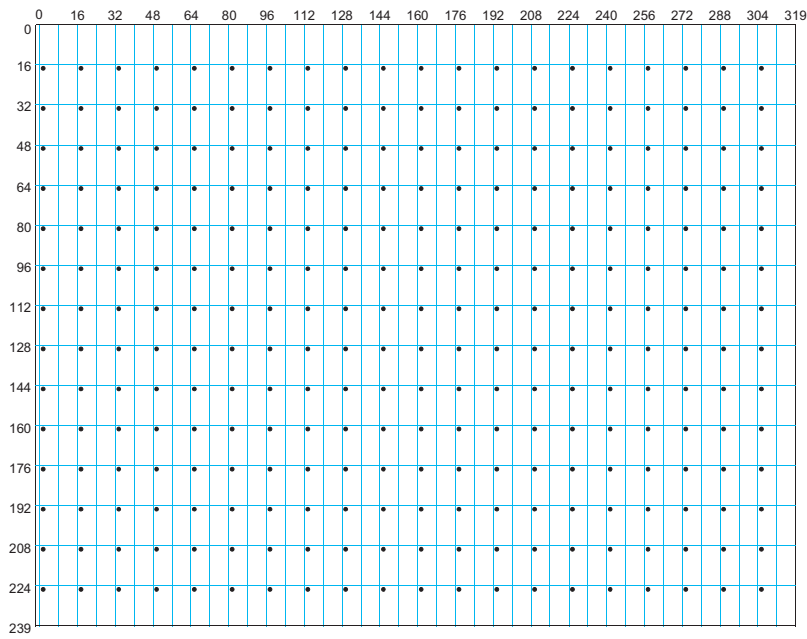
App.3 Drawing Sheet

(1) For A985GOT/A975GOT/A970GOT/A960GOT

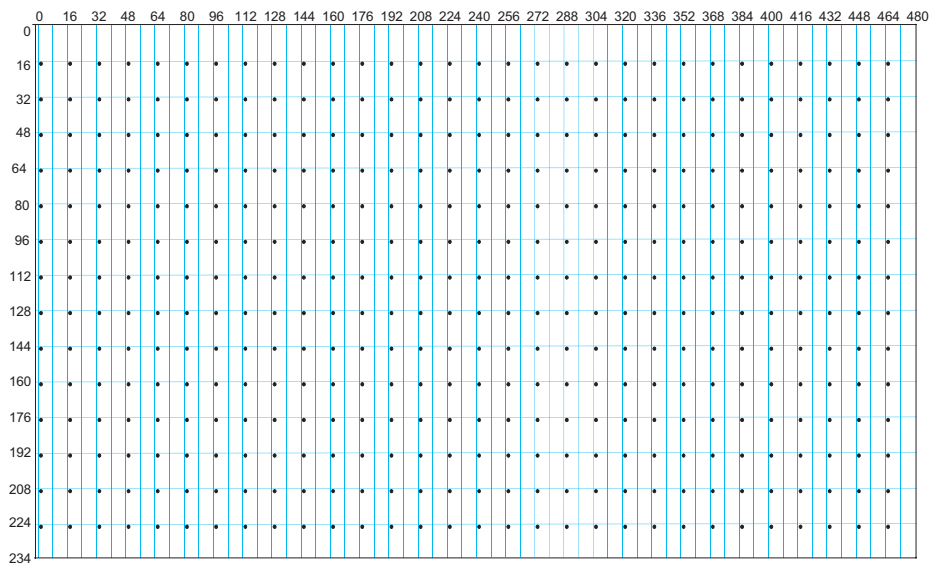


9	PARTS
10	GRAPH, METER
11	TRIGGER → ACTIONS
12	EXTERNAL INPUT/ OUTPUT
13	OTHERS
14	SCRIPT FUNCTION
	APPENDICES
	INDEX

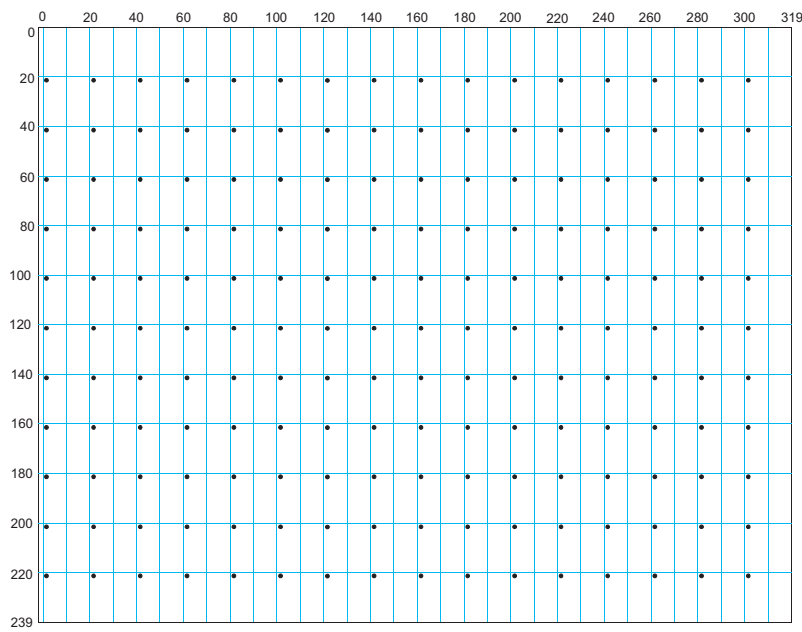
(2) For A95*GOT



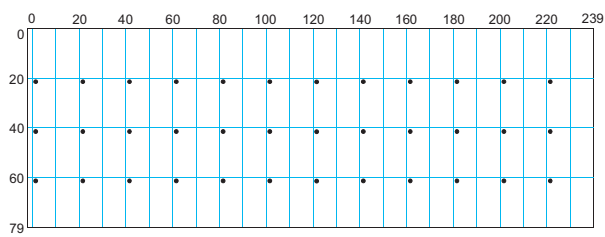
(3) For A956WGOT



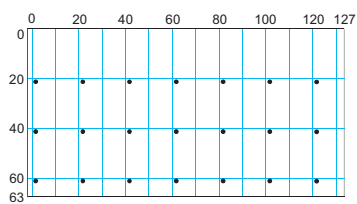
(4) For F940GOT



(5) For F930GOT



(6) For F920GOT



* There is no touch switch.

App.4 Printing Time of Hard Copy Function (Reference Value)

During printing, it is recommended that a monitor screen with fewer object functions is displayed. When a screen with object functions (e.g. value display function) which are changed very fast is displayed on the GOT, the GOT gives priority to display of object functions. Therefore, the printouts take longer. The following table shows the print out time (reference value) using the hard copy function while the monitor screen with value display function for 50 points is displayed.

GOT main unit	Connection	Type of printer to be used*1		
		Printer applicable for ESC/P command (16 colors)	Printer applicable for ESC/P command (black and white)	Printer applicable for PCL command
A985GOT	CPU direct connection	1min40s	40.9s	31.3s
	Bus connection	1min39s	40.9s	30.9s
	Computer link	1min39s	39.1s	30.6s
	MELSECNET connection (data link system)	1min42s	42.4s	32.2s
	MELSECNET connection (network system)	1min37s	40.1s	33.5s
A975GOT	CPU direct connection	1min08s	33.4s	27.9s
	Bus connection	1min09s	31.0s	27.0s
	Computer link	1min07s	33.4s	26.7s
	MELSECNET connection (data link system)	1min09s	31.1s	28.2s
	MELSECNET connection (network system)	1min09s	31.5s	28.0s
A970GOT	CPU direct connection	1min10s	32.3s	27.1s
	Bus connection	1min08s	30.4s	28.1s
	Computer link	1min07s	33.1s	26.8s
	MELSECNET connection (data link system)	1min08s	30.4s	28.1s
	MELSECNET connection (network system)	1min08s	33.5s	28.0s
A95*GOT -SBA/SBD	CPU direct connection	30.5s	20.3s	22.9s
	Bus connection	30.3s	21.2s	23.0s
	Computer link	30.7s	21.5s	22.8s
	MELSECNET connection (data link system)	31.5s	19.5s	22.5s
	MELSECNET connection (network system)	33.6s	19.3s	23.0s
A95*GOT- LBA/LBD	CPU direct connection	19.3s	20.6s	23.7s
	Bus connection	20.9s	20.9s	23.2s
	Computer link	19.1s	20.2s	23.1s
	MELSECNET connection (data link system)	22.1s	21.9s	22.6s
	MELSECNET connection (network system)	21.6s	19.8s	23.0s
A956WGOT	CPU direct connection	37.2s	22.8s	22.7s
