

MELSEC-L High-Speed Counter Module FB Library (CC-Link IE Field Compatible) Reference Manual

Applicable module:
LD62, LD62D

< CONTENTS >

Reference Manual Revision History	3
1. Overview	4
1.1 Overview of the FB Library	4
1.2 Function of the FB Library	4
1.3 System Configuration Example	5
1.4 Setting the CC-Link IE Field Network Master/Local Module	6
1.5 Setting Global Labels	9
1.6 Creating Interlock Programs.....	10
1.6.1 Cyclic Transmission Program.....	10
1.6.2 Transient Transmission Program	11
1.6.3 FB Transmission List.....	12
1.7 Relevant Manuals	12
1.8 Note	12
2. Details of the FB Library	13
2.1 M+LD62-IEF_SetRingCounter (Ring counter setting)	13
2.2 M+LD62-IEF_CountEnable (Count enable operation).....	19
2.3 M+LD62-IEF_PresentValStorage (Present value monitoring)	24
2.4 M+LD62-IEF_AllPresentValStorage (Present value monitoring (All CHs))	29
2.5 M+LD62-IEF_SetCoincidenceOut (Coincidence output function setting)	34
2.6 M+LD62-IEF_CoincidenceOutEnable (Coincidence output enable setting)	41
2.7 M+LD62-IEF_PresetOperation (Preset function operation).....	46
2.8 M+LD62-IEF_CountDisableOperation (Count disable function operation)	51
2.9 M+LD62-IEF_LatchCounterOperation (Latch counter function operation)	56
2.10 M+LD62-IEF_SamplingOperation (Sampling counter function operation).....	61
2.11 M+LD62-IEF_PeriodicPulseCounter (Periodic pulse counter function operation)	67
2.12 M+LD62-IEF_OverflowDetection (Overflow detection).....	72

Appendix 1 When Using the FB for 2 or More Master/Local Modules	77
Appendix 1.1 Entering Network Parameters	78
Appendix 1.2 Entering Global Labels	81
Appendix 1.3 Copying MELSOFT Library to Create an FB for the Second Module	82
Appendix 1.4 Replacing Devices to Create the FB for the Second Module	84
Appendix 2 FB Library Application Examples	86



Reference Manual Revision History

Reference Manual Number	Date	Description
FBM-M070-A	2016/04	First edition

1. Overview

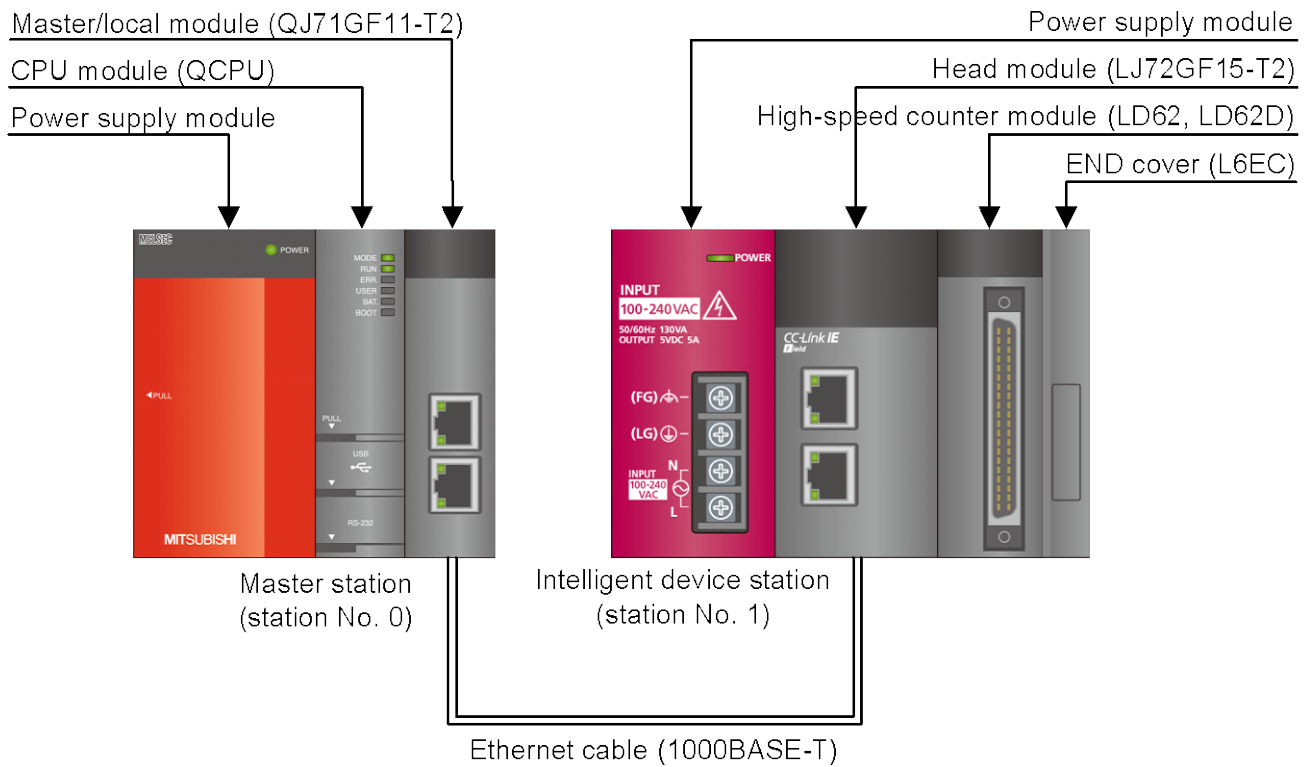
1.1 Overview of the FB Library

This FB library is for using the LD62/LD62D high-speed counter module through the MELSEC CC-Link IE field.

1.2 Function of the FB Library

Item	Description
M+LD62-IEF_SetRingCounter	Sets the ring counter upper limit and lower limit for a specified channel.
M+LD62-IEF_CountEnable	Performs count operation (count start/stop) for a specified channel or all channels.
M+LD62-IEF_PresentValStorage	Monitors the present value for a specified channel.
M+LD62-IEF_AllPresentValStorage	Monitors the present value for all channels.
M+LD62-IEF_SetCoincidenceOut	Sets a coincidence output point and resets counter value coincidence for a specified channel.
M+LD62-IEF_CoincidenceOutEnable	Enables external coincidence output for a specified channel or all channels.
M+LD62-IEF_PresetOperation	Performs a preset of present value.
M+LD62-IEF_CountDisableOperation	Executes count disable function for a specified channel or all channels.
M+LD62-IEF_LatchCounterOperation	Executes latch counter function.
M+LD62-IEF_SamplingOperation	Executes sampling counter function.
M+LD62-IEF_PeriodicPulseCounter	Executes periodic pulse counter function.
M+LD62-IEF_OverflowDetection	Detects overflow.

1.3 System Configuration Example



1.4 Setting the CC-Link IE Field Network Master/Local Module

This section explains the settings of QJ71GF11-T2 and LJ72GF11-T2 based on Section 1.3 "System Configuration Example". Set the following items using GX Works2.

(1) Network parameters

Item	Description
Network Type	Select the CC IE Field (Master Station).
Start I/O No.	Set the start I/O number of the master/local module in increments of 16 points. Set "0000".
Network No.	Set the network number of the master/local module. Set "1".
Total Stations	Set the number of slave stations connected to the master station. Include the number of reserved slave stations. Set "1".

	Module 1	Module 2
Network Type	CC IE Field (Master Station)	None
Start I/O No.	0000	
Network No.	1	
Total Stations	1	
Group No.		
Station No.	0	
Mode	Online (Normal Mode)	
	Network Configuration Settings	
	Network Operation Settings	
	Refresh Parameters	
	Interrupt Settings	
	Specify Station No. by Parameter	

(2) Network configuration setting

Item	Description
Station No.	Set the station number of the slave connected to the master station. Set "1".
Station Type	Set the station type of the slave connected to the master station. Set "Intelligent Device Station".
RX/RY setting	Set assignment for RX/RY for the slave station connected to the master station. (a) Points Set "16". (b) Start Set "0000".

Set up Network configuration.

Assignment Method
 Points/Start
 Start/End

The column contents for refresh device will be changed corresponding to refresh parameter setting contents.
Please reopen the window after completing refresh parameter setting when changing refresh parameter.

Number of PLCs	Station No.	Station Type	RX/RY Setting			R/Ww/R/Wr Setting			Refresh Device		
			Points	Start	End	Points	Start	End	RX	RY	R/Ww
1	1	Intelligent Device Station ▼	16	0000	000F						



(3) Refresh Parameters

Item	Description	Setting value
Transfer SB	Select the link refresh range of SB device.	<ul style="list-style-type: none"> •"Link Side Points" : 512 •"Link Side Start": 0000 •"PLC Side Dev. Name" : SB •"PLC Side Start" : 0000
Transfer SW	Select the link refresh range of SW device.	<ul style="list-style-type: none"> •"Link Side Points" : 512 •"Link Side Start": 0000 •"PLC Side Dev. Name" : SW •"PLC Side Start" : 0000
Transfer 1	Select the link refresh range of RX device.	<ul style="list-style-type: none"> •"Link Side Dev. Name" : RX •"Link Side Points" : 16 •"Link Side Start": 0000 •"PLC Side Dev. Name" : M •"PLC Side Start" : 1024
Transfer 2	Select the link refresh range of RY device.	<ul style="list-style-type: none"> •"Link Side Dev. Name" : RY •"Link Side Points" : 16 •"Link Side Start": 0000 •"PLC Side Dev. Name" : M •"PLC Side Start" : 2048

*Make sure to set "0000" for the Start of the Link side.

*Change the Points of the Link Side and Dev. Name and Start of the PLC Side according to the system. They must be the same as for "M_F_RX" and "M_F_RY" devices of the global label setting.

Assignment Method

Points/Start
 Start/End

	Link Side					PLC Side			
	Dev. Name	Points	Start	End		Dev. Name	Points	Start	End
Transfer SB	SB	512	0000	01FF	↔	SB	512	0000	01FF
Transfer SW	SW	512	0000	01FF	↔	SW	512	0000	01FF
Transfer 1	RX	16	0000	000F	↔	M	16	1024	1039
Transfer 2	RY	16	0000	000F	↔	M	16	2048	2063
Transfer 3					↔				
Transfer 4					↔				
Transfer 5					↔				
Transfer 6					↔				
Transfer 7					↔				
Transfer 8					↔				

Default Check End Cancel

1.5 Setting Global Labels

Global labels must be set before using this FB. This section explains global label settings.

(1) M_F_RX Set remote input (RX).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RX".
Data Type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a "Z9" prefix.

(2) M_F_RY Set remote output (RY).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RY".
Data Type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a "Z8" prefix.

	Class	Label Name	Data Type	Constant	Device	Comment
1	VAR_GLOBAL	M_F_RX	Bit	...	M1024Z9	RX refresh device
2	VAR_GLOBAL	M_F_RY	Bit	...	M2048Z8	RY refresh device
3				...		
4				...		
5				...		

1.6 Creating Interlock Programs

Interlock programs must be created for the FBs. The following are examples of interlock programs.

Set one interlock program to each cyclic transmission and transient transmission.

(Set a corresponding FB between MC and MCR instructions.)

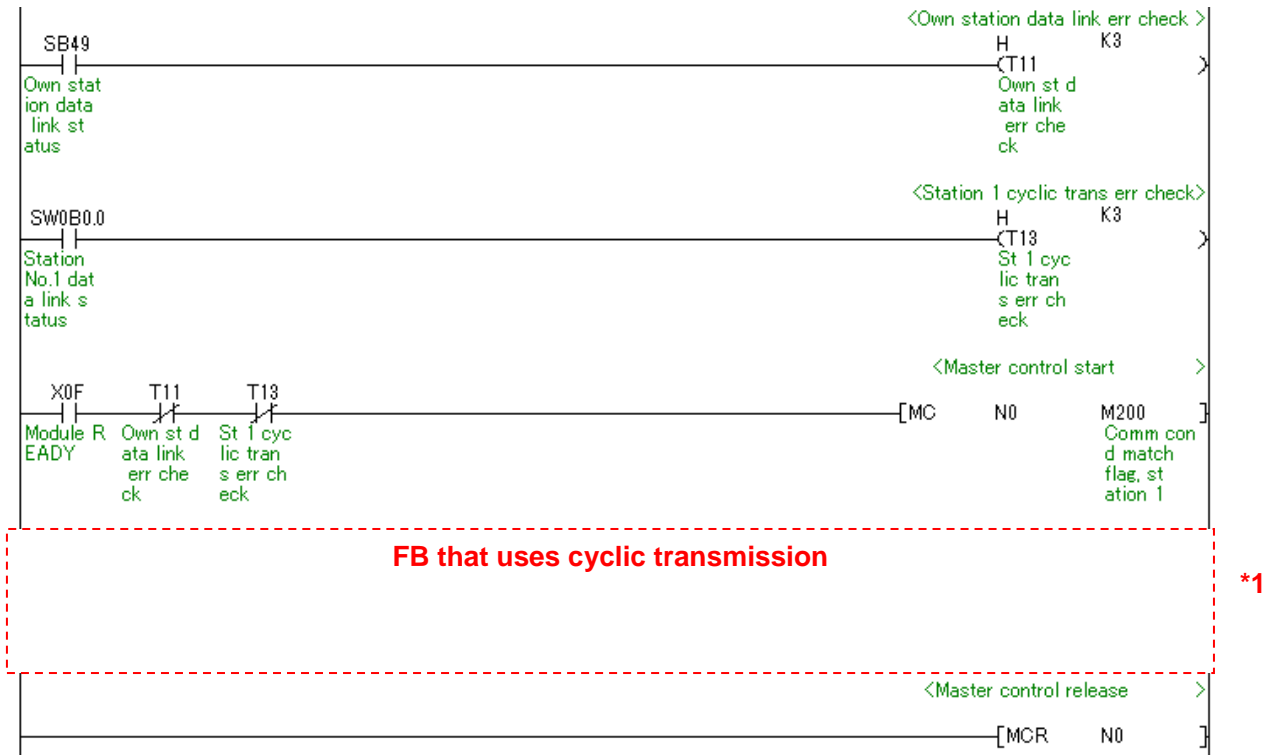
(For FBs that use both cyclic and transient transmission, refer to the application example.)

1.6.1 Cyclic Transmission Program

Use the following link special relay (SB) and link special register (SW) to create an interlock for cyclic transmission program.

- Own station data link status (SB0049)
- Each station data link status (SW00B0 to SW00B7)

Example: Interlock (station No.1)



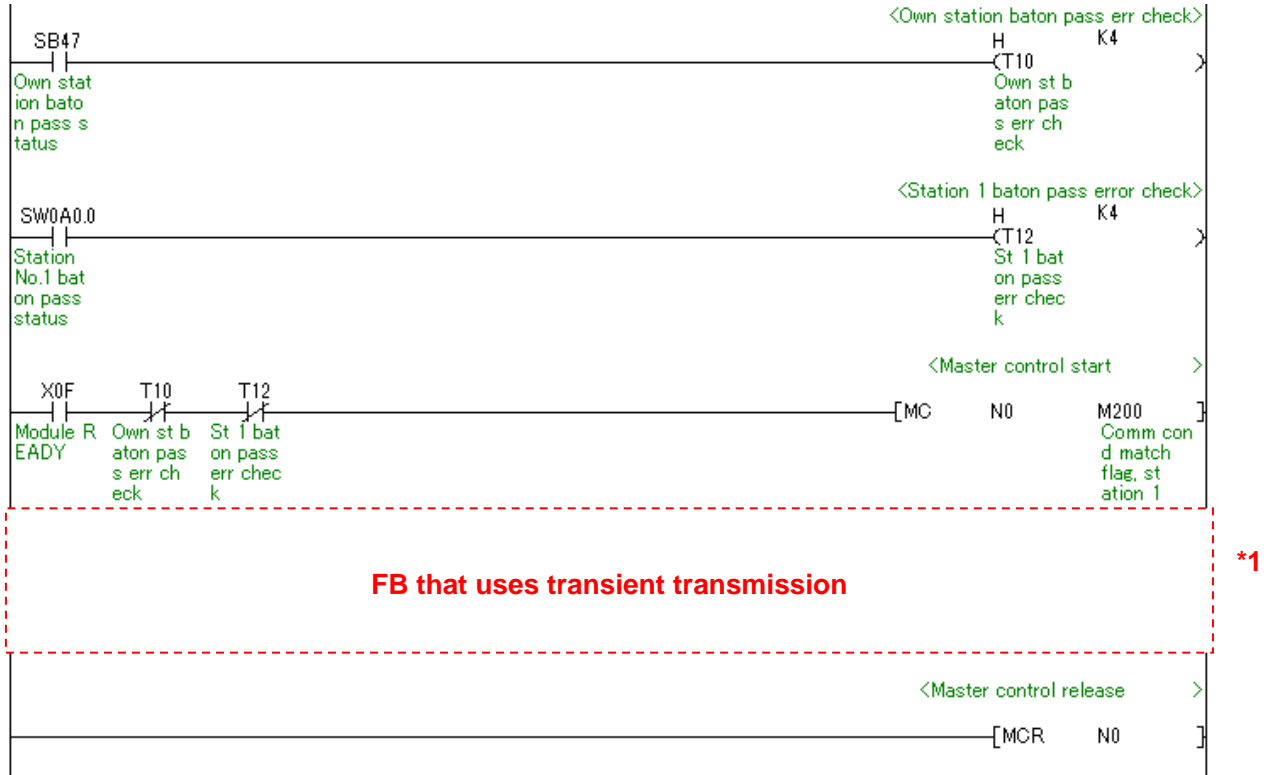
*1 For FB library that uses cyclic transmission, refer to 1.6.3 FB Transmission List.

