

MELSEC-Q/L Structured Programming Manual

Special Instructions



(Always read these instructions before using this product.)

Before using the MELSEC-Q series and MELSEC-L series programmable controllers, thoroughly read the manuals attached to the products and the relevant manuals introduced in the attached manuals. Also pay careful attention to safety and handle the products properly.

Please keep this manual in a place where it is accessible when required and always forward it to the end user.

CONDITIONS OF USE FOR THE PRODUCT

(1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
 i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi representative in your region.

The manual number is written at the bottom left of the back cover.

Print date	Manual number	Revision
Jul., 2008	SH(NA)-080785ENG-A	First edition
Jan., 2009	SH(NA)-080785ENG-B	Model Addition Q00UJ, Q00U, Q01U, Q10UDH, Q10UDEH, Q20UDH, Q20UDEH Addition MANUALS, Section 2.2.5, Section 5.5 Correction GENERIC TERMS AND ABBREVIATIONS IN THIS MANUAL, Section 1.1, Section 1.2, Section 2.2.5 to 2.2.7 changed to Section 2.2.6 to Section 2.2.8, Section 5.5 to Section 5.7 changed to Section 5.6 to Section 5.8
Jul., 2009	SH(NA)-080785ENG-C	Model Addition Q00J, Q00, Q01 Correction PURPOSE OF THIS MANUAL is changed to Section 1.1, GENERIC TERMS AND ABBREVIATIONS IN THIS MANUAL is changed to Section 1.2, Section 1.1 is changed to Section 1.3, Section 1.2 is changed to Section 1.4, Chapter 4, Program examples are added in Chapter 5
Jan., 2010	SH(NA)-080785ENG-D	Model Addition L02, L26-BT Addition CONDITIONS OF USE FOR THE PRODUCT, Section 2.3, Section 2.4, Section 2.5, Section 2.6, Chapter 8, Chapter 9 Correction MANUALS, Section 1.1, Section 1.2, Section 1.3, Section 1.4, Section 2.2, Chapter 4, Section 5.1.2, Section 5.1.3, Section 5.6.1, Section 5.6.2, Section 5.6.3, Section 5.6.4. Section 5.7.1, Section 5.7.2, Section 5.7.3, Section 5.7.4, Section 5.4.10 to Section 5.4.25 are changed to Section 5.4.9 to Section 5.4.24, Section 5.8 is changed to Section 5.5, Section 5.6 to Section 5.7 are changed to Chapter 6, Section 5.5 is changed to Chapter 7 Deletion Section 5.4.9

Print date	Manual number	Revision
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Sep., 2010	SH(NA)-080785ENG-F	AdditionSection 2.7, Section 5.4.16, Section 5.4.17, Chapter 10CorrectionMANUALS, Section 1.1, Section 1.3, Section 1.4, Section 2.1,Chapter 4, Section 5.1.2, Section 5.1.3, Section 5.4.1, Section 5.4.2, Section 5.4.4,Section 5.4.5. Section 5.4.8, Section 5.4.10, Section 5.4.12, Section 5.4.13,Section 5.4.14, Section 5.4.15, Section 5.4.18, Section 5.4.19, Section 5.4.20,Section 5.4.21, Section 5.4.22, Section 5.4.23, Section 5.4.29, Section 5.4.33,Section 2.2.2 to Section 2.2.4 are changed to Section 2.2.3 to Section 2.2.4,Section 5.2 to Section 5.4 are changed to Section 5.3 to Section 5.4,Section 5.5 is changed to Section 5.2DeletionSection 5.4.17, Section 5.4.18
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Mar., 2011	SH(NA)-080785ENG-H	Correction MANUALS, Section 1.1, Section 1.4, Section 2.1, Section 2.2.3, Section 5.1.1, Section 5.1.2, Section 5.1.3, Section 5.3.5, Section 5.3.7, Section 5.3.14, Section 5.3.15, Section 5.4.1, Section 5.4.2, Section 5.4.5, Section 5.4.6, Section 5.4.8, Section 5.4.9, Section 5.4.10, Section 5.4.11, Section 5.4.12, Section 5.4.13, Section 5.4.14, Section 5.1.15, Section 5.4.18, Section 5.4.19, Section 5.4.20, Section 5.4.21, Section 5.4.28, Section 5.4.31, Section 5.4.32, Section 5.4.33, Section 7.1, Section 7.2, Section 7.5, Section 7.8, Section 7.9

Print date	Manual number	Revision
Jul., 2011	SH(NA)-080785ENG-I	Model Addition L02-P, L26-PBT Correction Section 1.2, Section 1.4, Chapter 4, Section 5.3.2, Section 5.3.4, Section 5.3.15, Section 5.4.16, Section 5.4.17, Section 5.4.18, Section 5.4.21, Section 5.4.22, Section 5.4.23, Section 5.4.24, Section 5.4.25, Section 5.4.26, Section 5.4.27, Section 5.4.29, Section 5.4.32, Section 5.4.34, Section 7.1, Section 7.2, Section 8.1.5, Section 10.1.1, Section 10.1.2

Japanese manual version SH-080738-L

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INTRODUCTION

Thank you for purchasing the Mitsubishi MELSEC-Q series/MELSEC-L series programmable controller. Before using the product, thoroughly read this manual to develop full familiarity with the programming specifications to ensure correct use.

Please forward this manual to the end user.

CONTENTS

SAFETY PRECAUTIONS	A - 1
CONDITIONS OF USE FOR THE PRODUCT	
REVISIONS	A - 3
NTRODUCTION	A - 6
CONTENTS	A - 6
MANUALS	A - 10

1. OVERVIEW	1 - 1 to 1 - 10
1.1 Purpose of This Manual	1 - 2
1.2 Generic Terms and Abbreviations in This Manual	1 - 5
1.3 Explanation Content in This Manual	1 - 6
1.4 Modules and Versions Applicable to Instructions	1 - 8
2. INSTRUCTION TABLES	2 - 1 to 2 - 16
2.1 How to Read Instruction Tables	2 - 2
2.2 Module Dedicated Instruction	2 - 3
2.2.1 Analog instruction 2.2.2 Positioning instruction	
2.2.3 Serial communication 2.2.4 Network dedicated instruction	
2.3 PID Control Instruction	2 - 10
2.3.1 PID control instruction (inexact differential)2.3.2 PID control instruction (exact differential)	
2.4 Socket Communication Function Instruction	2 - 11
2.5 Built-in I/O Function Instruction	2 - 12
2.5.1 Positioning function dedicated instruction2.5.2 Counter function dedicated instruction	
2.6 Data Logging Function Instruction	2 - 15
2.7 SFC Control Instruction	2 - 15
3. CONFIGURATION OF INSTRUCTIONS	3 - 1 to 3 - 4
3.1 Configuration of Instructions	3 - 2
4. HOW TO READ INSTRUCTIONS	4 - 1 to 4 - 4
5. MODULE DEDICATED INSTRUCTION	5 - 1 to 5 - 256
5.1 Analog Instruction	5 - 2

	OFFGAN instruction	5 - 2
5.1.2	OGLOAD instruction	5 - 4
5.1.3	OGSTOR instruction	5 - 27
5.2 Pos	sitioning Instruction	5 - 51
-	ABRST instruction	
	PSTRT instruction	
	TEACH instruction	
	PFWRT instruction	
	PINIT instruction	
5.3 Ser	ial Communication	5 - 64
5.3.1	ONDEMAND instruction	
5.3.2	OUTPUT instruction	5 - 68
5.3.3	INPUT instruction	5 - 71
5.3.4	BIDOUT instruction	5 - 74
5.3.5	BIDIN instruction	5 - 77
5.3.6	SPBUSY instruction	5 - 79
5.3.7	CSET instruction (receive data clear)	5 - 80
5.3.8	BUFRCVS instruction	
	PRR instruction	
	CSET instruction (initial setting)	
	CSET instruction (programmable controller CPU monitor)	
	PUTE instruction	
	GETE instruction	
	UINI instruction	
	CPRTCL instruction	
		5 - 115
	work Dedicated Instruction	
	RIRD instruction	
	RIWT instruction	
	RIRCV instruction	5 - 125
5.4.4	RIRCV instruction	5 - 125 5 - 129
5.4.4 5.4.5	RIRCV instruction RISEND instruction RIFR instruction	5 - 125 5 - 129 5 - 133
5.4.4 5.4.5 5.4.6	RIRCV instruction RISEND instruction RIFR instruction RITO instruction	5 - 125 5 - 129 5 - 133 5 - 135
5.4.4 5.4.5 5.4.6 5.4.7	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 137 5 - 144 5 - 150 5 - 154
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.11	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.11 5.4.12	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.10 5.4.12 5.4.13	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.11 5.4.12 5.4.13 5.4.14	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction RECV instruction RECV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.11 5.4.12 5.4.13 5.4.14 5.4.15	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction RECV instruction RECVS instruction RECVS instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 181
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.10 5.4.12 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 181 5 - 190
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.11 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16 5.4.17	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 181 5 - 190 5 - 193
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.10 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16 5.4.17 5.4.18	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction RECV instruction RECVS instruction REQ Instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 181 5 - 190 5 - 193 5 - 197
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.12 5.4.12 5.4.13 5.4.13 5.4.15 5.4.16 5.4.17 5.4.18 5.4.19	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 181 5 - 190 5 - 193 5 - 197 5 - 200
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.12 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16 5.4.17 5.4.18 5.4.20	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 178 5 - 181 5 - 190 5 - 193 5 - 197 5 - 200 5 - 203
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.10 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16 5.4.17 5.4.18 5.4.19 5.4.20 5.4.21	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction RECV instruction RECVS instruction REQ instruction RTMRD instruction RTMRD instruction RTMRD instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 178 5 - 181 5 - 190 5 - 193 5 - 197 5 - 200 5 - 203 5 - 205
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.12 5.4.12 5.4.13 5.4.13 5.4.14 5.4.15 5.4.16 5.4.16 5.4.17 5.4.18 5.4.19 5.4.20 5.4.21	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction RECV instruction RECV instruction REQ INSTRUCTION R	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 173 5 - 178 5 - 178 5 - 190 5 - 190 5 - 193 5 - 197 5 - 200 5 - 203 5 - 205 5 - 208
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.12 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16 5.4.16 5.4.17 5.4.18 5.4.20 5.4.21 5.4.21	RIRCV instruction	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 178 5 - 190 5 - 193 5 - 193 5 - 197 5 - 200 5 - 203 5 - 208 5 - 210
5.4.4 5.4.5 5.4.6 5.4.7 5.4.8 5.4.9 5.4.10 5.4.10 5.4.12 5.4.13 5.4.14 5.4.15 5.4.16 5.4.16 5.4.17 5.4.18 5.4.19 5.4.20 5.4.21 5.4.21 5.4.23 5.4.24	RIRCV instruction RISEND instruction RIFR instruction RITO instruction RLPASET instruction READ instruction SREAD instruction WRITE instruction SWRITE instruction SEND instruction RECV instruction RECV instruction REQ INSTRUCTION R	5 - 125 5 - 129 5 - 133 5 - 135 5 - 137 5 - 144 5 - 150 5 - 154 5 - 161 5 - 165 5 - 173 5 - 178 5 - 178 5 - 178 5 - 178 5 - 190 5 - 193 5 - 193 5 - 200 5 - 203 5 - 208 5 - 210 5 - 212

5.4.26 CLOSE instruction	
5.4.27 BUFRCV instruction	
5.4.28 BUFRCVS instruction	
5.4.29 BUFSND instruction	
5.4.30 ERRCLR instruction	
5.4.31 ERRRD instruction	
5.4.32 UINI instruction	
5.4.33 MRECV instruction	
5.4.34 MSEND instruction	

6. PID CONTROL INSTRUCTION

6 - 1 to 6 - 30

6.1 PI	D Control Instruction (Inexact Differential)	6 - 2
6.1.1	PIDINIT instruction	
6.1.2	PIDCONT instruction	
6.1.3	PIDSTOP instruction and PIDRUN instruction	
6.1.4	PIDPRMW instruction	
6.2 PI	D Control Instruction (Exact Differential)	6 - 16
6.2.1	PIDINIT instruction	
6.2.2	PIDCONT instruction	
6.2.3	PIDSTOP instruction and PIDRUN instruction	
6.2.4	PIDPRMW instruction	

7. SOCKET COMMUNICATION FUNCTION INSTRUCTION	7 - 1 to 7 - 26
7.1 SOCOPEN Instruction	7 - 2
7.2 SOCCLOSE Instruction	7 - 5
7.3 SOCRCV Instruction	7 - 8
7.4 SOCRCVS Instruction	7 - 11
7.5 SOCSND Instruction	7 - 13
7.6 SOCCINF Instruction	7 - 16
7.7 SOCCSET Instruction	7 - 19
7.8 SOCRMODE Instruction	7 - 22
7.9 SOCRDATA Instruction	7 - 24

8. BUIL	T-IN I/O FUNCTION INSTRUCTION	8 - 1 to 8 - 30
8.1 Pc	sitioning Function Dedicated Instruction	8 - 2
8.1.1	IPPSTRT instruction	
8.1.2	IPDSTRT instruction	
8.1.3	IPSIMUL instruction	
8.1.4	IPOPR instruction	
8.1.5	IPJOG instruction	
8.1.6	IPABRST instruction	
8.1.7	IPSTOP instruction	
8.1.8	IPSPCHG instruction	
8.1.9	IPTPCHG instruction	
8.2 Co	ounter Function Dedicated Instruction	8 - 18
8.2.1	ICCNTRD instruction	
8.2.2	ICRNGWR instruction	
8.2.3	ICPREWR instruction	

I

8.2.4 ICLI HRD Instruction	
8.2.5 ICSMPRD instruction	
8.2.7 ICFCNT instruction	
8.2.8 ICRCNT instruction	
8.2.9 ICPLSRD instruction	
8.2.10 ICPWM instruction	
9. DATA LOGGING FUNCTION INSTRUCTION	9 - 1 to 9 - 4
9.1 LOGTRG Instruction, LOGTRGR Instruction	9 - 2
10. SFC CONTROL INSTRUCTION	10 - 1 to 10 - 6
10.1 SFC Control Instruction	10 - 2
10.1.1 SFCSCOMR instruction	
10.1.2 SFCTCOMR instruction	
INDEX	Index - 1 to Index - 4

MANUALS

Related manuals

The manuals related to this product are shown below.

Refer to the following tables when ordering required manuals.

(1) Structured programming

Manual name	Manual number (Model code)
MELSEC-Q/L/F Structured Programming Manual (Fundamentals)	
Explains the programming method, types of programming languages, and other information required to create	SH-080782ENG
structured programs.	(13JW06)
(Sold separately)	
MELSEC-Q/L Structured Programming Manual (Common Instructions)	
Explains the specifications and functions of common instructions such as sequence instructions, basic instructions,	SH-080783ENG
and application instructions that can be used in structured programs.	(13JW07)
(Sold separately)	
MELSEC-Q/L Structured Programming Manual (Application Functions)	SH-080784ENG
Explains the specifications and functions of application functions that can be used in structured programs.	(13JW08)
(Sold separately)	(155000)

(2) Operation of GX Works2

Manual name	Manual number (Model code)
GX Works2 Version 1 Operating Manual (Common) Explains the system configuration of GX Works2 and the functions common to Simple project and Structured project such as parameter setting, operation method for the online function. (Sold separately)	SH-080779ENG (13JU63)
GX Works2 Version 1 Operating Manual (Structured Project) Explains operation methods such as creating and monitoring programs in Structured project of GX Works2. (Sold separately)	SH-080781ENG (13JU65)
GX Works2 Beginner's Manual (Structured Project) Explains fundamental operation methods such as creating, editing, and monitoring programs in Structured project for users inexperienced with GX Works2. (Sold separately)	SH-080788ENG (13JZ23)

⊠POINT -

The Operating Manuals are included on the CD-ROM of the software package in a PDF file format. Manuals in printed form are sold separately. Order a manual by quoting the manual number (model code) listed in the table above.

(3) Detailed specifications of instructions

Analog instruction

Manual name	Manual number (Model code)
Analog-Digital Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64AD, Q68ADV, and Q68ADI.	(Model code) SH-080055 (13JR03)
(Sold separately)	(133703)
Channel Isolated High Resolution Analog-Digital Converter Module Channel Isolated High Resolution Analog-Digital Converter Module (With Signal Conditioning Function) User's Manual	SH-080277
Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64AD-GH and Q62AD-DGH.	(13JR51)
(Sold separately)	
Channel Isolated Analog-Digital Converter Module/Channel Isolated Analog-Digital Converter Module (With Signal Conditioning Function) User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68AD-G and Q66AD-DG.	SH-080647ENG (13JR96)
(Sold separately)	
Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q62DAN, Q64DAN, Q68DAVN, and Q68DAIN.	SH-080054 (13JR02)
(Sold separately)	
Channel Isolated Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q62DA-FG.	SH-080281E (13JR52)
(Sold separately)	
Channel Isolated Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q66DA-G.	SH-080648ENG (13JR97)
(Sold separately)	
RTD Input Module Channel Isolated RTD Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64RD and Q64RD-G.	SH-080142 (13JR31)
(Sold separately)	
Thermocouple Input Module Channel Isolated Thermocouple/Micro Voltage Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q64TD and Q64TDV-GH.	SH-080141 (13JR30)
(Sold separately)	
Channel Isolated Thermocouple Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68TD-G-H01/Q68TD-G-H02.	SH-080795ENG (13JZ26)
(Sold separately)	
Channel Isolated RTD Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q68RD3-G.	SH-080722ENG (13JZ06)
(Sold separately)	-
Q61LD Load Cell Input Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the Q61LD.	SH-080821ENG (13JZ31)
(Sold separately)	·
MELSEC-L Analog-Digital Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the analog-digital converter module.	SH-080899ENG (13JZ42)
(Sold separately)	
MELSEC-L Digital-Analog Converter Module User's Manual Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the digital-analog converter module.	SH-080900ENG (13JZ43)
(Sold separately)	

Positioning instruction

Manual name	Manual number (Model code)
Type QD75P/QD75D Positioning Module User's Manual (Details)	
Explains the system configuration, performance specifications, functions, handling, procedures before operation, and	SH-080058
troubleshooting of the QD75P1/QD75P2/QD75P4 and QD75D1/QD75D2/QD75D4.	(13JR09)
(Sold separately)	
Type QD75M Positioning Module User's Manual (Details)	
Explains the system configuration, performance specifications, functions, handling, procedures before operation, and	IB-0300062
troubleshooting of the QD75M1/QD75M2/QD75M4.	(1XB752)
(Sold separately)	
Type QD75MH Positioning Module User's Manual (Details)	
Explains the system configuration, performance specifications, functions, handling, procedures before operation, and	IB-0300117
troubleshooting of the QD75MH1/QD75MH2/QD75MH4.	(1XB917)
(Sold separately)	

Serial communication

Manual name	Manual number (Model code)
Q Corresponding Serial Communication Module User's Manual (Basic)	
Explains the overview for use of the module, applicable system configuration, specifications, procedures before	SH-080006
operation, fundamental data communication with external devices, maintenance, inspection, and troubleshooting.	(13JL86)
(Sold separately)	
MELSEC-L Serial Communication Module User's Manual (Basic)	
Explains the overview for use of the module, applicable system configuration, specifications, procedures before	SH-080894ENG
operation, fundamental data communication with external devices, maintenance, inspection, and troubleshooting.	(13JZ40)
(Sold separately)	
MELSEC-Q/L Serial Communication Module User's Manual (Application)	
Explains the specifications and usage of special functions of the module, settings for special functions, and data	SH-080007
communication with external devices.	(13JL87)
(Sold separately)	

Network dedicated instruction

Control & Communication Link System Master/Local Module User's Manual SH-080394E Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the SH-080394E QJ61BT11N. (Sold separately) MELSEC-L CC-Link System Master/Local Module User's Manual SH-080395ENG Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the SH-080895ENG built-in CC-Link and CC-Link system master/local modules. (Sold separately) CC-Link IE Controller Network Reference Manual SH-080668ENG Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the SH-080668ENG CC-Link IE Controller Network Reference Manual SH-080668ENG Explains the system configuration, performance specifications, functions, handling, wiring, and troubleshooting of the SH-080668ENG MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual SH-080917ENG Explains the specifications, procedures before operation, system configuration, installation, settings, functions, programming, and troubleshooting of the CC-Link IE Field Network and the CC-Link IE Field Network master/local SH-080972ENG MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual SH-080972ENG Explains the specifications, procedures before operation, system configura
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Explains the specifications, settings and procedures before operation, parameter setting, programming, and SH-080049
troubleshooting of the MELSECNET/H PLC-to-PLC network system. (13JF92)
(Sold separately)
Q Corresponding MELSECNET/H Network System Reference Manual (Remote I/O network)
Explains the system configuration, performance specifications, and programming of the MELSECNET/H network SH-080124
system (remote I/O network). (13JF96)
(Sold separately)
Q Corresponding Ethernet Interface Module User's Manual (Basic)
Explains the specifications of the Ethernet module, data communication procedure with external devices, line SH-080009
connection (open/close), fixed buffer communication, random access buffer communication, and troubleshooting. (13JL88)
(Sold separately)
Q Corresponding Ethernet Interface Module User's Manual (Application)
Explains the e-mail function of the Ethernet module, programmable controller CPU status monitoring, communication
function using the MELSECNET/H or MELSECNET/10 as a relay station, communication with data link instructions.
and the use of file transfer (FTP server) function. (13JL89)
(Sold separately)

• PID control instruction

Manual name	Manual number (Model code)
MELSEC-Q/L/QnA Programming Manual (PID Control Instructions) Explains the dedicated instructions for PID control.	SH-080040 (13JF59)
(Sold separately)	(1551 58)

Socket communication function instruction

Manual name		Manual number (Model code)
QnUCPU User's Manual (Communication via Built-in Ethernet Port) Explains the specifications and functions of the built-in Ethernet port communication.	(Sold separately)	SH-080811 (13JZ29)
MELSEC-L CPU Module User's Manual (Built-In Ethernet Function) Explains the specifications and functions of the built-in Ethernet port communication.	(Sold separately)	SH-080891ENG (13JZ37)

Built-in I/O function instruction

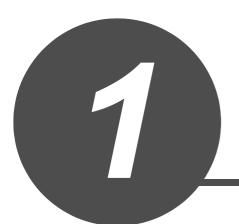
Manual name	Manual number (Model code)
MELSEC-L CPU Module User's Manual (Built-In I/O Function)	
Explains the general input/output function, interrupt input function, pulse catch function, positioning function, and high-	SH-080892ENG
speed counter function of CPU module.	(13JZ38)
(Sold separately)	

Data logging function instruction

Manual name	Manual number (Model code)
MELSEC-L CPU Module User's Manual (Data Logging Function)	
Explains the specifications of the LCPU module data logging function, and the method for using the LCPU logging configuration tool.	SH-080893ENG (13JZ39)
(Sold separately)	

SFC control Instruction

Manual name		Manual number (Model code)
MELSEC-Q/L/QnA Programming Manual (SFC) Explains the programming methods required to create SFC program, specifications and functions.	(Sold separately)	SH-080041ENG (13JF60)



OVERVIEW

1.1	Purpose of This Manual	1-2
1.2	Generic Terms and Abbreviations in This Manual	1-5
1.3	Explanation Content in This Manual	1-6
1.4	Modules and Versions Applicable to Instructions	1-8

This manual explains the instructions for the network module, intelligent function module, PID control, socket communication function, built-in I/O function, and data logging function among common instructions and special instructions necessary for creating programs using the structured programming technique.

Manuals for reference are listed in the following table according to their purpose.

For information such as the contents and number of each manual, refer to the list of 'Related manuals'.

Purpose		GX Works2	GX Works2 Beginner's Manual		GX Works2 Version 1 Operating Manual			
		Installation Instructions	Simple Project	Structured Project	Common	Simple Project	Structured Project	Intelligent Function Module
Installation	Learning the operating environment and installation method	Details						
	Learning a USB driver installation method				Details			
	Learning all functions of GX Works2				Outline			
Operation of GX Works2	Learning the project types and available languages in GX Works2				Outline			
	Learning the basic operations and operating procedures when creating a simple project for the first time		Details					
	Learning the basic operations and operating procedures when creating a structured project for the first time			Details				
	Learning the operations of available functions regardless of project type.				Details			
	Learning the functions and operation methods for programming				Outline	Details	Details	
	Learning data setting methods for intelligent function module							Details

(1) Operation of GX Works2

1

(2) Operations in each programming language

For details of instructions used in each programming language, refer to the section 3 on the next page

Purpose			orks2 's Manual	GX Works2 Version 1 Operating Manual		
		Simple Project	Structured Project	Simple Project	Structured Project	
	Ladder	Outline		Details		
Simple Project	SFC	*1 Outline		Details		
	ST		Outline		Details	
	Ladder	Outline		Details		
Structured	SFC	*1 Outline		Details		
Project	Structured ladder/ FBD		Outline		Details	
	ST		Outline		Details	

*1: MELSAP3 and FX series SFC only

(3)	Details of instructions	in	each	programming	language
(0)	Botano or motiono		00011	programming	, angaage

Purpose		MELSEC- Q/L/F Structured Programming Manual	MELSEC-Q/L Structured Programming Manual			MELSEC- Q/L MELSEC-Q/L/QnA Programming Manual Manual			Manual for module to be used
		Fundamentals	Common Instructions	Special Instructions	Application Functions	Common Instructions	PID Control Instructions	SFC	-
All languages	Learning details of programmable controller CPU error codes, special relays, and special registers					Details			
	Learning the types and details of common instructions					Details			
Using ladder	Learning the types and details of instructions for intelligent function modules								Details
language	Learning the types and details of instructions for network modules								Details
	Learning the types and details of instructions for the PID control function						Details		
Using SFC language	Learning details of specifications, functions, and instructions of SFC (MELSAP3)							Details	
	Learning the fundamentals for creating a structured program	Details							
	Learning the types and details of common instructions		Details						
Using structured ladder/FBD/ ST language	Learning the types and details of instructions for intelligent function modules			Outline					Details
	Learning the types and details of instructions for network modules			Outline					Details
	Learning the types and details of instructions for the PID control function			Outline			Details		
	Learning the types and details of application functions				Details				

This manual uses the generic terms and abbreviations listed in the following table to discuss the software packages and programmable controller CPUs. Corresponding module models are also listed if needed.

Generic term and abbreviation	Description
GX Works2	Generic product name for SWnDNC-GXW2-E (n: version)
Basic model QCPU	Generic term for Q00J, Q00, and Q01
High Performance model QCPU	Generic term for Q02, Q02H, Q06H, Q12H, and Q25H
Universal model QCPU	Generic term for Q00UJ, Q00U, Q01U, Q02U, Q03UD, Q03UDE, Q04UDH, Q04UDEH, Q06UDH, Q06UDEH, Q10UDEH, Q13UDH, Q13UDEH, Q20UDEH, Q20UDEH, Q26UDH, Q26UDEH, Q26U
	O50UDEH, and Q100UDEH
Built-in Ethernet port	Generic term for Q03UDE, Q04UDEH, Q06UDEH, Q10UDEH, Q13UDEH, Q20UDEH, Q26UDEH,
QCPU	O50UDEH, and Q100UDEH
QCPU (Q mode)	Generic term for Basic model QCPU, High Performance model QCPU, and Universal model QCPU
LCPU	Generic term for L02, L02-P, L26-BT and L26-PBT
CPU module	Generic term for QCPU (Q mode) and LCPU
CC-Link IE Controller	Abbreviation for CC-Link IE Controller Network system
Network	
CC-Link IE Field Network	Abbreviation for CC-Link IE Field Network system
CC-Link IE	Generic term for CC-Link IE Controller Network system and CC-Link IE Field Network system
MELSECNET/H	Abbreviation for MELSECNET/H network system
Ethernet	Abbreviation for Ethernet network system
CC-Link	Abbreviation for Control & Communication Link
Personal computer	Generic term for personal computer on which Windows [®] operates
	Generic term for the sequence instructions, basic instructions, application instructions, data link
Common instruction	instructions, multiple CPU dedicated instructions, and multiple CPU high-speed transmission dedicated instructions
Special instruction	Generic term for module dedicated instructions, PID control instructions, socket communication function instructions, built-in I/O function instructions, and data logging function instructions

This manual explains the programming methods and data used for control of the following modules and PID control using structured programming technique.

Function/module for explaining an instruction	Processing performed by the instruction	Reference
Analog module	 Switches the mode. (Offset/gain setting mode or normal mode) Reads the user range setting offset/gain value. Restores the user range setting offset/gain value. 	Section 5.1
Positioning module	 Restores the absolute position of the specified axis. Starts positioning of the specified axis. Executes teaching of the specified axis. Writes parameters/positioning data and block start data to a flash ROM. Initializes setting data. 	Section 5.2
Serial communication module	Sends and receives data to and from an external device.Registers and reads user frames.	Section 5.3
CC-Link system master/local module	 Reads and writes data from and to an intelligent device station on the CC-Link system. Reads and writes data from and to the auto-refresh buffer memory at the master station. Sets the network parameters. 	
CC-Link IE network module	 Sends and receives data to and from an external device. Reads and writes data from and to another station on the 	Section 5.4
MELSECNET/H network module	CC-Link IE or MELSECNET/H network system. • Reads and clears error information.	
Ethernet interface module	Sends and receives e-mails.	
PID control instruction	 Sets PID control data and performs PID operation for inexact differential and exact differential. Stops and starts operation of the specified loop. Changes the parameter of the specified loop. 	Chapter 6
Socket communication function (Built-in Ethernet port QCPU, LCPU)	 Opens/closes a connection. Reads receive data. Changes the receive mode. 	Chapter 7

Function/module for explaining an instruction		Processing performed by the instruction	Reference	
	Positioning function	 Starts positioning of the specified axis. Starts OPR of the specified axis. Starts JOG operation of the specified axis. Restores the absolute position of the specified axis. Stops the operating axis. Changes the speed and the target position of the specified axis. 		
Built-in I/O function	Counter function	 Updates the current value of the specified CH. Sets a ring counter lower limit value and a ring counter upper limit value. Sets a preset value/latch counter value/sampling counter value. Sets the coincidence output No. n point. Measures the frequency/rotation speed. Stores the measured pulse value. Outputs the PWM wave form. 	Chapter 8	
Data logging function		 Generates a trigger on the data logging of the specified data logging configuration number. Resets the LOGTRG instruction of the specified data logging configuration number. 	Chapter 9	
SFC control		 Reads comment of an active step in the specified SFC block. Reads comment of transition condition associated with an active step in the specified SFC block. 	Chapter 10	

• Precautions on using instructions

For details of the specifications, functions, and operating timing of each instruction, refer to the related manuals of each module.

🖙 'MANUALS'

This section explains the modules and versions applicable to the instructions explained in this manual.

Function/module for explaining	an instruction	Applicable version/serial number
	Q64AD	
	Q68ADV	
	Q68ADI	
	Q64AD-GH	
	Q62AD-DGH	
	Q68AD-G	
	Q66AD-DG	
	Q62DAN Q64DAN	
	Q64DAN Q68DAVN	
	Q68DAVN Q68DAIN	
	Q62DA	
	Q64DA	
Analog module	Q68DAV	Applicable to all versions
	Q68DAI	
	Q62DA-FG	
	Q66DA-G	
	Q64RD	
	Q64RD-G	
	Q64TD	
	Q64TDV-GH	
	Q68TD-G-H01	
	Q68TD-G-H02	
	Q68RD3-G	
	Q61LD	
	L60AD4	
	L60DA4	
	QD75P1	
	QD75P2	
	QD75P4	
	QD75D1	
	QD75D2	
	QD75D4	
Positioning module		Applicable to all versions
	QD75M1	
	QD75M2	
	QD75M4	
	QD75MH1	
	QD75MH2	
	QD75MH4	
	QJ71C24N	
	QJ71C24N-R2	
	QJ71C24N-R4	The modules that can use the UINI instruction are
Serial communication module	QJ71C24	limited.
	QJ71C24-R2	For details F Section 5.3.14
	LJ71C24	
	LJ71C24-R2	
	QJ61BT11N	Applicable to all versions
	LJ61BT11	
		The modules that can use the RLPASET instruction are
		limited.
CC-Link system master/local module		The instruction is applicable to the module of which the
	QJ61BT11	function version is B and the first five digits of the serial
		-
		number are '03042' or higher.
		For details F Section 5.4.7
CC-Link IE Controller Network module	QJ71GP21-SX	Applicable to all versions
	QJ71GP21S-SX	- The second sec

For details of applicable versions, refer to each instruction in Chapter 5.

Function/module for explainin	-	Applicable version/serial number
CC-Link IE Field Network module	QJ71GF11-T2 LJ71GF11-T2	Applicable to all versions
	QJ71LP21	
	QJ71LP21-25	
	QJ71LP21S-25	
MELSECNET/H network module	QJ71LP21G	Applicable to all versions
MELSECINE I/H Hetwork Houdule	QJ71BR11	Applicable to all versions
	QJ72LP25-25	
	QJ72LP25G	
	QJ72BR15 QJ71E71-100	
Ethernet interface module	QJ71E71-100 QJ71E71-B5	Applicable to all versions
	QJ71E71-B2	
	Q00J	
	Q00UJ	
	Q00	
	Q00U	
	Q01	
	Q01U	
	Q02	
	Q02H	
	Q02U	
	Q03UD	
	Q03UDE	
	Q04UDH	
	Q04UDEH	
	Q06H	
	Q06UDH	
CPU module supporting the PID control	Q06UDEH	The modules that can use the instruction are limited.
nstruction	Q10UDH	For details F Section 6.1, Section 6.2
	Q10UDEH	
	Q12H	
	Q13UDH	
	Q13UDEH	
	Q20UDH	
	Q20UDEH	
	Q25H	
	Q26UDH	
	Q26UDEH	
	Q50UDEH	
	Q100UDEH	
	L02	
	L02-P	
	L26-BT	
	L26-PBT	
	Q03UDE	
	Q04UDEH	
	Q06UDEH	
	Q10UDEH	The modules that can use the socket communication
	Q13UDEH	function instruction are limited when using the Built-in
	Q20UDEH	Ethernet port QCPU.
Built-in Ethernet port QCPU/LCPU	Q26UDEH	The instruction is applicable to the module of which the
(Built-in Ethernet function)	Q50UDEH	function version is B and the first five digits of the seria
	Q100UDEH	number are '11012' or higher.
	L02	
		Applicable to all versions for LCPU.
	L02-P	
	L26-BT	
	L26-PBT	I

Function/module for explaining		Applicable version/serial number
	L02	
LCPU (Built-in I/O function)	L02-P	Applicable to all versions
	L26-BT	
	L26-PBT	
	L02	
LCPU (Data logging function)	L02-P	Applicable to all versions
	L26-BT	
	L26-PBT	
	Q00J	
	Q00UJ	
	Q00	
	Q00U	
	Q01	
	Q01U	
	Q02	
	Q02H	
	Q02U	
	Q03UD	
	Q03UDE	
	Q04UDH	
	Q04UDEH	
CPU module supporting the SFC	Q06H	The modules that can use the instruction are limited.
instruction	Q06UDH	For details F Section 10.1
	Q06UDEH	
	Q10UDH	
	Q10UDEH	
	Q12H	
	Q13UDH	
	Q13UDEH	
	Q20UDH	
	Q20UDEH	
	Q25H	
	Q26UDH	
	Q26UDEH	
	Q50UDEH	
	Q100UDEH	
		I

 How to check the applicable ve 	rsion or serial number
Intelligent function modules	: User's Manual or Reference Manual for
	the module listed in 'Manuals'
CPU modules supporting PID c	ontrol: User's Manual (Function Explanation,
	Program Fundamentals) of the CPU
	module to be used
Built-in Ethernet port QCPU	: QnUCPU User's Manual
	(Communication via Built-in Ethernet
	Port)
 Manual for reference 	
S 'MANUALS'	



INSTRUCTION TABLES

2.1	How to Read Instruction Tables 2	-2
2.2	Module Dedicated Instruction	-3
2.3	PID Control Instruction	10
2.4	Socket Communication Function Instruction 2-	11
2.5	Built-in I/O Function Instruction	12
2.6	Data Logging Function Instruction	15
2.7	SFC Control Instruction	15

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
On-demand function transmission	G_ONDEMAND	Un), \$1, \$2, d	Sends data using the on-demand		Serial	5.64
	GP_ONDEMAND	Un), 61, 62, d	function of MC protocol.			5-64
Nonprocedural	G_OUTPUT	(Ln), §1, §2, d	Sends the specified number of data.			5-68
protocol	GP_OUTPUT	(m), (s), (s2, (d)	Sends the specified number of data.		Serial	5-08
communication	G_INPUT	Un, s, d), d2	Reads the received data.			5-71
↑ ①		 3	 (4)	† 5	↑ 6	

Instruction tables in Section 2.2 have the following form:

Description

- ① Classifies instructions by application.
- ② Indicates the instructions used in a program.
- ③ Indicates the arguments of the instruction.
 - (s), (d): Source...... Stores data before operation.
 - (a), (b): Destination Indicates the destination of data after operation.
 - n, n1: Specifies the number of devices and the number of transfers.
 - (in): Specifies the network number.
- ④ Indicates the processing details of each instruction.

(5) Details of executing condition of each instruction are as follows:

Symbol	Executing condition
	Indicates an 'executed while ON' type instruction that is executed only while the precondition is ON. When the precondition is OFF, the instruction is not executed and does not perform processing.
	Indicates an 'executed once at ON' type instruction that is executed only at the rising pulse (OFF \rightarrow ON) of the precondition of the instruction. The instruction is not executed afterwards even when the condition is ON and thus does not perform processing.

(6) Indicates the execution target module of each instruction.

For details of the icons, refer to Chapter 4.

O Indicates the pages on which the instructions are explained.

2.2.1 Analog instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Mode switching	G_OFFGAN	Un), s	Moves to the offset/gain setting mode. Moves to the normal mode.		5-2
	GP_OFFGAN	Un), (s)			
Setting value	G_OGLOAD	(Un), (s), (d)	Reads the user range settings offset/gain value to the programmable controller CPU.		- 5-4
reading	GP_OGLOAD	Un), (s), (d)			
Setting value restoration	G_OGSTOR	(Ln), (s), (d)	Restores the user range settings offset/gain value stored in the programmable controller CPU.		5-27
	GP_OGSTOR	(m), (s), (d)			5-27

2.2.2 Positioning instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	Z_ABRST1	(Un), (s), (d)			
Absolute position	Z_ABRST2	Un), (s), (d)	Restores the absolute position of the specified axis.		5-51
restoration	Z_ABRST3	(Un), (s), (d)			0-01
	Z_ABRST4	(Un), (s), (d)			
Positioning start	ZP_PSTRT1	(Un), (s), (d)			
	ZP_PSTRT2	(Un), (S), (d)	Starts positioning of the specified axis.		5-55
	ZP_PSTRT3	(un), (s), (d)			5-55
	ZP_PSTRT4	(Un), (s), (d)			
	ZP_TEACH1	(Un), (s), (d)			
Teaching	ZP_TEACH2	(Un), (s), (d)	Performs teaching for the specified axis.		5-57
readining	ZP_TEACH3	(Un), (s), (d)			0.01
	ZP_TEACH4	Un), (s), (d)			
Writing to flash ROM	ZP_PFWRT	un), (s), (d)	Writes the QD75 parameters, positioning data, and block start data to the flash ROM.		5-60
Setting data initialization	ZP_PINIT	(m), (s), (d)	Initializes the QD75 setting data.		5-62

2.2.3 Serial communication

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
On-demand	G_ONDEMAND	(m), s1, s2, d	Sends data using the on-demand			
function transmission	GP_ONDEMAND	un), 61, 62, 0	function of MC protocol.	Serial	Serial	5-64
Nonprocedural	G_OUTPUT	Un, s1, s2, d				5.00
protocol	GP_OUTPUT	Un, 1, 1, 2, 0	 Sends the specified number of data. 		Serial	5-68
communication	G_INPUT	Un, s, d), @	Reads the received data.			5-71
	G_BIDOUT	(m), (s1), (s2), (d)	Sends the specified number of data.			5-74
Bidirectional protocol	GP_BIDOUT	Un, s1, s2, d	Serius the specified humber of data.		Contal	5-74
communication	G_BIDIN	(m), (s), (d), (d)	Reads the received data.		Serial	5-77
	GP_BIDIN	(Un), (S), (d), (d2)	Reads the received data.			5-11
Communication	G_SPBUSY	Un, d	Reads the data transmission/		Covial	5-79
status check	GP_SPBUSY	Un, d	 reception status using the instruction. 		Serial	5-79
Receive data clear	ZP_CSET	(m), s), 2, (1), (2)	Clears receive data without stopping transmission using the nonprocedural protocol.		Serial	5-80
Data	Z_BUFRCVS	(un), (s), (d)	Receives data with an interrupt program using the nonprocedural protocol or bidirectional protocol.			5-83
transmission/ reception	G_PRR	(Un), (S), (d)	Sends data by user frame according to the specification in user frame		Serial	
	GP_PRR	(un), (s), (d)	specification area for transmission using the nonprocedural protocol.			5-85
Initial setting	ZP_CSET	un), s), ©, t), t2	Sets the unit (word/byte) of the number of the data to be sent or received.		Serial	5-89
Programmable controller CPU monitor	ZP_CSET	☞, ᢒ, ֎, ๗, ֎	Registers and cancels the programmable controller CPU monitoring for using the programmable controller CPU monitoring function.		Serial	5-93
	G_PUTE	(m), (s1), (s2), (d)	Registers a user frames to the flash			5-101
Flash ROM user frame	GP_PUTE	(m), (s1), (s2), (d)	ROM.		Contal	5-101
registration/ reading	G_GETE	Un, 1, 2, 0	Reads a user frames from the flash		Serial	5 404
3	GP_GETE	Un, 1, 2, 0	ROM.			5-104
Mode switching	ZP_UINI	(un), (s), (d)	Switches the mode, transmission specification, and host station number.		Serial	5-107
Pre-defined	G_CPRTCL	(m), n1, n2, (s), (d)	Executes the protocols and			E 440
protocol communication	GP_CPRTCL	un), n1, n2, s, d	functional protocols written to the flash ROM.		Serial	5-112

STRUCTION ABLES **2**

2.2.4 Network dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
	J_RIRD	(m [°]), (s), (d), (d2			CC IE C	
Reading from the	JP_RIRD	£, \$, #, @			CC IE C CC IE F	
buffer memory of an intelligent device station	G_RIRD	un, s, d), @	Reads data for the specified number of points from the buffer memory or device of the specified station.		CC-Link CC IE C	5-115
	GP_RIRD	ur, s, t, æ			CC-Link CC IE C CC IE F	
Writing to the buffer memory of an intelligent device station	J_RIWT	(m [°]), (s), (d), (d)			CC IE C	
	JP_RIWT	☞, ७, ๗, ๗			CC IE C CC IE F	
	G_RIWT	un, s), ©, 0	Writes data for the specified number of points to the buffer memory or device of the specified station.		CC-Link CC IE C CC-Link CC IE C CC IE F	5-120
	GP_RIWT	☞, ☞, ֎, @				
Reading from the buffer memory of	G_RIRCV	(m), s1, s2, d1, d2	Automatically performs handshaking with the specified station and reads		CC-Link	
an intelligent device station (with handshake)	GP_RIRCV	₩, 9, 2, 0, @	data from the buffer memory of the specified station. This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).			5-125
Writing to the buffer memory of	G_RISEND	☞, ᢒ, 2, 1, 2	Automatically performs handshaking with the specified station and writes data to the buffer memory of the			
an intelligent device station (with handshake)	GP_RISEND	☞, ᢒ, ୧, ๗, ๗	specified station. This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).		CC-Link	5-129
Reading from the	G_RIFR	un), n1, n2, n3, d	Reads data from the auto-refresh buffer memory of the specified			
Reading from the auto-refresh buffer memory of the master station	GP_RIFR	௴, n1, n2, n3,	station	CC-Link	5-133	
Writing to the	G_RITO	un), n1, n2, n3, @	Writes data to the auto-refresh buffer memory of the specified station.			
auto-refresh buffer memory of the master station	GP_RITO	ሆ), n1, n2, n3,	This instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2.		CC-Link	5-135

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page	
Network parameter	G_RLPASET	(m ²), (1), (12), (3), (4), (13), (10), (Sets network parameter to the master station and starts up the data		CC-Link	5-137	
setting	GP_RLPASET	(Ln), (1), (2), (3), (4), (5), (d)	link.		CC-LINK	5-157	
	J_READ	Jn), 61, 62, 61, 62					2
	JP_READ	(m), (s), (s2, (d), (d2	Reads data from a word device of				z
	G_READ	Un), \$1, \$2, 61, 62	another station.			5-144	INSTRUCTION TABLES
	GP_READ	Un), 61, 62, 61, 62					NSTR
	J_SREAD	Jn), 61, 62, 61, 62, 63			1		
Device data read/	JP_SREAD	(In [°]), (s ¹), (s ²), (d ¹), (d ²), (d ³)	Reads data from a device of another			5 450	
	G_SREAD	Un, \$1, \$2, \$1, \$2, \$3	station (with completion device).		CC IE C	5-150	
	GP_SREAD	(m), s1, s2, d1, d2, d3			CC IE F		
write	J_WRITE	(In [°]), (s1), (s2), (s3), (d1)			NET/H Ether		
-	JP_WRITE	(In [®]), (s1), (s2), (s3), (d1)	Writes data to a device of another station.				
	G_WRITE	Un), 61, 62, 63, 61			-	5-154	
	GP_WRITE	(Un), (s1, (s2, (s3, (d1			-		
	J_SWRITE	(In [°]), (s ¹), (s ²), (d ¹), (d ²), (d ³)					
	JP_SWRITE	(In [°]), (s1, (s2, (d1, (d2, (d3	Writes data to a device of another			5-161	
	G_SWRITE	Un), \$1, \$2, \$1, \$2, \$3	station (with completion device).				
	GP_SWRITE	Un, s1, s2, d1, d2, d3	-				
	J_SEND	Jn, \$1, \$2, d					
	JP_SEND	Jn), \$1, \$2, d			-		
	G_SEND	Un, \$1, \$2, d	Sends data to another station.		-	5-165	
	GP_SEND	Un, 11, 12, 0	-		CC IE C		
Message (user-specified	J_RECV	Jn), (6), (1), (2)			CC IE F		
data) communication	JP_RECV	Jn [*]), (s), (d), (2)	Reads received data from another		NET/H	5-173	
	G_RECV	Un, 6, 10, 12	station (for main program).		Ether		
	GP_RECV	Un), (6), (1), (2)					
	Z_RECVS	Un), (1), (2), (d)	Reads received data from another station (for interrupt program).			5-178	

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
	J_REQ	Jn), \$1, \$2, \$1, \$2			CC IE C	
Transient request	JP_REQ	₲,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Executes remote RUN/STOP for another station.		CC IE C CC IE F NET/H Ether	5-181
to another station	G_REQ	Un), s), s), d), a	Reads/writes clock data from another station.		CC IE C	5-161
	GP_REQ	☞, ᢒ, ֎, ๗, ֎			CC IE C CC IE F NET/H Ether	
Read from other	J_ZNRD	(Ln), n1, (S), n2, (d), (d)	ent Processing details condition modul 9, @		5-190	
Read from other station devices Write to other station devices Remote RUN	JP_ZNRD	un, n1, s, n2, d), @				5-190
Write to other	J_ZNWR	un, n1, s, n2, d, d				5-193
station devices	JP_ZNWR	Un), n1, (s), n2, (d), (d)				5-195
	Z_RRUN_J	(m [°]), (s ¹), (s ²), (s ³), (s ⁴), (d)			CC IE C NET/H	
Remote	ZP_RRUN_J	(m [°]), (s1), (s2), (s3), (s4), (d)				5-197
Remote RUN	Z_RRUN_U	Un, \$1, \$2, \$3, \$4, d				5-197
	ZP_RRUN_U	Un, s1, s2, s3, s4, d				
	Z_RSTOP_J	(m [°]), (s1), (s2), (s3), (s4), (d)				
Remote	ZP_RSTOP_J	Jn, \$1, \$2, \$3, \$4, d	Executes remote STOP for a CPU		CC IE C	5-200
STOP	GP_REQ GP_REQ GP_REQ GP_REQ GP_REQ GP_REQ Image: Second	NET/H	5-200			
	ZP_RSTOP_U	Un, \$1, \$2, \$3, \$4, d				
	Z_RTMRD_J	Jn), \$1, \$2, \$3, @, @				
Reading clock data from another	ZP_RTMRD_J	Jn ² , s ¹ , s ² , s ³ , d ¹ , d ²	Reads clock data from a CPU		CC IE C	5-203
station	Z_RTMRD_U	Un), s1, s2, s3, d1, d2	module on another station.		NET/H	5-203
	ZP_RTMRD_U	un), s1, s2, s3, d1, d2				
	Z_RTMWR_J	Jn), s1, s2, s3, s4, d				
Writing clock data	ZP_RTMWR_J	Jn, S1, S2, S3, S4, d	Writes clock data to a CPU module		CC IE C	5 205
to another station	Z_RTMWR_U	Un), 61, 62, 63, 64, 0	on another station.		NET/H	5-205
	ZP_RTMWR_U	(m ²), (s1), (s2), (s3), (s4), (d)				

Classification	Instruction name	Argument	Processing details	Executing condition	Applicable module	Page
Reading from buffer memory of intelligent function	Z_REMFR	(m), n1, n2, n3, n4, n5, (d), @	Reads data from the buffer memory of an intelligent function module on the remote I/O station.		NET/H	5-208
module on remote I/O station	ZP_REMFR	اله), n1, n2, n3, n4, n5, 1), @			CC IE F NET/H	
Writing to buffer memory of intelligent function	Z_REMTO	ஸ், n1, n2, n3, n4, n5, ரி, @	Writes data to the buffer memory of an intelligent function module on the		NET/H	5-210
module on remote I/O station	ZP_REMTO	(m), n1, n2, n3, n4, n5, (d) , @	remote I/O station.		CC IE F NET/H	
Setting parameter	G_CCPASET	☞, ᢒ, ֎, ֍, ଖ, d	master/local modules CC I	CC IE F	5-212	
	GP_CCPASET	(m [°]), s ¹), s ²), s ³), s ⁴), d				
Connection opening	ZP_OPEN	Un [°] , 61, 62, 0	Opens a connection.		Ether	5-218
or closing	ZP_CLOSE	(m), 61, 62, 0	Closes a connection.		Luier	5-222
	ZP_BUFRCV	un), s), s2, d), d2	Reads received data. (for main program)			5-225
Fixed buffer communication	Z_BUFRCVS	(m), (s), (d)	Reads received data. (for interrupt program)		Ether	5-229
	ZP_BUFSND	Un), \$1, \$2, \$3, d	Sends data.			5-231
Reading or clearing	ZP_ERRCLR	Un), (s), (d)	Clears error information.			5-235
error information	ZP_ERRRD	(Ln ²), (S), (d)	Reads error information.		Ether	5-238
Re-initialization/ station number setting/changing switch setting	Z_UINI	(m), (s), (d)	Executes re-initialization.		CC IE C	
	ZP_UINI	Un, (s), (d)	Sets the host station number.Changes the switch setting.		CC IE C Ether	5-241
E-mail	ZP_MRECV	Un), (s), (d), (d2)	Reads received e-mail.			5-245
communication	ZP_MSEND	(m), s1, s2, d	Sends an e-mail.		Ether	5-250

2.3.1 PID control instruction (inexact differential)

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Data setting	S_PIDINIT	6	Sets data to be used for PID operation.		6-2
Data Setting	SP_PIDINIT	S			0-2
PID operation	S_PIDCONT	6	Performs PID operation based on the set value (SV)		6-7
	SP_PIDCONT	6	and process value (PV).		0-1
PID operation stop	S_PIDSTOP	n	Stops the PID operation for the specified loop		
	SP_PIDSTOP	n	number.		6-11
PID operation start	S_PIDRUN	n	Starts the PID operation for the specified loop		0 11
TID operation start	SP_PIDRUN	n	number.		
Operation	S_PIDPRMW	n,	Changes operation parameter of the specified loop number.		6-12
parameter change	SP_PIDPRMW	n, ©			0-12

2.3.2 PID control instruction (exact differential)

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Data setting	PIDINIT	6	Sets data to be used for PID operation.		6-16
Data setting	PIDINITP	s			0-10
PID operation	PIDCONT	6	Performs PID operation based on the set value (SV)		6-21
	PIDCONTP	(\$)	and process value (PV).		0-21
PID operation stop	PIDSTOP	n	Stops the PID operation for the specified loop		
	PIDSTOPP	n	number.		6-26
PID operation start	PIDRUN	n	Starts the PID operation for the specified loop		0-20
	PIDRUNP	n	number.		
Operation	PIDPRMW	n, ©	Changes operation parameter of the specified loop number.		6-27
parameter change	PIDPRMWP	n, ®			0-27

2.4 Socket Communication Function Instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Opening/closing	SP_SOCOPEN	(Ln), (s1), (s2), (d)	Establishes a connection.		7-2
connection	SP_SOCCLOSE	(Ln), (s1), (s2), (d)	Shuts a connection off.		7-5
Reading receive	SP_SOCRCV	(11), \$1, \$2, €1, €2	Reads receive data. (Reading at the end process)		7-8
data	S_SOCRCVS	(m), (s), (d)	Reads receive data. (Reading at the instruction execution)		7-11
Sending data	SP_SOCSND	(Ln [°]), (S), (S), (G), (G)	Sends data.		7-13
Reading connection information	SP_SOCCINF	ur), (1), (2), (1)	Reads connection information.		7-16
Changing destination	SP_SOCCSET	(m ²), (s1), (s2)	Changes a destination of a UDP/IP connection.		7-19
Changing receive mode	SP_SOCRMODE	(m), (s1), (s2)	Changes the receive mode of a connection.		7-22
Reading data from receive data area	S_SOCRDATA	un), @, @, n, @	Reads data from the receive data area.		7-24
	SP_SOCRDATA	₩,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			1 24

2.5.1 Positioning function dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	IPPSTRT1	n			
	IPPSTRT1P	n	Specifies a data number to be executed from "Positioning Data" No. 1 to No. 10 which are		8-2
	IPPSTRT2	n	previously set in GX Works2, and starts the positioning.		0-2
	IPPSTRT2P	n			
Positioning start	IPDSTRT1	s	Regardless of "Positioning Data" No. 1 to No. 10		
Positioning start	IPDSTRT1P	s	which are previously set in GX Works2, starts the positioning using the data stored in the		8-3
	IPDSTRT2	s	devices starting from the one specified for		0-3
	IPDSTRT2P	s	control data.		
	IPSIMUL	n1, n2	Starts the positioning of the axis 1 "Positioning		9
	IPSIMULP	n1, n2	Data" number and the axis 2 "Positioning Data" number simultaneously.		8-6
	IPOPR1 (s)				
OPR start	IPOPR1P	s	Specifies a method and starts the OPR of the		8-7
	IPOPR2	s	specified axis.		
	IPOPR2P	s			
JOG start	IPJOG1	6), 62	Starts the JOG operation of the specified axis.		8-9
JOG start	IPJOG2	6), 62	Starts the JOG operation of the specified axis.		
Absolute position	IPABRST1	(s), (d)	Executes the absolute position restoration of the		8-11
restoration	IPABRST2	(s), (d)	specified axis.		0-11
Stop	IPSTOP1	-	Stops the axis in operation.		8-13
Stop	IPSTOP2	-			0-13
	IPSPCHG1	s			
Speed change	IPSPCHG1P	s	Changes the speed of the specified axis		8-14
Speed change	IPSPCHG2	s	Changes the speed of the specified axis.		
	IPSPCHG2P	s			
	IPTPCHG1	s			
Target position	IPTPCHG1P	s	Changes the target position of the specified		8-16
change	IPTPCHG2	s	axis.		0-10
	IPTPCHG2P	s			

2.5.2 Counter function dedicated instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page	
	ICCNTRD1	-				
	ICCNTRD1P	-	Stores the most recent value for the current		0.40	
Current value read	ICCNTRD2	-	value of the specified CH.		8-18	
	ICCNTRD2P	-				
	ICRNGWR1	61,62				
Ring counter upper/lower limit	ICRNGWR1P	61, 62	Sets a ring counter lower limit value and upper		8-19	
value write	ICRNGWR2	st, s2	limit value of the specified CH.		0-19	
	ICRNGWR2P	€1, €2				
	ICPREWR1	(s)				
Preset value write	ICPREWR1P	s	Sets a preset value of the specified CH.		8-21	
Fleset value white	ICPREWR2	s	Sets a preser value of the specified Ch.		0-21	
	ICOREWR2P	s				
	ICLTHRD1	n, @				
Latch counter	ICLTHRD1P	n, @	Stores a latch counter value of the specified CH.		8-22	
value read	ICLTHRD2	n, @				
	ICLTHRD2P	n, @				
	ICSMPRD1	d			- 8-23	
Sampling counter	ICSMPRD1P	d	Stores a sampling counter value of the specified			
value read	ICSMPRD2	d	СН.			
	ICSMPRD2P	d				
	ICCOVWR1	n,				
Coincidence	ICCOVWR1P	n,	Sets a coincidence output No. n point of the		8-24	
output point write	ICCOVWR2	n, ®	specified CH.		0-24	
	ICCOVWR2P	n,				
Frequency	ICFCNT1	d	Measures the frequency of the specified CH.		8-25	
measurement	ICFCNT2	d			8-25	
Rotation speed	ICRCNT1	d	Measures the rotation speed of the specified		8-26	
measurement	ICRCNT2	d	СН.		- 8-26	

Classification	Instruction name	Argument	Processing details	Executing condition	Page
	ICPLSRD1	đ			
Pulse	ICPLSRD1P	đ	Stores the measured pulse value of the specified CH.		8-27
measurement read	ICPLSRD2	đ			
	ICPLSRD2P	Ø			
PWM output	ICPWM1	\$1, \$2	Outputs the PWM waveform of the specified CH.		8-28
	ICPWM2	s), s2			0-20

2.6 Data Logging Function Instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
Trigger logging set/reset	LOGTRG	n	Generates the trigger conditions in a trigger logging. Stores the data sampling results to the data logging file for the number of times specified in the trigger logging configuration of the programming tool.		9-2
	LOGTRGR	n	Resets the trigger conditions		

2.7 SFC Control Instruction

Classification	Instruction name	Argument	Processing details	Executing condition	Page
SFC step comment read	S_SFCSCOMR	n1, n2, n3, ⓓ), @	Reads comment of an active step in the specified SFC block by the specified number.		10-2
	SP_SFCSCOMR	n1, n2, n3, ⓓ , @			
SFC transition condition comment read	S_SFCTCOMR	n1, n2, n3, @, @	Reads comment of transition condition associated with an active step in the specified SFC block by the specified number.		10-4
	SP_SFCTCOMR	n1, n2, n3, ⓓ , @			

MEMO



CONFIGURATION OF INSTRUCTIONS

3.1	onfiguration of Instructions	5-2
0.1		1

1

Instructions available in the CPU module can be divided into an instruction name and an argument.

The application of an instruction name and an argument are as follows:

- Instruction name..... Indicates the function of the instruction.
- Argument Indicates the I/O data used in the instruction.

Arguments are classified into I/O number, source data, destination data, number of devices, executing condition, and execution result.

- (1) I/O number
 - (a) I/O number is data that set a module in which the instruction is to be executed. Set the I/O number by start I/O number or a network number of the module depending on the instruction.
 - (b) Setting the start I/O number (Un) of the module
 Set the higher two digits when expressing the start I/O number in three digits for the module in which the instruction is to be executed.
 Set the start I/O number in a numeric value or character string according to the data type available with the instruction.
 - Setting the start I/O number in word (unsigned)/16-bit string or word (signed) data type

Set the start I/O number of the module for 'n' of 'Un'. Example: For the module whose start I/O number is 020H: 02

 Setting the start I/O number in string data type Set the start I/O number in the format of "Un" (n: start I/O number of the module).
 Example: For the module whose start I/O number is 020H: "02"

(c) Network number (Jn) setting

Set the network number of the network module/Ethernet module in which the instruction is to be executed.

Set a network number indicated below, in word (unsigned)/16-bit string or word (signed) data type, for 'n' of 'Jn'.

- 1 to 239 : Network number
- 254 : Network specified in "Valid module during other station access" on the GX Works2 network parameter screen

Example: When the network number is 1:1

(2) Source (s)

•

- (a) A source is data used in an operation.
- (b) The following source types are available depending on the device specified in an instruction:

Constant	Specifies a numeric value used in an operation. Constants are set during programming so that they cannot be changed while the program is being executed. Perform index setting when using them as variable data.
Bit device and word device	Specifies the device in which the data used in the operation are stored. Data must be stored to the specified device before executing the operation. By changing the data to be stored to the specified device while a program is being executed, the data used in the instruction can be changed.

- (c) The instructions explained in this manual use special data. Refer to the explanation for each instruction and use data correctly.
- (3) Destination d
 - (a) Data after the operation are stored to a destination.
 - (b) Set a device in which data are to be stored to a destination.
 - (c) The instructions explained in this manual use special data. Refer to the explanation for each instruction and use data correctly.

For details of the configuration of instructions for labels and structures, refer to MELSEC-Q/L/F Structured Programming Manual (Fundamentals).

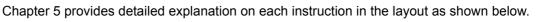
MEMO

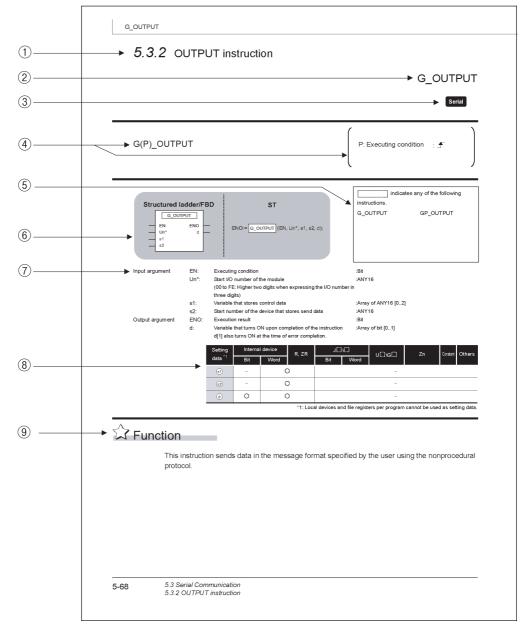


HOW TO READ INSTRUCTIONS



1





- ① Indicates a section number and an outline of an instruction.
- 2 Indicates an instruction to be explained.

③ Indicates the instruction execution target module.

If one instruction is to be executed in two or more modules, applicable modules are indicated using icons.

Module	lcon
Serial communication	Serial
CC-Link IE Controller Network	CC IE C
CC-Link IE Field Network	CC IE F
MELSECNET/H	NET/H
Ethernet	Ether
Universal model QCPU (Built-in Ethernet port QCPU)	QnUDE(H)
LCPU	L CPU
Universal model QCPU	Universal
High Performance model QCPU	High performance

④ Indicates the instruction name and executing condition of the instruction.

Executing condition	Non-conditional execution	Executed while ON	Executed once at ON	Executed while OFF	Executed once at OFF
Symbols on the corresponding page	No symbol				

- (5) Indicates the instruction names that can be described.
- ⑥ Indicates the description format of the instruction in the structured ladder/FBD/ST language.
- ⑦ Indicates the names of input and output arguments, and the data type of each argument. For details of each data type, refer to MELSEC-Q/L/F structured programming manual (Fundamentals).
- (8) Devices that can be used in the instruction are marked with \bigcirc .

The following table shows applicable classification for usable devices.

Device classification	Internal device (system, user)		File register		Link direct device ^{*4}		Intelligent function module		Others ^{*5}
classification	Bit	Word	R, ZR	Bit	Word	U[]\G[]	Zn		
Usable device ^{*1}	X, Y, M, L, SM, F, B, SB, FX, FY ^{*2}	T, ST, C, ^{*3} D, W, SD, SW, FD, @⊡	R, ZR	J [] //SB] [] //Y] [] //X	J⊞/SM]∭/M	U[]\G[]	Z	K, H, E, \$,	P, I, J, U, DX, DY, N, BL, TR, BL\S, V

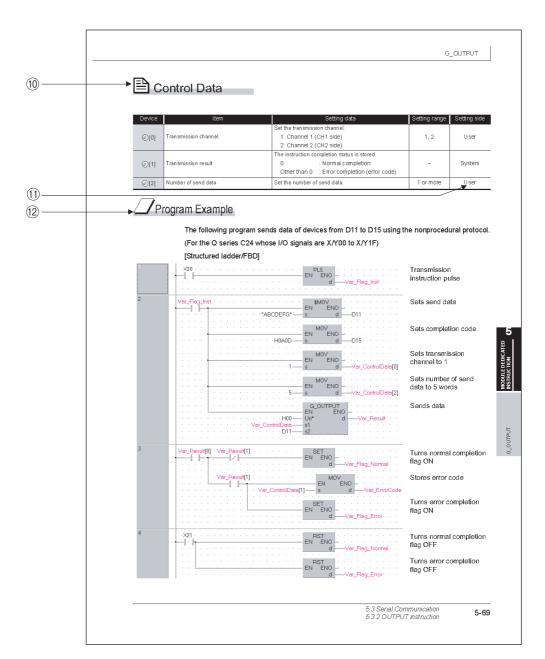
*1 : For description of each device, refer to the User's Manual (Function Explanation, Program Fundamentals) of the CPU module to be used.

*2 : FX and FY can be used in bit data only, and FD can be used in word data only in the PID control instruction.

*3 : T, ST, and C can be used in word data only (cannot be used in bit data).

- *4 : These devices can be used in CC-Link IE, MELSECNET/H, and MELSECNET/10.
- *5 : The Constant and Others columns describe settable devices.

(9) Indicates the processing performed by the instruction.



1 Indicates data such as control data, send data or receive data, that are used for an input argument or output argument in an instruction.

Example: Control data to be used in the CC-Link instruction 'GP_RIRD'

1 The setting side indicates the following:

User : Data set by user before dedicated instruction execution

System : Data stored by the programmable controller CPU after dedicated instruction execution

The setting does not need to be set by the user.

If the setting is set by the user, data cannot be read normally.

2 Indicates the program examples of structured ladder/FBD/ST.

The program examples are when the conditions are satisfied. The program example shown above shows that the conditions are satisfied in ladder block number 3.

The processing when the conditions are not satisfied, create appropriate programs as necessary.



MODULE DEDICATED INSTRUCTION

5.1	Analog Instruction	5-2
5.2	Positioning Instruction	. 5-51
5.3	Serial Communication	. 5-64
5.4	Network Dedicated Instruction	5-115

1

5.1 Analog Instruction

5.1.1 OFFGAN instruction

G_OFFGAN

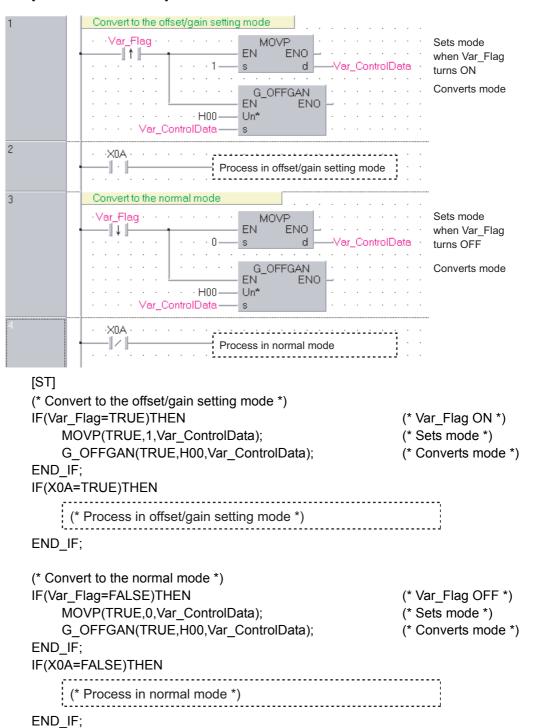
G(P)_OFFG	AN		P: Executing condition :
Structured G_OF EN Un* s		D ST ENO:= <u>G_OFFGAN</u> (EN, Un*, s);	instructions. G_OFFGAN GP_OFFGAN
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O	:Bit :ANY16 O number in
	S:	three digits) Mode switching 0: To normal mode 1: To offset/gain setting mode	:ANY16
Output argument	ENO:	Execution result	:Bit
	Setting	Internal device	
	data *1	Bit Word R, ZR Bit W	Jiii\Giii Zn Constant Othe



This instruction converts the mode of analog modules. (normal mode to offset/gain setting mode, offset/gain setting mode to normal mode)

Program Example

The following program converts the mode of the A/D converter module mounted on the I/O numbers from X/Y00 to X/Y0F to the offset/gain setting mode when Var_Flag turns ON, and gets it back to the normal mode when Var_Flag turns OFF.