	Bus connection	36.0s	23.1s	22.5s
	Computer link	36.9s	23.1s	22.8s
	MELSECNET connection (data link system)	35.7s	23.1s	23.1s
	MELSECNET connection (network system)	36.7s	23.1s	22.5s

- *1 Either of the following printers was used to measure printing time.
- ESC/P command-ready printer: Canon BJC-600J
 - PCL command-ready printer: HEWLETT PACKARD Laser Jet6L

App.5 Synthesized Colors Available for XOR

The following table indicates the colors and corresponding numbers available when using the parts display function XOR drawing mode.

(1) GOT having 256 display colors

When using the XOR for any colors other than the following, preview them in the preview of GT Designer2.

	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Black 0	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Blue 3	Blue 3	Black 0	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252	—	—	—	—	—	—	—	—
Red 224	Red 224	Purple 227	Black 0	Blue 3	Yellow 252	White 255	Green 28	Cyan 31	—	—	—	—	—	—	—	—
Purple 227	Purple 227	Red 224	Blue 3	Black 0	White 255	Yellow 252	Cyan 31	Green 28	—	—	—	—	—	—	—	—
Green 28	Green 28	Cyan 31	Yellow 252	White 255	Black 0	Blue 3	Red 224	Purple 227	—	—	—	—	—	—	—	—
Cyan 31	Cyan 31	Green 28	White 255	Yellow 252	Blue 3	Black 0	Purple 227	Red 224	—	—	—	—	—	—	—	—
Yellow 252	Yellow 252	White 255	Green 28	Cyan 31	Red 224	Purple 227	Black 0	Blue 3	—	—	—	—	—	—	—	—
White 255	White 255	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Black 0	—	—	—	—	—	—	—	—
Dark blue 2	Dark blue 2	—	—	—	—	—	—	—	Black 0	Dark purple 162	Dark red 160	Dark cyan 22	Dark green 20	Dark white 182	Dark yellow 180	—
Dark red 160	Dark red 160	—	—	—	—	—	—	—	Dark purple 162	Black 0	Dark blue 2	Dark yellow 180	Dark white 182	Dark green 20	Dark cyan 22	—
Dark purple 162	Dark purple 162	—	—	—	—	—	—	—	Dark red 160	Dark blue 2	Black 0	Dark white 182	Dark yellow 180	Dark cyan 22	Dark green 20	—
Dark green 20	Dark green 20	—	—	—	—	—	—	—	Dark cyan 22	Dark yellow 180	Dark white 182	Black 0	Dark blue 2	Dark red 160	Dark purple 162	—
Dark cyan 22	Dark cyan 22	—	—	—	—	—	—	—	Dark green 20	Dark white 182	Dark yellow 180	Dark blue 2	Black 0	Dark purple 162	Dark red 160	—
Dark yellow 180	Dark yellow 180	—	—	—	—	—	—	—	Dark white 182	Dark green 20	Dark cyan 22	Dark red 160	Dark purple 162	Black 0	Dark blue 2	—
Dark white 182	Dark white 182	—	—	—	—	—	—	—	Dark yellow 180	Dark cyan 22	Dark green 20	Dark purple 162	Dark red 160	Dark blue 2	Black 0	—
Dark black 109	Dark black 109	—	—	—	—	—	—	—	—	—	—	—	—	—	—	Black 0