1.6.2 Transient Transmission Program

Use link special relay (SB) and link special register (SW) to create an interlock for transient transmission program.

- Own station baton pass status (SB0047)
- Each station baton pass status (SW00A0 to SW00A7)

Example: Interlock (Station No.1)



*1 For FB library that uses transient transmission, refer to 1.6.3 FB Transmission List.

1.6.3 FB Transmission List

This table lists transmission types used for FBs.

FB name	Cyclic transmission	Transient transmission
M+LD62-IEF_SetRingCounter	o	o
M+LD62-IEF_CountEnable	o	-
M+LD62-IEF_PresentValStorage	o	o
M+LD62-IEF_AllPresentValStorage	o	o
M+LD62-IEF_SetCoincidenceOut	o	o
M+LD62-IEF_CoincidenceOutEnable	o	-
M+LD62-IEF_PresetOperation	o	o
M+LD62-IEF_CountDisableOperation	o	o
M+LD62-IEF_LatchCounterOperation	o	o
M+LD62-IEF_SamplingOperation	o	o
M+LD62-IEF_PeriodicPulseCounter	o	o
M+LD62-IEF_OverflowDetection	o	o

-: Not used

o: Used

1.7 Relevant Manuals

MELSEC-L High-Speed Counter Module User's Manual

MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual

MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual

MELSEC-L CC-Link IE Field Network Head Module User's Manual

QCPU User's Manual (Hardware Design, Maintenance and Inspection)

MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)

GX Works2 Version1 Operating Manual (Common)

GX Works2 Version1 Operating Manual (Simple Project, Function Block)

1.8 Note

Please make sure to read user's manuals for the corresponding products before using the products.

2. Details of the FB Library

2.1 M+LD62-IEF_SetRingCounter (Ring counter setting)

FB Name

M+LD62-IEF_SetRingCounter

Function Overview

Item	Description																																					
Function overview	Sets the ring counter upper limit and lower limit for a specified channel.																																					
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">M+LD62-IEF_SetRingCounter</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">Execution command</td> <td style="border-left: 1px solid black;">B : FB_EN</td> <td style="border-right: 1px solid black;">FB_ENO : B</td> <td style="text-align: left;">Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td style="border-left: 1px solid black;">W : i_Start_IO_No</td> <td style="border-right: 1px solid black;">FB_OK : B</td> <td style="text-align: left;">Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td style="border-left: 1px solid black;">W : i_Station_No</td> <td style="border-right: 1px solid black;">FB_ERROR : B</td> <td style="text-align: left;">Error flag</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td style="border-left: 1px solid black;">W : i_SlvStart_IO_No</td> <td style="border-right: 1px solid black;">ERROR_ID : W</td> <td style="text-align: left;">Error code</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td style="border-left: 1px solid black;">W : i_CH_No</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td style="border-left: 1px solid black;">W : i_CH</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Ring counter upper limit</td> <td style="border-left: 1px solid black;">D : i_RingUpperLimit</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Ring counter lower limit</td> <td style="border-left: 1px solid black;">D : i_RingLowerLimit</td> <td></td> <td></td> </tr> </tbody> </table>		M+LD62-IEF_SetRingCounter				Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error	Station No.	W : i_Station_No	FB_ERROR : B	Error flag	Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W	Error code	Own station channel	W : i_CH_No			Target CH	W : i_CH			Ring counter upper limit	D : i_RingUpperLimit			Ring counter lower limit	D : i_RingLowerLimit		
M+LD62-IEF_SetRingCounter																																						
Execution command	B : FB_EN	FB_ENO : B	Execution status																																			
Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error																																			
Station No.	W : i_Station_No	FB_ERROR : B	Error flag																																			
Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W	Error code																																			
Own station channel	W : i_CH_No																																					
Target CH	W : i_CH																																					
Ring counter upper limit	D : i_RingUpperLimit																																					
Ring counter lower limit	D : i_RingLowerLimit																																					
Applicable hardware and software	High-speed counter module	LD62, LD62D																																				
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																																				
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																														
Series	Model																																					
MELSEC-Q Series *1	Universal model QCPU *2																																					
MELSEC-L Series	LCPU *3																																					

Item	Description	
Engineering software	GX Works2 *1	
	Language	Software version
	Japanese version	Version1.86Q or later
	English version	Version1.24A or later
	Chinese (Simplified) version	Version1.49B or later
	Chinese (Traditional) version	Version1.49B or later
	Korean version	Version1.49B or later
	*1 For software versions applicable to the modules used, refer to "Relevant manuals".	
Programming language	Ladder	
Number of steps	379 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.	
Function description	<ol style="list-style-type: none"> 1) When FB_EN (Execution command) is turned ON, the set ring counter lower and upper values are written in the buffer memory. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details. 	
Compiling method	Macro type	



Item	Description		
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) When count enable command (RYn4) is ON, the FB does not complete its execution until turned OFF. (Please turn OFF count enable command (RYn4).) 8) If the parameters are set using GX Configurator-CT or the configuration function of GX Works 2, using this FB is unnecessary. 9) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 10) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 11) Set the global label setting according to Section 1.5. 12) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules". 		
FB operation type	Pulsed execution (1 scan execution type)		
Application example	Refer to "Appendix 2 - FB Library Application Examples".		
Timing chart	<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding-right: 20px;"> <p>[When operation completes without error] (When using CH1)</p> </td> <td style="width: 50%; vertical-align: top;"> <p>[When an error occurs] (When using CH1)</p> </td> </tr> </table>	<p>[When operation completes without error] (When using CH1)</p>	<p>[When an error occurs] (When using CH1)</p>
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Item	Description
Relevant manuals	<ul style="list-style-type: none"> •MELSEC-L High-Speed Counter Module User's Manual •MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual •MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual •MELSEC-L CC-Link IE Field Network Head Module User's Manual •QCPU User's Manual (Hardware Design, Maintenance and Inspection) •MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) •GX Works2 Version1 Operating Manual (Common) •GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.



Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.
Ring counter upper limit	i_RingUpperLimit	Double Word	-2,147,483,648~ 2,147,483,647	Specify the ring counter upper limit.
Ring counter lower limit	i_RingLowerLimit	Double Word	-2,147,483,648~ 2,147,483,647	Specify the ring counter lower limit.



●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the setting of ring counter upper and lower values is completed.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_SetRingCounter function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.



2.2 M+LD62-IEF_CountEnable (Count enable operation)

FB Name

M+LD62-IEF_CountEnable

Function Overview

Item	Description													
Function overview	Performs count operation (count start/stop) for a specified channel or all channels.													
Symbol	<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 45%;"> <p>Execution command — B : FB_EN</p> <p>Module start XY address — W : i_Start_IO_No</p> <p>Station No. — W : i_Station_No</p> <p>Slave module start XY address — W : i_SlvStart_IO_No</p> <p>Target CH — W : i_CH</p> </div> <div style="width: 10%; text-align: center; border: 1px solid black; padding: 5px;"> <p>M+LD62-IEF_CountEnable</p> </div> <div style="width: 45%;"> <p>FB_ENO : B — Execution status</p> <p>o_CountStart : B — Count operating flag</p> <p>FB_ERROR : B — Error flag</p> <p>ERROR_ID : W — Error code</p> </div> </div>													
Applicable hardware and software	High-speed counter module	LD62, LD62D												
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module												
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Chinese (Simplified) version	Version1.49B or later													
Chinese (Traditional) version	Version1.49B or later													
Korean version	Version1.49B or later													

Item	Description
Programming language	Ladder
Number of steps	321 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON/OFF FB_EN (Execution command), the count operation is started or stopped. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 8) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62 (D). 9) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 10) Set the global label setting according to Section 1.5. 11) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Real-time execution
Application example	Refer to "Appendix 2 - FB Library Application Examples".



Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error] (When using CH1)</p> </div> <div style="width: 45%;"> <p>[When an error occurs] (When using CH1)</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2 or 15.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.

Name (Comment)	Label name	Data type	Setting range	Description
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	Word	1~2 or 15	1~2: Specify the channel number. 15: Specify all channels.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Count operating flag	o_CountStart	Bit	OFF	When ON, it indicates that the count enable command is ON.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_CountEnable function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.



2.3 M+LD62-IEF_PresentValStorage (Present value monitoring)

FB Name

M+LD62-IEF_PresentValStorage

Function Overview

Item	Description																									
Function overview	Monitors the present value for a specified channel.																									
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center; margin: 0;">M+LD62-IEF_PresentValStorage</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: right;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%; text-align: right;">FB_ENO : B</td> <td style="width: 10%;">Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td>W : i_Start_IO_No</td> <td style="text-align: right;">FB_OK : B</td> <td>Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td>W : i_Station_No</td> <td style="text-align: right;">o_PresentValue : D</td> <td>Present value</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td style="text-align: right;">FB_ERROR : B</td> <td>Error flag</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td>W : i_CH_No</td> <td style="text-align: right;">ERROR_ID : W</td> <td>Error code</td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td>W : i_CH</td> <td></td> <td></td> </tr> </table> </div>		Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error	Station No.	W : i_Station_No	o_PresentValue : D	Present value	Slave module start XY address	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag	Own station channel	W : i_CH_No	ERROR_ID : W	Error code	Target CH	W : i_CH		
Execution command	B : FB_EN	FB_ENO : B	Execution status																							
Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error																							
Station No.	W : i_Station_No	o_PresentValue : D	Present value																							
Slave module start XY address	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag																							
Own station channel	W : i_CH_No	ERROR_ID : W	Error code																							
Target CH	W : i_CH																									
Applicable hardware and software	High-speed counter module	LD62, LD62D																								
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																								
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																		
Series	Model																									
MELSEC-Q Series *1	Universal model QCPU *2																									
MELSEC-L Series	LCPU *3																									
Engineering software	GX Works2 *1	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later												
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Chinese (Simplified) version	Version1.49B or later																									
Chinese (Traditional) version	Version1.49B or later																									
Korean version	Version1.49B or later																									

Item	Description
Programming language	Ladder
Number of steps	323 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) When FB_EN (Execution command) is turned ON, the present value is read from the buffer memory. 2) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 3) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 8) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 9) Set the global label setting according to Section 1.5. 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Real-time execution
Application example	Refer to "Appendix 2 - FB Library Application Examples".



Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.



Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.



●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the present value is being read.
Present value	o_PresentValue	Double Word	0	Store the present value.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_PresentValStorage function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.

2.4 M+LD62-IEF_AllPresentValStorage (Present value monitoring (All CHs))

FB Name

M+LD62-IEF_AllPresentValStorage

Function Overview

Item	Description																						
Function overview	Monitors the present value for all channels.																						
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">M+LD62-IEF_AllPresentValStorage</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">Execution command</td> <td>B : FB_EN</td> <td>FB_ENO : B — Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B — Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td>W : i_Station_No</td> <td>o_PresentValue1 : D — CH1 Present value</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td>o_PresentValue2 : D — CH2 Present value</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td>W : i_CH_No</td> <td>FB_ERROR : B — Error flag</td> </tr> <tr> <td></td> <td></td> <td>ERROR_ID : W — Error code</td> </tr> </tbody> </table>		M+LD62-IEF_AllPresentValStorage			Execution command	B : FB_EN	FB_ENO : B — Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B — Completed without error	Station No.	W : i_Station_No	o_PresentValue1 : D — CH1 Present value	Slave module start XY address	W : i_SlvStart_IO_No	o_PresentValue2 : D — CH2 Present value	Own station channel	W : i_CH_No	FB_ERROR : B — Error flag			ERROR_ID : W — Error code
M+LD62-IEF_AllPresentValStorage																							
Execution command	B : FB_EN	FB_ENO : B — Execution status																					
Module start XY address	W : i_Start_IO_No	FB_OK : B — Completed without error																					
Station No.	W : i_Station_No	o_PresentValue1 : D — CH1 Present value																					
Slave module start XY address	W : i_SlvStart_IO_No	o_PresentValue2 : D — CH2 Present value																					
Own station channel	W : i_CH_No	FB_ERROR : B — Error flag																					
		ERROR_ID : W — Error code																					
Applicable hardware and software	High-speed counter module	LD62, LD62D																					
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																					
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3															
Series	Model																						
MELSEC-Q Series *1	Universal model QCPU *2																						
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Engineering software	GX Works2 *1	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later									
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Chinese (Simplified) version	Version1.49B or later																						
Chinese (Traditional) version	Version1.49B or later																						
Korean version	Version1.49B or later																						

Item	Description
Programming language	Ladder
Number of steps	356 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	1) When FB_EN (Execution command) is turned ON, the present value is read from the buffer memory.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 8) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 9) Set the global label setting according to Section 1.5. 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Real-time execution
Application example	Refer to "Appendix 2 - FB Library Application Examples".

Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User' Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.

Name (Comment)	Label name	Data type	Setting range	Description
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the present value is being read.
CH1 Present value	o_PresentValue1	Double Word	0	Store the present value of CH1.
CH2 Present value	o_PresentValue2	Double Word	0	Store the present value of CH2.
Error flag	FB_ERROR	Bit	OFF	Always OFF
Error code	ERROR_ID	Word	0	Always 0

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_AllPresentValStorage function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.



2.5 M+LD62-IEF_SetCoincidenceOut (Coincidence output function setting)

FB Name

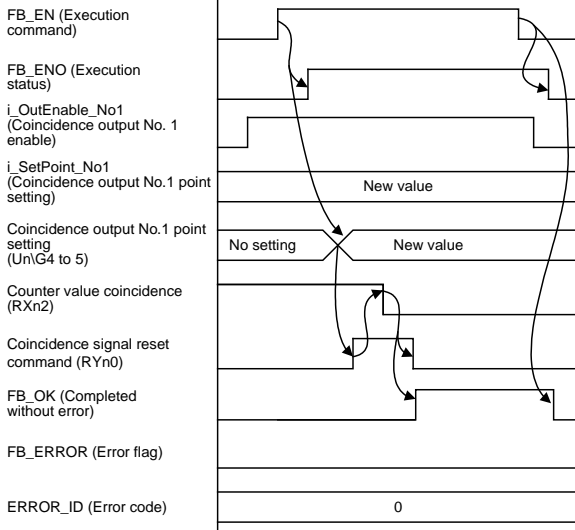
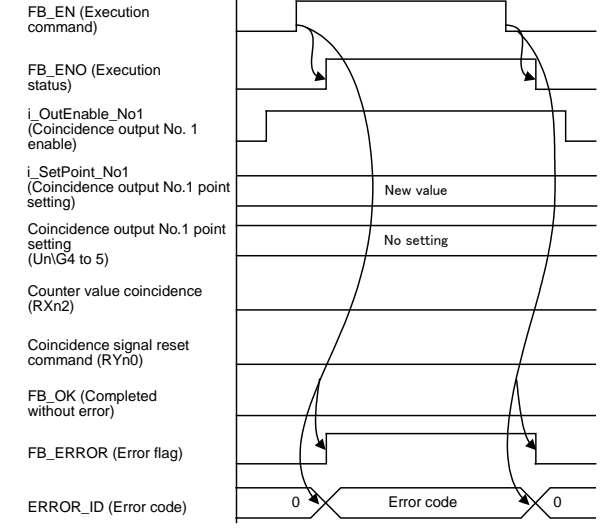
M+LD62-IEF_SetCoincidenceOut

Function Overview

Item	Description																																		
Function overview	Sets a coincidence output point and resets counter value coincidence for a specified channel.																																		
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">M+LD62-IEF_SetCoincidenceOut</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">Execution command</td> <td style="text-align: center;">B : FB_EN</td> <td style="text-align: left;">FB_ENO : B — Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td style="text-align: center;">W : i_Start_IO_No</td> <td style="text-align: left;">FB_OK : B — Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td style="text-align: center;">W : i_Station_No</td> <td style="text-align: left;">FB_ERROR : B — Error flag</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td style="text-align: center;">W : i_SlvStart_IO_No</td> <td style="text-align: left;">ERROR_ID : W — Error code</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td style="text-align: center;">W : i_CH_No</td> <td></td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td style="text-align: center;">W : i_CH</td> <td></td> </tr> <tr> <td style="text-align: right;">Coincidence output No.1 enable</td> <td style="text-align: center;">B : i_OutEnable_No1</td> <td></td> </tr> <tr> <td style="text-align: right;">Coincidence output No.2 enable</td> <td style="text-align: center;">B : i_OutEnable_No2</td> <td></td> </tr> <tr> <td style="text-align: right;">Coincidence output No.1 point setting</td> <td style="text-align: center;">D : i_SetPoint_No1</td> <td></td> </tr> <tr> <td style="text-align: right;">Coincidence output No.2 point setting</td> <td style="text-align: center;">D : i_SetPoint_No2</td> <td></td> </tr> </tbody> </table>		M+LD62-IEF_SetCoincidenceOut			Execution command	B : FB_EN	FB_ENO : B — Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B — Completed without error	Station No.	W : i_Station_No	FB_ERROR : B — Error flag	Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W — Error code	Own station channel	W : i_CH_No		Target CH	W : i_CH		Coincidence output No.1 enable	B : i_OutEnable_No1		Coincidence output No.2 enable	B : i_OutEnable_No2		Coincidence output No.1 point setting	D : i_SetPoint_No1		Coincidence output No.2 point setting	D : i_SetPoint_No2	
M+LD62-IEF_SetCoincidenceOut																																			
Execution command	B : FB_EN	FB_ENO : B — Execution status																																	
Module start XY address	W : i_Start_IO_No	FB_OK : B — Completed without error																																	
Station No.	W : i_Station_No	FB_ERROR : B — Error flag																																	
Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W — Error code																																	
Own station channel	W : i_CH_No																																		
Target CH	W : i_CH																																		
Coincidence output No.1 enable	B : i_OutEnable_No1																																		
Coincidence output No.2 enable	B : i_OutEnable_No2																																		
Coincidence output No.1 point setting	D : i_SetPoint_No1																																		
Coincidence output No.2 point setting	D : i_SetPoint_No2																																		
Applicable hardware and software	High-speed counter module	LD62, LD62D																																	
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																																	
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																											
Series	Model																																		
MELSEC-Q Series *1	Universal model QCPU *2																																		
MELSEC-L Series	LCPU *3																																		