[Structured ladder/FBD]

5.1.2 OGLOAD instruction

G_OGLOAD

G(P)_OGLO	AD		P: Executing condition :
Structured I G_OGI EN Un* s		BD ST ENO:= G_OGLOAD (EN, Un*, s, d);	indicates any of the following instructions. G_OGLOAD GP_OGLOAD
Input argument	EN:	Executing condition	:Bit
	Un*:	Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number three digits)	:ANY16 r in
	S:	Variable that stores control data	:Array of ANY16 [035]
Output argument	ENO:	Execution result	:Bit
	d:	Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:Array of bit [01]
		Setting data *1 Internal device R, ZR Jiii/iiii Bit Word Bit Bit	UIII\GIII Zn Constant Other
		b	-
	•	*1: Local devices and f	ile registers per program cannot be used as setting da

Grant Function

This instruction reads the user range settings offset/gain values of analog modules to the CPU.

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	Pass data classification setting	Specify the voltage/current of the offset/gain values to be read. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH4 CH3 CH2 CH1	0000н to 000Fн	User
s [3]	System area	-	-	-
ঙ [4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
⑤[9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH1 User range settings offset value	_	-	System
<u></u> জ[13]	CH1 User range settings gain value	_	-	System
<u>জ</u> [14]	CH2 User range settings offset value	_	-	System
<u></u> জ[15]	CH2 User range settings gain value	_	_	System
s [16]	CH3 User range settings offset value	_	-	System
s [17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	-	System
s [19]	CH4 User range settings gain value	_	_	System

(1) Q64AD/Q64DAN/Q64DA/L60AD4/L60DA4 *1

*1 : Set the data only to the Pass data classification setting \circledast [2].

(2) Q68ADV/Q68ADI/Q68DAVN/Q68DAV/Q68DAIN/Q68DAI *1

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	_
011		The instruction completion status is stored.		
<u></u> \$[1]	Completion status	0 : Normal completion	-	System
\$[2]		Other than 0 : Error completion (error code)		
⑤[2] ⑤[3]	System area	-	-	-
⑤[4]	CH1 Industrial shipment settings offset value		_	System
⑤ [5]	CH1 Industrial shipment settings gain value		-	System
<u> </u>	CH2 Industrial shipment settings offset value	_	_	System
<u></u> (§[7]	CH2 Industrial shipment settings gain value	_	_	System
<u>\$</u> [8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
§[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
s[13]	CH5 Industrial shipment settings gain value	_	-	System
s [14]	CH6 Industrial shipment settings offset value	_	-	System
<u>জ</u> [15]	CH6 Industrial shipment settings gain value	_	-	System
s[16]	CH7 Industrial shipment settings offset value	_	-	System
জ [17]	CH7 Industrial shipment settings gain value	_	-	System
<u></u> \$[18]	CH8 Industrial shipment settings offset value	_	-	System
s[19]	CH8 Industrial shipment settings gain value	-	-	System
s [20]	CH1 User range settings offset value	-	-	System
s[21]	CH1 User range settings gain value	-	-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s[24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
s [26]	CH4 User range settings offset value	_	-	System
\$[27]	CH4 User range settings gain value	_	-	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	-	-	System
s [30]	CH6 User range settings offset value	_	-	System
S[31]	CH6 User range settings gain value	_	-	System
s [32]	CH7 User range settings offset value	_	-	System
\$[33]	CH7 User range settings gain value	_	-	System
\$[34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	_	-	System

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(3) Q64AD-GH^{*1}

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	_	-
		The instruction completion status is stored.		
s[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code) Specify the voltage/current of the offset/gain values to		
		be read.		
⑤ [2]	Pass data classification setting	0: Voltage specified	0000н to	User
©[2]		1: Current specified b15 b4 b3 b2 b1 b0	000Fн	
		0 to 0 CH4 CH3 CH2 CH1		
\$[3]	System area	_	_	_
\$[4]	CH1 Industrial shipment settings offset value (L)			
\$[5]	CH1 Industrial shipment settings offset value (H)	-	-	System
\$[6]	CH1 Industrial shipment settings gain value (L)			
⑤ [7]	CH1 Industrial shipment settings gain value (H)	-	-	System
\$[8]	CH2 Industrial shipment settings offset value (L)			0
⑤ [9]	CH2 Industrial shipment settings offset value (H)	-	-	System
<u>©</u> [10]	CH2 Industrial shipment settings gain value (L)			Custom
⑤ [11]	CH2 Industrial shipment settings gain value (H)	-	-	System
S [12]	CH3 Industrial shipment settings offset value (L)			Custom
<u></u> জ[13]	CH3 Industrial shipment settings offset value (H)	-	-	System
s [14]	CH3 Industrial shipment settings gain value (L)			System
s [15]	CH3 Industrial shipment settings gain value (H)	_	-	System
<u>ি</u> [16]	CH4 Industrial shipment settings offset value (L)			System
S [17]	CH4 Industrial shipment settings offset value (H)	_	_	Oystern
⑤ [18]	CH4 Industrial shipment settings gain value (L)	_	_	System
s [19]	CH4 Industrial shipment settings gain value (H)	_		Oystern
s [20]	CH1 User range settings offset value (L)	_	_	System
s[21]	CH1 User range settings offset value (H)	_	_	Oystern
s [22]	CH1 User range settings gain value (L)	_	_	System
\$ [23]	CH1 User range settings gain value (H)			- Jotom
\$ [24]	CH2 User range settings offset value (L)		_	System
\$ [25]	CH2 User range settings offset value (H)			- ,
\$ [26]	CH2 User range settings gain value (L)	_		System
S [27]	CH2 User range settings gain value (H)			- ,
s [28]	CH3 User range settings offset value (L)	_	-	System
s [29]	CH3 User range settings offset value (H)			,
s [30]	CH3 User range settings gain value (L)	_	_	System
s [31]	CH3 User range settings gain value (H)			
s [32]	CH4 User range settings offset value (L)	_	_	System
s [33]	CH4 User range settings offset value (H)			,
s [34]	CH4 User range settings gain value (L)	_	_	System
s [35]	CH4 User range settings gain value (H)			

*1 : Set the data only to the Pass data classification setting [2].

When the data is written to the area to be set by system, offset/gain setting value is not read properly.

G_OGLOAD

5-7

(4) Q62AD-DGH^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
		The instruction completion status is stored.		Quatant
<u></u> জ[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
s[2]				
<u> </u>	System area	-	-	-
§ [4]	CH1 Industrial shipment settings offset value (L)			
s [5]	CH1 Industrial shipment settings offset value (H)	-	-	System
§[6]	CH1 Industrial shipment settings gain value (L)			Quatant
⑤ [7]	CH1 Industrial shipment settings gain value (H)	-	-	System
§ [8]	CH2 Industrial shipment settings offset value (L)			Quatara
s [9]	CH2 Industrial shipment settings offset value (H)	-	-	System
s [10]	CH2 Industrial shipment settings gain value (L)			Sustam
s[11]	CH2 Industrial shipment settings gain value (H)		-	System
⑤[12]				
to	System area	-	-	-
ঙ [19]				
s [20]	CH1 User range settings offset value (L)	_	_	System
ি [21]	CH1 User range settings offset value (H)			
s [22]	CH1 User range settings gain value (L)	_	_	System
ঙ [23]	CH1 User range settings gain value (H)			
ঙ [24]	CH2 User range settings offset value (L)	_	_	System
<u></u> জ [25]	CH2 User range settings offset value (H)			,
ঙ [26]	CH2 User range settings gain value (L)	_	_	System
§ [27]	CH2 User range settings gain value (H)			- ,
ি [28]				
to	System area	-	-	-
s [35]				

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(5) Q68AD-G^{*1}

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
		The instruction completion status is stored.		
ি [1]	Completion status	0 :Normal completion	-	System
		Other than 0 :Error completion (error code) Specify the voltage/current of the offset/gain values to		
		be read.		
	Deep data place if action actions	0: Voltage specified	0000н to	lloor
s[2]	Pass data classification setting	1: Current specified	00FFн	User
		b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 0 to 0 CH8CH7CH6CH5CH4CH3CH2CH1		
\$[3]	System area	_	-	-
⑤[4]	CH1 Industrial shipment settings offset value	_	-	System
\$[5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
\$[7]	CH2 Industrial shipment settings gain value	-	-	System
⑤[8]	CH3 Industrial shipment settings offset value	_	-	System
⑤[9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
<u></u> জ[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
s [13]	CH5 Industrial shipment settings gain value	_	_	System
s [14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
s [16]	CH7 Industrial shipment settings offset value	_	-	System
s[17]	CH7 Industrial shipment settings gain value	_	-	System
s [18]	CH8 Industrial shipment settings offset value	_	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
s [20]	CH1 User range settings offset value	_	-	System
s[21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	-	-	System
s [26]	CH4 User range settings offset value	_	-	System
s [27]	CH4 User range settings gain value	_	-	System
\$ [28]	CH5 User range settings offset value	-	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
<u> </u> (31]	CH6 User range settings gain value	_	-	System
s [32]	CH7 User range settings offset value	_	-	System
s [33]	CH7 User range settings gain value	_	-	System
s [34]	CH8 User range settings offset value	_	-	System
s [35]	CH8 User range settings gain value	-	-	System

*1 : Set the data only to the Pass data classification setting \circledast [2].

(6) Q66AD-DG^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	_
\$[1]	Completion status	The instruction completion status is stored. 0 :Normal completion	_	System
s [2]	System area	Other than 0 :Error completion (error code)	_	
§ [3]				
⑤ [4]	CH1 Industrial shipment settings offset value	-	-	System
s [5]	CH1 Industrial shipment settings gain value	-	-	System
s [6]	CH2 Industrial shipment settings offset value	-	-	System
§ [7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH3 Industrial shipment settings offset value	-	-	System
s [9]	CH3 Industrial shipment settings gain value	-	-	System
S[10]	CH4 Industrial shipment settings offset value	-	-	System
\$[11]	CH4 Industrial shipment settings gain value	-	-	System
⑤[12]	CH5 Industrial shipment settings offset value	_	-	System
<u></u> জ[13]	CH5 Industrial shipment settings gain value	_	-	System
<u></u>	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
s[16]				
to	System area	_	-	-
s [19]				
s [20]	CH1 User range settings offset value	_	-	System
⑤ [21]	CH1 User range settings gain value	_	-	System
\$[22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s[24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
s[26]	CH4 User range settings offset value	_	_	System
s[27]	CH4 User range settings gain value		-	System
<u> </u>	CH5 User range settings offset value		_	System
© [29]	CH5 User range settings gain value	_	_	System
⑤[20]	CH6 User range settings offset value		_	System
⑤[31]	CH6 User range settings gain value	_	_	System
⑤[31] ⑤[32]				
to	System area	_	_	_
s [35]				
0[00]				

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(7) Q62DAN/Q62DA *1

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
		The instruction completion status is stored.		
ি [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
		Specify the voltage/current of the offset/gain values to be read.		
		0: Voltage specified	0000н to	
ঙ[2]	Pass data classification setting	1: Current specified	0003н	User
		b15 b2 b1 b0 0 to 0 CH2 CH1		
s [3]	System area	_	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
ঙ [5]	CH1 Industrial shipment settings gain value	_	-	System
\$[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH1 User range settings offset value	_	-	System
s [9]	CH1 User range settings gain value	_	-	System
s [10]	CH2 User range settings offset value	-	-	System
<u>জ</u> [11]	CH2 User range settings gain value	-	-	System

*1 : Set the data only to the Pass data classification setting s [2].

(8) Q62DA-FG^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	_
<u>ি</u> [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ি[2]	Pass data classification setting	Specify the user range setting to read the offset/gain values. Он: User range setting 1 specified 1н: User range setting 2 specified 2н: User range setting 3 specified $\underbrace{\begin{smallmatrix} b15 to b12 & b11 to b8 & b7 to b4 & b3 to b0}_{OH & OH & CH2 & CH1}$	-	User
⑤ [3]	System area	-	-	-
s [4]	CH1 Industrial shipment settings offset value (used for D/A)	-	-	System
ঙ [5]	CH1 Industrial shipment setting gain value (used for D/A)	-	-	System
S [6]	CH2 Industrial shipment settings offset value (used for D/A)	-	-	System
s[7]	CH2 Industrial shipment setting gain value (used for D/A)	-	-	System
ি[8]	CH1 Industrial shipment settings offset value (used for monitor output)	-	-	System
ঙ [9]	CH1 Industrial shipment settings gain value (used for monitor output)	_	-	System
s [10]	CH2 Industrial shipment settings offset value (used for monitor output)	-	-	System
s [11]	CH2 Industrial shipment settings gain value (used for monitor output)	-	-	System
s [12]	CH1 User range settings offset value (used for D/A)	_	-	System
<u>ঙ</u> [13]	CH1 User range settings gain value (used for D/A)	-	-	System
\$[14]	CH2 User range settings offset value (used for D/A)	-	-	System
ঙ [15]	CH2 User range settings gain value (used for D/A)	_	-	System
জ [16]	CH1 User range settings offset value (used for monitor output)	-	-	System
ঙ[17]	CH1 User range settings gain value (used for monitor output)	_	-	System
s [18]	CH2 User range settings offset value (used for monitor output)	_	-	System
ঙ [19]	CH2 User range settings gain value (used for monitor output)	_	-	System

*1 : Set the data only to the Pass data classification setting s [2].

(9) Q66DA-G^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
		The instruction completion status is stored.		
⑤[1]	Completion status	0 :Normal completion Other than 0 :Error completion (error code)	-	System
		Specify the user range setting to read the offset/gain		
		values.		
		0H: User range setting 1 specified		
ାର	Pass data classification setting	1H: User range setting 2 specified 2H: User range setting 3 specified	0000н to	User
ঙ [2]	T ass data classification setting	b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0	0АААн	0301
		0 : Fixed CH6 CH5 CH4 CH3 CH2 CH1		
<u>\$[3]</u>	System area	_	-	_
⑤ [4]	CH1 Industrial shipment settings offset value	-	_	System
<u>\$</u> [5]	CH1 Industrial shipment settings gain value	_	_	System
<u>\$[6]</u>	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
⑤[8]	CH3 Industrial shipment settings offset value	_	_	System
⑤ [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
s [13]	CH5 Industrial shipment settings gain value	_	_	System
s [14]	CH6 Industrial shipment settings offset value	_	-	System
<u></u> জ[15]	CH6 Industrial shipment settings gain value	-	-	System
s[16]	CH1 User range settings offset value	-	-	System
<u></u> §[17]	CH1 User range settings gain value	_	-	System
s [18]	CH2 User range settings offset value	_	-	System
s [19]	CH2 User range settings gain value	_	-	System
\$ [20]	CH3 User range settings offset value	_	_	System
<u></u> \$[21]	CH3 User range settings gain value	-	-	System
\$[22]	CH4 User range settings offset value	-	_	System
\$[23]	CH4 User range settings gain value	-	_	System
\$[24]	CH5 User range settings offset value	-	_	System
s [25]	CH5 User range settings gain value	-	_	System
s [26]	CH6 User range settings offset value	_	-	System
s [27]	CH6 User range settings gain value	_	-	System
s [28]				
to	System area	-	-	System
s [35]				

*1 : Set the data only to the Pass data classification setting s [2].

(10) Q64RD/Q64RD-G *1

Control data of Q64RD/Q64RD-G (1/5)

Device		Item	Setting data	Setting range	Setting side
S [0]		System area	-	-	-
\$)[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
S	[2]	System area	_	_	_
S	[3]				
	s [4]	3-wire CH1 Factory default offset value	-	-	System
	s [5]	3-wire CH1 Factory default offset value	-	-	System
	⑤ [6]	3-wire CH1 Factory default gain value	-	-	System
Q64RD	⑤ [7]	3-wire CH1 Factory default gain value	-	-	System
	§ [8]	3-wire CH1 User range settings offset value	-	-	System
	⑤ [9]	3-wire CH1 User range settings offset value	-	-	System
	<u></u> জ [10]	3-wire CH1 User range settings gain value	-	-	System
	<u></u> \$[11]	3-wire CH1 User range settings gain value	-	-	System
	⑤ [4]	3-wire CH1 Factory default offset value (L)			System
	⑤ [5]	3-wire CH1 Factory default offset value (H)			Oystern
	§ [6]	3-wire CH1 Factory default gain value (L)	_	_	System
Q64RD	⑤ [7]	3-wire CH1 Factory default gain value (H)			Oystern
-G	s [8]	3-wire CH1 User range settings offset value (L)	_	_	System
	s [9]	3-wire CH1 User range settings offset value (H)			oyotem
	<u></u> জ [10]	3-wire CH1 User range settings gain value (L)	_	_	System
	<u></u> জ[11]	3-wire CH1 User range settings gain value (H)			Oystern
S	[12]	3-wire CH1 User range settings resistance offset value (L)	_	_	System
S	[13]	3-wire CH1 User range settings resistance offset value (H)			Oystern
S	[14]	3-wire CH1 User range settings resistance gain value (L)	_	_	System
\$ [15]		3-wire CH1 User range settings resistance gain value (H)			Oystern
	ঙ [16]	4-wire CH1 Factory default offset value	-	-	System
	<u>ঃ</u> [17]	4-wire CH1 Factory default offset value	-	-	System
Q64RD	<u></u> § [18]	4-wire CH1 Factory default gain value	-	-	System
	s [19]	4-wire CH1 Factory default gain value	-	-	System
QUILD	\$ [20]	4-wire CH1 User range settings offset value	-	-	System
	<u></u> । (হ) [21]	4-wire CH1 User range settings offset value	-	_	System
	ি [22]	4-wire CH1 User range settings gain value	-	_	System
	s [23]	4-wire CH1 User range settings gain value	-	-	System

Device		Item	Setting data	Setting	Setting
	0[16]	4-wire CH1 Factory default offset value (L)		range	side
	জ [16] জ [17]	4-wire CH1 Factory default offset value (L)	-	-	System
	⑤[17] ⑤[18]	4-wire CH1 Factory default gain value (L)			
Q64RD	⑤[10] ⑤[19]	4-wire CH1 Factory default gain value (H)	-	-	System
-G	⑤[10] ⑤[20]	4-wire CH1 User range settings offset value (L)			
	⑤[20] ⑤[21]	4-wire CH1 User range settings offset value (H)	_	-	System
	\$[22]	4-wire CH1 User range settings gain value (L)			
	\$[23]	4-wire CH1 User range settings gain value (H)	-	-	System
(5)	[24]	4-wire CH1 User range settings resistance offset value (L)			
	[24]	4-wire CH1 User range settings resistance offset value (H)	-	-	System
	[26]	4-wire CH1 User range settings resistance gain value (L)			
	[20]	4-wire CH1 User range settings resistance gain value (H)	-	-	System
	[27] ⑤[28]	3-wire CH2 Factory default offset value	_	_	System
	(20) (20)	3-wire CH2 Factory default offset value	_	_	System
	⑤ [20]	3-wire CH2 Factory default gain value	_	_	System
	⑤[30] ⑤[31]	3-wire CH2 Factory default gain value	_	_	System
Q64RD	⑤[31] ⑤[32]	3-wire CH2 User range settings offset value	_	_	System
	_	3-wire CH2 User range settings offset value	_	_	System
	<u> </u>	3-wire CH2 User range settings gain value	_	_	System
	্	3-wire CH2 User range settings gain value	_	_	System
	⑤[33] ⑤[28]	3-wire CH2 Factory default offset value (L)			Gystern
	(20) (20)	3-wire CH2 Factory default offset value (H)	-	-	System
	(3)[29] (3)[30]	3-wire CH2 Factory default gain value (L)			
00400		3-wire CH2 Factory default gain value (H)	_	-	System
Q64RD -G	ত[31] ত[32]	3-wire CH2 User range settings offset value (L)			
	⑤[32] ⑤[33]	3-wire CH2 User range settings offset value (H)	-	-	System
	⑤[33] ⑤[34]	3-wire CH2 User range settings gain value (L)			
	(34) (35)	3-wire CH2 User range settings gain value (H)	-	-	System
	[36]	3-wire CH2 User range settings resistance offset value (L)			
	[30]	3-wire CH2 User range settings resistance offset value (H)	-	-	System
		3-wire CH2 User range settings resistance gain value (L)			
<u> </u>		3-wire CH2 User range settings resistance gain value (H)	_	-	System
	<u>(</u> (40)	4-wire CH2 Factory default offset value	_	_	System
	⑤[40] ⑤[41]	4-wire CH2 Factory default offset value	_	_	System
	S [42] S	4-wire CH2 Factory default gain value	_	_	System
	⑤[42] ⑤[43]	4-wire CH2 Factory default gain value	_	_	System
Q64RD	⑤[43] ⑤[44]	4-wire CH2 User range settings offset value	_	_	System
	S [45]	4-wire CH2 User range settings offset value	_	_	System
	⑤[45] ⑤[46]	4-wire CH2 User range settings gain value	_	_	System
	S [47] S	4-wire CH2 User range settings gain value	_	_	System
	U [4/]				oyotom

Control data of Q64RD/Q64RD-G (2/5)

Dev	vice	Item	Setting data	Setting	Setting
				range	side
	<u>\$</u> [40]	4-wire CH2 Factory default offset value (L)	-	_	System
	<u></u> জ [41]	4-wire CH2 Factory default offset value (H)			
	s [42]	4-wire CH2 Factory default gain value (L)	-	-	System
Q64RD	s [43]	4-wire CH2 Factory default gain value (H)			
-G	<u></u> [44]	4-wire CH2 User range settings offset value (L)	_	_	System
	ঙ [45]	4-wire CH2 User range settings offset value (H)			
	<u></u> জ [46]	4-wire CH2 User range settings gain value (L)	_	_	System
	s [47]	4-wire CH2 User range settings gain value (H)			-,
S	[48]	4-wire CH2 User range settings resistance offset value (L)	_	_	System
S	[49]	4-wire CH2 User range settings resistance offset value (H)			
S	[50]	4-wire CH2 User range settings resistance gain value (L)	_	_	System
S	[51]	4-wire CH2 User range settings resistance gain value (H)			Oystern
	\$ [52]	3-wire CH3 Factory default offset value	_	-	System
	\$ [53]	3-wire CH3 Factory default offset value	-	-	System
	s [54]	3-wire CH3 Factory default gain value	-	-	System
00455	\$ [55]	3-wire CH3 Factory default gain value	-	-	System
Q64RD	§ [56]	3-wire CH3 User range settings offset value	-	-	System
	\$[57]	3-wire CH3 User range settings offset value	-	-	System
	§ [58]	3-wire CH3 User range settings gain value	-	-	System
	s [59]	3-wire CH3 User range settings gain value	_	-	System
	s [52]	3-wire CH3 Factory default offset value (L)			
	s [53]	3-wire CH3 Factory default offset value (H)	-	-	System
	<u>\$</u> [54]	3-wire CH3 Factory default gain value (L)			
Q64RD	<u>\$</u> [55]	3-wire CH3 Factory default gain value (H)	-	-	System
-G	<u>\$</u> [56]	3-wire CH3 User range settings offset value (L)			
	<u>\$</u> [57]	3-wire CH3 User range settings offset value (H)	-	-	System
	<u> </u>	3-wire CH3 User range settings gain value (L)			
	<u> </u>	3-wire CH3 User range settings gain value (H)	-	-	System
(s)	[60]	3-wire CH3 User range settings resistance offset value (L)			
	[61]	3-wire CH3 User range settings resistance offset value (H)	-	-	System
	[62]	3-wire CH3 User range settings resistance gain value (L)			
<u> [63]</u> [63]		3-wire CH3 User range settings resistance gain value (H)	-	-	System
	<u>\$[64]</u>	4-wire CH3 Factory default offset value	_	_	System
	⑤[65]	4-wire CH3 Factory default offset value	_	_	System
	§ [66]	4-wire CH3 Factory default gain value	_	_	System
	⑤ [67]	4-wire CH3 Factory default gain value			System
Q64RD	⑤[68]	4-wire CH3 User range settings offset value		_	System
	③ [69] ⑤ [69]	4-wire CH3 User range settings offset value	_	_	System
	⑤ [09] ⑤ [70]	4-wire CH3 User range settings gain value	_	_	System
		4-wire CH3 User range settings gain value			System
	\$[71]	- with on to osci range settings gain value	-	_	System

Control data of Q64RD/Q64RD-G (3/5)

Device		Item	Setting data	Setting range	Setting side
	s[64]	4-wire CH3 Factory default offset value (L)			
	s [65]	4-wire CH3 Factory default offset value (H)		-	System
	s [66]	4-wire CH3 Factory default gain value (L)			
Q64RD	§[67]	4-wire CH3 Factory default gain value (H)		-	System
-G	§[68]	4-wire CH3 User range settings offset value (L)			Quatana
	[69]	4-wire CH3 User range settings offset value (H)		-	System
	s [70]	4-wire CH3 User range settings gain value (L)			Custom
	\$[71]	4-wire CH3 User range settings gain value (H)		-	System
(5)	[72]	4-wire CH3 User range settings resistance offset value (L)			Custom
(\$	[73]	4-wire CH3 User range settings resistance offset value (H)		-	System
(\$	[74]	4-wire CH3 User range settings resistance gain value (L)			Custom
(\$	[75]	4-wire CH3 User range settings resistance gain value (H)		-	System
	s [76]	3-wire CH4 Factory default offset value	-	-	System
	s[77]	3-wire CH4 Factory default offset value	-	-	System
	s [78]	3-wire CH4 Factory default gain value	-	-	System
Q64RD	s [79]	3-wire CH4 Factory default gain value	_	-	System
Q64RD	s [80]	3-wire CH4 User range settings offset value	-	-	System
	<u> </u>	3-wire CH4 User range settings offset value	-	-	System
	§ [82]	3-wire CH4 User range settings gain value	-	-	System
	⑤ [83]	3-wire CH4 User range settings gain value	-	-	System
	⑤[76]	3-wire CH4 Factory default offset value (L)			Custom
	\$[77]	3-wire CH4 Factory default offset value (H)	_	-	System
	⑤ [78]	3-wire CH4 Factory default gain value (L)			Quatana
Q64RD	s [79]	3-wire CH4 Factory default gain value (H)		-	System
-G	⑤ [80]	3-wire CH4 User range settings offset value (L)			Quatant
	s [81]	3-wire CH4 User range settings offset value (H)	-	-	System
	\$[82]	3-wire CH4 User range settings gain value (L)			Custom
	\$[83]	3-wire CH4 User range settings gain value (H)		-	System
(\$	[84]	3-wire CH4 User range settings resistance offset value (L)			Sustem
(\$	[85]	3-wire CH4 User range settings resistance offset value (H)	-	-	System
s	[86]	3-wire CH4 User range settings resistance gain value (L)			Sustam
© [87]		3-wire CH4 User range settings resistance gain value (H)	-	-	System
	s [88]	4-wire CH4 Factory default offset value	-	-	System
	s [89]	4-wire CH4 Factory default offset value	-	-	System
	s [90]	4-wire CH4 Factory default gain value	_	-	System
Q64RD	s [91]	4-wire CH4 Factory default gain value	-	-	System
QU4KD	s [92]	4-wire CH4 User range settings offset value	_	-	System
	s [93]	4-wire CH4 User range settings offset value	_	-	System
	s [94]	4-wire CH4 User range settings gain value	_	-	System
	s [95]	4-wire CH4 User range settings gain value	_	-	System

Control data of Q64RD/Q64RD-G (4/5)

Device		Item	Setting data	Setting range	Setting side
	\$[88]	4-wire CH4 Factory default offset value (L)			System
	\$ [89]	4-wire CH4 Factory default offset value (H)	_	_	System
	s [90]	4-wire CH4 Factory default gain value (L)		-	System
Q64RD	s [91]	4-wire CH4 Factory default gain value (H)	_		Gystem
-G	s [92]	4-wire CH4 User range settings offset value (L)			System
	s [93]	4-wire CH4 User range settings offset value (H)			System
	s [94]	4-wire CH4 User range settings gain value (L)			System
	ঙ [95]	4-wire CH4 User range settings gain value (H)	_	_	System
S	[96]	4-wire CH4 User range settings resistance offset value (L)			System
© [97]		4-wire CH4 User range settings resistance offset value (H)	_		System
⑤ [98]		4-wire CH4 User range settings resistance gain value (L)			System
S	[99]	4-wire CH4 User range settings resistance gain value (H)	_	_	Gystelli

Control data of Q64RD/Q64RD-G (5/5)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(11) Q64TD/Q64TDV-GH *1

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
⑤ [2]	Queters and			
⑤ [3]	System area	_	-	_
⑤ [4]	CH1 Factory default offset value	_	-	System
s [5]	CH1 Factory default gain value	_	-	System
⑤ [6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
§ [8]	CH1 User range settings thermal EMF offset value (L)			Sustam
⑤ [9]	CH1 User range settings thermal EMF offset value (H)	_	-	System
s [10]	CH1 User range settings thermal EMF gain value (L)			Sustam
s[11]	CH1 User range settings thermal EMF gain value (H)	_	-	System
s[12]	CH2 Factory default offset value	_	-	System
<u></u> \$[13]	CH2 Factory default gain value	_	-	System
\$[14]	CH2 User range settings offset value	_	-	System
<u> </u> [15]	CH2 User range settings gain value	_	-	System
<u></u> \$[16]	CH2 User range settings thermal EMF offset value (L)			Sustam
<u></u> §[17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
s [18]	CH2 User range settings thermal EMF gain value (L)			System
s [19]	CH2 User range settings thermal EMF gain value (H)	_	_	Oystern
s [20]	CH3 Factory default offset value	_	-	System
ি [21]	CH3 Factory default gain value	_	-	System
\$ [22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	-	-	System
s [24]	CH3 User range settings thermal EMF offset value (L)	_	_	System
s [25]	CH3 User range settings thermal EMF offset value (H)			Gystern
s [26]	CH3 User range settings thermal EMF gain value (L)	_	_	System
S [27]	CH3 User range settings thermal EMF gain value (H)			Gystern
S [28]	CH4 Factory default offset value	_	-	System
s [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	-	-	System
s [31]	CH4 User range settings gain value	-	-	System
s [32]	CH4 User range settings thermal EMF offset value (L)	_	_	System
s [33]	CH4 User range settings thermal EMF offset value (H)			Cyotom
s [34]	CH4 User range settings thermal EMF gain value (L)			System
\$ [35]	CH4 User range settings thermal EMF gain value (H)			Gyotom

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(12) Q68TD-G-H02(H01)^{*1}

Control data of Q68TD-G-H02(H01) (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	_
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
জ [2] জ [3]	System area	-	-	_
§ [4]	CH1 Factory default offset value	_	-	System
⑤ [5]	CH1 Factory default gain value	_	-	System
⑤ [6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
⑤ [8]	CH1 User range settings thermal EMF offset value (L)			Quarteria
⑤ [9]	CH1 User range settings thermal EMF offset value (H)	-	-	System
⑤ [10]	CH1 User range settings thermal EMF gain value (L)			Quatara
⑤ [11]	CH1 User range settings thermal EMF gain value (H)	-	-	System
<u></u> ।[12]	CH2 Factory default offset value	_	-	System
s[13]	CH2 Factory default gain value	-	-	System
s[14]	CH2 User range settings offset value	_	-	System
<u></u> ال	CH2 User range settings gain value	_	-	System
s[16]	CH2 User range settings thermal EMF offset value (L)			Sustam
⑤ [17]	CH2 User range settings thermal EMF offset value (H)	_	-	System
s[18]	CH2 User range settings thermal EMF gain value (L)			Sustam
s[19]	CH2 User range settings thermal EMF gain value (H)	_	-	System
s [20]	CH3 Factory default offset value	_	-	System
s[21]	CH3 Factory default gain value	_	-	System
s [22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
s[24]	CH3 User range settings thermal EMF offset value (L)			System
s [25]	CH3 User range settings thermal EMF offset value (H)	_	-	System
s [26]	CH3 User range settings thermal EMF gain value (L)			System
s [27]	CH3 User range settings thermal EMF gain value (H)	_	-	System
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	-	-	System
s [30]	CH4 User range settings offset value	-	-	System
⑤ [31]	CH4 User range settings gain value	-	-	System
s [32]	CH4 User range settings thermal EMF offset value (L)			System
⑤ [33]	CH4 User range settings thermal EMF offset value (H)		_	Cystem
S[34]	CH4 User range settings thermal EMF gain value (L)	_	_	System
<u></u>	CH4 User range settings thermal EMF gain value (H)			Cystom
⑤ [36]	CH5 Factory default offset value	-	-	System
⑤ [37]	CH5 Factory default gain value	-	-	System
S [38]	CH5 User range settings offset value	-	_	System
s [39]	CH5 User range settings gain value	-	-	System
⑤ [40]	CH5 User range settings thermal EMF offset value (L)	_	_	System
<u></u> জ[41]	CH5 User range settings thermal EMF offset value (H)		_	System

Device	Item	Setting data	Setting range	Setting side
<u></u> آ [42]	CH5 User range settings thermal EMF gain value (L)	_	_	System
<u></u> آ [43]	CH5 User range settings thermal EMF gain value (H)			Oystelli
s [44]	CH6 Factory default offset value	-	-	System
<u></u> آ [45]	CH6 Factory default gain value	-	-	System
s [46]	CH6 User range settings offset value	_	-	System
<u></u> ال	CH6 User range settings gain value	_	-	System
s [48]	CH6 User range settings thermal EMF offset value (L)			System
s [49]	CH6 User range settings thermal EMF offset value (H)	_	-	System
s [50]	CH6 User range settings thermal EMF gain value (L)			System
<u></u> \$[51]	CH6 User range settings thermal EMF gain value (H)	_	_	System
s [52]	CH7 Factory default offset value	-	-	System
s [53]	CH7 Factory default gain value	-	-	System
s [54]	CH7 User range settings offset value	-	-	System
s [55]	CH7 User range settings gain value	_	-	System
\$ [56]	CH7 User range settings thermal EMF offset value (L)			System
s [57]	CH7 User range settings thermal EMF offset value (H)	_	_	System
s [58]	CH7 User range settings thermal EMF gain value (L)			System
s [59]	CH7 User range settings thermal EMF gain value (H)	-	-	System
ঙ [60]	CH8 Factory default offset value	-	-	System
s[61]	CH8 Factory default gain value	_	-	System
s [62]	CH8 User range settings offset value	-	-	System
s [63]	CH8 User range settings gain value	_	-	System
ঙ [64]	CH8 User range settings thermal EMF offset value (L)			System
ঙ [65]	CH8 User range settings thermal EMF offset value (H)	-	_	System
S [66]	CH8 User range settings thermal EMF gain value (L)			Sustam
s[67]	CH8 User range settings thermal EMF gain value (H)	-	_	System

Control data of Q68TD-G-H02(H01) (2/2)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

G_OGLOAD

(13) Q68RD3-G^{*1}

Control data of Q68RD3-G (1/2)

Device	Item	Setting data	Setting range	Setting side
s[0]	System area	-	-	-
		The instruction completion status is stored.		
⑤ [1]	Completion status	0 :Normal completion Other than 0 :Error completion	-	System
		(error code)		
⑤ [2]				
⑤[3]	System area	-	-	-
⑤ [4]	CH1 Factory default offset value	_	-	System
<u>\$</u> [5]	CH1 Factory default gain value	_	-	System
⑤ [6]	CH1 User range settings offset value	-	-	System
⑤ [7]	CH1 User range settings gain value	-	-	System
⑤ [8]	CH1 User range settings resistance offset value (L)			Sustam
s [9]	CH1 User range settings resistance offset value (H)	_	-	System
<u>©[10]</u>	CH1 User range settings resistance gain value (L)			Sustam
s[11]	CH1 User range settings resistance gain value (H)	_	-	System
s[12]	CH2 Factory default offset value	_	-	System
s[13]	CH2 Factory default gain value	-	-	System
s[14]	CH2 User range settings offset value	-	-	System
<u> </u> [15]	CH2 User range settings gain value	-	-	System
s[16]	CH2 User range settings resistance offset value (L)			System
S[17]	CH2 User range settings resistance offset value (H)	_	-	System
s [18]	CH2 User range settings resistance gain value (L)			System
<u>ঙ</u> [19]	CH2 User range settings resistance gain value (H)	_	_	System
s[20]	CH3 Factory default offset value	-	-	System
s[21]	CH3 Factory default gain value	-	-	System
\$[22]	CH3 User range settings offset value	-	-	System
s [23]	CH3 User range settings gain value	-	-	System
⑤ [24]	CH3 User range settings resistance offset value (L)	_	_	System
s [25]	CH3 User range settings resistance offset value (H)	_	_	Oystern
s [26]	CH3 User range settings resistance gain value (L)	_		System
s [27]	CH3 User range settings resistance gain value (H)			oyotom
s [28]	CH4 Factory default offset value	_	-	System
s [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	_	-	System
\$[31]	CH4 User range settings gain value	_	-	System
s [32]	CH4 User range settings resistance offset value (L)	_	_	System
s [33]	CH4 User range settings resistance offset value (H)			ejetem
\$[34]	CH4 User range settings resistance gain value (L)	_	_	System
\$[35]	CH4 User range settings resistance gain value (H)			- , 0.0111
\$[36]	CH5 Factory default offset value	_	-	System
\$[37]	CH5 Factory default gain value	_	-	System
s [38]	CH5 User range settings offset value	-	-	System
s [39]	CH5 User range settings gain value	-	-	System
s [40]	CH5 User range settings resistance offset value (L)		_	System
ঙ [41]	CH5 User range settings resistance offset value (H)			Cyotom

Control data of Q68RD3-G (2	/2)
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Device	Item	Setting data	Setting range	Setting side
s [42]	CH5 User range settings resistance gain value (L)			System
s [43]	CH5 User range settings resistance gain value (H)	_	-	System
s [44]	CH6 Factory default offset value	_	-	System
\$ [45]	CH6 Factory default gain value	_	-	System
s [46]	CH6 User range settings offset value	_	-	System
ঙ [47]	CH6 User range settings gain value	_	-	System
s [48]	CH6 User range settings resistance offset value (L)			System
s [49]	CH6 User range settings resistance offset value (H)	_	_	System
\$ [50]	CH6 User range settings resistance gain value (L)			System
ঙ [51]	CH6 User range settings resistance gain value (H)	_	_	System
ঙ [52]	CH7 Factory default offset value	_	-	System
\$ [53]	CH7 Factory default gain value	_	-	System
s [54]	CH7 User range settings offset value	_	-	System
s [55]	CH7 User range settings gain value	_	-	System
s [56]	CH7 User range settings resistance offset value (L)			System
s [57]	CH7 User range settings resistance offset value (H)	_	_	System
s [58]	CH7 User range settings resistance gain value (L)			System
s [59]	CH7 User range settings resistance gain value (H)	_	-	System
S [60]	CH8 Factory default offset value	_	-	System
s [61]	CH8 Factory default gain value	_	-	System
s [62]	CH8 User range settings offset value	_	-	System
s [63]	CH8 User range settings gain value	_	-	System
s[64]	CH8 User range settings resistance offset value (L)			System
s [65]	CH8 User range settings resistance offset value (H)	_	_	System
s [66]	CH8 User range settings resistance gain value (L)			Sustam
§[67]	CH8 User range settings resistance gain value (H)	-	_	System

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

G_OGLOAD

(14) Q61LD^{*1}

Control data of Q61LD (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	-	System
		The instruction completion status is stored.		
⑤ [1]	Completion status	0 :Normal completion	-	System
0.1		Other than 0 :Error completion (error code)		-
s[2]				
⑤[2] ⑤[3]	System area	-	-	System
<u> </u>	Load cell rated capacity (L)		_	System
s [5]	Load cell rated capacity (H)	-	-	System
⑤ [6]	Load cell rated output	_	-	System
<u>\$</u> [7]	Number of load cells in connection	-	-	System
<u>\$[8]</u>	Zero offset	_	-	System
<u>s</u> [9]	System area	_	-	System
<u>\$</u> [10]	Maximum weighing capacity setting (L)	_	-	System
<u></u>	Maximum weighing capacity setting (H)	_	-	System
<u>\$[12]</u>	Minimum division	_	-	System
<u>\$</u> [13]	Decimal point position	_	_	System
<u>\$</u> [14]	Unit	_	-	System
⑤[15]	System area	_	-	System
<u>\$</u> [16]	Standard weight setting (L)	_	-	System
<u>\$</u> [17]	Standard weight setting (H)	_	_	System
<u>\$</u> [18]	Installation site gravitational acceleration (L)	_	-	System
<u>s</u> [19]	Installation site gravitational acceleration (H)	_	_	System
⑤[20]	Calibration site gravitational acceleration (L)	-	-	System
<u>\$[21]</u>	Calibration site gravitational acceleration (H)	_	-	System
\$[22]	Digital output zero correction value (L)	_	-	System
\$[23]	Digital output zero correction value (H)	_	-	System
⑤ [24]	Digital output span correction value (L)	_	-	System
⑤ [25]	Digital output span correction value (H)	_	-	System
s [26]				
to	System area	-	-	System
⑤ [33]				
s[34]	Instrumentation amplifier gain setting	-	-	System
<u></u> [35]	A/D converter gain setting	-	-	System
s [36]	Zero offset output value (L)	-	-	System
⑤ [37]	Zero offset output value (H)	-	-	System
\$ [38]	Two-point zero calibration value (L)	-	-	System
s [39]	Two-point zero calibration value (H)	-	-	System
s [40]	Two-point span calibration value (L)	-	-	System
s[41]	Two-point span calibration value (H)	-	-	System
s [42]				
to	System area	-	-	System
<u></u> ال				
s [54]	1.0mV/V zero calibration value (L)	_	-	System
s [55]	1.0mV/V zero calibration value (H)	-	-	System

Control data of Q61LD (2/2)

Device	Item	Setting data	Setting range	Setting side
s [56]	1.0mV/V span calibration value (L)	-	-	System
\$ [57]	1.0mV/V span calibration value (H)	-	-	System
s [58]	2.0mV/V zero calibration value (L)	-	-	System
s [59]	2.0mV/V zero calibration value (H)	_	-	System
§[60]	2.0mV/V span calibration value (L)	-	-	System
s[61]	2.0mV/V span calibration value (H)	_	-	System
s [62]	3.0mV/V zero calibration value (L)	_	-	System
s [63]	3.0mV/V zero calibration value (H)	_	-	System
<u>\$[64]</u>	3.0mV/V span calibration value (L)	_	-	System
s [65]	3.0mV/V span calibration value (H)	_	-	System
s [66]				
to	System area	_	-	System
s [85]				

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

Program Example

[Structured ladder/FBD]

The following program reads out the offset/gain value of the A/D converter module mounted on the I/O numbers from X/Y00 to X/Y0F when the flag turns ON.

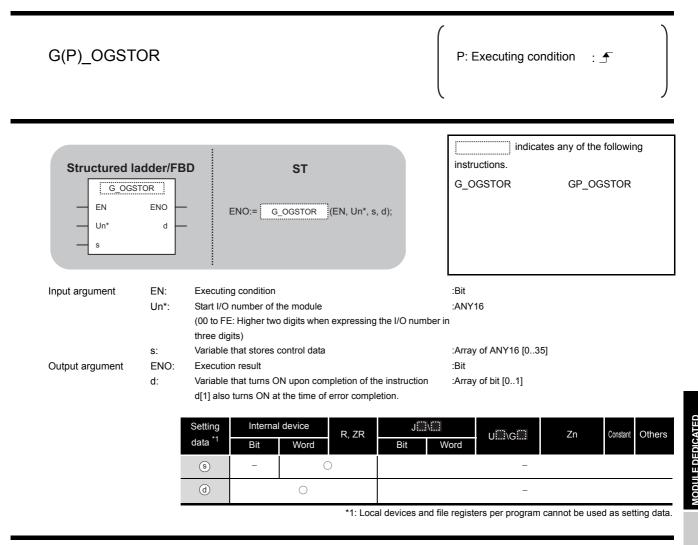
·Var_Flaq_Inst Specifies voltage MOV ΕN FNC -[[↑]] when instruction 0. ar ControlData[2] s flag turns ON Turns execution flag ON SET ENO ΕN Var_Flag_Exe d /ar Flag Exe Performs readout G_OGLOAD **FN** ENO · · · H00 Un* Var Result d Var ControlData s Var_Result[0] + Var_Result[1] Normal completion -|| · ||--1/1-ΕN ENO Turns execution flag OFF d /ar_Flaq_Exe Var_Result[0] Var_Result[1] Error completion Process on error completion ŀ ŀ

[ST]

(* Instruction flag ON *) IF(Var_Flag_Inst=TRUE)THEN -----. MOV(TRUE,0,Var_ControlData[2]); (* Specifies voltage *) (* Turns execution flag ON *) SET(TRUE, Var_Flag_Exe); END_IF; IF(Var_Flag_Exe=TRUE)THEN (* Execution flag ON *) G_OGLOAD(TRUE, H00, Var_ControlData, Var_Result); (* Performs readout *) IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *) ELSE (* Error completion *) ----Process on error completion *) END IF; END_IF; END_IF;

5.1.3 OGSTOR instruction

G_OGSTOR



☆ Function

This instruction restores the user range settings offset/gain values stored in the programmable controller CPU to the analog modules.

Control Data

(1) Q64AD/Q64DAN/Q64DA

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
ঙ [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	Pass data classification setting	The value set for pass data classification setting (\$)[2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified $\frac{b15 \qquad b4 \qquad b3 \qquad b2 \qquad b1 \qquad b0}{\boxed{0 \qquad t0 \qquad 0 \qquad CH4 \ CH3 \ CH2 \ CH1}}$	0000н to 000Fн	System
s [3]	System area	_	-	-
<u></u> \$[4]	CH1 Industrial shipment settings offset value	_	-	System
s [5]	CH1 Industrial shipment settings gain value	_	-	System
§ [6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s[10]	CH4 Industrial shipment settings offset value	_	-	System
\$[11]	CH4 Industrial shipment settings gain value	_	-	System
<u></u> \$[12]	CH1 User range settings offset value	_	-	System
s [13]	CH1 User range settings gain value	_	-	System
s [14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s [16]	CH3 User range settings offset value	_	-	System
<u></u> জ[17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	-	System
⑤ [19]	CH4 User range settings gain value	_	-	System

(2) Q68ADV/Q68ADI/Q68DAVN/Q68DAV/Q68DAIN/Q68DAI

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	-	_
		The instruction completion status is stored.		
৩[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
()[2]				
\$[2] \$[3]	System area	-	-	-
<u> </u>	CH1 Industrial shipment settings offset value			System
<u> </u> () () () () () () () () () (CH1 Industrial shipment settings gain value	_		System
⑤[6]	CH2 Industrial shipment settings offset value	_		System
⑤[7]	CH2 Industrial shipment settings gain value	_		System
⑤[8]	CH3 Industrial shipment settings offset value	_	_	System
⑤[9]	CH3 Industrial shipment settings gain value	_	_	System
⑤[10]	CH4 Industrial shipment settings offset value	_	-	System
⑤[11]	CH4 Industrial shipment settings gain value	-	_	System
⑤[12]	CH5 Industrial shipment settings offset value	_	-	System
⑤[13]	CH5 Industrial shipment settings gain value		-	System
<u></u> [14]	CH6 Industrial shipment settings offset value	_	-	System
<u></u>	CH6 Industrial shipment settings gain value	_	_	System
s [16]	CH7 Industrial shipment settings offset value	_	-	System
s[17]	CH7 Industrial shipment settings gain value	-	-	System
s [18]	CH8 Industrial shipment settings offset value	_	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
<u>s</u> [20]	CH1 User range settings offset value	_	-	System
<u>ি</u> [21]	CH1 User range settings gain value	_	-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	-	-	System
s [25]	CH3 User range settings gain value	-	-	System
s [26]	CH4 User range settings offset value	-	-	System
s [27]	CH4 User range settings gain value	-	-	System
\$ [28]	CH5 User range settings offset value	-	-	System
\$ [29]	CH5 User range settings gain value	-	-	System
s [30]	CH6 User range settings offset value	-	-	System
s [31]	CH6 User range settings gain value	-	-	System
\$ [32]	CH7 User range settings offset value	-	-	System
\$ [33]	CH7 User range settings gain value	-	-	System
<u></u> ال	CH8 User range settings offset value	-	-	System
s [35]	CH8 User range settings gain value	-	_	System

(3) Q64AD-GH

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	_	_
s [1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ [2]	Pass data classification setting	The value set for pass data classification setting (s) [2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified $\frac{b15 \qquad b4 \qquad b3 \qquad b2 \qquad b1 \qquad b0}{0 \qquad to \ 0 \qquad CH4 \ CH3 \ CH2 \ CH1}$	0000н to 000Fн	System
⑤[3]	System area	_	-	-
§ [4]	CH1 Industrial shipment settings offset value (L)			
s [5]	CH1 Industrial shipment settings offset value (H)	-	-	System
\$[6]	CH1 Industrial shipment settings gain value (L)			0 I
⑤ [7]	CH1 Industrial shipment settings gain value (H)	-	-	System
§ [8]	CH2 Industrial shipment settings offset value (L)			Sustan
s [9]	CH2 Industrial shipment settings offset value (H)	1 -	-	System
s[10]	CH2 Industrial shipment settings gain value (L)			Sustam
<u></u> জ[11]	CH2 Industrial shipment settings gain value (H)		-	System
s[12]	CH3 Industrial shipment settings offset value (L)			Sustam
s [13]	CH3 Industrial shipment settings offset value (H)		-	System
ঙ [14]	CH3 Industrial shipment settings gain value (L)			System
<u> </u> । । । ।	CH3 Industrial shipment settings gain value (H)		_	Oystern
<u></u> \$[16]	CH4 Industrial shipment settings offset value (L)	_	_	System
<u></u> \$[17]	CH4 Industrial shipment settings offset value (H)		_	Oystern
s[18]	CH4 Industrial shipment settings gain value (L)	_	_	System
s [19]	CH4 Industrial shipment settings gain value (H)			Gyotom
s[20]	CH1 User range settings offset value (L)	_	_	System
s[21]	CH1 User range settings offset value (H)			eyetein
\$[22]	CH1 User range settings gain value (L)	_	_	System
s [23]	CH1 User range settings gain value (H)			
ঙ [24]	CH2 User range settings offset value (L)	_	_	System
ঙ [25]	CH2 User range settings offset value (H)			
\$[26]	CH2 User range settings gain value (L)	_	_	System
ঙ [27]	CH2 User range settings gain value (H)			,
ি [28]	CH3 User range settings offset value (L)	_	_	System
ি [29]	CH3 User range settings offset value (H)			,
ি [30]	CH3 User range settings gain value (L)	_	_	System
ি [31]	CH3 User range settings gain value (H)			,
ি [32]	CH4 User range settings offset value (L)	_	_	System
\$[33]	CH4 User range settings offset value (H)			- ,
জ [34]	CH4 User range settings gain value (L)	_	_	System
\$ [35]	CH4 User range settings gain value (H)			,

(4) Q62AD-DGH

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	_
<u></u> জ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2]	System area	_	_	_
⑤[3]				
⑤ [4]	CH1 Industrial shipment settings offset value (L)	_	_	System
⑤ [5]	CH1 Industrial shipment settings offset value (H)			Gystein
⑤[6]	CH1 Industrial shipment settings gain value (L)			System
ঙ [7]	CH1 Industrial shipment settings gain value (H)		_	System
⑤[8]	CH2 Industrial shipment settings offset value (L)			System
⑤[9]	CH2 Industrial shipment settings offset value (H)	_	-	System
s [10]	CH2 Industrial shipment settings gain value (L)			System
s[11]	CH2 Industrial shipment settings gain value (H)		_	System
\$[12] to \$[19]	System area	_	_	-
s [20]	CH1 User range settings offset value (L)			System
s [21]	CH1 User range settings offset value (H)	_	_	System
s [22]	CH1 User range settings gain value (L)			System
s [23]	CH1 User range settings gain value (H)		-	System
s [24]	CH2 User range settings offset value (L)			System
s [25]	CH2 User range settings offset value (H)		_	System
s [26]	CH2 User range settings gain value (L)			System
s [27]	CH2 User range settings gain value (H)		_	System
\$[28] to \$[35]	System area	-	_	System

G_OGSTOR

(5) Q68AD-G

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	_
		The instruction completion status is stored.		
s[1]	Completion status	0 :Normal completion	-	System
		Other than 0 :Error completion (error code) Specify the voltage/current of the offset/gain values to		
		be read.		
© [2]	Pass data classification setting	0: Voltage specified	0000н to	User
\$[2]		1: Current specified	0000Fн	0361
		b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 0 to 0 CH8 CH7 CH6 CH5 CH4 CH3 CH2 CH1		
s [3]	System area	_	_	_
<u> </u>	CH1 Industrial shipment settings offset value	_	_	System
⑤[5]	CH1 Industrial shipment settings gain value		_	System
⑤[6]	CH2 Industrial shipment settings offset value	_	_	System
⑤[7]	CH2 Industrial shipment settings gain value	_	_	System
⑤[8]	CH3 Industrial shipment settings offset value	_	-	System
<u> </u>	CH3 Industrial shipment settings gain value		_	System
<u>\$[10]</u>	CH4 Industrial shipment settings offset value		_	System
⑤[11]	CH4 Industrial shipment settings gain value	_	_	System
<u>\$[12]</u>	CH5 Industrial shipment settings offset value	_	_	System
<u> </u>	CH5 Industrial shipment settings gain value	_	_	System
<u> </u>	CH6 Industrial shipment settings offset value	_	_	System
<u>s</u> [15]	CH6 Industrial shipment settings gain value	_	_	System
s[16]	CH7 Industrial shipment settings offset value	_	-	System
s[17]	CH7 Industrial shipment settings gain value	_	-	System
s [18]	CH8 Industrial shipment settings offset value	_	-	System
s [19]	CH8 Industrial shipment settings gain value	_	-	System
s[20]	CH1 User range settings offset value	_	-	System
<u></u> জ[21]	CH1 User range settings gain value	_	-	System
\$[22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	_	System
s [24]	CH3 User range settings offset value	_	_	System
s [25]	CH3 User range settings gain value	_	_	System
s [26]	CH4 User range settings offset value	_	-	System
s[27]	CH4 User range settings gain value	_	_	System
s [28]	CH5 User range settings offset value	_	-	System
s [29]	CH5 User range settings gain value	_	-	System
s [30]	CH6 User range settings offset value	_	-	System
<u></u> জ[31]	CH6 User range settings gain value	_	_	System
s [32]	CH7 User range settings offset value	_	-	System
s [33]	CH7 User range settings gain value	_	-	System
s[34]	CH8 User range settings offset value	_	-	System
\$ [35]	CH8 User range settings gain value	_	_	System

(6) Q66AD-DG^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	_
©[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
<u> </u>	System area	-	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
⑤ [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
\$[11]	CH4 Industrial shipment settings gain value	_	-	System
s [12]	CH5 Industrial shipment settings offset value	_	-	System
<u></u> জ[13]	CH5 Industrial shipment settings gain value	_	-	System
<u></u> \$[14]	CH6 Industrial shipment settings offset value	_	-	System
<u></u> জ[15]	CH6 Industrial shipment settings gain value	_	-	System
\$ [16] to \$ [19]	System area	_	_	System
s [20]	CH1 User range settings offset value	_	-	System
s [21]	CH1 User range settings gain value		-	System
s [22]	CH2 User range settings offset value	_	-	System
s [23]	CH2 User range settings gain value	_	-	System
s [24]	CH3 User range settings offset value	_	-	System
s [25]	CH3 User range settings gain value	_	-	System
s [26]	CH4 User range settings offset value	_	-	System
\$[27]	CH4 User range settings gain value	_	-	System
\$ [28]	CH5 User range settings offset value		-	System
s [29]	CH5 User range settings gain value	_	-	System
⑤ [30]	CH6 User range settings offset value	-	-	System
s [31]	CH6 User range settings gain value	_	-	System
\$ [32] to \$ [35]	System area	_	-	System

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(7) Q62DAN/Q62DA

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	_	-	-
s[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
®[2]	Pass data classification setting	The value set for pass data classification setting (s) [2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b2 b1 b0 0 to 0 CH2 CH1	0000н to 0003н	System
s [3]	System area	_	-	-
⑤ [4]	CH1 Industrial shipment settings offset value	_	-	System
\$ [5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
§[8]	CH1 User range settings offset value	_	-	System
s [9]	CH1 User range settings gain value	_	-	System
s[10]	CH2 User range settings offset value	_	-	System
<u></u> জ[11]	CH2 User range settings gain value	_	-	System

(8) Q62DA-FG

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	_
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
®[2]	Pass data classification setting	The value set for pass data classification setting (\$) [2] by the OGLOAD instruction is stored. 0H: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified 2H: User range setting 3 specified 0H 0H CH2 CH1	-	System
\$[3]	System area	-	-	-
s[4]	CH1 Industrial shipment settings offset value (used for D/A)	_	-	System
ঙ [5]	CH1 Industrial shipment settings gain value (used for D/A)	_	-	System
s [6]	CH2 Industrial shipment settings offset value (used for D/A)	_	-	System
s[7]	CH2 Industrial shipment settings gain value (used for D/A)	-	-	System
⑤ [8]	CH1 Industrial shipment settings offset value (used for monitor output)	-	-	System
ঙ [9]	CH1 Industrial shipment settings gain value (used for monitor output)	-	-	System
<u>জ</u> [10]	CH2 Industrial shipment settings offset value (used for monitor output)	_	-	System
\$[11]	CH2 Industrial shipment settings gain value (used for monitor output)	_	-	System
s [12]	CH1 User range settings offset value (used for D/A)	_	-	System
ি [13]	CH1 User range settings gain value (used for D/A)	-	-	System
<u>ি</u> [14]	CH2 User range settings offset value (used for D/A)	-	-	System
s [15]	CH2 User range settings gain value (used for D/A)	_	-	System
s [16]	CH1 User range settings offset value (used for monitor output)	_	_	System
s [17]	CH1 User range settings gain value (used for monitor output)	_	_	System
<u>ি</u> [18]	CH2 User range settings offset value (used for monitor output)	-	_	System
s [19]	CH2 User range settings gain value (used for monitor output)	-	-	System

(9) Q66DA-G^{*1}

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	_	_	-
\$[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
s [2]	Pass data classification setting	The value set for pass data classification setting (s) [2] by the OGLOAD instruction is stored. OH: User range setting 1 specified 1H: User range setting 2 specified 2H: User range setting 3 specified b15 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 15 to $10 cm$ 10	-	User
\$[3]	System area	_	-	-
s [4]	CH1 Industrial shipment settings offset value	-	-	System
<u></u> \$[5]	CH1 Industrial shipment settings gain value	-	-	System
s [6]	CH2 Industrial shipment settings offset value	-	-	System
\$[7]	CH2 Industrial shipment settings gain value	-	-	System
(8)	CH3 Industrial shipment settings offset value	_	-	System
s [9]	CH3 Industrial shipment settings gain value	_	-	System
s [10]	CH4 Industrial shipment settings offset value	_	-	System
s[11]	CH4 Industrial shipment settings gain value	_	-	System
<u></u> জ[12]	CH5 Industrial shipment settings offset value	_	-	System
<u></u> জ[13]	CH5 Industrial shipment settings gain value	_	-	System
<u></u> জ[14]	CH6 Industrial shipment settings offset value	_	-	System
s [15]	CH6 Industrial shipment settings gain value	_	-	System
⑤ [16]	CH1 User range settings offset value	_	-	System
§[17]	CH1 User range settings gain value	_	-	System
⑤ [18]	CH2 User range settings offset value	_	_	System
⑤ [19]	CH2 User range settings gain value	_	-	System
⑤ [20]	CH3 User range settings offset value	_	-	System
⑤ [21]	CH3 User range settings gain value	_	-	System
\$[22]	CH4 User range settings offset value	_	-	System
s [23]	CH4 User range settings gain value	_	-	System
s[24]	CH5 User range settings offset value	_	-	System
\$[25]	CH5 User range settings gain value	_	-	System
\$[26]	CH6 User range settings offset value	_	-	System
\$[27]	CH6 User range settings gain value	_	-	System
<u>s</u> [28]				
to	System area	_	-	-
s [35]				

*1 : Set the data only to the Pass data classification setting \$ [2].

When the data is written to the area to be set by system, offset/gain setting value is not read properly.

