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

Applicable module: LD62, LD62D

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# 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

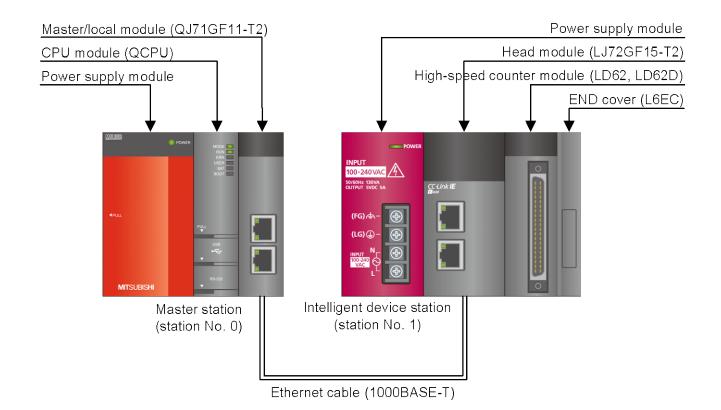
This FB library is for using the LD62/LD62D high-speed counter module through the MELSEC CC-Link IE field.

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.

# 1.2 Function of the FB Library



#### 1.3 System Configuration Example





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

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 nu	umber of the slave connected to the master station.						
	Set "1".							
Station Type	Set the station ty	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".						

				ng	1 mm	Start	End		Renesi	reonico
Points/Start     Start/End		-	/RY Setti		-	/RWr Se		parameter.	Defrect	n Device



#### (3) Refresh Parameters

Item	Description	Setting value
Transfer SB	Select the link refresh range of SB device.	•"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.	•"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.	•"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.	•"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.

C Start/End							*Set 0000 for the start address the Link Side.			
	7 B.	Link Sid	de	39.1				PLC SI	Je	
	Dev. Name	Points	Start	End		Dev. I	Vame	Points	Start	End -
Transfer SB	SB	512	0000	01FF	#	SB	-	512	0000	01FF
Transfer SW	SW	512	0000	015-	44	SW	-	512	0000	01FF
Transfer 1	RX 💌	16	0000	JOOF	+	М	-	16	1024	1039
Transfer 2	RY 🔻	16	0000	000F	+	М	-	16	2048	2063
Transfer 3	-				-		-			3
Transfer 4	-				+	2	-			3
Transfer 5	-					3	-			3
Transfer 6	-				₩.	3	-			
Transfer 7	-			1	₩.	3	-			
Transfer 8	-				₩.	3	-			



## 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.

Cigss	Label Name	Data Type		Constant	Device	Comment
VAR_GLOBAL	M_F_RX	Bit			M1024Z9	RX refresh device
Z VAR GLOBAL	M_F_RY	Bit		=	M2048Z8	RY refresh device
3			a second			
4	•			-		
5	•					20



## 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.)

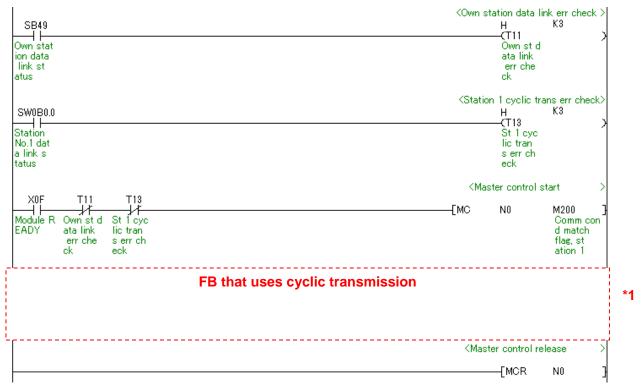
## 1.6.1 Cyclic Transmission Program

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)

SB47	<own stat<="" th=""><th>ion baton pa H —(T10</th><th>ss err check K4</th><th>&gt; \</th></own>	ion baton pa H —(T10	ss err check K4	> \
Own stat ion bato n pass s tatus		Own st b aton pas s err ch eck		
SW0A0.0 Station No.1 bat on pass status	<station< th=""><th>1 baton pass H —(T12 St 1 bat on pass err chec k</th><th>s error check K4</th><th>&gt; &gt;</th></station<>	1 baton pass H —(T12 St 1 bat on pass err chec k	s error check K4	> >
X0F T10 T12 Module R Own st b St 1 bat EADY aton pas on pass serrch errchec eck k	<mas —[MC</mas 	ter control st N0	tart Comm con d match flag, st ation 1	>
FB that uses transient transmission				*1
	<mast< td=""><td>er control rel —[MCR</td><td>ease NO</td><td>3 &gt;</td></mast<>	er control rel —[MCR	ease NO	3 >

\*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	0	0
M+LD62-IEF_CountEnable	0	-
M+LD62-IEF_PresentValStorage	0	0
M+LD62-IEF_AllPresentValStorage	0	0
M+LD62-IEF_SetCoincidenceOut	0	0
M+LD62-IEF_CoincidenceOutEnable	0	-
M+LD62-IEF_PresetOperation	0	0
M+LD62-IEF_CountDisableOperation	0	0
M+LD62-IEF_LatchCounterOperation	0	0
M+LD62-IEF_SamplingOperation	0	0
M+LD62-IEF_PeriodicPulseCounter	0	0
M+LD62-IEF_OverflowDetection	0	0

-: 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.