Item	Description													
	Engineering software	GX Works2 *1 <table border="1" data-bbox="667 248 1469 544"> <thead> <tr> <th data-bbox="667 248 1070 297">Language</th> <th data-bbox="1070 248 1469 297">Software version</th> </tr> </thead> <tbody> <tr> <td data-bbox="667 297 1070 347">Japanese version</td> <td data-bbox="1070 297 1469 347">Version1.86Q or later</td> </tr> <tr> <td data-bbox="667 347 1070 396">English version</td> <td data-bbox="1070 347 1469 396">Version1.24A or later</td> </tr> <tr> <td data-bbox="667 396 1070 445">Chinese (Simplified) version</td> <td data-bbox="1070 396 1469 445">Version1.49B or later</td> </tr> <tr> <td data-bbox="667 445 1070 495">Chinese (Traditional) version</td> <td data-bbox="1070 445 1469 495">Version1.49B or later</td> </tr> <tr> <td data-bbox="667 495 1070 544">Korean version</td> <td data-bbox="1070 495 1469 544">Version1.49B or later</td> </tr> </tbody> </table> <p data-bbox="667 555 1469 633">*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later
Language	Software version													
Japanese version	Version1.86Q or later													
English version	Version1.24A or later													
Chinese (Simplified) version	Version1.49B or later													
Chinese (Traditional) version	Version1.49B or later													
Korean version	Version1.49B or later													
Programming language	Ladder													
Number of steps	676 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.													
Function description	<ol style="list-style-type: none"> 1) After turning ON i_OutEnable_No1 (Coincidence output No.1 enable), turn ON FB_EN (Execution command) to enable i_SetPoint_No1 (Coincidence output No.1 point setting). 2) When i_OutEnable_No1 (Coincidence output No.1 enable) is not turned ON, i_SetPoint_No1 (Coincidence output No.1 point setting) is not written in the buffer memory and coincidence signal No. 1 reset command (RYn0) is not turned ON either. (The same operation is applied to No.2) 3) Turn ON both i_OutEnable_No1 (Coincidence output No.1 enable) and i_OutEnable_No2 (Coincidence output No.2 enable) to use both No.1 and No.2. 4) By turning ON FB_EN (Execution command), i_SetPoint_No1 (Coincidence output No.1 point setting) is written in the buffer memory and coincidence signal No. 1 reset command (RYn0) is turned ON. When counter value coincidence (Point No.1) (RXn2) is turned OFF, coincidence signal No. 1 reset command (RYn0) is turned OFF. (The same operation is applied to No.2) 5) Counter value coincidence (point No.1) (RXn2) and external coincidence output are turned ON again even if counter value coincidence (point No.1) (RXn2) and external coincidence output are reset with this FB while the present value is the coincidence output point. 6) FB operation is one-shot only, triggered by the FB_EN signal. 7) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 8) Refer to the error code explanation section for details. 													
Compiling method	Macro type													

Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 8) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 9) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 10) Set the global label setting according to Section 1.5. 11) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 2 - FB Library Application Examples".

Item	Description	
Timing chart	<p>[When operation completes without error] (When using CH1)</p> 	<p>[When an error occurs] (When using CH1)</p> 
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block) 	

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.



Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.
Coincidence output No.1 enable	i_OutEnable_No1	Bit	ON,OFF	ON: Use coincidence output No.1. OFF: Do not use coincidence output No.1. When ON, the function is enabled by turning ON FB_EN (Execution command).



Name (Comment)	Label name	Data type	Setting range	Description
Coincidence output No.2 enable	i_OutEnable_No2	Bit	ON,OFF	ON: Use coincidence output No.2. OFF: Do not use coincidence output No.2. When ON, the function is enabled by turning ON FB_EN (Execution command).
Coincidence output No.1 point setting	i_SetPoint_No1	Double Word	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.1 point setting value.
Coincidence output No.2 point setting	i_SetPoint_No2	Double Word	-2,147,483,648~ 2,147,483,647	Specify the coincidence output No.2 point setting value.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that counter value coincidence has been reset.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_SetCoincidenceOut function block. It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.

2.6 M+LD62-IEF_CoincidenceOutEnable (Coincidence output enable setting)

FB Name

M+LD62-IEF_CoincidenceOutEnable

Function Overview

Item	Description													
Function overview	Enables external coincidence output for a specified channel or all channels.													
Symbol	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>Execution command — B : FB_EN</p> <p>Module start XY address — W : i_Start_IO_No</p> <p>Station No. — W : i_Station_No</p> <p>Slave module start XY address — W : i_SlvStart_IO_No</p> <p>Target CH — W : i_CH</p> </div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>M+LD62-IEF_CoincidenceOutEnable</p> </div> <div style="margin-left: 20px;"> <p>FB_ENO : B — Execution status</p> <p>FB_OK : B — Completed without error</p> <p>FB_ERROR : B — Error flag</p> <p>ERROR_ID : W — Error code</p> </div> </div>													
Applicable hardware and software	High-speed counter module	LD62, LD62D												
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module												
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3						
Series	Model													
MELSEC-Q Series *1	Universal model QCPU *2													
MELSEC-L Series	LCPU *3													
Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>		Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later
Language	Software version													
Japanese version	Version1.86Q or later													
English version	Version1.24A or later													
Chinese (Simplified) version	Version1.49B or later													
Chinese (Traditional) version	Version1.49B or later													
Korean version	Version1.49B or later													

Item	Description
Programming language	Ladder
Number of steps	344 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON/OFF FB_EN (Execution command), the coincidence output is enabled/disabled. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 8) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 9) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 10) Set the global label setting according to Section 1.5. 11) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Pulsed execution (1 scan execution type)



Item	Description	
Application example	Refer to "Appendix 2 - FB Library Application Examples".	
Timing chart	<p>[When operation completes without error] (When using CH1)</p>	<p>[When an error occurs] (When using CH1)</p>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block) 	

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2 or 15.	Please try again after confirming the setting.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Target CH	i_CH	Word	1~2 or 15	1~2: Specify the channel number. 15: Specify all channels.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that coincidence signal enable command is ON.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_CoincidenceOutEnable function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.

2.7 M+LD62-IEF_PresetOperation (Preset function operation)

FB Name

M+LD62-IEF_PresetOperation

Function Overview

Item	Description																													
Function overview	Performs a preset of present value.																													
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center;">M+LD62-IEF_PresetOperation</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%;">FB_ENO : B</td> <td>Execution status</td> </tr> <tr> <td>Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B</td> <td>Completed without error</td> </tr> <tr> <td>Station No.</td> <td>W : i_Station_No</td> <td>FB_ERROR : B</td> <td>Error flag</td> </tr> <tr> <td>Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td>ERROR_ID : W</td> <td>Error code</td> </tr> <tr> <td>Own station channel</td> <td>W : i_CH_No</td> <td></td> <td></td> </tr> <tr> <td>Target CH</td> <td>W : i_CH</td> <td></td> <td></td> </tr> <tr> <td>Preset value</td> <td>D : i_PresetValue</td> <td></td> <td></td> </tr> </table> </div>		Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error	Station No.	W : i_Station_No	FB_ERROR : B	Error flag	Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W	Error code	Own station channel	W : i_CH_No			Target CH	W : i_CH			Preset value	D : i_PresetValue		
Execution command	B : FB_EN	FB_ENO : B	Execution status																											
Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error																											
Station No.	W : i_Station_No	FB_ERROR : B	Error flag																											
Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W	Error code																											
Own station channel	W : i_CH_No																													
Target CH	W : i_CH																													
Preset value	D : i_PresetValue																													
Applicable hardware and software	High-speed counter module	LD62, LD62D																												
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	CPU module	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																						
Series	Model																													
MELSEC-Q Series *1	Universal model QCPU *2																													
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Chinese (Traditional) version	Version1.49B or later																													
Korean version	Version1.49B or later																													

Item	Description
Programming language	Ladder
Number of steps	408 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the present value is replaced with i_PresetValue (Preset value). 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 8) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 9) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 10) Set the global label setting according to Section 1.5. 11) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Pulsed execution (1 scan execution type)
Application example	Refer to "Appendix 2 - FB Library Application Examples".



Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error] (When using CH1)</p> </div> <div style="width: 45%;"> <p>[When an error occurs] (When using CH1)</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.
Preset value	i_PresetValue	Double Word	-2,147,483,648~ 2,147,483,647	Specify the preset value.



●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that preset command is ON.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_PresetOperation function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.



2.8 M+LD62-IEF_CountDisableOperation (Count disable function operation)

FB Name

M+LD62-IEF_CountDisableOperation

Function Overview

Item	Description																						
Function overview	Executes count disable function for a specified channel or all channels.																						
Symbol	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">M+LD62-IEF_CountDisableOperation</th> </tr> </thead> <tbody> <tr> <td style="text-align: right;">Execution command</td> <td>B : FB_EN</td> <td>FB_ENO : B — Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td>W : i_Start_IO_No</td> <td>o_DisableStart : B — Count disable operating flag</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td>W : i_Station_No</td> <td>FB_ERROR : B — Error flag</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td>ERROR_ID : W — Error code</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td>W : i_CH_No</td> <td></td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td>W : i_CH</td> <td></td> </tr> </tbody> </table>		M+LD62-IEF_CountDisableOperation			Execution command	B : FB_EN	FB_ENO : B — Execution status	Module start XY address	W : i_Start_IO_No	o_DisableStart : B — Count disable operating flag	Station No.	W : i_Station_No	FB_ERROR : B — Error flag	Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W — Error code	Own station channel	W : i_CH_No		Target CH	W : i_CH	
M+LD62-IEF_CountDisableOperation																							
Execution command	B : FB_EN	FB_ENO : B — Execution status																					
Module start XY address	W : i_Start_IO_No	o_DisableStart : B — Count disable operating flag																					
Station No.	W : i_Station_No	FB_ERROR : B — Error flag																					
Slave module start XY address	W : i_SlvStart_IO_No	ERROR_ID : W — Error code																					
Own station channel	W : i_CH_No																						
Target CH	W : i_CH																						
Applicable hardware and software	High-speed counter module	LD62, LD62D																					
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																					
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3															
	Series	Model																					
MELSEC-Q Series *1	Universal model QCPU *2																						
MELSEC-L Series	LCPU *3																						
Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later										
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Chinese (Traditional) version	Version1.49B or later																						
Korean version	Version1.49B or later																						

Item	Description
Programming language	Ladder
Number of steps	619 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the count disable function is executed. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) Turn OFF the counter function selection start command (RYn6) signal when using the FB. When the signal is ON, the count disable function of the target channel will not be executed. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 6) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 7) Every input must be provided with a value for proper FB operation. 8) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 9) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 10) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 11) Set the global label setting according to Section 1.5. 12) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Pulsed execution (1 scan execution type)



Item	Description
Application example	Refer to "Appendix 2 - FB Library Application Examples".
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error] (When using CH1)</p> </div> <div style="width: 45%;"> <p>[When an error occurs] (When using CH1)</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not within the range of 1 to 2 or 15.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2 or 15	1~2: Specify the channel number. 15: Specify all channels.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Count disable operating flag	o_DisableStart	Bit	OFF	When ON, it indicates that the execution command for count disable is ON.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output



FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_CountDisableOperation function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.

2.9 M+LD62-IEF_LatchCounterOperation (Latch counter function operation)

FB Name

M+LD62-IEF_LatchCounterOperation

Function Overview

Item	Description																									
Function overview	Executes latch counter function.																									
Symbol	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p style="text-align: center; margin: 0;">M+LD62-IEF_LatchCounterOperation</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: right;">Execution command</td> <td style="width: 30%;">B : FB_EN</td> <td style="width: 30%; text-align: left;">FB_ENO : B</td> <td style="width: 10%;">Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td>W : i_Start_IO_No</td> <td>FB_OK : B</td> <td>Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td>W : i_Station_No</td> <td>o_LatchCount : D</td> <td>Latch count value</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td>FB_ERROR : B</td> <td>Error flag</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td>W : i_CH_No</td> <td>ERROR_ID : W</td> <td>Error code</td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td>W : i_CH</td> <td></td> <td></td> </tr> </table> </div>		Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error	Station No.	W : i_Station_No	o_LatchCount : D	Latch count value	Slave module start XY address	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag	Own station channel	W : i_CH_No	ERROR_ID : W	Error code	Target CH	W : i_CH		
Execution command	B : FB_EN	FB_ENO : B	Execution status																							
Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error																							
Station No.	W : i_Station_No	o_LatchCount : D	Latch count value																							
Slave module start XY address	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag																							
Own station channel	W : i_CH_No	ERROR_ID : W	Error code																							
Target CH	W : i_CH																									
Applicable hardware and software	High-speed counter module	LD62, LD62D																								
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																								
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																		
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Engineering software	<p>GX Works2 *1</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later													
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Chinese (Traditional) version	Version1.49B or later																									
Korean version	Version1.49B or later																									

Item	Description
Programming language	Ladder
Number of steps	467 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the latch counter function is executed. 2) FB operation is one-shot only, triggered by the FB_EN signal. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) Turn OFF the counter function selection start command (Yn6) signal when using the FB. When the signal is ON, the latch counter function of the target channel will not be executed. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 6) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 7) Every input must be provided with a value for proper FB operation. 8) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 9) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 10) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 11) Set the global label setting according to Section 1.5. 12) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Pulsed execution (multiple scan execution type)



Item	Description
Application example	Refer to "Appendix 2 - FB Library Application Examples".
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error] (When using CH1)</p> </div> <div style="width: 45%;"> <p>[When an error occurs] (When using CH1)</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.



●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the execution command for latch counter is ON.
Latch count value	o_LatchCount	Double Word	0	Store the latch count value.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_LatchCounterOperation function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.



2.10 M+LD62-IEF_SamplingOperation (Sampling counter function operation)

FB Name

M+LD62-IEF_SamplingOperation

Function Overview

Item	Description																													
Function overview	Executes sampling counter function.																													
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center; margin: 0;">M+LD62-IEF_SamplingOperation</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: right;">Execution command</td> <td style="width: 20%; border-left: 1px solid black; padding-left: 5px;">B : FB_EN</td> <td style="width: 20%; border-left: 1px solid black; padding-left: 5px;">FB_ENO : B</td> <td style="width: 30%; text-align: left;">Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td style="border-left: 1px solid black; padding-left: 5px;">W : i_Start_IO_No</td> <td style="border-left: 1px solid black; padding-left: 5px;">FB_OK : B</td> <td style="text-align: left;">Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td style="border-left: 1px solid black; padding-left: 5px;">W : i_Station_No</td> <td style="border-left: 1px solid black; padding-left: 5px;">o_SamplingCount : D</td> <td style="text-align: left;">Sampling count value</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td style="border-left: 1px solid black; padding-left: 5px;">W : i_SlvStart_IO_No</td> <td style="border-left: 1px solid black; padding-left: 5px;">FB_ERROR : B</td> <td style="text-align: left;">Error flag</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td style="border-left: 1px solid black; padding-left: 5px;">W : i_CH_No</td> <td style="border-left: 1px solid black; padding-left: 5px;">ERROR_ID : W</td> <td style="text-align: left;">Error code</td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td style="border-left: 1px solid black; padding-left: 5px;">W : i_CH</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Sampling time setting (unit: 10ms)</td> <td style="border-left: 1px solid black; padding-left: 5px;">W : i_SamplingTime</td> <td></td> <td></td> </tr> </table> </div>		Execution command	B : FB_EN	FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error	Station No.	W : i_Station_No	o_SamplingCount : D	Sampling count value	Slave module start XY address	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag	Own station channel	W : i_CH_No	ERROR_ID : W	Error code	Target CH	W : i_CH			Sampling time setting (unit: 10ms)	W : i_SamplingTime		
Execution command	B : FB_EN	FB_ENO : B	Execution status																											
Module start XY address	W : i_Start_IO_No	FB_OK : B	Completed without error																											
Station No.	W : i_Station_No	o_SamplingCount : D	Sampling count value																											
Slave module start XY address	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag																											
Own station channel	W : i_CH_No	ERROR_ID : W	Error code																											
Target CH	W : i_CH																													
Sampling time setting (unit: 10ms)	W : i_SamplingTime																													
Applicable hardware and software	High-speed counter module	LD62, LD62D																												
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																												
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																						
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MELSEC-Q Series *1	Universal model QCPU *2																													
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Engineering software	GX Works2 *1 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later																	
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Chinese (Traditional) version	Version1.49B or later																													
Korean version	Version1.49B or later																													

Item	Description
Programming language	Ladder
Number of steps	596 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the sampling count starts with the preset i_SamplingTime (Sampling time setting (unit: 10ms)), and the sampling count value is read from the buffer memory. 2) When the sampling time period elapses, FB_OK (Completed without error) is turned ON, and the processing is completed. 3) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 4) Refer to the error code explanation section for details.
Compiling method	Macro type



Item	Description
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) Turn OFF the counter function selection start command (RYn6) signal when using the FB. When the signal is ON, the sampling counter function of the target channel will not be executed. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 6) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 7) Every input must be provided with a value for proper FB operation. 8) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 9) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 10) 10) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 11) Set the global label setting according to Section 1.5. 12) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Pulsed execution (multiple scan execution type)
Application example	Refer to "Appendix 2 - FB Library Application Examples".