Control data of Q64RD/Q64RD-G (1/5)

Dev	vice	Item	Setting data	Setting range	Setting side
S	[0]	System area	-	_	-
	[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
S	[2]	System area			
S	[3]	System area	_	_	_
	⑤ [4]	3-wire CH1 Factory default offset value	-	-	System
	⑤ [5]	3-wire CH1 Factory default offset value	-	-	System
	⑤ [6]	3-wire CH1 Factory default gain value	-	-	System
Q64RD	(\$ [7]	3-wire CH1 Factory default gain value	-	-	System
QUAND	(8)	3-wire CH1 User range settings offset value	-	-	System
	s [9]	3-wire CH1 User range settings offset value	-	-	System
	s[10]	3-wire CH1 User range settings gain value	-	-	System
	<u> </u> (।	3-wire CH1 User range settings gain value	-	-	System
	s [4]	3-wire CH1 Factory default offset value (L)			Sustam
	s [5]	3-wire CH1 Factory default offset value (H)		_	System
	s [6]	3-wire CH1 Factory default gain value (L)			Sustam
Q64RD	s[7]	3-wire CH1 Factory default gain value (H)		_	System
-G	(8)	3-wire CH1 User range settings offset value (L)			Sustam
	s [9]	3-wire CH1 User range settings offset value (H)		_	System
	<u>জ</u> [10]	3-wire CH1 User range settings gain value (L)			Custom
	\$[11]	3-wire CH1 User range settings gain value (H)		_	System
S	[12]	3-wire CH1 User range settings resistance offset value (L)			Queters
S	[13]	3-wire CH1 User range settings resistance offset value (H)		_	System
S	[14]	3-wire CH1 User range settings resistance gain value (L)			Custom
S	[15]	3-wire CH1 User range settings resistance gain value (H)		_	System
	s [16]	4-wire CH1 Factory default offset value	-	-	System
	s[17]	4-wire CH1 Factory default offset value	-	-	System
	s[18]	4-wire CH1 Factory default gain value	-	-	System
06400	s [19]	4-wire CH1 Factory default gain value	-	-	System
Q64RD	s [20]	4-wire CH1 User range settings offset value	-	-	System
	<u>জ</u> [21]	4-wire CH1 User range settings offset value	-	-	System
	⑤ [22]	4-wire CH1 User range settings gain value	-	-	System
	s [23]	4-wire CH1 User range settings gain value	-	_	System

Other Avire CH1 Factory default offset value (1) - ratiog store 064RD 0 [19] 4-wire CH1 Factory default gain value (1) - - System 0 0 [19] 4-wire CH1 Factory default gain value (1) - - System 0 0 [19] 4-wire CH1 User range settings offset value (1) - - System 0 2[2] 4-wire CH1 User range settings offset value (1) - - System 0 [2]3 4-wire CH1 User range settings offset value (1) - - System 0 [2]4 4-wire CH1 User range settings resistance offset value (1) - - System 0 [2]3 4-wire CH1 User range settings resistance gain value (1) - - System 0 [2]3 4-wire CH1 User range settings resistance gain value (1) - - System 0 [2]3 3-wire CH2 Eactory default offset value - - System 0 [3]3 3-wire CH2 Eactory default offset value - - System <	Dev	vice	Item	Setting data	Setting	Setting
0:010 4-wire CH1 Factory default diset value (h) - - System 0:181 4-wire CH1 Factory default gain value (L) - - System 0:191 4-wire CH1 Factory default gain value (L) - - System 0:191 4-wire CH1 User range settings offset value (h) - - System 0:121 4-wire CH1 User range settings and value (h) - - System 0:121 4-wire CH1 User range settings resistance offset value (h) - - System 0:121 4-wire CH1 User range settings resistance offset value (h) - - System 0:123 4-wire CH1 User range settings resistance gain value (h) - - System 0:123 4-wire CH1 User range settings resistance gain value (h) - - System 0:123 3-wire CH2 Factory default dister value - - System 0:123 3-wire CH2 Factory default dister value - - System 0:123 3-wire CH2 Factory default dister value - - System <td< td=""><td colspan="2"></td><td>4 wire CH1 Eactory default offset value (L)</td><td></td><td>range</td><td>side</td></td<>			4 wire CH1 Eactory default offset value (L)		range	side
Other Other Other System 0110 4-wire CHT Factory default gain value (1) - - System 0120 4-wire CHT Factory default gain value (1) - - System 0121 4-wire CHT User range settings offset value (1) - - System 0121 4-wire CHT User range settings and value (1) - - System 0122 4-wire CHT User range settings resistance offset value (1) - - System 0122 4-wire CHT User range settings resistance offset value (1) - - System 0128 4-wire CHT User range settings resistance and value (1) - - System 0128 4-wire CHT User range settings resistance and value (1) - - System 0128 3-wire CH2 Factory default offset value - - System 0131 3-wire CH2 Factory default gain value - - System 0133 3-wire CH2 Eactory default gain value - - System 0133 3-wire CH2 Eactory default gain value				-	-	System
OBJAND O(10) 4-wire CH1 Factory default gain value (H) - - System G (2) 4-wire CH1 User range settings offset value (L) - - System G (2) 4-wire CH1 User range settings gain value (L) - - System G (2) 4-wire CH1 User range settings gain value (L) - - System G (2) 4-wire CH1 User range settings resistance gain value (L) - - System G (2) 4-wire CH1 User range settings resistance gain value (L) - - System G (2) 4-wire CH1 User range settings resistance gain value (L) - - System G (2) 4-wire CH1 User range settings resistance gain value (L) - - System G (2) 3-wire CH2 Factory default offset value - - System G (3) 3-wire CH2 Eactory default offset value - - System G (3) 3-wire CH2 User range settings offset value - - System<						
G C[2] 4-wire CH1 User range settings offset value (1) - - System C[2] 4-wire CH1 User range settings an value (1) - - System C[2] 4-wire CH1 User range settings existance offset value (1) - - System C[2] 4-wire CH1 User range settings resistance offset value (1) - - System C[2] 4-wire CH1 User range settings resistance offset value (1) - - System C[2] 4-wire CH1 User range settings resistance gain value (1) - - System C[2] 4-wire CH1 User range settings resistance gain value (1) - - System C[2] 4-wire CH1 User range settings resistance gain value (1) - - System C[2] 4-wire CH1 User range settings gain value - - System C[3] 3-wire CH2 Factory default offset value - - System C[3] 3-wire CH2 User range settings gain value - - System C[3] 3-wire CH2 User range settings gain value (1) - - <t< td=""><td>00400</td><td></td><td></td><td>-</td><td>-</td><td>System</td></t<>	00400			-	-	System
O [20] Initial Section Processing Constraints - - System O [21] 4-wire CH1 User range settings dist value (1) - - System O [23] 4-wire CH1 User range settings gain value (1) - - System O [24] 4-wire CH1 User range settings resistance offset value (1) - - System O [25] 4-wire CH1 User range settings resistance dist value (1) - - System O [26] 4-wire CH1 User range settings resistance dist value (1) - - System O [26] 4-wire CH1 User range settings resistance dist value (1) - - System O [27] 4-wire CH1 User range settings resistance dist value (1) - - System O [28] 3-wire CH2 Factory default dist value - - System O [28] 3-wire CH2 Eactory default dist value - - System O [28] 3-wire CH2 User range settings dist value - - System O [28] 3-wire CH2 User range settings dist value (1) - - System <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Ote Ote System O[22] 4-wire CH1 User range settings gain value (L) - - System O[23] 4-wire CH1 User range settings resistance offset value (L) - - System O[26] 4-wire CH1 User range settings resistance offset value (L) - - System O[26] 4-wire CH1 User range settings resistance gain value (L) - - System O[28] 4-wire CH1 User range settings resistance gain value (H) - - System O[28] 3-wire CH2 Factory default offset value - - System O[29] 3-wire CH2 Factory default gain value - - System O[30] 3-wire CH2 Eactory default gain value - - System O[31] 3-wire CH2 User range settings offset value - - System O[33] 3-wire CH2 User range settings offset value - - System O[34] 3-wire CH2 User range settings offset value (L) - - System O[34] 3-wire CH2 Eactory default offset value (L)				-	-	System
Organ 4-wire CH1 User range settings resistance offset value (L) - - System O(24) 4-wire CH1 User range settings resistance offset value (L) - - System O(25) 4-wire CH1 User range settings resistance offset value (L) - - System O(27) 4-wire CH1 User range settings resistance gain value (L) - - System O(28) 4-wire CH2 Factory default offset value - - System O(29) 3-wire CH2 Factory default offset value - - System O(30) 3-wire CH2 Factory default offset value - - System O(31) 3-wire CH2 User range settings offset value - - System O(32) 3-wire CH2 User range settings offset value - - System O(32) 3-wire CH2 User range settings offset value - - System O(33) 3-wire CH2 User range settings offset value - - System O(33) 3-wire CH2 Factory default offset value (L) - - System <						
Old 4-wire CH1 User range settings resistance offset value (L) - - System O(26) 4-wire CH1 User range settings resistance gain value (L) - - System O(27) 4-wire CH1 User range settings resistance gain value (L) - - System O(28) 4-wire CH1 User range settings resistance gain value (L) - - System O(28) 3-wire CH2 Factory default offset value - - System O(30) 3-wire CH2 Factory default gain value - - System O(31) 3-wire CH2 Factory default gain value - - System O(32) 3-wire CH2 Factory default offset value - - System O(33) 3-wire CH2 Factory default offset value - - System O(33) 3-wire CH2 Factory default offset value - - System O(34) 3-wire CH2 Factory default offset value (L) - - System O(212) 3-wire CH2 Factory default gen value (H) - - System O(33) <t< td=""><td></td><td></td><td></td><td>-</td><td>-</td><td>System</td></t<>				-	-	System
O[25] 4-wire CH1 User range settings resistance offset value (H) - - System O[26] 4-wire CH1 User range settings resistance gain value (L) - - System O[27] 4-wire CH1 User range settings resistance gain value (H) - - System O[28] 3-wire CH2 Factory default offset value - - System O[130] 3-wire CH2 Factory default gain value - - System O[131] 3-wire CH2 Factory default gain value - - System O[133] 3-wire CH2 Factory default gain value - - System O[133] 3-wire CH2 Factory default gain value - - System O[134] 3-wire CH2 User range settings gain value - - System O[135] 3-wire CH2 User range settings gain value (L) - - System O[136] 3-wire CH2 Factory default offset value (L) - - System O[131] 3-wire CH2 factory default offset value (L) - - System O[131] <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
Op/261 4-wire CH1 User range settings resistance gain value (1) - - System 0[27] 4-wire CH1 User range settings resistance gain value (H) - - System 0[28] 3-wire CH2 Factory default offset value - - System 0[30] 3-wire CH2 Factory default gain value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[30] 3-wire CH2 Factory default offset value (L) - - System 0[31] 3-wire CH2 Eactory default gain value (L) - - System 0[32] 3-wire CH2 User range settings offset value (L) - - System 0[33] 3-wire CH				-	-	System
OLM - System Operating 0[27] 4-wire CH1 User range settings resistance gain value (H) - - System 0[28] 3-wire CH2 Factory default offset value - - System 0[30] 3-wire CH2 Factory default offset value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 User range settings gain value - - System 0[36] 3-wire CH2 Factory default offset value (L) - - System 0[37] 3-wire CH2 User range settings gain value (L) - - System 0[38] 3-wire CH2 User range settings gain value (L) - <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
O[28] 3-wire CH2 Factory default offset value - - System O[64RD 0[30] 3-wire CH2 Factory default gain value - - System 0[30] 3-wire CH2 Factory default gain value - - System 0[30] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 Factory default gain value - - System 0[33] 3-wire CH2 User range settings offset value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 Factory default offset value (L) - - System 0[36] 3-wire CH2 Factory default gain value (L) - - System 0[31] 3-wire CH2 Factory default gain value (L) - - System 0[32] 3-wire CH2 User range settings offset value (L) - - System 0[33] 3-wire CH2 User range settings resistance offset value (L) - - System 0[34] 3-wire CH2				-	-	System
OLD System QG4RD 3-wire CH2 Factory default offset value - - System 0[30] 3-wire CH2 Factory default gain value - - System 0[31] 3-wire CH2 Factory default gain value - - System 0[32] 3-wire CH2 User range settings offset value - - System 0[33] 3-wire CH2 User range settings gain value - - System 0[34] 3-wire CH2 User range settings gain value - - System 0[35] 3-wire CH2 User range settings gain value - - System 0[36] 3-wire CH2 Factory default offset value (L) - - System 0[30] 3-wire CH2 Factory default gain value (L) - - System 0[31] 3-wire CH2 User range settings offset value (L) - - System 0[32] 3-wire CH2 User range settings offset value (L) - - System 0[33] 3-wire CH2 User range settings resistance offset value (L) - - System	s	_				
Ocket Right				-	-	
Octa System O(31) 3-wire CH2 Factory default gain value - - System O(32) 3-wire CH2 User range settings offset value - - System O(33) 3-wire CH2 User range settings gain value - - System O(34) 3-wire CH2 User range settings gain value - - System O(35) 3-wire CH2 Eactory default offset value (L) - - System O(30) 3-wire CH2 Eactory default offset value (L) - - System O(31) 3-wire CH2 Factory default offset value (L) - - System O(31) 3-wire CH2 Factory default gain value (L) - - System O(32) 3-wire CH2 User range settings offset value (L) - - System O(33) 3-wire CH2 User range settings gain value (L) - - System O(34) 3-wire CH2 User range settings gain value (L) - - System O(36) 3-wire CH2 User range settings resistance offset value (L) - - System <td><u>s</u> [29]</td> <td></td> <td>-</td> <td>-</td> <td></td>		<u>s</u> [29]		-	-	
Od4RD O O O O © [32] 3-wire CH2 User range settings offset value - - System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 User range settings gain value - - System © [36] 3-wire CH2 Factory default offset value (L) - - System © [29] 3-wire CH2 Factory default gain value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (L) - - System © [32] 3-wire CH2 User range settings offset value (L) - - System © [33] 3-wire CH2 User range settings offset value (L) - - System © [34] 3-wire CH2 User range settings gain value (L) - - System © [36] 3-wire CH2 User range settings resistance offset value (L) - - System © [37] 3-wire CH2 User range settings resistanc		<u>\$</u> [30]	3-wire CH2 Factory default gain value	-	-	
Other System © [33] 3-wire CH2 User range settings offset value - - System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 User range settings gain value - - System © [28] 3-wire CH2 Factory default offset value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (H) - - System © [33] 3-wire CH2 User range settings offset value (L) - - System © [34] 3-wire CH2 User range settings offset value (L) - - System © [35] 3-wire CH2 User range settings gain value (L) - - System © [36] 3-wire CH2 User range settings effset value (L) - - System © [36] 3-wire CH2 User range settings effset value (H) - -	Q64RD	s [31]	3-wire CH2 Factory default gain value	-	-	System
Other System © [34] 3-wire CH2 User range settings gain value - - System © [35] 3-wire CH2 Factory default offset value (L) - - System © [29] 3-wire CH2 Factory default offset value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [30] 3-wire CH2 Factory default gain value (L) - - System © [31] 3-wire CH2 Factory default gain value (H) - - System © [33] 3-wire CH2 User range settings offset value (L) - - System © [33] 3-wire CH2 User range settings offset value (L) - - System © [34] 3-wire CH2 User range settings gain value (H) - - System © [36] 3-wire CH2 User range settings resistance offset value (L) - - System © [36] 3-wire CH2 User range settings resistance offset value (H) - - - System © [37] 3-wire CH2 User range settings resistance offset value (s [32]	3-wire CH2 User range settings offset value	-	-	System
Image: Classical stress of the classical stress		s [33]	3-wire CH2 User range settings offset value	-	-	System
Image: Constraint of the second sec		<u>ি</u> [34]	3-wire CH2 User range settings gain value	-	-	System
Otean		s [35]	3-wire CH2 User range settings gain value	-	-	System
(a) [29] 3-wire CH2 Factory default offset value (H) - - System (a) [30] 3-wire CH2 Factory default gain value (L) - - System (a) [31] 3-wire CH2 Factory default gain value (H) - - System (a) [32] 3-wire CH2 User range settings offset value (L) - - System (a) [33] 3-wire CH2 User range settings gain value (L) - - System (a) [35] 3-wire CH2 User range settings gain value (L) - - System (a) [36] 3-wire CH2 User range settings gain value (H) - - System (a) [36] 3-wire CH2 User range settings gain value (H) - - System (a) [37] 3-wire CH2 User range settings resistance offset value (H) - - System (b) [38] 3-wire CH2 User range settings resistance gain value (H) - - System (b) [39] 3-wire CH2 User range settings resistance gain value (H) - - System (b) [41] 4-wire CH2 Factory default offset value - - System (a) [42] 4-wire CH2 Factory default gain value <		s [28]	3-wire CH2 Factory default offset value (L)	_		System
O64RD • [31] 3-wire CH2 Factory default gain value (H) - - System • • [31] 3-wire CH2 User range settings offset value (L) - - System • • [32] 3-wire CH2 User range settings offset value (H) - - System • • [33] 3-wire CH2 User range settings gain value (L) - - System • • [36] 3-wire CH2 User range settings gain value (L) - - System • • [36] 3-wire CH2 User range settings resistance offset value (L) - - System • • [36] 3-wire CH2 User range settings resistance offset value (L) - - System • • [37] 3-wire CH2 User range settings resistance offset value (H) - - System • • [38] 3-wire CH2 User range settings resistance gain value (L) - - System • • [39] 3-wire CH2 User range settings resistance gain value (H) - - System • • • • • • • • • • • • • • • • • • •		s [29]	3-wire CH2 Factory default offset value (H)			Cycloni
O64RD © [31] 3-wire CH2 Factory default gain value (H) - - System •G [32] 3-wire CH2 User range settings offset value (L) - - System •G [33] 3-wire CH2 User range settings gain value (L) - - System •G [34] 3-wire CH2 User range settings gain value (L) - - System •G [35] 3-wire CH2 User range settings gain value (H) - - System •G [35] 3-wire CH2 User range settings resistance offset value (L) - - System •G [36] 3-wire CH2 User range settings resistance offset value (L) - - System •G [37] 3-wire CH2 User range settings resistance gain value (L) - - System •G [38] 3-wire CH2 User range settings resistance gain value (L) - - System •G [39] 3-wire CH2 Eactory default offset value - - System •G [40] 4-wire CH2 Factory default offset value - - System •G [41] 4-wire CH2 Eactory defau		\$ [30]	3-wire CH2 Factory default gain value (L)			System
Image: Signal of the one	Q64RD	<u></u> জ[31]	3-wire CH2 Factory default gain value (H)	_	_	Oystem
S [33] 3-wire CH2 User range settings gain value (H) - - System S [34] 3-wire CH2 User range settings gain value (L) - - System S [35] 3-wire CH2 User range settings gain value (H) - - System S [36] 3-wire CH2 User range settings resistance offset value (L) - - System S [37] 3-wire CH2 User range settings resistance offset value (H) - - System S [38] 3-wire CH2 User range settings resistance gain value (L) - - System S [39] 3-wire CH2 User range settings resistance gain value (L) - - System S [40] 4-wire CH2 User range settings resistance gain value (H) - - System S [41] 4-wire CH2 Factory default offset value - - System S [42] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [41] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 User range settings offset value -	-G	\$ [32]	3-wire CH2 User range settings offset value (L)			Svetom
S [35] 3-wire CH2 User range settings gain value (H) - - System S [36] 3-wire CH2 User range settings resistance offset value (L) - - System S [37] 3-wire CH2 User range settings resistance offset value (H) - - System S [38] 3-wire CH2 User range settings resistance gain value (L) - - System S [39] 3-wire CH2 User range settings resistance gain value (H) - - System S [40] 4-wire CH2 Factory default offset value - - System S [41] 4-wire CH2 Factory default offset value - - System S [42] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [43] 4-wire CH2 Factory default gain value - - System S [44] 4-wire CH2 User range settings offset value - - System S [45] 4-wire CH2 User range settings offset value - - System S [45] 4-wire CH2 User range settings offset value - -		s [33]	3-wire CH2 User range settings offset value (H)		-	System
(§ [35] 3-wire CH2 User range settings gain value (H) - - System (§ [36] 3-wire CH2 User range settings resistance offset value (L) - - System (§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value -		s [34]	3-wire CH2 User range settings gain value (L)			Custom
Sigs 3-wire CH2 User range settings resistance offset value (H) - - System Sigs 3-wire CH2 User range settings resistance gain value (L) - - System Sigs 3-wire CH2 User range settings resistance gain value (H) - - System Sigs 3-wire CH2 User range settings resistance gain value (H) - - System Sigs 3-wire CH2 User range settings resistance gain value (H) - - System Sigs 3-wire CH2 Factory default offset value - - System Sigs Sigs 4-wire CH2 Factory default offset value - - System Sigs Sigs 4-wire CH2 Factory default gain value - - System Sigs Sigs 4-wire CH2 Factory default gain value - - System Sigs Sigs 4-wire CH2 Factory default gain value - - System Sigs Sigs 4-wire CH2 User range settings offset value - - System Sigs Sigs 4-wire CH2 User range settings offset value - - System Sigs </td <td></td> <td>\$ [35]</td> <td>3-wire CH2 User range settings gain value (H)</td> <td>-</td> <td>_</td> <td>System</td>		\$ [35]	3-wire CH2 User range settings gain value (H)	-	_	System
(§ [37] 3-wire CH2 User range settings resistance offset value (H) - - System (§ [38] 3-wire CH2 User range settings resistance gain value (L) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [39] 3-wire CH2 User range settings resistance gain value (H) - - System (§ [40] 4-wire CH2 Factory default offset value - - System (§ [41] 4-wire CH2 Factory default offset value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [42] 4-wire CH2 Factory default gain value - - System (§ [43] 4-wire CH2 Factory default gain value - - System (§ [44] 4-wire CH2 User range settings offset value - - System (§ [45] 4-wire CH2 User range settings offset value - - System (§ [46] 4-wire CH2 User range settings gain value - - System	S	[36]	3-wire CH2 User range settings resistance offset value (L)			Quarterin
Sign 3-wire CH2 User range settings resistance gain value (H) - System Sign 3-wire CH2 User range settings resistance gain value (H) - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default offset value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 Factory default gain value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings offset value - - System Sign 4-wire CH2 User range settings gain value - - System Sign 4-wire CH2 User range settings gain value - - System	S	[37]	3-wire CH2 User range settings resistance offset value (H)	-	_	System
(S)[39] 3-wire CH2 User range settings resistance gain value (H) (S)[40] 4-wire CH2 Factory default offset value - - System (S)[41] 4-wire CH2 Factory default offset value - - System (S)[41] 4-wire CH2 Factory default offset value - - System (S)[42] 4-wire CH2 Factory default gain value - - System (S)[42] 4-wire CH2 Factory default gain value - - System (S)[43] 4-wire CH2 Factory default gain value - - System (S)[44] 4-wire CH2 User range settings offset value - - System (S)[44] 4-wire CH2 User range settings offset value - - System (S)[45] 4-wire CH2 User range settings offset value - - System (S)[46] 4-wire CH2 User range settings gain value - - System	S	[38]	3-wire CH2 User range settings resistance gain value (L)			Quarterin
Q64RD	<u> </u>		3-wire CH2 User range settings resistance gain value (H)	-	-	System
Q64RD		<u>\$</u> [40]	4-wire CH2 Factory default offset value	_	-	System
Image: Second		<u>\$</u> [41]	4-wire CH2 Factory default offset value	_	_	System
Image: Second			4-wire CH2 Factory default gain value	_	-	System
(a) [44] 4-wire CH2 User range settings offset value - - System (b) [45] 4-wire CH2 User range settings offset value - - System (b) [46] 4-wire CH2 User range settings gain value - - System			4-wire CH2 Factory default gain value	_	-	System
(\$ [45] 4-wire CH2 User range settings offset value - - System (\$ [46] 4-wire CH2 User range settings gain value - - System	Q64RD		4-wire CH2 User range settings offset value	_	_	System
(§ [46]] 4-wire CH2 User range settings gain value – – System			4-wire CH2 User range settings offset value	_	_	System
			4-wire CH2 User range settings gain value	_	_	System
		⑤[47]	4-wire CH2 User range settings gain value	_	_	System

Control data of Q64RD/Q64RD-G (2/5)

Device		Item	Setting data	Setting range	Setting side
	s [40]	4-wire CH2 Factory default offset value (L)		Juni ge	
	<u></u>	4-wire CH2 Factory default offset value (H)	-	-	System
	<u> </u>	4-wire CH2 Factory default gain value (L)			
Q64RD	<u>\$[43]</u>	4-wire CH2 Factory default gain value (H)	-	_	System
-G	<u>\$</u> [44]	4-wire CH2 User range settings offset value (L)			
	<u>\$</u> [45]	4-wire CH2 User range settings offset value (H)	-	-	System
	<u>\$[46]</u>	4-wire CH2 User range settings gain value (L)			
	s[47]	4-wire CH2 User range settings gain value (H)	-	-	System
(\$)	[48]	4-wire CH2 User range settings resistance offset value (L)			Quetera
\$	[49]	4-wire CH2 User range settings resistance offset value (H)	-	_	System
\$	[50]	4-wire CH2 User range settings resistance gain value (L)			Queters
\$	[51]	4-wire CH2 User range settings resistance gain value (H)	-	_	System
	\$ [52]	3-wire CH3 Factory default offset value	-	_	System
	\$ [53]	3-wire CH3 Factory default offset value	-	_	System
	s [54]	3-wire CH3 Factory default gain value	-	-	System
Q64RD	s [55]	3-wire CH3 Factory default gain value	_	-	System
Q04KD	s [56]	3-wire CH3 User range settings offset value	_	-	System
	s[57]	3-wire CH3 User range settings offset value	-	-	System
	s [58]	3-wire CH3 User range settings gain value	-	-	System
	s [59]	3-wire CH3 User range settings gain value	-	-	System
	s [52]	3-wire CH3 Factory default offset value (L)			Sustam
	s [53]	3-wire CH3 Factory default offset value (H)	_	-	System
	\$[54]	3-wire CH3 Factory default gain value (L)			System
Q64RD	\$ [55]	3-wire CH3 Factory default gain value (H)	_	_	System
-G	<u></u> জ [56]	3-wire CH3 User range settings offset value (L)			System
	<u></u> \$[57]	3-wire CH3 User range settings offset value (H)	-	_	Oystem
	\$ [58]	3-wire CH3 User range settings gain value (L)			System
	\$ [59]	3-wire CH3 User range settings gain value (H)	-	_	System
s	[60]	3-wire CH3 User range settings resistance offset value (L)	_	_	System
S	[61]	3-wire CH3 User range settings resistance offset value (H)			oystem
S	[62]	3-wire CH3 User range settings resistance gain value (L)	_	_	System
S	[63]	3-wire CH3 User range settings resistance gain value (H)	_		Oystern
	\$[64]	4-wire CH3 Factory default offset value	-	-	System
	\$ [65]	4-wire CH3 Factory default offset value	-	-	System
	\$ [66]	4-wire CH3 Factory default gain value	-	-	System
Q64RD	s [67]	4-wire CH3 Factory default gain value	_	_	System
	\$ [68]	4-wire CH3 User range settings offset value	-	_	System
	\$ [69]	4-wire CH3 User range settings offset value	_		System
	s [70]	4-wire CH3 User range settings gain value	-	_	System
	<u></u> (জ[71]	4-wire CH3 User range settings gain value	-	-	System

Control data of Q64RD/Q64RD-G (3/5)

(s [64] s [65]	4-wire CH3 Factory default offset value (L)		range	side
(
		4-wire CH3 Factory default offset value (H)	-	-	System
C		4-wire CH3 Factory default gain value (L)			
00400	§ [66]	4-wire CH3 Factory default gain value (L) 4-wire CH3 Factory default gain value (H)	-	-	System
	§ [67]	4-wire CH3 User range settings offset value (L)			
	§ [68]	4-wire CH3 User range settings offset value (L) 4-wire CH3 User range settings offset value (H)	-	-	System
	s [69]	4-wire CH3 User range settings gain value (L)			
	\$ [70]	4-wire CH3 User range settings gain value (L) 4-wire CH3 User range settings gain value (H)	-	-	System
	ତ [71]	4-wire CH3 User range settings resistance offset value (L)			
<u> </u>		4-wire CH3 User range settings resistance offset value (L) 4-wire CH3 User range settings resistance offset value (H)	-	-	System
© [73]		4-wire CH3 User range settings resistance diset value (H) 4-wire CH3 User range settings resistance gain value (L)			
© [74]			-	-	System
© [75]	-	4-wire CH3 User range settings resistance gain value (H)			Custom
	s [76]	3-wire CH4 Factory default offset value	-	-	System
	\$[77]	3-wire CH4 Factory default offset value	-	-	System
	\$ [78]	3-wire CH4 Factory default gain value	-	-	System
Q64RD	s [79]	3-wire CH4 Factory default gain value	-	-	System
	\$ [80]	3-wire CH4 User range settings offset value	-	-	System
	s [81]	3-wire CH4 User range settings offset value	-	-	System
(s [82]	3-wire CH4 User range settings gain value	-	-	System
	\$ [83]	3-wire CH4 User range settings gain value	-	-	System
	\$[76]	3-wire CH4 Factory default offset value (L)	_	_	System
	s [77]	3-wire CH4 Factory default offset value (H)			
	\$ [78]	3-wire CH4 Factory default gain value (L)	_	_	System
	s [79]	3-wire CH4 Factory default gain value (H)			- ,
-G	\$[80]	3-wire CH4 User range settings offset value (L)	_	_	System
	\$[81]	3-wire CH4 User range settings offset value (H)			e yete
	\$[82]	3-wire CH4 User range settings gain value (L)	_	_	System
	\$ [83]	3-wire CH4 User range settings gain value (H)			Gyötölli
s [84]]	3-wire CH4 User range settings resistance offset value (L)	_	_	System
s [85]]	3-wire CH4 User range settings resistance offset value (H)			Gyötölli
S[86]]	3-wire CH4 User range settings resistance gain value (L)			System
S[87]]	3-wire CH4 User range settings resistance gain value (H)	_		Oystelli
(\$[88]	4-wire CH4 Factory default offset value	-	-	System
(s [89]	4-wire CH4 Factory default offset value	-	-	System
	s [90]	4-wire CH4 Factory default gain value	-	-	System
	s [91]	4-wire CH4 Factory default gain value	-	-	System
Q64RD	s [92]	4-wire CH4 User range settings offset value	-	-	System
(s [93]	4-wire CH4 User range settings offset value	-	-	System
(s [94]	4-wire CH4 User range settings gain value	-	-	System
(\$ [95]	4-wire CH4 User range settings gain value	_	-	System

Control data of Q64RD/Q64RD-G (4/5)

Device		Item	Setting data	Setting range	Setting side	
	S[88]	4-wire CH4 Factory default offset value (L)	_	_	System	
	s [89]	4-wire CH4 Factory default offset value (H)			System	
	s [90]	4-wire CH4 Factory default gain value (L)	_	_	System	
Q64RD	<u>ি</u> [91]	4-wire CH4 Factory default gain value (H)			System	
-G	s [92]	4-wire CH4 User range settings offset value (L)	_	_	System	
	s [93]	4-wire CH4 User range settings offset value (H)			Cystem	
	s [94]	4-wire CH4 User range settings gain value (L)	_	-	System	
	s [95]	4-wire CH4 User range settings gain value (H)			Cystem	
S	[96]	4-wire CH4 User range settings resistance offset value (L)	_	_	System	
\$	[97]	4-wire CH4 User range settings resistance offset value (H)			e y e tom	
S	[98]	4-wire CH4 User range settings resistance gain value (L)	_	_	System	
S	[99]	4-wire CH4 User range settings resistance gain value (H)			Gystern	

Control data of Q64RD/Q64RD-G (5/5)

*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(11) Q64TD/Q64TDV-GH

Device	Item	Setting data	Setting range	Setting side
§ [0]	System area	_	-	_
6[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
§[2]	System area			
ঙ [3]		_	_	-
⑤ [4]	CH1 Factory default offset value	-	-	System
⑤ [5]	CH1 Factory default gain value	-	-	System
⑤[6]	CH1 User range settings offset value	-	-	System
⑤ [7]	CH1 User range settings gain value	-	-	System
⑤ [8]	CH1 User range settings thermal EMF offset value (L)	_	_	System
s [9]	CH1 User range settings thermal EMF offset value (H)			Gyöteini
s [10]	CH1 User range settings thermal EMF gain value (L)	_	_	System
s[11]	CH1 User range settings thermal EMF gain value (H)			eyetein
s[12]	CH2 Factory default offset value	-	-	System
ি [13]	CH2 Factory default gain value	-	-	System
<u>ি</u> [14]	CH2 User range settings offset value	_	-	System
<u>জ</u> [15]	CH2 User range settings gain value	_	-	System
<u></u> জ[16]	CH2 User range settings thermal EMF offset value (L)	_	_	System
<u></u> জ[17]	CH2 User range settings thermal EMF offset value (H)			
<u></u> জ[18]	CH2 User range settings thermal EMF gain value (L)	_	_	System
<u></u> §[19]	CH2 User range settings thermal EMF gain value (H)			.,
s [20]	CH3 Factory default offset value	_	-	System
S[21]	CH3 Factory default gain value	_	-	System
S [22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
s [24]	CH3 User range settings thermal EMF offset value (L)	-	-	System
s [25]	CH3 User range settings thermal EMF offset value (H)			-
\$[26]	CH3 User range settings thermal EMF gain value (L)	_	-	System
<u></u> জ[27]	CH3 User range settings thermal EMF gain value (H)			
\$ [28]	CH4 Factory default offset value	_	-	System
\$ [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	-	-	System
s [31]	CH4 User range settings gain value	-	-	System
\$[32]	CH4 User range settings thermal EMF offset value (L)	_	-	System
\$ [33]	CH4 User range settings thermal EMF offset value (H)			
s [34]	CH4 User range settings thermal EMF gain value (L)	_	-	System
s [35]	CH4 User range settings thermal EMF gain value (H)			-

(12) Q68TD-G-H02(H01)

Control data of Q68TD-G-H02(H01) (1/2)

	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
s[2]	System area	_	_	_
\$[3]	oystem area	_	_	_
ঙ[4]	CH1 Factory default offset value	-	-	System
s [5]	CH1 Factory default gain value	-	-	System
⑤[6]	CH1 User range settings offset value	-	-	System
ঙ[7]	CH1 User range settings gain value	_	-	System
\$[8]	CH1 User range settings thermal EMF offset value (L)			System
\$[9]	CH1 User range settings thermal EMF offset value (H)	_	-	System
s [10]	CH1 User range settings thermal EMF gain value (L)			System
s[11]	CH1 User range settings thermal EMF gain value (H)	_	_	System
s [12]	CH2 Factory default offset value	_	-	System
<u> </u> ⁽¹³⁾	CH2 Factory default gain value	_	-	System
<u></u> জ[14]	CH2 User range settings offset value	_	_	System
<u></u> জ [15]	CH2 User range settings gain value	_	_	System
s [16]	CH2 User range settings thermal EMF offset value (L)			
s [17]	CH2 User range settings thermal EMF offset value (H)	-	-	System
s [18]	CH2 User range settings thermal EMF gain value (L)			
\$[19]	CH2 User range settings thermal EMF gain value (H)	_	-	System
\$[20]	CH3 Factory default offset value	_	-	System
\$[21]	CH3 Factory default gain value	_	-	System
\$[22]	CH3 User range settings offset value	_	-	System
s [23]	CH3 User range settings gain value	_	-	System
\$[24]	CH3 User range settings thermal EMF offset value (L)			_
s [25]	CH3 User range settings thermal EMF offset value (H)	_	-	System
\$ [26]	CH3 User range settings thermal EMF gain value (L)			_
	CH3 User range settings thermal EMF gain value (H)	_	-	System
\$ [28]	CH4 Factory default offset value	_	-	System
\$ [29]	CH4 Factory default gain value	_	-	System
s [30]	CH4 User range settings offset value	_	-	System
s[31]	CH4 User range settings gain value	_	_	System
\$[32]	CH4 User range settings thermal EMF offset value (L)			
⑤ [33]	CH4 User range settings thermal EMF offset value (H)	-	-	System
§ [34]	CH4 User range settings thermal EMF gain value (L)			
⑤ [35]	CH4 User range settings thermal EMF gain value (H)	-	-	System
⑤[36]	CH5 Factory default offset value	_	-	System
⑤[37]	CH5 Factory default gain value	_	_	System
010.1	CH5 User range settings offset value		_	System
\$ [38]	CHO User range settings onset value			

Device	Item	Setting data	Setting range	Setting side
<u>s</u> [40]	CH5 User range settings thermal EMF offset value (L)			Svotom
s [41]	CH5 User range settings thermal EMF offset value (H)	_	-	System
s [42]	CH5 User range settings thermal EMF gain value (L)			System
\$ [43]	CH5 User range settings thermal EMF gain value (H)	-	_	System
\$[44]	CH6 Factory default offset value	_	-	System
\$ [45]	CH6 Factory default gain value	_	-	System
\$[46]	CH6 User range settings offset value	_	-	System
ঙ [47]	CH6 User range settings gain value	_	-	System
\$[48]	CH6 User range settings thermal EMF offset value (L)			System
ঙ [49]	CH6 User range settings thermal EMF offset value (H)	_	_	System
ঙ [50]	CH6 User range settings thermal EMF gain value (L)			System
ঙ [51]	CH6 User range settings thermal EMF gain value (H)	_	_	Oystern
ঙ [52]	CH7 Factory default offset value	_	-	System
s [53]	CH7 Factory default gain value	_	-	System
\$[54]	CH7 User range settings offset value	_	-	System
ঙ [55]	CH7 User range settings gain value	_	-	System
s [56]	CH7 User range settings thermal EMF offset value (L)	_	_	System
<u></u> \$[57]	CH7 User range settings thermal EMF offset value (H)			Gystern
\$ [58]	CH7 User range settings thermal EMF gain value (L)	_	_	System
\$ [59]	CH7 User range settings thermal EMF gain value (H)	_		Oystern
\$[60]	CH8 Factory default offset value	-	-	System
s[61]	CH8 Factory default gain value	-	-	System
s [62]	CH8 User range settings offset value	-	-	System
§ [63]	CH8 User range settings gain value	-	-	System
§ [64]	CH8 User range settings thermal EMF offset value (L)			System
s [65]	CH8 User range settings thermal EMF offset value (H)			Oystern
\$[66]	CH8 User range settings thermal EMF gain value (L)	_		System
s [67]	CH8 User range settings thermal EMF gain value (H)		_	Gystern

Control data of Q68TD-G-H02(H01) (2/2)

(13) Q68RD3-G

Control data of Q68RD3-G (1/2)

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
ঙ[2] ঙ[3]	System area	-	-	-
⑤ [4]	CH1 Factory default offset value	_	-	System
⑤ [5]	CH1 Factory default gain value	_	-	System
⑤[6]	CH1 User range settings offset value	_	-	System
⑤ [7]	CH1 User range settings gain value	_	-	System
⑤[8]	CH1 User range settings resistance offset value (L)			Questions
s [9]	CH1 User range settings resistance offset value (H)	_	_	System
s[10]	CH1 User range settings resistance gain value (L)			Custom
<u></u> জ[11]	CH1 User range settings resistance gain value (H)	_	_	System
s [12]	CH2 Factory default offset value	_	-	System
s [13]	CH2 Factory default gain value	_	-	System
s[14]	CH2 User range settings offset value	_	-	System
<u> </u> (15]	CH2 User range settings gain value	_	-	System
s[16]	CH2 User range settings resistance offset value (L)			System
s [17]	CH2 User range settings resistance offset value (H)	_	_	System
s [18]	CH2 User range settings resistance gain value (L)			Sustam
s [19]	CH2 User range settings resistance gain value (H)		_	System
s [20]	CH3 Factory default offset value	-	-	System
ি [21]	CH3 Factory default gain value	-	-	System
\$[22]	CH3 User range settings offset value	_	-	System
\$[23]	CH3 User range settings gain value	-	-	System
জ [24]	CH3 User range settings resistance offset value (L)			System
\$[25]	CH3 User range settings resistance offset value (H)		_	Oystern
\$[26]	CH3 User range settings resistance gain value (L)	_	_	System
\$[27]	CH3 User range settings resistance gain value (H)			Gyötenn
s [28]	CH4 Factory default offset value	-	-	System
s [29]	CH4 Factory default gain value	-	-	System
<u> </u>	CH4 User range settings offset value	-	-	System
\$[31]	CH4 User range settings gain value	-	-	System
\$[32]	CH4 User range settings resistance offset value (L)			System
\$ [33]	CH4 User range settings resistance offset value (H)			Gystelli
s [34]	CH4 User range settings resistance gain value (L)		_	System
<u> </u>	CH4 User range settings resistance gain value (H)			Gystelli
\$[36]	CH5 Factory default offset value	-	-	System
\$[37]	CH5 Factory default gain value	-	_	System
s [38]	CH5 User range settings offset value	_	-	System

Control data of Q68RD3-G (2/2)

Device	Item	Setting data	Setting range	Setting side
s [39]	CH5 User range settings gain value	-	_	System
s [40]	CH5 User range settings resistance offset value (L)			System
s[41]	CH5 User range settings resistance offset value (H)			Gystein
s [42]	CH5 User range settings resistance gain value (L)	_	_	System
s [43]	CH5 User range settings resistance gain value (H)	_		oystem
⑤ [44]	CH6 Factory default offset value	-	-	System
s [45]	CH6 Factory default gain value	-	-	System
⑤ [46]	CH6 User range settings offset value	-	-	System
⑤ [47]	CH6 User range settings gain value	-	-	System
⑤ [48]	CH6 User range settings resistance offset value (L)	_	_	System
⑤ [49]	CH6 User range settings resistance offset value (H)			Oystelli
s [50]	CH6 User range settings resistance gain value (L)			System
s [51]	CH6 User range settings resistance gain value (H)	_	-	System
s [52]	CH7 Factory default offset value	-	-	System
s [53]	CH7 Factory default gain value	_	-	System
s [54]	CH7 User range settings offset value	_	-	System
S[55]	CH7 User range settings gain value	_	-	System
\$[56]	CH7 User range settings resistance offset value (L)			System
\$[57]	CH7 User range settings resistance offset value (H)	_	-	System
s [58]	CH7 User range settings resistance gain value (L)			System
\$[59]	CH7 User range settings resistance gain value (H)	_	-	System
s [60]	CH8 Factory default offset value	_	-	System
<u></u> §[61]	CH8 Factory default gain value	_	-	System
s [62]	CH8 User range settings offset value	-	-	System
s [63]	CH8 User range settings gain value	_	-	System
s[64]	CH8 User range settings resistance offset value (L)			Sustam
s [65]	CH8 User range settings resistance offset value (H)		_	System
s [66]	CH8 User range settings resistance gain value (L)			Sustam
s[67]	CH8 User range settings resistance gain value (H)	-	-	System

(14) Q61LD^{*1}

Control data of Q61LD (1/2)

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	System
s [1]	Completion status	The instruction completion status is stored. 0 :Normal completion Other than 0 :Error completion (error code)	_	System
\$[2] \$[3]	- System area	-	_	System
⑤ [4]	Load cell rated capacity (L)	-	-	System
s [5]	Load cell rated capacity (H)	-	-	System
⑤[6]	Load cell rated output	-	-	System
⑤ [7]	Number of load cells in connection	-	-	System
⑤[8]	Zero offset	-	-	System
s [9]	System area	-	-	System
s [10]	Maximum weighing capacity setting (L)	-	-	System
<u>ঙ</u> [11]	Maximum weighing capacity setting (H)	-	-	System
s [12]	Minimum division	-	-	System
<u> </u> [13]	Decimal point position	-	-	System
s[14]	Unit	-	-	System
s [15]	System area	-	-	System
s [16]	Standard weight setting (L)	-	-	System
s[17]	Standard weight setting (H)	-	-	System
s[18]	Installation site gravitational acceleration (L)	-	-	System
s [19]	Installation site gravitational acceleration (H)	-	_	System
s [20]	Calibration site gravitational acceleration (L)	-	-	System
s [21]	Calibration site gravitational acceleration (H)	-	-	System
s [22]	Digital output zero correction value (L)	-	-	System
s [23]	Digital output zero correction value (H)	-	-	System
s [24]	Digital output span correction value (L)	-	-	System
s [25]	Digital output span correction value (H)	-	-	System
\$ [26] to \$ [33]	System area	-	-	System
⑤ [34]	Instrumentation amplifier gain setting	_	-	System
s [35]	A/D converter gain setting	_	_	System
\$[36]	Zero offset output value (L)	_	-	System
⑤ [37]	Zero offset output value (H)	_	-	System
\$ [38]	Two-point zero calibration value (L)	_	-	System
⑤ [39]	Two-point zero calibration value (H)	_	-	System
<u>\$</u> [40]	Two-point span calibration value (L)	_	-	System
<u> </u>	Two-point span calibration value (H)	_	-	System
S [42] to S [53]	System area	-	-	System
⑤[54]	1.0mV/V zero calibration value (L)	_	_	System
[51] [55]	1.0mV/V zero calibration value (H)	_	_	System

Control data of Q61LD (2/2)

Device	Item	Setting data	Setting range	Setting side
s [56]	1.0mV/V span calibration value (L)	-	-	System
\$ [57]	1.0mV/V span calibration value (H)	_	-	System
s [58]	2.0mV/V zero calibration value (L)	_	-	System
\$[59]	2.0mV/V zero calibration value (H)	-	-	System
\$[60]	2.0mV/V span calibration value (L)	_	-	System
s [61]	2.0mV/V span calibration value (H)	_	-	System
\$[62]	3.0mV/V zero calibration value (L)	-	-	System
\$[63]	3.0mV/V zero calibration value (H)	_	-	System
\$[64]	3.0mV/V span calibration value (L)	_	-	System
s[65]	3.0mV/V span calibration value (H)	_	-	System
s [66]				
to	System area	_	-	System
s [85]				

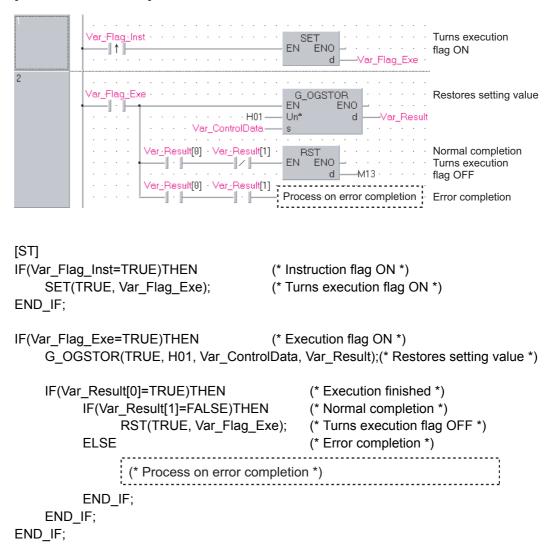
*1 : Setting is unnecessary. If setting is configured, offset/gain setting value is not read properly.

(15) L60AD4/L60DA4

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	-	-	-
<u></u> জ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ[2]	Stored data type setting	The value set for pass data classification setting (s) [2] by the OGLOAD instruction is stored. 0: Voltage specified 1: Current specified b15 b4 b3 b2 b1 b0 0 to 0 CH4CH3CH2CH1	0000н to 000Fн	System
\$[3]	System area	-	-	-
\$[4]	CH1 Industrial shipment settings offset value	-	-	System
\$[5]	CH1 Industrial shipment settings gain value	_	-	System
⑤[6]	CH2 Industrial shipment settings offset value	_	-	System
⑤ [7]	CH2 Industrial shipment settings gain value	_	-	System
(8)	CH3 Industrial shipment settings offset value	_	-	System
s[9]	CH3 Industrial shipment settings gain value	-	-	System
s[10]	CH4 Industrial shipment settings offset value	-	-	System
s[11]	CH4 Industrial shipment settings gain value	-	-	System
s[12]	CH1 User range settings offset value	-	-	System
<u></u> জ[13]	CH1 User range settings gain value	_	-	System
s[14]	CH2 User range settings offset value	_	-	System
s [15]	CH2 User range settings gain value	_	-	System
s[16]	CH3 User range settings offset value	_	-	System
s[17]	CH3 User range settings gain value	_	-	System
s [18]	CH4 User range settings offset value	_	-	System
s [19]	CH4 User range settings gain value	_	-	System

Program Example

The following program restores the offset/gain setting value to the A/D converter module mounted on the I/O numbers from X/Y10 to X/Y1F when the flag turns ON.

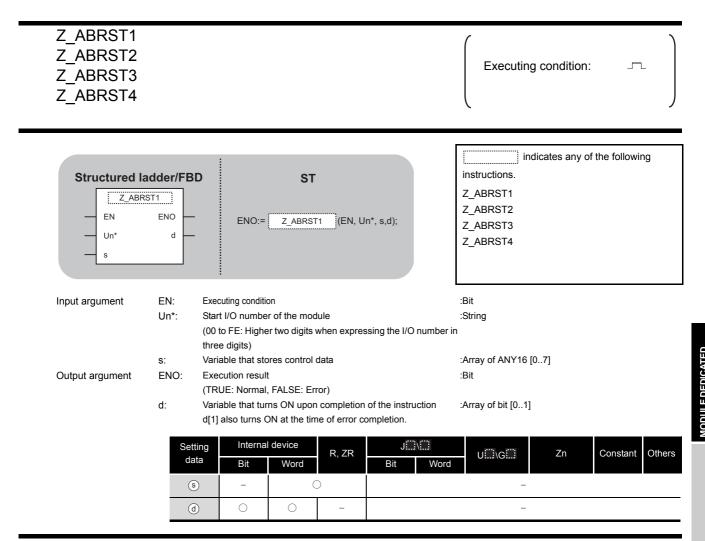


[Structured ladder/FBD]

5.2 Positioning Instruction

5.2.1 ABRST instruction

Z_ABRST1



Grant Function

This instruction restores the absolute position of the specified axis. (Refer to the following)

- Z_ABRST1: Axis 1
- Z_ABRST2: Axis 2
- Z_ABRST3: Axis 3
- Z_ABRST4: Axis 4

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
<u></u> ۱]	Completion status	The instruction completion status is stored.0 : Normal completionOther than 0 : Error completion (error code)	_	System
ঙ [2]	Receive signal from servo amplifier	 Write the following signal status read from the servo amplifier to the input module. b0: ABS data bit0 b1: ABS data bit1 b2: Send data READY flag 	b0: 0/1 b1: 0/1 b2: 0/1	User
ঙ [3]	Send signal to servo amplifier	The ON/OFF status of the following data, that are calculated by the dedicated instructions on the basis of "receive signal from servo amplifier" and output to the amplifier, are stored. • b0: Servo ON • b1: ABS transfer mode • b2: ABS request flag	_	System
ঙ [4]	Status	Communication status with the servo amplifier • 0 : Communication completed (Set by the user at the start of communication) • Other than 0: During communication (Stored by the system.)	0	User/ System
\$[5] to \$[7]	System area	-	_	-

Program Example

The following program restores the absolute position of the axis 1.

The devices from X47 to X49 and from Y50 to Y52 are used for the communication with the servo amplifier.

- X47: ABS data bit0
- X48: ABS data bit1
- X49: Send data READY flag
- Y50: Servo ON
- Y51: ABS transfer mode
- Y52: ABS request flag

[Structured ladder/FBD]

1	SM400 · · · · · · · · · · · · · · · · · ·	Absolute position restoration pulse
2	Ver_Flag_Inst X0 EN EN EN EN EN EN EN EN G Var_Flag_Mem G Var_ControlData[4]	Turns absolute position restoration memory ON Clears completion status
3	Var_Result[0] · Var_Result[1] · Var_ControlData[3] · S · d · K1Y50 · · · · · · · · · · · · · · · · · · ·	Turns the servo ON with the data to be sent to the servo amplifier
	· Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Sets completion status to error code
	AND= EN EN	Turns absolute position restoration memory OFF
4	Var_Flag_Mem··X47·····BSET BET BEN ENO n d Var_ControlData[2]	Sets ABS data Sets ABS data in data b0 received from the servo
		Sets ABS data in data b1
	X49 X49 EN ENO N ControlData[2]	Sets send data ready flag in data b2
	Z_ABRST1 EN ENO Un d Var_ControlData—s	Restores absolute position

Z_ABRST1

[ST] PLS(SM400, Var_Flag_Inst); (* Absolute position restoration pulse *) IF((Var_Flag_Inst=TRUE) & (X0=FALSE))THEN SET(TRUE, Var Flag Mem); (* Turns absolute position restoration memory ON *) (* Clears completion status *) MOV(TRUE, 0, Var_ControlData[4]); END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) MOV(TRUE, Var ControlData[3], K1Y50); (* Turns the servo ON with the data to be sent to the servo amplifier *) ELSE (* Error completion *) MOV(TRUE, Var_ControlData[4], Var_ErrorCode); (* Sets completion status to error code *) END_IF; IF(Var_ControlData[4]=0)THEN RST(TRUE, Var_Flag_Mem); (* Turns absolute position restoration memory OFF *) END IF; END IF; IF(Var_Flag_Mem=TRUE)THEN (* absolute position restoration memory ON *) (* Sets ABS data *) BSET(X47, 0, Var_ControlData[2]); (* Sets ABS data in data b0 received from the servo *) BSET(X48, 1, Var ControlData[2]); (* Sets ABS data in data b1 received from the servo *) BSET(X49, 2, Var_ControlData[2]); (* Sets send data ready flag in data b2 received from the servo *) Z_ABRST1(TRUE, "00", Var_ControlData, Var_Result); (* Restores absolute position *)

END_IF;

5.2.2 PSTRT instruction

ZP_PSTRT1

ZP_PSTRT1 ZP_PSTRT2 ZP_PSTRT3 ZP_PSTRT4			Executing condition :
Structured I ZP_PS EN Un* s	RT1	ST ZP_PSTRT1(EN, Un*, s,d	instructions. ZP_PSTRT1 ZP_PSTRT2 ZP_PSTRT3 ZP_PSTRT4
Input argument Output argument	three digits) s: Variable that stores ENO: Execution result (TRUE: Normal, FA	the module vo digits when expressing th control data	:Array of ANY16 [02] :Bit
	d[1] also turns ON a	at the time of error complet	on. J⊡\⊡ U⊡\G⊡ Zn Constant Others

Grand Function

This instruction starts positioning of the specified axis. (Refer to the following.)

- ZP_PSTRT1: Axis 1
- ZP_PSTRT2: Axis 2
- ZP_PSTRT3: Axis 3
- ZP_PSTRT4: Axis 4

5

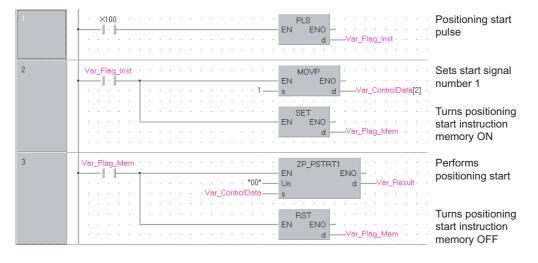
E DEDICATED

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
s[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	_	System
(٤ [2]	Start No.	Specify the following data number to be started by the PSTRT [] instruction. 1 to 600 : Positioning data number 7000 to 7004: Block start 9001 : Machine OPR 9002 : Fast OPR 9003 : Current value change 9004 : Multiple axes concurrent start	1 to 600, 7000 to 7004, 9001 to 9004	User

Program Example

The following program executes the positioning start of the positioning data number 1 when X100 turns ON.



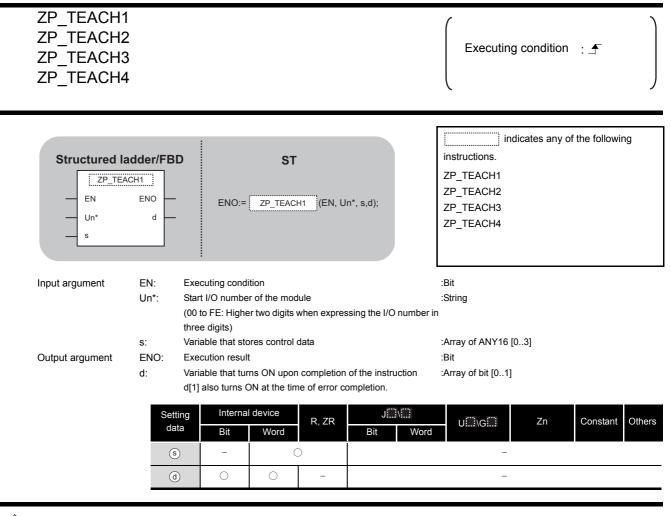
[Structured ladder/FBD]

[ST]

PLS(X100, Var_Flag_Inst); (* Positioning start pulse *) IF(Var_Flag_Inst=TRUE)THEN MOVP(TRUE, 1, Var_ControlData[2]);(* Sets start signal number 1 *) SET(TRUE, Var_Flag_Mem); (* Turns positioning start instruction memory ON *) END_IF; IF(Var_Flag_Mem=TRUE)THEN (* Positioning start instruction memory ON *) ZP_PSTRT1(TRUE, "00", Var_ControlData, Var_Result); (* Performs positioning start *) RST(TRUE, Var_Flag_Mem); (* Turns positioning start instruction memory OFF *) END_IF;

5.2.3 TEACH instruction

ZP_TEACH1



Grant Function

This instruction performs teaching for the specified axis. (Refer to the following)

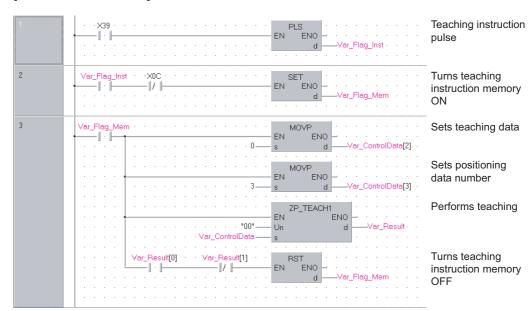
- ZP_TEACH1: Axis 1
- ZP_TEACH2: Axis 2
- ZP_TEACH3: Axis 3
- ZP_TEACH4: Axis 4

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	System area	_	_	-
ঙ[1]	Completion status	The instruction completion status is stored. • 0 : Normal completion • Other than 0 : Error completion (error code)	-	System
\$[2]	Teaching data selection	 Set the address (positioning address/circular address) to which the current feed value is written. 0: Write the current feed value to the positioning address 1: Write the current feed value to the circular address 	0,1	User
s [3]	Positioning data No.	Set the positioning data number for which teaching is performed.	1 to 600	User

Program Example

The following program performs teaching for the positioning data number 3 of the axis 1 when X39 turns ON.



[Structured ladder/FBD]

[ST]

PLS(X39, Var_Flag_Inst);

(* Teaching instruction pulse *)

```
IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN
```

SET(TRUE, Var_Flag_Mem); (* Turns teaching instruction memory ON *) END_IF;

IF(Var_Flag_Mem=TRUE)THEN (* Teaching instruction memory ON *) MOVP(TRUE, H0, Var_ControlData[2]); (* Sets teaching data *) MOVP(TRUE, K3, Var_ControlData[3]); (* Sets positioning data number *)

ZP_TEACH1(TRUE, "00", Var_ControlData, Var_Result);

(* Performs teaching *)

IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN RST(TRUE, Var_Flag_Mem); (* Turns teaching instruction memory OFF *) END_IF; END_IF;

5.2.4 PFWRT instruction

ZP_PFWRT

ZP_PFWRT		Executing condition :
Structured I);
Input argument Output argument	 EN: Executing condition Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the three digits) s: Variable that stores control data ENO: Execution result d: Variable that turns ON upon completion of the d[1] also turns ON at the time of error completed 	:Array of ANY16 [01] :Bit instruction :Array of bit [01]
	Setting dataInternal device BitR, ZRSiImage: Image:	J∭\() it Word U∭\G∭ Zn Constant Others -

Grant Function

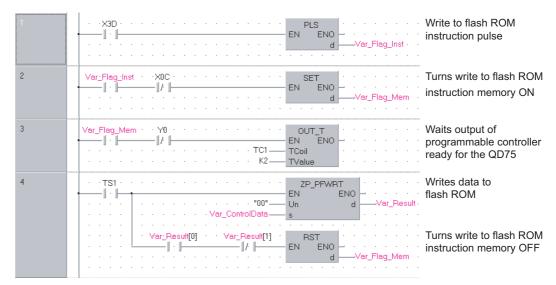
This instruction writes the QD75 parameters, positioning data, and block start data to the flash ROM.

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	_	_	-
		The instruction completion status is stored.		
⑤ [1]	Completion status	O : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Program Example

The following program writes the parameters, positioning data, and block start data stored in buffer memory to the flash ROM when X3D turns ON.



[Structured ladder/FBD]

[ST]

PLS(X3D, Var_Flag_Inst); (* Write to flash ROM instruction pulse *) IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN

SET(TRUE, Var_Flag_Mem); (* Turns write to flash ROM instruction memory ON *) END_IF;

IF((Var_Flag_Mem=TRUE)&(Y0=FALSE))THEN OUT T(TRUE, TC1, 2);

(* Waits output of programmable controller ready for the QD75 *)

END_IF;

```
IF(TS1=TRUE)THEN (* Write to flash ROM instruction memory ON *)
ZP_PFWRT(TRUE, "00", Var_ControlData, Var_Result);
(* Writes data to flash ROM *)
IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN
```

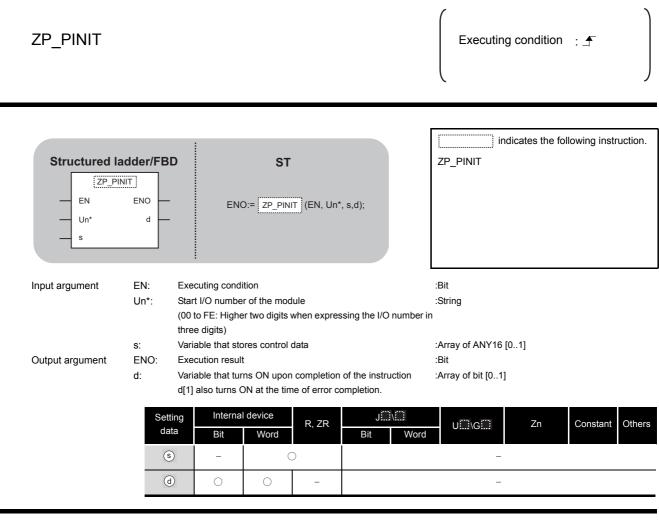
RST(TRUE, Var_Flag_Mem);

(* Turns write to flash ROM instruction memory OFF *)

END_IF; END_IF; 5

5.2.5 PINIT instruction

ZP_PINIT



Grant Function

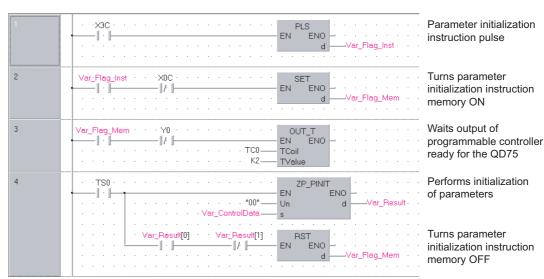
This instruction initializes the QD75 setting data.

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤[0]	System area	-	-	-
		The instruction completion status is stored.		
⑤ [1]	Completion status	O : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Program Example

The following program initializes the parameters of buffer memory and those of flash ROM when X3C turns ON.



[Structured ladder/FBD]

[ST]

PLS(X3C, Var_Flag_Inst); (* Parameter initialization instruction pulse *)

```
IF((Var_Flag_Inst=TRUE)&(X0C=FALSE))THEN
    SET(TRUE, Var_Flag_Mem);
                      (* Turns parameter initialization instruction memory ON *)
END_IF;
IF((Var_Flag_Mem=TRUE)&(Y0=FALSE))THEN
    OUT T(TRUE, TC0, 2);
                      (* Waits output of programmable controller ready for the QD75 *)
END_IF;
IF(TS0=TRUE)THEN
                      (* Parameter initialization instruction memory ON *)
    ZP_PINIT(TRUE, "00", Var_ControlData, Var_Result);
                      (* Performs initialization of parameters *)
    IF((Var_Result[0]=TRUE)&(Var_Result[1]=FALSE))THEN
          RST(TRUE, Var_Flag_Mem);
                      (* Turns parameter initialization instruction memory OFF *)
    END_IF;
END_IF;
```

5.3 Serial Communication

5.3.1 ONDEMAND instruction

G_ONDEMAND

						Serial
G(P)_ONDE	MAND				P: Executing conc	lition : 🖵
Structured I G_ONDE EN Un* s1 s2			ST _ONDEMAND (EN, Un*, s1	, s2, d);	indicates instructions. G_ONDEMAND	s any of the following GP_ONDEMAND
Input argument	EN: Un*: s1: s2:	three digits) Variable that ste			:Bit :ANY16 in :Array of ANY16 [02] :ANY16	
Output argument	ENO: d:		t ns ON upon completion o DN at the time of error con		:Bit :Array of bit [01]	
		Setting Int data *1 Bi	ernal device R, ZR	J\. Bit	Word U G	Zn Constant Others
		62 - (d) (C)	0		-	

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction sends data using the on-demand function of MC protocol.

Device	Item	Setting data	Setting range	Setting side
		Set the transmission channel.		
s1 [0]	Transmission channel	1: Channel 1 (CH1 side)	1, 2	User
		2: Channel 2 (CH2 side)		
		The instruction completion status is stored.		
s1[1]	Transmission result	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends data of devices from D10 to D11 using the on-demand function.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	· ·×53 · · · · · · · · · · · · · · · · · · ·	On-demand transmission instruction pulse
2	Var_Frag_Inst	Sets transmission channel to 1
	MOV EN S d Var_ControlData[2]	Sets number of send data to 2 words
	H1234 EN ENO s d D10	Sets send data to D10 to D11
	H5678 BNO D11	
	EN ENOVar_Flag_Normal	Turns normal completion flag OFF
	EN ENO dVar_Flag_Error	Turns error completion flag OFF
	EN ENO d Var_Flag_Exe	Turns execution flag ON
3	Var_Flag_Exe GP_ONDEMAND Image: Sector of the sector	Performs on-demand function transmission
4	Var_Result[0] Var_Result[1] SET I I I I Var_Result[0] I I I	Turns normal completion flag ON
	· · · · · · · · · · · · · · · · · · ·	Turns error completion flag ON
	RST EN ENO d Var_Flag_Exe	Turns execution flag OFF

[ST]	
PLS(X53, Var_Flag_Inst);	(* On-demand transmission instruction pulse *)
IF(Var_Flag_Inst=TRUE)THEN	(* Instruction flag ON *)
MOV(TRUE, 1, Var_ControlData[0]);	(* Sets transmission channel to 1 *)
MOV(TRUE, 2, Var_ControlData[2]);	(* Sets number of send data to 2 words *)
MOV(TRUE, H1234, D10);	(* Sets send data to D10 to D11 *)
MOV(TRUE, H5678, D11);	
RST(TRUE, Var_Flag_Normal);	(* Turns normal completion flag OFF *)
RST(TRUE, Var_Flag_Error);	(* Turns error completion flag OFF *)
SET(TRUE, Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Flag_Exe=TRUE)THEN	(* Execution flag ON *)
GP_ONDEMAND(TRUE, H0, Var_Co	ntrolData, D10, Var_Result);
	(* Performs on-demand function transmission *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
SET(TRUE, Var_Flag_Normal)	; (* Turns normal completion flag ON *)
ELSE	(* Error completion *)
SET(TRUE, Var_Flag_Error);	(* Turns error completion flag ON *)
END_IF;	
RST(TRUE, Var_Flag_Exe);	(* Turns execution flag OFF *)
END_IF;	

- 1. The communication status can be checked by the SPBUSY instruction. \square Section 5.3.6
- 2. Specify the capacity of the send data (stored in devices from D10 to D11 in the program example above) and the number of send data within the user-defined buffer memory range assigned for the on-demand function.

DDULE DEDICATED STRUCTION **G**

5.3.2 OUTPUT instruction

G_OUTPUT

Serial

G(P)_OUTP	UT					P: Executing cond	dition : 🛧
Structured la G_OUT EN Un* s1 s2			ENO:= G_OU	ST TPUT (EN, Un*, s1, s2,	d);	indicate instructions. G_OUTPUT	s any of the following
Input argument	EN: Un*:	Start I/O (00 to FE three dig	its)	digits when expressing	the I/O number		
	s1:		that stores co		. 1.	:Array of ANY16 [02]	
Output argument	s2: ENO:	Start nun Executio		evice that stores send d	ata	:ANY16 :Bit	
Supul argument	d:	Variable	that turns ON	I upon completion of the time of error comple		Array of bit [01]	
		Setting data ^{*1}	Internal o	device R, ZR	J∭\∭ Bit \	U[]]\G[]] Word	Zn Constant Others
	Ī	<u>s1</u>	-	0		_	
	1	s2	-	0		_	

Grant Function

This instruction sends data in the message format specified by the user using the nonprocedural protocol.

Device	Item	Setting data	Setting range	Setting side
্রা [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
গে[1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s1 [2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends data of devices from D11 to D15 using the nonprocedural protocol. (For the Q series C24 whose I/O signals are X/Y00 to X/Y1F) [Structured ladder/FBD]

1	·x20 · · · · · · · · · · · · · · · · · · ·	Transmission instruction pulse
2	Var_Flag_Inst	Sets send data
	H0A0D s d D15	Sets completion code
	MOV EN ENO	Sets transmission channel to 1
	MOV EN ENO	Sets number of send data to 5 words
	G_OUTPUT EN ENO Un* d Var_ControlDatas1 s2	Sends data
3	Var_Result[0] · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
	· Var_Result[1] MOV · Var_ControlData[1] EN · Var_ErrorCode	Stores error code
	EN ENO d Var_Flag_Error	Turns error completion flag ON
4	·×21 · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag OFF
	RST EN ENO d Var_Flag_Error	Turns error completion flag OFF

5-69

[ST]	
PLS(X20, Var_Flag_Inst);	(* Transmission instruction pulse*)
IF (Var_Flag_Inst=TRUE) THEN MOV(TRUE, H4241, D11); MOV(TRUE, H4443, D12); MOV(TRUE, H4645, D13); MOV(TRUE, H0047, D14); MOV(TRUE, H0AD, D15); MOV(TRUE, 1, Var_ControlData[0]); MOV(TRUE, 5, Var_ControlData[2]);	(* Sets send data *) (* Sets transmission channel to 1 *) (* Sets number of send data to 5 words *)
G_OUTPUT(TRUE, H0, Var_ControlData[2]),	
	(* Sends data *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE MOV(TRUE, Var_ControlData[1], Var SET(TRUE, Var_Flag_Error); END_IF; END_IF;	
IF (X21=TRUE) THEN RST(TRUE, Var_Flag_Normal); RST(TRUE, Var_Flag_Error); END_IF;	(* Turns normal completion flag OFF *) (* Turns error completion flag OFF *)

5.3.3 INPUT instruction

G_INPUT



G_INPUT

Structured Ia G_INF EN Un* s			NO:= G_	ST	, Un*, s, d1,	d2);		indicat ructions. NPUT	es any of ti	he following
Input argument	EN:	Executing	g condition				:Bit			
	Un*:			the module			:ANY	′16		
				o digits wher	n expressing	the I/O nun	nber in			
		three dig	,							
	S:			control data				y of ANY16 [03]		
Output argument	ENO:	Execution					:Bit			
	d1:				stores receiv		:ANY			
	d2:				npletion of th		n :Arra	y of bit [01]		
	-									
		Setting		al device	R, ZR]\]	U\G	Zn	Constant Ot
		data ^{*1}	Bit	Word		Bit	Word			
		s	-	(C			-		
		d1	-	(C			-		

Grant Function

This instruction receives data in the message format specified by the user using the nonprocedural protocol.

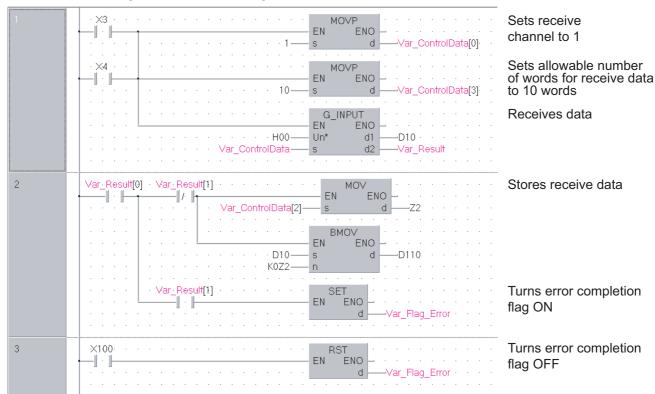
JLE DEDICATED RUCTION **G1**

Device	Item	Setting data	Setting range	Setting side
s [0]	Reception channel	Set the reception channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
ঙ[1]	Reception result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
<u> </u> (হ]	Number of receive data	The number of receive data are stored.	0 or more	System
<u>জ</u> [3]	Allowable number of words for receive data	Set the allowable number of words for receive data to be stored in $\textcircled{0}$.	1 or more	User

Program Example

The following program stores data which are received using the nonprocedural protocol in the devices starting from D10.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)



[Structured ladder/FBD]

```
[ST]
IF((X3=TRUE) OR (X4=TRUE))THEN
    MOVP(TRUE, 1, Var_ControlData[0]);
                                              (* Sets receive channel to 1 *)
    MOVP(TRUE, 10, Var_ControlData[3]);
                      (* Sets allowable number of words for receive data to 10 words *)
    G_INPUT(TRUE, H0, Var_ControlData, D10, Var_Result);
                                                    (* Receives data *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                                    (* Execution finished *)
    IF(Var Result[1]=FALSE)THEN
                                                    (* Normal completion *)
          MOV(TRUE, Var_ControlData[2], Z2);
          BMOV(TRUE, D10, K0Z2, D110);
                                                    (* Stores receive data *)
    ELSE
                                                    (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                                    (* Turns error completion flag ON *)
    END_IF;
END IF;
IF(X100=TRUE)THEN
                                              (* Turns error completion flag OFF *)
    RST(TRUE, Var_Flag_Error);
END_IF;
```

5.3.4 BIDOUT instruction

G_BIDOUT

Serial

G(P)_BIDOU	JT				P: Executing condition :
Structured Ia G_BID EN Un* s1 s2			ENO:= G_B	ST IDOUT (EN ,Un* ,s1 ,s2 ,d);	indicates any of the following instructions. G_BIDOUT GP_BIDOUT
Input argument	EN: Un*:	Start I/O	•	ne module digits when expressing the I/O r	:Bit :ANY16 number in
	s1: s2:		that stores of	ontrol data levice that stores send data	:Array of ANY16 [02] :ANY16
Output argument	SZ: ENO:		on result		:Bit
	d:			N upon completion of the instruct the time of error completion.	ction :Array of bit [01]
		Setting data ^{*1}	Internal Bit	device R, ZR Word Bit	UIII\GIII Zn Constant Oth
	1	s1	-	0	_
	1	s2	_	0	-

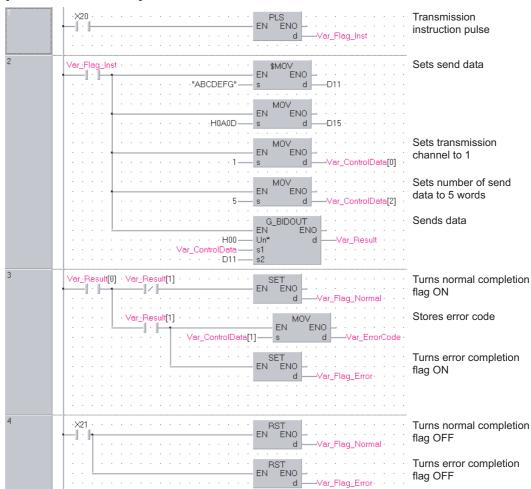
This instruction sends data using the bidirectional protocol.

Device	Item	Setting data	Setting range	Setting side
s1 [0]	Transmission channel	Set the transmission channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
s1[1]	Transmission result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s1[2]	Number of send data	Set the number of send data.	1 or more	User

Program Example

The following program sends desired data stored in devices from D11 to D15 using the bidirectional protocol.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)



[Structured ladder/FBD]

G_BIDOUT

[ST] PLS(X20, Var_Flag_Inst); (* Transmission instruction pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, H4241, D11); (* Sets send data *) MOV(TRUE, H4443, D12); MOV(TRUE, H4645, D13); MOV(TRUE, H0047, D14); MOV(TRUE, H0AD, D15); MOV(TRUE, 1, Var_ControlData[0]); (* Sets transmission channel to 1 *) MOV(TRUE, 5, Var ControlData[2]); (* Sets allowable number of words for send data to 5 words *) G_BIDOUT(TRUE, H0, Var_ControlData, D11, Var_Result); (* Sends data *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) (* Turns error completion flag ON *) SET(TRUE, Var_Flag_Error); END IF; END_IF; IF(X21=TRUE)THEN RST(TRUE, Var_Flag_Normal); (* Turns normal completion flag OFF *) RST(TRUE, Var_Flag_Error); (* Turns error completion flag OFF *) END_IF;

G_BIDIN

Serial

5.3.5 BIDIN instruction

G(P)_BIDIN P: Executing condition : 1 indicates any of the following Structured ladder/FBD instructions. ST G_BIDIN GP_BIDIN G_BIDIN ΕN ENO ENO:= G_BIDIN (EN, Un*, s, d1, d2); Un* d1 d2 s :Bit Input argument EN: Executing condition Un*: :ANY16 Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..3] s: Output argument ENO: Execution result :Bit d1: :ANY16 Start number of the device that stores receive data d2: :Array of bit [0..1] Variable that turns ON upon completion of the instruction d2[1] also turns ON at the time of error completion. Setting Internal device J...\ R, ZR Others U...\G Zn Constant data *1 Bit Word Word Bi (s) 0 d1) _ _ d2) _

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

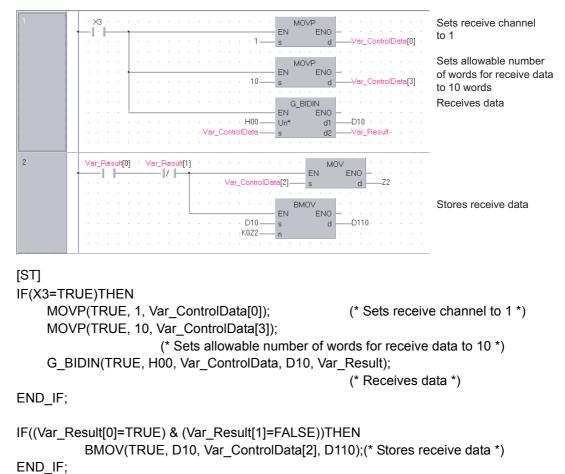
This instruction receives data using the bidirectional protocol.