(2) GOT having 16 display colors

	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Black 0	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Dark black 109
Blue 3	Blue 3	Black 0	Dark purple 162	Dark red 160	Dark cyan 22	Dark green 20	Dark white 182	Dark yellow 180	Dark black 109	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252	Dark blue 2
Red 224	Red 224	Dark purple 162	Black 0	Dark blue 2	Dark yellow 180	Dark white 182	Dark green 20	Dark cyan 22	Purple 227	Dark black 109	Blue 3	Yellow 252	White 255	Green 28	Cyan 31	Dark red 160
Purple 227	Purple 227	Dark red 160	Dark blue 2	Black 0	Dark white 182	Dark yellow 180	Dark cyan 22	Dark green 20	Red 224	Blue 3	Dark black 109	White 255	Yellow 252	Cyan 31	Green 28	Dark purple 162
Green 28	Green 28	Dark cyan 22	Dark yellow 180	Dark white 182	Black 0	Dark blue 2	Dark red 160	Dark purple 162	Cyan 31	Yellow 252	White 255	Dark black 109	Blue 3	Red 224	Purple 227	Dark green 20
Cyan 31	Cyan 31	Dark green 20	Dark white 182	Dark yellow 180	Dark blue 2	Black 0	Dark purple 162	Dark red 160	Green 28	White 255	Yellow 252	Blue 3	Dark black 109	Purple 227	Red 224	Dark cyan 22
Yellow 252	Yellow 252	Dark white 182	Dark green 20	Dark cyan 22	Dark red 160	Dark purple 162	Black 0	Dark blue 2	White 255	Green 28	Cyan 31	Red 224	Purple 227	Dark black 109	Blue 3	Dark yellow 180
White 255	White 255	Dark yellow 180	Dark cyan 22	Dark green 20	Dark purple 162	Dark red 160	Black 0	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Dark black 109	Dark white 182	
Dark blue 2	Dark blue 2	Dark black 109	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Blue 3
Dark red 160	Dark red 160	Purple 227	Dark black 109	Blue 3	Yellow 252	White 255	Green 28	Cyan 31	Dark purple 162	Black 0	Dark blue 2	Dark yellow 180	Dark white 182	Dark green 20	Dark cyan 22	Red 224
Dark purple 162	Dark purple 162	Red 224	Blue 3	Dark black 109	White 255	Yellow 252	Cyan 31	Green 28	Dark red 160	Dark blue 2	Black 0	Dark white 182	Dark yellow 180	Dark cyan 22	Dark green 20	Purple 227
Dark green 20	Dark green 20	Cyan 31	Yellow 252	White 255	Dark black 109	Blue 3	Red 224	Purple 227	Dark cyan 22	Dark yellow 180	Dark white 182	Black 0	Dark blue 2	Dark red 160	Dark purple 162	Green 28
Dark cyan 22	Dark cyan 22	Green 28	White 255	Yellow 252	Blue 3	Dark black 109	Purple 227	Red 224	Dark green 20	Dark white 182	Dark yellow 180	Dark blue 2	Black 0	Dark purple 162	Dark red 160	Cyan 31
Dark yellow 180	Dark yellow 180	White 255	Green 28	Cyan 31	Red 224	Purple 227	Dark black 109	Blue 3	Dark white 182	Dark green 20	Dark cyan 22	Dark red 160	Dark purple 162	Black 0	Dark blue 2	Yellow 252
Dark white 182	Dark white 182	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Dark black 109	Dark yellow 180	Dark cyan 22	Dark green 20	Dark purple 162	Dark red 160	Dark blue 2	Black 0	White 255
Dark black 109	Dark black 109	Dark blue 2	Dark red 160	Dark purple 162	Dark green 20	Dark cyan 22	Dark yellow 180	Dark white 182	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255	Black 0

(3) GOT having 8 display colors

	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255
Black 0	Black 0	Blue 3	Red 224	Purple 227	Green 28	Cyan 31	Yellow 252	White 255
Blue 3	Blue 3	Black 0	Purple 227	Red 224	Cyan 31	Green 28	White 255	Yellow 252
Red 224	Red 224	Purple 227	Black 0	Blue 3	Yellow 252	White 255	Green 28	Cyan 31
Purple 227	Purple 227	Red 224	Blue 3	Black 0	White 255	Yellow 252	Cyan 31	Green 28
Green 28	Green 28	Cyan 31	Yellow 252	White 255	Black 0	Blue 3	Red 224	Purple 227
Cyan 31	Cyan 31	Green 28	White 255	Yellow 252	Blue 3	Black 0	Purple 227	Red 224
Yellow 252	Yellow 252	White 255	Green 28	Cyan 31	Red 224	Purple 227	Black 0	Blue 3
White 255	White 255	Yellow 252	Cyan 31	Green 28	Purple 227	Red 224	Blue 3	Black 0

App.6 Comparison between GT Designer terms and GT Designer2 terms

The following terms are different between GT Designer and GT Designer2.