Item	Description
Timing chart	<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>[When operation completes without error] (When using CH1)</p> </div> <div style="width: 48%;"> <p>[When an error occurs] (When using CH1)</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User' Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.
Sampling time setting (unit: 10ms)	i_SamplingTime	Word	1~65,535 *1	Set the sampling time. (unit: 10ms) *1: Setting method •1~32,767: Set in decimal. •32,768~65,535: Set after converted into hexadecimal.



●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the sampling time period elapses, and sampling counter function is ended.
Sampling count value	o_SamplingCount	Double Word	0	Store the sampling count value.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_SamplingOperation function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.

2.11 M+LD62-IEF_PeriodicPulseCounter (Periodic pulse counter function operation)

FB Name

M+LD62-IEF_PeriodicPulseCounter

Function Overview

Item	Description																																				
Function overview	Executes periodic pulse counter function.																																				
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center; margin: 0;">M+LD62-IEF_PeriodicPulseCounter</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: right;">Execution command</td> <td style="width: 20%;">B : FB_EN</td> <td style="width: 20%;"></td> <td style="width: 20%; text-align: left;">FB_ENO : B</td> <td style="width: 10%; text-align: left;">Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td>W : i_Start_IO_No</td> <td></td> <td>FB_OK : B</td> <td>Completed without error</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td>W : i_Station_No</td> <td></td> <td>o_PreviousValue : D</td> <td>Periodic pulse count, previous value</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td></td> <td>o_PresentValue : D</td> <td>Periodic pulse count, present value</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td>W : i_CH_No</td> <td></td> <td>FB_ERROR : B</td> <td>Error flag</td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td>W : i_CH</td> <td></td> <td>ERROR_ID : W</td> <td>Error code</td> </tr> <tr> <td style="text-align: right;">Periodic time setting (unit: 10 ms)</td> <td>W : i_PeriodTime</td> <td></td> <td></td> <td></td> </tr> </table> </div>		Execution command	B : FB_EN		FB_ENO : B	Execution status	Module start XY address	W : i_Start_IO_No		FB_OK : B	Completed without error	Station No.	W : i_Station_No		o_PreviousValue : D	Periodic pulse count, previous value	Slave module start XY address	W : i_SlvStart_IO_No		o_PresentValue : D	Periodic pulse count, present value	Own station channel	W : i_CH_No		FB_ERROR : B	Error flag	Target CH	W : i_CH		ERROR_ID : W	Error code	Periodic time setting (unit: 10 ms)	W : i_PeriodTime			
Execution command	B : FB_EN		FB_ENO : B	Execution status																																	
Module start XY address	W : i_Start_IO_No		FB_OK : B	Completed without error																																	
Station No.	W : i_Station_No		o_PreviousValue : D	Periodic pulse count, previous value																																	
Slave module start XY address	W : i_SlvStart_IO_No		o_PresentValue : D	Periodic pulse count, present value																																	
Own station channel	W : i_CH_No		FB_ERROR : B	Error flag																																	
Target CH	W : i_CH		ERROR_ID : W	Error code																																	
Periodic time setting (unit: 10 ms)	W : i_PeriodTime																																				
Applicable hardware and software	High-speed counter module	LD62, LD62D																																			
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																																			
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																													
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Engineering software	GX Works2 *1	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later																							
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Chinese (Simplified) version	Version1.49B or later																																				
Chinese (Traditional) version	Version1.49B or later																																				
Korean version	Version1.49B or later																																				

Item	Description
Programming language	Ladder
Number of steps	493 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) By turning ON FB_EN (Execution command), the periodic pulse count starts with the preset i_PeriodTime (Periodic time setting (unit: 10ms)), and the previous and present periodic pulse count values are read from the buffer memory. 2) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) Turn OFF the counter function selection start command (RYn6) signal when using the FB. When the signal is turned ON, the periodic pulse counter function of the target channel will not be executed. 5) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 6) This FB uses index registers Z9, Z8, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 7) Every input must be provided with a value for proper FB operation. 8) When this FB is used in two or more places, a duplicated coil warning will occur during compile operation due to the Y signal being operated by index modification. However this is not a problem and the FB will operate without error. 9) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 10) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 11) Set the global label setting according to Section 1.5. 12) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".

Item	Description	
FB operation type	Pulsed execution (multiple scan execution type)	
Application example	Refer to "Appendix 2 - FB Library Application Examples".	
Timing chart	<p>[When operation completes without error] (When using CH1)</p>	<p>[When an error occurs] (When using CH1)</p>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block) 	

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

● Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.
Periodic time setting (unit: 10 ms)	i_PeriodTime	Word	1~65,535 *1	Set periodic time setting. (unit: 10 ms) *1: Setting method •1~32,767: Set in decimal. •32,768~65,535: Set after converted into hexadecimal.



●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Completed without error	FB_OK	Bit	OFF	When ON, it indicates that the periodic pulse counter function is started.
Periodic pulse count, previous value	o_PreviousValue	Double Word	0	Store the previous periodic pulse count value.
Periodic pulse count, present value	o_PresentValue	Double Word	0	Store the present periodic pulse count value.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_PeriodicPulseCounter function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.

2.12 M+LD62-IEF_OverflowDetection (Overflow detection)

FB Name

M+LD62-IEF_OverflowDetection

Function Overview

Item	Description																																					
Function overview	Detects overflow.																																					
Symbol	<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p style="text-align: center;">M+LD62-IEF_OverflowDetection</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; text-align: right;">Execution command</td> <td style="width: 20%;">B : FB_EN</td> <td style="width: 20%;"></td> <td style="width: 20%;">FB_ENO : B</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: left;">Execution status</td> </tr> <tr> <td style="text-align: right;">Module start XY address</td> <td>W : i_Start_IO_No</td> <td></td> <td>o_Overflow : B</td> <td></td> <td style="text-align: left;">Overflow occurrence flag</td> </tr> <tr> <td style="text-align: right;">Station No.</td> <td>W : i_Station_No</td> <td></td> <td>FB_ERROR : B</td> <td></td> <td style="text-align: left;">Error flag</td> </tr> <tr> <td style="text-align: right;">Slave module start XY address</td> <td>W : i_SlvStart_IO_No</td> <td></td> <td>ERROR_ID : W</td> <td></td> <td style="text-align: left;">Error code</td> </tr> <tr> <td style="text-align: right;">Own station channel</td> <td>W : i_CH_No</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">Target CH</td> <td>W : i_CH</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> </div>		Execution command	B : FB_EN		FB_ENO : B		Execution status	Module start XY address	W : i_Start_IO_No		o_Overflow : B		Overflow occurrence flag	Station No.	W : i_Station_No		FB_ERROR : B		Error flag	Slave module start XY address	W : i_SlvStart_IO_No		ERROR_ID : W		Error code	Own station channel	W : i_CH_No					Target CH	W : i_CH				
Execution command	B : FB_EN		FB_ENO : B		Execution status																																	
Module start XY address	W : i_Start_IO_No		o_Overflow : B		Overflow occurrence flag																																	
Station No.	W : i_Station_No		FB_ERROR : B		Error flag																																	
Slave module start XY address	W : i_SlvStart_IO_No		ERROR_ID : W		Error code																																	
Own station channel	W : i_CH_No																																					
Target CH	W : i_CH																																					
Applicable hardware and software	High-speed counter module	LD62, LD62D																																				
	CC-Link IE field network module	CC-Link IE field network master/local module CC-Link IE field network head module																																				
	CPU module	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th style="width: 50%;">Series</th> <th style="width: 50%;">Model</th> </tr> </thead> <tbody> <tr> <td>MELSEC-Q Series *1</td> <td>Universal model QCPU *2</td> </tr> <tr> <td>MELSEC-L Series</td> <td>LCPU *3</td> </tr> </tbody> </table> <p>*1 Not applicable to QCPU (A mode) *2 The first five digits of the serial number are "12012" or later *3 The first five digits of the serial number are "13012" or later.</p>	Series	Model	MELSEC-Q Series *1	Universal model QCPU *2	MELSEC-L Series	LCPU *3																														
Series	Model																																					
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Engineering software	GX Works2 *1	<table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th style="width: 50%;">Language</th> <th style="width: 50%;">Software version</th> </tr> </thead> <tbody> <tr> <td>Japanese version</td> <td>Version1.86Q or later</td> </tr> <tr> <td>English version</td> <td>Version1.24A or later</td> </tr> <tr> <td>Chinese (Simplified) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Chinese (Traditional) version</td> <td>Version1.49B or later</td> </tr> <tr> <td>Korean version</td> <td>Version1.49B or later</td> </tr> </tbody> </table> <p>*1 For software versions applicable to the modules used, refer to "Relevant manuals".</p>	Language	Software version	Japanese version	Version1.86Q or later	English version	Version1.24A or later	Chinese (Simplified) version	Version1.49B or later	Chinese (Traditional) version	Version1.49B or later	Korean version	Version1.49B or later																								
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Chinese (Simplified) version	Version1.49B or later																																					
Chinese (Traditional) version	Version1.49B or later																																					
Korean version	Version1.49B or later																																					

Item	Description
Programming language	Ladder
Number of steps	337 steps (for MELSEC-Q series universal model CPU) *The number of steps of the FB in a program depends on the CPU model that is used and input and output definition.
Function description	<ol style="list-style-type: none"> 1) While FB_EN (Execution command) is ON, o_Overflow (Overflow occurrence flag) turns ON if overflow occurs. 2) When the target channel setting value is out of range, the FB_ERROR output turns ON, processing is interrupted, and the error code is stored in ERROR_ID (Error code). 3) Refer to the error code explanation section for details.
Compiling method	Macro type
Restrictions and precautions	<ol style="list-style-type: none"> 1) The FB does not include error recovery processing. Program the error recovery processing separately in accordance with the required system operation. 2) The FB cannot be used in an interrupt program. 3) Please ensure that the FB_EN signal is capable of being turned OFF by the program. Do not use this FB in programs that are only executed once such as a subroutine, FOR-NEXT loop, etc. because it is impossible to turn OFF. 4) When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel. 5) This FB uses index registers Z9, Z7, Z6 and Z5. Please do not use these index registers in an interrupt program. 6) Every input must be provided with a value for proper FB operation. 7) The pulse input mode, counting speed setting, and counter format must be properly configured to match systems and devices connected to the LD62/LD62D. 8) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4. 9) Set the global label setting according to Section 1.5. 10) Only one master/local module can be controlled by the CC-Link IE Field system FB. To control 2 or more master/local modules by the FB, refer to "When Using the FB for 2 or More Master/Local Modules".
FB operation type	Real-time execution
Application example	Refer to "Appendix 2 - FB Library Application Examples".



Item	Description
Timing chart	<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>[When operation completes without error]</p> </div> <div style="width: 45%;"> <p>[When an error occurs]</p> </div> </div>
Relevant manuals	<ul style="list-style-type: none"> ●MELSEC-L High-Speed Counter Module User's Manual ●MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual ●MELSEC-L CC-Link IE Field Network Head Module User's Manual ●QCPU User's Manual (Hardware Design, Maintenance and Inspection) ●MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection) ●GX Works2 Version1 Operating Manual (Common) ●GX Works2 Version1 Operating Manual (Simple Project, Function Block)

Error Codes

●Error code list

Error code	Description	Action
10 (Decimal)	The specified target channel is not valid. The target channel is not 1 or 2.	Please try again after confirming the setting.
D000 to DAF9 (Hexadecimal)	A CC-Link IE field network error occurred in the system.	Refer to Error Code List in the MELSEC-Q/L CC-Link IE Field Network Master/Local Module User's Manual for details.

Labels

●Input labels

Name (Comment)	Label name	Data type	Setting range	Description
Execution command	FB_EN	Bit	ON,OFF	ON: The FB is activated. OFF: The FB is not activated.

Name (Comment)	Label name	Data type	Setting range	Description
Module start XY address	i_Start_IO_No	Word	Depends on the I/O point range of the CPU. For details, refer to the CPU user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station number.
Slave module start XY address	i_SlvStart_IO_No	Word	Depends on the I/O point range of the head module. For details, refer to the head module user's manual.	Specify the starting XY address (in hexadecimal) where the LD62/LD62D module is mounted. (For example, enter H10 for X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for own station.
Target CH	i_CH	Word	1~2	Specify the channel number.

●Output labels

Name (Comment)	Label name	Data type	Initial value	Description
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON. OFF: Execution command is OFF.
Overflow occurrence flag	o_Overflow	Bit	OFF	When ON, it indicates that an overflow has occurred.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has occurred.
Error code	ERROR_ID	Word	0	FB error code output

FB Version Upgrade History

Version	Date	Description
1.00A	2016/04	First edition

Note

This chapter includes information related to the M+LD62-IEF_OverflowDetection function block.

It does not include information on restrictions of use such as combination with modules or programmable controller CPUs.

Before using any Mitsubishi products, please read all relevant manuals.



Appendix 1 When Using the FB for 2 or More Master/Local Modules

To use 2 or more CC-Link IE field master/local modules and to use an FB for the second and subsequent CC-Link IE field master/local modules, it is necessary to create an FB for the second and subsequent modules from the MELSOFT Library CC-Link IE field master/local module FB using the following procedure.

Four steps are required to create an FB for the second and subsequent modules, and the brief description is given as follows.

- (1) Enter network parameters
- (2) Set global labels
- (3) Copy MELSOFT Library to create the FB for the second module
- (4) Replace devices to create the FB for the second module



Appendix 1.1 Entering Network Parameters

1) Enter the network parameters for the second module.

Item	Description
Network Type	Select CC IE Field (Master Station).
Start I/O No.	Set the start I/O number of the master/local module in increments of 16 points. Set "0020".
Network No.	Set the network number of the master/local module. Set "2".
Total Stations	Set the number of slave stations connected to the master station. Include the number of reserved slave stations. Set "1".

	Module 1	Module 2	Module 3
Network Type	CC IE Field (Master Station)	CC IE Field (Master Station)	None
Start I/O No.	0000	0020	
Network No.	1	2	
Total Stations	1	1	
Group No.			
Station No.	0	0	
Mode	Online (Normal Mode)	Online (Normal Mode)	
	Network Configuration Settings	Network Configuration Settings	
	Network Operation Settings	Network Operation Settings	
	Refresh Parameters	Refresh Parameters	
	Interrupt Settings	Interrupt Settings	
	Specify Station No. by Parameter	Specify Station No. by Parameter	



2) Set the network configuration setting for the second module.

Item	Description
Station No.	Set the station number of the slave connected to the master station. Set "1".
Station Type	Set the station type of the slave connected to the master station. Set "Intelligent Device Station".
RX/Ry Setting	Set assignment for RX/Ry for the slave station connected to the master station. (a) Points Set "16". (b) Start Set "0000".

Set up Network configuration.

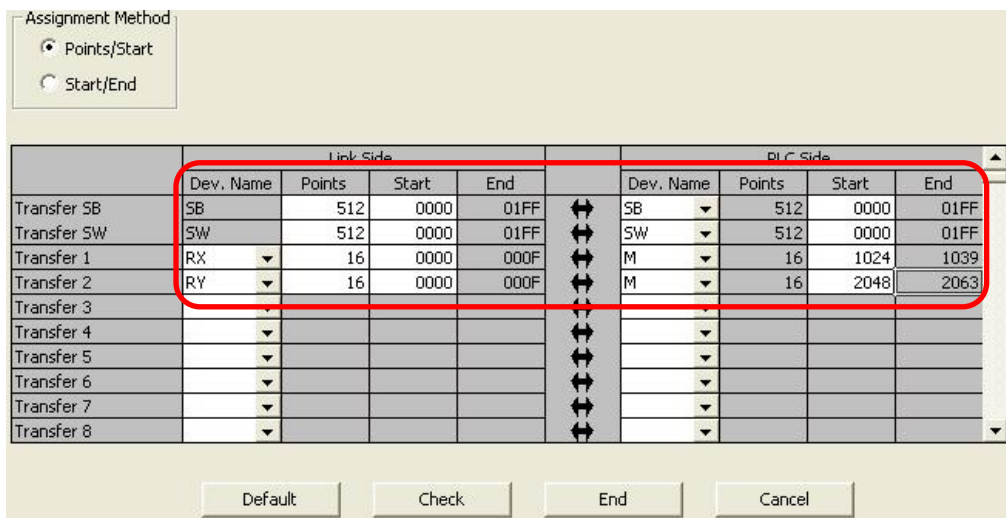
Assignment Method
 Points/Start The column contents for refresh device will be changed corresponding to refresh parameter setting contents.
Please reopen the window after completing refresh parameter setting when changing refresh parameter.
 Start/End

Number of PLC	Station No.	Station Type	RX/Ry Setting			RWw/RWv Setting			Refresh Device		
			Points	Start	End	Points	Start	End	RX	RY	RWw
1	1	Intelligent Device Station	16	0000	000F						

3) Enter the refresh parameters for the second module.

Item	Description	Setting value
Transfer SB	Set the link refresh range of SB device.	<ul style="list-style-type: none"> •"Link Side Points" :512 •"Link Side Start" :0200 •"PLC Side Dev. Name" :SB •"PLC Side Start" :0200
Transfer SW	Set the link refresh range of SW device.	<ul style="list-style-type: none"> •"Link Side Points" :512 •"Link Side Start" :0200 •"PLC Side Dev. Name" :SW •"PLC Side Start" :0000
Transfer 1	Set the link refresh range of RX device.	<ul style="list-style-type: none"> •"Link Side Dev. Name" :RX •"Link Side Points" :16 •"Link Side Start" :0000 •"PLC Side Dev. Name" :M •"PLC Side Start" :1056
Transfer 2	Set the link refresh range of RY device.	<ul style="list-style-type: none"> •"Link Side Dev. Name" :RY •"Link Side Points" :16 •"Link Side Start" :0000 •"PLC Side Dev. Name" :M •"PLC Side Start" :2080

*Change the Points of the Link Side and Dev. Name and Start of the PLC Side according to your system.