Device	Item	Setting data	Setting range	Setting side
(0] ھ	Reception channel	Set the reception channel. 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side)	1, 2	User
\$[1]	Reception result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
⑤ [2]	Number of receive data	The number of received data are stored.	1 or more	System
s [3]	Allowable number of words for receive data	Set the allowable number of words for receive data to be stored in (d).	1 or more	User

Program Example

The following program receives data using the bidirectional protocol and stores the data in the devices starting from D10.

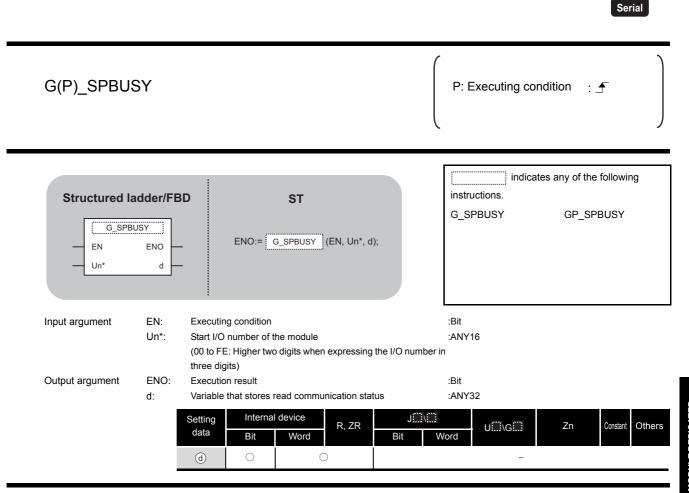
(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)



[Structured ladder/FBD]

G_SPBUSY

5.3.6 SPBUSY instruction



Grant Function

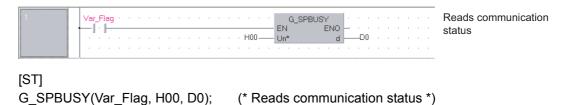
This instruction reads the data transmission/reception status.

Program Example

The following program reads out the communication status of the target module.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder/FBD]



G_SPBUSY

5.3.7 CSET instruction (receive data clear)

Serial ZP_CSET Executing condition : _ indicates the following instruction. Structured ladder/FBD ST ZP_CSET ZP_CSET ΕN ENO ENO:= ZP_CSET (EN, Un*, s1, s2, d1, d2); d1 Un' s1 d2 s2 :Bit Input argument EN: Executing condition Un*: :String Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: :ANY16 Channel number that requests receive data clear 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side) s2: Variable that stores control data :Array of ANY16 [0..111] Execution result :Bit Output argument ENO: d1: Dummy :ANY16 d2: :Array of bit [0..1] Variable that turns ON upon completion of the instruction d2[1] also turns ON at the time of error completion. Setting Internal device J....\... Constant R, ZR U...\G... Zn Others К, Н data Bit Word Bit Word (s1) _ 0 _ \bigcirc _ \bigcirc (s2) _ _ _ 0 d1) _ _ _ _ d2) _ _ _

*1: Local devices and file registers per program cannot be used as setting data.

ZP_CSET

Grant Function

Clears receive data without stopping transmission using the nonprocedural protocol.

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0'.	0	User
⊚[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s2 [2]	Request type	Specify the request. 4: Receive data clear request	4	User
☑ [3]to☑ [111]	For system	-	_	System

Program Example

The following program clears the receive data in the Q series C24 side.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

1	X20 X20 MOVP Clears execution I I EN ENO S d Var_ControlData[0] type to 0
	EN ENO
	····· ······· ······· Var_ControlData[2] ····· ······ ······ Clears data
	EN EN EN EN EN Var_Dummy Un* d1 Var_Dummy Var_Result Var_Result S1 d2 Var_Result Var_Ness
2	Var_Result[0] Var_Result[1] SET Turns normal completion Image: Set in the second
	Var_Result[1] SET Turns error completion Image: Non-State State Sta
	MOV MOV Stores error code
	· · · · · · · · · · · · · · · · · · ·
3	• X21 • • • • • • • • • • • • • • • • • • •
	RST Turns error completion
	d <u>Var_Flag_Error</u>

[Structured ladder/FBD]

ULE DEDICATED RUCTION **G**

ZP_CSET

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE, 0, Var_ControlData[0]);
                                              (* Clears execution type to 0 *)
    MOVP(TRUE, 4, Var_ControlData[2]);
                                               (* Sets request type *)
    ZP_CSET(TRUE, "00", 1, Var_ControlData, Var_Dummy, Var_Result);
                                              (* Clears data *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                              (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                               (* Normal completion *)
          SET(TRUE, Var_Flag_Normal);
                                               (* Turns normal completion flag ON *)
    ELSE
                                               (* Error completion *)
          MOV(TRUE, Var_ControlData[1], Var_ErrorCode);
                                              (* Stores error code *)
                                              (* Turns error completion flag ON *)
          SET(TRUE, Var_Flag_Error);
    END_IF;
END IF;
IF(X21=TRUE)THEN
    RST(TRUE, Var_Flag_Normal);
                                              (* Turns normal completion flag OFF *)
                                              (* Turns error completion flag OFF *)
    RST(TRUE, Var_Flag_Error);
END_IF;
```

5.3.8 BUFRCVS instruction

Z_BUFRCVS



Z_BUFRCVS

Structured la EN Un* s			ST Z_BUFRCVS (EN, Un*, s, d);	Z_BUFRCVS	s the follo	owing instructio
Input argument	EN:	Executing condition	on	:Bit		
	Un*:	Start I/O number of (00 to FE: Higher for the second secon	two digits when expressing the I	:String /O		
	s:	Reception channe 1: Channel 1 (CH 2: Channel 2 (CH2	1 side)	:ANY16		
Output argument	ENO:	Execution result	,	:Bit		
	d:		e device that stores read data e read from the receive area of b	:ANY16 uffer		
		Setting Intern data ^{*1} Bit	nal device R, ZR Book R, ZR Book Book Book Book Book Book Book Boo	J\GU\G	Zn	Constant K, H
	Ī	<u>s</u> –	0			0 -
	-					

Z_BUFRCVS

5

LE DEDICATED

Grant Function

This instruction receives data with an interrupt program during communication using the nonprocedural protocol or bidirectional protocol.

Receive Data

Item	Setting data	Setting range	Setting side	
Receive data length	The number of data read from the number of receive	0 or more	System	
	data storage area is stored.			
Receive data	, and the second s	_	System	
	stored in ascending address order.			
	Receive data length	Receive data length The number of data read from the number of receive data storage area is stored. Data read from the receive data storage area are	Receive data length The number of data read from the number of receive data storage area is stored. 0 or more Receive data Data read from the receive data storage area are	

Program Example

The following program receives data with an interrupt program.

[Structured ladder/FBD]

1	DX3 · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
2	DX4 · · · · · · · · · · · · · · · · · · ·	Turns error completion flag ON
3	SM400 SM400 SM400 SM400 SM400 S S S SM400 S S S	Executes interrupt receive program

[ST]

(* Set the normal/error confirmation flag for the main program *)
(* The main program resets flags *)
SET(DX3, Var_Flag_Normal);
SET(DX4, Var_Flag_Error);
(* Turns error completion flag ON *)

(* Receives data from CH1 and stores the data in devices starting from D200 *) Z_BUFRCVS(SM400, "00", 1, D200); (* Executes interrupt receive program *)

G_PRR

Sorial

5.3.9 PRR instruction

						Serial
G(P)_PRR					P: Executing cond	dition : 🗲
Structured I G_P EN Un* s			ST PRR (EN, Un*, s, d);		G_PRR	s any of the following GP_PRR
Input argument	Un*:	Executing condition Start I/O number of the (00 to FE: Higher two di three digits)	module gits when expressing the	I/O number i	:Bit :ANY16 n	
Output argument	ENO: d:		trol data upon completion of the in e time of error completion		:Array of ANY16 [04] :Bit :Array of bit [01]	
		Setting Internal de jata *1 Bit (s) - (d) O	Word R, ZR	J∷∷\ Bit V	Vord UIII\GIII	Zn Constant Other
				evices and file	e registers per program c	annot be used as setting dat



This instruction sends data by user frame according to the specification in user frame specification area for transmission during communication using the nonprocedural protocol.

G_PRR

DULE DEDICATED

Device	Item	Setting data	Setting range	Setting side
		Set the transmission channel.		
⑤[0]	Transmission channel	1: Channel 1 (CH1 side)	1, 2	User
		2: Channel 2 (CH2 side)		
		The instruction completion status is stored.		
⑤ [1]	⑤[1] Transmission result	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		
		Specify whether to add CR/LF codes to the send data.		
s[2]	CR/LF addition specification	0: CR/LF not added	0, 1	User
		1: CR/LF added		
		Specify the position in the user frame specification		
⑤ [3]	Transmission pointer	area for transmission from where the frame number	1 to 100	User
		data are to be sent.		
⑤ [4]	Number of send data	Set the number of user frames to be sent.	1 to 100	User

Program Example

The following program sends desired data and the user frames from number 1 to number 5 which are registered in the transmission frame setting.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

Transmission ×50 PLS EN ENO instruction pulse 'ar Flag Inst d 2 Sets number of MO' ΕN ENO send data 4 TransData[0] Sets desired MOV ΕN ENO send data H1234 _TransData[1] MO ENO ΕN H56AB ar_TransData[2] Sets send data TO ENO ΕN to buffer memory Var_TransData[0] n1 n2 n3 H400 МО User frame 0 ENO ΕN H3F2 ar_Frame[0] User frame 1 MO' ΕN ENO H3F3 ar_Frame[1] User frame 2 MOV ΕN ENO H8001 ar_Frame[2] User frame 3 MO' ENO ΕN H8000 ar_Frame[3] User frame 4 MON ENO ΕN H41B ar_Frame[4] User frame 5 MO' ENO ΕN 0 ar_Frame[5] Sets user frames TO ENO ΕN to buffer memory Var_Frame[0] H8 n1 HOBA 6 n3 3 /ar_Flag_Inst MOV Sets transmission ΕN ENO channel to 1 1 ControlData[0] Clears transmission MOV ENO ΕN result 0 ControlData[1] MOV ENO Sets CR/LF to 'CR/LF ΕN not added' HO ControlData[2] Sets transmission MO' V ENO ΕN pointer H1 ControlData[3] Sets number of MOV ΕN ENO send data H5 ControlData[4] GP_PRR EN ENO Un* Performs user frame transmission H08 ar_Result Var. ControlDate SET EN ENO 4 /ar_Result[0] · Var_Result[1] Turns normal completion -171 -1 - 1 flag ON ar_Flaq_Normal Var_Result[1] SET EN ENO Turns error completion -|| · ||flag ON 'ar Flag Error

[Structured ladder/FBD]

[ST] (* Transmission instruction pulse *) PLS(X50, Var_Flag_Inst); IF((Var_Flag_Inst=TRUE) & (X9E=TRUE) & (X9F=FALSE))THEN MOV(TRUE, 4, Var TransData[0]); (* Sets number of send data *) MOV(TRUE, H1234, Var TransData[1]); (* Sets desired send data *) MOV(TRUE, H56AB, Var_TransData[2]); TO(TRUE, Var_TransData[0], H8, H400, 3); (* Sets send data to buffer memory *) MOV(TRUE, H3F2, Var_Frame[0]); (* Sets user frame 0 *) MOV(TRUE, H3F3, Var Frame[1]); (* Sets user frame 1 *) MOV(TRUE, H8001, Var Frame[2]); (* Sets user frame 2 *) MOV(TRUE, H8000, Var_Frame[3]); (* Sets user frame 3 *) MOV(TRUE, H41B, Var Frame[4]); (* Sets user frame 4 *) MOV(TRUE, 0, Var_Frame[5]); (* Sets user frame 5 *) TO(TRUE, Var_Frame[0], H8, H0BA, 6); (* Sets user frames to buffer memory *) END IF; IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 1, Var_ControlData[0]); (* Sets transmission channel to 1 *) MOV(TRUE, 0, Var_ControlData[1]); (* Clears transmission result *) MOV(TRUE, H0, Var ControlData[2]); (* Sets CR/LF to 'CR/LF not added' *) MOV(TRUE, H1, Var ControlData[3]); (* Sets transmission pointer *) MOV(TRUE, H5, Var_ControlData[4]); (* Sets number of send data *) GP PRR(TRUE, H08, Var ControlData, Var Result); (* Performs user frame transmission *) END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END IF; END_IF;

ZP_CSET

5.3.10 CSET instruction (initial setting)

						Sei	rial
ZP_CSET					Executing condition	:	
Structured I EN Un* s1 s2		ENO:=ZP_C	ST :SET (EN, Un*, s1, s2, d	1, d2);	ZP_CSET	owing instr	uctior
Input argument	Un*: Start (00 t	-	the module o digits when expressing	the I/O number i	:Bit :String n		
	s1: Rece 1: Cl	digits) ption channel i annel 1 (CH1 s annel 2 (CH2 s	side)		:ANY16		
Output argument	s2: Varia ENO: Exec d1: Dum d2: Varia	ble that stores ution result ny ble that turns C			:Array of ANY16 [0111] :Bit :ANY16 :Array of bit [01]		
	Settin data		I device R, ZR Word	J∖ Bit V	U[]]\G[]] Zn	Constant K, H	Othe
	(s1)	-	0		_	0	_
	62	-	0		_	-	_
	đ	-	0		-	-	
	d2	0	0		-	-	-

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction changes the setting values for sending/receiving data using communication protocols.

5-89

ZP_CSET

5

E DEDICATED

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0'.	0	User
s2[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
€2 [2]	Request type	Specify the request. 1: Change of unit (word/byte) and buffer memory assignment	1	User
2[3]	Word/byte unit specification	Specify the unit of the number of send/receive data. 0: Current setting value 1: In units of words 2: In units of bits	0,1,2	User
s2 [4]	Buffer memory start address for on- demand function	Specify the start address of the buffer memory used by the on-demand function 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1AFFн, 2600н to 3FFFн	User
ଛ2[5]	Buffer memory size for on-demand function	Specify the size (the number of words) of the buffer memory to be used by the on-demand function. 0н: Current setting value is used. 1н to 1A00н: Size	0н, 1н to 1А00н	User
@[6]	Send area start address	Specify the start address of the send area used for the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1АFFн, 2600н to 3FFFн	User
@[7]	Send area size	Specify the size (the number of words) of the send area used by the nonprocedural/bidirectional protocol. 0H: Current setting value is used. 1H to 1A00H: Size * The start area of the send area (1 word) is used for the number of send data specification area.	0н, 1н to 1А00н	User
⊚[8]	Receive area start address	Specify the start address of the receive area used for the nonprocedural/bidirectional protocol. 0н: Current setting value is used. 400н to 1AFFн, 2600н to 3FFFн: Start address	0н, 400н to 1AFFн, 2600н to 3FFFн	User
@[9]	Receive area size	Specify the size (the number of words) of the receive area used for the nonprocedural/bidirectional protocol. Он: Current setting value is used. 1н to 1A00н: Size * The start area of the receive area (1 word) is used for the number of receive data storage area.	0н, 1н to 1А00н	User
© [10] to © [111]	For system	_	_	System

Program Example

The following program changes the send buffer area of the CH1 side interface.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

- Sets send buffer to C00H to FFFH.
- Sets receive buffer to 600H to 7FFH.

[Structured ladder/FBD]

1	Var_Flag_Inst FMOVP Image: Inst Image: Inst Image: Inst Image: Image: Inst Image: Image: Inst Image: Ima	Clears D0 to D111 to 0
	Image: Non-state of the state of the st	Sets execution type
	MOVP EN ENO s dVar_ControlData[2]	Sets request type
	MOVP EN ENO s dVar_ControlData[3] ·	Sets word/byte unit to word
	MOVP EN ENO S dVar_ControlData[4]	Sets on-demand start address
		Sets on-demand buffer size
	MOVP EN ENO s d Var ControlData[6]	Sets send buffer start address
	MOVP EN ENO s d ControlData[7]	Sets send buffer size
	MOVP EN ENO s d Var ControlData[8]	Sets receive buffer start address
		Sets receive buffer size
	H200 s d Var_ControlData[9] ZP_CSET	Performs initialization
2	Var_Result[0] Var_Result[1] s1 d2 Var_Result[1]	Turns normal
	EN ENO d Var_Flag_Normal	completion flag ON
	SET SET <td>Turns error completion flag ON</td>	Turns error completion flag ON

ULE DEDICATED RUCTION **G**

ZP_CSET

[ST] IF(Var_Flag_Inst=TRUE)THEN FMOVP(TRUE,0,112, Var_ControlData[0]); MOVP(TRUE, 0, Var_ControlData[0]); MOVP(TRUE, 1, Var_ControlData[2]); MOVP(TRUE, 1, Var_ControlData[3]); MOVP(TRUE, H400, Var_ControlData[4]); MOVP(TRUE, 0, Var_ControlData[5]); MOVP(TRUE, H400, Var_ControlData[6]); MOVP(TRUE, H400, Var_ControlData[6]); MOVP(TRUE, H400, Var_ControlData[7]); MOVP(TRUE, H400, Var_ControlData[8]); MOVP(TRUE, H200, Var_ControlData[9]); ZP_CSET(TRUE, "00", 1, Var_ControlData,	(* Sets execution type *) (* Sets request type *) (* Sets word/byte unit to word *) (* Sets on-demand start address *) (* Sets on-demand buffer size *) (* Sets send buffer start address *) (* Sets send buffer size *) (* Sets receive buffer start address *) (* Sets receive buffer size *) Var_Dummy, Var_Result);
END_IF;	(* Performs initialization *)
IF(Var_Result[0]=TRUE)THEN IF(Var_Result[1]=FALSE)THEN SET(TRUE, Var_Flag_Normal); ELSE SET(TRUE, Var_Flag_Error); END_IF; END_IF;	(* Execution finished *) (* Normal completion *) (* Turns normal completion flag ON *) (* Error completion *) (* Turns error completion flag ON *)

5.3.11 CSET instruction (programmable controller CPU monitor)

ZP_CSET

							Serial
ZP_CSET						Executing condition	: 🕈
Structured Ia			NO:= ZP_CSE	ST (EN, Un*, s1, s2, d7	1, d2);	ZP_CSET	owing instruction
Input argument	EN: Un*:	Start I/O r (00 to FE		module igits when expressing	the I/O numbe	:Bit :String r in	
	s1:	1: Chann	n channel nun el 1 (CH1 side	e)		:ANY16	
Output argument	s2: ENO: d1: d2:	Variable t Executior Dummy Variable t	hat turns ON			:Array of ANY16 [0111] :Bit :ANY16 :Array of bit [01]	
		Setting data ^{*1}	Internal de Bit	evice R, ZR Word	J∰\É.	〕 Word U∭\G∭ Zn	Constant K, H
	Ī	§1	-	0		_	0
		62	-	0		-	_
		dl	-	0		-	-

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction registers and cancels the programmable controller CPU monitoring.

(1)	Registering the	programmable controller	CPU monitoring
-----	-----------------	-------------------------	----------------

Device		Item	Setting data	Setting range	Setting side
s2 [0]	Execution type		Specify '0'.	0	User
@[1]	Co	mpletion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s2 [2]	Re	quest type	Specify the request. 2: Registration of programmable controller CPU monitoring	2	User
s2 [3]	Су	cle time unit	Specify the unit of cycle time. 0: 100ms 1: Second 2: Minute	0 to 2	User
s2 [4]	Су	cle time	Specify the cycle time. 1H to FFFFH: Cycle time	1н to FFFFн	User
s2 [5]		ogrammable controller CPU monitoring	Specify the monitoring function. 1: Constant cycle transmission 2: Condition agreement transmission	1,2	User
s2 [6]	Programmable controller CPU monitoring transmission method		Specify the transmission method. 0: Data transmission (device data, CPU error information) 1: Notification	0,1	User
⊚[7]		User frame output start pointer	Specify the start pointer of the table to which the user frame number for constant cycle transmission is set. 0 : No specification (at condition agreement transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User
€2 [8]	Constant cycle transmission	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for constant cycle transmission. 0 : No specification (at condition agreement transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
@[9]		Modem connection data No.	Specify the data number for modem function connection when making notification in constant cycle transmission. 0 : No specification (at data transmission and condition agreement transmission) BB8H to BD5H : Connection data number (flash ROM) 8001H to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User
s2 [10]	Number of registered word blocks		Specify the number of blocks of the word device to be monitored.	0 to 10	User
፼ [11]	Number of registered bit blocks		Specify the number of blocks of the bit device to be monitored.	0 to 10	User
⊚[12]	Programmable controller CPU error monitoring (programmable controller CPU status monitoring)		Specify whether to also execute programmable controller CPU error monitoring. 0: Not monitored 1: Monitored	0,1	User

Device			Item	Setting data	Setting range	Setting side
s2 [13]		Device code		Specify the code of the device to be monitored. 0 : No device monitored Other than 0 : Device code	90н to CCн (Device code)	User
s₂ [14] s₂ [15]		Мо	nitoring start device	Specify the start number of the monitoring device in this block.	0 or more	User
ଛି [16]		Nu	mber of registered points	Specify the number of registered points (read points) of this block. 0 : No device monitored 1 or more : Number of registered points * For a bit device, specify the number of points in units of words.	0, 1 or more	User
፼[17]			Monitoring condition	Specify the monitoring condition of this block. 0 : No specification (at constant cycle transmission) 1 or more : Monitoring condition	0 to 65535	User
ଽୖ2[18]	Dragrammable		Monitoring condition value	Specify the monitoring condition value for this block. 0 or more: Monitoring condition * Specify '0' at constant cycle transmission.	0 to 000Ан, 0101н to 010Ан	User
⊚[19]	Programmable controller CPU monitoring setting 1st * 1st block	1	User frame output start pointer	Specify the start pointer of the table to which the user frame number for condition agreement transmission for this block is set. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User
@[20]		Condition agreement transmission	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for condition agreement transmission for this block. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
፼[21]			Modem connection data No.	Specify the data number for modem function connection when making notification in condition agreement transmission for this block. 0 : No specification (at data transmission and constant cycle transmission) BB8н to BD5н : Connection data number (flash ROM) 8001н to 801Fн: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User
© [22] to © [102]	Programmable controller CPU monitoring setting 2nd to 10th * 2nd to 10th blo	ock	1	The same item arrangement as the first programmable controller CPU monitoring setting item.	_	User

Device			Item	Setting data	Setting range	Setting side		
© [103]					1			
s2 [104]					0			
s2 [105]					0	1 January		
s2 [106]			Fixed value	Specify a fixed value to monitor the CPU status.	1	User		
s2 [107]	+				5			
© [108]					1			
⊚[109]	CPU status monitoring setting	t transmission	User frame output start pointer	Specify the start pointer of the to which the user frame number for condition agreement transmission for this block is set. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Start pointer	0, 1 to 100	User		
⊚[110]	* Error monitoring 11th * 11th block	Condition agreement transmission	Condition agreemen	Condition agreemen	Number of user frame transmissions	Specify the number of user frame transmissions (outputs) for condition agreement transmission for this block. 0 : No specification (at constant cycle transmission and notification) 1 to 100 : Number of transmissions	0, 1 to 100	User
⊚[111]	*		Modem connection data No.	Specify the data number for modem function connection when making notification in condition agreement transmission for this block. 0 : No specification (at data transmission and constant cycle transmission) BB8H to BD5H : Connection data number (flash ROM) 8001H to 801FH: Connection data number (buffer memory)	0, ВВ8н to ВD5н, 8001н to 801Fн	User		

(2) Canceling the programmable controller CPU monitoring

Device	Item	Setting data	Setting range	Setting side
s2 [0]	Execution type	Specify '0н'.	0	User
@[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
⊚[2]	Request type	Specify the request. 3: Cancel of the programmable controller CPU monitoring	3	User
© [3] to © [111]	For system	-	-	System

Program Example

Program to register the programmable controller CPU monitoring
 The following program registers the programmable controller CPU monitoring and sends the
 monitoring result from the CH1 side interface.
 The following setting is to send content of devices from M0 to M15 and devices from D100 to
 D109 to the external device through the constant cycle transmission. (Cycle time: 3 minutes)

·X24 Instruction pulse PLS ΕN ENO /ar_Flag_Inst d 2 Sets execution type Var_Flag_Inst Var_Flag_Normal MOVP ΕN ENO 0 d ControlData[0] Sets request type MOVE ΕN ENO 2 ControlData[2] d Sets cycle time unit MO' ΕN ENO to minute · 2 ar_ControlData[3] d Sets cycle time MOVP ΕN ENO to 3 minutes 3 d ControlData[4] Sets programmable controller MOVP CPU monitoring function to ΕN ENO constant cycle transmission · 1 d ar_ControlData[5] Sets transmission method MOVE ΕN ENO to data transmission 0 ControlData[6] s d Sets output start pointer ΕN ENO · 1 d ControlData[7] Sets number of user MO ΕN ENO frame transmissions 2 ControlData[8] d Turns data set flag ON SET ΕN ENO /ar_Flaq_Set d

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F)

[Structured ladder/FBD]

continued on the next page

3	Var_Flag_Set · · · · · · · · · · · · · · · · MOVP	Poto number of registered
5		Sets number of registered word blocks
	MOVP	Sets number of registered
	EN ENO	bit blocks
	MOVP	Sets device code
	EN ENO	Ceta device code
		Sets start number of
	EN EN EN	monitoring device
	· · · · · · · · · · · · · · · · · ·	
	Var_ControlData[15]	
		Sets number of registered points
	Var_ControlData[16]	
	MOVP EN ENO - · · · · · · · · ·	Sets device code
	H90 s d Var_ControlData[22]	
	моvр • • • • • • • • • • • • • • • • • • •	Sets start number of monitoring device
	□ · · · · · · · · · · · · · · · · · · ·	
	моvр ем ем ем ем ем на	
	Var_ControlData[24]	
		Sets number of registered points (For bit device, specify it in units
	s d	of words)
		Turns execution flag ON
	d	
	RST	Turns data set flag OFF
	d Var_Flag_Set	
4		Pagiatara programmabla
4	Var_Flag_Exe ZP_CSET Image: Section of the section	Registers programmable controller CPU monitoring
	····································	
5		Towns a second second stice
5	Var_Result[0] · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
		Turne error completion
		Turns error completion flag ON
	d —Var_Flag_Error	-
		Turns execution flag OFF
	d	
	· •	

[ST] PLS(X24, Var_Flag_Inst); (* Instruction pulse *) IF((Var_Flag_Inst=TRUE) & (Var_Flag_Normal=FALSE))THEN MOV(TRUE, 0, Var ControlData[0]); (* Sets execution type *) MOV(TRUE, 2, Var_ControlData[2]); (* Sets request type *) MOV(TRUE, 2, Var_ControlData[3]); (* Sets cycle time unit to minute *) MOV(TRUE, 3, Var ControlData[4]); (* Sets cycle time to 3 minutes *) MOV(TRUE, 1, Var_ControlData[5]); (* Sets programmable controller CPU monitoring function to constant cycle transmission. *) MOV(TRUE, 0, Var_ControlData[6]); (* Sets transmission method to data transmission *) MOV(TRUE, 1, Var ControlData[7]); (* Sets output start pointer *) MOV(TRUE, 2, Var_ControlData[8]); (* Sets number of user frame transmissions *) SET(TRUE, Var Flag Set); (* Turns data set flag ON *) END IF; IF(Var Flag_Set=TRUE)THEN MOV(TRUE, 1, Var_ControlData[10]);(* Sets number of registered word blocks *) MOV(TRUE, 1, Var_ControlData[11]);(* Sets number of registered bit blocks *) (* Sets the 1st block of the CPU monitoring to D100 to D109 *) MOV(TRUE, H0A8, Var ControlData[13]); (* Sets device code *) MOV(TRUE, 100, Var_ControlData[14]);(* Sets start number of monitoring device *) MOV(TRUE, 0, Var ControlData[15]); MOV(TRUE, 10, Var_ControlData[16]); (* Sets number of registered points *) (* Sets the 2nd block of the CPU monitoring to M0 to M15 *) (* Sets device code *) MOV(TRUE, H90, Var ControlData[22]); MOV(TRUE, 0, Var_ControlData[23]);(* Sets start number of monitoring device *) MOV(TRUE, 0, Var_ControlData[24]); MOV(TRUE, 1, Var ControlData[25]); (* Sets number of registered points. (For bit device, specify it in units of words.) *) SET(TRUE, Var Flag Exe); (* Turns execution flag ON *) RST(TRUE, Var Flag Set); (* Turns data set flag OFF *) END_IF; IF(Var Flag Exe=TRUE)THEN ZP CSET(TRUE, "00", 1, Var ControlData, Var Dummy, Var Result); (* Registers the programmable controller CPU monitoring *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(TRUE, Var Flag Normal); ELSE (* Error completion *)

SET(TRUE, Var_Flag_Error); END_IF;

RST(TRUE, Var_Flag_Exe); END_IF; (* Turns execution flag OFF *)

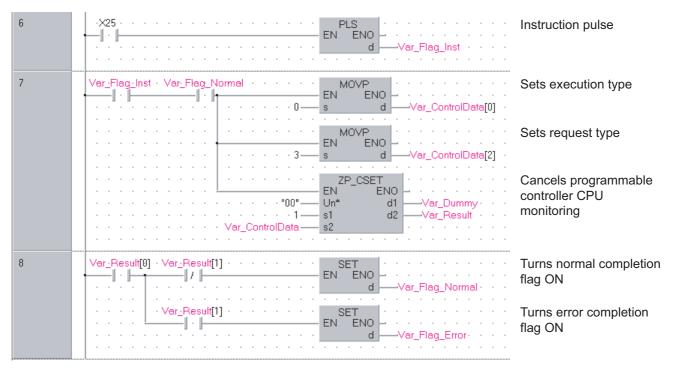
(* Turns error completion flag ON *)

INSTRUCTION

5

(2) Program to cancel the programmable controller CPU monitoring The following program cancels the programmable controller CPU monitoring of the CH1 side interface.

(For the Q series C24 whose I/O signals are X/Y00 to X/Y1F) [Structured ladder/FBD]



[ST]

END_IF;

PLS(X25, Var_Flag_Inst); (* Instruction pulse *) IF((Var_Flag_Inst=TRUE) & (Var_Flag_Normal=TRUE))THEN MOV(TRUE, 0, Var_ControlData[0]); (* Sets execution type *) MOV(TRUE, 3, Var_ControlData[2]); (* Sets request type *) ZP CSET(TRUE, "00", 1, Var ControlData, Var Dummy, Var Result); (* Cancels programmable controller CPU monitoring *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(TRUE, Var_Flag_Normal); ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END IF;

G_PUTE

Serial

5.3.12 PUTE instruction

G(P)_PUTE						P: Executing co	ndition : _	
Structured I GPU EN Un* s1 s2		3D 	ENO:= G	ST PUTE (EN, Un*, s1, s2	2, d);	G_PUTE	tes any of the GP_PU	-
Input argument	EN: Un*:	Start I/C		he module o digits when expressing	the I/O number in	:Bit :ANY16 n		
	s1:		that stores			:Array of ANY16 [03]]	
Output argument	s2: ENO:		mber of the o	device that stores read r	egistration data	:ANY16 :Bit		
	d:			N upon completion of th t the time of error comple		:Array of bit [01]		
		Setting data *1	Interna Bit	Word R, ZR	J\	Vord U∭\G∭	Zn	Constant Others
		s1	-	0		-		
		(s2)	-	0		_		
		d	0	0		_		

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction registers a user frame.

Control Data

Device	Item	Setting data	Setting range	Setting side
s1 [0]	Registration/deletion specification	Specify whether to register/delete the user frame of the number specified by (5) [2]. 1: Registered 3: Deleted	1, 3	User
s1[1]	Registration/deletion result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1 [2]	Frame No.	Specify the user frame number.	1000 to 1199	User
st [3]	Number of registered bytes	1 to 80: Number of bytes of the user frame to be registered. * Specify any number in the range from 1 to 80 as a dummy when '3: Deleted' is selected.	1 to 80	User

Program Example

The following program registers a user frame as the registration number 3E8H.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

[Structured ladder/FBD]

1	·×50 · · · · · · · · · · · · · · · · · · ·	Registration request pulse
2	Var_Flag_Inst MOV EN ENO S d Var_ControlData[0]	Sets registration request
	H3E8 B d Var_ControlData[2]	Sets user frame number
	EN ENO 	Sets number of registered bytes
	H3946 — s d ──Var_Frame[0]	User frame 0
	EN ENO s ds ds d	User frame 1
	EN ENO 	User frame 2
	EN MOV EN ENO 	User frame 3
	EN MOV EN ENO s d	User frame 4
	TO EN ENO 	Sets write enable in flash ROM side
	G_PUTE EN ENO 	Registers user frame
3	Var_Result[0] · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
	Var_Result[1] · · · · · EN ENO dVar_Flag_Error·	Turns error completion flag ON

[ST] PLS(X50, Var_Flag_Inst); (* Registration request pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 1, Var ControlData[0]); (* Sets registration request *) MOV(TRUE, H3E8, Var ControlData[2]); (* Sets user frame number *) MOV(TRUE, 10, Var_ControlData[3]); (* Sets number of registered bytes *) MOV(TRUE, H3946, Var_Frame[0]); (* User frame 0 *) MOV(TRUE, H3030, Var_Frame[1]); (* User frame 1 *) MOV(TRUE, H3030, Var_Frame[2]); (* User frame 2 *) MOV(TRUE, H4646, Var Frame[3]); (* User frame 3 *) MOV(TRUE, H3030, Var_Frame[4]); (* User frame 4 *) TO(TRUE, 1, H08, H2000, 1); (* Sets write enable in flash ROM side *) G_PUTE(TRUE, H08, Var_ControlData, Var_Frame[0], Var_Result); (* Registers user frame *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END IF;

```
END_IF;
```

DULE DEDICATED

5.3.13 GETE instruction

G(P)_GETE P: Executing condition : 🕈 indicates any of the following Structured ladder/FBD instructions. ST G_GETE GP_GETE G_GETE ΕN ENO ENO:= G_GETE (EN, Un*, s1, s2, d); Un' d s1 s2 :Bit Input argument EN: Executing condition :ANY16 Un*: Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) s1: Variable that stores control data :Array of ANY16 [0..3] Start number the device that stores the read registration data :ANY16 s2: Output argument ENO: :Bit Execution result :Array of bit [0..1] d: Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion. Setting Internal device J....\.... Others R, ZR U...\G... Constant Zn data *1 Bit Word Bit Word (s1) 0 s2) _ d _ *1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads a user frame.



Control Data

Device	Item	Setting data	Setting range	Setting side
s1[0]	Dummy	-	0	-
s1[1]	Read result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[2]	Frame No. specification	Specify the user frame number.	1000 to 1199	User
st [3]	Allowable number of bytes for read data	Specify the maximum number of bytes for storing the registered data of the read user frame to @.	1 to 80	User
	Number of registered bytes	The number of bytes of the registered data for the read user frame is stored.	1 to 80	System

Program Example

The following program reads out the registration data of the user frame number 3E8H.

(For the Q series C24 whose I/O signals are X/Y80 to X/Y9F)

[Structured ladder/FBD]

1	·X51 ····· EN EN ENO ····· ····· ····· ····· ····· ····· ····· ·····	Read request pulse
2	Var_Flag_Inst MOV Image: State S	
	H3E8 H3E8 d Var_ControlData[2]	Sets user frame number Sets allowable number
	Image: Move and the second	of bytes for read data
	······ ······ ······ FMOV ····· ····· ····· EN ENO ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ······ ······ ······ ····· ······ ····· ······ ······ ····· ······ ······ ······ ······ ····· ······· ······ ······ ······	Clears user frame to 0
	G_GETE EN ENO Un* d Var_ControlData s1 S2	Reads user frame
3	Var_Result[0] · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	Turns normal completion flag ON
	····· ····· SET ····· ····· ····· EN ENO d ····· ·····	Turns error completion flag ON

G_GETE

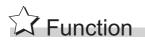
[ST] PLS(X51, Var_Flag_Inst); (* Read request pulse *) IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE, 0, Var_ControlData[0]); MOV(TRUE, H3E8, Var_ControlData[2]); (* Sets user frame number *) MOV(TRUE, 80, Var_ControlData[3]); (* Sets allowable number of bytes for read data *) FMOV(TRUE, 0, 40, Var_Frame[0]); (* Clears user frame to 0 *) G_GETE(TRUE, H08, Var_ControlData, Var_Frame[0], Var_Result); (* Reads user frame *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal); (* Turns normal completion flag ON *) ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END_IF; END_IF;

5-106

ZP_UINI

5.3.14 UINI instruction

Serial **ZP_UINI** Executing condition : indicates the following instruction. Structured ladder/FBD ST ZP_UINI ZP_UINI ΕN ENO ENO:= ZP_UINI (EN, Un*, s, d); Un' d s :Bit Input argument Executing condition EN: Un*: :String Start I/O number of the module (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..9] s: Output argument Execution result :Bit ENO: Variable that turns ON upon completion of the instruction d: :Array of bit [0..1] d[1] also turns ON at the time of error completion. Setting Internal device J....\.... R, ZR Zn Constant Others U....\G.... data^{*1} Bit Word Word Bit (s)(d) *1: Local devices and file registers per program cannot be used as setting data.

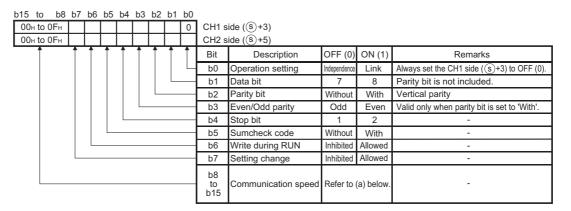


This instruction switches the mode, transmission specification, and host station number of the Q series C24.

Control Data

Device	Item	Setting data	Setting range	Setting side
⑤ [0]	For system	Always specify '0'.	0	User
\$[1]	Execution result	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ[2]	Execution type	 Specify the execution type. 0: Switches the execution type according to the setting in the area starting from (\$[3]]. 1: Returns the execution type according to the switch setting on GX Works2. 	0, 1	
s [3]	CH1 Transmission specification setting	Set the transmission specifications for CH1. (Refer to (1).)	0 to 0FFEн	
ঙ [4]	CH1 Communication protocol setting	Set the communication protocol for CH1. (Refer to (2).)	0 to 8	User
\$[5]	CH2 Transmission specification setting	Set the transmission specifications for CH2. (Refer to (1).)	0 to 0FFFн	
\$[6]	CH2 Communication protocol setting	Set the communication protocol for CH2. (Refer to (2).)	0 to 7	
⑤ [7]	Station No. setting	Set the host station number.	0 to 31	
\$[8] to \$[12]	For system	Always specify '0'.	0	

(1) $\,\,\,^{(1)}$ $\,\,^{(2)}$ [3] (CH1 Transmission specification setting) and $\,^{(3)}$ [5] (CH2 Transmission specification setting) *1



(a) Communication speed

Communication	Bit position	Communication	Bit position	Remarks
speed	b15 to b8	speed	b15 to b8	Kennarks
50bps	0Fн	14400bps	06н	• 230400bps is selectable only at
300bps	00н	19200bps	07н	, , ,
600bps	01н	28800bps	08н	CH1 side ($($ (\mathbb{S})[3]). (Select 300bps at
1200bps	02н	38400bps	09н	CH2 side (⑤ [5]).)
2400bps	03н	57600bps	0Ан	• The sum of communication speeds
4800bps	04н	115200bps	0Вн	selected at CH1 side and CH2 side must be within 230400bps.
9600bps	05н	230400bps	0Сн	

*1: Specify '0000H' at the CH side for which "MELSOFT connection" is specified in the communication protocol setting.

(2) $\$ (CH1 Communication protocol setting) and $\$ (6] (CH2 Communication protocol setting)

Setting No.	Description		Remarks
0н	MELSOFT connection		Specify '0000H' for the transmission specification setting.
1н		Format 1	-
2н		Format 2	-
3н	MC protocol	Format 3	-
4н		Format 4	-
5н		Format 5	-
6н	Nonprocedural protocol		-
7н	Bidirectional protocol		-
8н	For link setting		Setting is possible only for CH1 side (⑤[4])
9н	Pre-defined protocol		Pre-defined protocol communication

Precautions

The UINI instruction is applicable to the QJ71C24N (-R2/R4) of which the function version is B and the first five digits of the serial number are '06062' or higher.

Program Example

The following program changes settings of the Q series C24 mounted on the I/O numbers X/Y00 to X/Y1F as follows when X20 turns ON.

		Bit		Setting		
Device	Position	Specified value		Description		value
	b0	OFF		Operation setting	Independence	
	b1	ON	-	Data bit	8	t
	b2	ON		Parity bit	With	Ť
	b3	OFF	CH1	Even/Odd parity	Odd	Ť
	b4	OFF	Transmission	Stop bit	1	07E6H
s [3]	b5	ON	specification	Sumcheck code	With	072011
	b6	ON	setting	Write during RUN	Allowed	Ť
	b7	ON		Setting change	Allowed	•
	b8 to b15	-	-	Communication speed	19200bps	
s [4]		-		unication protocol setting	Link setting	0008H
	b0	ON		Operation setting	Link	-
	b1	ON	-	Data bit	8	
	b2	ON	-	Parity bit	With	
	b3	OFF	CH2	Even/Odd parity	Odd	
	b4	OFF	Transmission	Stop bit	1	07E7H
s [5]	b5	ON	specification	Sumcheck code	With	0/2/11
	b6	ON	setting	Write during RUN	Allowed	†
	b7	ON	-	Setting change	Allowed	†
	b8 to b15	-		Communication speed	19200bps	
S [6]		-		unication protocol setting	MC protocol Format 5	0005H
s [7]		-	Station	No. setting	1	0001H

1	·×20 ···Y2 ···Y3 ···×6 ···×00 ····· FMOV I↑ I ····I / I····I / I····I / I····I ··· EN H0 ····· H0 ····· s d -Var_ControlData[0] n	UINI instruction command
	H0 s dVar_ControlData[0	Always sets 0
	H0 s dVar_ControlData[1	Clears control data to 0
	H0 s d	
	H7E6 s d	Sets CH1 transmission
	H8 s dVar_ControlData[4	Sets CH1 communication protocol
	H7E7 s dVar_ControlData[5	Sets CH2 transmission specification
	H5 s d -Var_ControlData[6	•
	H1 — s d —Var_ControlData[7	
	ZP_UINI EN ENO Var_ControlData s	Switches mode
	EN ENO d Var_Flag	Turns interlock signal for*1 communication stop ON
2	Var_Result[0] · Var_Result[1] · Process on normal comple	tion Normal completion
	Process on error completio	· · · · ·
	BRST CN EN EN C Var_Flag	Turns interlock signal for communication stop OFF*1
3	Var Flag *1.	ss

[Structured ladder/FBD]

*1: Create a program so that the data communication process does not run while the interlock signal for communication stop is ON.