GT Designer terms	GT Designer2 terms	Remarks
Edit key group	Edit touch area/frame region	The operation for editing the touch switch valid key area and changing the figure/frame size of the object with frame set.
Case	State	Settings for change the object display attributes according to the device status (condition).
Parts library Panel kit	Library	Generic term for system libraries and user defined libraries.
	Template	Generic term for objects and figures registered in each library.

App.7 List of Functions Added by GT Designer2 Version Upgrade (For GOT900 Series)

The following describes the functions added by version upgrade of the GT Designer2 Version2.00A to 96A. For using the following functions, use GT Designer2 or OS of the corresponding version or later.

1 Added GT Designer2 functions

Item	Description	Version of GT Designer□	Version of OS
Reading BMP image data	Enables displaying BMP image data reduced to an available resolution on GT Designer2.	2.77F	--
Comment	Copying comments in column unit on Comment, etc.	2.09K	--
Library workspace	Improved library structure and added import function	2.09K	--
	Improved library structure, expanded the maximum registration number of user libraries, and copying the figure data to the designated user library	2.17T	--
	Enables setting the background color of the figures in the Library Editor screen.	2.47Z	--
	Enables sorting the figure data by subject or function and displaying different-shaped figures in the same color in the image list.	2.58L	--
	Real type data are added to the subject in the library.	2.63R	--
Copy OFF → ON Copy ON → OFF	Copying only text is possible for lamp display, touch switches and comment display.	2.17T	--
Import and Export	Alarm history and recipe function setting can be edited in CSV file format.	2.17T	--
	Items that can be imported or exported with the alarm history are added. (Device No., comment No., and detail No.)	2.77F	--
Print	Printing with header and footer is possible.	2.17T	--
Data View	With grouped objects, setting change is possible for individual objects.	2.17T	--
Screen Preview	Security level changing and language switching can be confirmed in image.	2.17T	--
	Enables switching screens in the Screen Preview window.	2.96A	--
Wizard	Wizard used for setting the GOT type and PLC type and also for communication setting when creating a new project.	2.17T	--
Screen capture	Function for capturing the specified range and loading to GT Designer2	2.43V	--
Set Overlay Screen	A screen can be called by dragging it.	2.43V	--

Item	Description	Version of GT Designer <input type="checkbox"/>	Version of OS
Expansion / Reduction	Supports expansion/reduction when multiple objects and shapes are selected.	2.47Z	--
	Supports automatically zooming in and out objects and figures suitable for the screen size when the GOT type is changed to a GOT type with different resolution.	2.73B	--
Zoom	<ul style="list-style-type: none"> Interval of magnification specification has been changed. +/- buttons have been added. Zoom in/zoom out operations using the "Ctrl key" and "Mouse wheel" have been added. 	2.47Z	--
Guidelines	Lines to align figures and objects are displayed when arranging a placed figure or object.	2.90U	--
Text list	Enables displaying the direct input texts in a list.	2.90U	--
Script function	<ul style="list-style-type: none"> Enables storing the script data in the project data. Enables using the script editor for editing the scripts. Enables the user to specify the storage areas for script files when no script files exist in the specified project data file. Setting items are added in the Script dialog box. (Script data storage destination and script editor type) 	2.77F	--

2 Functions not supported

Compared with GT Designer, GT Designer2 does not support the following functions.

Functions	Deleted contents
Object list	Delete the function that enables displaying by list and editing each object type.
Set overlay screen	Delete the function that enables changing in batch the screen No. for setting overlay screen.
Print	(1) Outputs object information (details) to printer (2) Outputs images of set devices only or object ID only.