Appendix 1.2 Entering Global Labels

Enter the global labels for the second module.

Specify label names for the second module. The names must be different from the label names for the first module.

The following explains how to set the global label for the second module.

1) M_F_RX2 Set for remote input (RX).

Item	Description
Class	Select "VAR_GLOBAL".
Label name	Enter "M_F_RX2".
Data type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a prefix "Z9".

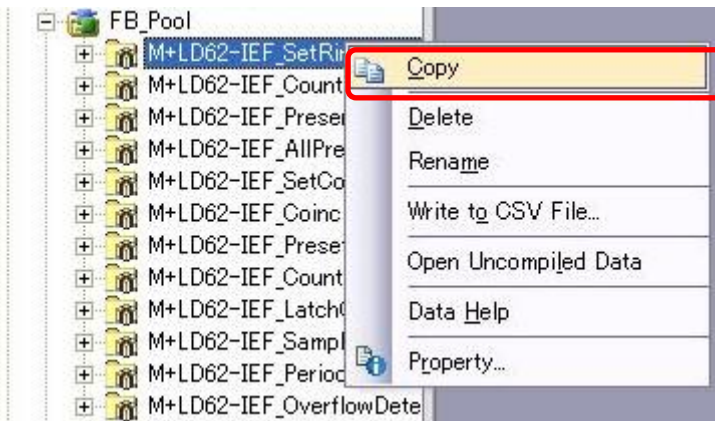
2) M_F_RY2 Set for remote output (RY).

Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RY2".
Data type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a prefix "Z8".

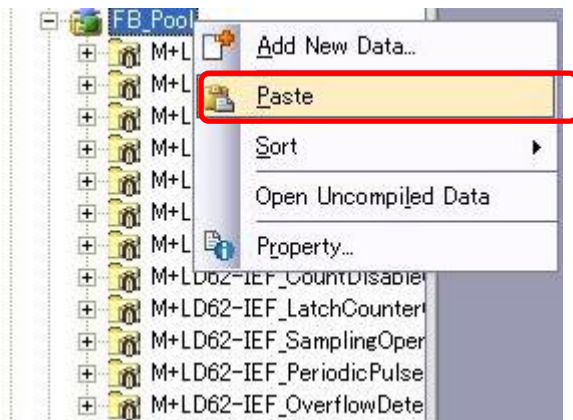
	Class	Label Name	Data Type	Constant	Device	Comment
1	VAR_GLOBAL	M_F_RX	Bit	...	M1024Z9	RX refresh device
2	VAR_GLOBAL	M_F_RY	Bit	...	M2048Z8	RY refresh device
3	VAR_GLOBAL	M_F_RX2	Bit	...	M1056Z9	RX refresh device
4	VAR_GLOBAL	M_F_RY2	Bit	...	M2080Z8	RY refresh device
5				...		

Appendix 1.3 Copying MELSOFT Library to Create an FB for the Second Module

1) Select an FB necessary for the second module from the Project tab of the Navigation window. Execute the Copy command.



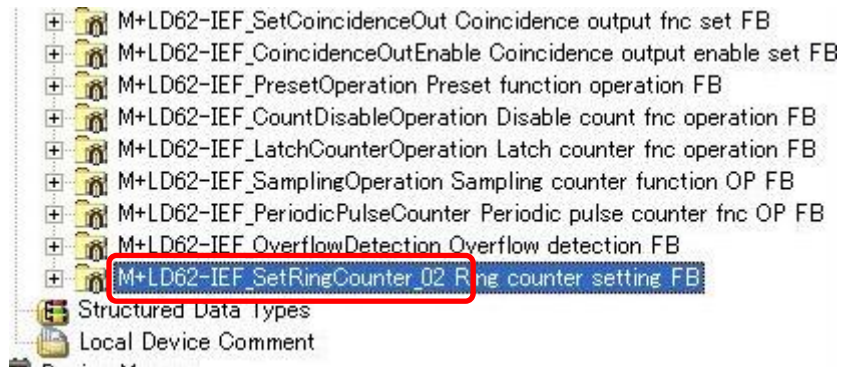
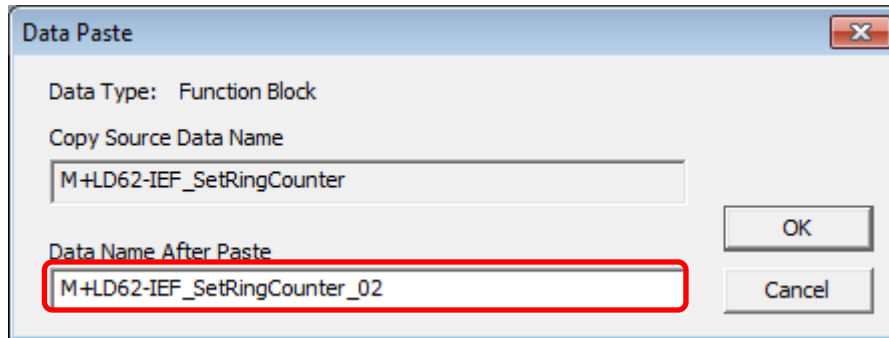
2) Paste the copied FB to "FB_Pool" on the Project tab of the Navigation window.



3) After selecting the paste command, a window appears to enter an FB name. Enter an FB name after paste.

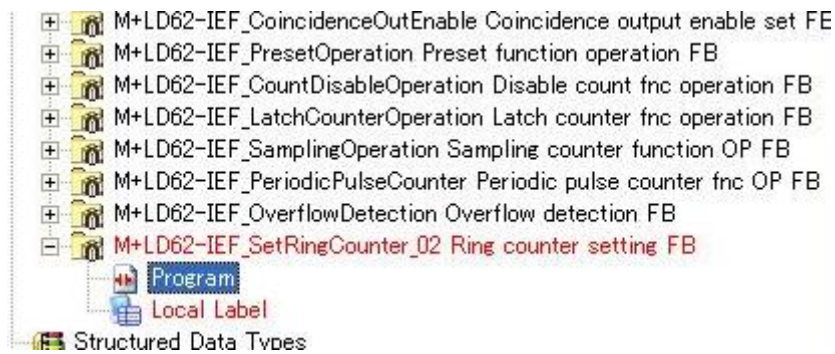
(Example: LD62-IEF_SetRingCounter_02)

[Note] The character string "+" of M+... cannot be entered.

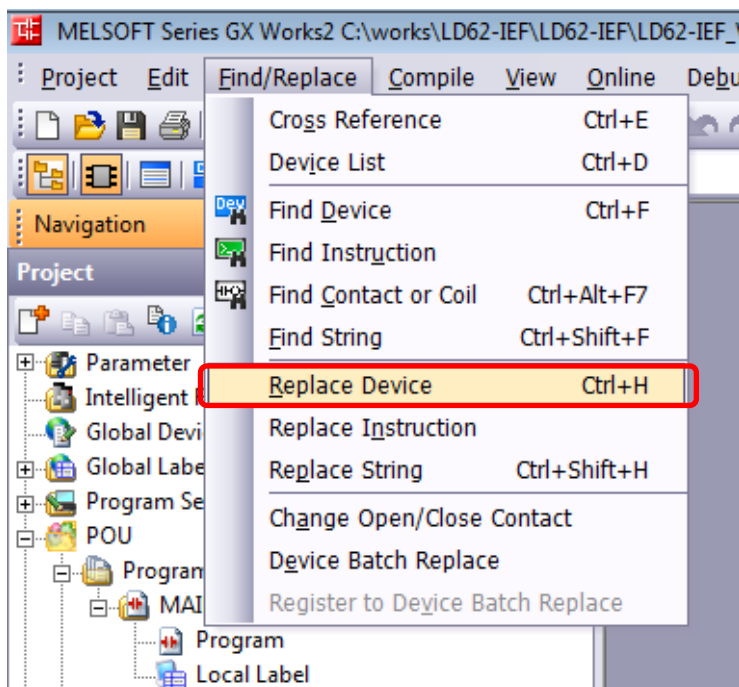


Appendix 1.4 Replacing Devices to Create the FB for the Second Module

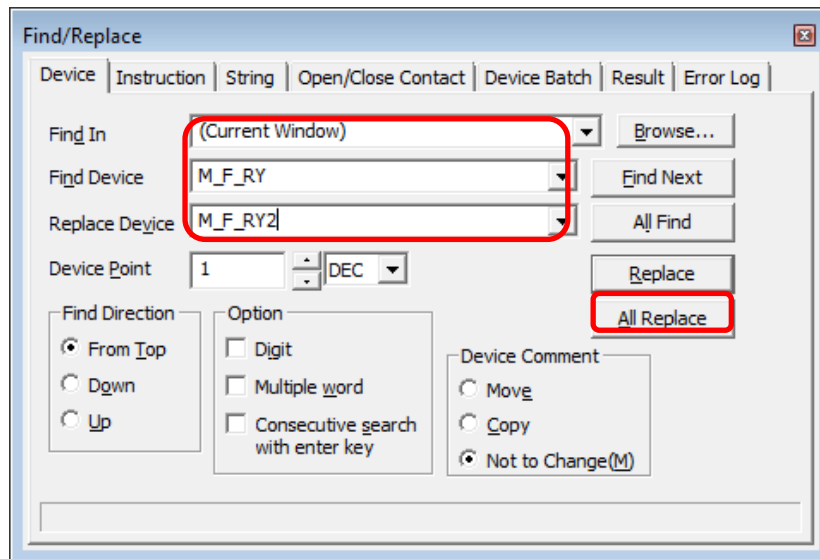
1) Open "Program" of the added FB.



2) Select "Find/Replace" menu and then select "Replace Device". "Find/Replace" window appears.



3) Select "Current Window" from Find In, "M_F_RY" from Find Device, and "M_F_RY2" from Replace Device. Then replace all devices. In the same way, replace "M_F_RX" with "M_F_RX2" all at once.



By performing the steps above, the CC-Link IE field master/local module FB can be used for the second module.

[Point]

- 1) To use multiple FBs for the second CC-Link IE field master/local module, repeat the step (4).
- 2) To use an FB for third or subsequent CC-Link master/local modules, make sure that the "Global label name", "Data Name After Paste" that is set when pasting FB data and "Replace Device" that is set when replacing devices are not duplicated for the first and second modules.

[Note]

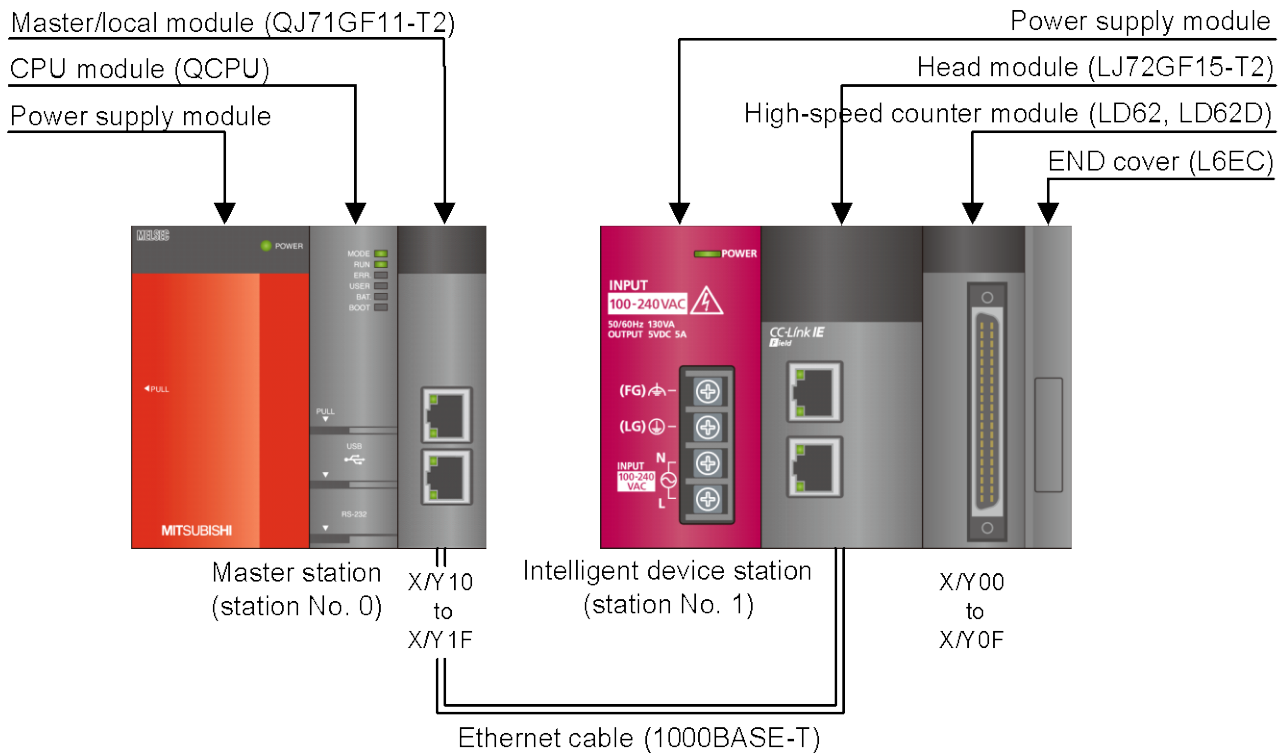
If MELSOFT Library is upgraded, MELSOFT Library FBs can be upgraded by importing them again. However, the FBs that were created by following these procedures for the second and subsequent modules are not upgraded even if the FBs are imported again.

Therefore, to upgrade FBs that were created by following these procedures, after upgrading MELSOFT Library, follow these procedures again.

Appendix 2 FB Library Application Examples

LD62 FB application examples are as follows.

1) System configuration



Reminder

- Every input must be provided with a value for proper FB operation.

If not set, the values will be unspecified.

- Abbreviations may be used in the label comments due to the limitation on the number of the characters to display in GX Works2.

2) Device list

a) External input (commands)

Device	FB name	Application (ON details)
M0	M+LD62-IEF_SetRingCounter	Ring counter setting request
M10	M+LD62-IEF_CountEnable	Count enable command
M20	M+LD62-IEF_PresentValStorage	Present value read request
M30	M+LD62-IEF_AllPresentValStorage	Present value read request
M40	M+LD62-IEF_SetCoincidenceOut	Coincidence output function setting command
M41		Coincidence output No. 1 enable
M42		Coincidence output No. 2 enable
M50	M+LD62-IEF_CoincidenceOutEnable	Coincidence output enable command
M60	M+LD62-IEF_PresetOperation	Preset function execution command
M70	M+LD62-IEF_CountDisableOperation	Count disable command
M80	M+LD62-IEF_LatchCounterOperation	Latch counter command
M90	M+LD62-IEF_SamplingOperation	Sampling count command
M100	M+LD62-IEF_PeriodicPulseCounter	Periodic pulse counter command
M110	M+LD62-IEF_OverflowDetection	Overflow detection command

b) External output (checks)

Device	FB name	Application (ON details)
M1	M+LD62-IEF_SetRingCounter	Ring counter setting FB ready
M2		Ring counter setting complete
F0		Ring counter setting FB error
D0		Ring counter setting FB error code
M11	M+LD62-IEF_CountEnable	Count enable FB ready
M12		Count operating flag
F5		Count enable FB error
D10		Count enable FB error code
M21	M+LD62-IEF_PresentValStorage	Present value monitoring FB ready
M22		Present value read operation complete
D20		Present value
F10		Present value monitoring FB error
D22		Present value monitoring FB error code
M31		M+LD62-IEF_AllPresentValStorage
M32	Present value read operation complete	

Device	FB name	Application (ON details)
D30	M+LD62-IEF_AllPresentValStorage	CH1 Present value
D32		CH2 Present value
F15		Present value monitoring FB error
D34		Present value monitoring FB error code
M43	M+LD62-IEF_SetCoincidenceOut	Coincidence output function setting FB ready
M44		Coincidence output function setting complete
F20		Coincidence output function setting FB error
D40		Coincidence output function setting FB error code
M51	M+LD62-IEF_CoincidenceOutEnable	Coincidence output enable setting FB ready
M52		Coincidence output enable setting complete
F25		Coincidence output enable setting FB error
D50		Coincidence output enable setting FB error code
M61	M+LD62-IEF_PresetOperation	Preset function execution FB ready
M62		Preset function execution complete
F30		Preset function execution FB error
D60		Preset function execution FB error code
M71	M+LD62-IEF_CountDisableOperation	Count disable function execution FB ready
M72		Count disable operating flag
F35		Count disable function execution FB error
D70		Count disable function execution FB error code
M81	M+LD62-IEF_LatchCounterOperation	Latch counter function execution FB ready
M82		Latch counter function execution complete
D80		Latch count value
F40		Latch counter function execution FB error
D82		Latch counter function execution FB error code
M91	M+LD62-IEF_SamplingOperation	Sampling counter function execution FB ready
M92		Sampling counter function execution complete
D90		Sampling count value
F45		Sampling counter function execution FB error
D92		Sampling function execution FB error code
M101	M+LD62-IEF_PeriodicPulseCounter	Periodic pulse counter function execution FB ready
M102		Periodic pulse counter function execution complete
D100		Periodic pulse count, previous value
D102		Periodic pulse count, present value
F50		Periodic pulse counter function execution FB error
D104		Periodic pulse counter function execution FB error code