```
[ST]
IF(LDP(TRUE,X20)
                                                     (* UINI instruction command *)
&(Y2=FALSE)
                                               (* CH1 mode switching request *)
&(Y9=FALSE)
                                               (* CH2 mode switching request *)
&(X6=FALSE)
                                               (* CH1 mode switching *)
&(X0D=FALSE))THEN
                                               (* CH2 mode switching *)
    (* Runs if there is no mode switching *)
    FMOV(TRUE, H0, 13, Var ControlData[0]); (* Clears control data to 0 *)
    MOV(TRUE, H0, Var_ControlData[0]);
                                               (* Always sets 0 *)
    MOV(TRUE, H0, Var_ControlData[1]);
                                               (* Clears execution result to 0 *)
    MOV(TRUE, H0, Var ControlData[2]);
                                               (* Sets execution type *)
    MOV(TRUE,H7E6,Var_ControlData[3]); (* Sets CH1 transmission specification *)
    MOV(TRUE,H8,Var_ControlData[4]); (* Sets CH1 communication protocol *)
    MOV(TRUE, H7E7, Var_ControlData[5]); (* Sets CH2 transmission specification *)
    MOV(TRUE, H5, Var_ControlData[6]);(* Sets CH2 communication protocol *)
    MOV(TRUE, H1, Var_ControlData[7]);
                                              (* Sets host station number *)
    ZP UINI(TRUE, "00", Var ControlData, Var Result); (* Switches mode *)
    SET(TRUE, Var_Flag); (* Turns interlock signal for communication stop ON *)*1
END_IF;
```

IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
RST(TRUE, Var_Flag); (* Turns interlock sig	gnal for communication stop OFF *) ^{*1}

END_IF;

(* Do not perform the data communication process during interlock signal for communication stop ON *)

IF(Var_Flag=FALSE)^{*1} THEN

·····	,
(* Data communication process *)	
·i_`	نا

END_IF;

*1: Create a program so that the data communication process does not run while the interlock signal for communication stop is ON.

5.3.15 CPRTCL instruction

Serial G(P)_CPRTCL P: Executing condition : 🕈 indicates any of the following instructions. Structured ladder/FBD ST G_CPRTCL GP_CPRTCL G_CPRTCL ENO ΕN _ Un' d ENO:= G_CPRTCL (EN, Un*, n1, n2, s, d); n1 n2 s Input argument EN: Executing condition :ANY16 Un*: Start I/O number of the module :ANY16 (00 to FE: Higher two digits when expressing the I/O number in three digits) ·ANY16 n1: Channel to communicate with other devices 1: Channel 1 (CH1 side) 2: Channel 2 (CH2 side) n2: Number of consecutive protocol executions (1 to 8) :ANY16 Start number of the device in which control data are stored :Array of ANY16 [0..17] s: Output argument ENO: :Bit Execution result d: Variable that turns ON upon completion of the instruction :Array of bit [0..1] d[1] also turns ON at the time of error completion.

Setting	Internal	device	R, ZR	JIII\III		U∭\G∭	Zn	Constant	Others
data ^{*1}	Bit	Word	., <u></u> ,	Bit	Word	0(G		К, Н	Guidie
n1	_	C)			-		0	-
n2	-	C	\sim			-		0	-
\$	-	C)			-		-	_
d	0	C)			-		Ι	-

*1: Local devices and file registers per program cannot be used as setting data.

G_CPRTCL

This instruction executes the protocols and functional protocols written to the flash ROM by predefined protocol support function.

Control Data

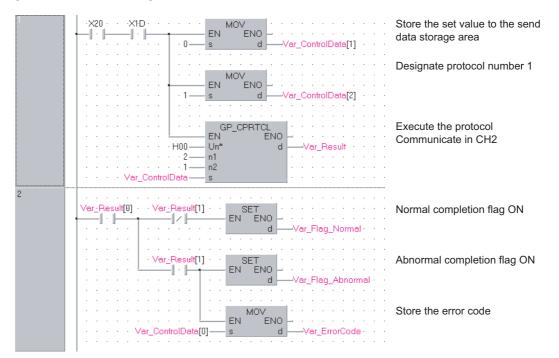
Device	Item	Setting data	Setting range	Setting side
		The instruction completion status is stored.		
		When executing multiple protocols, the execution		
⑤ [0]	Completion status	result of the protocol executed at last is stored.*1	-	System
		0 : Normal completion		
		Other than 0 : Error completion (error code) ^{*2}		
		The number of executions is stored.		
© [1]	Number of executions	Protocols with errors are included in the count.	1 to 8	System
⑤ [1]		When settings of the setting data and control data	1100	System
		contain an error, "0" is stored.		
⑤ [2]		Set the first protocol number or functional protocol		
0[2]	Execution protocol	number to be executed.	1 to128,	
to	number designation	:	201 to 207	User
⑤ [9]		201 10 201		
@[a]		number to be executed.		
		When the communication type of the first protocol		
		executed is "Receive only" or "Send & receive", the		
		matched receive packet number is stored.		
s[10]		"0" is stored with the following condition.		
		When the communication type is "Send only"		
		• If the error occurs to the first protocol executed		
		When the functional protocol is executed		
to	Verification match	:		
	receive packet number	When the communication type of the 8th protocol	0, 1 to 16	System
		executed is "Receive only" or "Send & receive", the		
		matched receive packet number is stored.		
		"0" is stored with the following condition.		
s[17]		When the communication type is "Send only"		
		If the error occurs to the 8th protocol executed		
		• When the number of the executed protocols is		
		less than 8		
		When the functional protocol is executed		

*1: When executing multiple protocols, if an error occurs to the nth protocol, the protocols after the nth protocol are not executed.

*2 : For details of the error code at the error completion, refer to Q Corresponding Serial Communication Module User's Manual (Basic) or MELSEC-L Serial Communication Module User's Manual (Basic).

Program Example

This instruction executes the protocol specified in Var_ControlData[2] when X20 turns ON. [Structured ladder/FBD]



[ST]

IF((X20=TRUE) & (X1D=TRUE))THEN

MOV(TRUE, 0, Var_ControlData[1];

(* Store the set value to the send data storage area *) MOV(TRUE, 1, Var_ControlData[2];(* Designate protocol number 1 *) GP_CPRTCL(TRUE, H00, 2, 1, Var_ControlData, Var_Result);

(* Execute the protocol Communicate in CH2 *)

END_IF;

IF(Var_Result[0]=TRUE)THEN

IF(Var_Result[1]=FALSE)THEN

SET(TRUE, Var_Flag_Normal);(* Normal completion flag ON *)

ELSE

SET(TRUE, Var_Flag_Abnormal);(* Abnormal completion flag ON *) MOV(TRUE, Var_ControlData[0], Var_ErrorCode);

(* Store the error code *)

END_IF; END_IF;

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5.4 Network Dedicated Instruction

5.4.1 RIRD instruction

						J_	_RIRD, G_RIRI
						l	CC-Link CC IE C CC IE F
J(P)_RIRD G(P)_RIRD						P: Executing c	ondition : 🖣
Structu I RRD EN ENO Jn* d1 s d2	red ladder.	G_RIRD	- E	hannand	*, s, d1, d2); *, s, d1, d2);	instructions. J_RIRD G_RIRD	cates any of the following JP_RIRD GP_RIRD
Input argument	EN: Jn*:	Network 254: Netw		the host station (1 to a lied in "Valid module c		:Bit :ANY16 n	
	Un*:	(00 to FE	•	the module o digits when express	ing the I/O numbe	:ANY16 er in	
Output argument	s: ENO: d1: d2:	Execution Start num Variable t	that stores in result inber of the that turns C	control data device that stores rea N upon completion o at the time of error co	of the instruction	:Array of ANY16 [0 :Bit :ANY16 :Array of bit [01]	4]
		Setting		l device R, ZR	J	U:;\G:;	Zn Constant Other
		data *1	Bit	Word	Bit	Word	
	-	data *1 © (d1)	Bit _ _		Dit		

C Function

This instruction reads data for the specified number of points from the buffer memory of the CC-Link module or the device of the programmable controller CPU module on the specified station.

E Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code) For error codes when target station is anything other than master/local module, refer to the manual of the target station.	-	System
ি [1]	Target station No.	Specify the station number of the target station.	0 to 64 ^{*1} 0 to 120	
s [2]	Access code, Attribute code	Specify the access code and attribute code of the device to be read. b15 b8b7 b0 Access code Attribute code	Refer to (1) and (2).	User
s [3]	Buffer memory address or device No.	Specify the start address of the buffer memory or the start number of the device.	Within the device range* ²	
<u></u> [4]	Number of read points	Specify the number of data to be read (in units of words).	1 to 32 ^{*3} 1 to 480 ^{*4}	

*1 : For G(P)_RIRD, the setting range shall be 0 to 64.

- *2: For details, refer to the manual for the local station or the intelligent device station from which data are read.
- When the random access buffer is specified, specify the start address of the random access buffer as 0. *3 : The value indicates the maximum number of data to be read.
 - Specify the value within the buffer memory capacity of the local station or the intelligent device station, or the receive buffer area setting range set by a parameter.
- *4 : When reading device data from the programmable controller CPU other than the QCPU (Q mode), QCPU (A mode) or QnACPU/AnUCPU, the setting range shall be 1 to 32 words.

(1) Buffer memory of the CC-Link module

Buffer memory		Access code	Attribute code
Buffer in an inte	Buffer in an intelligent device station		
	Random access buffer	20н	
	Remote input	21н	
Buffer in a master or local station	Remote output	22н	04н
	Remote register	24н	
	Link special relay	63н	
	Link special register	64н	

Device *1	Name	Device type		Unit	*2	A.I. I. I. *2
Device ^{*1}	Name	Bit	Word	Onit	Access code ^{*2}	Attribute code*2
Input relay	х	0	-	Hexadecimal	01н	
Output relay	Y	0	-	Hexadecimal	02н	
Internal relay	М	0	-	Decimal	03н	
Latch relay	L	0	-	Decimal	83н	
Link relay	В	0	-	Hexadecimal	23н	
Timer (contact)	Т	0	-	Decimal	09н	
Timer (coil)	Т	0	-	Decimal	0Ан	
Timer (current value)	Т	-	0	Decimal	0Сн	
Retentive timer (contact)	ST	0	-	Decimal	89н	
Retentive timer (coil)	ST	0	-	Decimal	8Ан	
Retentive timer (current value)	ST	-	0	Decimal	8Сн	05н
Counter (contact)	С	0	-	Decimal	11н	
Counter (coil)	С	0	-	Decimal	12н	
Counter (current value)	С	-	0	Decimal	14н	
Data register ^{*3}	D	-	0	Decimal	04н	
Link register ^{*3}	W	-	0	Hexadecimal	24н	
File register	R	-	0	Decimal	84н	
Link special relay	SB	0	-	Hexadecimal	63н	
Link special register	SW	-	0	Hexadecimal	64н	
Special relay	SM	0	-	Decimal	43н	1
Special register	SD	-	0	Decimal	44н	

(2) Device memory of the programmable controller CPU module

*1 : Devices other than those listed above cannot be accessed.

When accessing a bit device, specify it with 0 or a multiple of 16.

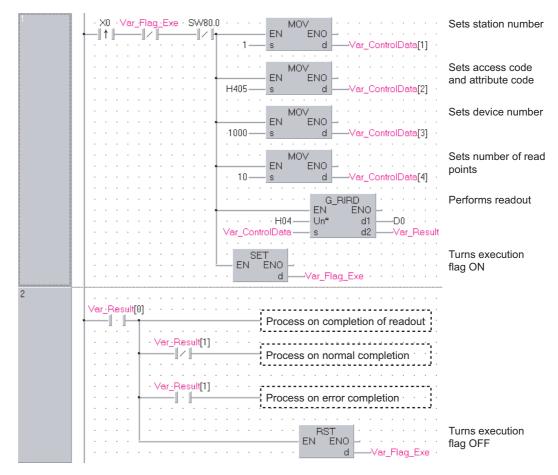
*2: For access code/attribute code when target station is anything other than master/local module, refer to the manual of the target station.

*3 : D65536 and the following devices of extended data registers as well as W10000 and the following devices of extended link registers cannot be specified.

Program Example

The following program reads out 10-word data, which start from D1000 of the number 1 local station connected to the master module mounted on the I/O numbers from X/Y40 to X/Y5F, and stores the data in the devices starting from D0 when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)



[Structured ladder/FBD]

[ST] IF(X0=TRUE) &(Var_Flag_Exe=FALSE) &(SW80.0=FALSE))THEN MOV(TRUE,1, Var_ControlData[1]); MOV(TRUE,H0405, Var_ControlData[2]); MOV(TRUE, 1000, Var_ControlData[3]); MOV(TRUE, 10, Var_ControlData[3]); G_RIRD(TRUE, H04, Var_ControlData, D0, SET(TRUE, Var_Flag_Exe); END_IF;	(* Sets device number *) (* Sets number of read points *) Var_Result);(* Performs readout *)
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of readout *)	
IF(Var_Result[1]=FALSE)THEN	
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
RST(TRUE, Var_Flag_Exe);	(* Turns execution flag OFF *)

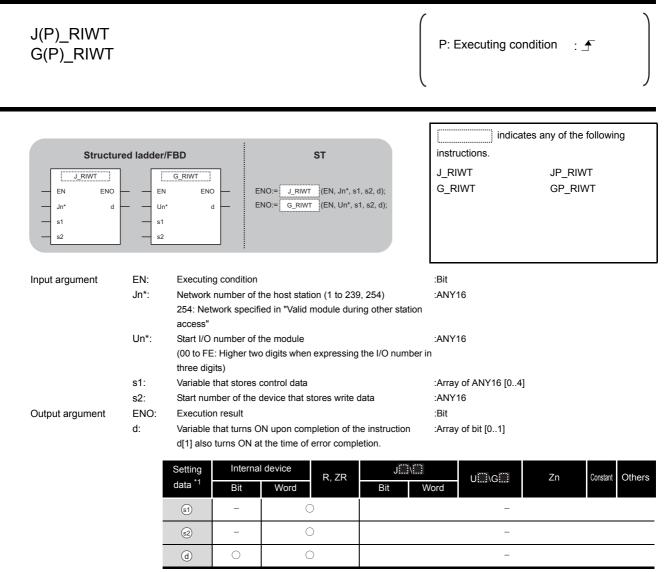
END_IF;

MODULE DEDICATED INSTRUCTION

5.4.2 RIWT instruction

J_RIWT, G_RIWT

CC-Link CC IE C CC IE F



*1: Local devices and file registers per program cannot be used as setting data.

☆ Function

This instruction writes the data for the specified number of points to the buffer memory of the CC-Link module or the device of the programmable controller CPU module on the specified station.

Control Data

Device	Item	Setting data	Setting range	Setting side
(5) [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code) For error codes when target station is anything other than master/local module, refer to the manual of the target station.	-	System
st][1]	Target station No.	Specify the station number of the target station	0 to 64 ^{*1} 0 to 120	
st)[2]	Access code and attribute code	Specify the access code and attribute code of the device to be read.	Refer to (1) and (2).	User
গ্ৰ [3]	Buffer memory address or device No.	Specify the start address of the buffer memory or the start number of the device.	Within the device range*2	
st][4]	Number of write points	Specify the number of data to be written (in units of words).	1 to 10 ^{*3} 1 to 480 ^{*4}	

- *1 : For G(P)_RIWT, the setting range shall be 0 to 64.
- *2: For details, refer to the manual for the local station or the intelligent device station to which data are written.
- When the random access buffer is specified, specify the start address of the random access buffer as 0.*3 :When writing device data to the programmable controller CPU other than the QCPU (Q mode), QCPU (A
- mode) or QnACPU/AnUCPU, the setting range shall be 1 to 10 words.*4 : The value indicates the maximum number of data to be written.
- The value indicates the maximum number of data to be written.
 Specify the value within the buffer memory capacity of the local station or the intelligent device station, or the send buffer area setting range set by a parameter.

(1) Buffer memory of the CC-Link module

Buffer memory category		Access code	Attribute code
Buff	00н		
	Random access buffer	20н	
	Remote input	21н	
Buffer in a master or local station	Remote output	22н	04н
	Remote register	24н	
	Link special relay	63н]
	Link special register	64н	

Device ^{*1}	Name	Devi	ce type	Unit	Access code ^{*2}	Attribute code*2
Device	Name	Bit	Word	Onic		Attribute code ^{*2}
Input relay	Х	0	-	Hexadecimal	01н	
Output relay	Y	0	-	Hexadecimal	02н	
Internal relay	М	0	-	Decimal	03н	
Latch relay	L	0	-	Decimal	83н	
Link relay	В	0	-	Hexadecimal	23н	
Timer (contact)	Т	0	-	Decimal	09н	
Timer (coil)	Т	0	-	Decimal	0Ан	
Timer (current value)	Т	-	0	Decimal	0Сн	
Retentive timer (contact)	ST	0	-	Decimal	89н	
Retentive timer (coil)	ST	0	-	Decimal	8Ан	
Retentive timer (current value)	ST	-	0	Decimal	8CH	05н
Counter (contact)	С	0	-	Decimal	11н	
Counter (coil)	С	0	-	Decimal	12н	
Counter (current value)	С	-	0	Decimal	14н	
Data register ^{*3}	D	-	0	Decimal	04н	1
Link register ^{*3}	W	-	0	Hexadecimal	24н	
File register	R	-	0	Decimal	84н	1
Link special relay	SB	0	-	Hexadecimal	63н	1
Link special register	SW	-	0	Hexadecimal	64н	1
Special relay	SM	0	-	Decimal	43н	1
Special register	SD	-	0	Decimal	44н	1

(2) Device memory of the programmable controller CPU module

*1 : Devices other than those listed above cannot be accessed.

When accessing a bit device, specify it with 0 or a multiple of 16.

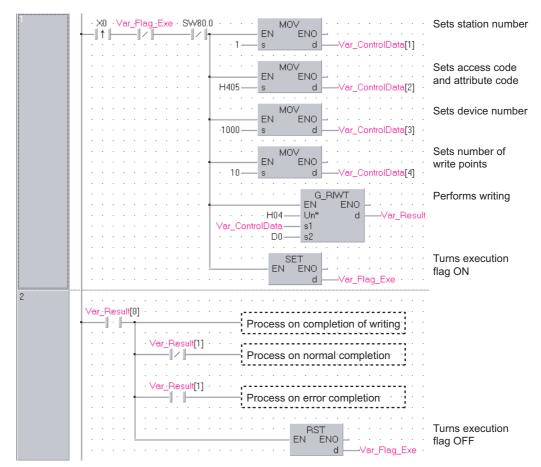
*2: For access code/attribute code when target station is anything other than master/local module, refer to the manual of the target station.

*3 : D65536 and the following devices of extended data registers as well as W10000 and the following devices of extended link registers cannot be specified.

Program Example

The following program stores 10-word data, which are stored in the devices starting from D0, to the devices starting from D1000 of the number 1 local station connected to the master module mounted on the I/O numbers from X/Y40 to X/Y5F when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)



[Structured ladder/FBD]

MOV(TRUE, H0405, Var_ControlData[2]);	, , , , , , , , , , , , , , , , , , , ,
MOV(TRUE, 1000, Var_ControlData[3]); MOV(TRUE, 10, Var_ControlData[4]);	
G_RIWT(TRUE, H04, Var_ControlData, D0	
SET(TRUE, Var_Flag_Exe);	(* Turns execution flag ON *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of writing *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
DOT/TOUE Ver Flee Evely (* Turne evention f	

RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *) END_IF;

G_RIRCV

CC-Link

5.4.3 RIRCV instruction

					(r	
G(P)_RIRC\	/					P: Executing cor	ndition : 🕂
Structured I		BD		ST		instructions.	es any of the following
G_RIF — EN — Un* — s1 — s2	ENO	- EN	O:= G_RIRC	₩ (EN, Un*, s1, s2	. d1, d2);	G_RIRCV	GP_RIRCV
Input argument	EN:	Executing	g condition			:Bit	
	Un*:		-	e module digits when express	ing the I/O number	:ANY16 in	
	s1:	Variable 1	hat stores c	ontrol data		:Array of ANY16 [04]	
	s2:	Variable 1	hat stores in	terlock signal		:Array of ANY16 [02]	
Output argument	ENO:	Execution				:Bit	
	d1: d2:	Variable	that turns Of	evice that stores rea I upon completion o t the time of error co	f the instruction	:ANY16 :Array of bit [01]	
		Setting	Internal	device R, ZR		U\G	Zn Constant C
		data *1		VVOI (C)	Bit	Word	
		data *1	Bit _	0		-	
						-	
	_	s1)	-	0			

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction automatically performs handshaking with an intelligent device station and reads data from the buffer memory of the specified intelligent device station.

This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).

G_RIRCV

5

Control Data

Device	Item	Setting data	Setting range	Setting side
s1 [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[1]	Station No.	Specify the station number of the intelligent device station.	0 to 64	User
s1 [2]	Access code, Attribute code	Set '0004н'.	0004н	User
s1 [3]	Buffer memory address	Specify the start address of the buffer memory.	*1	User
s1 [4]	Number of read points	Specify the number of data to be read (in units of words).	1 to 480 ^{*2}	User

*1 : For details, refer to the manual for the intelligent device station from which data are read.

*2 : The value indicates the maximum number of data to be read.

Specify the value within the buffer memory capacity of the intelligent device station or the receive buffer area setting range set by a parameter.

Device	Item	Setting data	Setting range	Setting side
0.00	b15 to b8 b7 to b0	RY: Request device	0 to 127	User
s2 [0]	© [0] 0 RY	Set the high-order 8 bits to 0.	0	User
	b15 to b8 b7 to b0	RX: Completion device	0 to 127	User
s2[1]		RWr: Error code storage device	0 to 15. FFн	User
		Set FFH when no error code storage device exists.	0 10 10,111	0301
		0: Completes with the content of one device (RXn).		
	b15 to b0	1: Completes with the content of two devices (RXn,		
© [2]	Completion mode	RXn + 1).	0/1	User
	Completion mode	(RXn + 1 turns ON upon abnormal completion of		
		the instruction.)		

(1) Interlock signal storage device

*3 :

The same error code as that for the completion status of control data are stored in the error code storage device.

Program Example

The following program reads 11-word data, which are stored in buffer memory starting from the buffer memory address 400H of the number 63 intelligent device station (AJ65BT-R2(N)) connected to the master module mounted on the I/O numbers X/Y00 to X/Y1F, and stores the data in the devices starting from D40.

The interlock signal storage is set to request device: RY2, completion device: RX2, error code storage device: RWr2, and completion mode: 1.

(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder/FBD]

1	Var_Flag_Inst · Var_Flag_Exe · SW83.E · · · · MOV · · · · · · · · · · · · · · · · · · ·	Sets station number
	63 s d Var_ControlData[1]	
	MOV EN ENO s d	Sets access code and attribute code
	H400 s d Var_ControlData[3]	Sets buffer memory address
	MOV EN ENO s d	Sets number of read points
	H2 s d Var_InterlockData[0]	Sets request device
	H202 S d Var_InterlockData[1]	Sets completion device and error code storage area
	H1sH2	Sets completion mode
	G_RIRCV EN ENO Un* d1Un* d1 _	Performs readout
2	Var_Flag_Inst SW83.E MEP SET SET I I EN EN EN I I I I I	Turns execution flag ON
3	Var_Result[0] Var_Result[1] Image: Second	
	RST EN ENO dVar_Flag_Inst	Turns read request OFF
	EN ENO dVar_Flag_Exe	Turns execution flag OFF

5

[ST] IF((Var_Flag_Inst=TRUE) (* Read request ON *) &(Var_Flag_Exe=FALSE) (* Execution flag *) (* Data link status of station number 63 *) &(SW83.E=FALSE))THEN (* Sets control data *) MOV(TRUE, 63, Var ControlData[1]); (* Sets station number *) (* Sets access code and attribute code *) MOV(TRUE,H4, Var_ControlData[2]); MOV(TRUE, H400, Var ControlData[3]); (* Sets buffer memory address *) MOV(TRUE, 11, Var_ControlData[4]); (* Sets number of read points *) (* Sets interlock signal storage device *) MOV(TRUE, H2, Var_InterlockData[0]); (* Sets request device *) MOV(TRUE, H202, Var_InterlockData[1]); (* Sets completion device and error code storage area *) MOV(TRUE, H1, Var_InterlockData[2]); (* Sets completion mode *) G RIRCV(TRUE, H00, Var ControlData, Var InterlockData, D40, Var Result); (* Performs readout *) END_IF; IF(MEP((Var_Flag_Inst=TRUE) & (SW83.E=FALSE)))THEN (* Read request is ON and data link status of station number 63 is OFF (rising pulse) *) SET(TRUE, Var_Flag_Exe); (* Turns execution flag ON *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) (* Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *) END_IF; RST(TRUE, Var Flag Inst); (* Turns read request OFF *) RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *) END_IF;

5.4.4 RISEND instruction



CC Link	
CC-LINK	l

G(P)_RISEN	ID					P: Executing con	dition : <u>f</u>
Structured Is G_RIS EN Un* s1 s2			ST g_risend (EN	l, Un*, s1, s2, d1,	d2);	indicate instructions. G_RISEND	s any of the following GP_RISEND
Input argument	Un*: s1: s2:	(00 to FE: High three digits) Variable that st	per of the modu ner two digits w tores control d tores interlock	hen expressing t	he I/O number i	:Bit :ANY16 n :Array of ANY16 [04] :Array of ANY16 [02] :Bit	
Output argument	d1: d2:	Start number o Variable that tu	of the device th urns ON upon o	at stores write da completion of the ne of error compl	instruction	:ANY16 :Array of bit [01]	
		lata ^{*1} B			J 🛄 \ 🛄 Bit V	Vord UIII\GIII	Zn Constant C
		GI		0		_	
		© -		0			
		d2 ()	0		-	

G_RISEND

5

EDICATED

Grant Function

This instruction automatically performs handshaking with an intelligent device station and writes data to the buffer memory of the specified intelligent device station.

This instruction is applicable with a module having a handshake signal, such as the AJ65BT-R2(N).

Control Data

Device	Item	Setting data	Setting range	Setting side
st) [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
s1[1]	Station No.	Specify the station number of the intelligent device station.	0 to 64	User
s1 [2]	Access code, Attribute code	Set '0004н'.	0004н	User
s1 [3]	Buffer memory address	Specify the start address of the buffer memory.	*1	User
s1 [4]	Number of write points	Specify the number of data to be written (in units of words).	1 to 480 ^{*2}	User

*1 : For details, refer to the manual for the intelligent device station to which data are written.

*2 : The value indicates the maximum number of data to be written.

Specify the value within the buffer memory capacity of the intelligent device station or the receive buffer area setting range set by a parameter.

Device	Item	Setting data	Setting range	Setting side
\sim	b15 to b8 b7 to b0	RY: Request device	0 to 127	User
s2 [0]	© [0] 0 RY	Set the high-order 8 bits to 0.	0	User
	© [1] b15 to b8 b7 to b0 RWr *3 RX	RX: Completion device	0 to 127	User
s2 [1]		RWr: Error code storage device	0 to 15,	User
		Set FFH when no error code storage device exists.	FFн	USEI
		0: Completes with the content of one device (RXn).		
	b15 to b0	1: Completes with the content of two devices (RXn,		
s2 [2]	Completion mode	RXn + 1).	0/1	User
	Completion mode	(RXn + 1 turns ON upon abnormal completion of		
		the instruction.)		

(1) Interlock signal storage device

*3 : The same error code as that for the completion status of control data are stored in the error code storage device.

The following program writes 1-word data of D10 to the buffer memory address 111H of the number 63 intelligent device station (AJ65BT-R2(N)) which is connected to the master module mounted on the I/O numbers from X/Y00 to X/Y1F.

The interlock signal storage settings are set to request device: RY4, completion device: RX4, error code storage device: RWr1, and completion mode: 1.

(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder/FBD]

1	Var_Flag.Inst · Var_Flag.Exe · SW83.E · · · · MOV · · · · · · · · · · · · · · · · · · ·	Sets station number
	s d	
	H4— EN H4— s d —Var_ControlData[2]	Sets access code and attribute code
		Sets buffer memory address
	H111 s d Var_ControlData[3]	
	MOV	Sets number of write
		points
	□ · · · · · · · · · · · · · · · · · · ·	points
		Sets request device
	EN ENO	
		Sets completion device
	EN ENO	and error code storage
	H104—sd —Var_interlockData[1]	area device
	MOV	Sets completion mode
	· · · · · · · · · · · · · · · · · · ·	Cete completion mede
	·····································	
		Sets data to be written
	· · · · · · · · · · · · · · · · · · ·	to intelligent device
	dD10	station
	· · · · · · · · · · · · · · · · · · ·	
	GP_RISEND	Performs writing
	H00 Un* d1 D10 · · · · ·	
	s1 d2	
2	Var_Flag_Inst · SW83.E · MEP · · · · · · · · · · · · · · · · · · ·	Turns execution flag ON
3	Var_Result[0] · Var_Result[1] · · · · · ·	
5	Process on normal completion	
	Var_Result[1]	
	Process on error completion	
	BST	Turns write request OFF
		Turns write request OFF
	d —Var_Flag_Inst	
	· · · · · · · · · · · · · · · · · · ·	
	RST EN ENO	Turns execution
	d —Var_Flag_Exe	flag OFF

[ST] IF((Var_Flag_Inst=TRUE) (* Write request ON *) &(Var_Flag_Exe=FALSE) (* Execution flag *) (* Data link status of station number 63 *) &(SW83.E=FALSE))THEN (* Sets control data *) MOV(TRUE, 63, Var ControlData[1]); (* Sets station number *) MOV(TRUE, H4, Var_ControlData[2]); (* Sets access code and attribute code *) MOV(TRUE, H111, Var ControlData[3]); (* Sets buffer memory address *) MOV(TRUE, 1, Var_ControlData[4]); (* Sets number of write points *) (* Sets interlock signal storage device *) MOV(TRUE, H4, Var_InterlockData[0]); (* Sets request device *) MOV(TRUE, H104, Var_InterlockData[1]); (* Sets completion device and error code storage area device *) MOV(TRUE, H1, Var_InterlockData[2]); (* Sets completion mode *) (* Sets data to be written to intelligent device station *) MOV(TRUE, 11, D10); GP_RISEND(TRUE, H00, Var_ControlData, Var_InterlockData, D10, Var_Result); (* Performs writing *) END IF; IF(MEP((Var Flag Inst=TRUE) & (SW83.E=FALSE)))THEN (* Write request is ON and data link status of station number 63 is OFF (rising pulse) *) SET(TRUE, Var_Flag_Exe); (* Turns execution flag ON *) END_IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) Process on normal completion *) ELSE (* Error completion *) Process on error completion *) END IF; (* Turns write request OFF *) RST(TRUE, Var_Flag_Inst); RST(TRUE, Var_Flag_Exe); (* Turns execution flag OFF *)

END_IF;

G_RIFR

5.4.5 RIFR instruction

								CC-L	.ir
G(P)_RIFR						P: Executing col	ndition : 🕤		_
Structured la G_RI Un* n1 n2 n3		-	NO:= <u>G_</u> F	ST IFR (EN, Un*, n1, n2, r	13, d);	indications. G_RIFR	tes any of the fo GP_RIFR	llowin	g
Input argument	EN: Un*:	Start I/O	g condition number of t :: Higher two	he module 9 digits when expressing	the I/O number in	:Bit :ANY16			
	n1: n2:	Random Offset va	t device sta access buff lue of speci	tion number (1 to 64) er specification (FFн) fied intelligent device au iffer of the master statio		:ANY16 :ANY16			
Output argument	n3: ENO: d:	No proce Execution	essing is per n result	ts (0 to 4096) formed with setting '0'. levice that stores read d	ata	:ANY16 :Bit :ANY16			
		Setting data ^{*1} n1	Internal Bit	device Word R, ZR	J\ Bit W	/ord		onstant K, H	0
	t	n2	0	0		-		0	
		n3	0	0		_		0	

*1: Local devices and file registers per program cannot be used as setting data.

_

Grant Function

This instruction reads data from the auto-refresh buffer of the specified station.

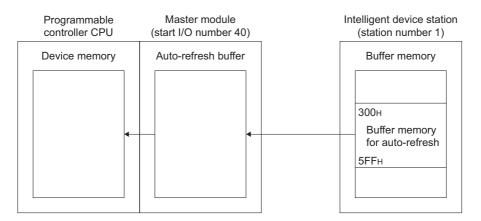
0

d

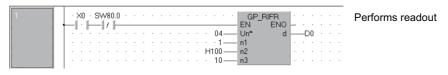
The instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).

The following program reads out 10-word data from buffer memory starting from the offset value 100 of the auto-refresh buffer of the master module (400H in the intelligent device station) and stores the data in the devices starting from D0 when X0 turns ON.

(When the refresh device of the link special register (SW) is set to SW0.)



[Structured ladder/FBD]



[ST]

IF((X0=TRUE) & (SW80.0=FALSE))THEN

GP_RIFR(TRUE, H04, 1, H100, 10, D0); END_IF; (* Performs readout *)

G_RITO

5.4.6 RITO instruction

			CC-Link
G(P)_RITO			P: Executing condition :
Structured I	adder/FB	D ST	indicates any of the following instructions.
EN Un* n1 n2 n3	ENO d	ENO:= (EN, Un*, n1, n2, n3, d);	
Input argument	EN: Un*:	Executing condition Start I/O number of the module (00 to FE: Higher two digits when expressing the I/	:Bit :ANY16 /O number in
	n1:	three digits) Intelligent device station number (1 to 64) Random access buffer specification (FFн)	:ANY16
	n2:	Offset value of specified intelligent device auto-ref or random access buffer of the master station	fresh buffer :ANY16
	n3:	Number of write points	:ANY16
Output argument	ENO: d:	Execution result Start number of the device that stores write data	:Bit :ANY16
		Setting data *1 Bit Word R, ZR E	JIII\III Bit Word UIII\GIII Zn Constant - Constant K, H Oth

5

0

_

_

_

n2

n3

d

 \bigcirc

 \bigcirc

_

This instruction writes the data to the auto-refresh buffer of the specified station.

0

0

0

The instruction is applicable with a module having an auto-refresh buffer, such as the AJ65BT-R2(N).

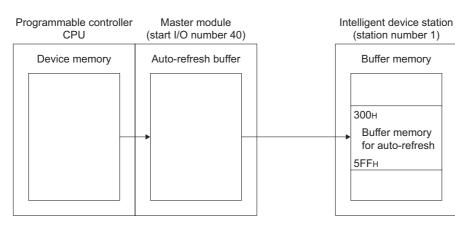
_

_

_

*1: Local devices and file registers per program cannot be used as setting data.

The following program write 10-word data which are stored in the devices starting from D0 into buffer memory starting the offset value 100 of the auto-refresh buffer of the master module (400H in the intelligent device station) when X0 turns ON.



(When the refresh device of the link special register (SW) is set to SW0.)

[Structured ladder/FBD]

1																		GP_F	RITO ENO						:	Performs
																	04		d	H	-[D0		•		whiting
																	100							÷		
	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	10	n3		•	•		•	•	•	



IF((X0=TRUE) & (SW80.0=FALSE))THEN GP_RITO(TRUE, H04, 1, H100, 10, D0); END_IF;

(* Performs writing *)

G_RLPASET

5.4.7 RLPASET instruction

G(P)_RLPA	SET				P: Executing condition :
					indicates any of the followi
					instructions.
					G_RLPASET GP_RLPASET
Structured I G RLP EN Un* s1 s2 s3 s4			NO:= G_RLP/	ST ASET (EN, Un*, s1, s2, s3, s4, s5, d);	
Input argument	EN: Un*:	Start I/C (00 to F		he module o digits when expressing the I/O	:Bit :ANY16 number in
	s1:	three di Variable	gits) e that stores o	control data	:Array of ANY16 [07]
	s2:			slave station setting data	:Array of ANY16 [063]
	s3:			reserved station specification da	
	s4: s5:			error invalid station specificatior send/receive and auto-refresh b	
	30.		nent data		
Output argument	ENO:		on result		:Bit
	d:			N upon completion of the instru t the time of error completion.	ction :Array of bit [01]
		Setting data ^{*1}	Internal Bit	device R, ZR Word Bit	U∭\G∭ Zn Constant
		(s1)	-	0	-
		s2	-	0	-
	Ī	s 3	-	0	-
	Ī	<u>\$4</u>	-	0	-
		s5	-	0	-

Grant Function

This instruction sets the network parameters to the master station and starts up the data link.

AODULE DEDICATED

G_RLPASET

Control Data

Device	Item	Setting data	Setting range*2	Setting side
s1 [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ৰা[1]	Setting flag	Specify the validity of each setting data from @ to @ . 0: Invalid ^{*1} 1: Valid b15 b14b13 b4 b3 b2 b1 b0 Slave station setting data(s2) Reserved station specification data(s3) Error invalid station specification data(s4) Send/receive and auto-refresh buffer assignment data(s5) 00: Remote net (Ver. 1 mode) 01: Remote net (Ver. 2 mode) 10: Remote net (Ver. 2 mode) 11: Cannot be used	_	User
s1 [2]	Number of connected modules	Set the number of connected slave stations.	1 to 64	User
s1 [3]	Number of retries	Set the number of retries to be performed to a communication error station.	1 to 7	User
ঃা [4]	Number of automatic return modules	Set the number of slave stations that can be returned in one link scan.	1 to 10	User
st [5]	Operation specification when CPU is down	Specify the data link status when a master station programmable controller CPU error occurs. 0: Stop 1: Continue	0, 1	User
st [6]	Scan mode specification	Specify the link scan mode for sequence scan. 0: Asynchronous 1: Synchronous	0, 1	User
s1[7]	Delay time specification	Set '0' for the delay time.	0	User

*1: For the setting data for which invalid is specified, default parameter is applied.

*2: Setting a value outside the setting range results in error completion of the instruction.

	(1) Slave stat	ion setting data				
Device	Item	Settin	g data		Setting range	Setting side
		Set the slave station type, the number	per of occupied slave	e stations, and		
		the station number as shown below	r.			
		Default parameter setting is '0101H number of occupied slave stations: compatible remote I/O station)'	→Station nu →Number of →Type of s to 0140H (station nu	of occupied slave stations lave station mber: 1 to 64,	-	
		Setting of station number				
		1 to 64 (BIN setting)			1 to 40н	
		Setting of the number of occupied s	slave stations			
		Number of occupied slave	Setting	I		
O		stations	<u></u> 1н		1 to 4н	
s2 [0]	Setting for 1 to 64	1 station 2 stations	<u>1н</u> 2н		1 10 411	11
to	modules ^{*3}	3 stations	3н			User
s2 [63]		4 stations	<u></u>			
		Setting of slave station type ^{*4}				
		Type of slave sta	tion	Setting		
		Ver.1 compatible remote I/O statio	n	0н		
		Ver.1 compatible remote device st	ation	1н		
		Ver.1 compatible intelligent device	station	2н		
		Ver.2 compatible single remote de	vice station	5н		
		Ver.2 compatible single intelligent	device station	6н	0 to Fн	
		Ver.2 compatible double remote de	evice station	8н		
		Ver.2 compatible double intelligent	t device station	9н		
		Ver.2 compatible quadruple remote		Вн		
		Ver.2 compatible quadruple intellig		Сн		
		Ver.2 compatible octuple remote d		Ен		
		Ver.2 compatible octuple intelligen	t device station	Fн		

*3: Set the same number which was set for Number of connected modules in the control data.

*4 : Setting a value outside the setting range in the setting of slave station type results in error completion of the instruction.

G_RLPASET

(2) Reserved station specification data

Device	Item	Setting data											Setting range	Setting side
		Specify the r 0: Not sp 1: Specifi	ecifie ed	d										
s3 [0]	Specification for 1 to 64	(-2)[0]	b15	b14	b13	b12	to	b3	b2	b1	b0	ו		
to	stations ^{*5}	(s3)[0]	16	15	14	13	to	4	3	2	1		-	User
63 [3]	stations -	(s3)[1]	32	31	30	29	to	20	19	18	17			
		(s3[2]	48	47	46	45	to	36	35	34	33			
		s3[3]	64	63	62	61	to	52	51	50	49			
				1	to 64	in the	table i	ndicate	es a sta	ation n	umber.			
		Default parameter setting is '0: Not specified' for all stations.												

*5 : Set the parameter up to the largest station number set in the slave station setting data.

*6: Set the parameter only to the start station number of the module for the remote station/local station/ intelligent device station that occupies two or more stations.

(3) Error invalid station specification data

Device	Item					Settin	g data	a					Setting range	Setting side
		Specify the 0 0: Not sp 1: Specif	ecifie		statio	n. ^{*8}								
s4 [0]	On a sifile stime for 4 to 04		b15	b14	b13	b12	to	b3	b2	b1	b0			
to	Specification for 1 to 64	(s4)[0]	16	15	14	13	to	4	3	2	1		_	User
	stations ^{*7}	(s4)[1]	32	31	30	29	to	20	19	18	17			0000
s4 [3]		s4[2]	48	47	46	45	to	36	35	34	33			
		s4[3]	64	63	62	61	to	52	51	50	49			
				1	1 to 64	in the	table i	ndicate	es a sta	ation nu	umber.			
		Default para	Default parameter setting is '0: Not specified' for all stations.											

*7: Set the parameter up to the largest station number set in the slave station setting data.

*8 : Set the parameter only to the start station number of the module for the remote station/local station/ intelligent device station that occupies two or more stations.

Reserved station specification has a priority when an error invalid station and reserved station are specified for the same station.

(4) Send/receive and auto-refresh buffer assignment data

Device	Item	Setting data	Setting range	Setting side
63 [0]	Specification for 1	Specify the buffer memory size assignment at transient transmission for local stations and intelligent device stations.	Send/receive buffer ^{*10} : Он (no setting) 40н to 1000н 0 (word) (no setting) 64 to 4096 (words)	
to © [77]	to 26 modules ^{*9}	(s5)[75] Send buffer size (s5)[76] Receive buffer size (s5)[77] Auto-refresh buffer size Default parameter setting is 'send buffer size: 40H, receive	Auto-refresh buffer ^{*11} : Он (no setting) 80н to 1000н 0 (word) (no setting) 128 to 4096 (words)	User
		buffer size: 40H, auto-refresh buffer size: 80H'.		

*9: Set the assignment data, in ascending order, for the stations set for a local station or intelligent device station in the slave station setting data.

*10 : Keep the total of the send/receive buffer size within 1000H (4096 (words)). Specify the size added seven words to the size of send/receive data as the send/receive buffer size. Setting a value outside the setting range results in error completion of the instruction.

*11: Keep the total of the auto-refresh buffer size within 1000н (4096 (words)).
 Specify the necessary auto-refresh buffer size for each intelligent device station.
 Setting a value outside the setting range results in error completion of the instruction.

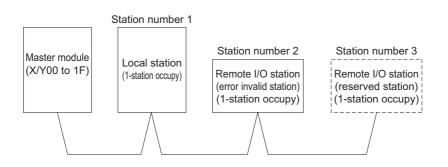


The RLPASET instruction is applicable to the QJ61BT11 of which the function version is B and the first five digits of the serial number are '03042' or higher.

The QJ61BT11N and LJ61BT11 is compatible with the RLPASET instruction.

Program Example

The following program sets the network parameter to the master module mounted on the I/O number X/Y00 to X/Y1F, and starts up the data link.



[Structured ladder/FBD]

1	SM400	Reads SB0040 to SB01FF
	28 n3 EN ENO H0 n1 d H640 n2 SW40 448 n3 SW40	Reads SW0040 to SW01FF
2	SM402 SB6E: EN EN I · I <td>Parameter setting command</td>	Parameter setting command
3	Ver_Flag_Inst	Clears completion status
	EN ENO 15 s d Var_ControlData[1]	Sets all of setting flags to Valid
		Sets number of connected modules
	EN ENO 3 — s d —Var_ControlData[3]	Sets number of retries Sets number of automatic return
	EN ENO 	modules Sets operation specification when
		CPU is down to stop Sets scan mode specification to asynchronous
		Set delay time specification
4	Ver_Flag_Inst H2101 S d Ver_SlaveStation[0]	First module: local station, 1-station occupy, station number 1
	H102 s d Var_SlaveStation[1]	Second module: Remote I/O station, 1-station occupy, station number 2
	H103 s d Var_SlaveStation[2]	Third module: Remote I/O station, 1-station occupy, station number 3
5	Var_Flag_Inst · · · · · · · · · · · · · · · · · · ·	Reserved station specification: station number 3
6	Var_Flag_Inst · · · · · · · · · · · · · · · · · · ·	Error invalid station specification: station number 2
7	Ver_Flag_Inst	First module: local station, send buffer 100 words
	EN MOV 100 s d Var_BufferSize[1]	Receive buffer 100 words
	0 s d Var_BufferSize[2]	Auto-refresh buffer 0 word
8	Var_Flag_Inst 	Performs parameter setting and data link start
9	Var_Result[0]	Turns parameter setting command OFF
	Var_Result[1]	Refresh command
	Var_Result[1] Process on error completion	Control program start command

5.4 Network Dedicated Instruction 5.4.7 RLPASET instruction [ST] FROM(TRUE, H0, H5E4, 28, K4SB40); (* Reads SB0040 to SB01FF *) FROM(TRUE, H0, H640, 448, SW40); (* Reads SW0040 to SW01FF*) IF((SM402=TRUE) & (SB6E=TRUE))THEN (* Parameter setting command *) SET(TRUE, Var Flag Inst); END IF: IF(Var_Flag_Inst=TRUE)THEN (* Parameter setting command ON *) MOV(TRUE, 0, Var ControlData[0]); (* Clear completion status *) MOV(TRUE, 15, Var_ControlData[1]); (* Sets all of setting flags to Valid *) MOV(TRUE, 3, Var_ControlData[2]); (* Sets number of connected modules *) MOV(TRUE, 3, Var ControlData[3]); (* Sets number of retries *) MOV(TRUE, 1, Var ControlData[4]); (* Sets number of automatic return modules *) MOV(TRUE, 0, Var_ControlData[5]); (* Sets operation specification when CPU is down to stop *) MOV(TRUE, 0, Var_ControlData[6]); (* Sets scan mode specification to asynchronous *) MOV(TRUE, 0, Var ControlData[7]); (* Set delay time specification *) MOV(TRUE, H2101, Var_SlaveStation[0]); (* First module: local station, 1-station occupy, station number 1 *) MOV(TRUE, H0102, Var SlaveStation[1]); (* Second module: Remote I/O station, 1-station occupy, station number 2*) MOV(TRUE, H0103, Var SlaveStation[2]); (* Third module: Remote I/O station, 1-station occupy, station number 3 *) MOV(TRUE, H4, Var_ReservedStation[0]); (* Reserved station specification: station number 3 *) MOV(TRUE, H2, Var ErrorInvalidStation[0]); (* Error invalid station specification: station number 2 *) MOV(TRUE, 100, Var BufferSize[0]); (* First module: local module, send buffer 100 words *) MOV(TRUE, 100, Var BufferSize[1]); (* Second module: local station, receive buffer 100 words *) MOV(TRUE, 0, Var_BufferSize[2]); (* Third module: local station, auto-refresh buffer 0 words *) GP_RLPASET(TRUE, H00, Var_ControlData, Var_SlaveStation, Var ReservedStation, Var ErrorInvalidStation, Var BufferSize, Var Result); (* Performs parameter setting *) END IF; IF(Var Result[0]=TRUE)THEN (* Execution finished *) IF(Var Result[1]=FALSE)THEN (* Normal completion *) (* Refresh command *) SET(TRUE, SB3); SET(TRUE, Var Flag Exe); (* Control program start command *) ELSE (* Error completion *) (* Process on error completion *) END_IF; RST(TRUE, Var Flag Inst); (* Turns parameter setting command OFF *) END IF;

5.4.8 READ instruction

J_READ, G_READ

CC IE C CC IE F NET/H Ether

J(P)_READ P: Executing condition · 🔺 G(P)_READ indicates any of the following Structured ladder/FBD ST instructions. J_READ JP_READ J_READ G_READ ſ G_READ GP_READ ΕN ENO ΕN ENO (EN, Jn*, s1, s2, d1, d2); ENO:= J_READ d1 d1 Un Jn* ENO:= G_READ (EN, Un*, s1, s2, d1, d2); s1 d2 s1 d2 s2 s2 Input argument EN: Executing condition ·Bit Jn*: Network number of the host station (1 to 239, 254) :ANY16 254: Network specified in "Valid module during other station access" Start I/O number of the module ·ANY16 Un*: (00 to FE: Higher two digits when expressing the I/O number in three digits) Variable that stores control data :Array of ANY16 [0..17] s1: Start number of the target station's device from which data are :ANY s2: read Output argument ENO: :Bit Execution result Start number of the host station's device that stores read data :ANY16 d1: d2. Variable that turns ON upon completion of the instruction :Array of bit [0..1] d2[1] also turns ON at the time of error completion. Setting Internal device J....\.... Others R, ZR U....\G.... Zn Constant *1 data Bit Word Word Bi _ (s1) _ (s2) \bigcirc _ (d1) _ _ d2) _ *1: Local devices and file registers per program cannot be used as setting data.

Gamma Function

This instruction reads data from a word device of another station.

Control Data

Device	Item			Setting range	Setting side			
			b15	to b7	to 0	b0		
্রা [0]	Error completion type	Spec 0: Cl st 1: Cl	ify the clock lock data at arting from	n type (bit 7) data setup status at the the time of error compl (a) [11]. the time of error comp	ror completion. ot set in the area	0001н, 0081н	User	
s1[1]	Completion status	0 Othe	er than 0	pletion status is stored. Normal completion Error completion (erro	-		-	System
		Specify		l used by the host statior	1.			
				scription	Set	ting value		
s1 [2]	Channel used by host station		SECNET/H		1 to 8		1 to 10	User
				oller Network	1 to 10 1 to 2			
		CC-L	ink IE Field	Network	<u> </u>			
		Specif	y the type of	of the target station C	PU.			
		Sett	ing value	Desc	ription		0000н,	
		Ethernet	0000н	Target station CPU/hos data are the same as '0		CPU (Specified	0000н, 03FFн	
		Eth	03FFн ^{*1}	Target station CPU/hos	t system (CPU		
s1 [3]	Target station's CPU type		0000н	Target station CPU/hos data are the same as '0		CPU (Specified		User
		MELSECNET/H CC-Link IE	03E0н ^{*2}	Multi-CPU No. 1/target system)	station CI	PU (single CPU	0000н, 03Е0н to	
		LSE CC-L	03E1н ^{*2}	Multi-CPU No. 2			03ЕЗн,	
		ME	03E2н ^{*2}	Multi-CPU No. 3		03FFн		
			03E3н ^{*2}	Multi-CPU No. 4				
			03FFн ^{*1}	Target station CPU/hos	t system (CPU		
s1 [4]	Target station network No.		239 : Netw	number of the target sta ork number ify this when 254 has b		n Jn.	1 to 239, 254	User
		Specify	the station	number of the target stat	ion.			
				Setting value		Description		
			LSECNET/F	1		1 to 64		
		-	ernet -Link IE Con	troller Network				
	Torget atotics No.		-	n is Universal model QCI	1 to120	1 10 105	Lloor	
st [5]	Target station No.			n is anything other than nodel QCPU	1 to 125	User		
		CC	-Link IE Field					
		Master station 125 (7DH)						
			Local statio station	n or the intelligent device	e	1 to 120		
st [6]	_	Reserv	ed				0	User

Device	Item		Setting data		Setting range	Setting side
		1 For instruction exec				
		Specify the number of instruction resends when the instruction is not			0 to 15	User
st][7]	Number of resends	completed within the				
		② At instruction comp	oletion		_	System
		The number of reser	nds (result) is stored.			oystem
		Specify the monitoring				
		If the instruction is not				
		number of times specif	ied in 🗊 [7].			
		De	escription	Setting value		
			0 to TCP retransmission			
			timer value: Monitoring is			
s1 [8]	Arrival monitoring time		performed by the TCP		0 to 32767	User
0[0]		Ethernet	retransmission timer value.	0 to 16383		
			(TCP retransmission timer value + 1) to 16383:			
			Monitoring time (unit:			
			second)			
			0: 10 seconds			
		MELSECNET/H	1 to 32767: 1 to 32767	0 to 32767		
		CC-Link IE	seconds	0 10 02101		
		Specify the number of	read data.			
		De	escription	Setting value		
	Read data length	Ethernet 1 to 960			1 to 8192 Use	User
s1 [9]		MELSECNET/H (word)				
		CC-Link IE Field Network				
		CC-Link IE Controller Network (word)				
st [10]	-	Reserved	-	User		
		Valid/invalid status of the	ne data in the area starting fro	om 🗊 [12] is stored.		_
s1[11]	Clock set flag ^{*3}	0: Invalid	-	System		
		1: Valid				
		Clock data at the time	of error completion are stored	d in BCD format.		
0.000		b15 to	b8 b7 to	b0		
s1 [12]	Clock data at the time of	(s1) [12] Month (01)				
to	error completion ^{*3}	(s1) [13] Hour (00⊢ (s1) [14] Second (00			-	System
st [15]		(s1) [14] Second (00 (s1) [15] Year (00н to 99н				
			00H (Sun.) to			
		Network number of the	station where an error was o	leterted is stored		
	Error-detected network No.		or was detected at the host s			
s1[16]		number is not stored.)	S. Was deteoled at the host s		-	System
		1 to 239: Network num	ber			
			where an error was detected	is stored.		
		(However, when an err	or was detected at the host s	station, the network		
		number is not stored.)				
		Sotti	ng value	Description		
্রা[17]		MELSECNET/H	-	to 64		
	Error-detected station No. *3				_	System
		Ethernet 1 to 120 CC-Link IE Controller Network -		to 120	– Syste	Gystelli
		CC-Link IE Field Network -				
		Master station 125 (7DH)				
		Local station or the intelligent device 1 to 120				
	1					

- *1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.
 - (Specification is not possible for other modules. An access is always made to the target station CPU.)
- *2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

- Network module: The first five digits of the serial number are '06092' or higher.
- QCPU: The first five digits of the serial number are '06092' or higher.
- *3 : Data are stored only when 1 is set in bit 7 of Error completion type ((i) [0]).

The following program reads out data from the devices from D250 to D254 in the station number 4 (target station) and stores the data to the devices from D700 to D704 of the station number 1 (host station).

Var_Flag_Inst Sets error MOV 1 ΕN ENO completion type H81 d ar_ControlData[0] s Sets channel used MO ENO ΕN by host station 1 d _ControlData[2] S Sets target station's MOV ΕN ENO CPU type ΗN d ar_ControlData[3] s Sets target station MO\ ΕN ENO network number ar_ControlData[4] · 1 d S Sets target station MC ΕN ENO number 4 d ControlData[5] S MΟV ENO ΕN 0 d ControlData[6] Sets monitoring MON ΕN ENO time Π _ControlData[8] \mathbf{S} d Sets data length MO\ ΕN ENO by the word 5 ControlData[9] d S MOV ΕN ENO Ω d ar_ControlData[10] s 2 Exe SB47 SW0A0.3 Sets number of Var Flag MOV ΕN ENO resends 5 /ar_ControlData[7] s d JP_READ Performs readout ΕN ENO d1 D700 Jn* 1 Var_ControlData s1 d2 Var Result D250 s^2 3 Var_Result[0] 1 Process on completion of readout Execution finished Var_Result[1] 121 Process on normal completion Normal completion Var_Result[1] ŀ Process on error completion Error completion Stores error code MOΛ ΕN ENO Var_ControlData[1] Var_ErrorCode d s

[Structured ladder/FBD]

[ST]	
IF (LDP(TRUE,Var_Flag_Inst) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets error completion type *)
MOV(TRUE,1,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,4,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,0,Var_ControlData[6]);	(* Osta and a 'tan'a a time *)
MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,5,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,0,Var_ControlData[10]); END IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SWOAD 3=FALSE)) THEN
MOV(TRUE, 5, Var_ControlData[7]);	
	0,D700,Var_Result);(* Performs readout *)
END IF;	,,
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of reado	t *)
·	J
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *	*)
ELSE	(* Error completion *)
(* Process on error completion *)	
MOV(TRUE, Var ControlData[1], V	/ar_ErrorCode);(* Stores error code *)
END IF;	_ //

END_IF;

5.4.9 SREAD instruction

J_SREAD, G_SREAD

CC IE C CC IE F NET/H Ether

J(P)_SREAD G(P)_SREAD							P: Exe	cuting con	dition	
Structured <u>JSREAD</u> EN ENO Jn* d1 s1 d2 s2 d3		BD SREAD ENO d1 d2 d3		NO:= J_SREA			instructic J_SREA G_SREA	ons. D	es any of th JP_SRI GP_SR	
Input argument	EN: Jn*:	Network		he host static		254) g other station	:Bit :ANY16			
	Un*:	access" Start I/O	number of t : Higher two	he module		he I/O number	:ANY16			
	s1: s2:	Variable f Start num	that stores of	control data arget station'	s device fror	n which data a	-	ANY16 [017]	l	
Output argument	ENO:	read Executior	n result				:Bit			
ouput argumont	d1:			nost station's	device that	stores read da	read data :ANY16			
	d2:			N upon com			:Array of I	oit [01]		
	d3:	Variable		at the time of N upon comp vice)			:Bit			
		Setting data ^{*1}	Internal Bit	device Word	R, ZR	J\	L Word	J\G	Zn	Constant Others
		s1)	-	С)			_		
		s2	_	С)			_		
		d1	-	C)			-		
		d2	0	С)			-		
		d3	0	С)			_		
	_				*1: Local	devices and fi	le registers p	per program c	annot be u	sed as setting data.

5-150

Grant Function

This instruction reads data from a word device of another station.

Control Data

For the control data of the SREAD instruction that reads the word device memory of another station, refer to READ instruction.

The control data of the SREAD instruction are the same as those of the READ instruction. Accordingly, this section omits the explanation.

The following program example of the SREAD instruction is different from that of the READ instruction by assigning the read notification device $_{(3)}$ at the end of arguments.

Var_Flag_Inst Sets error MOV ΕN ENO completion type H81 ar_ControlData[0] d s Sets channel used MOV ΕN ENO by host station 1 _ControlData[2] d Sets target MOV ΕN ENO station's CPU type HO _ControlData[3] d Sets target station MOV ΕN ENO network number 1. ar_ControlData[4] d Sets target station MOV ΕN ENO number 4d ar_ControlData[5] MOV ENO ΕN 0. _ControlData[6] d Sets monitoring MOV ΕN ENO time 0 ar ControlData[8] d Sets data length MOV ENO ΕN by the word 5 ar_ControlData[9] d MOV ENO ΕN n. d /ar_ControlData[10] s $\overline{2}$ √ar Flag Exe SB47 Sets number of SWRAR 2 MOV ΕN ENO resends 5 ControlData[7] s d J_SREAD Performs readout EN ENO Jn* d1 -D700 1 Var_Result Var_ControlDate s1 d2 D250 s2 d3 Var. Flag З Var_Result[0] Process on completion of readout Execution finished Ŀ Var_Result[1] Normal completion Process on normal completion 171 /ar_Result[1] Error completion Process on error completion - - - - - -- - - -Stores error code MO\ ΕN ENO Var_ControlData[1] d Var_ErrorCode s

[Structured ladder/FBD]

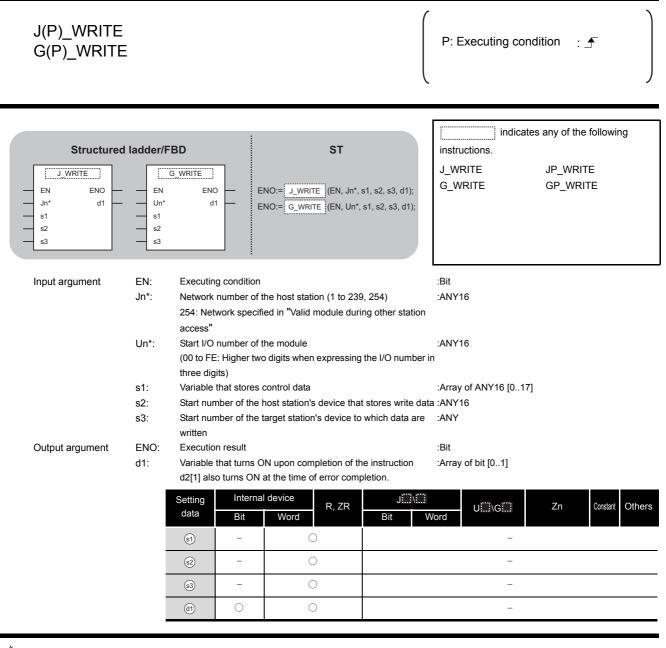
[ST]	
IF (Var_Flag_Inst=TRUE) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets error completion type *)
MOV(TRUE,1,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,4,Var_ControlData[5]);	(* Sets target station number*)
MOV(TRUE,0,Var_ControlData[6]);	
MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,5,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,0,Var_ControlData[10]); END IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE)	AND (SWIDAD 3=FALSE)) THEN
MOV(TRUE, 5, Var_ControlData[7]);	
J_SREAD(TRUE,1,Var_ControlData,D250,I	
	(* Performs readout *)
END_IF;	, , , , , , , , , , , , , , , , , , ,
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of readout *)	
IF(Var_Result[1]=FALSE)THEN	("Normal completion ")
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
·	
MOV(TRUE, Var_ControlData[1], Var	
END_IF;	

END_IF;

5.4.10 WRITE instruction

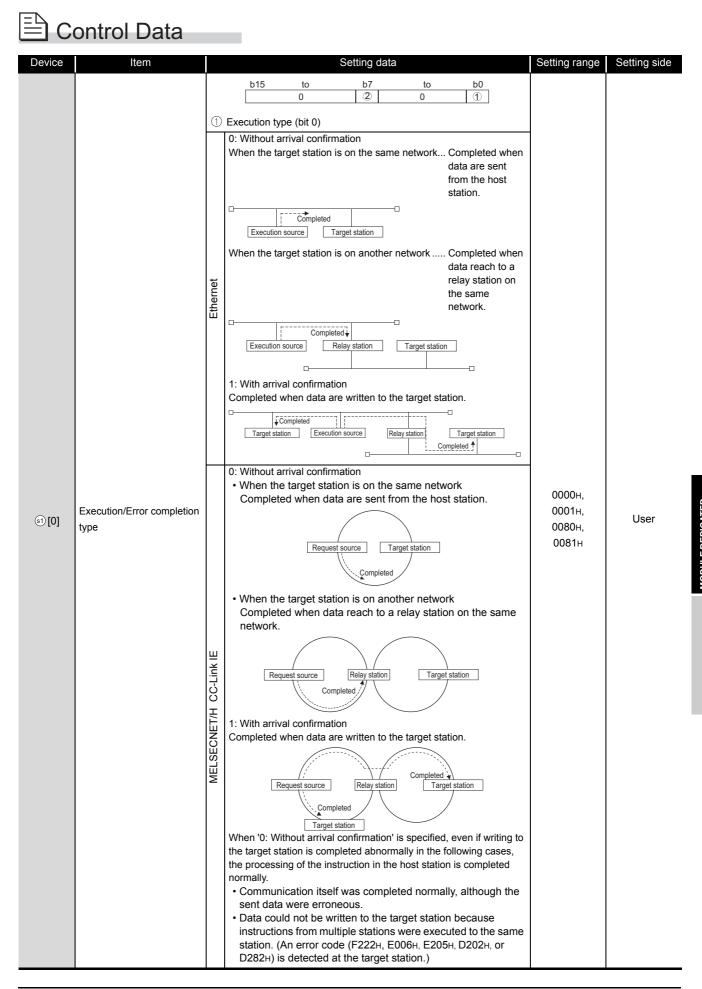
J_WRITE, G_WRITE

CC IE C CC IE F NET/H Ether



Grant Function

This instruction writes data to a word device of another station.



J_WRITE, G_WRITE

Device	Item			Setting data		Setting range	Setting side
্রা [0]	Execution/Error completion type	Specify 1 0: Clock startir 1: Clock	r completion the clock da data at the ng from () (data at the () [11].	0000н, 0001н, 0080н, 0081н	User		
s1 [1]	Completion status	0	:	pletion status is stored. Normal completion Error completion (error o	code)	_	System
		Specify	the channel	used by the host station.			
			D	escription	Setting value		
st [2]	Channel used by host station	Ethernet MELSECNET/H		1	1 to 8	1 to 10	User
		CC-Link IE Controller Network 1 to 10					
		CC-Link IE Field Network 1 to 2				-	
		Setti	the type of type of the type of type of the type of t	he target station CPU. Descr Target station CPU/host	system CPU (Specified	0000н, 03FFн	
		Ethernet		data are the same as '03			
			03FFн ^{*1} 0000н	Target station CPU/host Target station CPU/host data are the same as '03	system CPU (Specified		
st [3]	Target station's CPU type	ET/H IE	03E0н ^{*2}	Multi-CPU No. 1/target s system)	tation CPU (single CPU	0000н,	User
		MELSECNET/H CC-Link IE	03E1н ^{*2}	Multi-CPU No. 2		03E0н to	
		VELS CC	03E2н ^{*2}	Multi-CPU No. 3		03E3н, 03FFн	
		≥ .	03E3н ^{*2}	Multi-CPU No. 4			
			03FFн ^{*1}	Target station CPU/host system CPU			
s1 [4]	Target station network No.		Specify the network number of the target station. 1 to 239 : Network number 254 : Specify this when 254 has been set in Jn.			1 to 239, 254	User

Device	Item	Setting data	Setting range	Setting side
		Specify the station number of the target station.		
		(1) Station number specification		
		Setting value Descri	otion	
		MELSECNET/H 1 to 64		
		Ethernet 1 to 120		
		CC-Link IE Controller Network 1 to 120		
		CC-Link IE Field Network -		
		Master station 125 (7DH)	
		Local station or the intelligent device 1 to 120 station		
		To increase the data reliability when the station number is s executing the instruction with setting Execution/Error compl ((s) [0]) to '1: With arrival confirmation' is recommended. (2) Group specification (target station is anything other than	etion type	
		CC-Link IE Field Network)	1 to 120,	User
		81н to A0н: All stations in group numbers 1 to 32	110 120, 125 (7Dн)	
s1[5]	Target station No.	(Setting is available when Execution type is set to '0: W	. ,	
		arrival confirmation' in <a>[0] .)	FFH	
		Group No.1 · · · 81н Group No.2 · · · 82н		
		to		
		Group No.32 · · · A0 _H		
		(3) All stations specification		
		FFH: All stations of the target network number (Except	the host	
		station.) (Setting is available when Execution type is set to '0: W	/ithout	
			hillout	
		arrival confirmation' in (s) [0].) To specify a group or all stations.		
		 Specify '0000H' or '03FFH' for the target station's CPU typ Group specification cannot be set for the station of the CO Field Network. It cannot be confirmed if the data are written to the target normally. Confirm the device of the target station of the w 	C-Link IE station	
s1 [6]	-	destination. (Fixed value)	0	User
0.01		For instruction execution		
		Specify the number of instruction resends when the instruct	ion is not	
			<u> </u>	User
		completed within the monitoring time specified in (s) [8]. (Se available when Execution type is set to '1: With arrival confi		0.001
st][7]	Number of resends	(i) [0].)		
		② At instruction completion		
		The number of resends (result) is stored. (Setting is availab	le when –	System
		Execution type is set to '1: With arrival confirmation' in 🗐 [0	1.)	

Device	Item		Setting data		Setting range	Setting side
		is available when Exects (s1 [0].)	time required for instruction cution type is set to '1: With ar completed within this time, it			
্রা [8]	Arrival monitoring time	Ethernet	O to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second)	0 to 16383	0 to 32767	User
		MELSECNET/H CC-Link IE	0: 10 seconds 1 to 32767: 1 to 32767 seconds	0 to 32767		
		Specify the number of	write data.			
			escription	Setting value		
st [9]	Write data length	Ethernet MELSECNET/H CC-Link IE Field Network		1 to 960 (word)	1 to 8192	User
		CC-Link IE	Controller Network			
s1[10]	(Reserved)		-	-		
ৱা[11]	Clock set flag ^{*3}	Valid/invalid status of t 0: Invalid 1: Valid	_	System		
ঃ† [12] to sî [15]	Clock data at the time of error completion ^{*3}	Clock data at the time b15 tc (s) [12] Month (01) (s) [13] Hour (00- (s) [14] Second (00) (s) [15] Year (00+ to 99+	_	System		
ঙা [16]	Error-detected network No.		e station where an error was o ror was detected at the host s ber		_	System
		Number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.)				
		Setting value Description MELSECNET/H 1 to 64		-		
st][17]	Error-detected station No.	Ethernet 1 to 120 CC-Link IE Controller Network - Master station 125 (7DH)			-	System
				I25 (7Dн)		
		Local station or the station	he intelligent device	l to 120		

*1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

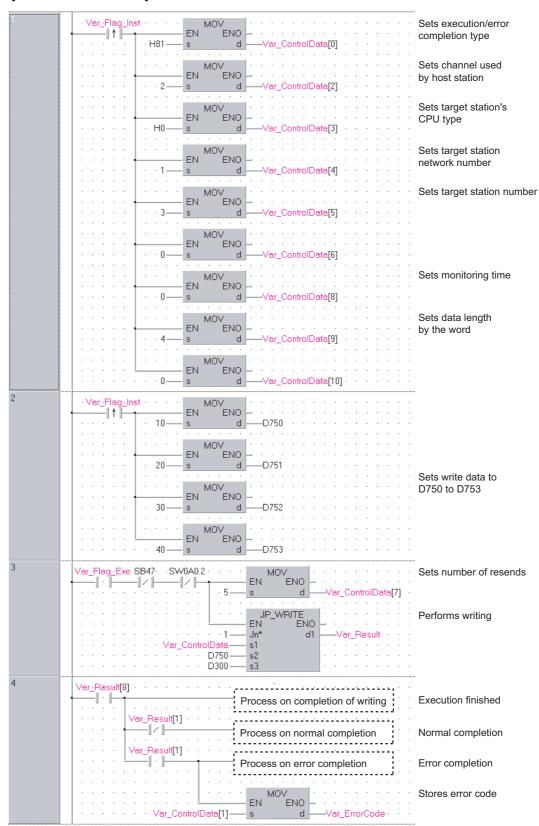
*2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.) • Network module: The first five digits of the serial number are '06092' or higher.

• QCPU: The first five digits of the serial number are '06092' or higher.

*3 : Data are stored only when 1 is set in bit 7 of Error completion type ((s) [0]).

The following program writes data which are stored in the devices from D750 to D753 of the station number 2 (host station) to the devices from D300 to D303 of the station number 3 (target station).

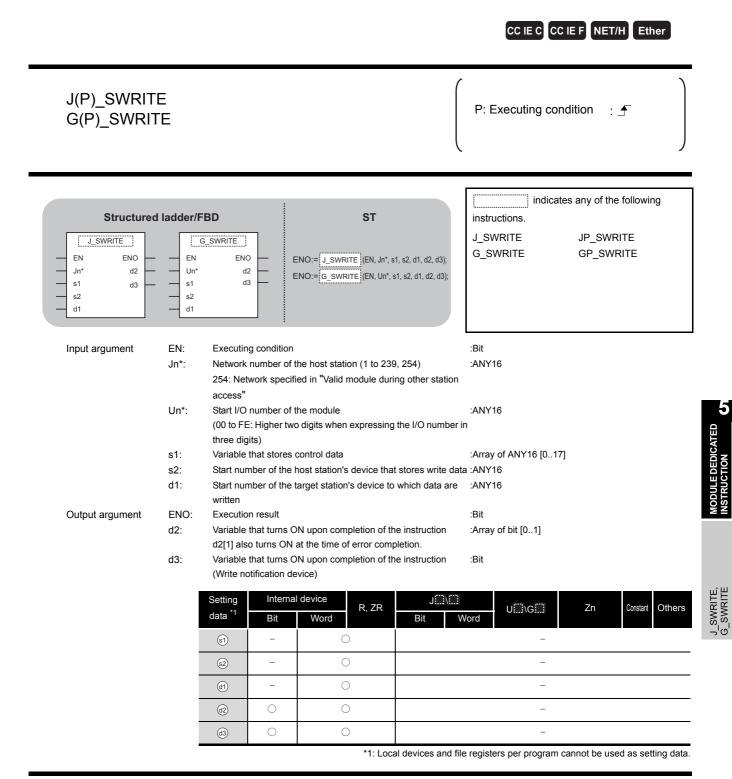


[Structured ladder/FBD]

[ST]	
IF (Var_Flag_Inst=TRUE) THEN	
MOV(TRUE,H81,Var_ControlData[0]);	(* Sets execution/error completion type *)
MOV(TRUE,2,Var_ControlData[2]);	(* Sets channel used by host station *)
MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
MOV(TRUE,3,Var_ControlData[5]);	(* Sets target station number *)
MOV(TRUE,0,Var_ControlData[6]);	
MOV(TRUE,0,Var_ControlData[8]);	(* Sets monitoring time *)
MOV(TRUE,4,Var_ControlData[9]);	(* Sets data length by the word *)
MOV(TRUE,0,Var_ControlData[10]);	
END_IF;	
IF (LDP(TRUE,Var_Flag_Inst2)) THEN	(* Cata write data to DZE0 to DZE2 *)
MOV(TRUE,10,D750);	(* Sets write data to D750 to D753 *)
MOV(TRUE,20,D751); MOV(TRUE,30,D752);	
MOV(TRUE, 30, D752);	
END IF;	
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE)	AND (SW0A0 2=FALSE)) THEN
MOV(TRUE, 5, Var_ControlData[7]);	
JP WRITE(TRUE,1,Var ControlData,D750	
	(* Performs writing *)
END IF;	、 3 ,
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
(* Process on completion of writing *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
IF(Var_Result[1]=FALSE)THEN (* Process on normal completion *)	
ELSE	(* Error completion *)
ELSE (* Process on error completion *)	
MOV(TRUE, Var_ControlData[1], Va	
	(* Stores error code *)
END IF;	
END_IF;	
,	

5.4.11 SWRITE instruction

J_SWRITE, G_SWRITE



Grant Function

This instruction writes data to a word device of another station.

Control Data

For the control data of the SWRITE instruction that writes data to the word device memory of another station, refer to WRITE instruction.

The control data of the SWRITE instruction are the same as those of the WRITE instruction. Accordingly, this section omits the explanation.

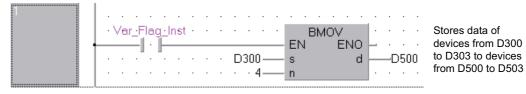
The following program example of the SWRITE instruction is different from that of the WRITE instruction by assigning the write notification device (3) at the end of arguments.

[Structured ladder/FBD]

(1) Program on the request source (station number 2) of the SWRITE instruction

1	Var_Flag_Inst · · · · MOV EN EI	10	Sets execution/error
	· · · · · · · · · · · · · · · · · · ·	dVar_ControlData[0]	completion type
	MOV	VO - · · · · · · · · · · · · · · · · · ·	Sets channel used by host station
	· · · · · · · · · · · · · · · · · · ·	dVar_ControlData[2]	
		vo <mark>-</mark>	Sets target station's CPU type
	· · · · · · H0 — s · · · · · · · · · · · · · · ·	d Var_ControlData[3]	
		d —Var ControlData[4]	Sets target station network number
			Sets target station number
		NO	
		· · · · · · · · · · · · · · · · · · ·	
		NOVar_ControlData[6] · · · · · · ·	
			Sets monitoring time
	· · · · · · · · 0 — s	dVar_ControlData[8]	
	MOV	10	Sets data length by the word
	· · · · · · · · · · · · · · · · · · ·	d Var_ControlData[9]	by the word
	· · · · · · · · · · · · · · Et	VO - · · · · · · · · · · · · · · · · · ·	
2	· · · · · · · · 0 — s	_dVar_ControlData[10] · · · · · · ·	
2		10	
	· · · · · · · 10—s	dD750 · · · · · · · · · · · · · · · · · · ·	
		NOD751	
		D/31	Sets write data to D750 to D753
		чо –	
		· · · · · · · · · · · · · · · · · · ·	
		NO	
3	Var_Flag_Exe SB47· · SW0A0.2 · · ·		Sets number of resends
	· · · · · · · · · · · · · · · · · · ·	S d Var_ControlData[7]	
		· JP_SWRITE · · · · · · · · · · · · · · · · · · ·	Performs writing
	Var_ControlData	Jn* d2Var_Result · · ·	
	D750-	— s2 · · · · · · · ·	
4			
	Var_Result[0] · · · · · · · · · · · · · · · · · · ·	Process on completion of writing	Execution finished
	Var_Result[1]	Process on normal completion	Name a completion
		Process on normal completion	Normal completion
		Process on error completion	Error completion
			Stores error code
	· · · · · · · · · Var_ControlData[1]·	EN ENO Var_ErrorCode	

(2) Program on the request target (station number 3) of the SWRITE instruction



[ST]

(1) Program on the request source (station number 2) of the SWRITE instruction

	IF (Var_Flag_Inst=TRUE) THEN	,
	MOV(TRUE,H81,Var_ControlData[0]);	(* Sets execution/error completion type *)
	MOV(TRUE,2,Var_ControlData[2]);	(* Sets channel used by host station *)
	MOV(TRUE,H0,Var_ControlData[3]);	(* Sets target station's CPU type *)
	MOV(TRUE,1,Var_ControlData[4]);	(* Sets target station network number *)
	MOV(TRUE,3,Var_ControlData[5]);	(* Sets target station number *)
	MOV(TRUE,0,Var_ControlData[6]);	(* Oata manitarian time *)
	MOV(TRUE,0,Var_ControlData[8]); MOV(TRUE,4,Var_ControlData[9]);	(* Sets monitoring time *) (* Sets data length by the word *)
	MOV(TRUE,4, val_controlData[9]);	
	END_IF;	
	IF (Var_Flag_Inst2=TRUE) THEN	
	MOV(TRUE,10,D750);	(* Sets write data to D750 to D753 *)
	MOV(TRUE,20,D751);	
	MOV(TRUE,30,D752);	
	MOV(TRUE,40,D753);	
	END_IF; IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE).	ΔΝΙΟ (SWOAO 2=ΕΔΙ SE)) ΤΗΕΝ
	MOV(TRUE, 5, Var_ControlData[7]);	
	JP_SWRITE(TRUE,1,Var_ControlData,D75	
	_ 、	(* Performs writing *)
	END_IF;	
	IF(Var Result[0]=TRUE)THEN	(* Execution finished *)
	IF(Var_Result[0]=TRUE)THEN	
	(* Process on completion of writing *)	
	IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
	(* Process on normal completion *)	
	ELSE	(* Error completion *)
	(* Droccoc on error completion *)	
	(* Process on error completion *)	
	MOV(TRUE, Var_ControlData[1], Va	r_ErrorCode);(* Stores error code *)
	END_IF;	
	END_IF;	
)	Program on the request target (station number 3) of the SWRITE instruction
	IF(Var_Flag=TRUE) THEN	
	BMOV(TRUE D300 4 D500)	

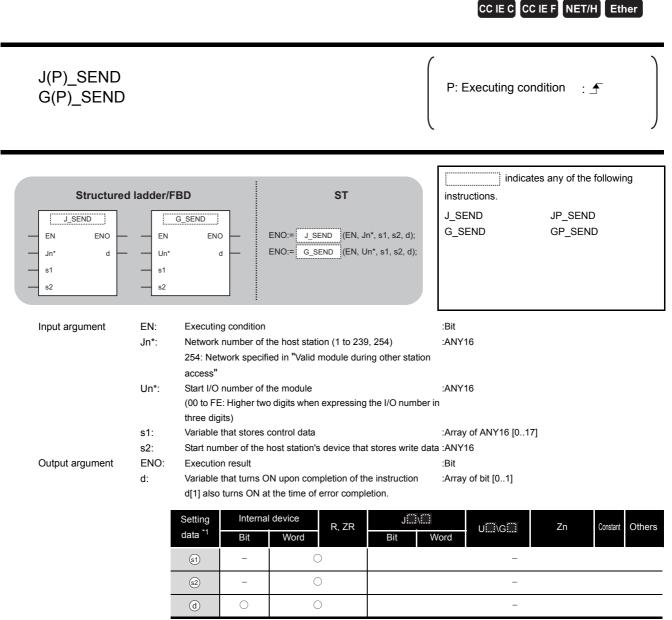
BMOV(TRUE,D300,4,D500);

(* Stores data of devices from D300 to D303 to devices from D500 to D503 *) END_IF;

(2)

5.4.12 SEND instruction

J_SEND, G_SEND



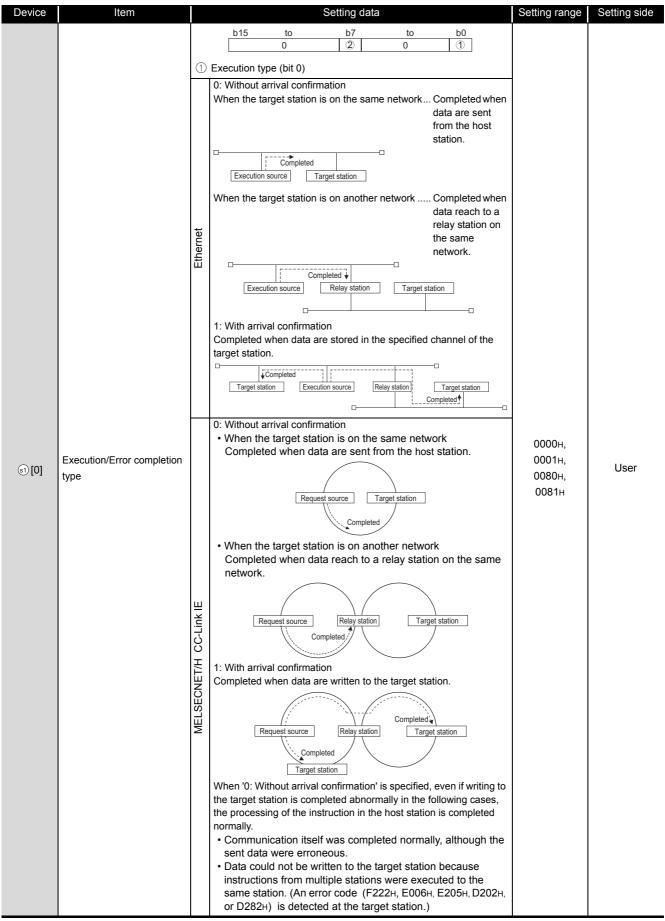
*1: Local devices and file registers per program cannot be used as setting data.

Granitical Function

This instruction sends data to another station.

J_SEND, G_SEND

Control Data



Device	Item	Setting data		Setting range	Setting side
st) [0]	Execution/Error completion type	 ② Error completion type (bit 7) Specify the clock data setup status at the time of error completion. O: Clock data at the time of error completion is not set in the area starting from (a) [11]. 1: Clock data at the time of error completion is set in the area starting from (a) [11]. 		0000н, 0001н, 0080н, 0081н	User
ৱা[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error completion)	de)	-	System
ৱ্য [2]	Channel used by host station	CC-Link IE Controller Network	Setting value	1 to 8	User
(3] ال	Target station channel	Ethernet	res data. ^{*2} Setting value 1 to 64 1 to 8	1 to 64	User
ട)[4]	Target station network No.	Specify the network number of the target station 1 to 239 : Network number 254 : Specify this when 254 has (Network specified in 'Valio station access')	been set in Jn.	1 to 239, 254	User

Device	Item	Setting data Specify the station number of the target station. (1) Station number specification	Setting range	Setting side	
		Setting value Descri	otion		
		MELSECNET/H 1 to 64			
		Ethernet			
		CC-Link IE Controller Network			
		Host station is Universal model QCPU 1 to120			
		Host station is anything other than Universal model QCPU			
		CC-Link IE Field Network -			
		Master station 125 (7DF	1)		
		Local station or the intelligent device 1 to 120 station			
		To increase the data reliability when the station number is s executing the instruction with setting Execution/Error complete			
st [5]	[5] Target station No.	 ((s) [0]) to '1: With arrival confirmation' is recommended. (2) Group specification (target station is anything other than CC-Link IE Field Network) 81H to A0H: All stations in group numbers 1 to 32 (Setting is available when Execution type is set to '0: W 	125 (7Dн) 81н to А0н,	User	
		arrival confirmation' in (s) [0].)			
		Group No.1 · · · 81н Group No.2 · · · 82н			
		to			
		Group No.32 · · · А0н			
		 (3) All stations specification FFH: All stations of the target network number (Except the host station.) (Setting is available when Execution type is set to '0: Without 			
		arrival confirmation' in (1) [0].)			
		To specify a group or all stations.			
	Specify '0000 Group specifi Field Networ It cannot be	 Specify '0000H' or '03FFH' for the target station's CPU type. Group specification cannot be set for the station of the CR Field Network. It cannot be confirmed if the data are written to the target normally. Confirm the device of the target station of the written to the target station. 	C-Link IE station		
		destination.			
s1[6]	-	(Fixed value)	0	User	
		 For instruction execution Specify the number of instruction resends when the instruct 	ion is not		
		completed within the monitoring time specified in $\textcircled{3}$ [8]. (See	etting is 0 to 15	User	
st [7]	Number of resends	available when Execution type is set to '1: With arrival confi (1) (0].)	rmation' in		
		② At instruction completion			
		The number of resends (result) is stored. (Setting is available	e when the –	System	
		Execution type is set to '1: With arrival confirmation' in (3) [0		-	

Device	Item		Setting data		Setting range	Setting side
		Specify the monitoring is available when Exect in (a) [0].) If the instruction is not a number of times specifi				
		De	escription	Setting value		
ട)[8]	Arrival monitoring time	Ethernet	0 to TCP retransmission timer value: Monitoring is performed by the TCP retransmission timer value. (TCP retransmission timer value + 1) to 16383: Monitoring time (unit: second)	0 to 16383	0 to 32767	User
		MELSECNET/H CC-Link IE	0: 10 seconds 1 to 32767: 1 to 32767 seconds	0 to 32767		
s1 [9]	Send data length	Specify the number of s	1 to 960	User		
s1 [10]	(Reserved)		-		-	-
s1][11]	Clock set flag ^{*1}	Valid/invalid status of the data in the area starting from (a) [12] is stored. 0: Invalid 1: Valid			-	System
ৱা [12] to ৱা [15]	Clock data at the time of error completion ^{*1}	b15 to (a) [12] <u>Молth (01н</u> (a) [13] <u>Ноиг (00н</u> (a) [14] <u>Second (00</u>	(12] Month (01н to 12н) Year (00н to 99н) Last two digits			
ঃা [16]	Error-detected network	Network number of the (However, when an err number is not stored.) 1 to 239: Network num	_	System		
্রা [17]	Error-detected station No.*1	Setting value Description MELSECNET/H 1 to 64 Ethernet 1 to 120 CC-Link IE Controller Network - Master station 125 (7DH) Local station or the intelligent device 1 to 120		_	System	

*1 : Data are stored only when 1 is set in bit 7 of Error completion type ((() [0]).

*2: Logical channel setting is not available for the CC-Link IE network module.

5.4 Network Dedicated Instruction

5.4.12 SEND instruction

MODULE DEDICATED INSTRUCTION

J_SEND, G_SEND

Program Example

The following program sends data of the devices from D750 to D753 of the station number 1 (host station) to the channel 5 of the station number 2 (target station).

For the method for reading the data, which are sent by the SEND instruction, from the channel 5 of the station number 2 (target station), refer to the following sections.

For reading out data in a main program

Section 5.4.13 RECV instruction

For reading out data in an interrupt program

Section 5.4.14 RECVS instruction

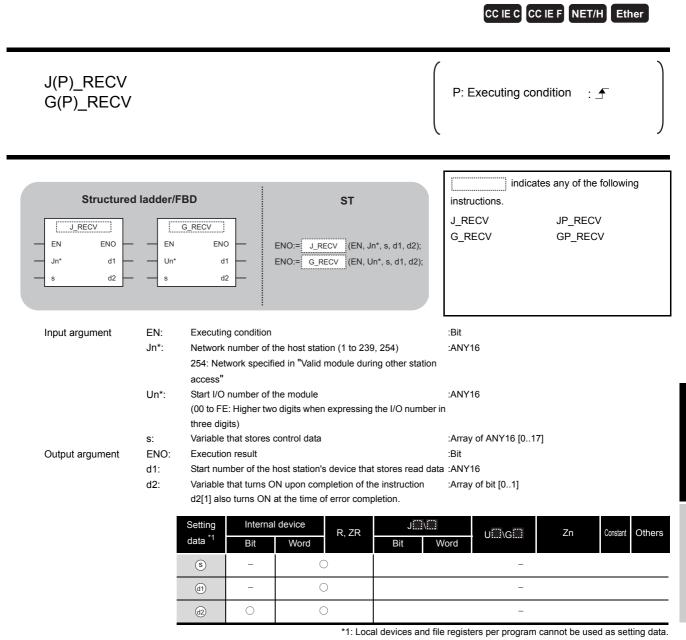
[Structured ladder/FBD]

1	·Var_Flag_Inst MOV Inst EN EN ENO ····································	Sets execution/error completion type
	EN ENO s d Var_ControlData[2]	Sets channel used by host station
	Image: Movement of the state of the stat	Sets target station channel
	MOV EN EN S d Var_ControlData[4]	Sets target station network number
	EN ENO 2 s d Var_ControlData[5]	Sets target station number
	EN ENO 0 s d Var_ControlData[6]	
	EN ENO 0 s d Var_ControlData[8]	Sets monitoring time
	EN ENO 4 s d Var_ControlData[9]	Sets data length by the word
	MOV MOV EN ENO S d Var_ControlData[10]	
2	·Var_Flag:Inst MOV ↑ EN ENO 0 10 s d	
	EN ENO 20	Sets send data to D750 to D753
3	Var_Flag_Exe SB47 SW0A0.1 MOV Image: Strategy of the strategy of	Sets number of resends
	JP_SEND EN	Sends data
4	Var_Result[0] Process on completion of sending	Execution finished
	Var_Result[1] Process on normal completion	Normal completion
	Process on error completion	Error completion
	MOV EN EN ENO s d	Stores error code

[ST] IF (Var_Flag_Inst=TRUE) THEN MOV(TRUE,H81,Var_ControlData[0]); (* Sets execution/error completion type *) MOV(TRUE,3,Var_ControlData[2]); (* Sets channel used by host station *) MOV(TRUE,H5,Var_ControlData[3]); (* Sets target station channel *) MOV(TRUE,1,Var ControlData[4]); (* Sets target station network number *) (* Sets target station number *) MOV(TRUE,2,Var_ControlData[5]); MOV(TRUE,0,Var_ControlData[6]); MOV(TRUE,0,Var_ControlData[8]); (* Sets monitoring time *) MOV(TRUE,4,Var_ControlData[9]); (* Sets data length by the word *) MOV(TRUE,0,Var ControlData[10]); END IF; IF (Var_Flag_Inst2=TRUE) THEN MOV(TRUE, 10, D750); (*Sets send data to D750 to D753 *) MOV(TRUE,20,D751); MOV(TRUE, 30, D752); MOV(TRUE,40,D753); END IF; IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN MOV(TRUE, 5, Var_ControlData[7]); (* Sets number of resends *) JP_SEND(TRUE,1,Var_ControlData,D750,Var_Result);(* Sends data *) END IF: IF(Var Result[0]=TRUE)THEN (* Execution finished *) -----(* Process on completion of sending *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) _____ (* Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *) ···· / MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END IF; END IF;

5.4.13 RECV instruction

J_RECV, G_RECV



Grant Function

This instruction reads received data (for main program).

Control Data

Device	Item	Setting data		Setting range	Setting side	
®[0]	Error completion type	b15 to b7 to b0 0 0 0 0 0 1 Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0 0 0: Clock data at the time of error completion is not set in the area starting from (§ [11]). 1: Clock data at the time of error completion is set in the area starting from (§ [11]). The instruction completion status is stored. The instruction completion status is stored.		0000н, 0080н ng	User	
® [1]	Completion status	0 : No Other than 0 : Err	_	System		
ঙ [2]	Host station channel	Description Setting value MELSECNET/H 1 to 8 CC-Link IE Controller Network CC-Link IE Field Network		1 to 8	User	
s [3]	Channel used by sending station	Channel used by the se 1 to 8: Channel	ending station is stored.		_	System
\$[4]	Network No. of sending station	Network number of the 1 to 239: Network n		System		
٤[5]	Sending station No.	Station number of the sending station is stored. Setting value Description MELSECNET/H 1 to 64 Ethernet 1 to 120 CC-Link IE Controller Network - Master station 125 (7DH) Local station or the intelligent device 1 to 120			System	
§ [6]	(Reserved)		_		_	-
§[7]	(Reserved)		_			_
		Specify the monitoring When the instruction is completes abnormally.	not completed within th	e monitoring time, it		
(8)	Arrival monitoring time	Ethernet CC-Link IE MELSECNET/H	0 to TCP retransmissi timer value: Monitoring performed by the TCP retransmission timer v (TCP retransmission t value + 1) to 16383: Monitoring time (unit: second) 0: 10 seconds 1 to 32767: 1 to 32767 seconds	g is alue. mer 0 to 16383	0 to 32767	User

Device	Item	Setting data	Setting range	Setting side
ි [9]	Receive data length	The number of received data stored in (1) to (1) + n is stored.0: No receive data1 to 960: Number of words of receive data	-	System
s [10]	(Reserved)	_	-	-
ঙ [11]	Clock set flag ^{*1}	Valid/invalid status of the data in the area starting from (\$)[12] is stored. 0: Invalid 1: Valid	-	System
©[12] to ©[15]	Clock data at the time of error completion ^{*1}	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (s) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b0 (s) [13] Hour (00H to 23H) Day (01H to 31H) b14 b15 b14 Second (00H to 59H) Minute (00H to 59H) b16 b17 b17	-	System
§ [16]	Error-detected network No. *1	Network number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) 1 to 239: Network number	_	System
s [17]	Error-detected station No.*1	Number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) Setting value Description MELSECNET/H 1 to 64 Ethernet 1 to 120 CC-Link IE Controller Network - Master station 125 (7DH) Local station or the intelligent device 1 to 120	_	System

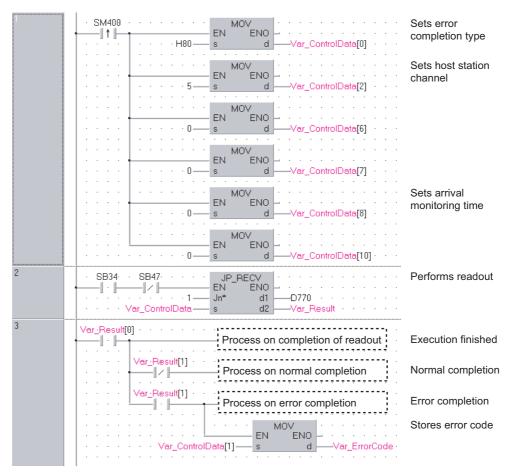
*1 : Data are stored only when 1 is set in bit 7 of Error completion type (([§][0]).

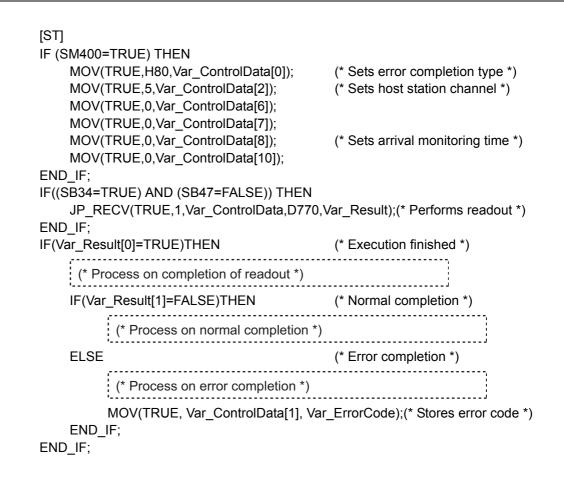
Program Example

The following program reads out data, which is sent from the station number 1 by the SEND instruction, from the channel 5 of the station number 2 (host station) and stores the data to the devices from D770 to D773 of the station number 2 (host station) when SB0034 turns ON. For the SEND instruction, refer to the following section.

Section 5.4.12 SEND instruction

[Structured ladder/FBD]





5.4.14 RECVS instruction

Z_RECVS

CC IE C CC IE F NET/H Ether

Z_RECVS

Structured EN Jn* s1 s2	Iadder/F ECVS ENO d		NO:= Z_RE	ST CVS (EN, U	Jn*, s1, s2, d)		Z_RI	ECVS	es the follo	wing instr	ruction.
Input argument	EN:	Executin	g condition				:Bit				
	Un*:		number of t				:String	9			
		(00 to FE three dig	-	o digits wher	n expressing	the I/O numbe	er in				
	s1:	Variable	that stores of	control data			:Array	of ANY16 [017	7]		
	s2:	Start nur	nber of the h	nost station's	s device that	stores read d	ata :ANY	16			
Output argument	ENO:	Executio	n result				:Bit				
	d:	Dummy					:Bit				
		Setting	Internal	device	R, ZR	J\[U∭\G∭	Zn	Constant	Others
		data ^{*1}	Bit	Word	,	Bit	Word	0			
		s1	-	C)			-			
	Ī	s2	_	C)			_			
		d	0	C)			_			

*1: Local devices and file registers per program cannot be used as setting data.

This instruction reads received data (for interrupt program).

Control Data

Device	Item	Setting data		Setting range	Setting side
§[0]	Completion type	b15 to 0 (Fixed)	b0	0	User
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error completion)	_	System	
		Specify the channel of host station that stores Description	receive data. Setting value		
ঙ[2]	Host station channel	MELSECNET/H Ethernet CC-Link IE Controller Network	1 to 8	1 to 8	User
		CC-Link IE Field Network	1 to 2		
⑤ [3]	Channel used by sending station	Channel used by the sending station is stored. 1 to 8: Channel	-	System	
⑤ [4]	Network No. of sending station	Network number of the sending station is store 1 to 239: Network number	ed.	_	System
ঙ [5]	Sending station No.	Station number of the sending station is stored Setting value MELSECNET/H Ethernet CC-Link IE Controller Network	Description 1 to 64 1 to 120	_	System
		CC-Link IE Field Network Master station slave station	- 125 (7DH) 1 to 120		
\$[6] \$[7] \$[8]	System area	_	-	_	
ি [9]	Receive data length	The number of received data stored in (1) to (1) + n is stored. 0 : No receive data 1 to 960 : Number of words of receive data		-	System
\$ [10] to \$ [17]	System area	_		-	-

Z_RECVS

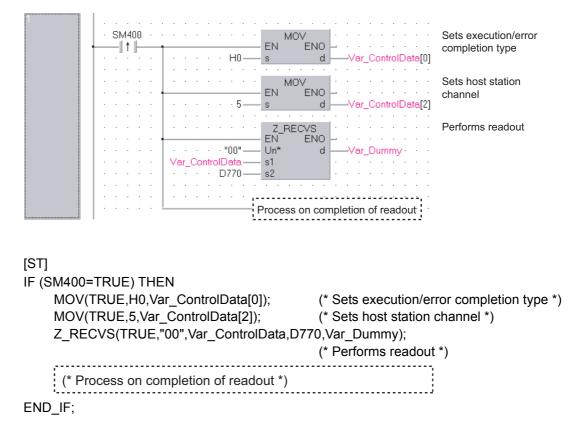
Program Example

The following program reads data, which is sent from the station number 1 by the SEND instruction, from the channel 5 of the station number 2 (host station) and stores the data to the devices from D770 to D773 of the station number 2 (host station) when an interruption program starts up.

For the SEND instruction, refer to the following section.

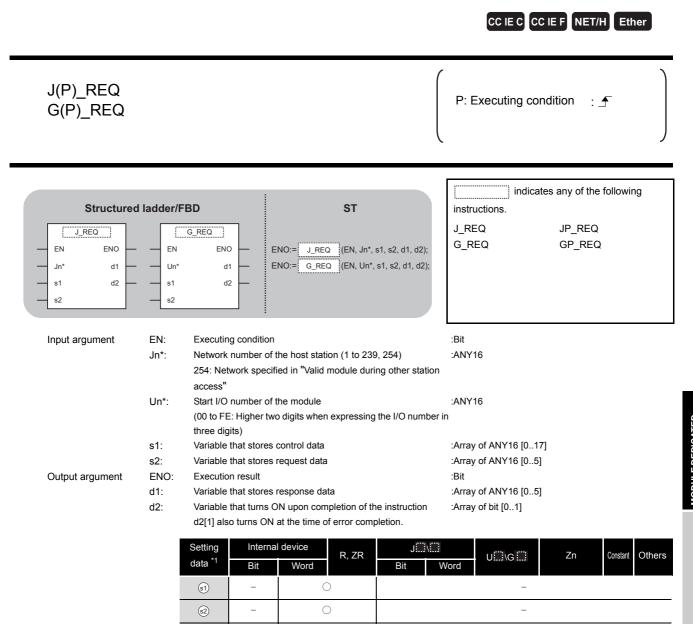
Section 5.4.12 SEND instruction

[Structured ladder/FBD]



5.4.15 REQ instruction

J_REQ, G_REQ



*1: Local devices and file registers per program cannot be used as setting data.

_



Remotely runs or stops a programmable controller on another station.

(d1)

d2)

_

Also, reads/writes clock data from/to a programmable controller on another station.

Control Data

Device	Item			Setting data	Setting range	Setting side
ട്ര [0]	Error completion type	Specify t 0: Clock from (1: Clock	b15 t completion typ he clock data s data at the time (a) [11]. data at the time (b) [11].	0011н, 0091н	User	
ৱা[1]	Completion status	0	ruction complet : No : than 0 : Err	-	System	
st [2]	Channel used by host station	Specify the channel used by the host station. 1 to 8: Channel			1 to 8	User
s) [3]	Target station's CPU type		he type of the t ting value 0000н 03FFн ^{*1} 0000н 03E0н ^{*2} 03E1н ^{*2} 03E2н ^{*2} 03E3н ^{*2} 03E3н ^{*2}	Description Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Target station CPU/host system CPU Target station CPU/host system CPU (Specified data are the same as '03FFH'.) Multi-CPU No. 1/target station CPU (single CPU system) Multi-CPU No. 2 Multi-CPU No. 3 Multi-CPU No. 4	0000н, 03FFн 0000н, 03E0н to 03E3н, 03FFн	User
গ্ৰ [4]	Target station network No.	Specify the network number of the target station. 1 to 239 : Network number 254 : Specify this when 254 has been set in Jn. (Network specified in 'Valid module during other station access')			1 to 239, 254	User

5-182

	Item		Setting data		Setting range	Setting side
		Specify the station number of	-			
		(1) Station number speci	fication			
		Setting va	lue D	escription		
		MELSECNET/H	1 tr	o 64		
		Ethernet	Ethernet			
		CC-Link IE Controller Netwo	ork -			
		Host station is Universa	al model QCPU 1 to	o120		
		Host station is anything	other than	- 64		
		Universal model QCPU		o 64		
		CC-Link IE Field Network	-			
		Master station	12	5 (7DH)		
		Local station or the inte	lligent device	o 120		
		station	1.0	0 120		
		(2) Group specification (targ	et station is anything oth	er than	1 to 120,	
		CC-Link IE Field Network			125 (7Dн)	
st) [5]	Target station No.	81н to A0н: All stations in gro data writing and remote RUN	•	ailable only at clock	81н to А0н, FFн	User
		Grou	up No.1 · · · 81н			
			up No.2 · · · 82н			
			to			
		Grou				
		(3) All stations specification				
		FFH: All stations of the ta				
		station.) (Available only				
		STOP) To specify a group or all stati				
		 Specify '0000H' or '03FFH' Group specification cannot 				
		Field Network.				
		 It cannot be confirmed if the 		-		
		normally. Confirm the devi destination.	ce of the target station of	t the write		
s1[6]	_	(Fixed value)				
(v)		(0	User
					0	User
		① For instruction execution				
		Specify the number of resent		s not completed	0 0 to 15	User User
st][7]	Number of resends	0		s not completed		
s ¹ [7]	Number of resends	Specify the number of resent	ecified in 🗊 [8].	s not completed	0 to 15	User
ৱা[7]	Number of resends	Specify the number of resent within the monitoring time sp	ecified in 🗊 [8].	s not completed		
ৱা[7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion	ecified in (a) [8]. Ilt) is stored		0 to 15	User
ৱ্য[7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu	ecified in (a) [8]. Ilt) is stored equired for the instruction	n completion.	0 to 15	User
্রা[7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is	n completion.	0 to 15	User
s) [7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is	n completion.	0 to 15	User
্য [7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7].	n completion.	0 to 15	User
ৱ্য [7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7].	n completion.	0 to 15	User
্রা [7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to	ecified in (a) [8]. IIt) is stored equired for the instruction eted within this time, it is (a) [7]. Stion	n completion.	0 to 15	User
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. Definition TCP retransmission	n completion.	0 to 15 0 to 15	User System
্জ [7]	Number of resends	Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfer	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. Defining TCP retransmission r value: Monitoring is	n completion. resent by the Setting value	0 to 15	User
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfor retra	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. Dition TCP retransmission r value: Monitoring is pormed by the TCP	n completion.	0 to 15 0 to 15	User System
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfor retra (TCI	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. otion TCP retransmission r value: Monitoring is pormed by the TCP ansmission timer value.	n completion. resent by the Setting value	0 to 15 0 to 15	User System
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfit retra (TCI valu Mon	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. Definition TCP retransmission r value: Monitoring is formed by the TCP ansmission timer value. P retransmission timer e + 1) to 16383: itoring time (unit:	n completion. resent by the Setting value	0 to 15 0 to 15	User System
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfer retra (TCI valu	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. Definition TCP retransmission r value: Monitoring is formed by the TCP ansmission timer value. P retransmission timer e + 1) to 16383: itoring time (unit:	n completion. resent by the Setting value	0 to 15 0 to 15	User System
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfor retra (TCI valu Mon seco MELSECNET/H	ecified in (a) [8]. It) is stored equired for the instruction eted within this time, it is (a) [7]. Pretransmission r value: Monitoring is pred by the TCP ansmission timer value. P retransmission timer e + 1) to 16383: itoring time (unit: ond) D seconds	n completion. resent by the Setting value 0 to 16383	0 to 15 0 to 15	User System
		Specify the number of resent within the monitoring time sp ② At instruction completion The number of resends (resu Specify the monitoring time r If the instruction is not compl number of times specified in Descrip 0 to time perfor retra (TCI valu Mon seco MELSECNET/H	ecified in (a) [8]. (a) is stored equired for the instruction eted within this time, it is (a) [7]. (b) TCP retransmission r value: Monitoring is pormed by the TCP ansmission timer value. P retransmission timer e + 1) to 16383: itoring time (unit: pnd)	n completion. resent by the Setting value	0 to 15 0 to 15	User System

Device	Item	Setting data		Setting range	Setting side
st) [9]	Request data length	Specify the number of request data (words). (Number of words of the data stored in request dat 4: Remote RUN 3: Remote STOP 2: Clock data read 6: Clock data write	2 to 4, 6	User	
st) [10]	Response data length	Number of response data (words) are stored. (Number of words of the data stored in response d 2: Remote RUN/STOP 6: Clock data read 2: Clock data write	_	System	
s1 [11]	Clock set flag ^{*3}	Valid/invalid status of the data in the area starting f 0: Invalid 1: Valid	-	System	
জ [12] to জ [15]	Clock data on error completion ^{*3}	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (a) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b1 b1 b1 b0 (a) [13] Hour (00H to 23H) Day (01H to 31H) b1 b1		_	System
গ্রা [16]	Error-detected network No. *3	Network number of the station where an error was detected is stored. (However, when an error was detected at the host station, the network number is not stored.) 1 to 239: Network number		-	System
্ত [17]	Error-detected station No.	Ethernet CC-Link IE Controller Network CC-Link IE Field Network Master station		_	System

*1: Specification is possible when the host station is a network module or Ethernet module of function version D or later.

(Specification is not possible for other modules. An access is always made to the target station CPU.)
 *2 : Specification is possible when the versions of the QCPU and the network module on the host station and the target station are as indicated below.

(Specification is not possible for other modules. An access is always made to the target station CPU.)

- Network module: The first five digits of the serial number are '06092' or higher.
- QCPU: The first five digits of the serial number are '06092' or higher.

*3 : This becomes valid only when 1 is set in bit 7 of Error completion type ((c) [0]).

(1) Remote RUN/STOP

Request data (all set by the user)

Device	Item	Description	Remote RUN	Remote STOP
	Dequest type	0010н: When station number is specified in 🗊 [5]	0	
s2 [0]	Request type	0030н: When all stations a group is specified in 🗊 [5]	0	0
@[4]	Sub-request type	0001H: Remote RUN	0	0
⊚[1]	oub request type	0002н: Remote STOP)	0
		Specify whether to forcibly execute remote RUN/STOP. The forced		
		execution is a function that forces a station which has stopped by		
		remote STOP to RUN remotely from another station.		
		For remote RUN		
s2 [2]	Operation mode	0001H: No forced execution	0	0
		0003H: Forced execution (This setting can be specified for		
		remote RUN.)		
		For remote STOP		
		0003н: (Fixed)		
		Specify the status of device memory in the CPU module only for		
		remote RUN.		
		0000H: Not cleared (Note that the local devices are cleared.)		
		0001H: Cleared (excluding the latch range and settings in remote RUN)		
		0002H: Cleared (including the latch range and settings in remote		
s2 [3]	Clear mode	RUN)	0	×
		Clear mode (@[3]) allows specification to clear (initialize) the devices		
		in the CPU module at the start of CPU module operation activated by		
		remote RUN.		
		After performing the specified clear processing, CPU module runs		
		according to the setting that specified by Device Initial Value in GX		
		Works2.		

Response data^{*1} (all set by the system)

Device	ltem	Description	Remote RUN	Remote STOP
d] [0]	Request type	0090н: When station number is specified in \textcircled{s} [5]	0	0
		00В0н: When all stations or a group is specified in \mathfrak{s} [5]		
d1[1]	Sub-request type	0001н: Remote RUN 0002н: Remote STOP	0	0

*1: When "all stations or a group (81H to A0H, FFH)" is specified in (s) [5], no response data will be stored.

(2) Reading/writing the clock data

Request data (all set by the user)

Device	Item	Setting data	Read clock data	Write clock data
⊚[0]	Request type	0001н: Clock data read 0011н: Clock data write (When station number is specified in ⓒ)[5]) 0031н: Clock data write (When all stations or a group is specified in ⓒ)[5])	0	0
©[1]	Sub-request type	0002н: Clock data read 0001н: Clock data write	0	0
@[2]	Change pattern Clock data to be changed	 ① Change pattern (bit 0 to 7) Specify the items to be written in high-order byte of (2) [2] to (2) [5]. 0: Not changed 1: Changed ② Year to be changed (bit 8 to 15)*1 Store the year (last two digits) in BCD format. b15 b8 b7 b6 b5 b4 b3 b2 b1 b0 Year (00Ht099H) 0 Year (last two digits) Year (last two digits) Month Day Hour Minute Second Day of week 	×	0
@[3]		High-order 8 bits: Day (01н to 31н), low-order 8 bits: Month (01н to 12н) <u>b15 to b8 b7 to b0</u> Day (01н to 31н) Month (01н to 12н)	Х	0
⊚[4]	Clock data to be changed (continued)	bits: Minute (00н to 59н), low-order 8 bits: Hour (00н to 23н) b15 to b8 b7 to b0 Minute (00н to 59н) Hour (00н to 23н)	×	0
€ [5]		High-order 8 bits: Day of week (00н (Sunday) to 06н (Saturday)), low- order 8 bits: Second (00н to 59н) <u>b15 to b8 b7 to b0</u> <u>Day of week (00н to 06н) Second (00н to 59н)</u> → 00н (Sun.) to 06н (Sat.)	×	0

*1 : This function cannot change the first two digits of year data.

To change the year data including the first two digits, set the clock data using another function (such as GX Works2).

Device	Item	Setting data	Read clock data	Write clock data
d) [0]	Request type	0081н: Clock data read 0091н: Clock data write (When station number is specified in ্র্যা [5]) 00В1н: Clock data write (When all stations or a group is specified in ্র্যা [5]) ^{*2}	0	0
@[1]	Sub-request type	0002н: Clock data read 0001н: Clock data write	0	0
d)[2]		High-order 8 bits: Month (01н to 12н), low-order 8 bits: Year (00н to 99н) ^{*3} <u>b15 to b8 b7 to b0</u> <u>Month (01н to 12н) Year (00н to 99н)</u>	0	×
@[3]		High-order 8 bits: Hour (00H to 23H), low-order 8 bits: Day (01H to 31H) b15 to b8 b7 to b0 Hour (00H to 23H) Day (01H to 31H) Day (01	0	×
@[4]	Read clock data	bits Second (00н to 59н), low-order 8 bits (00н to 59н) b15 to b8 b7 to b0 Second (00н to 59н) Minute (00н to 59н)	0	×
@[5]		High-order 8 bits: (00н), low-order 8 bits: Day of week (00н (Sunday) to 06н (Saturday)) b15 to b8 b7 to b0 00н Day of week (00н to 06н) 00н (Sun.) to 06н (Sat.)	0	×

Response data (all set by the system)

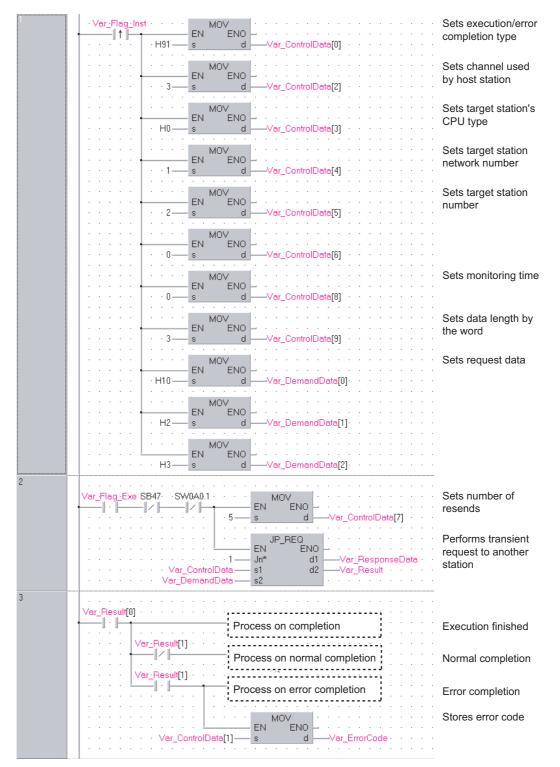
*2: When "all stations or a group (81H to A0H, FFH)" is specified in (s) [5], no response data will be stored.

*3 : Last two digits of year data

Program Example

The following program performs remote STOP to the QCPU, which is the station number 2 (target station).

[Structured ladder/FBD]