INDEX

[A]	
Alarm history display	8-31
Before setting	8-33
Cautions	8-64
Description on touch switches.....	8-62
Placement and setting.....	8-39
Setting items	8-41
Basic tab	8-41
Frame tab.....	8-46
Device (Common) tab	8-47
Option (Common) tab	8-55
Print (Common) tab (GOT-A900 series only)	
.....	8-58
Extended tab	8-60
ASCII display	7-44
Arrangement and settings	7-47
Before setting	7-46
Cautions	7-55
Setting items	7-48
Basic tab	7-48
Extended tab (for GOT-A900 series only)	
.....	7-50
Trigger tab (for GOT-A900 series only) ...	7-52
Other tabs (for GOT-F900 series only)	7-54
ASCII input	7-44
Arrangement and settings	7-47
Before setting	7-46
Setting items	7-48
Basic tab	7-48
Extended tab (for GOT-A900 series only)	
.....	7-50
Trigger tab (for GOT-A900 series only) ...	7-52
Other tabs (for GOT-F900 series only)	7-54
Automatic screen saver disable signal	3-44
Auxiliary settings.....	4-45
[B]	
Bar code function.....	12-39
Cautions	12-42
Setting items of bar code function.....	12-41
Settings	12-40
Bar graph.....	10-59
Arrangement and settings	10-61
Cautions	10-70
Required knowledge for bar graph setting	10-59
Setting items	10-62
Basic tab	10-62
Device/scale tab.....	10-64
Extended tab.....	10-66
Trigger tab (GOT-A900 series only).....	10-68
Data operation tab (GOT-A900 series only)	
.....	10-69
Barcode input disable signal.....	3-35
Barcode input read complete signal	3-35
Barcode input signal	3-39
Base screen specifications	2-2
Buzzer one-shot output signal	3-35
Buzzer output signal	3-35
[C]	
Case	App-16
Centering	5-26
Changing property of the registered parts	4-34
Changing the registered comment's settings.....	4-15
Changing the registered parts settings	4-33
Character size by magnification.....	2-14
Clock display.....	7-57
Arrangement and settings	7-58
Cautions	7-62
Setting items	7-59
Basic tab	7-59
Extended tab (GOT-A900 series only)	7-61
Clock function	2-36
Clock function for monitoring by GOT.....	2-36
Comment display	7-63
Arrangement and settings	7-64
Cautions	7-83
Setting items of bit comment.....	7-65
Basic tab	7-65
Comment tab.....	7-67
Extended tab (GOT-A900 series only)	7-69
Trigger tab (GOT-A900 series only).....	7-71
Setting items of word comment.....	7-72
Basic tab	7-72
Comment tab.....	7-74
Extended tab (GOT-A900 series only)	7-76
Case tab (GOT-A900 series only).....	7-78
Trigger tab (GOT-A900 series only).....	7-81
Data operation tab (GOT-A900 series only)	
.....	7-82
Comment registration	4-1
Copying the registered comments	4-10
Copying the registered parts.....	4-31
[D]	
Data list.....	7-28
Arrangement and settings	7-31
Cautions	7-43
Required knowledge for data list setting	7-29
Setting items	7-32
Basic tab	7-32
List tab.....	7-34
Extended tab	7-39
Case tab (GOT-A900 Series only)	7-40
Trigger tab.....	7-42
Data operation function.....	5-45
Deleting the registered comments	4-13
Deleting the registered parts.....	4-32
Device Setting.....	5-1
Device types for screen switching	3-7
Devices	2-42
Drawing sheet.....	App-6

[O]			
Object arrangement	5-20	Extended tab (bit)	9-44
Object display speed (reference value)	App-1	Trigger tab (bit)	9-45
Object shape setting	5-22	Setting items of fixed parts movement	9-57
Object size change	5-25	Basic tab (fixed)	9-57
Object specifications	2-18	Extended tab (fixed)	9-61
Objects	2-18	Trigger tab (fixed)	9-61
Offset function	5-52	Setting items of word parts movement	9-46
Operation panel	12-31	Basic tab (word)	9-46
Cautions	12-38	Extended tab (word)	9-51
Required knowledge for operation panel setting	12-32	Case tab (word)	9-52
Setting items	12-34	Trigger tab (word)	9-55
Settings	12-33	Data operation tab (word)	9-56
Overlap	2-40	Setting of parts move route	
Overlap between figure and object	2-40	(common setting for each screen)	9-37
Overlap between objects	2-40	Parts registration	4-24
		Password	3-21
		PLC CPU with clock function	
		(GOT-A900 series only)	2-38
		PLC Type	3-1
		Print Format	3-49
		Printer error detection signal	3-37
[P]		[R]	
Panel kit	App-16	Read device	3-28
Panelmeter	10-1	Recipe function	11-12
Arrangement and settings	10-3	Cautions	11-20
Cautions	10-13	Setting items	11-14
Required knowledge for panelmeter setting	10-1	Settings	11-13
Setting items	10-4	Recipe processing signal	3-36
Basic tab	10-4	Report function	12-1
Scale/Text tab (GOT-A900 series only)	10-6	Arrangement and settings	12-3
Display/Scale tab (GOT-F900 series only)	10-8	Cautions	12-23
Extended tab (GOT-A900 series only)	10-9	Print layout setting	12-13
Case tab (GOT-A900 series only)	10-10	Report screen creation (screen property)	12-5
Data Operation tab (GOT-A900 series only)	10-12	Basic tab	12-5
Parts display	9-1	Format/Trigger tab	12-6
Arrangement and settings	9-7	Logging tab	12-7
Cautions	9-26	Setting common to each report	
Setting items of bit parts display	9-8	(report setting)	12-8
Basic tab	9-8	Common tab	12-9
Extended tab (for GOT-A900 series only)	9-11	Print Format tab	12-12
Trigger tab (for GOT-A900 series only)	9-12	Report output signal	3-36
Setting items of fixed parts display	9-23	RGB	12-68
Basic tab	9-23	Cautions	12-73
Extended tab (for GOT-A900 series only)	9-26	Setting items of RGB	12-72
Setting items of word parts display	9-13	Settings	12-71
Basic tab	9-13		
Extended tab (for GOT-A900 series only)	9-17	[S]	
Case tab (for GOT-A900 series only)	9-18	Sampling	10-102
Trigger tab (for GOT-A900 series only)	9-21	Cautions	10-104
Data operation tab (for GOT-A900 series only)	9-22	Setting items	10-103
Parts library	App-16	Settings	10-102
Parts movement	9-28	Scatter graph	10-81
Arrangement and setting	9-39	Arrangement and settings	10-88
Cautions	9-62	Cautions	10-101
Setting items of bit parts movement	9-40	Required knowledge for scatter graph setting	10-82
Basic tab (bit)	9-40	Setting items	10-89
		Basic tab	10-89