Device	FB name	Application (ON details)
M111	M+LD62-IEF_OverflowDetection	Overflow detection FB ready
M112		Overflow detecting
F55	M+LD62-IEF_OverflowDetection	Overflow detection FB error
D110		Overflow detection FB error code
T10	Interlock check	Own station baton pass error check
T11		Own station data link error check
T12		Station No.1 baton pass error check
T13		Own station No.1 cyclic transmission error check
M200		Communication condition match flag (station No. 1)

3) Global label settings

a) Common settings

Class	Label name	Data type	Device
VAR_GLOBAL	M_F_RX	Bit	M1024Z9
VAR_GLOBAL	M_F_RY	Bit	M2048Z8

4) Application example settings

a) Common settings

Item	Value	Description
Module start XY address	0	Specify the starting XY address where the CC-Link IE field system master/local module is mounted.

b) Network parameters

Item	Setting value
Network Type	CC IE Field (Master Station)
Start I/O No.	0000
Network No.	1
Total Stations	1
Mode	Online (Normal Mode)

c) Network configuration setting

Item		Setting value
Station No.		1
Station Type		Intelligent Device Station
RX/RX setting	Points	16
	Start	0000

d) Refresh Parameters

Item	Link Side			PLC Side	
	Dev. Name	Points	Start	Dev. Name	Start
Transfer SB	SB	512	0000	SB	0000
Transfer SW	SW	512	0000	SW	0000
Transfer 1	RX	16	0000	M	1024
Transfer 2	RY	16	0000	M	2048

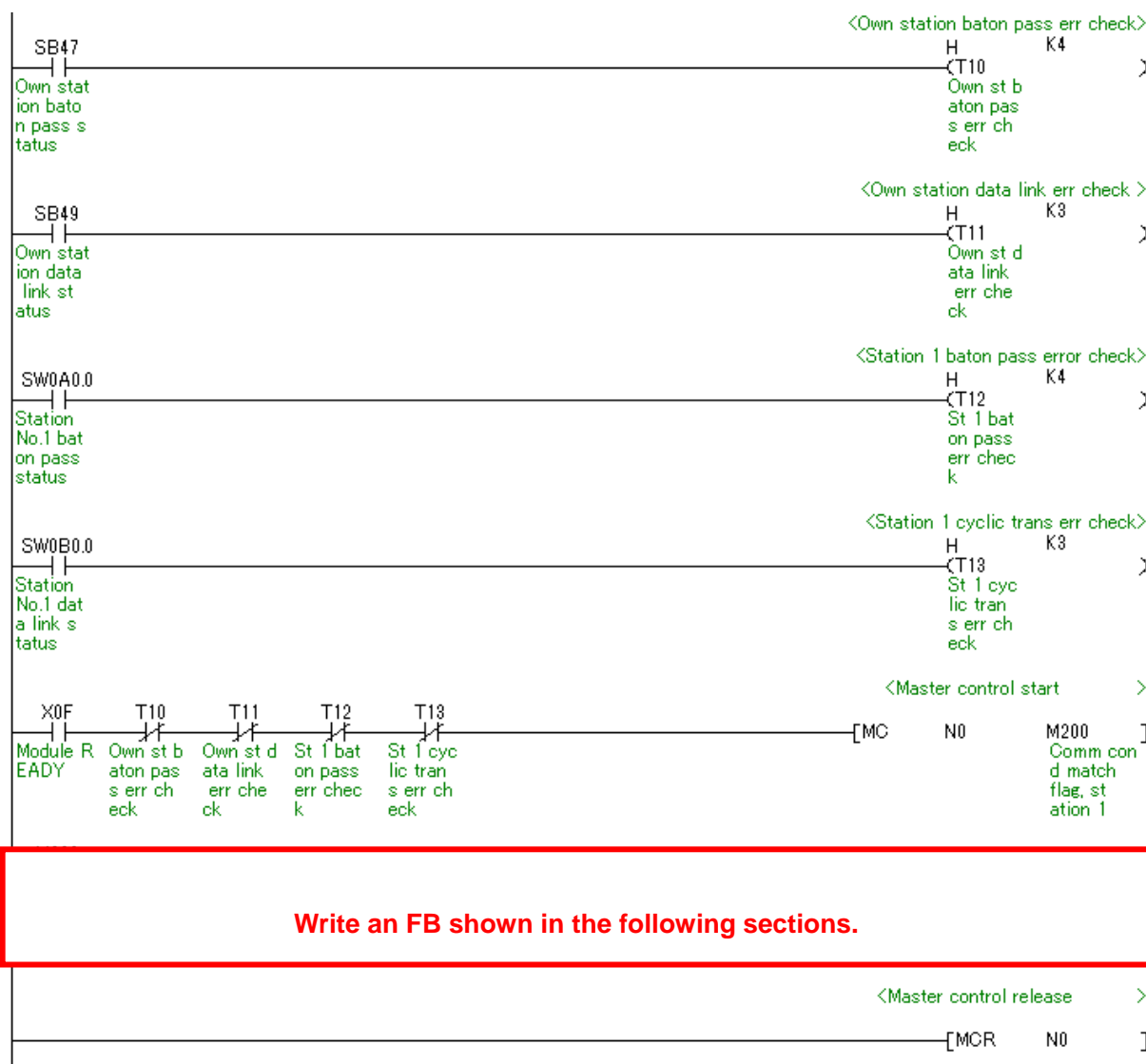
e) Slave Station Information

Item	Setting value
Mode	Online
Network No.	1
Station No.	1

5) Programs

Interlock program

*This is the interlock program for when using both cyclic and transient transmission.

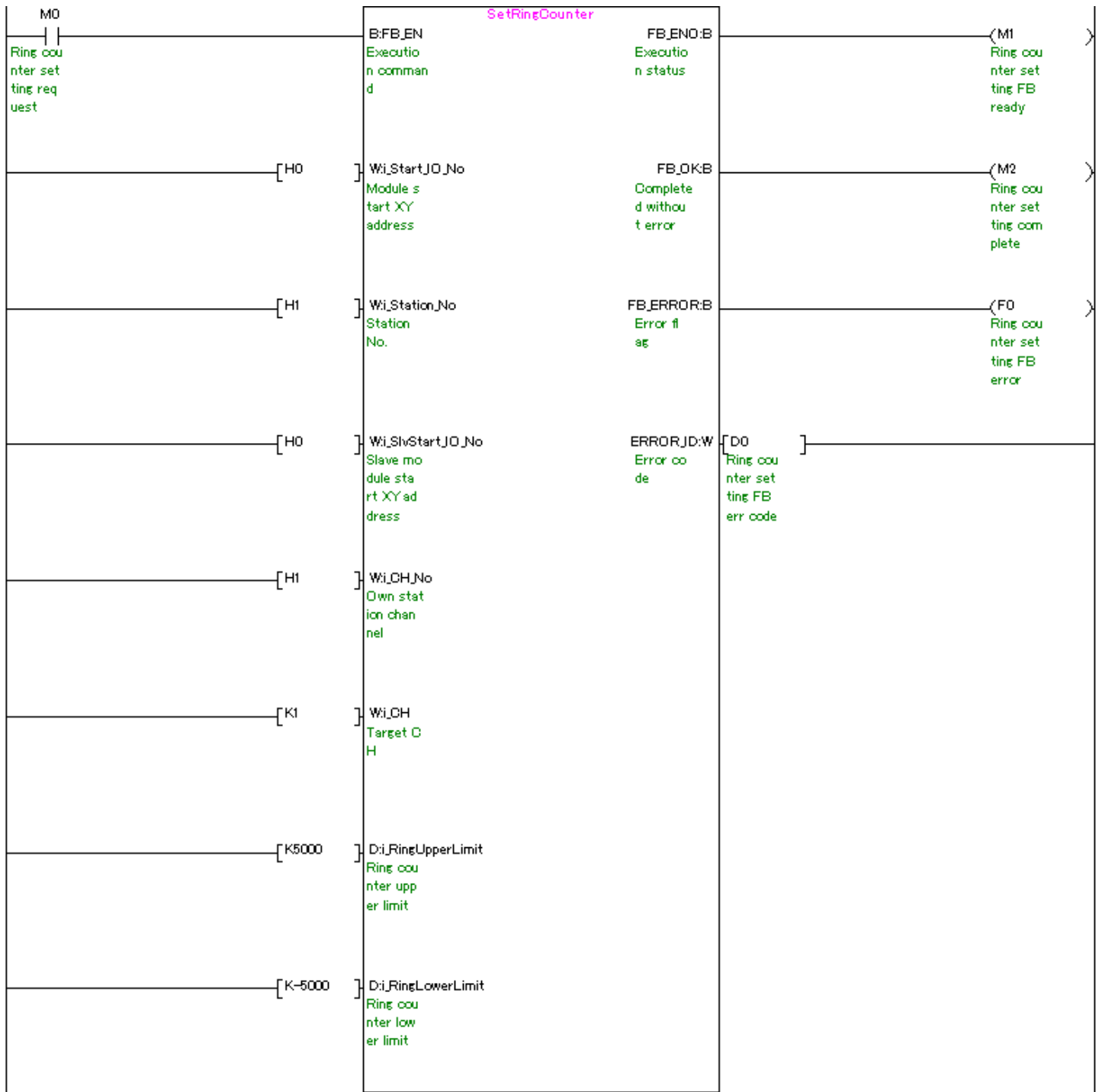


M+LD62-IEF_SetRingCounter (Ring counter setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the target station to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.
i_RingUpperLimit	K5000	Set the ring counter upper limit to 5,000.
i_RingLowerLimit	K-5000	Set the ring counter lower limit to -5,000.

By turning ON M0, the ring counter setting value of channel 1 is written to the buffer memory.

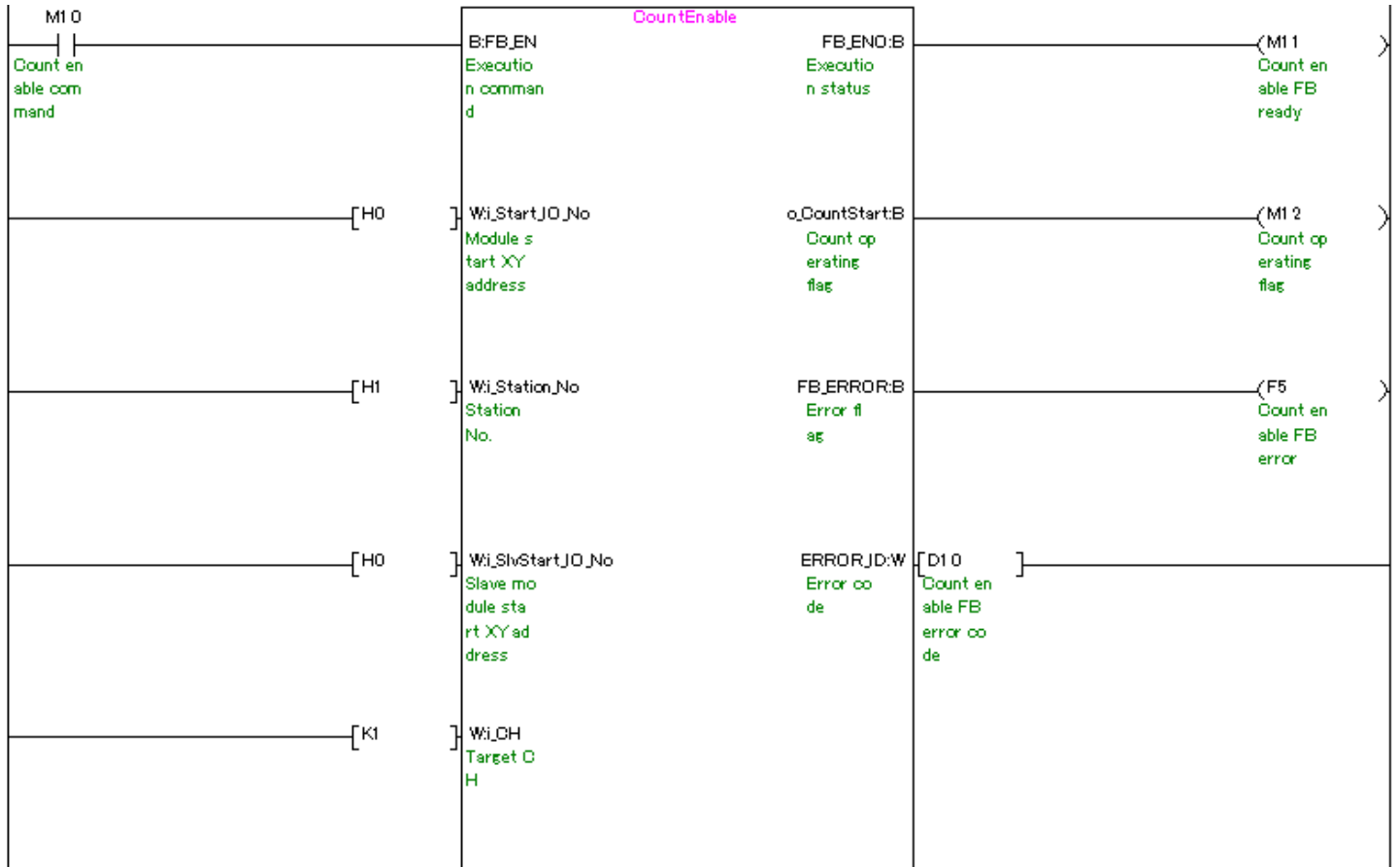




M+LD62-IEF_CountEnable (Count enable operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH	K1	Set the target channel to channel 1.

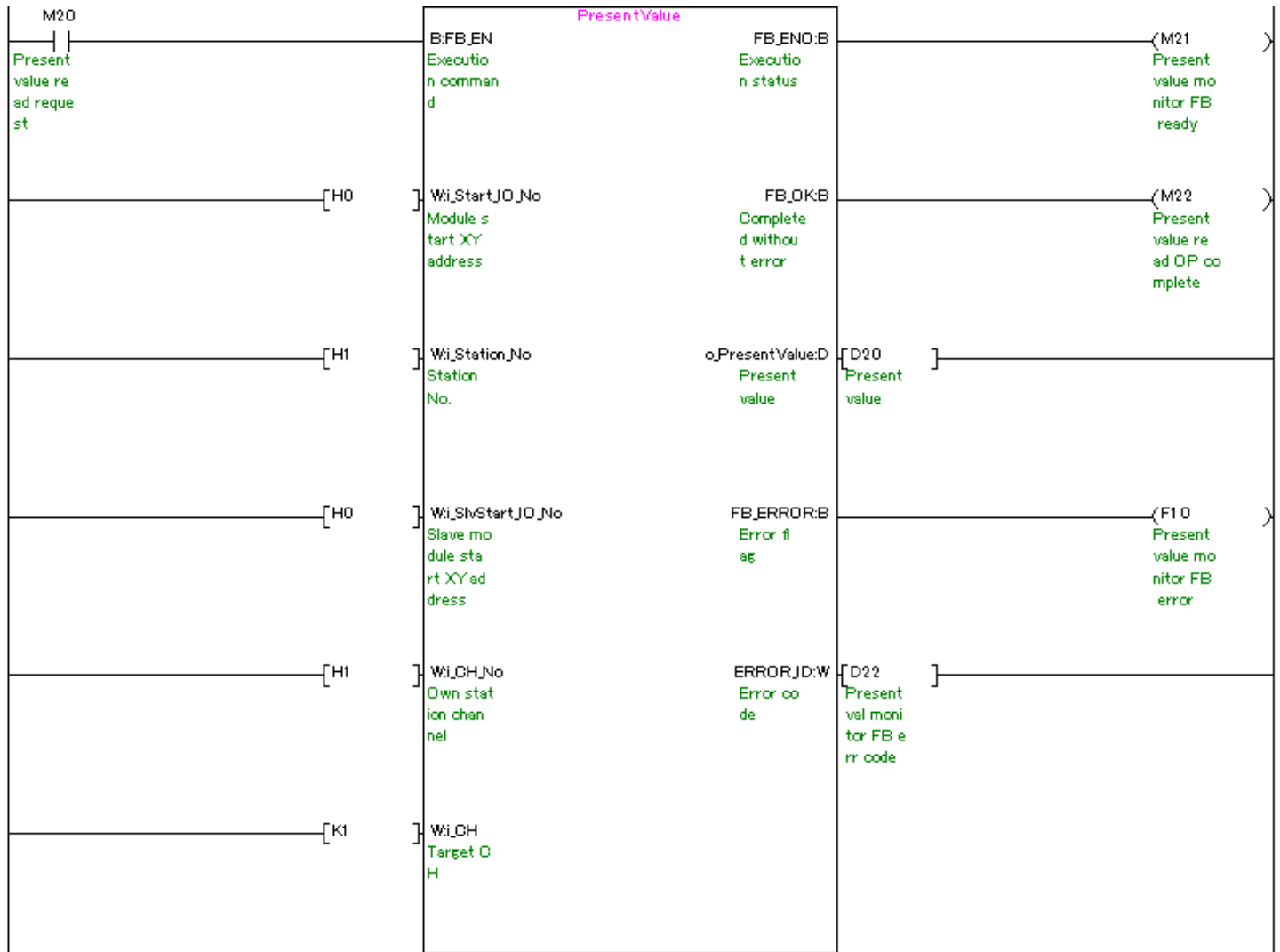
By turning ON M10, the count enable command for channel 1 is turned ON.



M+LD62-IEF_PresentValStorage (Present value monitoring)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.