```
[ST]
IF (Var_Flag_Inst=TRUE) THEN
    MOV(TRUE,H91,Var_ControlData[0]); (* Sets execution/error completion type *)
    MOV(TRUE,3,Var_ControlData[2]);
                                        (* Sets channel used by host station *)
    MOV(TRUE,H0,Var ControlData[3]); (* Sets target station's CPU type *)
    MOV(TRUE,1,Var ControlData[4]);
                                        (* Sets target station network number *)
    MOV(TRUE,2,Var_ControlData[5]);
                                        (* Sets target station number *)
    MOV(TRUE,0,Var ControlData[6]);
    MOV(TRUE,0,Var_ControlData[8]);
                                        (* Sets monitoring time *)
    MOV(TRUE,3,Var_ControlData[9]);
                                        (* Sets data length by the word *)
    MOV(TRUE,H10,Var_DemandData[0]);(* Sets request data *)
    MOV(TRUE,H2,Var_DemandData[1]);
    MOV(TRUE,H3,Var DemandData[2]);
END_IF;
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN
    MOV(TRUE, 5, Var ControlData[7]); (* Sets number of resends *)
    JP_REQ(TRUE,1,Var_ControlData,Var_DemandData,Var_ResponseData,Var_Result);
                                  (* Performs transient request to another station *)
END_IF;
IF(Var Result[0]=TRUE)THEN
                                        (* Execution finished *)
                . . . . . . . . . . . . . . . . . . .
                                           (* Process on completion *)
    IF(Var Result[1]=FALSE)THEN
                                        (* Normal completion *)
```

(* Process on normal completion *) ELSE (* Error completion *) (* Process on error completion *)

MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END_IF;

END_IF;

5.4 Network Dedicated Instruction

5.4.15 REQ instruction

5.4.16 ZNRD instruction

J_ZNRD

CC IE C NET/H Ether J(P)_ZNRD P: Executing condition : 1 indicates any of the following Structured ladder/FBD ST instructions. J_ZNRD JP_ZNRD J_ZNRD ΕN ENO ENO:= J_ZNRD (EN, Jn*, n1, s, n2, d1, d2); Jn* d1 n1 d2 s n2 :Bit Input argument FN. Executing condition Network number of the host station (1 to 239) ·ANY16 Jn*: n1: Target station number (1 to 64) :ANY16 s Target station's start device number where data to be read are :ANY16 stored Read data length :ANY16 n2: When the target station is Q/QnA/AnUCPU: 1 to 230 words When the target station is anything other than Q/QnA/ AnUCPU: 1 to 32 words ENO: :Bit Output argument Execution result The host station's start device number where readout data will :ANY16 d1: be stored (A contiguous area for the read data length is required.) d2: The host station's device that is turned on for one scan upon :Array of bit [0..1] completion of the instruction d2[1] also turns ON if the instruction execution has failed. Setting Internal device J ... \ Constant R, ZR U....\G.... Zn Others data *1,*2 Word Word Bit Bit n1 _ _ _ S _ _ _ _ n2 _ _ 0 _ _ _ d1) _ _ d2) *1: Local devices and file registers per program cannot be used as setting data.

*2: In addition to the setting data, the ZNRD instruction is executed using the following fixed values. Channel used by host station: Channel 1

Arrival monitoring time (monitoring time until instruction completion): 10 seconds Number of resends for arrival monitoring timeout: 5 times

Grant Function

This instruction reads data from devices of a programmable controller CPU on another station. (In units of words)

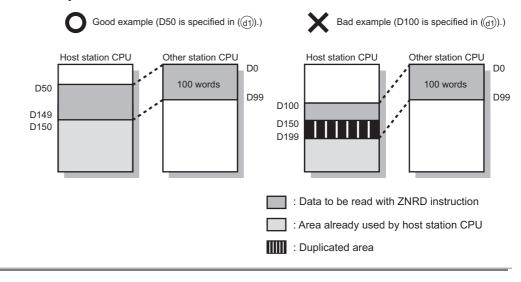
1. Specify devices of the target station's CPU within the range allowed for the host station CPU when reading data from the devices with the ZNRD instruction.

(Target station's start device number ${\scriptstyle \textcircled{\tiny sl}}$ where data to be read are stored)

- + (Read points 1) \leq (End device No. of host station's CPU^{*1})
- Specify the host station's start device number

 within the range allowed for storing read data.

(Example) When D150 and after the area in the host station's CPU has been already used



_ZNRD

Program Example

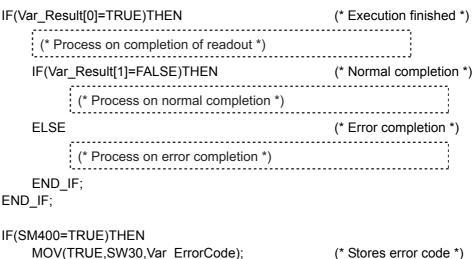
In this program example, when M101 turns ON, data in D250 to D254 of station No.4 (target station) are read out to D700 to D704 of station No.1 (host station).

M1-01- SB47-·SW0A0.3 · JP_ZNRD Performs readout ΕN ENO -||||| 1.1 -12 k · 1 — Jn* d1 -D700 Var_Result 4 n1 d2 D250 - 5 Var_Result[0] -1 ŀ Process on completion of readout No. of the Var_Result[1] —IZH Process on normal completion Propos Var_Result[1] Process on error completion -|| • ||-3 SM400 MOV Stores error code EN ENO - · -|| • ||-SW30 d -Var_ErrorCode S

[Structured ladder/FBD]

[ST]

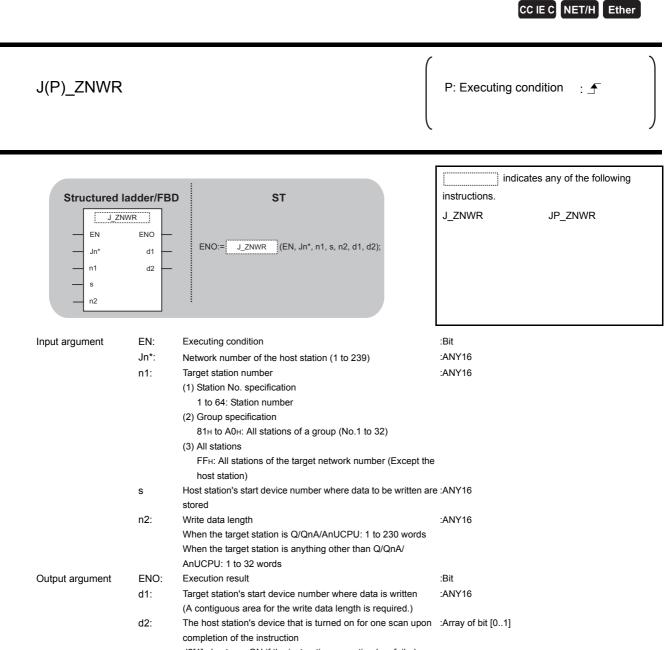
IF((M101=TRUE) &(SB47=FALSE) & (SW0A0.3=FALSE)) THEN JP_ZNRD(TRUE,1,4,D250,5,D700, Var_Result);(* Performs ZNRD instruction*) END_IF;



END_IF;

5.4.17 ZNWR instruction

J_ZNWR



d2[1] also turns ON if the instruction execution has failed.

_ZNWR

Setting	Interna	l device	R, ZR	J[]]\[]]		U∭\G∭	Zn	Constant	Others
data *1,*2	Bit	Word	,	Bit	Word	0::\G::	E 11	K, H	
n1		0				-		0	-
S	-	0	-		-			-	-
n2		0				_		-	-
d1	-	C)			_		0	-
d2		0				_		-	-

*1: Local devices and file registers per program cannot be used as a device which is used in setting data.

*2: In addition to the setting data, the ZNWR instruction is executed using the following fixed values. Channel used by host station: Channel 2

Arrival monitoring time (monitoring time until instruction completion): 10 seconds Number of resends for arrival monitoring timeout: 5 times

Grant Function

This instruction writes data to devices of a programmable controller CPU on another station. (In units of words)

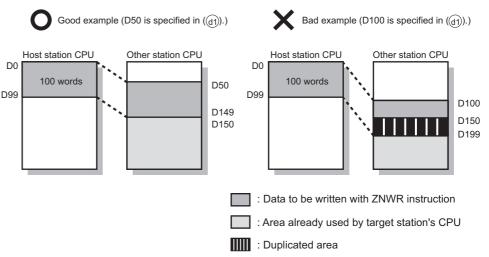
1. Specify devices of the target station's CPU within the range allowed for the host station CPU when writing data to the devices with the ZNWR instruction.

(Target station's start device number where data are written)

- + (Write points 1) \leq (End device No. of host station's CPU ^{*1})
- \star1 End device No. of the device in the host station CPU, and whose device name is same as in ${}_{\mathrm{(s)}}$

write data.

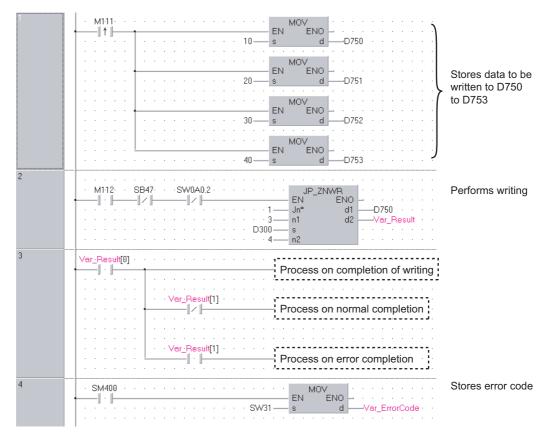
(Example) When D150 and after the area in the host station's CPU has been already used



Program Example

In this program example, when M112 turns ON, data in D750 to D753 of station No.2 (host station) are written to D300 to D303 of station No.3 (target station).

[Structured ladder/FBD]



[ST] IF(M111=TRUE)THEN MOV(TRUE, 10, D750); MOV(TRUE, 20, D751); MOV(TRUE, 30, D752); MOV(TRUE, 40, D753);	(* Instruction flag ON *)
END_IF;	(* Stores data to be written to D750 to D753 *)
IF((M112=TRUE) &(SB47=FALSE) & (SW0 JP_ZNWR(TRUE,1,3,D300,4, D750, END_IF;	DA0.2=FALSE)) THEN Var_Result); (* Performs writing *)
IF(Var_Result[0]=TRUE)THEN	(* Completion of writing *)
(* Process on completion of writing	*)
	(* Normal completion *)
(* Process on normal complet	tion *)
ELSE	(* Error completion *)
(* Process on error completio	n *)
END_IF; END_IF;	
IF(SM400=TRUE)THEN MOV(TRUE,SW31,Var_ErrorCode); END_IF;	(* Stores error code *)

5.4.18 RRUN instruction

Z_RRUN_J, Z_RRUN_U

CC IE C NET/H

Z(P)_RRUN_ Z(P)_RRUN_			P: Executing condition :
Structured Z RRUN J EN Jn* s1 s2 s3 s4		BD ST ENO d ENO:= Z_RRUN_J (EN, Jn*, s1, s2, s3, s4, d); ENO:= Z_RRUN_U (EN, Un*, s1, s2, s3, s4, d);	indicates any of the following instructions. Z_RRUN_J ZP_RRUN_J Z_RRUN_U ZP_RRUN_U
Input argument	EN: Jn*:	Executing condition Network number of the target station (1 to 239, 254) 254: Network specified in "Valid module during other station access"	:Bit :String
	Un*:	Start I/O number of the host station network No. (00 to FE: Higher two digits when expressing the I/O number in	:String n
	s1:	three digits) Channel used by host station For the RRUN instruction, specify the channel used by host station that is the same as the one used for the RSTOP	:ANY16
	s2:	instruction. Target station number (1) Station number specification Host station is Universal model QCPU: 1 to 120 Host station is anything other than Universal model QCPU: 1 to 64 (2) Group specification 81H to A0H: All stations of a group (No.1 to 32) (3) All stations	:ANY16
		FFн: All stations of the target network No. (Except the host station) To specify a group or all stations, specify '0000н' or '03FFн' for	r
	s3:	the target station's CPU type (s3). Target station's CPU type 0000H: Target station CPU/control CPU/host system CPU (Specified data are the same as '03FFH'.) 03E0H: Multi-CPU No. 1/ target station CPU (single CPU system) 03E1H: Multi-CPU No. 2 03E2H: Multi-CPU No. 3 03E3H: Multi-CPU No. 4 03E5H: Target station CPU/control CPU/cont system CPU	:ANY16
Output argument	s4: ENO: d:	03FFH: Target station CPU/control CPU/host system CPU Mode Execution result Variable that turns ON upon completion of the instruction d[1] also turns ON at the time of error completion.	:ANY16 :Bit :Array of bit [01]

Setting	Internal	device	R, ZR J∭∖		U\G	Zn	Constant	Others	
data ^{*1}	Bit	Word	N, 2N	Bit	Word	Uii\Gii	20	K, H	Cullero
(s1)	-	C)			-		0	-
s2	-	C)			-		0	-
s 3	-	C)	-			0	-	
<u>s4</u>	-	C)			-		0	-
d	0	C)			-		-	-

1: Local devices and file registers per program cannot be used as setting data.

Grant Function

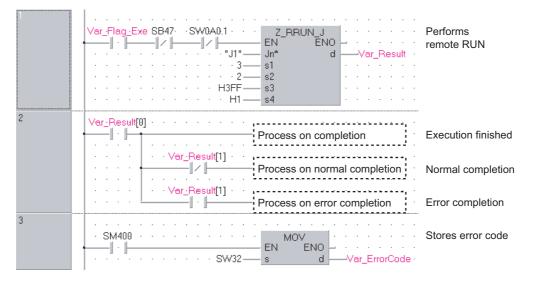
This instruction remotely switches a CPU module on another station to RUN.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program remotely switches the QCPU on the station number 2 (target station) to RUN.



[Structured ladder/FBD]

[ST] IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (Z_RRUN_J(TRUE,"J1",3,2,H3FF,H1,Var_Result) END_IF; IF(Var Result[0]=TRUE)THEN	· · · · · · · · · · · · · · · · · · ·
· · · · · · · · · · · · · · · · · · ·	()
(* Process on completion *)	
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
(* Process on normal completion *)	
ELSE	(* Error completion *)
(* Process on error completion *)	
END_IF;	
END_IF;	

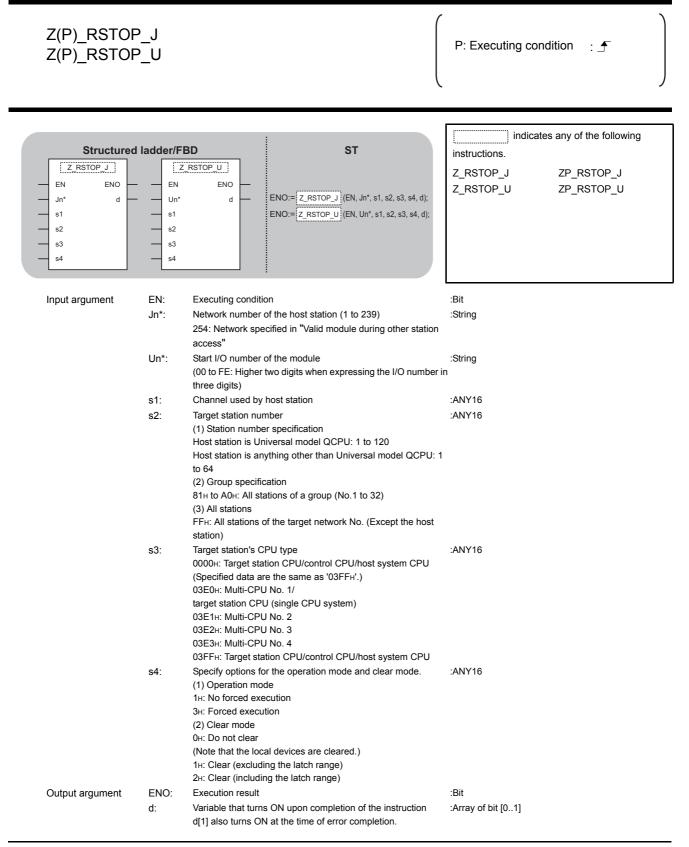
MOV(SM400,SW32,Var_ErrorCode);

(* Stores error code *)

5.4.19 RSTOP instruction

Z_RSTOP_J, Z_RSTOP_U

CC IE C NET/H



Setting	Interna	l device	vice J			Zn	Constant	Others	
data *1	ta ^{*1} Bit Word		Bit	Word	0:		K, H		
(s1)	-	C)			-		0	-
s2	-	C)					0	-
<u>s</u> 3	-	C)	-			0	-	
<u>\$4</u>	-	C)	-			0	-	
d	0	C)	-				_	-
			*1.1 003	al devices a	nd file registe	are ner program	cannot be user	t as sot	ting data

1: Local devices and file registers per program cannot be used as setting data

Grant Function

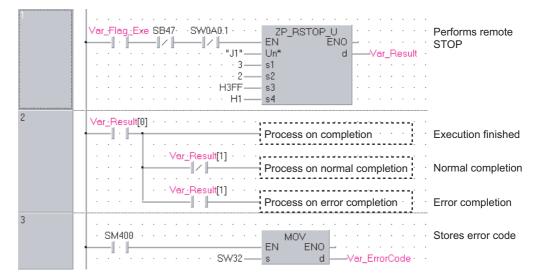
This instruction remotely switches a CPU module on another station to STOP.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program remotely switches the QCPU on the station number 2 (target station) to STOP.



[Structured ladder/FBD]

ODULE DEDICATED

[ST] IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN ZP_RSTOP_J(TRUE,"J1",3,2,H3FF,H1,Var_Result);(* Performs remote STOP *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) (* Process on completion *) . . IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Process on normal completion *) ELSE (* Error execution *) (* Process on error completion *) END IF; END_IF;

MOV(SM400, SW32, Var_ErrorCode); (* Stores error code *)

5.4.20 RTMRD instruction

Z_RTMRD_J, Z_RTMRD_U

CC IE C NET/H

Z(P)_RTMRI Z(P)_RTMRI					P: Executing cond	dition : 🛓	7	
Structured EN ENO Jn* d1 s1 d2 s2 s3		BD ENO d1 d2	ST ENO:= Z_RTMRD_J (EN, Jn' ENO:= Z_RTMRD_U (EN, Un		indicate instructions. Z_RTMRD_J Z_RTMRD_U	s any of the f ZP_RTMR ZP_RTMR	D_J	ng
Input argument	EN: Jn*: Un*:	254: Network s access" Start I/O numb	lition er of the host station (1 to 23 pecified in "Valid module du er of the module er two digits when expressin	ring other station	:Bit :String :String n			
	s1: s2:		-		:ANY16 :ANY16			
	s3:	Target station's 0000H: Target s (Specified data 03E0H: Multi-C target station C 03E1H: Multi-C 03E2H: Multi-C 03E3H: Multi-C	station CPU/control CPU/hos are the same as '03FFH'.) PU No. 1/ :PU (single CPU system) PU No. 2 PU No. 3		:ANY16			
Output argument	ENO:	Execution resu			:Bit			
	d1: d2:	Variable that tu	ores read clock data rns ON upon completion of s ON at the time of error con		:Array of ANY16 [03] :Array of bit [01]			
		Setting In data ^{*1} B	ternal device R, ZR	J∭\∭ Bit V	U∭\G∭	Zn	Constant K, H	Others
		s1 -	· 0		-		0	-
		62 -	· O		_		\bigcirc	-
		<u>(53</u> –	· 0				0	-
		- (1)	· 0		_		-	-
		d2 C			_		-	-

*1: Local devices and file registers per program cannot be used as setting data.

5

Z_RTMRD_J, Z_RTMRD_U

Grant Function

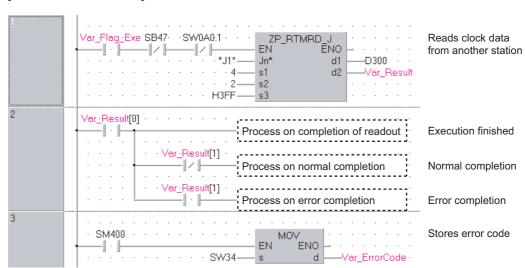
This instruction reads clock data from a CPU module on another station.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program reads out clock data from the QCPU on the station number 2 (target station) and stores the clock data in the station number 1 (host station).



[Structured ladder/FBD]

[ST]

IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SW0A0.1=FALSE)) THEN ZP_RTMRD_J(TRUE,"J1",4,2,H3FF,D300,Var_Result); (* Poads clock data from another station *)

(* Reads clock data from another station *)

END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) (* Process on completion of readout *) (* Normal completion *) IF(Var_Result[1]=FALSE)THEN Process on normal completion *) ELSE (* Error completion *) * Process on error completion *) END IF; END IF; MOV(SM400, SW33, Var ErrorCode); (* Stores error code *)

5.4.21 RTMWR instruction

Z_RTMWR_J, Z_RTMWR_U

CC IE C NET/H

Z(P)_RTMW Z(P)_RTMW			P: Executing condition :
Structured EN ENO Jn* d s1 s2 s3 s4		BD ST ENO:= Z.RTMWR_J d ENO:= Z.RTMWR_U (EN, Jn*, s1, s2, s3, s4, d); ENO:= Z.RTMWR_U (EN, Un*, s1, s2, s3, s4, d);	indicates any of the following instructions. Z_RTMWR_J ZP_RTMWR_J Z_RTMWR_U ZP_RTMWR_U
Input argument	EN: Jn*:	Executing condition Network number of the target station (1 to 239, 254) 254: Network specified in "Valid module during other station access"	:Bit :String on
	Un*:	Start I/O number of the host station network No. (00 to FE: Higher two digits when expressing the I/O numb three digits)	:String er in
	s1: s2: s3:	 Channel used by host station (1 to 8) Target station number (1) Station number specification Host station is Universal model QCPU: 1 to 120 Host station is anything other than Universal model QCPU to 64 (2) Group specification 81H to A0H: All stations of a group (No.1 to 32) (3) All stations FFH: All stations of the target network No. (Except the host station) To specify a group or all stations, specify '0000H' or '03FFH the target station's CPU type 0000H: Target station CPU/control CPU/host system CPU (Specified data are the same as '03FFH'.) 	st i' for :ANY16
Output argument	s4: ENO: d:	(c)peonied data die the same die GOTTIT) 03EOH: Multi-CPU No. 1/ target station CPU (single CPU system) 03E1H: Multi-CPU No. 2 03E2H: Multi-CPU No. 3 03E3H: Multi-CPU No. 4 03FFH: Target station CPU/control CPU/host system CPU Variable that stores write clock data Execution result Variable that turns ON upon completion of the instruction d2[1] also turns ON at the time of error completion.	:Array of ANY16 [04] :Bit :Array of bit [01]

Setting	Interna	l device	R, ZR	J	1	U\G	Zn	Constant	Others
data *1	Bit	Word	, <u>2</u> , 1	Bit	Word	0::\G::	20	K, H	Cullero
(s1)	-	C)			-		0	-
s2	-	C)			_		0	-
\$3	-	C)			_		0	-
s4)	-	C)			_		-	-
d	0	C)		-	-			

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

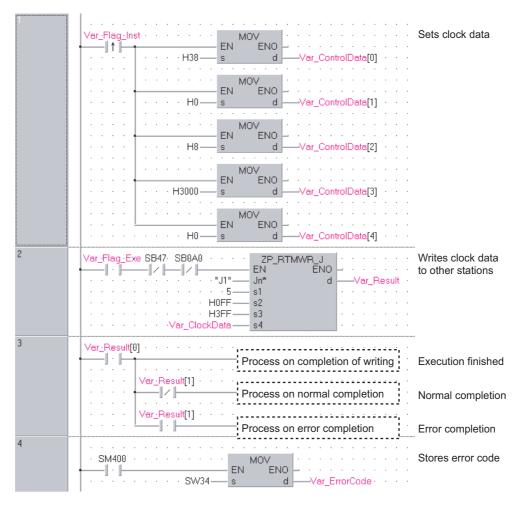
This instruction writes clock data to a CPU module on another station.

Precautions

This instruction is applicable to the QJ71LP21 or QJ71BR11 with the function version B or later.

Program Example

The following program writes the clock data (8:30:00) to all stations on the network number 1. [Structured ladder/FBD]



```
[ST]
IF (Var_Flag_Inst=TRUE) THEN
   MOV(TRUE,H38,Var_ClockData[0]); (* Sets clock data *)
   MOV(TRUE,H0,Var_ClockData[1]);
   MOV(TRUE,H8,Var ClockData[2]);
   MOV(TRUE,H3000,Var ClockData[3]);
   MOV(TRUE,H0,Var_ClockData[4]);
END IF;
IF((Var_Flag_Exe=TRUE) AND (SB47=FALSE) AND (SB0A0=FALSE)) THEN
   ZP_RTMWR_J(TRUE,"J1",5,H0FF,H3FF,Var_ClockData,Var_Result);
                             (* Writes clock data to other stations*)
END_IF;
IF(Var_Result[0]=TRUE)THEN (* Execution finished *)
       .....
    (* Process on completion of writing *)
                              /
   IF(Var_Result[1]=FALSE)THEN (* Normal completion *)
              .....
         (* Process on normal completion *)
                                 ......
   ELSE
                        (* Error completion *)
              -----
        (* Process on error completion *)
                               END IF;
END IF;
```

MOV(SM400, SW34, Var_ErrorCode);(* Stores error code *)

5.4.22 REMFR instruction

Z_REMFR

CC IE F NET/H

Z(P)_REMFI	R					P: Executing co	ndition : 🖍	
Structured		3D		ST		instructions.	tes any of the follo	owing
EN - EN - Jn* - n1 - n2 - n3 - n4 - n5	EMFR	- - - -	NO:= <u>Z_rem</u> i	R (EN, Jn*, n1, n2, n3, n4, n5, d1, d	2);	Z_REMFR	ZP_REMFR	
Input argument	EN:	Executin	g condition			:Bit		
input diguniont	Jn*:		•	ber (1 to 239)		:String		
	n1:		number (1			:ANY16		
	n2:					:ANY16		
				er (1 to 120)	tion module			
	n3:			the target intelligent func Field Network, the higher		:ANY16		
				number in three digits.	two digits when			
				ET/H, the higher three dig	aits when			
				number in four digits.	,			
	n4:		-	y start address		:ANY16		
				ddress of the buffer men	nory for the read			
		destinati	on intellige	nt function module.				
	n5:	Number	of read poi	nts (1 to 240 words)		:ANY16		
Output argument	ENO:	Executio	n result			:Bit		
	d1:	Start nur	nber of the	device that stores read of	data (host station)) :ANY16		
		•		umber of the host statior	n's device that			
	d2:		that turns (DN upon completion of th at the time of error comp		:Array of bit [01]		
		Setting		al device	J\			stant O
		data *1	Bit	Word R, ZR	Bit V	/ord	Zn K,	Н
		n1	-	0		-		
		n2	-	0		_	(
		n3	I	0		_	(
		n4	-	0		_		
		n5	-	0		-	(\mathbf{D}
		d1	-	0		-	-	-

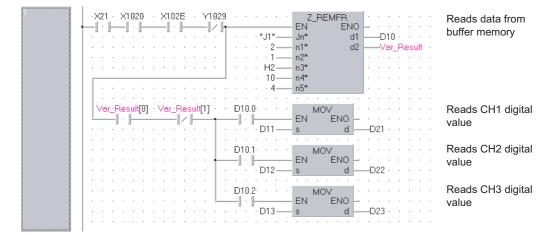
Grant Function

This instruction reads data from the buffer memory of an intelligent function module to the host station's word device (starting from (a)) on the intelligent device station/remote I/O station.

Program Example

The following program reads digital output values.

[Structured ladder/FBD]



[ST]

IF((X21=TRUE) AND (X1020=TRUE) AND (X102E=TRUE) AND (Y1029=FALSE))THEN Z_REMFR(TRUE,"J1",2,1,H2,10,4,D10,Var_Result); (* Reads data from buffer memory *) (*Reads digital values of CH1 to CH3 at once*) IF((Var_Result[0]=TRUE) AND (Var_Result[1]=FALSE))THEN IF(D10.0=TRUE)THEN MOV(TRUE,D11,D21); (* Reads CH1 digital output value *) END IF; IF(D10.1=TRUE)THEN MOV(TRUE,D12,D22); (* Reads CH2 digital output value *) END IF; IF(D10.2=TRUE)THEN MOV(TRUE,D13,D23); (* Reads CH3 digital output value *) END_IF; END_IF; END_IF;

5.4.23 REMTO instruction

Z_REMTO

CC IE F NET/H

Z(P)_REMT	0				P: Executing condition : _	
Structured	ladder/F	BD		ST	indicates any of the followin instructions.	ıg
EN - EN - Jn* - n1 - n2 - n3 - n4 - n5	EMTO = ENO = d1 = d2 =	- - - E	NO:= Z_REMT() (EN, Jn*, n1, n2, n3, n4, n5, d1, d2);	Z_REMTO ZP_REMTO	
Input argument	EN:	Executir	ng condition		:Bit	
input diguniont	Jn*:			he host station (1 to 239)	:String	
	n1:		l number (1	, ,	:ANY16	
	n2:				:ANY16	
			station numb			
	n3:			he target intelligent function Field Network, the higher two		
				umber in three digits.		
				T/H, the higher three digits v	when	
				umber in four digits.		
	n4:			start address	:ANY16	
				ddress of the buffer memory		
				t function module.		
	n5:			nts (1 to 240 words)	:ANY16	
Output argument	ENO:		on result		:Bit	
	d1:	Start nu	mber of the	device that stores write data	(host station) :ANY16	
		Specifie	s the start n	umber of the host station's d	evice that	
		stores w	vrite data.			
	d2:			N upon completion of the in at the time of error completion		
		Setting		l device R, ZR	J∰\∭ U∭\G∭ Zn vu	0
		data *1	Bit	Word	Bit Word K,H	
		n1	-	0	- 0	
		n2	-	0	- 0	
		n3	-	0	- 0	
		n4	-	0	- 0	
		n5	-	0	- 0	
	_					
	-	d1	-	0		

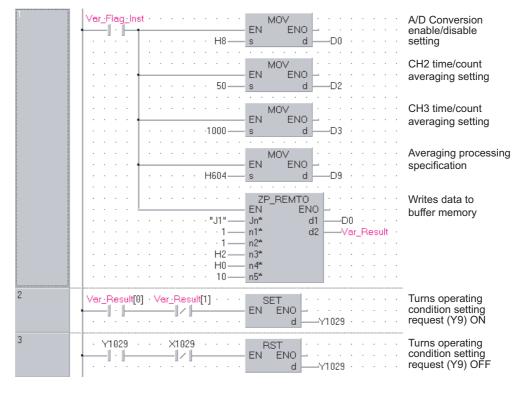
Grant Function

This instruction writes data to the buffer memory of an intelligent function module on the intelligent device station/remote I/O station.

Program Example

The following program makes the A/D conversion enable setting on channels.

[Structured ladder/FBD]



[ST]

IF(Var_Flag_Inst=TRUE)THEN MOV(TRUE,H8,D0); (* A/D Conversion enable/disable setting *) MOV(TRUE,50,D2); (* CH2 time/count averaging setting *) MOV(TRUE, 1000, D3); (* CH3 time/count averaging setting *) MOV(TRUE,H604,D9); (* Averaging processing specification *) ZP REMTO(TRUE,"J1",1,1,H2,H0,10,D0,Var Result); (* Writes data to buffer memory *) END IF; IF((Var_Result[0]=TRUE) AND (Var_Result[1]=FALSE))THEN SET(TRUE, Y1029); (* Turns operating condition setting request (Y9) ON *) END IF; IF((Y1029=TRUE) AND (X1029=FALSE))THEN RST(TRUE, Y1029); (* Turns operating condition setting request (Y9) OFF *) END_IF;

5.4.24 CCPASET instruction

G_CCPASET



Structured ladder/FBD ST Imput argument ENO = @CCPASEF (EN, Un*, s1, s2, s3, s4, d); Imput argument EN: Executing condition EN: Start I/O number of the module : ANY16 Un*: Start I/O number of the module Start I/O number of the module : ANY16 Uoto EE: Higher two digits when expressing the I/O number in three digits Start I/O number of the host station's device that stores network : Array of ANY16 [03] Start I/O number of the host station's device that stores network : Array of ANY16 [0599]	G(P)_CCPAS	SET				P: Executing col	ndition : <u>f</u>
Un*: Start I/O number of the module : ANY16 (00 to FE: Higher two digits when expressing the I/O number in three digits) : \$1: Variable that stores control data : Array of ANY16 [03] \$2: Start number of the host station's device that stores network : Array of ANY16 [07] station specification data. : Array of ANY16 [07] output argument ENO: Execution result : Bit d: Variable that turns ON upon completion of the instruction : Array of Bit [01] d[1] also turns ON at the time of error completion. : Array of Bit [01] : Other i: - - - - i: - - -	— EN — Un* — s1 — s2 — s3	ENO -	ENO:=G_CCPAS		3, s4, d);	instructions.	
Output argument ENO: Execution result : Bit d: Variable that turns ON upon completion of the instruction : Array of Bit [01] d[1] also turns ON at the time of error completion. Setting Internal device R, ZR Jiii Uiii Giii Zn Constant Other s1 -	Input argument	Un*: Sta (00 s1: Var s2: Sta cor s3: Sta sta s4: Sta	rt I/O number of i to FE: Higher tw ee digits) iable that stores rt number of the figuration setting rt number of the tion specification rt number of the	o digits when express control data host station's device I data. host station's device data. host station's device	e that stores netwo	: ANY16 er in : Array of ANY16 [03] rk : Array of ANY16 [059 ed : Array of ANY16 [07]	9]
-	Output argument	ENO: Exx d: Var d[1 Setting data ¹¹ sî sî sî sî sî sî	ecution result iable that turns C also turns ON a Internal d Bit - - -	2N upon completion t the time of error co evice R, ZR O O	ompletion. J⊞∖⊞	: Array of Bit [01]	Zn Constant Others

Grant Function

This instruction sets parameters for master/local module (master station).

Control Data

Device	Item	Setting data	Setting range	Setting side
st) [0]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
্রা [1]	Setting flag	Specify the validity of setting data from $_{s2}$ to $_{s3}$ in the range from b0 to b2. '0: Invalid' is specified, default parameter is applied. The supplementary setting and the network operation setting in the range from b8 to bA. $\begin{array}{c ccccccccccccccccccccccccccccccccccc$	-	User
st [2]	Total number of slave station	Specify the number of connected slave stations.	1 to 120	User
st [3]	Constant link scan time	Set the constant link scan time. 0 : No setting 5 to 2000: Constant link scan time	5 to 2000 (ms)	User

(1) Network configuration setting data

Set the network configuration settings when network configuration setting data (b0) is enabled in the setting flag (<a>[1]).

Device		Item	Setting data	Setting range	Setting side
⊚ [0]	1st	Slave station setting information	Specify the station type and station number. b15 ~ b12 b11 ~ b8 b7 ~ b0 Station type 1 (Fixed) Station number 0 : Remote I/O station 1 : Remote device station 2 : Intelligent device station 3 : Local station	-	
s2 [1]	131	RX/RY offset	Specify the start number of RX/RY in units of 16 points.	0 to 3FF0н	
s2 [2]		RX/RY size	Specify the number of RX/RY in units of 16 points.	0 to 2048	
s2 [3]		RWr/RWw offset	Specify the start number of RWr/RWw in units of 4 points.	0 to 1FFCн	
s2 [4]		RWr/RWw size	Specify the number of RWr/RWw in units of 4 points.	0 to 1024	User
© [5] to © [594]			• • • •		0361
€2 [595]		Slave station setting information			
© [596]		RX/RY offset			
© [597]	120th	RX/RY size	The same as from $\textcircled{2}$ [0] to $\textcircled{2}$ [4].		
© [598]		RWr/RWw offset			
© [599]		RWr/RWw size			

(2) Reserved station specification data

Set the slave station as the reserved station when reserved station specification data (b1) is enabled in the setting flag (((1)).

Device	Item		Setting data										Setting side								
3 [0] to 3 [7]	Reserved station specification	Specify the reserve 0: Not specified 1: Specified (3)[0] (3)[1] (3)[2] (3)[2] (3)[3] (3)[4] (3)[5] (3)[6] (3)[6]		b14 15 31 47 63 79 95	b13 14 30 46 62 78 94	13 29 45 61 77 93	12 28 44 60 76 92	11 27 43 59 75 91	10 26 42 58 74 90	9 25 41 57 73 89	8 24 40 56 72 88 104	7 23 39 55 71 87 103	6 22 38 54 70 86 102		4 20 36 52 68 84 100	3 19 35 51 67 83 99	2 18 34 50 66 82 98	b0 1 17 33 49 65 81 97		User	
		\$3[7]	_	-	-	_	 Nu	umbe	ers ir	n the				117 e the							

(3) Error invalid station setting data

Set the slave station as the error invalid station when error invalid station setting data(b2) is enabled in the setting flag (s[1])

Device	Item	Setting data											Sett sic	0							
⊛ [0] to ⊛ [7]	Error invalid station setting ^{*1}	(4) (2) (3) (3) (4) (4) (5)	(Def b15 16 32 48 64 80 96	fault b14 15 31 47 63 79 95	b) b13 14 30 46 62 78 94	b12 13 29 45 61 77 93	12 28 44 60 76 92	11 27 43 59 75 91	10 26 42 58 74 90	57 73 89 105	8 24 40 56 72 88 104	7 23 39 55 71 87 103	6 22 38 54 70 86 102	5 21 37 53 69 85 101	4 20 36 52 68 84 100	3 19 35 51 67 83 99	2 18 34 50 66 82 98	33 49 65 81		Us	
							Nı	umbe	ers i	h the	tabl	e inc	licat	e the	stat	ion r	numl	bers.			

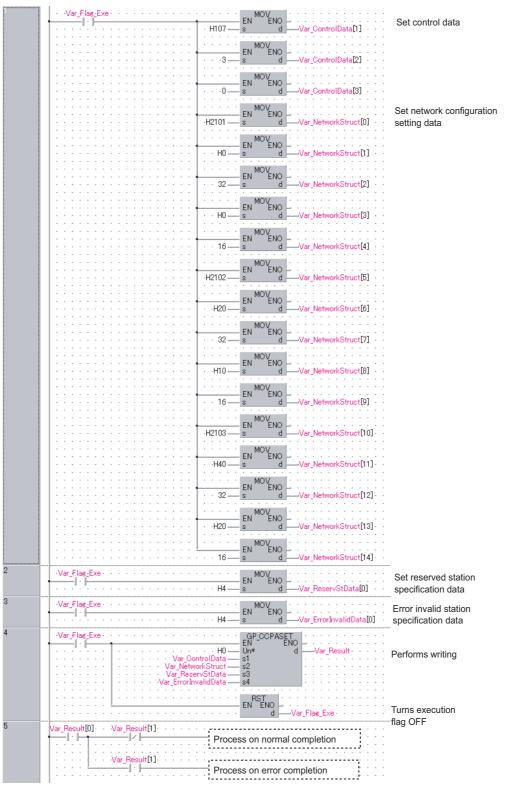
*1: Reserved station specification has a priority when an error invalid station and reserved station are specified for the same station.

Program Example

The following program sets parameters for master station of network No.1 when Var_Flag_Exe turns ON.

(Total number of slave stations is 3.)

[Structured ladder/FBD]



```
[ST]
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    MOV(TRUE, H107, Var ControlData[1]);
                                               (* Sets control data *)
    MOV( TRUE, 3, Var_ControlData[2]);
    MOV(TRUE, 0, Var ControlData[3]);
                                       (* Sets data of network configuration setting *)
    MOV( TRUE, H2101, Var_NetworkStruct[0] );
    MOV( TRUE, H0, Var NetworkStruct[1] );
    MOV( TRUE, 32, Var_NetworkStruct[2] );
    MOV( TRUE, H0, Var_NetworkStruct[3] );
    MOV(TRUE, 16, Var NetworkStruct[4]);
    MOV( TRUE, H2102, Var NetworkStruct[5] );
    MOV( TRUE, H20, Var_NetworkStruct[6 ] );
    MOV( TRUE, 32, Var NetworkStruct[7] );
    MOV( TRUE, H10, Var_NetworkStruct[8] );
    MOV( TRUE, 16, Var NetworkStruct[9] );
    MOV(TRUE, H2103, Var NetworkStruct[10]);
    MOV( TRUE, H40, Var_NetworkStruct[11] );
    MOV( TRUE, 32, Var_NetworkStruct[12] );
    MOV( TRUE, H20, Var_NetworkStruct[13] );
    MOV( TRUE, 16, Var NetworkStruct[14] );
END IF;
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    MOV( TRUE, H4, Var ReservStData[0] );
                                       (* Sets data of reserved station specification *)
END IF;
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    MOV(TRUE, H4, Var ErrorInvalidData[0]);
                                      (* Sets data of error invalid station setting *)
END IF;
IF( Var_Flag_Exe = TRUE ) (* Execution flag *)
    GP CCPASET(TRUE, H0, Var ControlData, Var NetworkStruct, Var ReservStData,
                       Var_ErrorInvalidData, Var_Result);
                                                                 (* Performs writing *)
    RST( TRUE, Var Flag Exe );
                                         (* Turns execution flag OFF *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                  (*Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
      (* Process on normal completion *)
    ELSE
                                   (* Error completion *)
       Process on error completion *)
    END_IF;
```

END_IF;

5.4.25 OPEN instruction

ZP_OPEN

Ether

ZP_OPEN				Exe	cuting condition	:	J
· · · · · · · · · · · · · · · · · · ·	OPEN ENO d	ENO:= ZP_0	ST PEN (EN, Un*, s1, s2, d);	ZP_C	DPEN	ollowing instru	uction.
Input argument	Un*: Star (00	ecuting condition Int I/O number of the I to FE: Higher two c ee digits)	e module ligits when expressing the I/O	:Bit :String number in			
		nnection number (1	to 16)	:ANY1	6		
		iable that stores co	ntrol data	-	of ANY16 [09]		
Output argument		ecution result	the second states of the states	:Bit	- + + + + + + + + + + + + + + + + + + +		
			upon completion of the instru- ne time of error completion.	iction :Array	of bit [01]		
	Setti	ing Internal d	evice	J\	uiii.ciii Zn	Constant	Others
	data	a ^{*1} Bit	Word R, ZR Bit	Word	U\G Zn	К, Н	Others
	(s1)) –	0		_	0	-
	s2) –	0		_	-	-
	d) ()	0		_	-	-

Grant Function

This instruction establishes (opens) a connection with external device for data communication.

Control Data

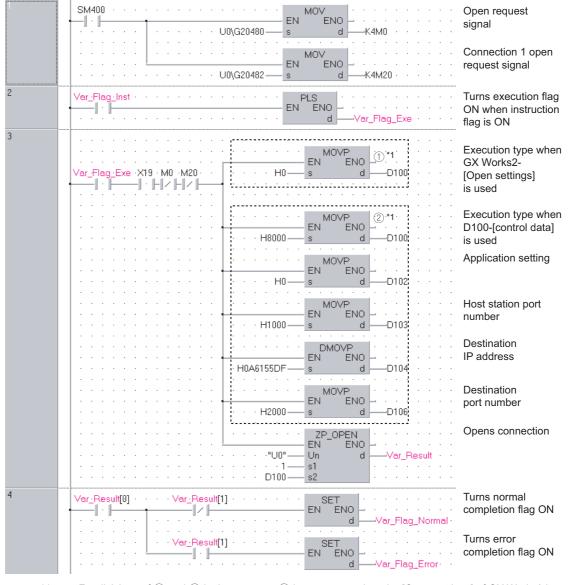
Device	Item	Setting data	Setting range	Setting side
		Specify whether to use the parameter values set by GX Works2 or the		
@[0]	Execution type/ Completion type	setting values of the following control data (@[2] to @[9]) at open processing of a connection. 0000H: Uses the parameter set in [Open settings] of GX Works2.	0000н, 8000н	User
		8000н: Uses the settings of control data @ [2] to @ [9].		
@[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
		Specify the application of connection.		
		b15 b14 b13 to b10 b9 b8 b7 b6 to b2 b1 b0 (6) 0 (5) (4) (3) 0 (2) (1)		
		① Application of fixed buffer0: For sending, or fixed buffer is not used in communication		
		1: For receiving		
		 ② Check of existence of the target 0: Not checked 1: Checked 		
		③ Pairing open setting		
	Application setting area	0: No pairing open	(See the left	User
s2 [2]	Application setting area	1: Pairing open	column.)	USEI
		④ Communication method (protocol)0: TCP/IP1: UDP/IP		
		© With/without procedure in fixed buffer communication		
		0: Procedural communication		
		1: Nonprocedural communication	l	
		6 Open system		
		00: Active open or UDP/IP		
		10: Unpassive open		
		11: Fullpassive open	401н to	
			401н to 1387н,	
s2 [3]	Host station port No.	Specify the port number of the host station.	138Bн to	User
			FFFEH	
0.000			1н to	
<u>s</u> 2[4]	Destination IP address	Specify the IP address of the external device.	FFFFFFFH	User
s2 [5]			(FFFFFFFFн: broadcast)	
			401H to	
	Destination port No	Specify the part number of the external douise	FFFFH	Lleor
s2 [6]	Destination port No.	Specify the port number of the external device.	(FFFFн:	User
			broadcast)	
s2 [7]	Destination Ethernet		n	
to	address	Specify the Ethernet address of the external device.	00000000000000H	User
s2 [9]			FFFFFFFFFFF	

Program Example

The following program opens the connection 1 for TCP/IP communication using the Active open process.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



*1:

For divisions of (1) and (2) in the program, (1) is necessary when the [Open settings] of GX Works2 is used and (2) is necessary when it is not used.