Device/Scale tab	10-90	Settings	11-23	
Attribute tab	10-91	Touch switch	6-15	9
Case/Trigger tab	10-92	Arrangement and settings	6-18	
Case tab	10-96	Cautions	6-80	
Extended tab	10-98	Keyboard function	6-78	
Data operation tab	10-100	Setting items of bit switch	6-19	PARTS
Screen size	2-2	Basic tab	6-19	
Script functions	14-1	Text/lamp tab	6-21	
Security function	5-56	Extended tab		
Set overlay screen function	13-1	(for GOT-A900 series only)	6-24	10
Arrangement and settings	13-2	Action tab	6-27	
Cautions	13-5	Trigger tab	6-34	
Check of the settings	13-4	Setting items of change station No. switch	6-59	
Sound	12-46	Basic tab	6-59	GRAPH, METER
Cautions	12-48	Text/lamp tab	6-63	
Setting items	12-47	Extended tab	6-63	
Settings	12-46	Action tab	6-64	
State Setting	5-28	Trigger tab	6-64	
Station No. switching device	3-14	Setting items of data change switch	6-68	11
Statistics graph	10-71	Basic tab	6-68	
Arrangement and settings	10-73	Text/lamp tab	6-69	
Cautions	10-80	Trigger tab	6-70	TRIGGER ACTIONS
Required knowledge for statistics graph setting	10-72	Setting items of data set switch	6-36	
Setting items	10-74	Basic tab	6-36	
Basic tab	10-74	Text/lamp tab	6-38	
Device/scale tab	10-75	Extended tab		
Extended tab		(specific for GOT-A900 series)	6-38	12
(For GOT-A900 series only)	10-77	Extended tab		
Trigger tab		(for GOT-F900 series only)	6-39	EXTERNAL INPUT/OUTPUT
(For GOT-A900 series only)	10-78	Action tab	6-40	
Data operation tab		Trigger tab	6-40	
(For GOT-A900 series only)	10-79	Setting items of go to screen switch	6-49	
Status observation function	11-1	Basic tab	6-49	
Cautions	11-10	Text/lamp tab	6-57	
Setting items	11-3	Extended tab		
Trigger tab	11-5	(specific for GOT-A900 series)	6-57	13
Action tab	11-7	Action tab	6-58	
Settings	11-2	Trigger tab	6-58	
Storing/reading a comment as file	4-16	Setting items of key code switch	6-65	OTHERS
Synthesized colors available for XOR	App-13	Basic tab	6-65	
System alarm display	8-23	Text/lamp tab	6-66	
Before setting system alarm	8-24	Extended tab		
Placement and settings	8-27	(specific for GOT-A900 series)	6-66	
Precaution	8-30	Action tab	6-67	14
Setting items	8-28	Trigger tab	6-67	
Basic tab	8-28	Setting items of multi action switch	6-73	
Extended tab	8-29	Basic tab	6-73	
System information	3-28	Text/lamp tab	6-75	
System signal 1	3-35	Extended tab		
System signal 2	3-36	(specific for GOT-A900 series)	6-75	SCRIPT FUNCTION
		Indirect Text tab		
		(specific for GOT-A900 series)	6-76	
		Trigger tab	6-77	
		Setting items of recipe transfer switch	6-71	
		Basic tab	6-71	
		Text/lamp tab	6-72	
		Trigger tab	6-72	
		Setting items of special function switch	6-41	
		Basic tab	6-41	APPENDICES

[T]

Test function	13-10
Arrangement and settings	13-11
Setting items	13-11
Time action function	11-22
Cautions	11-27
Setting items	11-24

Text/lamp tab	6-43
Extended tab	
(for GOT-A900 series only).....	6-44
Trigger tab.....	6-48
Trend graph	10-28
Setting items	10-32
Basic tab	10-32
Device/scale tab.....	10-35
Extended tab	
(for GOT-A900 series only).....	10-37
Other tabs	
(for GOT-F900 series only).....	10-38
Trigger tab	
(for GOT-A900 series only).....	10-39
Data operation	
(for GOT-A900 series only).....	10-42
Arrangement and settings	10-31
Cautions	10-43
Required knowledge for trend graph setting	
.....	10-28
Trigger setting.....	5-35
[U]	
User alarm display	8-1
Before setting user alarm	8-2
Placement and settings.....	8-9
Precautions	8-20
Setting items	8-10
Basic tab	8-10
Device tab (GOT-A900 series only)	8-13
Detailed tab (GOT-F900 series only)	8-15
Extended tab	8-16
Trigger tab (GOT-A900 series only).....	8-18
Touch switch for displaying user alarm	8-19
[V]	
Video	12-50
Cautions	12-67
Setting items of video.....	12-64
Settings	12-63
[W]	
Window screen specifications	2-2
Write device	3-28

Microsoft, Windows, Windows NT, Windows Vista are registered trademarks of Microsoft Corporation in the United States and other countries.

Adobe and Adobe Reader are registered trademarks of Adobe Systems Incorporated.

Pentium and Celeron are a registered trademarks of Intel Corporation in the United States and other countries.

Ethernet is a trademark of Xerox Co., Ltd. in the United States.

MODBUS is a trademark of Schneider Electric SA.