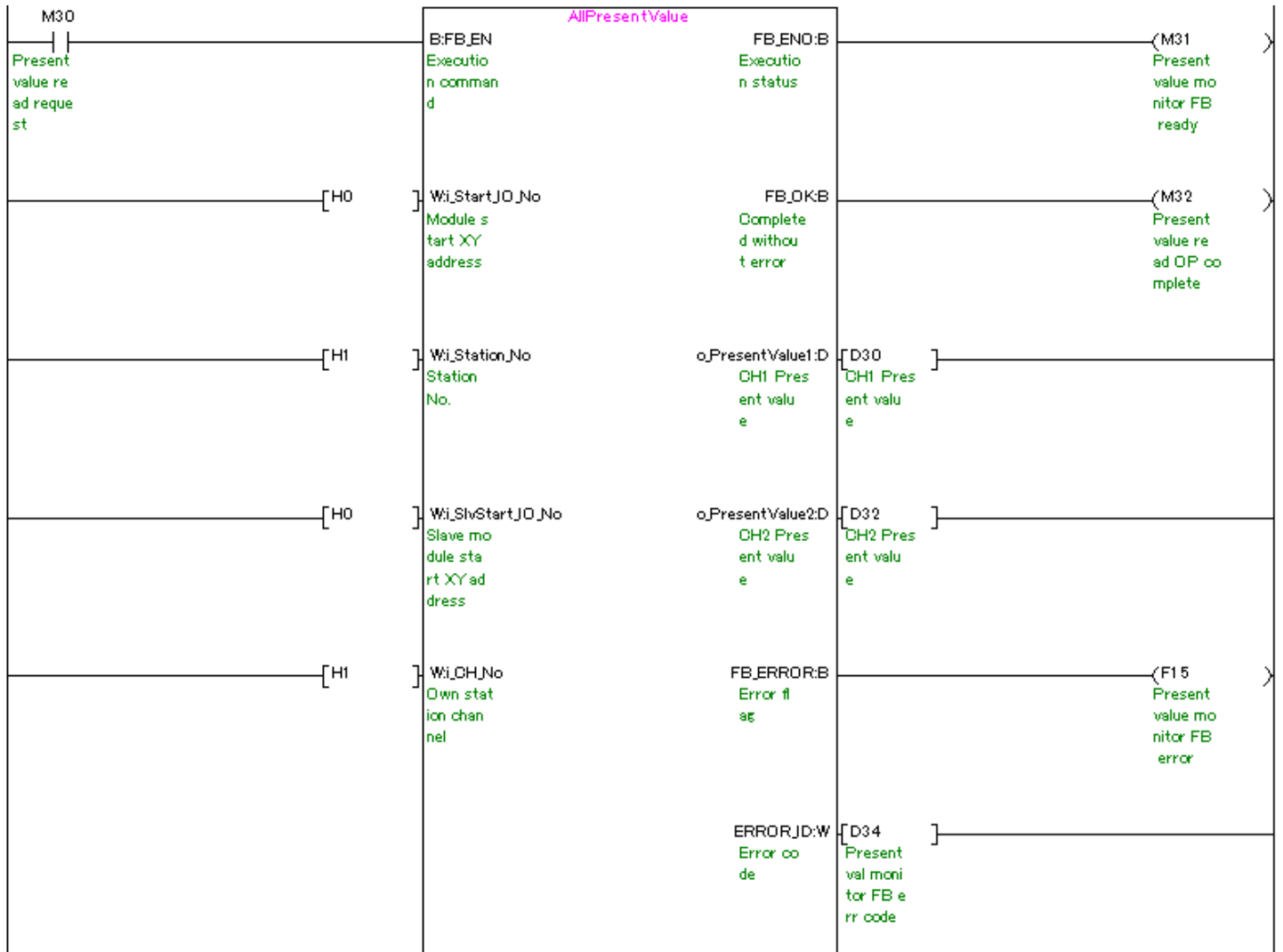
By turning ON M20, the present value of channel 1 is read from the buffer memory.



M+LD62-IEF_AllPresentValStorage (Present value monitoring (All CHs))

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.

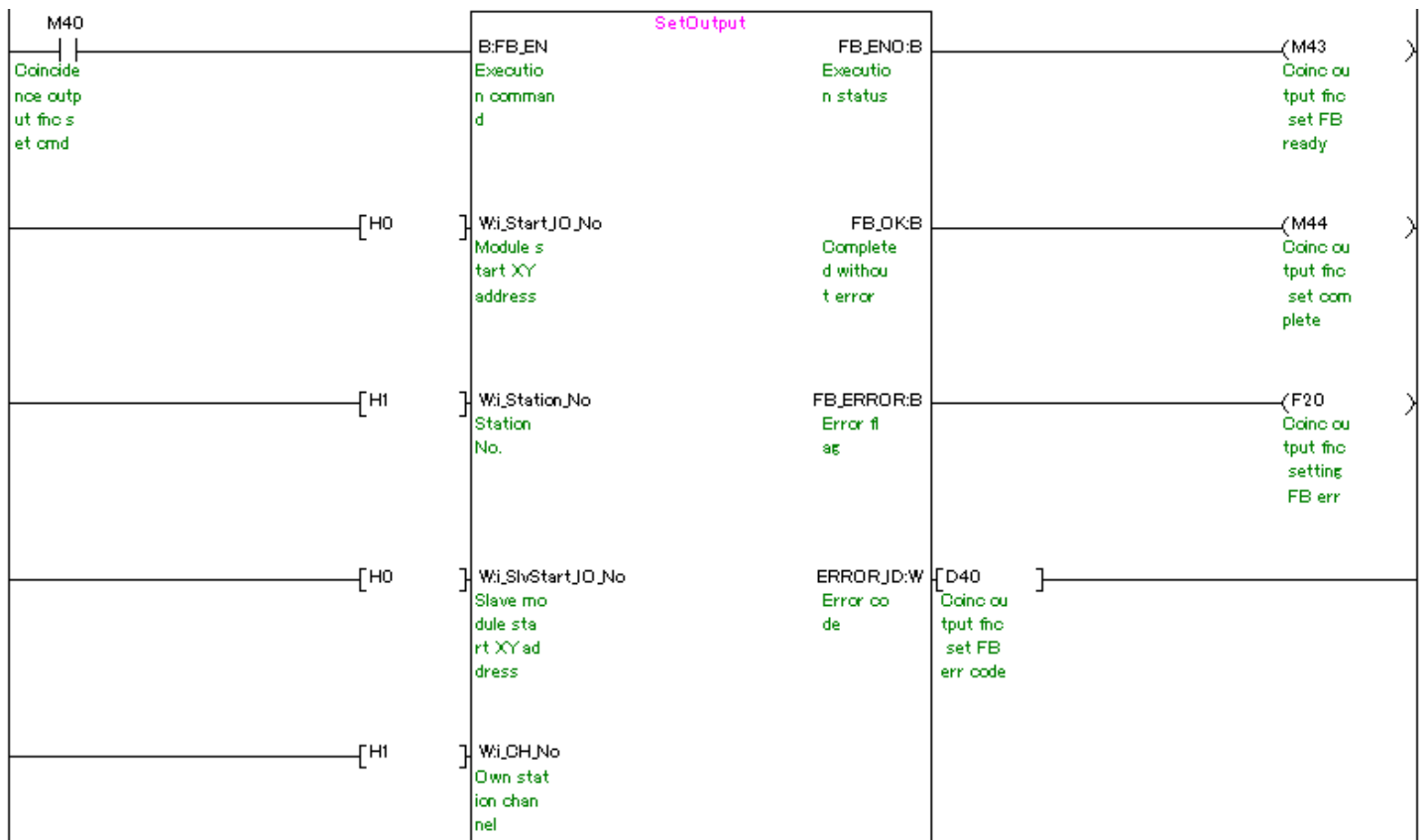
By turning ON M30, the present values of channels 1 and 2 are read.



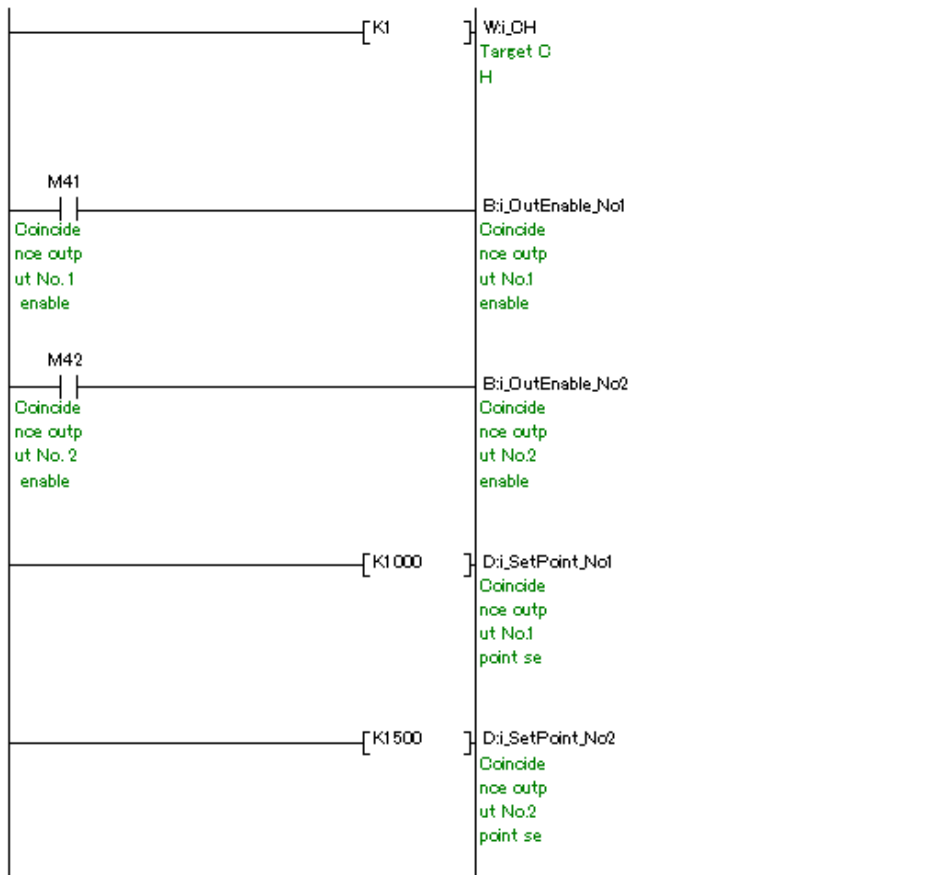
M+LD62-IEF_SetCoincidenceOut (Coincidence output function setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.
i_OutEnable_No1	ON/OFF	Turn ON to enable the coincidence output No.1 for the target channel.
i_OutEnable_No2	ON/OFF	Turn ON to enable the coincidence output No.2 for the target channel.
i_SetPoint_No1	K1000	Set the coincidence output No.1 point value to 1,000.
i_SetPoint_No2	K1000	Set the coincidence output No.2 point value to 1,000.

After turning ON M41, by turning ON M40, the coincidence output No.1 point for channel 1 is written to the buffer memory and coincidence signal No.1 is reset.



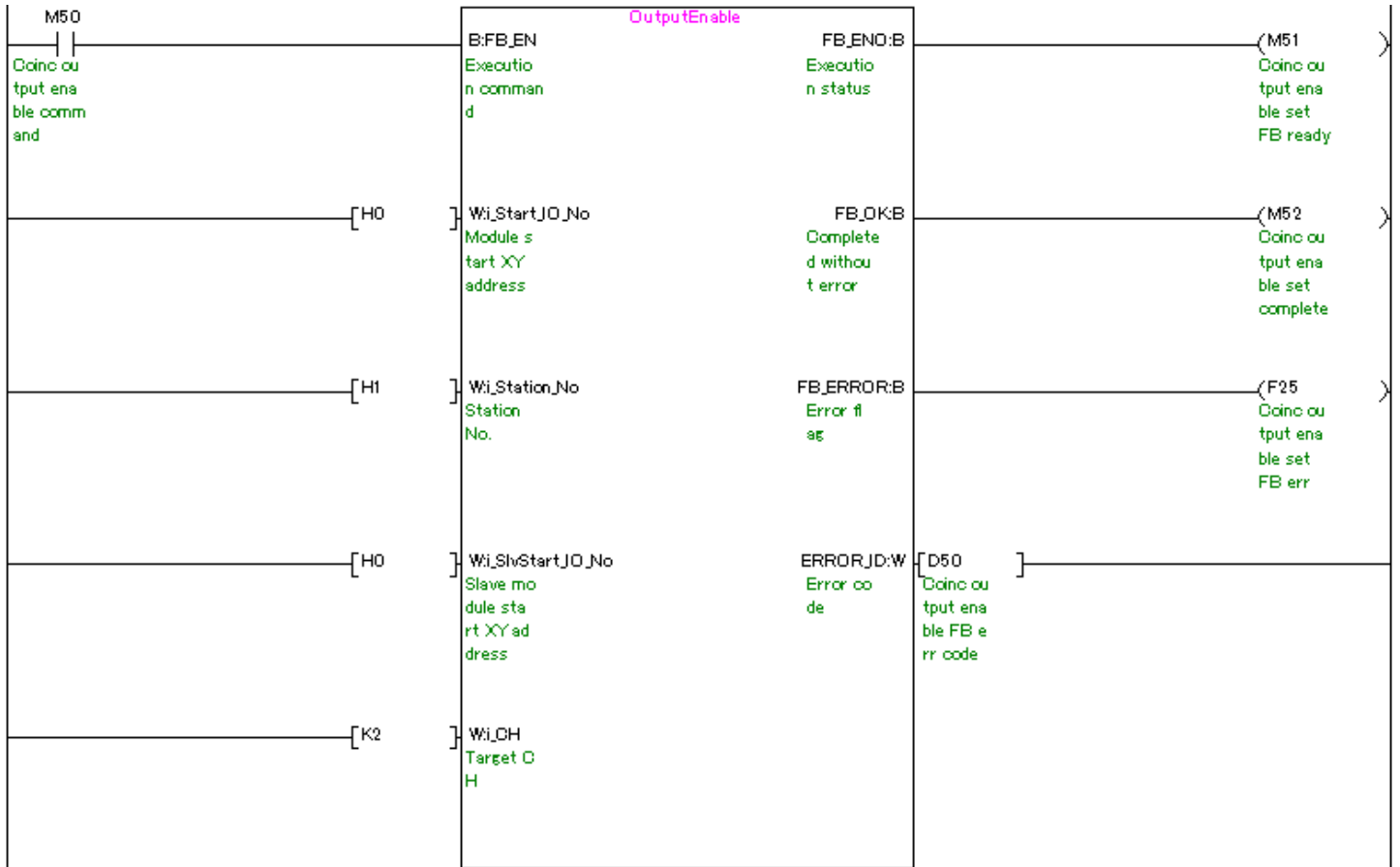
(Please refer to next page.)



M+LD62-IEF_CoincidenceOutEnable (Coincidence output enable setting)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Start_IO_No	H1	Set the station No. to 1H.
i_Station_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH	K1	Set the target channel to channel 1.

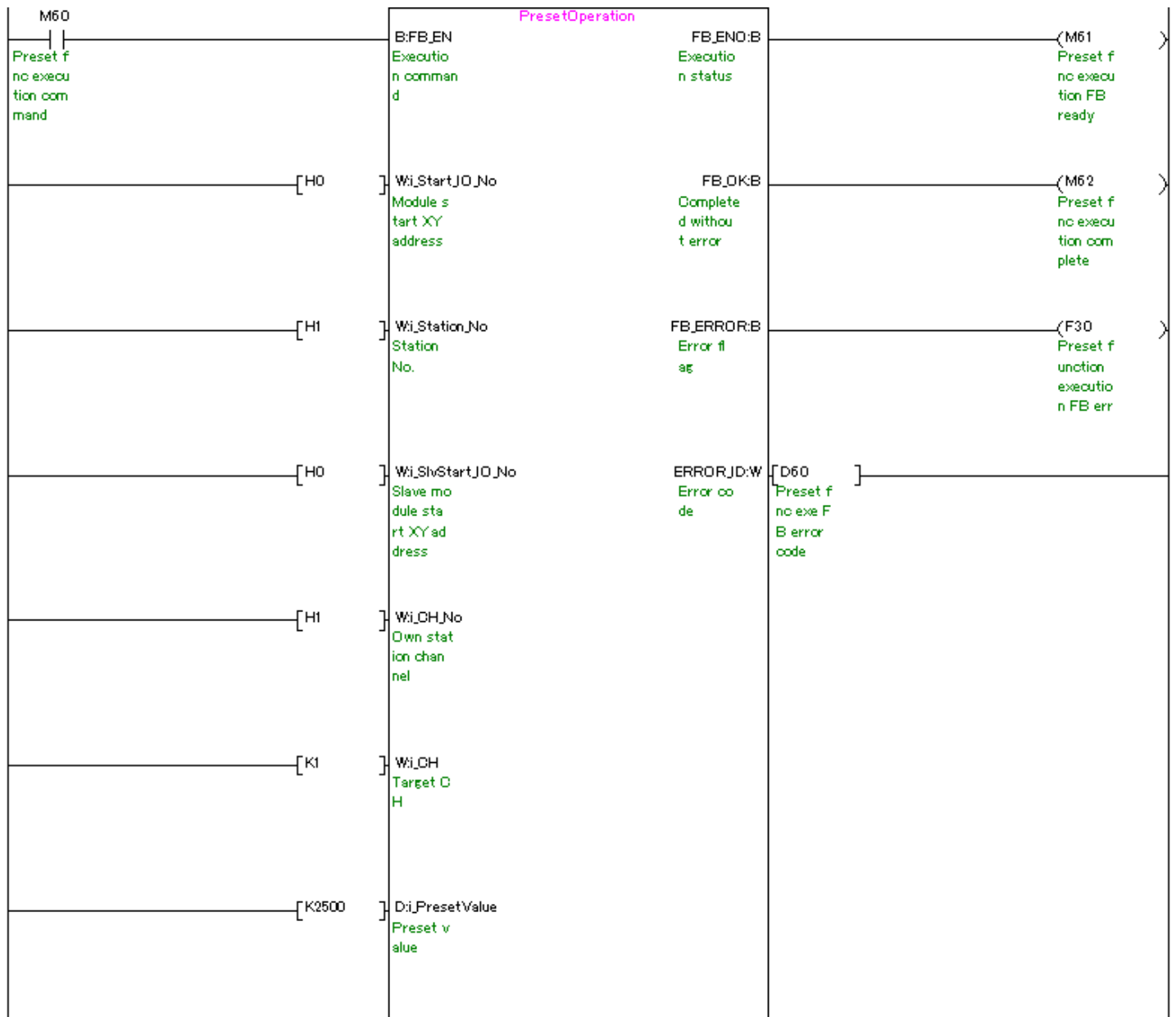
By turning ON M50, the external coincidence output for channel 1 is enabled.