```
[ST]
IF(SM400=TRUE)THEN
                (* Always ON *)
    MOV(TRUE,U0\G20480,K4M0);
                (* Open completed signal/connection 1 open completion signal *)
    MOV(TRUE,U0\G20482,K4M20);
                (* Open request signal/connection 1 open request signal *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                                 (* When instruction flag is ON*)
    PLS(TRUE,Var_Flag_Exe);
                                 (* Turns execution flag ON *)
END IF;
IF((Var_Flag_Exe=TRUE) AND (X19=TRUE)
                            (* Execution flag/initialization normal completion signal *)
    AND (M0=FALSE) AND (M20=FALSE))THEN
          (* Connection 1 open completion signal/connection 1 open request signal *)
               .....
(1)*1
            (*Use GX Works2-[Open settings]*)
    MOVP(TRUE,H0,D100);
            (*Execution type*)
            (2)*1
            (*Use D100-[control data]*)
    MOVP(TRUE, H8000, D100);
            (*Execution type*)
    MOVP(TRUE,H0,D102);
            (*Application setting*)
    MOVP(TRUE,H1000,D103);
            (*Host station port number*)
    DMOVP(TRUE,H0A6155DF,D104);
            (*Destination IP address*)
    MOVP(TRUE,H2000,D106);
            (*Destination port number*)
    ZP OPEN(TRUE,"U0",1,D100,Var Result); (* Opens connection *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                             (* Execution finished *)
    IF(Var Result[1]=FALSE)THEN
                                             (* Normal completion *)
                                            (* Turns normal completion flag ON *)
          SET(TRUE, Var_Flag_Normal);
    END IF;
    IF(Var_Result[1]=TRUE)THEN
                                            (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                            (* Turns error completion flag ON *)
    END IF;
END_IF;
```

*1: For divisions of ① and ② in the program, ① is necessary when the [Open settings] of GX Works2 is used and ② is necessary when it is not used.

5.4.26 CLOSE instruction

ZP_CLOSE

Ether

ZP_CLOSE							Executing cond	ition :	ſ	
Structured EN Un* s1 s2	d ladder/F	_		ST	1, s2, d);		ZP_CLOSE	tes the follow	wing instr	uction.
Input argument	EN: Un*: s1:	Executing co Start I/O nun (00 to FE: Hi three digits) Connection	nber of the gher two di	gits when exp	pressing the	e I/O number i	:Bit :String n :ANY16			
	s2:	Variable that					:Array of ANY16 [01	1		
Output argument	ENO:	Execution re					:Bit			
	d:			ipon complet e time of erro			:Array of bit [01]			
		Setting data ^{*1}	Internal de Bit	Word	R, ZR	J∭∖∭ Bit V	/ord	Zn	Constant K, H	Others
	Ī	<u>s1</u>	-	0			_		0	-
	1	s2	-	0			_		_	-
	Ť	d	0	0			_		_	_
		Ŭ			*1: Local d	evices and file	e registers per program	cannot be us	sed as set	tina dat

Grant Function

This instruction shuts off (closes) a connection with external device during data communication.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	_	-
s2[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System

Program Example

The following program closes the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

	Var_Flag_Open Connection 1 I · I EN EN Close timing Var_Flag_CloseTiming Close timing Close timing
2	Var_Flag_Close Timing Var_Flag_OpenOK Closing connection 1 from external device d Var_Flag_Close
3	Var_Flag_Inst Close instruction Image: Inst Instruction Image: Inst Inst Inst Inst Inst Inst Inst Inst
4	Var_Flag_Inst2 · Var_Flag_Open · · · · · ZP_CLOSE Closes connection
	Var_Flag_Close · Var_Flag_Exe
5	Var_Result[0] Var_Result[1] Turns normal Image: Set in the second se
	Var_Result[1] EN EN Turns error completion flag ON
	RST Turns execution EN ENO d Var_Flag_Exe

[ST] (* Connection 1 open completion signal *) IF(Var_Flag_Open=TRUE)THEN PLF(TRUE,Var_Flag_CloseTiming); (* Connection 1 close timing *) END_IF; IF((Var Flag CloseTiming=TRUE) AND (Var Flag OpenOK=TRUE))THEN (* Connection 1 close timing/open instruction normal completion *) PLS(TRUE,Var_Flag_Close); (* Closing connection from external device *) END IF; IF(Var_Flag_Inst=TRUE)THEN (* Close instruction *) PLS(TRUE,Var_Flag_Inst2); (* Close instruction 1PLS *) END IF; IF(((Var_Flag_Inst2=TRUE) AND (Var_Flag_Open=TRUE)) (* Close instruction 1PLS/connection 1 open completion signal *) OR ((Var Flag Close=TRUE) AND (Var Flag Exe=FALSE)))THEN (* Closing connection 1 from external device/CLOSE instruction is in execution *) ZP CLOSE(TRUE,"U0",1,Var ControlData,Var Result); (* Closes connection *) SET(TRUE,Var_Flag_Exe); (* Turns execution flag ON *) END IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) SET(TRUE, Var_Flag_Normal);(* Turns normal completion flag ON *) END_IF; IF(Var Result[1]=TRUE)THEN (* Error completion *) (* Turns error completion flag ON *) SET(TRUE, Var_Flag_Error); END IF; RST(TRUE, Var Flag Exe); (* Turns execution flag OFF *) END_IF;

ZP_BUFRCV

5.4.27 BUFRCV instruction

								Eth	er
ZP_BUFRC	V					Executing condi	tion	: 🛧	
Structured EN Un* s1 s2	BUFRCV ENO d1 d2	_	= ZP_BUFR	ST <u>CV</u> (EN, Un*, s1, s2,	d1, d2);	ZP_BUFRCV	tes the follo	wing instru	uctio
Input argument	EN: Un*:		mber of the		ising the I/O number	:Bit :String in			
Output argument	s1: s2: ENO: d1: d2:	Variable that	number (1 t stores co esult r of the de t turns ON		of the instruction	:ANY16 :Array of ANY16 [01] :Bit :ANY16 :Array of bit [01]			
		Setting data ^{*1}	Internal o Bit	device R, Z Word	R Jiii\iii Bit	U\G	Zn	Constant K, H	Oth
	ĺ	s1	-	0		_		0	-
	_	s2	-	0		-		-	-
	-	(1)	-	0		_		-	-
		d2	0	0		-		-	

 * 1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in a main program. AODULE DEDICATED

ZP_BUFRCV

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
		The instruction completion status is stored.		
s2 [1] Completion status		0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

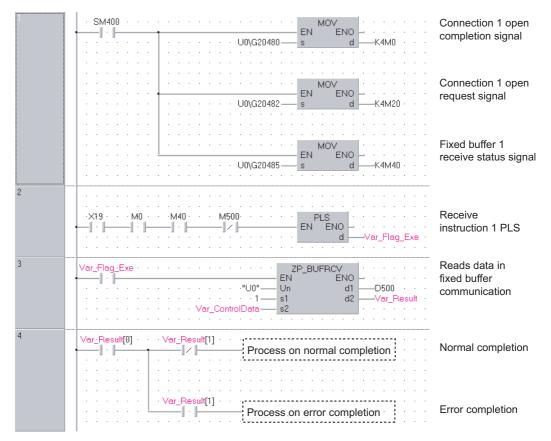
Device	Item	Setting data	Setting range	Setting side
@) +0	System area	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of words	- 1 to 1017 1 to 508	System
		Nonprocedural communication (communication in binary code): The number of bytes	1 to 2046	
(d1) +1 to (d1) +n	Receive data	Data read from the fixed buffer data area are stored in ascending address order.	-	System

Program Example

The following program reads out receive data from the fixed buffer of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



5

```
[ST]
IF(SM400=TRUE)THEN
                (* Always ON *)
    MOV(TRUE,U0\G20480,K4M0);
                (* Open completion signal/connection 1 open completion signal *)
    MOV(TRUE,U0\G20482,K4M20);
                (* Open request signal/connection 1 open request signal *)
    MOV(TRUE,U0\G20485,K4M40);
                (* Fixed buffer receive status signal/fixed buffer 1 receive status signal *)
END_IF;
(* Program to receive fixed buffer number 1 (main program) *)
IF((X19=TRUE) AND (M0=TRUE) AND (M40=TRUE) AND (M500=FALSE))THEN
    (* Initialization normal completion signal/connection 1 normal open completion signal *)
    (* Fixed buffer 1 receive status signal/receive instruction completion signal *)
    PLS(TRUE,Var_Flag_Exe);
                (* Receive instruction 1PLS *)
END IF;
IF(Var_Flag_Exe=TRUE)THEN
                (* Receive instruction 1PLS *)
    ZP_BUFRCV(TRUE,"U0",1,Var_ControlData,D500,Var_Result);
                (* Reads data in fixed buffer communication *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                       (* Execution finished *)
                                        (* Normal completion *)
    IF(Var_Result[1]=FALSE)THEN
             * Process on normal completion *)
                                       (* Error completion *)
    ELSE
                         (* Process on error completion *)
    END IF:
END IF;
```

5.4.28 BUFRCVS instruction

Z_BUFRCVS

Ether

Z_BUFRCVS

Structured EN Un* s	I ladder/FE ENO - d -		ST Z_BUFRCVS (EN, Un*, s, d);	Z_BUFRCVS	the following instruction.
Input argument	EN: Un*:	Executing condition Start I/O number of (00 to FE: Higher three digits)		:Bit :String number in	
	s:	Connection numb	per (1 to 16)	:ANY16	
Output argument	ENO:	Execution result		:Bit	
	d:	Start number of th	ne device that stores read data	:ANY16	
		Setting Inter data ^{*1} Bit	R, ZR Bit	J[]]\[] Word	Zn Constant K, H Other
		s –	0	-	0 -

Grant Function

This instruction reads receive data from external device in fixed buffer communication. This instruction is used in an interrupt program.

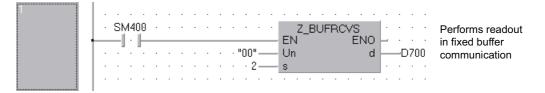
Device	Item	Setting data	Setting range	Setting side
(d)+0	Receive data length	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of	- 1 to 1017 1 to 508	System
		words Nonprocedural communication (communication in binary code): The number of bytes	1 to 2046	
(d) +1 to (d) +n	Receive data	Data read from the fixed buffer data area are stored in ascending address order.	-	System

Program Example

The following program reads receive data from the fixed buffer of the connection 2.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

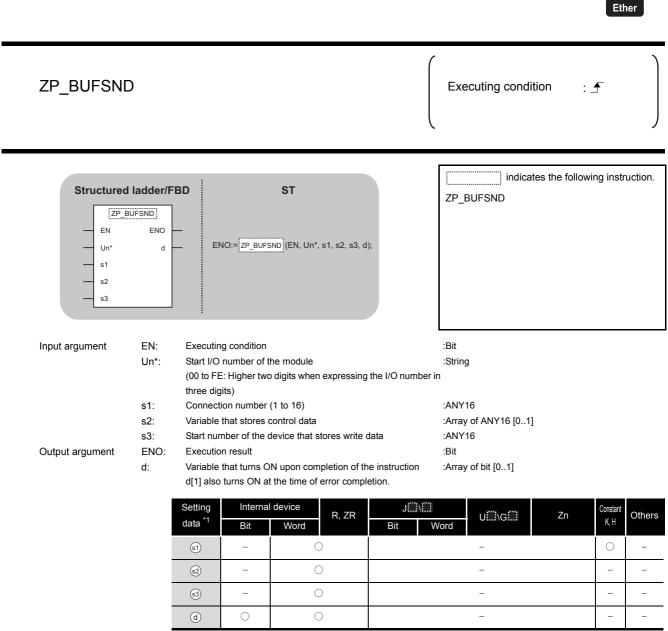




Z_BUFRCVS(SM400,"00",2,D700);(* Reads data in fixed buffer communication *)

ZP_BUFSND

5.4.29 BUFSND instruction



*1: Local devices and file registers per program cannot be used as setting data.

This instruction sends data to external device in fixed buffer communication.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	_	-
		The instruction completion status is stored.		
s2[1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

(1) Send data

Device	Item	Setting data	Setting range	Setting side
്ര +0	Send data length	Data length of the data read from the fixed buffer data area is stored. (Data length becomes the number of words or the number of bytes depending on the procedure used in fixed buffer communication.) With procedure (communication in binary code): The number of words With procedure (communication in ASCII code): The number of words Nonprocedural communication (communication in binary code): The number of bytes	- 1 to 1017 1 to 508 1 to 2046	User
s3 +1 to s3 +n	Send data	Specify the send data.	-	User

Program Example

The following program sends data from the fixed buffer of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	X19 Var_Flag_Open Send instruction Var_Flag_Open PLS Send instruction EN EN EN
	d —Var_Flag_Inst
2	Ver_Flag_Inst · · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·
	MOV Sets send data
	· · · · · · · · · · · · · · · · · · ·
	EN ENO
	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·
	Var_Result communication
3	· · · · · · · · · · · · · D300 — <u>s3</u> · · · · · · ·
Ŭ	Var_Result[0] Var_Result[1] Image: Ima
	Ver_Result[1] Process on error completion Error completion

```
[ST]
IF((X19=TRUE) AND (Var_Flag_Open=TRUE))THEN
    (* Initialization normal completion signal/connection 1 open completion signal*)
    PLS(TRUE,Var_Flag_Inst);
                (* Send instruction 1PLS *)
END IF;
IF(Var_Flag_Inst=TRUE)THEN
                (* Send instruction 1PLS *)
    MOV(TRUE,3,D300);
                (* Sets data length (number of words) *)
    MOV(TRUE,1234,D301);
                (* Sets send data *)
    MOV(TRUE,5678,D302);
                (* Sets send data *)
    MOV(TRUE,8901,D303);
                (* Sets send data *)
    ZP BUFSND(TRUE,"U0",1,Var ControlData,D300,Var Result);
                (* Sends data in fixed buffer communication *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                       (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                      (* Normal completion *)
                    -----
           (* Process on normal completion *)
    ELSE
                                       (* Error completion *)
                                     -----
           (* Process on error completion *)
    END_IF;
END_IF;
```

5-234

ZP_ERRCLR

Fther

5.4.30 ERRCLR instruction

ZP_ERRCLR					Executing condition :
Structured la ZP_ERF EN Un* s		ENO:= ZP	ST ERRCLR (EN, Un*, s, d);		ZP_ERRCLR
Input argument	Un*: Start I/		the module o digits when expressing t	he I/O number	:Bit :String in
s: Variable that stores control data Output argument ENO: Execution result d: Variable that turns ON upon completion of the instr d[1] also turns ON at the time of error completion.			tion.	:Array of ANY16 [07] :Bit :Array of bit [01]	
	Setting data *1 (\$	Bit	I device Word C	J\ Bit	UIII\GIII Zn Constant Others
	d	0	0		- ile registers per program cannot be used as setting dat

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction turns OFF the LED on Ethernet module and clears error information stored in the buffer memory.

Control Data

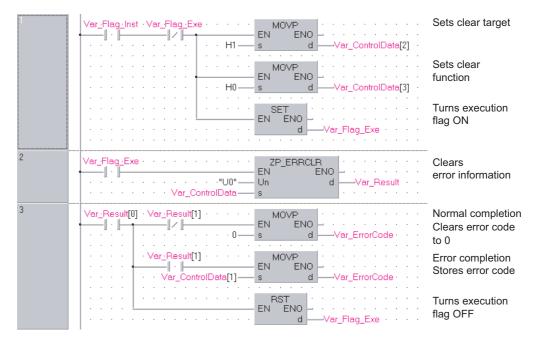
Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s [2]	Clear target specification	Specify the error information to be cleared. 0000н: Initial error code 0001н to 0010н: Open error code of the corresponding connection 0100н: Error log block area 0101н: Communication status - Status by protocol 0102н: Communication status - E-mail reception status 0103н: Communication status - E-mail transmission status FFFFH: Clears all of the above.	(See the left column.)	User
ঙ [3]	Clear function specification	Specify the function to be cleared. 0000н: [COM.ERR] LED is turned OFF and an error code is cleared. FFFFн: Error log clear	0000н, FFFFн	User
\$ [4] to \$ [7]	System area	-	-	-

Program Example

The following program clears the open error code of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



<pre>[ST] IF((Var_Flag_Inst=TRUE) AND (Var_Flag_Exe=F, MOVP(TRUE,H1,Var_ControlData[2]); MOVP(TRUE,H0,Var_ControlData[3]); SET(TRUE,Var_Flag_Exe);</pre>	
END_IF;	
IF(Var_Flag_Exe=TRUE)THEN	
ZP_ERRCLR(TRUE,"U0",Var_ControlData,V	/ar_Result);
	(* Clears error information *)
END_IF;	
IF(Var_Result[0]=TRUE)THEN	(* Execution finished *)
IF(Var_Result[1]=FALSE)THEN	(* Normal completion *)
MOVP(TRUE,0,Var_ErrorCode);	(* Clears error code to 0 *)
END_IF;	
IF(Var_Result[1]=TRUE)THEN	(* Error completion *)
MOVP(TRUE,Var_ControlData[1],Var_	_ErrorCode);(* Stores error code *)
END_IF;	
RST(TRUE,Var_Flag_Exe);	(* Turns execution flag OFF *)
END_IF;	

5.4.31 ERRRD instruction

ZP_ERRRD

Ether

ZP_ERRRD						Executing condition	: _	
Structured EN Un* s	I ladder/F ERRRD ENO d		NO:= <u>ZP_</u>	ST ERRRD (EN, Un*, s, d);		ZP_ERRRD	e following instruction.	
Input argument	EN: Un*:	Executing c Start I/O nu		he module		:Bit :String		
	UII .		ligher two	o digits when expressi	ng the I/O number i	-		
	s:	Variable that	at stores o	control data		:Array of ANY16 [07]		
Output argument	ENO:	Execution result				:Bit		
	d:			N upon completion of the time of error com		:Array of bit [01]		
		Setting data ^{*1}	Internal Bit	device R, ZR Word	J∭\∭ Bit V	U::::\G::::	Zn Constant Others	
		(\$)	-	0		_		
		b	0	0		-		
*1: Local devices and file registers per program cannot be use								



This instruction reads the error information stored in the buffer memory of the Ethernet module.

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	-	-
©[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ঙ[2]	Read information specification	Specify the error information to be read. 0 : Initial error code 1 to 16 : Open error code of the corresponding connection	0, 1 to 16	User
sি[3]	Read target information specification	Specify the target error information to be read. 0000н: Latest error information	0000н	User
ি [4]	Error information	The read error information is stored. 0000н : No error Other than 0000н : Error code	-	System
\$[5] to \$[7]	System area	-	_	_

Program Example

The following program reads the open error code of the connection 1.

(The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]

1	Var_Flag_Inst Var_Flag_Exe Image: Inst Var_ControlData[2]	Sets open error code
	H0—s d —Var_ControlData[3]	Sets latest error information
	EN EN EN d	Turns execution flag ON
2	Var_Flag_Exe ZP_ERRD I EN Wor_ControlData s	Reads error information
3	Var_Result[0] Var_Result[1] I Var_ControlData[4] S d Var_Result[1] Var_ErrorInfo Var_Result[1] MOVP Var_ControlData[4] S Var_ErrorInfo Var_ErrorCode	Normal completion Stores error information Error completion Stores error code
	BST EN ENO d	Turns execution flag OFF

```
[ST]
IF((Var_Flag_Inst=TRUE) AND (Var_Flag_Exe=FALSE))THEN
    MOVP(TRUE,H1,Var_ControlData[2]);
                (* Sets open error code of connection number 1 *)
    MOVP(TRUE,H0,Var_ControlData[3]);
                (* Sets latest error information *)
    SET(TRUE,Var_Flag_Exe);
                                  (* Turns execution flag ON*)
END IF;
IF(Var_Flag_Exe=TRUE)THEN
    ZP_ERRRD(TRUE,"00", Var_ControlData, Var_Result);
                                  (* Reads error information *)
END_IF;
IF(Var_Result[0]=TRUE)THEN
                                  (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
          MOVP(TRUE,Var_ControlData[4],Var_ErrorInfo);
                                  (* Stores error information*)
    END IF;
    IF(Var_Result[1]=TRUE)THEN (* Error completion *)
          MOVP(TRUE,Var_ControlData[1],Var_ErrorCode);
                                  (* Stores error code *)
    END IF;
    RST(TRUE,Var_Flag_Exe);
                                  (* Turns execution flag OFF *)
END_IF;
```

5-240

5.4.32 UINI instruction

Z_UINI

					*1	CC IE C Eth	
Z(P)_UINI					P: Executing cond	dition : _	
	Liadder/FBD	ENO:= Z	ST UINI (EN, Un*, s, d);		indicate instructions. Z_UINI	es any of the followin	g
Input argument	Un*: Sta (00 thr s: Va	ee digits) riable that stores o	digits when expressing	g the I/O number i	:Array of ANY16 [09]		
Output argument	d: Va d[1 Sett] also turns ON at ting Internal a ^{*1} Bit	N upon completion of th the time of error compl device Word	letion. J∭∖∭	:Bit :Array of bit [01] U:\G Vord	Zn Constant	Other
			0		– – e registers per program c		

Grant Function

Ethernet: This instruction reinitializes the Ethernet module.

CC-Link IE Controller Network: For Universal model QCPU, this instruction sets the station number of the CC-Link IE Controller Network module on normal station (host station).

5

NULE DEDICATED

Control Data

(1) Ethernet

Device	Item	Setting data	Setting range	Setting side
s [0]	System area	-	_	_
©[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
©[2]	Modification specification	[When updating the address information of external devices which are held by the Ethernet module] • Specify '0H'.*1 [When modifying the host station IP address, operation settings, transmission speed, communication mode] • Specify the parameter to be modified. However, Modification specification of transmission speed, communication mode cannot be executed simultaneously with that of host station IP address, operation settings. If executed, only modification specification of host station IP address and operation settings will be set. b15 b12b11 o b2 b1 0] ① Modification specification of host station IP address Specify whether the host station IP address is modified or not. (To modify the IP address, specify the address in ④ [3] and ④ [4].) 0: Not changed 1: Changed ② Modification specification of operation setting Specify whether the operation setting is modified or not. (To modify the operation setting, specify the operation setting in ④ [5].) 0: Not changed 1: Changed ③ ③ Modification specification of transmission speed, communication mode. O: not changed 1: Changed ③ Modification specification of transmission speed, communication mode. O: not changed 1: automatic negotiation 2: 100Mbps/full-duplex communi	0н to 5000н	User
ঙ [3] ঙ [4]	Host station IP address	Specify the IP address of the host station.	00000001н to FFFFFFFEн	User

Device	Item	Setting data	Setting range	Setting side
৩ [5]	Operation setting	b15 to b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 ① Communication data code setting 0 ① 〕 <t< td=""><td>0 or 1</td><td>User</td></t<>	0 or 1	User
\$ [6] to \$ [9]	-	Specify 0.	0	User

*1 : The Ethernet module enables data exchange to restart by clearing the address information retained in the module and by performing re-initial processing.

(The Initial normal completion signal (X19) is on.)

(2) CC-link IE Controller Network

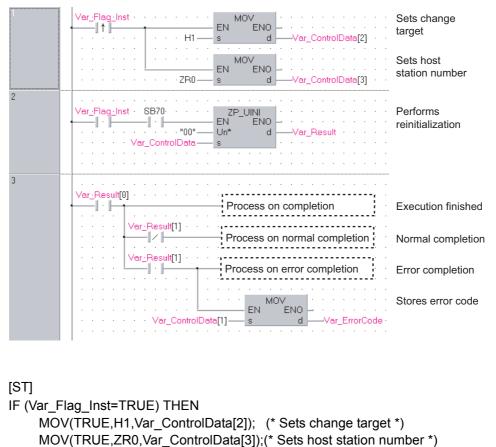
Device	Item	Setting data	Setting range	Setting side
<u></u> (0]	-	Specify 0.	0	User
ঙ[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System
ি [2]	Modification specification	Specify the change target 0001н: With station number setting	0001н	User
ঙ[3]	Host station No.	Specify the station number of the host station.	1 to 120	User
\$[4] to \$[9]	-	Specify 0.	0	User

The UINI instruction can be executed only once. The UINI instruction cannot be executed again after determination of station number. (It caused an error completion.)

However, in the case of the UINI instruction with the error completion, execute the UINI instruction again after taking corrective action.

Program Example

The following program sets the station number 2. The following is an example for Ethernet. [Structured ladder/FBD]



END IF;

```
IF((Var_Flag_Exe=TRUE) AND (SB70=TRUE))THEN

ZP_UINI(TRUE,"00",Var_ControlData,Var_Result);

(* Performs reinitialization *)

END_IF;

IF(Var_Result[0]=TRUE)THEN

(* Execution finished *)

IF(Var_Result[1]=FALSE)THEN

(* Normal completion *)
```

(* Process on normal completion *)

ELSE

(* Process on error completion *)

(* Process on error completion *)

MOV(TRUE, Var_ControlData[1], Var_ErrorCode);(* Stores error code *) END_IF;

(* Error completion *)

END_IF;

ZP_MRECV

5.4.33 MRECV instruction

						Ether
ZP_MRECV	,					Executing condition : 于
Structured EN Un* s	d ladder/F MRECV ENO d1 d2		2:= ZP_MF	ST IECV (EN, Un*, s, d1, d2);	Z	indicates the following instruction.
Input argument	EN: Un*:	Executing of Start I/O nu (00 to FE: H three digits	imber of t Higher two	he module digits when expressing the I/O n	:8	Bit String
Output argument	s: ENO: d1: d2:	Variable the Execution of Start numb content of t Variable the	at stores o result er of the h the receiv at turns O	control data nost station's device that stores the ed e-mail (header + attached file N upon completion of the instruc at the time of error completion.	:E he :A)	Array of ANY16 [015] Bit ANY16 Array of bit [01]
		Setting	Internal	device	J	
		data *1	Bit	Word R, ZR Bit	Wor	UIIIAGIII Zn Constant Othe
		data ^{*1}		Word Bit		U∭\G∭ Zn Constant Othe d

Grant Function

This instruction reads received e-mail.

ILE DEDICATED

ZP_MRECV

E Control Data

Device	lte	em	Setting data	Setting range	Setting side
© [0]	Execution/Error completion type		b15 to b10 b9 b8 b7 to b0 0 2 0 ① 0 0 ① Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0: Clock data at the time of error completion is not set in the area starting from (§ [11]). 1: Clock data at the time of error completion is set in the area starting from (§ [11]). (2) Execution type (bit 9) *1 Specify whether to inquire about existence of mails in the server after reading received mails. 0: Not requested (not read) 1: Requested (read)	0000н, 0080н, 0200н, 0280н	User
ঙ[1]	Completion status		The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
ঙ [2]	E-mail No. to be read		Specify the number of a mail to be read when multiple mails are received. 0 : First mail 1 or more : Specified mail	0 or more	User
⑤ [3] to ⑤ [8]	System area		_	-	-
(٤)	For instruct Receive data		Specify the data length (header + attached file) of the mail that can be stored in (1) to (1) +n. (Header: 1 to 373, attached file: 1 to 6144) 0 : Adjust data length to that of the received mail. 1 to 6517 : The number of data that can be stored in ((1) to (1) + n)	0 to 6517 (word) * Includes the header length	User
	At instruction completion	At instruction completion	Data length (header + attached file) of the mail stored in ⓓ to ⓓ + n is stored. 1 to 6517: The number of receive data stored in (ⓓ to ⓓ + n)	explained below.	System
s়[10]	Header length	For instruction execution	Specify the header data length of the mail that can be stored in (a) to (a) + n. 0 : Adjust header data length to that of the received mail. 1 to 373 : The number of data that can be stored in ((a) to (a) + n)	0 to 373 (word)	User
		At instruction completion	Header data length of the mail stored in (d) to (d) + n is stored. 1 to 373: Number of receive data stored in ((d) to (d) + n)		System
s [11]	Clock set flag		Valid/invalid status of the data in the area starting from (§) [12] is stored. 0: Invalid 1: Valid	0,1	System

Device	Item	Setting data	Setting range	Setting side
\$[12] to \$[15]	Clock data (set only when errors occur)	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (s) [12] Month (01H to 12H) Year (00H to 99H) Last two digits b0 (s) [13] Hour (00H to 23H) Day (01H to 31H) b1 (s) [14] Second (00H to 59H) Minute (00H to 59H) b1 (s) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) 00H (Sun.) to 06H (Sat.)	-	System

Device	Item	Setting data	Setting range	Setting side
d1 +0				
to	Receive data	Content (header + attached file) of the received mail are stored.	-	System
d1 +n				

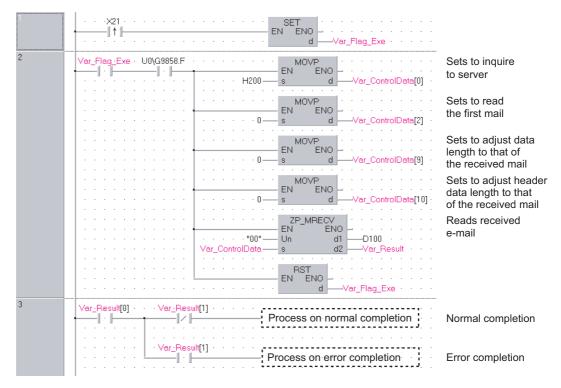
*1: The following table shows the processing that depends on the selection of the execution type after executing the MRECV instruction.

Setting option	Processing	Advantage	Disadvantage
No request (not read)	 Only e-mail read processing from the mail server is performed. Inquiry (reading) for the information of received mails remaining in the mail server is performed after the time set in the GX Works2 parameter has elapsed. 	Unnecessary read processing is not performed when the mail server has no mail.	Even if mails remain in the mail server, they cannot be read immediately. Mails tend to be accumulated in the mail server.
Request (read)	 E-mail read processing from the mail server is performed. After the execution of the MRECV instruction, inquiry (read) processing for information on the received mails remaining in the mail server is performed. (Inquiry for receiving of a mail is made immediately.) 	Received mails stored in the mail server can be read in series.	Inquiries to the mail server are made more often. Internal processing of the module increases, which affects other internal processing to a certain degree.

Program Example

The following program performs the e-mail receiving process by the receive instruction (X21). (The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

[Structured ladder/FBD]



```
[ST]
IF (X21=TRUE) THEN
    SET(TRUE,Var_Flag_Exe);
END_IF;
IF((Var_Flag_Exe=TRUE) AND (U0\G9858.F=TRUE))THEN
    MOVP(TRUE,H200,Var ControlData[0]);
                (* Sets to inquire to server *)
    MOVP(TRUE,0,Var_ControlData[2]);
                (* Sets to read the first mail *)
    MOVP(TRUE,0,Var_ControlData[9]);
                (* Sets to adjust data length to that of the received mail *)
    MOVP(TRUE,0,Var_ControlData[10]);
                (* Sets to adjust header data length to that of the received mail *)
    ZP_MRECV(TRUE,"00",Var_ControlData,D100,Var_Result);
                (* Reads received e-mail *)
    RST(TRUE,Var_Flag_Exe);
END IF;
IF(Var_Result[0]=TRUE)THEN
                                        (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN
                                        (* Normal completion *)
              Process on normal completion *)
                                        (* Error completion *)
    ELSE
              Process on error completion *)
    END IF;
END_IF;
```

```
DULE DEDICATED
```

5.4.34 MSEND instruction

ZP_MSEND

Ether

ZP_MSEND				Executing condition :
Structured EN Un* s1 s2	I ladder/FB MSEND ENO d		ST <u>2P_MSEND</u> (EN, Un*, s1, s2, d);	ZP_MSEND
Input argument	EN: Un*: s1: s2:	three digits) Variable that sto Start number of		:Array of ANY16 [015] the :ANY16
Output argument	ENO: d:	Execution result Variable that tur d[1] also turns C	ns ON upon completion of the instruction of the instruction.	
		Setting Inte data ^{*1} Bit	R, ZR	JⅢ\Ⅲ Word UⅢ\GⅢ Zn Constant Others
		(s1) –	0	_
		s2 -	0	

Grant Function

This instruction sends an e-mail.

Control Data

Device	Item	Setting data	Setting range	Setting side
ال	Execution/Error completion type Send data format	b15 to b12 to b8 b7 to b0 0 2 1 0 1 Error completion type (bit 7) Specify the clock data setup status at the time of error completion. 0: Clock data at the time of error completion is not set in the area starting from (a) [11]. 1: Clock data at the time of error completion is set in the area starting from (a) [11]. 1: Clock data format (bit 12 to bit 8) Specify the data format of the send data. (Sending the data as an attached file) 1 1 1 0 0 0 1 0 0 1 0 0 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 (Sending the data as a text) Encat	(See the left column.)	User
s1[1]	Completion status	0 : Normal completion Other than 0 : Error completion (error code)	-	System
st [2]	Transmission destination No.	Specify the external device to which e-mails are to be sent by the setting number on [Send mail address setting] of GX Works2. 1 to 16: Setting number of the external device	1 to 16	User
ৱা [3] to ৱা [8]	System area	-	-	-
্রা [9]	Send data length	 Specify the data length ((subject + attached file) or (subject + text)) of the mail stored in @ to @ + n. ① Sending the data as an attached file (subject: 0 to 373, attached file: 1 to 6144) 1 to 6517: Data length (word) of a mail ② Sending the data as a text (subject: 0 to 373, text: 1 to 960) 1 to 1333: Data length (word) of a mail 	1 to 6517, 1 to 1333	User
গ্রা [10]	Subject length	Specify the subject data length of the mail stored in ② to ③ + n. 0 to 373: Data length (word) of subject	0 to 373	User

Device	Item	Setting data	Setting range	Setting side
s1 [11]	Clock set flag	Valid/invalid status of the data in the area starting from (a) [12] is stored. 0: Invalid 1: Valid	_	System
ৰণ [12] to ৰণ [15]	Clock data (set only when errors occur)	Clock data at the time of error completion are stored in BCD format. b15 to b8 b7 to b0 (s) [12] Month (01H to 12H) Year (00H to 99H) Last two digits (s) [13] Hour (00H to 23H) Day (01H to 31H) (s) [14] Second (00H to 59H) Minute (00H to 59H) (s) [15] Year (00H to 99H) First two digits Day of week (00H to 06H) (0) (Sun.) to 06H (Sat.) 00v (Sun.) to 06H (Sat.)	_	System

(1) Send data

Device	Item	Setting data	Setting range	Setting side
€2 +0 to €2 +n	Send data	Specify the content of ((subject + attached file) or (Subject + text)) of a mail to be sent.	_	User

Program Example

The following program performs e-mail sending process by the send instruction (X20). (The I/O signals of the Ethernet module are X/Y00 to X/Y1F)

(1) Sending the data as an attached file

	MOVP EN s	Sets ASCII as send data format
	EN ENO s d	Sets transmission destination number
	MOVP EN ENO s d Var ControlData[9]	Sets send data
		Sets subject length
	State	Sets subject
	EN ENO	Sets file to be attached
		•
		•
	· · · · · · · · · · · · · · · · · · ·	Sends e-mail
	EN ENO Var_ControlData s1 S2	•
2 Var_Re	sult[0] Ver_Result[1] Process on normal completion	Normal completion
	Var_Result[1]	Error completion

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE,H800,Var_ControlData[0]);
                             (* Sets ASCII as send data format *)
    MOVP(TRUE,1,Var_ControlData[2]);
                             (* Sets transmission destination number *)
    MOVP(TRUE,10,Var_ControlData[9]);
                             (* Sets send data length *)
    MOVP(TRUE,7,Var_ControlData[10]);
                             (* Sets subject length *)
    Int_Msg[0] := H6574;
                             (* te *)
                             (* st *)
    Int_Msg[1] := H7473;
    Int_Msg[2] := H616d;
                             (* ma *)
    Int_Msg[3] := H6c69;
                             (* il *)
    Int_Msg[4] := H6d20;
                             (* m *)
    Int Msg[5] := H6573;
                             (* se *)
    Int_Msg[6] := H646e;
                             (* nd *)
                             (* Sets subject *)
    MOVP(TRUE,H1234,Int_Msg[7]);
                             (* Sets file to be attached *)
    MOVP(TRUE,H5678,Int_Msg[8]);
    MOVP(TRUE,H9ABC,Int_Msg[9]);
    ZP_MSEND(TRUE,"U0", Var_ControlData, Int_Msg[0], Var_Result);
                             (* Sends e-mail *)
END IF;
IF(Var Result[0]=TRUE)THEN
                                   (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
                Process on normal completion *)
    ELSE
                                   (* Error completion *)
              Process on error completion *)
    END IF;
```

END_IF;

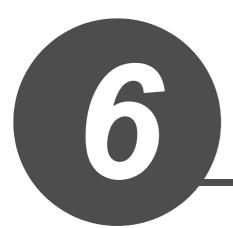
(2) Sending the data as a text [Structured ladder/FBD]

-		Sets text as send data format
	MOVP EN ENO s dVar_ControlData[2]	Sets transmission destination number
	MOVP EN ENO s dVar_ControlDeta[9]	Sets send data length
	MOVP EN ENO s d Var ControlData[10]	Sets subject length
	SMOVP EN ENO "testmail msend" s d	Sets subject
		Sets text
	"Error Machine1 001"s D207 ZP_MSEND EN ENO	Sends e-mail
	Var_ControlData S1	
2	Var_Result[0] Var_Result[1] Process on normal completion Var_Result[1] Var_Result[1] Process on error completion	Normal completion

```
[ST]
IF(X20=TRUE)THEN
    MOVP(TRUE,H1000,Var_ControlData[0]);
                 (* Sets text as send data format *)
    MOVP(TRUE,1,Var ControlData[2]);
                 (* Sets transmission destination number *)
    MOVP(TRUE,16,Var_ControlData[9]);
                 (* Sets send data length *)
    MOVP(TRUE,7,Var_ControlData[10]);
                 (* Sets subject length *)
                             (* te *)
    Int_Msg[0] := H6574;
    Int_Msg[1] := H7473;
                             (* st *)
    Int_Msg[2] := H616d;
                             (* ma *)
    Int_Msg[3] := H6c69;
                             (* il *)
    Int_Msg[4] := H6d20;
                             (* m *)
    Int Msg[5] := H6573;
                             (* se *)
    Int_Msg[6] := H646e;
                             (* nd *)
                             (* Sets subject *)
    Int_Msg[7] := H7274;
                             (* Er *)
    Int_Msg[8] := H6f72;
                             (* ro *)
    Int_Msg[9] := H2072;
                             (* r *)
    Int_Msg[10] := H614d;
                             (* Ma *)
    Int_Msg[11] := H6863;
                             (* ch *)
    Int_Msg[12] := H6e69;
                             (* in *)
    Int_Msg[13] := H3165;
                             (* e1 *)
    Int Msg[14] := H3020;
                             (* 0 *)
    Int_Msg[15] := H3130;
                             (* 01 *)
                             (* Sets text *)
    ZP_MSEND(TRUE,"U0",Var_ControlData,Int_Msg[0],Var_Result);
                             (* Sends e-mail *)
END IF;
IF(Var_Result[0]=TRUE)THEN
                                   (* Execution finished *)
    IF(Var_Result[1]=FALSE)THEN(* Normal completion *)
              Process on normal completion *)
    ELSE
                                   (* Error completion *)
                                      Process on error completion *)
    END IF;
END_IF;
```

5-255

MEMO



PID CONTROL INSTRUCTION

6.1	PID Control Instruction (Inexact Differential)	6-2
6.2	PID Control Instruction (Exact Differential)	6-16

1

6.1 PID Control Instruction (Inexact Differential)

6.1.1 PIDINIT instruction

S_PIDINIT

SP_PIDINIT		P: Executing condition :
Structured I		indicates any of the following instructions. S_PIDINIT SP_PIDINIT s);
Input argument Output argument	EN: Executing condition s: Start number of the device that stores P ENO: Execution result Setting data Internal device R, Z Sit Word State O	:Bit

Function

This instruction enables PID control by registering the PID control data for the number of loops to be used to the CPU module in batch.

(1) PID control data

			Setting	range	0.000	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range	
Common sett	ing data (device: (s) +	0 to (s) +1)					
s +0	Number of loops	Set the number of loops for PID operation.	1 tc	32	User		
ঙি +1	Number of loops in one scan	Set the number of loops for PID operation in one scan if multiple loops have reached the sampling cycle time.	1 tc	9 32	User	An error occurs and the PID operation for all loops is not performed.	
Setting data f	or No. 1 loop (device:	s +2 to s +15)					
s) +2	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User		
s) +3	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User		
s) +4	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
) +5	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 Tı = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Tı = Infinite (∞)	User		
© +6	Derivative constant (Tɒ)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes a significant change in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User		
s) +7	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User		

*1 : For the PID operational expressions to be set for Operational expression selection, refer to MELSEC-Q/L/ QnA Programming Manual (PID Control Instructions).

			Setting	g range	Setting	Processing when the	
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range	
s +8	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the MVLL or MVHL is less than -50, the value is clipped to -50. • If the MVLL or MVHL is greater than 2050, the value is clipped to 2050.	
্ড +9	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User		
ঙ +10	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000. 	
s +11	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000. 	

			Setting	range	Setting	Processing when the
Device	Data item	item Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s +12	(Fixed value)	-	0	0	User	-
ঙ +13	Derivative gain (Kɒ)	Set a duration (delay in action) for derivative action. As the setting value increases, the duration becomes smaller and action becomes closer to exact differential. Ideal value KD = 8.00	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\sigma)	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\comega)	User	An error occurs and the PID operation for the corresponding loop is not performed.
s +14	(Fixed value)	_	0	0	User	_
<u></u> জ +15	(Fixed value)	-	0	0	User	-

Setting data for No. 2 loop (device: (s) +16 to (s) +29)

	Operational	
s +16	expression	
	selection	
0 147	Sampling cycle	
s +17	(Ts)	
	Proportional	
s +18	constant	
	(KP)	
	Integral	
s +19	constant	
	(Tı)	
	Derivative	
s +20	constant	
	(TD)	
(s) +21	Filter coefficient	
(5) +2 I	(α)	The same as Catting data for No. 4 lash
(s) +22	MV lower limit	The same as Setting data for No. 1 loop
3 722	(MVLL)	
0,100	MV upper limit	
s +23	(MVHL)	
	MV change rate	
s +24	limit	
	($ riangle$ MVL)	
	PV change rate	
s +25	limit	
	($ riangle$ PVL)	
s +26	(Fixed value)	
	Derivative gain	
s +27	(KD)	
s +28	(Fixed value)	
s) +29	(Fixed value)	

			Setting	range		Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
Setting data for	or No. n loop					
	Operational					
s +(m+0)	expression					
	selection					
s +(m+1)	Sampling cycle					
(m+1)	(Ts)					
	Proportional					
s +(m+2)	constant					
	(KP)					
	Integral					
s +(m+3)	constant					
	(Tı)					
	Derivative					
জ +(m+4)	constant					
	(TD)					
	Filter coefficient					
জ +(m+5)	(α)	The same as Setting data	for No. 1 loop			
s +(m+6)	MV lower limit	The same as Setting data				
(III+0)	(MVLL)					
(m + 7)	MV upper limit					
জ +(m+7)	(MVHL)					
	MV change rate					
s +(m+8)	limit					
	(🛆 MVL)					
	PV change rate	1				
s +(m+9)	limit					
	(🛆 PVL)					
s +(m+10)	(Fixed value)	1				
	Derivative gain	•				
জ +(m+11)	(KD)					
s +(m+12)	(Fixed value)					
s +(m+13)	(Fixed value)					

m=(n-1)×14+2 n: number of loops

Precautions

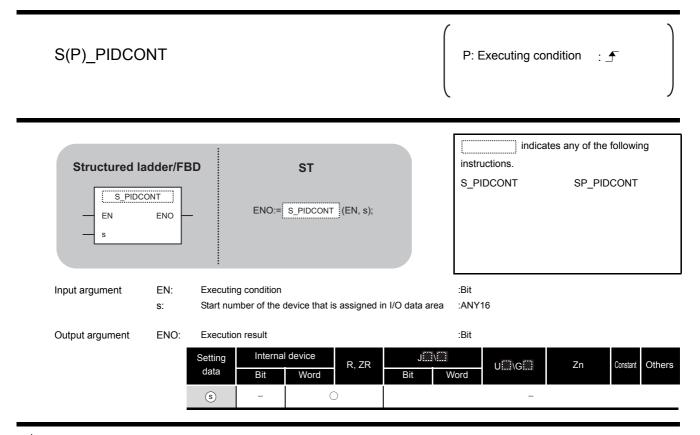
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, imes: Not applicable

6.1.2 PIDCONT instruction

S_PIDCONT



Grant Function

- (1) This instruction measures sampling cycle and performs PID operation at instruction execution.
- (2) This instruction performs PID operation based on the set value (SV) and process value (PV) in the I/O data area set to the device number specified by s or later, and stores the operation result to the automatic manipulated value (MV) area in the I/O data area.
- (3) PID operation is performed in response to the first execution of the PIDCONT instruction after the set sampling cycle time has elapsed.

(1) I/O data

			Setting	range	Setting	Processing when the	
Device	Data name	Description	With PID	Without PID	side	setting data are outside	
			limits limits		Side	the setting range	
			0 : PID opera	tion for the			
			number of	f loops to be			
			used is ba	tch-processed			
	Initial processing flag	Processing method at	in one sca	an.	User		
s +0	miliar processing hag	the start of PID operation	Other than 0: F	PID operation	USEI	_	
			for the number of loops to be used is processed				
			in several	scans.			
s +1	DID control	work area					
to	PID control		-		_		
s +9	(reserved by	the system)					
I/O data area f	or No. 1 loop (device: (s) +10	to (s) +27)					
						In the case of "With PID	
						limits", the PID operation is	
						performed after values are	
		PID control target		-32768 to		replaced as follows:	

ঙ +10	Set value	SV	PID control target value	0 to 2000	-32768 to 32767	User	 replaced as follows: If SV is less than 0, the value is clipped to 0. If SV is greater than 2000, the value is clipped to 2000.
ঙ +11	Process value	PV	 Feedback data from the control target to the A/D conversion module 	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If PV is less than -50, the value is clipped to -50. • If PV is greater than 2050, the value is clipped to 2050.
ঙ +12	Automatic manipulated value	MV	 Manipulated value obtained by PID operation The value is output from the D/A conversion module to the control target. 	-50 to 2050	-32768 to 32767	System	_
s) +13	Process value after filtering	PVf	Process value obtained by calculation using operational expression. *1	-50 to 2050	-32768 to 32767	System	-
ঙ +14	Manual manipulated value	MVman	Store the data output from the D/A conversion module in manual operation.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVMAN is less than -50, the value is clipped to -50. • If MVMAN is greater than 2050, the value is clipped to 2050.

*1 : For Process value after filtering (PVf), the value calculated based on the process value of input data are stored.

				Setting	g range	Sotting	Processing when the
Device	Data nam	ne	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
s) +15	Manual/ automatic selection	MAN/ AUTO	 Select whether the output to the D/A conversion module is a manual manipulated value or an automatic manipulated value. In manual operation, the automatic manipulated value remains unchanged. 	value	tic manipulated manipulated	User	When other than 0 or 1 is selected, an error occurs and the operation for the corresponding loop is not performed.
s +16	Alarm	ALARM	 Used to determine if the change rate of the MV (manipulated value) and the PV (process value) is within or outside the limit value range. Once set, the alarm data are maintained until the user resets it. When the MV variation is outside the limit range, bit 1 (b1) is set to '1'. When the PV variation is outside the limit range, bit 0 (b0) is set to '1'. 	is 	f PV variation s outside the mit range, 1' is set. f MV variation s outside the mit range, 1' is set.	User System	_
(\$) +17 to (\$) +32			ol work area y the system)		-	_	-

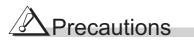
I/O data area for No. 2 loop (device: (s) +28 to (s) +45)

I/O data area f	or No. 2 loop (de	evice: (s) +2	28 to (s) +45)			
s +33	Set value	SV				
s) +34	Process value	PV				
ঙ +35	Automatic manipulated value	MV				
s +36	Process value after filtering	PVf	The same as I/O data area f	for No. 1 loop		
s) +37	Manual manipulated value	MVman				
© +38	Manual/ automatic selection	MAN/ AUTO				
s +39	Alarm	ALARM				
s +40 to s +55			ol work area y the system)	-	_	_

6

				Setting	range	Setting	Processing when the
Device	Data r	name	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
I/O data area fo	or No. n loop						
s +(m+0)	Set value	SV					
s +(m+1)	Process value	PV					
s +(m+2)	Automatic manipulated value	MV					
s +(m+3)	Process value after filtering	PVf	The same as I/O data an	ea for No. 1 loop			
s +(m+4)	Manual manipulated value	MVman					
জ +(m+5)	Manual/ automatic selection	MAN/ AUTO					
s +(m+6)	Alarm	ALARM					
 (\$) +(m+7) to (\$) +(m+22) 			trol work area by the system)	-	-	_	-

m=(n-1) \times 23+10 n: number of loops



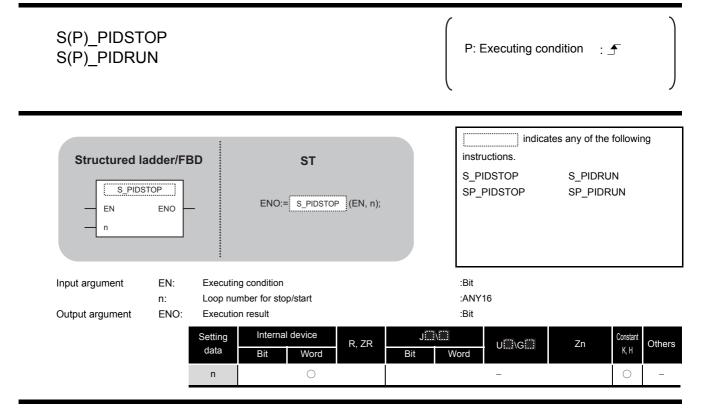
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.1.3 PIDSTOP instruction and PIDRUN instruction

S_PIDSTOP, S_PIDRUN



Grant Function

- (1) S(P)_PIDSTOP This instruction stops the PID operation for the loop number specified by 'n'.
- (2) S(P) PIDRUN This instruction starts the PID operation for the loop number specified by 'n'.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU	0	0	

 \bigcirc : Applicable, \times : Not applicable

6

S_PIDSTOP, S_PIDRUN

6.1.4 PIDPRMW instruction

S_PIDPRMW

S(P)_PIDPR	MW		P: Executing condition : _
Structured I		D ST ENO:= <u>S_PIDPRMW</u> (EN, n, s);	indicates any of the following instructions. S_PIDPRMW SP_PIDPRMW
Input argument	EN:	Executing condition	:Bit
	n:	Loop number to be changed	:ANY16
	S:	Start number of the device that stores PID control data to be changed	:ANY16
Output argument	ENO:	Execution result	:Bit
		Setting data Internal device R, ZR Jiii Bit Word Bit V n O O V (s) - O V	Word U Zn Constant K, H Others - - - - - - - - - -

☆ Function

This instruction changes the operation parameter of the loop number specified by 'n' to the PID control data stored in the devices starting from the device number specified by s.

(1) PID control data

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
(s) +0	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	An error occurs and the PID operation for the corresponding loop is not
(s) +1	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	performed.

*1 : For the PID operational expressions set for Operational expression selection, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	g range	Cotting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
ঙ +2	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User	
(s) +3	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	User	
ঙি +4	Derivative constant (T⊳)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	An error occurs and the PID operation for the corresponding loop is not performed.
s) +5	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User	
s) +6	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVLL or MVHL value is less than -50, the value is clipped to -50. • If MVLL or MVHL value is greater than 2050, the value is clipped to 2050.
s) +7	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	

S_PIDPRMW

	Data item	Description	Setting range		Setting	Processing when the
Device			With PID limits	Without PID limits	side	setting data are outside the setting range
s +8	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000.
ঙ +9	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If the △ PVL value is less than 0, the value is clipped to 0. • If the △ PVL value is greater than 2000, the value is clipped to 2000.
s +10	(Fixed value)	_	0	0	User	-
ঙ +11	Derivative gain (KD)	Set a duration (delay in action) for derivative action. As the setting value increases, the duration becomes smaller and action becomes closer to exact differential.	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (\cord)	0 to 32767 (unit: 0.01) If setting value > 30000 KD = Infinite (∞)	User	An error occurs and the PID operation for the corresponding loop is not performed.
() 110	(Fixed value)	Ideal value K _D = 8.00	0	0	User	
s +12	(Fixed value) (Fixed value)	_	0	0	User	
s +13		-	U	U	0361	-

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model QCPU	The first five digits of the serial number are '05031' or lower.	×	0
	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2 PID Control Instruction (Exact Differential)

6.2.1 PIDINIT instruction

PIDINIT

PIDINIT(P)		P: Executing condition :
Structured I		indicates any of the following instructions. PIDINIT PIDINITP
Input argument Output argument	EN: Executing condition s: Start number of the device that stores PID control ENO: Execution result Setting data Internal device Bit Word S -	Bit Word :Bit

Function

This instruction enables PID control by registering the PID control data for the number of loops to be used to the CPU module in batch.

(1) PID control data

			Setting range		Sotting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range
Common sett	ing data (device: (s) +	0 to ⊚ +1)				
s +0	Number of loops	Set the number of loops for PID operation.			User	
§ +1	Number of loops in one scan	Set the number of loops for PID operation in one scan if multiple loops have reached the sampling cycle time.			User	An error occurs and the PID operation for all loops is not performed.
Setting data f	or No. 1 loop (device:	s +2 to s +11)				
(s) +2	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	
s +3	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	
s) +4	Proportional constant (KP)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User	An error occurs and the PID operation for the corresponding loop is not performed.
٤) +5	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 TI = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	User	
© +6	Derivative constant (Tɒ)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes a significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	
® +7	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User	

*1 : For the PID operational expressions set for Operational expression selection, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

Device	Data item	Description	Setting range		Setting	Processing when the
			With PID limits	Without PID limits	side	setting data are outside the setting range
s +8	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVLL or MVHL value is less than -50, the value is clipped to -50. • If MVLL or MVHL value is greater than 2050, the value is clipped to 2050.
(6) +9	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User	
s +10	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ MVL value is less than 0, the value is clipped to 0. If the △ MVL value is greater than 2000, the value is clipped to 2000.
s) +11	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000.

Device	Data item	Description	Setting With PID limits	range Without PID limits	Setting side	Processing when the setting data are outside the setting range			
Setting data fo	r No. 2 loop (device:	(s) +12 to (s) +21)							
	Operational								
s +12	expression								
	selection								
s +13	Sampling cycle								
	(Ts)								
s +14	Proportional constant								
3 +14	(KP)								
	Integral								
s +15	constant								
U U	(Tı)								
	Derivative								
s +16	constant	The same as Setting data f	or No. 1 loop						
	(TD)	The same as bearing data i							
s +17	Filter coefficient								
	(α) MV lower limit	-							
s +18	(MVLL)								
	MV upper limit	-							
s +19	(MVHL)								
	MV change rate								
s +20	limit								
U	($ riangle$ MVL)								
	PV change rate								
s +21	limit								
	($ ightarrow$ PVL)								
Setting data fo		1							
s +(m+0)	Operational expression								
() +(III+0)	selection								
	Sampling cycle	-							
s +(m+1)	(Ts)								
	Proportional								
s +(m+2)	constant								
	(Kp)								
	Integral								
s +(m+3)	constant								
	(Tı) Derivative	-							
s +(m+4)	constant								
(III+4)	(TD)	The same as Setting data f	or No. 1 loop						
	Filter coefficient	-							
s +(m+5)	(α)								
() . (m · 0)	MV lower limit	1							
s +(m+6)	(MVLL)								
s +(m+7)	MV upper limit								
(III+7)	(MVHL)	ļ							
	MV change rate								
s +(m+8)	limit								
	(△ MVL) PV change rate	4							
	PV change rate								
s +(m+9)	limit								

m=(n-1)×10+2 n: number of loops 6

INTROL JCTION

PIDINIT

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.2 PIDCONT instruction

PIDCONT

PIDCONT(P	')	P: Executing condition :
Structured I		indicates any of the following instructions. PIDCONT PIDCONTP
Input argument	EN: Executing condition s: Start number of the device that is assigned in I/	:Bit /O data area :ANY16
Output argument	Execution result Setting data Internal device Bit Word R, ZR (s) - O	Bit UIII\GIII Zn Constant Others Bit Word –

☆ Function

- (1) This instruction measures sampling cycle and performs PID operation at instruction execution.
- (2) This instruction performs PID operation based on the set value (SV) and process value (PV) in the I/O data area set to the device number specified by (5) or later, and stores the operation result to the automatic manipulated value (MV) area in the I/O data area.
- (3) PID operation is performed in response to the first execution of the PIDCONT instruction after the set sampling cycle time has elapsed.

(1) I/O data

				Setting	range	Setting	Processing when the	
Device	Data nar	ne Description		With PID limits	Without PID limits	side	setting data are outside the setting range	
s +0	Initial processing flag		Processing method at the start of PID operation	 PID operation for the number of loops to be used is batch-processed in one scan. Other than 0: PID operation for the number of loops to be used is processed in several scans. 		User	-	
s +1 to s +9			ol work area y the system)	-	-	-	-	
I/O data area f	or No. 1 loop (de	vice: (s)+1	0 to (s) +27)					
(s) +10	Set value	SV	PID control target value	0 to 2000	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If SV is less than 0, the value is clipped to 0. • If SV is greater than 2000, the value is clipped to 2000.	
s) +11	Process value	PV	Feedback data from the control target to the A/D conversion	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If PV is less than -50, the value is clipped to	

			module				-50.If PV is greater than 2050, the value is clipped to 2050.
s) +12	Automatic manipulated value	MV	 Manipulated value obtained by PID operation The value is output from the D/A conversion module to the control target. 	-50 to 2050	-32768 to 32767	System	-
s) +13	Process value after filtering	PVf	Process value obtained by calculation using operational expression. *1	-50 to 2050	-32768 to 32767	System	-

*1 : For process value after filtering (PVf), the value calculated based on the process value of input data are stored.

For the operational expression, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

				Setting	g range	0	Processing when the	
Device	Data na	me	Description	With PID limits	Without PID limits	Setting side	setting data are outside the setting range	
\$ +14	Manual manipulated value	MVman	Store the data output from the D/A conversion module in manual operation.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is performed after values are replaced as follows: • If MVMAN is less than -50, the value is clipped to -50. • If MVMAN is greater than 2050, the value is clipped to 2050.	
\$ +15	Manual/ automatic selection	MAN/ AUTO	 Select whether the output to the D/A conversion module is a manual manipulated value or an automatic manipulated value. In manual operation, the automatic manipulated value remains unchanged. 	0: Automati value 1: Manual r value	c manipulated nanipulated	User	When other than 0 or 1 is selected, an error occurs and the operation for the corresponding loop is not performed.	
s) +16	Alarm	ALARM	 Used to determine if the change rate of the MV (manipulated value) and the PV (process value) is within or outside the limit value range. Once set, the alarm data are maintained until the user resets it. When the MV variation is outside the limit range, bit 1 (b1) is set to '1'. When the PV variation is outside the limit range, bit 0 (b0) is set to '1'. 		If PV variation is outside the limit range, '1' is set. If MV variation is outside the limit range, '1' is set.	User System	_	
(\$) +17 to (\$) +27	PID control work area (reserved by the system)				-	-	-	

6

PID CONTROL INSTRUCTION

PIDCONT

Device	Data nai	me	Description	Setting With PID limits	range Without PID limits	Setting side	Processing when the setting data are outside the setting range		
I/O data area fo	or No. 2 loop (dev	/ice: (s) +2	8 to ⊚ +45)	linnits	linits		the setting range		
s +28	Set value	SV	, (j),						
<u>چ</u> (§) +29	Process value	PV							
s) +30	Automatic manipulated value	MV		The same as I/O data area for No. 1 loop					
ঙ +31	Process value after filtering	PVf	The same as I/O data are						
s) +32	Manual manipulated value	MVman							
s) +33	Manual/ automatic selection	MAN/ AUTO							
s +34	Alarm	ALARM							
 s +35 to s +45 			work area the system)	-	-	_	-		
I/O data area fo	or No. n loop								
(m+0) (জ	Set value	SV							
s +(m+1)	Process value	PV							
জ +(m+2)	Automatic manipulated value	MV							
জ +(m+3)	Process value after filtering	PVf	The same as I/O data are	ea for No. 1 loop					
জ +(m+4)	Manual manipulated value	MVman							
জ +(m+5)	Manual/ automatic selection	MAN/ AUTO							
s +(m+6)	Alarm	ALARM							
<pre>(\$ +(m+7) to (\$ +(m+17))</pre>			work area the system)		-	_	-		

 $m=(n-1) \times 18+10$ n: number of loops

Precautions

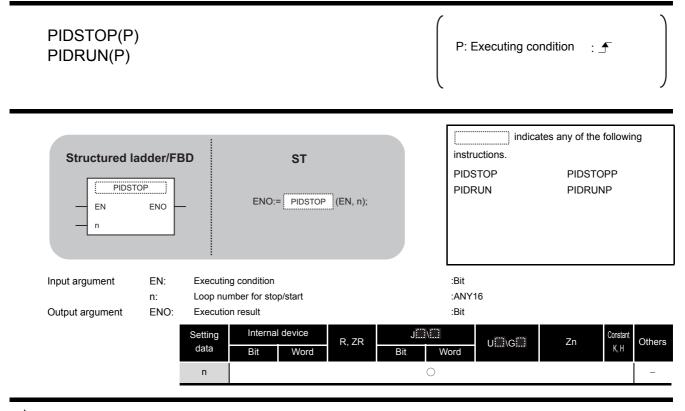
The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.3 PIDSTOP instruction and PIDRUN instruction

PIDSTOP, PIDRUN



Grant Function

(1) PIDSTOP(P)

This instruction stops the PID operation for the loop number specified by 'n'.

(2) PIDRUN(P)This instruction starts the PID operation for the loop number specified by 'n'.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

6.2.4 PIDPRMW instruction

PIDPRMW

PIDPRMW(F	P)						P: Exe	ecuting co	ndition :		
Structured Ia PIDPR EN n s		3D -	ENO:=	ST PIDPRMW	(EN, n, s);	instructi PIDPRN	ons.	ates any of th PIDPF	ne followir RMWP	ng
Input argument	EN: n: s:	Loop nu Start nu changeo	t	-	tores PID co	ontrol data to be	:Bit :ANY16 :ANY16 :Bit				
Output argument	ENO:	Executio	Interna	device		J::::\::::	BI			Constant	
		Setting data	Bit	Word	R, ZR		/ord	U\G	Zn	Constant K, H	Others
	1	n	0	C)		(C		0	_
		s	-	()			_		_	_

Grant Function

This instruction changes the operation parameter of the loop number specified by 'n' to the PID control data stored in the devices starting from the device number specified by (s).

(1) PID control data

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
s) +0	Operational expression selection	Select the PID operational expression. *1	0: Forward operation 1: Reverse operation	0: Forward operation 1: Reverse operation	User	An error occurs and the PID operation for the corresponding loop is not
s) +1	Sampling cycle (Ts)	Set the PID operation cycle.	1 to 6000 (unit: 10ms)	1 to 6000 (unit: 10ms)	User	performed.

*1 : For the PID operational expressions set for Operational expression selection, refer to MELSEC-Q/L/QnA Programming Manual (PID Control Instructions).

			Setting	range	Setting	Processing when the setting data are outside the setting range	
Device	Data item	Description	With PID limits	Without PID limits	side		
s +2	Proportional constant (K _P)	Proportional gain of PID operation	1 to 10000 (unit: 0.01)	1 to 10000 (unit: 0.01)	User		
s) +3	Integral constant (Tı)	Constant that expresses the magnitude of the integral action (I action) effect. Increasing the integral constant slows down the manipulated value change.	1 to 32767 (unit: 100ms) If setting value > 30000 Ti = Infinite (∞)	1 to 32767 (unit: 100ms) If setting value > 30000 Tı = Infinite (∞)	User		
s) +4	Derivative constant (Tɒ)	Constant that expresses the magnitude of the derivative action (D action) effect. Increasing the derivative constant causes significant changes in the manipulated value even with a slight change of the control target.	0 to 30000 (unit: 10ms)	0 to 30000 (unit: 10ms)	User	An error occurs and the PID operation for the corresponding loop is not performed.	
s) +5	Filter coefficient (α)	Set the degree of filtering to be applied to the process value. The filtering effect decreases as the value gets closer to 0.	0 to 100	0 to 100	User		
s +6	MV lower limit (MVLL)	Set the lower limit for the manipulated value (MV) calculated in PID operation in automatic mode. If the MV is less than the set lower limit value (MVLL), the value is clipped to the MVLL.	-50 to 2050	-32768 to 32767	User	In the case of "With PID limits", the PID operation is not performed after values are replaced as follows: • If MVLL or MVHL value is less than -50, the value is clipped to -50. • If MVLL or MVHL value is greater than 2050, the value is clipped to 2050.	
(s) +7	MV upper limit (MVHL)	Set the upper limit for the manipulated value calculated in PID operation in automatic mode. If the MV is greater than the set upper limit value (MVHL), the value is clipped to the MVHL.	-50 to 2050	-32768 to 32767	User		

			Setting	range	Setting	Processing when the
Device	Data item	Description	With PID limits	Without PID limits	side	setting data are outside the setting range
ভ +8	MV change rate limit (Set the variation limit between the previous MV and the present MV. When the MV variation is greater than the limit value, bit 1 (b1) of the alarm device is set to '1'. MV variation is not limited. (Even if the MV variation exceeds the limit value, the actual MV variation is used as it is for calculating the MV.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed after values are replaced as follows: △ MVL value is less than 0, the value is clipped to 0. △ MVL value is greater than 2000, the value is clipped to 2000.
© +9	PV change rate limit (Set the variation limit between the previous PV and the present PV. When the PV variation is greater than the limit value, bit 0 (b0) of the alarm device is set to '1'. PV variation is not limited. (Even if the PV variation exceeds the limit value, the actual PV variation is used as it is for performing the PID operation.)	0 to 2000	-32768 to 32767	User	 In the case of "With PID limits", the PID operation is performed values are replaced as follows: If the △ PVL value is less than 0, the value is clipped to 0. If the △ PVL value is greater than 2000, the value is clipped to 2000.

Precautions

The following table shows the CPU modules applicable to the PID control instructions (inexact differential) and the PID control instructions (exact differential).

	CPU module model	Inexact differential	Exact differential
Basic model QCPU	The first five digits of the serial number are '04122' or higher	0	0
High Performance model	The first five digits of the serial number are '05031' or lower.	×	0
QCPU	The first five digits of the serial number are '05032' or higher.	0	0
Universal model QCPU		0	0
LCPU		0	0

 \bigcirc : Applicable, \times : Not applicable

MEMO

SOCKET COMMUNICATION FUNCTION INSTRUCTION

7.1	SOCOPEN Instruction
7.2	SOCCLOSE Instruction
7.3	SOCRCV Instruction
7.4	SOCRCVS Instruction
7.5	SOCSND Instruction
7.6	SOCCINF Instruction
7.7	SOCCSET Instruction
7.8	SOCRMODE Instruction
7.9	SOCRDATA Instruction

1

2 OVERVIEW

INSTRUCTION TABLES

3

CONFIGURATION OF INSTRUCTIONS

7.1 SOCOPEN Instruction

SP_SOCOPEN

QnUDE(H) LCPU

data Bit Word Bit Word (st) - () -	: 1	ondition :	Executing condition					EN	SP_SOCOP	
Un: Dummy ("U0") :String s1: Connection number (1 to 16) :ANY16 s2: Variable that stores control data :Array of ANY16 [09] ENO: Execution result :Bit d: Variable that turns ON during one scan upon completion of the :Array of bit [01] instruction instruction d[1] also turns ON at the time of error completion. Internal device R, ZR J(1) Setting Internal device R, ZR Bit Word Zn s: - O - - - -	owing instruct	ates the follow	·	EN, Un, s1,s2,d);		:NO:= <u>SP_</u>	_	ENO	— EN — Un — s1	
data Bit Word R, ZR Bit Word Uiii:\Giiii Zn (st) - O - - - -		9]	:String :ANY16 :Array of ANY16 [09] :Bit		control data N during one	("U0") tion number that stores on result that turns O on	Dummy Connect Variable Executio Variable instructio	Un: s1: s2: ENO:	Un: s1: s2: Output argument ENO:	
	Constant K, H	Zn	Vord UIII\GIII	Bit	Word	Bit	data			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			-	^*1 ^*1		- ^ *1	62	-		

Grant Function

This instruction establishes a connection.

Control Data

Device	Item	Setting data	Setting range	Setting side
©[0]	Execution type/ Completion type	Specify which to use the parameter values set by GX Works2 or the setting values of the following control data (<a>[2] to <a>[9]) at open processing of a connection. 0000H: Uses the parameter set in [Open settings] of GX Works2. 8000H: Uses the settings of control data <a>[2] to <a>[9] .	0000н, 8000н	User
⊚[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
⊚[2]	Application setting area	 b15b14b13 to b10 b9 b8 b7 to b0 c) [2] 3 0 21 0 Communication method (protocol) 0: TCP/IP 1: UDP/IP With/without procedure in socket communication function 1: Nonprocedural communication Open system 00: Active open or UDP/IP 10: Unpassive open 11: Fullpassive open 	(See the left column.)	User
⊚[3]	Host station port No.	Specify the port number of the host station.	1н to 1387н, 1392н to FFFEн (400н or later is recommended)	User
© [4] © [5]	Destination IP address ^{*2}	Specify the IP address of the external device.	1н to FFFFFFFFн (FFFFFFFFн: broadcast)	User
⊚[6]	Destination port No. ^{*2}	Specify the port number of the external device.	1н to FFFFн (FFFFн: broadcast)	User
© [7] to © [9]	-	Unavailable	_	System

*1 : "Destination IP address" and "Destination port No" are neglected at Unpassive open.

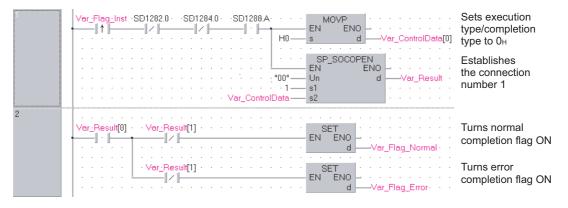
Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program opens the connection 1.

[Structured ladder/FBD]



[ST]

IF((LDP(TRUE, Var_Flag_Inst)) &(SD1282.0=FALSE) &(SD1284.0=FALSE) &(SD1288.A=TRUE))THEN MOVP(TRUE, H0, Var_ControlData[0]); (* Sets execution type/completion type to 0H *) SP_SOCOPEN(TRUE, "00", 1, Var_ControlData, Var_Result); (* Establishes the connection number 1 *) END_IF; IF(Var_Result[0]=TRUE)THEN (* Execution finished *) IF(Var_Result[1]=FALSE)THEN (* Normal completion *) (* Turns normal completion flag ON *) SET(FALSE, Var_Flag_Normal); ELSE (* Error completion *) SET(TRUE, Var_Flag_Error); (* Turns error completion flag ON *) END_IF;

END_IF;

7.2 SOCCLOSE Instruction

SP_SOCCLOSE



SP_SOCCL	OSE					Executing co	ondition :	: _	
Structured I SP_SOC EN Un s1 s2		_	ST	(EN, Un, s1,s2,d	d);	SP_SOCCLOSE	tes the follow	wing instri	uction
Input argument	EN: Un: s1: s2:	Executing condi Dummy ("U0") Connection nun Variable that sto	nber (1 to 16)			:Bit :String :ANY16 :Array of ANY16 [01]	1		
s2: Variable that stores control data Output argument ENO: Execution result d: Variable that turns ON during one scan upon completion or instruction d[1] also turns ON at the time of error completion.							1		
Output argument		Variable that tur instruction	ns ON during on			:Bit :Array of bit [01]			
Output argument		Variable that tur instruction d[1] also turns (ns ON during on DN at the time of ernal device		n. J∭\∭		Zn	Constant K, H	Othe
Output argument		Variable that tur instruction d[1] also turns (Setting Int	ns ON during on DN at the time of ernal device	error completio	n. J∭\∭	:Array of bit [01]	Zn		Othe
Output argument		Variable that tur instruction d[1] also turns (Setting data	ns ON during on DN at the time of ernal device Word	error completio	n. J∭\∭	:Array of bit [01]	Zn	K, H	Othe _

Grant Function

This instruction shuts off a specified connection.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
፼[1]	Completion status	The instruction completion status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program shuts off the connection 1 when the disconnect request flag turns ON or the external device closes the connection 1.