Other company and product names herein are either trademarks or registered trademarks of their respective owners.

This product uses Arphic Mobile Font.

VS-FlexGrid8

(c)ComponentOne LLC. All rights reserved

LEADTOOLS(r) DLL for Win32

Copyright (c) 1991-2003 LEAD Technologies, Inc.

HEADQUARTERS

MITSUBISHI ELECTRIC EUROPE B.V. EUROPE
 German Branch
 Gothaer Straße 8
D-40880 Ratingen
 Phone: +49 (0)2102 / 486-0
 Fax: +49 (0)2102 / 486-1120

MITSUBISHI ELECTRIC EUROPE B.V. CZECH REPUBLIC
 Czech Branch
 Avenir Business Park, Radlická 714/113a
CZ-158 00 Praha 5
 Phone: +420 (0)251 551 470
 Fax: +420 (0)251-551-471

MITSUBISHI ELECTRIC EUROPE B.V. FRANCE
 French Branch
 25, Boulevard des Bouvets
F-92741 Nanterre Cedex
 Phone: +33 (0)1 / 55 68 55 68
 Fax: +33 (0)1 / 55 68 57 57

MITSUBISHI ELECTRIC EUROPE B.V. IRELAND
 Irish Branch
 Westgate Business Park, Ballymount
IRL-Dublin 24
 Phone: +353 (0)1 4198800
 Fax: +353 (0)1 4198890

MITSUBISHI ELECTRIC EUROPE B.V. ITALY
 Italian Branch
 Viale Colleoni 7
I-20041 Agrate Brianza (MB)
 Phone: +39 039 / 60 53 1
 Fax: +39 039 / 60 53 312

MITSUBISHI ELECTRIC EUROPE B.V. SPAIN
 Spanish Branch
 Carretera de Rubí 76-80
E-08190 Sant Cugat del Vallés (Barcelona)
 Phone: 902 131121 // +34 935653131
 Fax: +34 935891579

MITSUBISHI ELECTRIC EUROPE B.V. UK
 UK Branch
 Travellers Lane
UK-Hatfield, Herts. AL10 8XB
 Phone: +44 (0)1707 / 27 61 00
 Fax: +44 (0)1707 / 27 86 95

MITSUBISHI ELECTRIC CORPORATION JAPAN
 Office Tower "Z" 14 F
 8-12,1 chome, Harumi Chuo-Ku
Tokyo 104-6212
 Phone: +81 3 622 160 60
 Fax: +81 3 622 160 75

MITSUBISHI ELECTRIC AUTOMATION, Inc. USA
 500 Corporate Woods Parkway
Vernon Hills, IL 60061
 Phone: +1 847 478 21 00
 Fax: +1 847 478 22 53

EUROPEAN REPRESENTATIVES

AUSTRIA
 GEVA
 Wiener Straße 89
AT-2500 Baden
 Phone: +43 (0)2252 / 85 55 20
 Fax: +43 (0)2252 / 488 60

BELARUS
 TEHNIKON
 Oktyabrskaya 16/5, Off. 703-711
BY-220030 Minsk
 Phone: +375 (0)17 / 210 46 26
 Fax: +375 (0)17 / 210 46 26

BELGIUM
 ESCO DRIVES & AUTOMATION
 Culliganlaan 3
BE-1831 Diegem
 Phone: +32 (0)2 / 717 64 30
 Fax: +32 (0)2 / 717 64 31

BELGIUM
 Koning & Hartman b.v.
 Woluwelaan 31
BE-1800 Vilvoorde
 Phone: +32 (0)2 / 257 02 40
 Fax: +32 (0)2 / 257 02 49

BOSNIA AND HERZEGOVINA
 INEA BH d.o.o.
 Aleja Lipa 56
BA-71000 Sarajevo
 Phone: +387 (0)33 / 921 164
 Fax: +387 (0)33 / 524 539

BULGARIA
 AKHNATON
 4 Andrej Ljapchev Blvd. Pb 21
BG-1756 Sofia
 Phone: +359 (0)2 / 817 6004
 Fax: +359 (0)2 / 97 44 06 1

CROATIA
 INEA CR d.o.o.
 Losinjska 4 a
HR-10000 Zagreb
 Phone: +385 (0)1 / 36 940 -01 / -02 / -03
 Fax: +385 (0)1 / 36 940 -03

CZECH REPUBLIC
 AutoCont C.S. s.r.o.
 Technologická 374/6
CZ-708 00 Ostrava-Pustkovec
 Phone: +420 595 691 150
 Fax: +420 595 691 199

CZECH REPUBLIC
 B:ELECTRIC, s.r.o.
 Mladoboleslavská 812
CZ-197 00 Praha 19 - Kbely
 Phone: +420 286 850 848, +420 724 317 975
 Fax: +420 286 850 850

DENMARK
 Beijer Electronics A/S
 Lykkegårdsvej 17, 1.
DK-4000 Roskilde
 Phone: +45 (0)46 / 75 76 66
 Fax: +45 (0)46 / 75 56 26

ESTONIA
 Beijer Electronics Eesti OÜ
 Pärnu mnt.160i
EE-11317 Tallinn
 Phone: +372 (0)6 / 51 81 40
 Fax: +372 (0)6 / 51 81 49

FINLAND
 Beijer Electronics OY
 Jaakonkatu 2
FIN-01620 Vantaa
 Phone: +358 (0)207 / 463 500
 Fax: +358 (0)207 / 463 501