M+LD62-IEF_PresetOperation (Preset function operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.
i_PresetValue	K2500	Set the preset value to 2,500.

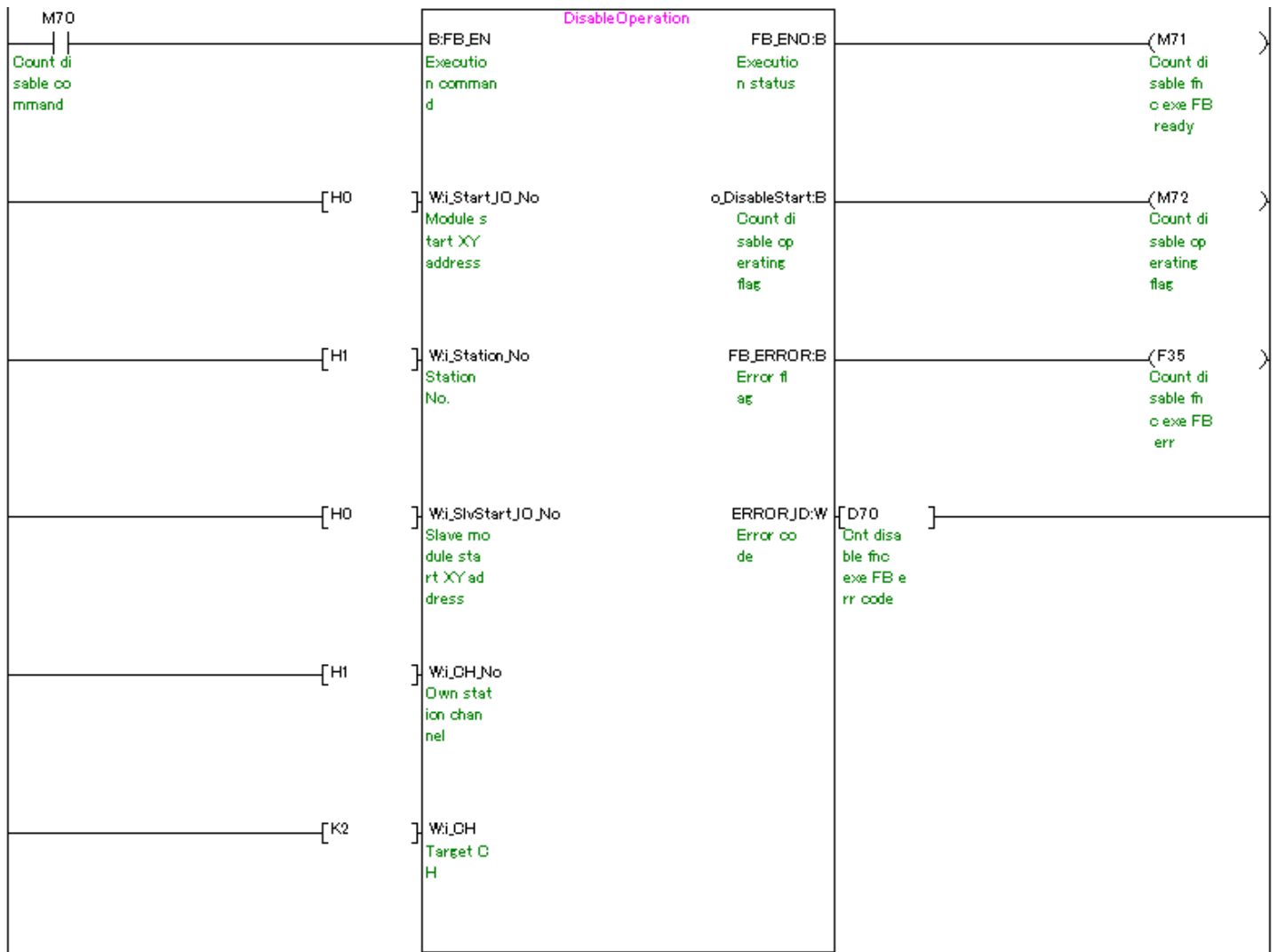
By turning ON M60, the present value of channel 1 is replaced with the preset value.



M+LD62-IEF_CountDisableOperation (Count disable function operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.

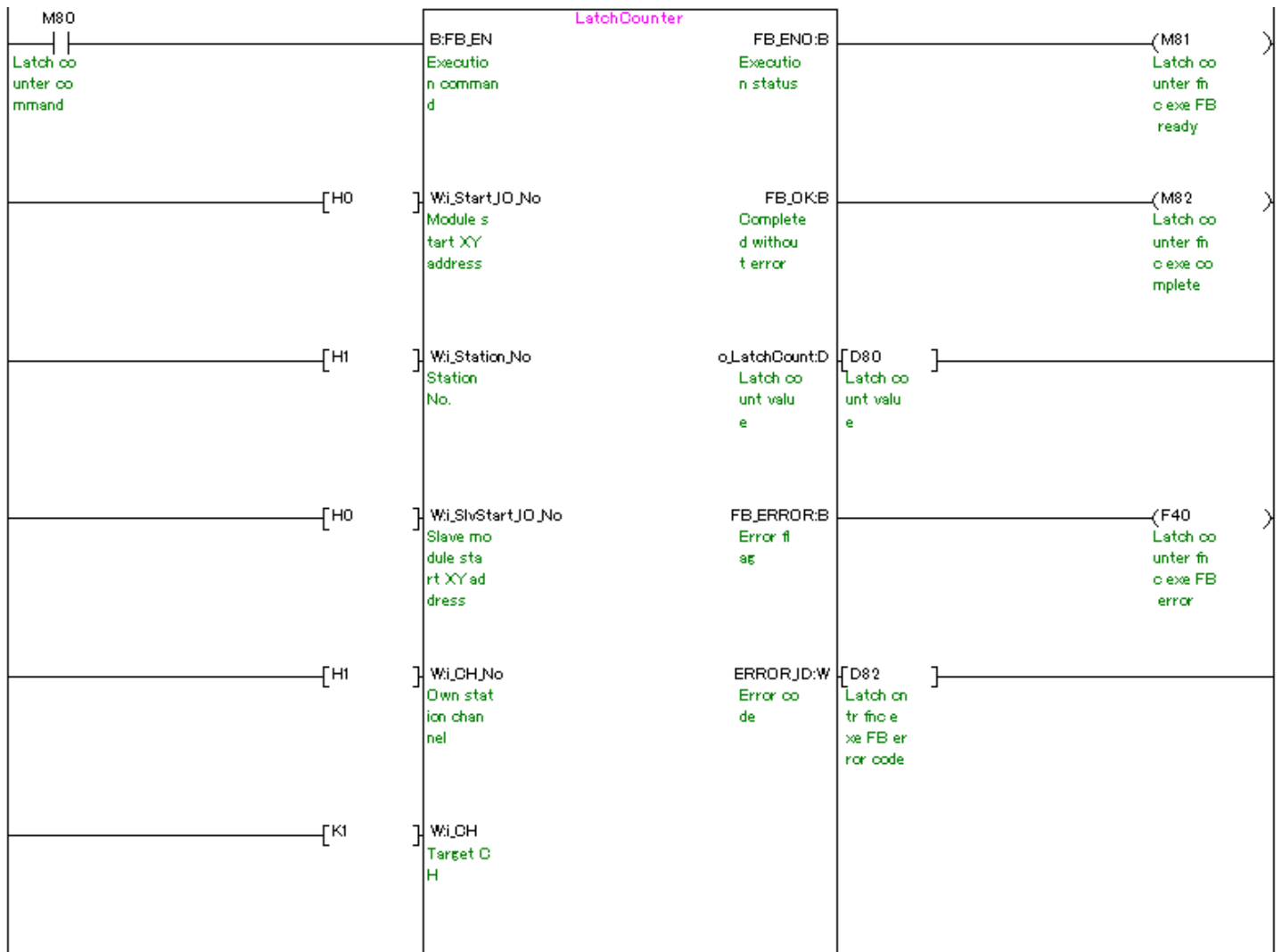
By turning ON M70, the count disable function is executed for channel 1.



M+LD62-IEF_LatchCounterOperation (Latch counter function operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.

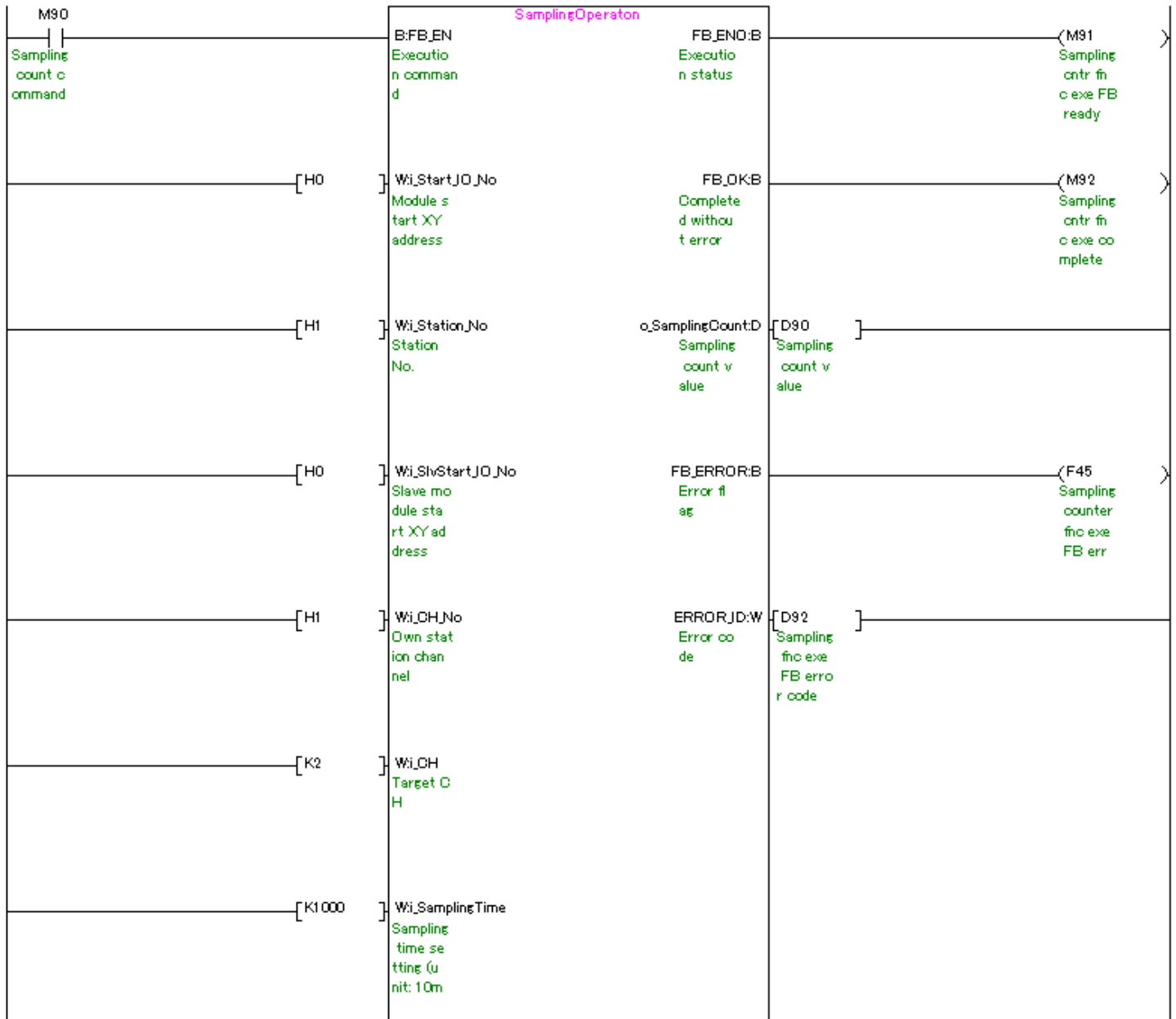
By turning ON M80, the latch counter function is executed for channel 1.



M+LD62-IEF_SamplingOperation (Sampling counter function operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.
i_SamplingTime	K1000	Set the sampling time to 1,000.

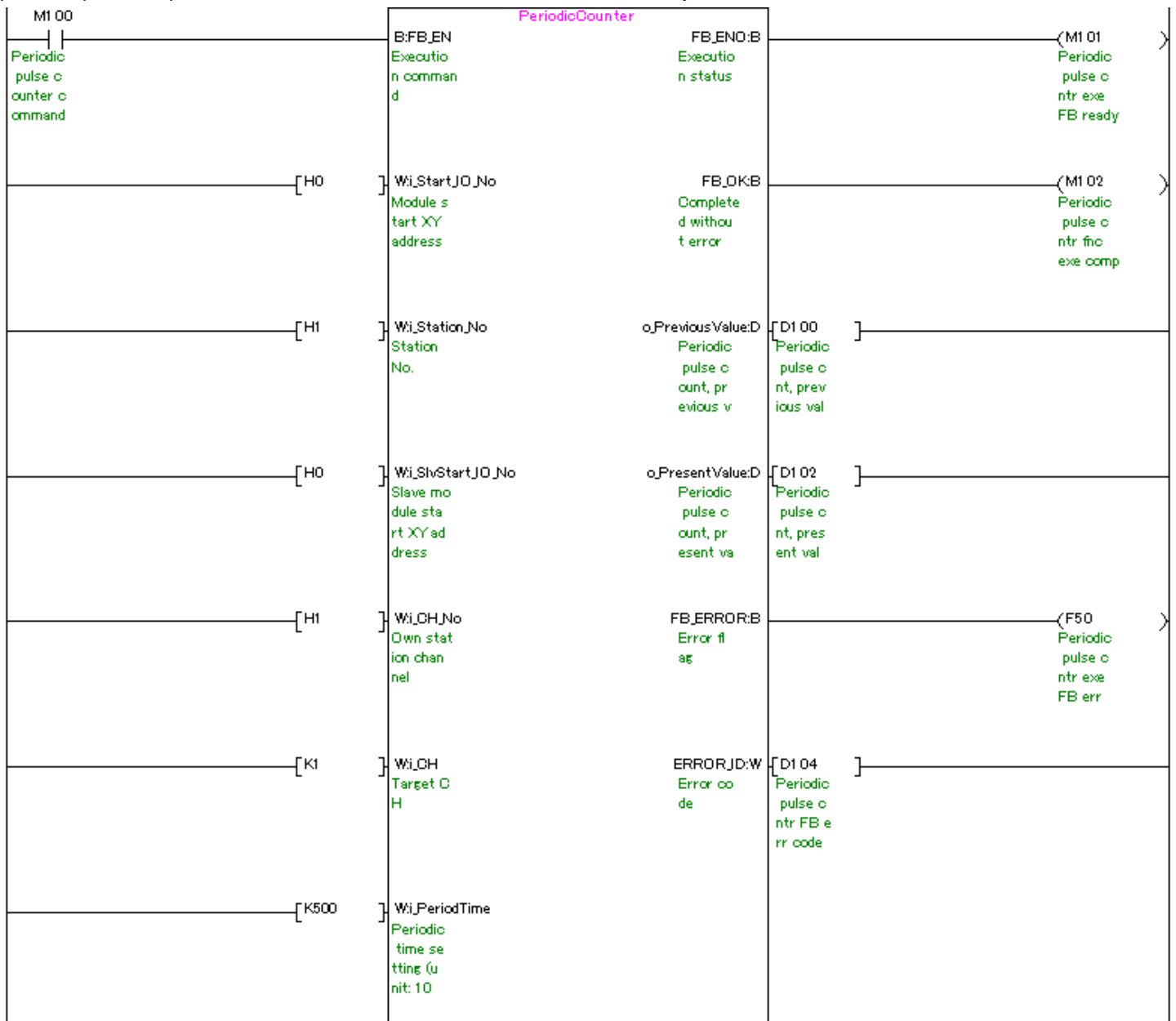
By turning ON M90, the sampling count of channel 1 starts with the set sampling time and the sampling count value is read from the buffer memory.



M+LD62-IEF_PeriodicPulseCounter (Periodic pulse counter function operation)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.
i_PeriodTime	K500	Set the periodic time setting to 500.

By turning ON M100, the periodic pulse count of channel 1 starts with the set periodic time and the previous and present periodic pulse count values are read from the buffer memory.



M+LD62-IEF_OverflowDetection (Overflow detection)

Label name	Setting value	Description
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel to 1H.
i_CH	K1	Set the target channel to channel 1.

By turning ON M110, overflow detection is performed for channel 1.