2	·SD1282.0 · ·SD1284.0 · · · · · · · · · · · · · · · · · · ·	EN ENO	Turns flag ON when open completion signal turns OFF
	Var_Flag_Inst ·SD1282.0 · Var_Flag_Exe 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	EN ENO	Shuts off the connection number 1
2	· Var_Flag. · · · · · · · · · · · · · · · · · · ·		Turns execution flag ON
	Var_Result[0] · · Var_Result[1] · · · · · · · · · · · · · · · · · · ·	EN ENO	Turns normal completion flag ON
	· · · · · · · · · · · · · · · · · · ·	EN ENO d	Turns error completion flag ON
		EN ENO d	Turns execution flag OFF

[Structured ladder/FBD]

```
[ST]
IF(LDF(TRUE, SD1282.0)&(SD1284.0=TRUE))THEN
                                  (* When open completion signal turns OFF *)
    PLS(TRUE, Var_Flag);
                                  (* Turns flag ON *)
END_IF;
IF(((LDP(TRUE, Var_Flag_Inst) & SD1282.0) OR Var_Flag) & (NOT Var_Flag_Exe)) THEN
    SP_SOCCLOSE(TRUE, "00", 1, Var_ControlData, Var_Result);
                                  (* Shuts off the connection number 1 *)
    SET(TRUE, Var_Flag_Exe);
                                  (* Turns execution flag ON *)
ELSE
    SP_SOCCLOSE(FALSE, "00", 1, Var_ControlData, Var_Result);
    SET(FALSE, Var_Flag_Exe);
END_IF;
IF(Var Result[0]=TRUE)THEN
                                        (* Execution finished *)
                                        (* Normal completion *)
    IF(Var_Result[1]=FALSE)THEN
          SET(FALSE, Var_Flag_Normal);(* Turns normal completion flag ON *)
    ELSE
                                        (* Error completion *)
          SET(TRUE, Var_Flag_Error);
                                       (* Turns error completion flag ON *)
    END IF;
    RST(TRUE, Var_Flag_Exe);
                                        (* Turns execution flag OFF *)
END_IF;
```

7.3 SOCRCV Instruction

SP_SOCRCV

QnUDE(H) LCPU

SP_SOCRC	V						Executing o	condition : _		
Structured I SP_SOU EN Un s1 s2		_	IO:=	ST	N, Un, s1,s2	d1,d2);	SP_SOCRCV	ates the followir	ng instr	uction.
Input argument	EN: Un: s1:	Dummy Connect	ng condition ("U0") tion number that stores	. ,			Bit String ANY16 Array of ANY16 [0	11		
s2: Output argument ENO: d1: d2:		Executio Start nur Variable instructio	on result mber of the that turns O	device that s N during on	stores receiv e scan upor	completion of th	:Anay of ANY 16 [0 :Bit :ANY16 ne :Array of bit [01]	"]		
		Setting data	Interna Bit	l device Word	R, ZR	J\ Bit	U:::\G::: Word	Zn	Constant K, H	Othe
	-	s1	-	0	O				0	_
	-	\$2 (d1)	_	△ ^{*1} △ ^{*1}	*1 ^*1					

*1: Local devices and file registers per program cannot be used as setting data.

Grant Function

This instruction reads receive data of a specified connection from the socket communication receive data area at the end process performed after the instruction execution.

△*1

 \triangle^{*1}

d2)

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	_	-
		The instruction completion status is stored.		
s2 [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Device	Item	Setting data	Setting range	Setting side
		Data length of the data read from the socket communication receive		
d1 +0	Receive data length	data area is stored.	0 to 2046	System
		(number of bytes)		
d1) +1		Date read from the application manipulation reading date area are stand		
to	Receive data	Data read from the socket communication receive data area are stored in ascending address order.	-	System
@1 +n				



Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads data received from the external device.

[Structured ladder/FBD]

1	Var_Flag_inst SD1282:0 SD1286:0 Var_Result[0] SP_SOCRCV I	Reads data from the connection number 1
2	Var_Result[0] Var_Result[1] I I </td <td></td>	
	····· Var_Result[1] SET ···· I····· EN ···· I····· ···· I····· ····· I····· ····· I····· ····· I····· ····· I····· ····· I······ ····· I······ ····· I······ ····· I······ ····· ······ ····· ········ ····· ······ ····· ······ ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ····· ······ ····· ······ ····· ······ ·····<	Turns error completion flag OFF

[ST]

IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE) &(SD1286.0=TRUE) &(Var_Result[0]=FALSE))THEN SP_SOCRCV (TRUE, "U0", 1, Var_ControlData, D500, Var_Result);

END_IF;

```
IF(Var_Result[0]=TRUE)THEN
IF(Var_Result[1]=FALSE)THEN
SET(TRUE, Var_Flag_Normal);
ELSE
SET(TRUE, Var_Flag_Error);
END_IF;
END_IF;
```

- (* Execution finished *)
- (* Normal completion *)
- (* Turns normal completion flag ON *)

(* Reads data from the connection number 1 *)

- (* Error completion *)
- (* Turns error completion flag ON *)

7.4 SOCRCVS Instruction

S_SOCRCVS



S_SOCRCV	S							Executing c	ondition :		_
Structured Ia S SOCE EN Un s			ENO:=	ST SOCRCVS	(EN, Un, s, (J);		OCRCVS	ates the follow	wing instr	uction
Input argument Output argument	Un: I s: 0 it argument ENO: I			(1 to 16) device that s	stores receiv	e data	:Bit :Strin :ANY :Bit :ANY	16			
		Setting data	Interna Bit	l device Word	R, ZR	J	\ Word	- U∭\G∭	Zn	Constant K, H	Othe
		S	-	0	0			_		0	_
		d	-	0	0			_		-	-

Grant Function

This instruction reads receive data of a specified connection from the socket communication receive data area.

Control Data

Device	Item	Setting data	Setting range	Setting side
@[0]	Receive data length	Data length of the data read from the socket communication receive data area is stored. (number of bytes)	0 to 2046	System
(d) +1 to (d) +n	Receive data	Data read from the socket communication receive data area are stored in ascending address order.	_	System

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads data received from the external device.

[Structured ladder/FBD]

1		
		Reads data from
		the connection
	dD500 d	⁰ number 1
	· · · · · · · · · · · · · · · · · · ·	·

[ST]

IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE) &(SD1286.0=TRUE))THEN S_SOCRCVS(TRUE, "U0", 1, D5000);

(* Reads data from the connection number 1 *)

END_IF;

7.5 SOCSND Instruction

SP_SOCSND



SP_SOCSN	D					Executing condition :
Structured Ia SP SOC EN Un s1 s2 s3		-	NO:=	ST SOCSND (EN	N, Un, s1,s2,s3,d)	I);
Input argument	EN: Un: s1: s2:	Dummy (' Connectio Variable t	ion number (that stores c	(1 to 16) control data		:Bit :String :ANY16 :Array of ANY16 [01]
Output argument	s3: ENO: d:	Execution Variable the instruction	n result that turns Ol on)N during one	stores send data le scan upon com f error completion.	:Bit mpletion of the :Array of bit [01]
	ļ	Setting data	Internal Bit	Il device Word	R, ZR	JIII UIII/GIII Zn Constant Bit Word Zn K,H Oth
	Ī	s1	-	0	0	- 0 -
	7	s2	-	^*1	*1	
					ł i	
		\$3	- △*1	0		

S Function

This instruction sends data to the external device of a specified connection.

Control Data

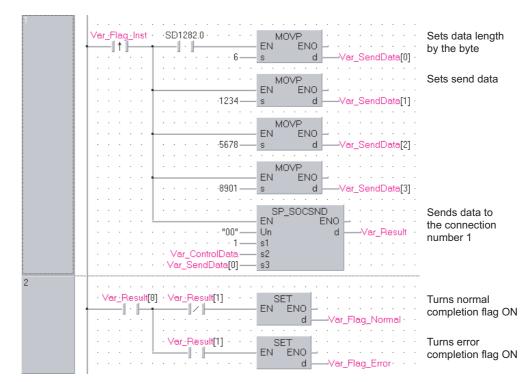
Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	_
		The instruction completion status is stored.		
s2 [1]	Completion status	0 : Normal completion	-	System
		Other than 0 : Error completion (error code)		

Device	Item	Setting data	Setting range	Setting side
s3 +0	Send data length	Specify the data length of the send data. (number of bytes)	0 to 2046	User
€3 +1 to €3 +n	Send data	Specify the send data.	_	User

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program sends data (1234, 5678, and 8901) to the external device using the socket communication function.



[Structured ladder/FBD]

[ST]

```
IF((Var_Flag_Inst=TRUE) &(SD1282.0=TRUE))THEN
    MOVP(TRUE, 6, Var_SendData[0]);
                                             (* Sets data length by the byte *)
    MOVP(TRUE, 1234, Var_SendData[1]);
                                             (* Sets send data *)
    MOVP(TRUE, 5678, Var_SendData[2]);
    MOVP(TRUE, 8901, Var SendData[3]);
    SP_SOCSND(TRUE, "00", 1, Var_ControlData, Var_SendData[0], Var_Result);
                                       (* Sends data to the connection number 1 *)
END_IF;
IF(Var Result[0]=TRUE)THEN
                                             (* Execution finished *)
    IF(Var Result[1]=FALSE)THEN
                                             (* Normal completion *)
```

SET(FALSE, Var_Flag_Normal); ELSE SET(TRUE, Var_Flag_Error); END_IF;

END IF;

- (* Turns normal completion flag ON *)
- (* Error completion *)
- (* Turns error completion flag OFF *)

7.6 SOCCINF Instruction

SP_SOCCINF

QnUDE(H) LCPU

SP_SOCCIN	١F						Executing cor	ndition	: 🖍	
Structured I SP_SOC EN Un s1 s2		_	NO:= SP	ST _SOCCINF	(EN, Un, s1,s2,	d);	SP_SOCCINF	es the follo	wing instr	uction.
Input argument Output argument	EN: Un: s1: s2: ENO: d:	Dummy (Connecti Variable t Execution	on number hat stores n result				:Bit :String :ANY16 :Array of ANY16 [01] :Bit :Array of ANY16 [04]			
		Setting data	Interna Bit	al device Word	R, ZR	J\	₩ord	Zn	Constant K, H	Other
		(s1)	-	0	0		-		0	_
				1					_	
		s2	-	0	0		-		_	_

This instruction reads connection information of a specified connection.

E Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
፼[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System

Item	Setting data	Setting range	Setting side			
		1н to				
		FFFFFFFH				
Destination IP address	The IP address of the external device is stored	0н : No	System			
		destination	System			
		(FFFFFFFFH:				
		broadcast)				
(d) [2] Destination port No.		1н to FFFFн				
	The port number of the external device is stored.	(FFFFH:	System			
		broadcast)				
d [3] Host station port No.		1н to 1387н,				
	The port number of the host station is stored.	1392н to	System			
		FFFEH				
Application setting area	b15b14b13 to b10 b9 b8 b7 to b0 (d)[4] (3) 0 (2)[1] 0 (1) 0 (2)[1] 0 (1) 0 (2)[1] 0 (2)[1] 0 (2)[1] 0 (2)[1] 0 (1) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (2) (1) (3) (2) (4) (1) (5) (2) (5) (2) (6) (2) (7) (2) (7) (2) (7) (2)	-	System			
	Host station port No.	Destination port No. The port number of the external device is stored. Host station port No. The port number of the host station is stored. $d[4]$ 3 0 2 10 0 0 2 10 0	Destination IP address The IP address of the external device is stored. FFFFFFFH 0H: No destination (FFFFFFFH: broadcast) Destination port No. The port number of the external device is stored. 1H to FFFFH (FFFFFH: broadcast) Host station port No. The port number of the host station is stored. 1H to 1387H, 1392H to FFFFFEH Host station port No. The port number of the host station is stored. 1H to 1387H, 1392H to FFFEH Application setting area © Communication method (protocol) 0: TCP/IP 1: UDP/IP 0 @ With/without procedure in socket communication function 1: Nonprocedural communication 0: Active open or UDP/IP 10: Unpassive open -			

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads connection information of the connection number 1. [Structured ladder/FBD]

1	Var_Flag_inst SP_SOCCINF Image: SP_SOCCINF ENO Image: SP_SOCCINF Un Image: SP_SOCCINF Image: SP_SOCCINF Image: SP_SOCCINF Image: SP_SOCCINF <tr< th=""><th>Reads data from the connection number 1</th></tr<>	Reads data from the connection number 1

[ST]

IF(Var_Flag_Inst=TRUE)THEN

SP_SOCCINF(TRUE, "U0", 1, Var_ControlData, Var_Connection);

(* Reads data from the connection number 1 *)

END_IF;

7.7 SOCCSET Instruction

SP_SOCCSET



SP_SOCCS	ET							Executing co	ndition	: 🖍	
Structured Ia SP SOC EN Un s1 s2			NO:=	ST SOCCSET	(EN, Un, s1,	s2);	SP_	indicat	es the follo	wing instr	uction.
Input argument	EN: Un: s1: s2:	Dummy (Connectio	on number	(1 to 16) control data			:Bit :String :ANY :Array				
Output argument	ENO:	Execution Setting data (s1) (s2)		Vord	R, ZR	J∭∖Ĭ Bit	:Bit	U[]\G[] - -	Zn	Constant K, H	Other –

Function

This instruction changes the IP address and port number of the external device of a specified connection.

(Available only with a UDP/IP connection)

Control Data

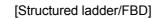
Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
s2 [1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
@[2] @[3]	Destination IP address	Specify the IP address of the external device.	1н to FFFFFFFH 0н: No destination (FFFFFFFFH: broadcast)	User
⊚[4]	Destination port No.	Specify the port number of the external device.	1н to FFFFн (FFFFн: broadcast)	User

Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program changes the destination (destination IP address and port number) of the connection number 1 which is being open.



1	· Var_Flag_Inst · SD1282.0 · · · · · · · · · · · · · · · · · · ·
	H55DE s d Var_ControlData[2] IP address to 10.97.85.222
	······································
	MOVP
	H2001 EN ENO Var_ControlData[4] port number to 8193
	SP_SOCCSET Changes the setting
	Of the connection
	Un
	······································

[ST]

IF((LDP(TRUE, Var_Flag_Inst)) &(SD1282.0=TRUE) THEN MOVP(TRUE, H55DE, Var_ControlData[2]); MOVP(TRUE, H0A61, Var_ControlData[3]);

(* Sets destination IP address to 10.97.85.222 *)

MOVP(TRUE, H2001, Var_ControlData[4]); (* Sets destination port number to 8193 *) SP_SOCCSET(TRUE, "U0", 1, Var_ControlData); (* Changes the setting of the connection number 1 *)

END_IF;

7.8 SOCRMODE Instruction

SP_SOCRMODE

QnUDE(H) LCPU

SP_SOCRM	IODE					E	xecuting co	ndition :	. _	
Structured I SP_SOCI EN Un s1 s2			ST _SOCRMODE)(EN, Un, s1, s	52);	SP_SC	indicat	es the follow	wing instr	uction.
Input argument Output argument	EN: Un: s1: s2: ENO:	Executing condition Dummy ("U0") Connection numbe Variable that stores Execution result	er (1 to 16)			:Bit :String :ANY16 :Array o :Bit	f ANY16 [03]			
ouput argument	LNO.		al device Word	R, ZR	J∰ Bit		U:::\G::: - -	Zn	Constant K, H	Other
Function		_								

This instruction changes the TCP receive mode (unavailable for a UDP connection) and receive data size.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
ଛ2[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	_	System
s2 [2]	TCP Receive Mode ^{*1}	Specify the TCP receive mode. 0 : TCP normal receive mode 1 : TCP fixed length receive mode	0, 1	User
€2[3]	Receive Data Size	Specify the receive data size of the socket communication. (number of bytes)	1 to 2046	User

*1: Unavailable for a UDP connection.

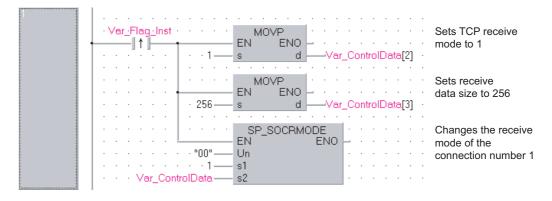
Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program changes the receive mode of the connection number1 to TCP fixed length receive mode and changes its receive data length to 256 bytes.

After instruction execution, the connection number 1 turns the receive status signal ON when the length of receive data reaches 256 bytes.



[Structured ladder/FBD]

[ST]

IF (Var_Flag_Inst=TRUE) THEN

MOVP(TRUE, 1, Var_ControlData[2]); (* Sets TCP receive mode to 1 *) MOVP(TRUE, 256, Var_ControlData[3]); (* Sets receive data size to 256 *) SP_SOCRMODE(TRUE, "00", 1, Var_ControlData); (*Changes the receive mode of the connection number 1 *)

END_IF;

7.9 SOCRDATA Instruction

S_SOCRDATA

QnUDE(H) LCPU

S(P)_SOCR	DATA						P:Executing	condition	: 🖍	
Structure EN Un s1 s2 n	ed ladder OCRDATA ENO d	/FBD	ENO:=	S_SOCRD4	ST (EN, Un	, s1, s2, n, d);	S_SOCRDATA	tes the follo	wing instr	
Input argument	EN: Un: s1: s2:	Dummy Connect Variable	ion number that stores	control data			:Bit :String :ANY16 :Array of ANY16 [01]			
Output argument	n: ENO: d:	Number of read data (1 to 1024 words) Execution result Variable that stores read data				ANY16 :Bit ANY16				
		Setting data	Interna Bit	l device Word	R, ZR	J∭\III Bit V	Vord	Zn	Constant K, H	Others
	Ī	(s1)	_	0	0		-		0	-
		<u>s2</u>	-	0	0		-		-	-
		n	_	0	0		_		0	

Grant Function

This instruction reads data for the specified number of words from the socket communication receive data area of a specified connection, and stores it.

Control Data

Device	Item	Setting data	Setting range	Setting side
s2 [0]	System area	-	-	-
፼[1]	Completion status	The instruction application status is stored. 0 : Normal completion Other than 0 : Error completion (error code)	-	System

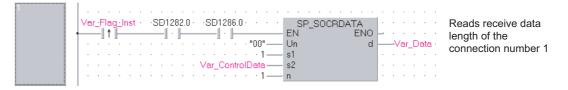
Precautions

Use the Built-in Ethernet port QCPU of which the function version is B or later and the first five digits of the serial number are '11012' or higher.

Program Example

The following program reads the receive data length of the connection number 1.

[Structured ladder/FBD]

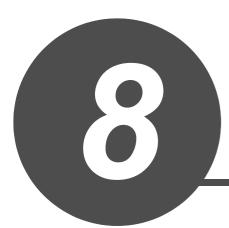


[ST]

IF((Var_Flag_Inst=TRUE) & (SD1282.0=TRUE) &(SD1286.0=TRUE))THEN SP_SOCRDATA(TRUE, "00", 1, Var_ControlData, 1, Var_Data); (* Reads receive data length of connection number 1 *)

END_IF;

MEMO



BUILT-IN I/O FUNCTION INSTRUCTION

8.1	Positioning Function Dedicated Instruction	8-2
8.2	Counter Function Dedicated Instruction	8-18

8.1 Positioning Function Dedicated Instruction

8.1.1 IPPSTRT instruction

IPPSTRT1, IPPSTRT2

LCPU

IPPSTRT1(F IPPSTRT2(F		P: Executing condition :
Structured I — IPPST — EN — n		indicates any of the following instructions. IPPSTRT1 IPPSTRT1P IPPSTRT2 IPPSTRT2P
Input argument Output argument	EN:Executing conditionn:Positioning data number (Setting range: 1 to 10)ENO:Execution result	:Bit :ANY16 :Bit
	Setting data Internal device R, ZR Ji n - O O	Word UIII\GIII Zn Constant Others

☆ Function

This instruction specifies a data number to be executed for 'n' from the positioning data No. 1 to No. 10 which are previously set in GX Works2, and starts the specified axis (refer to the following).

- IPPSTRT1(P): Axis 1
- IPPSTRT2(P): Axis 2

Program Example

The following program starts the "Positioning Data" No. 1 of the Axis 1 when M0 turns ON.



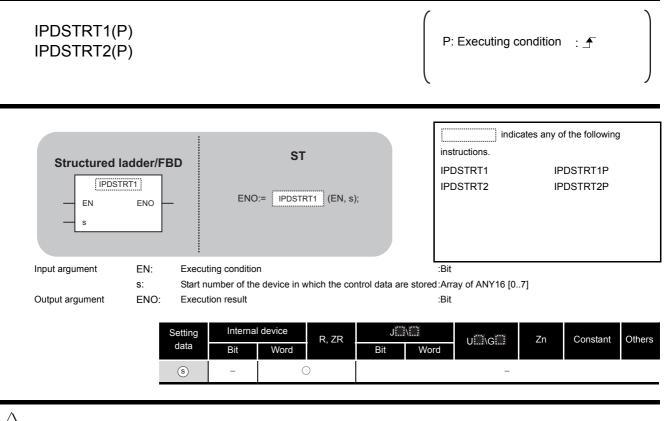
[ST] IPPSTRT1(M0, 1);

NULT-IN I/O FUNCTION

8.1.2 IPDSTRT instruction

IPDSTRT1, IPDSTRT2

LCPU



Grant Function

Regardless of "Positioning Data" No. 1 to No. 10 which are previously set in GX Works2, this instruction starts the positioning of the specified axis (refer to the following) using the data stored in the devices starting from \odot .

- IPDSTRT1(P): Axis 1
- IPDSTRT2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side			
		1: Positioning control (ABS)					
		2: Positioning control (INC)					
		3: Speed/position switching control					
		(forward RUN)					
s [0]	Control system	4: Speed/position switching control	1 to 7				
		(reverse RUN)					
		5: Current value change					
		6: Speed control (forward RUN)					
		7: Speed control (reverse RUN)					
ঙ [1]	Acceleration/deceleration time	0 to 32767 (ms)	User				
s [2]	Deceleration stop time	eceleration stop time –					
ঙ [3]	Dwell time	0 to 65535 (ms) ^{*1}					
s [4]	Command speed		0 to 200000				
s [5]		_	(pulse/s) ^{*2}				
§ [6]			-2147483648 to	1			
	Positioning address/movement amount	-	2147483647				
s [7]			(pulse)				

*1: Enter the setting value to the program as described below.

1 to 32767: Enter in decimal

- 32768 to 65535: Enter after converting it to hexadecimal
- *2: The restricted speed value may be applied when the set value of the command speed is not within 0 to 200000.

Program Example

The following program sets the following positioning data and starts the axis 1 when M0 turns ON.

Device	Item	Setting data			
D0	Control system	Positioning control (ABS)			
D1	Acceleration/deceleration time	1000 (ms)			
D2	Deceleration stop time	1000 (ms)			
D3	Dwell time	0 (ms)			
D4, D5	Command speed	20000 (pulse/s)			
D6, D7	Positioning address/movement amount	100000 (pulse)			

[Structured ladder/FBD]

	· M0										MOV
·	-									· ·1—	EN ENO s d
	• •	• •	·	•	•	•	·	•			
							Ľ				
	· ·	• •			·		·		·	·1000	s d
·	• •	• •	·			•	·	·	1		
	• •		:	÷	Ì	:	Ŀ.	•	•		EN ENO
	· ·	• •					.			·1000	s d
· ·	• •	• •	·	•	·	·	·	·	·		
	· ·		:	÷	÷	:		•	•		
		• •					.			· · 0—	s d
	• •	• •	•	1			·				· · · · · · ·
	· ·		:	÷	÷	:	·	•	•		
							.			20000 —	s d
· ·	• •	• •	·	·	·	·	·	·	·		
	• •	• •	÷	÷	÷	:	ŀ	•	•		
									- 1	00000	s d
- ·	· ·	· ·	·				·	÷	÷	\cdot \cdot \cdot \cdot	
· ·	• •	• •	•	÷	•	:	·	•	·		IPDSTRT1P EN ENC
										· D0	- S

[ST]

MOV(M0, 1, D0); MOV(M0, 1000, D1); MOV(M0, 1000, D2); MOV(M0, 0, D3); DMOV(M0, 20000, D4); DMOV(M0, 100000, D6); IPDSTRT1P(M0, D0);

8.1.3 IPSIMUL instruction

IPSIMUL

LCPU

IPSIMUL(P)		P: Executing condition :
Structured EN n1 n2	ENO ENO:= IPSIMUL (EN, n1, n2);	indicates any of the following instructions. IPSIMUL IPSIMULP
Input argument Output argument	EN:Executing conditionn1:Axis 1 positioning data numbern2:Axis 2 positioning data numberENO:Execution result	:Bit :ANY16 :ANY16 :Bit
	Setting dataInternal device R, ZRBitWordR, ZRn1-On2-O	UIGI Zn Constant Others

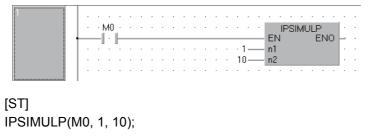
Grant Function

This instruction simultaneously starts the positioning of the axis 1 positioning data number specified by n1 and the axis 2 positioning data number specified by n2.

Program Example

The following program simultaneously starts the axis 1 positioning data No. 1 and the axis 2 positioning data No. 10 when M0 turns ON.

[Structured ladder/FBD]



LCPU

8.1.4 IPOPR instruction

IPOPR1, IPOPR2

8

IPOPR1(P) IPOPR2(P)		P: Executing condition :
Structured I		indicates any of the following instructions. IPOPR1 IPOPR1P IPOPR2 IPOPR2P
Input argument Output argument	EN: Executing conditions: Start number of the device in which the control dENO: Execution result	:Bit ata are stored:Array of ANY16 [02] :Bit
	Setting data Internal device R, ZR Bit Word Bit	JINI UII∖GII Zn Constant Others Bit Word –

Grant Function

This instruction starts the OPR of which type is specified by \odot on the specified axis (refer to the following).

- IPOPR1(P): Axis 1
- IPOPR2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side	
		1: Machine OPR			
s [0]	OPR type	2: Fast OPR (OP address)	1 to 3		
		3: Fast OPR (standby address)			
s [1]	Standby address		-2147483648 to	User	
0.1	, , , , , , , , , , , , , , , , , , ,		2147483647 (pulse)		
s [2]	(Set only when Fast OPR (standby address (3)) is set for the OPR type)	-	(Ignored when other than		
(I=1 ()	(3)) is set tor the OFK type)		standby address (3))		

Program Example

The following program starts the machine OPR of the axis 1 when M0 turns ON.

Device	Item	Setting data				
D0	OPR type	Machine OPR				
D1, D2	Standby address	0 (Ignored)				

[Structured ladder/FBD]

1	- 1																		
	- 1		•						•					•			•		
		•		M0	i.		•	•	•	•	Ì	•	•	•	•	•	•	•	
			•								Ι						1—		
	- 1		•						•								•		
				·									·	·	·	·		·	DIMOV
	- 1		•			•			•		t	_	_	_	_	_	_	_	EN ENO
					·	·	·	·		÷			·	·		·	0 —		s d — D1 ·
	- 1																		
																			IPOPR1P
	- 1										<u> </u>							_	EN ENOL···
																D	0 —		S
			·	·	·	·	·	·	·	÷	·	·	·	·	·	·	·	·	

[ST] MOV(M0, 1, D0); DMOV(M0, 0, D1); IPOPR1P(M0, D0);

8.1.5 IPJOG instruction

IPJOG1, IPJOG2

LCPU

8

IPJOG1 IPJOG2

Structured la PJOC EN s1 s2	31	ENO:=	ST IPJOG1	(EN, s1, s	52);	ins IPJ	indic tructions. IOG1 IOG2	cates any c	of the following	3
Input argument	EN: s1: s2:	Executing conditio Start number of the Direction specifica 0: Forward RUN 1: Reverse RUN	e device in v			:Bit		.3]		
Output argument		Execution result Setting data Bit (s) - (s2 O	l device Word	R, ZR	Ji Bit	:Bit	U[]]\G[]] - -	Zn	Constant	Others

Grant Function

This instruction starts the JOG operation of the specified axis (refer to the following).

- IPJOG1: Axis 1
- IPJOG2: Axis 2

The JOG operation is executed in the direction specified by 0, using the JOG speed, JOG acceleration/deceleration time stored in the devices starting from 0.

Control Data

Device	Item	Setting data	Setting range	Setting side
s1 [0]	JOG speed		0 to 200000	
s1 [1]			(pulse/s) ^{*1}	User
s1 [2]	JOG acceleration time	-	0 to 32767 (ms)	0301
s1 [3]	JOG deceleration time	-	0.0002707 (113)	

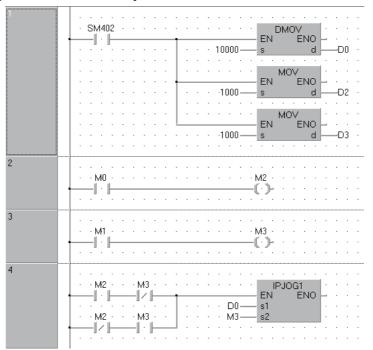
*1: The restricted speed value may be applied when the set value of the JOG speed is not within 0 to 200000.

Program Example

The following program starts the forward JOG operation when M0 turns ON, and starts the reverse JOG operation when M1 turns ON.

Device	Item	Setting data
D0, D1	JOG speed	10000 (pulse/s)
D2	JOG acceleration time	1000 (ms)
D3	JOG deceleration time	1000 (113)

[Structured ladder/FBD]



[ST] DMOV(SM402, 10000, D0); MOV(SM402, 1000, D2); MOV(SM402, 1000, D3); OUT(M0, M2); OUT(M1, M3); IPJOG1(M2 AND NOT M3 OR NOT M2 AND M3, D0, M3);

BUILT-IN I/O FUNCTION INSTRUCTION

8.1.6 IPABRST instruction

IPABRST1, IPABRST2



PABRST1 PABRST2			Executing condition :
Structured PAB EN s	ladder/FBD	ST ENO:= IPABRST1 (EN, s, d)	indicates any of the following instructions. IPABRST1 IPABRST2
nput argument	EN: E	Executing condition	:Bit
		Start number of the device for input	:Array of bit [02]
Output argument		Execution result	:Bit
	d: Set	Start number of the device for output ting Internal device R, ZR tta Bit Word	:Array of bit [02] J∭\[] Bit Word U[]\G[] Zn Constant

Grant Function

This instruction executes the absolute position restoration of the specified axis (refer to the following) by communicating with the servo amplifier using the input device specified by s and output device specified by s.

- IPABRST1: Axis 1
- IPABRST2: Axis 2

Control Data

(1) Signals imported from servo amplifier

Device	Item	Setting data	Setting range	Setting side	
s [0]		ABS send data bit0			
s [1]	Signals imported from servo amplifier	ABS send data bit1	0, 1	User	
s [2]		ABS send data ready			

(2) Signals exported to servo amplifier

Device	Item	Setting data	Setting range	Setting side
(0) (0)		Servo ON		
d [1]	Signals exported to servo amplifier	ABS transfer mode	-	System
d [2]	*	ABS request flag		

Program Example

This instruction executes the absolute position restoration of the axis 1 when M0 turns ON.

- X20 to X22: Signals imported from the servo amplifier
- Y30 to Y32: Signals exported to the servo amplifier

[Structured ladder/FBD]

1																													
	·		MO	- A	÷	·	·	÷	·	·	÷	·	·	÷	·	·			IP.	AB	RS	ST 1	 }		•	·	·	÷	·
		_	Ľ											. ;	×20)		EN s	1			E	INU: (_	_Y	30		:
	·		·						·		·	·					·	•	•	•	•	•	•	·					

[ST] IPABRST1(M0, X20, Y30);

LCPU

8.1.7 IPSTOP instruction

IPSTOP1, IPSTOP2

8

IPSTOP1, IPSTOP2

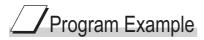
IPSTOP1 IPSTOP2

Structured ladder/FBD	ST ENO:= IPSTOP (EN);	instructions. IPSTOP1 IPSTOP2	cates any c	of the following]
		Bit Bit ∪∭\G∭	Zn	Constant	Others

Grant Function

This instruction stops the positioning of the specified axis (refer to the following).

- IPSTOP1: Axis 1
- IPSTOP2: Axis 2



The following program stops the axis 1 when M0 turns ON.

[Structured ladder/FBD]

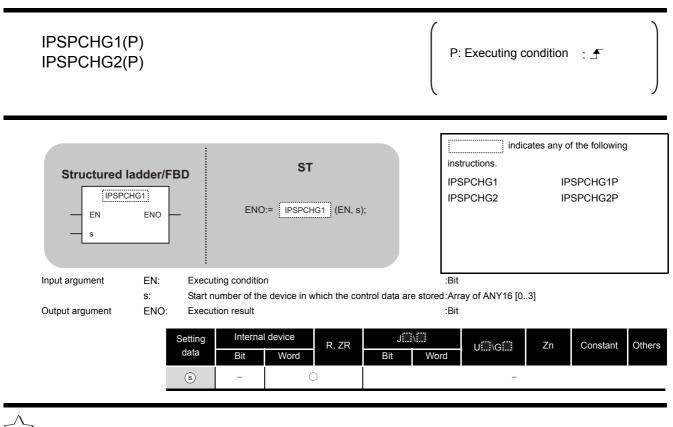




8.1.8 IPSPCHG instruction

IPSPCHG1, IPSPCHG2

LCPU



Grant Function

This instruction changes the speed of the specified axis (refer to the following) using the acceleration/deceleration time at speed change, deceleration stop time at speed change, and new speed value stored in the devices starting from (s).

- IPSPCHG1(P): Axis 1
- IPSPCHG2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
s [0]	Acceleration/deceleration time at speed	-		
	change		0 to 32767 (ms)	
ঙ [1]	Deceleration stop time at speed change	-		User
s [2]	New speed value	_	0 to 200000	
s [3]			(pulse/s) ^{*1}	

*1: The restricted speed value may be applied when the set value of the new speed is not within 0 to 200000.

Program Example

The following program changes the speed of the axis 1 when M0 turns ON.

Device	Item	Setting data
D0	Acceleration/deceleration time at speed change	2000 (ms)
D1	Deceleration stop time at speed change	1000 (ms)
D2, D3	New speed value	200000 (pulse/s)

[Structured ladder/FBD]

1	· · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · ·
	MOV
	EN ENO
	· · · · · · · · · · · · 1000 — s d — D1 ·
	· · · · · · · · · · · · · · · · · · ·
	EN ENO
	· · · · · · · · · · · · 20000 — s d — D2 ·
	PSPCHG1P
	EN ENO
	· · · · · · · · · · · · D0 — s

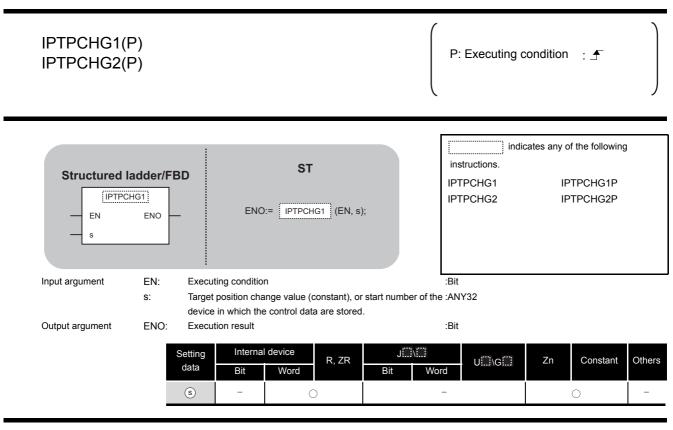
[ST]

MOV(M0, 2000, D0); MOV(M0, 1000, D1); DMOV(M0, 20000, D2); IPSPCHG1P(M0, D0); 8

8.1.9 IPTPCHG instruction

IPTPCHG1, IPTPCHG2

LCPU



This instruction changes the position of the specified axis (refer to the following) to the new target position specified by (s).

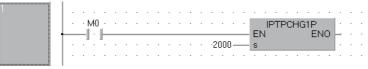
- IPTPCHG1(P): Axis 1
- IPTPCHG2(P): Axis 2

Control Data

Device	Item	Setting data	Setting range	Setting side
s +0			-2147483648 to	
-	Target position change value	-	2147483647	User
s +1			(pulse/s)	

Program Example

The following program changes the target position of the axis 1 to 2000 when M0 turns ON. [Structured ladder/FBD]



[ST] IPTPCHG1P(M0, 2000);

8.2 Counter Function Dedicated Instruction

8.2.1 ICCNTRD instruction

ICCNTRD1, ICCNTRD2

LCPU

ICCNTRD1(P) ICCNTRD2(P)		P: Executing o	condition : 于	
Structured ladder/FBD	ST ENO:= ICCNTRD1 (EN);	indi instructions. ICCNTRD1 ICCNTRD2	icates any of the follow ICCNTRD1F ICCNTRD2F	5
	euting condition eution result Internal device Bit Word	:Bit Bit J U∭\G∭	Zn Constan	t Others

Function

This instruction stores a value at the time of instruction execution to the current value of the specified CH (refer to the following).

Instruction	CH	Device in which the current value is stored
ICCNTRD1(P)	CH1	SD1880, SD1881
ICCNTRD2(P)	CH2	SD1900, SD1901

Program Example

The following program stores the most recent value to the CH 1 current value (SD1880, SD1881) when M0 turns ON.

[Structured ladder/FBD]



[ST] ICCNTRD1(M0);

8.2 Counter Function Dedicated Instruction 8.2.1 ICCNTRD instruction

LCPU

8.2.2 ICRNGWR instruction

ICRNGWR1, ICRNGWR2

ICRNGWR ICRNGWR	. ,	P: Executing conditi	on :
	Iadder/FBD ST GWR1 ENO ENO ENO:= ICRNGWR1 (EN, s1,	instructions.	y of the following ICRNGWR1P ICRNGWR2P
Input argument	EN: Executing condition s1: Ring counter lower limit value (constant), the device that stores the ring counter low • Constant: Settings which is within the ra	ver limit value ange of -2147483648	
	to 2147483647 and ((s), (s) +1) ≦ • Device: Within the range of specified d s2: Ring counter upper limit value (constant), the device that stores the ring counter up • Constant: Settings which is within the range to 2147483647 and ((s), (s) +1) ≦	evice or start number of :ANY32 per limit value ange of -2147483648	
Output argument	• Device: Within the range of specified de ENO: Execution result		
	Setting data Bit Word R, ZR	JIII\\III Bit Word UIII\GIII Zn −	Constant Othe

Grant Function

This instruction sets the ring counter lower limit value and the ring counter upper limit value of the specified CH (refer to the following).

_

• ICRNGWR1(P): CH1

s2)

_

• ICRNGWR2(P): CH2

 \bigcirc

Program Example

The following program sets -100000 for the ring counter lower limit value and 100000 for the ring counter upper limit value of CH 1 when M0 turns ON.

[Structured ladder/FBD]

1																								
			٠Ņ	vł0	÷		·											ICRNO	WR	1P				
	-	_			⊢			_	_	_	_	_	_		_	_	_	EN		ΕN	0	_	÷	·
														00		-		s1				·	·	·
			·	÷	÷	·	÷	·	÷	·	·	÷	÷1	00	00	0 —	_	s2					·	·
			·	÷	÷	÷	÷	÷	÷	÷	·	÷	·	÷	÷	÷	·						·	·

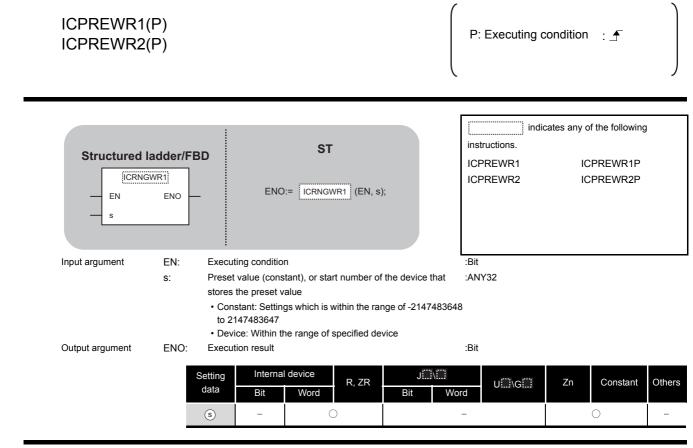
[ST] ICRNGWR1P(M0, -100000, 100000);

LCPU

IUILT-IN I/O FUNCTION

8.2.3 ICPREWR instruction

ICPREWR1, ICPREWR2



Grantion

This instruction sets a preset value of the specified CH (refer to the following).

- ICPREWR1(P): CH1
- ICPREWR2(P): CH2

Program Example

The following program sets 10000 for the preset value of CH 1 when M0 turns ON.

[Structured ladder/FBD]

1																												
				M	0_																101	PRI	E٧	/R1		Ŀ		
	-t	_	-	1:	ŀ	-	-	_	_	_					_				_	E	N.			E١	10	F.		·
		·				•	•	·	÷	÷	·	·	·	·	·	10	00	0-	_	s						Ŀ.,	·	·
		•				•		·	•		·		·	·	•	·		·	·	1	·		•	• •	•		•	•

[ST] ICPREWR1(M0, 10000);

8.2.4 ICLTHRD instruction

ICLTHRD1, ICLTHRD2

LCPU

ICLTHRD1(I ICLTHRD2(I					P: Executing c	condition	: 🖍	
Structured ICLTF EN n			ST ICLTHRD1 (EN, n, r	d);	indic instructions. ICLTHRD1 ICLTHRD2	IC	f the following LTHRD1P LTHRD2P)
Input argument	EN:	Executing condition			:Bit			
	n:	Latch count value (1	,2)		:ANY16			
Output argument	ENO: d:	Execution result Start number of the stored	device in which the	latch count value	:Bit is:ANY32			
		Setting Internal of data Bit	levice R, ZR Word	J\ Bit Wo	u	Zn	Constant	Othe
		n –	0		-		0	-
		- b	0			0		

Grant Function

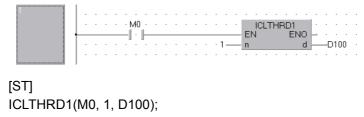
This instruction stores a latch count value n of the specified CH (refer to the following) to .

- ICLTHRD1(P): CH1
- ICLTHRD2(P): CH2

Program Example

The following program stores the latch count value 1 of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder/FBD]



8.2.5 ICSMPRD instruction

ICSMPRD1, ICSMPRD2

8

ICSMPRD1(ICSMPRD2(P: Executing condition :
Structured ICSM EN		indicates any of the following instructions. ICSMPRD1 ICSMPRD1P ICSMPRD2 ICSMPRD2P
Input argument Output argument	EN: Executing condition ENO: Execution result d: Start number of the device in which the sam is stored Setting Internal device R, ZR Bit Word R, ZR	:Bit :Bit pling count value;ANY32 JU::\G Bit Word U::\G

Grant Function

This instruction stores a sampling count value of the specified CH (refer to the following) to .

- ICSMPRD1(P): CH1
- ICSMPRD2(P): CH2

Program Example

The following program stores the sampling count value of CH 1 to D100 and D101 when M0 turns ON.

[Structured ladder/FBD]

1	.																		
			м0 		•	•	•	•	•	•	•	•	•	•	•	•	•		
																		dD100	
	·	•		·		÷	·	÷	÷	÷	1	·		÷	·	1	÷		

[ST] ICSMPRD1(M0, D100);

8.2.6 ICCOVWR instruction

ICCOVWR1, ICCOVWR2

LCPU

ICCOVWR1 ICCOVWR2	· ,				P: Executing c	ondition : 于	
Structured EN s	Iadder/FB		ST ICCOVWR1 (EN, n, s	\$);	indic instructions. ICCOVWR1 ICCOVWR2	ates any of the following ICCOVWR1P ICCOVWR2P	3
Input argument	EN: n: s:	the device in which • Constant: Setting to 2147483647		n point is stored ige of -2147483648			
Output argument	ENO:	Execution result	Vord R, ZR	JINI Bit Wo	:Bit rd U::::\G::: -	Zn Constant	Oth

Grant Function

This instruction stores a coincidence output No. n point of the specified CH (refer to the following).

- ICCOVWR1(P): CH1
- ICCOVWR2(P): CH2

Program Example

The following program sets the value of D100 and D101 to the coincidence output No. 2 point of CH 1 when M0 turns ON.

[Structured ladder/FBD]

[ST] ICCOVWR1(M0, 2, D100);

8.2.7 ICFCNT instruction

ICFCNT1, ICFCNT2

8

IN I/O FU

ICFCNT1 ICFCNT2

Structured I		ENO:	ST = ICFCNT1 (EN, d);	i, ir 10	indic instructions. CFCNT1 CFCNT2	cates any c	of the following	3
Input argument Output argument	ENO: E d: S	Executing condition Execution result Start number of the value	n e device that stores the r	:B B neasured frequency:A	it			
	Sett da		l device R, ZR Word	J∷i∖ii Bit Word	U∭\G∭	Zn	Constant	Others
	d) –	0	-		0	-	

Grant Function

This instruction measures a frequency of the specified CH (refer to the following) according to the settings such as the frequency measurement unit time setting.

- · ICFCNT1: CH1
- ICFCNT2: CH2

The measured value is stored to (a) at the ICFCNT instruction execution. The measurement starts at the rising pulse of the ICFCNT instruction execution command, and ends at the falling pulse.

Program Example

The following program executes the frequency measurement of CH 1 while M0 is ON.

[Structured ladder/FBD]

1	.																								
		- ÷	···-			• •			•	•	•	•	•	•	•	F	101	FC		1 INC			·	•	:
			- 1														IN .		L	C		 D10	00		
	·	·	·	·	•		·	·	·	·	·	·	1	·	÷		÷		•	•	•	÷	·	1	·

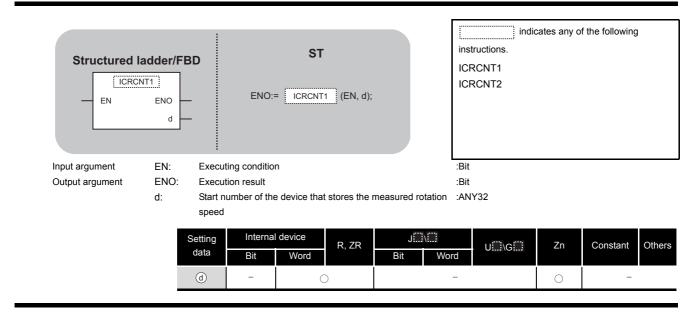
[ST] ICFCNT1(M0, D100);

8.2.8 ICRCNT instruction

ICRCNT1, ICRCNT2

LCPU

ICRCNT1 ICRCNT2



☆ Function

This instruction measures a rotation speed of the specified CH (refer to the following) according to the settings such as the rotation speed measurement unit time setting.

- ICRCNT1: CH1
- ICRCNT2: CH2

The measured value is stored to (a) at the ICRCNT instruction execution. The measurement starts at the rising pulse of the ICRCNT instruction execution command, and ends at the falling pulse.

Program Example

The following program stores the rotation speed measurement value of CH 1 to D100 and D101 while M0 is ON.

[Structured ladder/FBD]



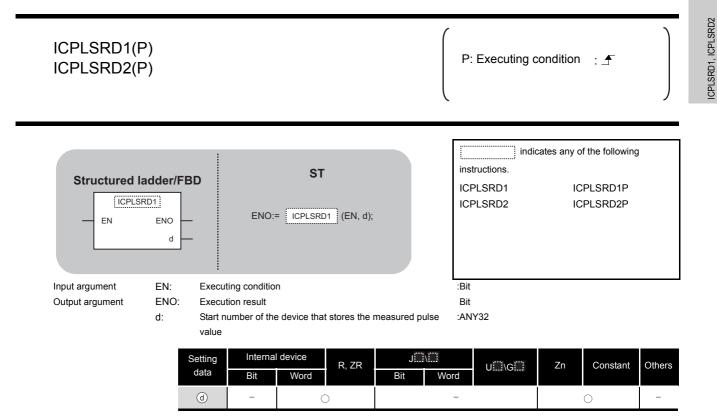
[ST] ICRCNT1(M0, D100);

LCPU

8.2.9 ICPLSRD instruction

ICPLSRD1, ICPLSRD2

8





This instruction stores a measured pulse value of the specified CH (refer to the following) to .

- · ICPLSRD1(P): CH1
- ICPLSRD2(P): CH2

Program Example

The following program stores the measured pulse value of CH 1 to D100 and D101 when M0 turns ON.

8.2 Counter Function Dedicated Instruction

8.2.9 ICPLSRD instruction

[Structured ladder/FBD]



[ST] ICPLSRD1(M0, D100);

8.2.10 ICPWM instruction

ICPWM1, ICPWM2

LCPU

ICPWM1 ICPWM2

Structured EN s1 s2			ST ICPWM1 (EN, s1, s	ICF	indic ructions. WM1 WM2	cates any of t	he following	1
Input argument	EN:	Executing condition	n	:Bit				
	s1:	PWM output ON tin	me setting value (consta	ant), or start number :AN	(32			
		of the device that s	stores the PWM output 0	ON time setting				
		value						
		Constant: Setting	gs which is 0 or within th	e range of 10 to 10 ⁷				
		(0.1µs) and (🗊	, ⑸ +1) ≦ (⑸ , ⑸) +1)				
		Device: Within the second	ne range of specified de	vice				
	s2:	PWM output cycle	time setting value (cons	stant), or start :AN	(32			
			ice that stores the PWM	output cycle time				
		setting value						
		Constant: Setting	gs which is 0 or within th	e range of 50 to 10 ⁷				
		(0.1µs) and (🗊	, (s1) +1) \leq ((s2) , (s2)) +1)				
		Device: Within the second	ne range of specified de	vice				
Output argument	ENO:	Execution result		:Bit				
	9	etting Internal	l device	JIII\III				
		data Bit	R, ZR	Bit Word	U\G	Zn	Constant	Othe
	_	Ві	vvora	Bit Word				1
		s1 –	0	-		C)	-

Grant Function

This instruction outputs a PWM waveform of the specified CH (refer to the following).

- ICPWM1: CH1
- ICPWM2: CH2

The PWM waveform with the ON time ($_{\odot}$) and the cycle time ($_{\odot}$) is output from the coincidence output No.1 signal during the ICPWM instruction execution. The output of the PWM waveform starts from OFF.

Program Example

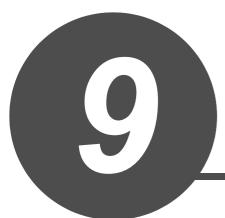
The following program outputs the PWM waveform with 1μ s ON time and 5μ s cycle time from CH 1 while M0 is ON.

[Structured ladder/FBD]



[ST] ICPWM1(M0, 10, 50);

MEMO



DATA LOGGING FUNCTION INSTRUCTION

9.1	LOGTRG Instruction, LOGTRGR Instruction	9-2

9.1 LOGTRG Instruction, LOGTRGR Instruction

		LCPU
LOGTRG LOGTRGR		Executing condition : _
Structured I EN n	RG	indicates any of the following instructions. LOGTRG LOGTRGR
Input argument Output argument	EN:Executing conditionn:Data logging configuration numberENO:Execution result	:Bit :ANY16 :Bit
	Setting dataInternal deviceR,BitWordR,	JIIII UIIIGII Zn Constant Oth Bit Word UIIIGII Zn K, H Oth

Grant Function

LOGTRG

- (1) The LOGTRG instruction generates a trigger in the trigger logging of the data logging configuration number specified by 'n'.
- (2) A value from 1 to 10 is set for 'n'.
- (3) When the LOGTRG instruction is executed, the special relay (data logging trigger) of the data logging configuration number specified by 'n' turns ON. After executing the trigger logging for the number of times set for "Number of records", the instruction latches the data and stops the trigger logging.
- (4) Validated when "When trigger instruction executed" is selected as the trigger condition.
- (5) No processing is performed with the following condition.
 - Specifying a data logging configuration number for which other than "When trigger instruction executed" is specified as the trigger condition.
 - Specifying a data logging configuration number which is not configured.
 - Specifying a data logging configuration number which is currently used for continuous logging.
 - Executing the LOGTRG instruction again without executing the LOGTRGR instruction after the LOGTRG instruction.

LOGTRGR

- (1) The LOGTRGR instruction resets the LOGTRG instruction of the specified data logging configuration number.
- (2) When the LOGTRGR instruction is executed, the special relay (data logging trigger, trigger logging complete) of the data logging configuration number specified by 'n' turns OFF.
- (3) When the instruction is executed while transferring data in the buffer memory to the SD memory card, the instruction process is held until data transfer is complete.

Operation Error

In the following case, an operation error occurs, the error flag (SM0) is turned ON, and the corresponding error code is stored to SD0.

• The value for n is outside the range of 1 to 10 (Error code: 4100)

Program Example

The following program executes the LOGTRG instruction on the data logging configuration No. 1 when X0 turns ON, and resets the trigger condition with the LOGTRGR instruction when X1 turns ON.

[Structured ladder/FBD]

1	.	•	×0		•	•						•				•			GTI	RG		•	•	•
					•		•	•	•	•	•	•	•	•	•	1 –		EN n		EN.				•
2																					•			•
			×1.	ė.	•	•	•	•	•	•	•	•	•	•	•	•	•	LOG	TF	GP EN			÷	:
			۰.													1 –		n						
	·															· .								

[ST] LOGTRG(X0,1); LOGTRGR(X1,1);



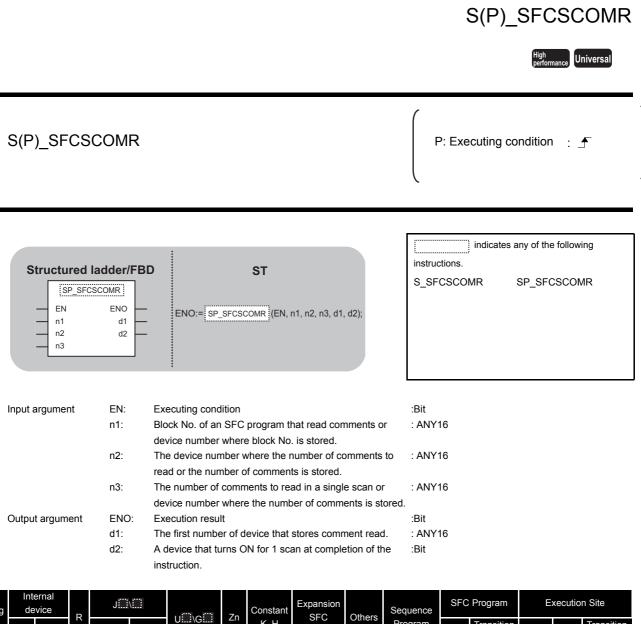
10.1	SFC Control Instruction)-2

10

INDEX

10.1 SFC Control Instruction

10.1.1 SFCSCOMR instruction



Setting data	Internal device				\	213 213	Zn	Constant	t Expansion SFC	Others	Sequence	SFC Program		Execution Site		
	Bit	Word	R	Bit	Word	U\G	211	К, Н	K, H BLm\Sn	Outlets	Program	Sten	Transition Condition	Block	Step	Transition Condition
n1	-	0				-		0	-				-		-	_
n2	-	0				_		0	-			-		-	-	
n3	-	0		-		_		0	-		0		-	0	-	-
d1	-	O*′	1			_		-	-				-		-	-
d2	O*1	_				_		-	-				-		-	-
	*1: Local device cannot be used.															

☆ Function

This function reads step comments being activated in the SFC block specified at , by the number of comment specified at , and stores those to the device number of after specified at .

Caution

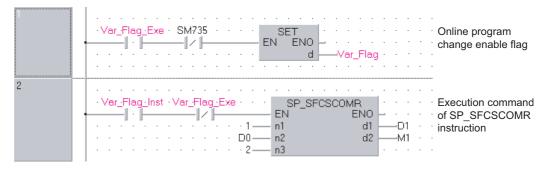
For High Performance model QCPU, use the function version is B or later and the first five digits of the serial number are '07012' or higher.

Program Example

This program reads 2 comments being activated at the SFC block No.1 when X1 is turned ON, and stores those to the storage device after D0.

(The number of comment to be read in a single scan is also set in 2.)

[Structured ladder/FBD]



[ST]

IF((Var_Flag_Exe=TRUE) & (SM735=FALSE))THEN

(*Online program change execution command*) SET(TRUE, Var_Flag); (*Online program change enable flag*) END_IF; IF((Var_Flag_Inst=TRUE) & (Var_Flag=FALSE))THEN (*Execution command of SP_SFCSCOMR instruction*) SP_SFCSCOMR(TRUE, 1, D0, 2, D1, M1); END_IF;

10.1.2 SFCTCOMR instruction

S(P)_SFCTCOMR

^h formance Universal

S(P)_SFCTCOMR P: Executing condition : indicates any of the following instructions. Structured ladder/FBD ST S_SFCTCOMR SP_SFCTCOMR SP_SFCTCOMR ΕN ENO ENO:= SP_SFCTCOMR (EN, n1, n2, n3, d1, d2); n1 d1 n2 d2 n3 Input argument EN: Executing condition :Bit n1: Block No. of an SFC program that read comments or : ANY16 device number where block No. is stored. n2: The device number where the number of comments to : ANY16 read or the number of comments is stored. n3: : ANY16 The number of comments to read in a single scan or device number where the number of comments is stored. Output argument ENO: Execution result :Bit d1: The first number of device that stores comment read. : ANY16 d2: A device that turns ON for 1 scan at completion of the :Bit instruction.

Setting		Internal device		J		. Jacob - Jacob	7	Constant	nt Expansion	Others	Sequence	SFC Program		Execution Site		n Site
data	Bit	Word	R	Bit	Word	U\G	Zn	К, Н	SFC BLm\Sn	Others	Program	Step	Transition Condition	Block	Step	Transition Condition
n1	-	0	0		_		0	-			-			_	-	
n2	-	0				-		0	-				-		-	-
n3	-	0				_		0	_		0		-	0	-	-
d1	-	0*1	1			_			-				-		-	-
d2)	O*1	-				_		-	_				-		-	_
	*1: Local device cannot be used.															

Grant Function

This function reads comments of the transition condition 1 associated with steps activated in the SFC block specified at with the number of comments specified at , and stores those to the device number of after specified at .

Caution

For High Performance model QCPU, use the function version is B or later and the first five digits of the serial number are '07012' or higher.

Program Example

This program reads 2 comments being activated at the SFC block No.1 when X1 is turned ON, and stores those to the storage device after D0.

(The number of comment to be read
in a single scan is also set in 2.)

[Structured ladder/FBD]

1	·Var_Flag_Exe SM735 SET Change enable flag □ □ □ □ □ □ □ □ □
2	· Var_Flag.Inst · Var_Flag.···· SP_SFCTCOMR Execution command · · · · · · · · · · · · · · · · · · ·

[ST]

IF((Var_Flag_Exe=TRUE) & (SM735=FALSE))THEN

(*Online program change execution command*) (*Online program change enable flag*)

END_IF;

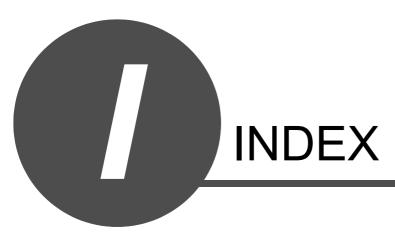
SET(TRUE, Var_Flag);

IF((Var_Flag_Inst=TRUE) & (Var_Flag=FALSE))THEN

(*Execution command of SP_SFCTCOMR instruction*) SP_SFCTCOMR(TRUE, 1, D0, 2, D1, M1); END_IF; S(P)_SFCTCOMR

10-5

MEMO





[A]

ABRST (absolute position restoration)	5-51
Analog instruction	
Analog module	1-8

[B]

BIDIN (receiving data using bidirectional protocol
communication)
BIDOUT (sending data using bidirectional protocol
communication)5-74
BUFRCV (receiving data in fixed buffer
communication) 5-225
BUFRCVS (receiving data with interrupt
program)5-83,5-229
BUFSND (sending data in fixed buffer communication)

[C]

CC-Link IE Controller Network module 1-8,1-9
CC-Link system master/local module1-8
CLOSE (connection closing)
Configuration of Instructions 3-2
CPRTCL (Pre-defined protocol communication)
CSET (initial setting)
CSET (programmable controller CPU monitoring)
CSET (receive data clear)5-80
וחז

[D]

Destination	3-3
[E]	

6-1	
ERRCLR (clearing error information)	5-235
ERRRD (reading error information)	5-238
Ethernet interface module	1-9

[G]

GETE (user frame reading)	5-104
[H]	
HOW TO READ INSTRUCTIONS	4-1
[1]	
I/O number	3-2
I/O number of module	3-2
ICCNTRD (current value read)	8-18
ICCOVWR (coincidence output point write)	8-24
ICFCNT (frequency measurement)	8-25
ICLTHRD (latch counter value read)	8-22
ICPLSRD (pulse measurement read)	8-27

CRNGWR (ring counter upper/lower limit value write)	
	9
CSMPRD (sampling counter value read)	
NPUT (receiving data using nonprocedural protocol	
communication)5-7	1
NSTRUCTION TABLES 2-	1
PABRST (absolute position restoration)	1
PDSTRT (positioning start)8-3	3
PJOG (JOG start)8-9	9
POPR (OPR start)8-	7
PPSTRT (table start)8-2	2
PSIMUL (2 axes simultaneous start)8-6	6
PSPCHG (speed change) 8-14	4
PSTOP (axis stop)8-13	3
PTPCHG (target position change)8-16	6

[L]

LOGTRG (trigger logging set)	9-2
LOGTRGR (trigger logging reset)	9-2

[M]

MELSECNET/H network module	1-9
Modules and Versions Applicable to Instructions	1-8
MRECV (receiving e-mail)	5-245
MSEND (sending e-mail)	5-250

[N]

2
-

[0]

OFFGAN (mode switching)	5-2
OGLOAD (reading offset/gain setting value)	5-4
OGSTOR (restoring offset/gain setting value)	5-27
ONDEMAND (sending data using the on-demar	nd
function)	5-64
OPEN (connection opening)	5-218
OUTPUT (sending data using nonprocedural pr	otocol
communication)	5-68

[P]

PFWRT (writing data to flash ROM)	5-60
PID control instruction	
PIDCONT (PID operation)	6-7,6-21
PIDINIT (setting data to be used for PID	
operation)	6-2,6-16
PIDPRMW (changing parameter for PID	
operation)	6-12,6-27
PIDRUN (PID operation start)	6-11,6-26
PIDSTOP (PID operation stop)	6-11,6-26
PINIT (setting data initialization)	5-62
Positioning Instruction	5-51
PRR (data transmission/reception)	5-85
PSTRT (positioning start)	5-55

PUTE (user frame registration)	5-101
--------------------------------	-------

[R]

F3
READ (reading data from a word device) 5-144
RECV (receiving data) 5-173
RECVS (receiving data) 5-178
Related manuals A-10
REMFR (reading data from buffer memory) 5-208
REMTO (writing data to buffer memory) 5-210
REQ (transient request) 5-181
RIFR (reading data from auto-refresh buffer memory)
RIRCV (reading data from buffer memory) 5-125
RIRD (reading data) 5-115
RISEND (writing data to buffer memory) 5-129
RITO (writing data to auto-refresh buffer memory)
RIWT (writing data) 5-120
RLPASET (parameter setting) 5-137
RRUN (remote RUN) 5-197
RSTOP (remote STOP) 5-200
RTMRD (reading clock data) 5-203
RTMWR (writing clock data) 5-205

[S]

SEND (sending data)	5-165
Serial communication instruction	2-5
Serial communication module	1-8
SFCSCOMR instruction	10-2
SFCTCOMR instruction	10-4
SOCCINF (reading connection information)	7-16
SOCCLOSE (shutting off a connection)	7-5
SOCCSET (changing connection target)	7-19
SOCOPEN (opening a connection)	7-2
SOCRCV (reading receive data)	7-8
SOCRCVS (reading receive data)	7-11
SOCRDATA (reading data from the socket	
communication receive data area)	7-24
SOCRMODE (changing receive mode)	7-22
SOCSND (sending data)	7-13
Source	3-3
SPBUSY (communication status check)	5-79
SREAD (reading data from a word device)	5-150
SWRITE (writing data to a word device)	5-161
[T]	
TEACH (teaching)	5-57

[U]

UINI (re-initialization)	5-241
UINI (switching the mode, transmission specifica	ation,
and host station number)	5-107

[W]

WRITE (writing data to a word device)5-154
[Z]
ZNWR 5-193

MEMO

<u>WARRANTY</u>

Please confirm the following product warranty details before using this product.

1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company. However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing onsite that involves replacement of the failed module.

[Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

[Gratis Warranty Range]

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- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
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MELSEC-Q/L Structured Programming Manual

Special Instructions

Q-KP-TM-E

MODEL

MODEL CODE

13JW09

SH(NA)-080785ENG-I(1107)KWIX

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

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HEADQUARTERS	
MITSUBISHI ELECTRIC EUROPE B.V. German Branch Gothaer Straße 8	EUROPE
D-40880 Ratingen Phone: +49 (0)2102 / 486-0 Fax: +49 (0)2102 / 486-1120	
MITSUBISHI ELECTRIC EUROPE B.Vorg.sl.	ZECH REP.
Czech Branch Avenir Business Park, Radlická 714/113a CZ-158 00 Praha 5 Phone: +420 - 251 551 470 Fax: +420 - 251-551-471	
MITSUBISHI ELECTRIC EUROPE B.V. French Branch 25, Boulevard des Bouvets F-92741 Nanterre Cedex Phone: +33 (0)1 / 55 68 55 68	FRANCE
Finite: +33 (0)1 / 55 68 57 57	
MITSUBISHI ELECTRIC EUROPE B.V. Irish Branch Westgate Business Park, Ballymount IRL-Dublin 24 Phone: +353 (0)1 4198800 Fax: +353 (0)1 4198890	IRELAND
MITSUBISHI ELECTRIC EUROPE B.V. Italian Branch Viale Colleoni 7 I-20041 Agrate Brianza (MB) Phone: +39 039 / 60 53 1 Fax: +39 039 / 60 53 312	ITALY
MITSUBISHI ELECTRIC EUROPE B.V. Poland Branch Krakowska 50 PL-32-083 Balice Phone: +48 (0)12 / 630 47 00 Fax: +48 (0)12 / 630 47 01	POLAND
MITSUBISHI ELECTRIC EUROPE B.V. 52, bld. 3 Kosmodamianskaya nab 8 floor RU-115054 Moscow Phone: +7 495 721-2070 Fax: +7 495 721-2071	RUSSIA
MITSUBISHI ELECTRIC EUROPE B.V.	SPAIN
Spanish Branch Carretera de Rubí 76-80 E-08190 Sant Cugat del Vallés (Barce Phone: 902 131121 // +34 935653131 Fax: +34 935891579	lona)
MITSUBISHI ELECTRIC EUROPE B.V. UK Branch Travellers Lane UK-Hatfield, Herts. AL10 8XB Phone: +44 (0)1707 / 27 61 00	UK
Fax: +44 (0) 1707 / 27 86 95 MITSUBISHI ELECTRIC CORPORATION Office Tower "Z" 14 F	JAPAN
8-12,1 chome, Harumi Chuo-Ku Tokyo 104-6212 Phone: +81 3 622 160 60	
FaX: +813 622 160 75	
Fax: +81 3 622 160 75 MITSUBISHI ELECTRIC AUTOMATION, Inc. 500 Corporate Woods Parkway Vernon Hills, IL 60061 Phone: +1 847 478 21 00	USA

EUROPEAN REPRESENT	ATIVES
GEVA	AUSTRIA
Wiener Straße 89 AT-2500 Baden	
Phone: +43 (0)2252 / 85 55 20	
Fax: +43 (0)2252 / 488 60	
TECHNIKON	BELARUS
Oktyabrskaya 19, Off. 705	
BY-220030 Minsk	
Phone: +375 (0)17 / 210 46 26	
Fax: +375 (0)17 / 210 46 26	
ESCO DRIVES & AUTOMATION Culliganlaan 3	BELGIUM
BE-1831 Diegem	
Phone: +32 (0)2 / 717 64 30	
Fax: +32 (0)2 / 717 64 31	
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INEA RBT d.o.o. BOSNIA AND H	
Aleja Lipa 56	ENZEGUVINA
BA-71000 Sarajevo	
Phone: +387 (0)33 / 921 164	
Fax: +387 (0)33/ 524 539	
AKHNATON	BULGARIA
4, Andrei Ljapchev Blvd., PO Box 21	
BG-1756 Sofia	
Phone: +359 (0)2 / 817 6000 Fax: +359 (0)2 / 97 44 06 1	
	CDOATIA
INEA RBT d.o.o. Losinjska 4 a	CROATIA
HR-10000 Zagreb	
Phone: +385 (0)1/36940-01/-02/-03	
Fax: +385 (0)1 / 36 940 - 03	
	CH REPUBLIC
Technologická 374/6	
CZ-708 00 Ostrava-Pustkovec Phone: +420 595 691 150	
Fax: +420 595 691 199	DENMARK
Fax: +420 595 691 199 Beijer Electronics A/S	DENMARK
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Fax: +420 595 691 199 Beijer Electronics A/S Lykkegårdsvej 17 DK-4000 Roskilde Phone: +45 (0)46/ 75 76 66	DENMARK
Fax: +420 595 691 199 Beijer Electronics A/S Lykkegårdsvej 17 DK-4000 Roskilde Phone: +45 (0)46/ 75 76 66 Fax: +45 (0)46/ 75 56 26	
Fax: +420 595 691 199 Beijer Electronics A/S Lykkegårdsvej 17 DK-4000 Roskilde Phone: +45 (0)46/ 75 76 66 Fax: +45 (0)46/ 75 56 26 Beijer Electronics Eesti OÜ	DENMARK
Fax: +420 595 691 199 Beijer Electronics A/S Lykkegårdsvej 17 DK-4000 Roskilde Phone: +45 (0)46/ 75 76 66 Fax: +45 (0)46/ 75 56 26 Beijer Electronics Eesti OÜ Pärnu mnt.160i	
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