GREECE
 UTECO A.B.E.E.
 5, Mavrogenous Str.
GR-18542 Piraeus
 Phone: +30 211 / 1206 900
 Fax: +30 211 / 1206 999

HUNGARY
 MELTRADE Ltd.
 Fertő utca 14.
HU-1107 Budapest
 Phone: +36 (0)1 / 431-9726
 Fax: +36 (0)1 / 431-9727

LATVIA
 Beijer Electronics SIA
 Vestienas iela 2
LV-1035 Riga
 Phone: +371 (0)784 / 2280
 Fax: +371 (0)784 / 2281

LITHUANIA
 Beijer Electronics UAB
 Savanorių Pr. 187
LT-02300 Vilnius
 Phone: +370 (0)5 / 232 3101
 Fax: +370 (0)5 / 232 2980

EUROPEAN REPRESENTATIVES

MALTA
 ALFATRADE Ltd.
 99, Paola Hill
Malta- Paola PLA 1702
 Phone: +356 (0)21 / 697 816
 Fax: +356 (0)21 / 697 817

MOLDOVA
 INTEHSIS srl
 bld. Traian 23/1
MD-2060 Kishinev
 Phone: +373 (0)22 / 66 4242
 Fax: +373 (0)22 / 66 4280

NETHERLANDS
 HIFLEX AUTOM.TECHNIEK B.V.
 Wolweverstraat 22
NL-2984 CD Ridderkerk
 Phone: +31 (0)180 - 46 60 04
 Fax: +31 (0)180 - 44 23 55

NETHERLANDS
 Koning & Hartman b.v.
 Haarderbergweg 21-23
NL-1101 CH Amsterdam
 Phone: +31 (0)20 / 587 76 00
 Fax: +31 (0)20 / 587 76 05

NORWAY
 Beijer Electronics AS
 Postboks 487
NO-3002 Drammen
 Phone: +47 (0)32 / 24 30 00
 Fax: +47 (0)32 / 84 85 77

POLAND
 MPL Technology Sp. z o.o.
 Ul. Krakowska 50
PL-32-083 Balice
 Phone: +48 (0)12 / 630 47 00
 Fax: +48 (0)12 / 630 47 01

ROMANIA
 Sirius Trading & Services srl
 Aleea Lacul Morii Nr. 3
RO-060841 Bucuresti, Sector 6
 Phone: +40 (0)21 / 430 40 06
 Fax: +40 (0)21 / 430 40 02

SERBIA
 Craft Con. & Engineering d.o.o.
 Bulevar Svetog Cara Konstantina 80-86
SER-18106 Nis
 Phone: +381 (0)18 / 292-24-4/5
 Fax: +381 (0)18 / 292-24-4/5

SERBIA
 INEA SR d.o.o.
 Izletnicka 10
SER-113000 Smederevo
 Phone: +381 (0)26 / 617 163
 Fax: +381 (0)26 / 617 163

SLOVAKIA
 AutoCont Control s.r.o.
 Radlinského 47
SK-02601 Dolny Kubin
 Phone: +421 (0)43 / 5868210
 Fax: +421 (0)43 / 5868210

SLOVAKIA
 CS MTrade Slovensko, s.r.o.
 Vajanského 58
SK-92101 Piestany
 Phone: +421 (0)33 / 7742 760
 Fax: +421 (0)33 / 7735 144

SLOVENIA
 INEA d.o.o.
 Stegne 11
SI-1000 Ljubljana
 Phone: +386 (0)1 / 513 8100
 Fax: +386 (0)1 / 513 8170

SWEDEN
 Beijer Electronics AB
 Box 426
SE-20124 Malmö
 Phone: +46 (0)40 / 35 86 00
 Fax: +46 (0)40 / 35 86 02

SWITZERLAND
 Econotec AG
 Hinterdorfstr. 12
CH-8309 Nürensdorf
 Phone: +41 (0)44 / 838 48 11
 Fax: +41 (0)44 / 838 48 12

TURKEY
 GTS
 Bayraktar Bulvarı Nutuk Sok. No:5
TR-34775 Yukari Dudullu-Umraniye-ISTANBUL
 Phone: +90 (0)216 526 39 90
 Fax: +90 (0)216 526 39 95

UKRAINE
 CSC Automation Ltd.
 4-B, M. Raskovoyi St.
UA-02660 Kiev
 Phone: +380 (0)44 / 494 33 55
 Fax: +380 (0)44 / 494-33-66

EURASIAN REPRESENTATIVES

KAZAKHSTAN
 Kazpromautomatiks Ltd.
 Mustafina Str. 7/2
KAZ-470046 Karaganda
 Phone: +7 7212 / 50 11 50
 Fax: +7 7212 / 50 11 50

MIDDLE EAST REPRESENTATIVES

ISRAEL
 ILAN & GAVISH Ltd.
 24 Shenkar Str., Kiryat Arie
IL-49001 Petah-Tiqva
 Phone: +972 (0)3 / 922 18 24
 Fax: +972 (0)3 / 924 0761

LEBANON
 CEG INTERNATIONAL
 Cebaco Center/Block A Autostrade DORA
Lebanon - Beirut
 Phone: +961 (0)1 / 240 430
 Fax: +961 (0)1 / 240 438

AFRICAN REPRESENTATIVE

SOUTH AFRICA
 CBI Ltd.
 Private Bag 2016
ZA-1600 Isando
 Phone: +27 (0)11 / 928 2000
 Fax: +27 (0)11 / 392 2354