#### Details of the FB Library 2.

#### 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		M+LD62-IEF_SetRingCounter				
	Execution com	mand ——	B : FB_EN	FB_ENO : B		
	Module start XY add	dress ——	W : i_Start_IO_No	FB_OK : B	Completed without error	
	Station	n No	W : i_Station_No	FB_ERROR : B	Error flag	
	Slave module start XY add	dress ——	W : i_SlvStart_IO_No	ERROR_ID : W	Error code	
	Own station cha	annel ——	W∶i_CH_N₀			
	Targe	t CH	W : i_CH			
	Ring counter upper	· limit ——	D : i_RingUpperLimit			
	Ring counter lower	limit ——	D : i_RingLowerLimit			
				]		
Applicable hardware	High-speed	LD62, LD62D				
and software	counter module					
	CC-Link IE field	CC-Li	nk IE field network ma	ster/local module		
	network module	CC-Li	nk IE field network hea	ad module		
	CPU module	_				
			Series	Мс	odel	
		MELSEC-Q Series *1 Universal model QCPU *2				
		MELSEC-L Series LCPU *3				
		*1 Not	applicable to QCPU	(A mode)		
		*2 The	e first five digits of the	serial number are	e "12012" or later	
		*3 The	e first five digits of the	serial number are	e "13012" or later.	



Item	Description					
	Engineering	GX Works2 *1				
	software	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 applica	able to the modules used, refer to			
		"Relevant manuals".				
Programming	Ladder					
language						
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	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	t channel setting value is out of ra	inge, the FB_ERROR output turns ON,			
	processing is in	terrupted, and the error code is s	stored in ERROR_ID (Error code).			
	4) Refer to the error	Refer to the error code explanation section for details.				
Compiling method	Macro type					



Item	Description					
Restrictions and	1) The FB does not include error recovery processing. Program the error recovery					
precautions	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					
	<ul><li>configured to match systems and devices connected to the LD62/LD62D.</li><li>10) Set the refresh parameters of the network parameter setting according to (3) in Section</li></ul>					
	1.4.					
	<ol> <li>1.4.</li> <li>Set the global label setting according to Section 1.5.</li> </ol>					
	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	[When operation completes without error] [When an error occurs]					
	(When using CH1) (When using CH1)					
	FB_EN (Execution FB_EN (Execution command)					
	command) FB_ENO (Execution					
	status)					
	Ring counter value write processing         No         Ring counter value write processing         No processing					
	Count enable command (RYn4) Count enable command (RYn4) (RYn4)					
	FB_OK (Completed without error)					
	FB_ERROR (Error flag)					
	ERROR ID (Error code) 0 ERROR ID (Error code) 0 Error code 0					



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



# Labels

# Input labels

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



#### Output labels

Name (Comment)	Label name	Data	Initial	Description
		type	value	
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON.
		DIL	UFF	OFF: Execution command is OFF.
Completed without	FB_OK			When ON, it indicates that the setting of ring
error		Bit	OFF	counter upper and lower values is
				completed.
Error flag	FB_ERROR	Dit	OFF	When ON, it indicates that an error has
		Bit	OFF	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	M+LD62-IEF_CountEnable					
	Execution command	dB : FB_EN	FB_ENO : B Execution status			
	Module start XY address	s	o_CountStart : B Count operating flag			
	Station No		FB_ERROR : B Error flag			
	Slave module start XY address		ERROR_ID : W Error code			
	Target CH	H				
Applicable hardware	High-speed counter	LD62, LD62D				
and software	module					
	CC-Link IE field	CC-Link IE field network master/local module				
	network module	CC-Link IE field network hea	ad module			
	CPU module					
		Series	Model			
		MELSEC-Q Series *1	Universal model QCPU *2			
		MELSEC-L Series	LCPU *3			
		*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.			
	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) versi				
		Korean version	Version1.49B or later			
		*1 For software versions applicable to the modules used, refer to				
		"Relevant manuals".				



Item	Description			
Programming	Ladder			
language				
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	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	1) The FB does not include error recovery processing. Program the error recovery			
precautions	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	[When operation completes without error] (When using CH1)	[When an error occurs] (When using CH1)			
	FB_EN (Execution command)         FB_ENO (Execution status)         Count enable command (RYn4)         o_CountStart (Count operation flag)         FB_ERROR (Error flag)         ERROR ID (Error code)         0	FB_EN (Execution command) FB_ENO (Execution status) Count enable command (RYn4) o_CountStart (Count operation flag) FB_ERROR (Error flag) ERROR JD (Error code) 0 Error code 0			
Relevant manuals	<ul> <li>MELSEC-L High-Speed Counter Module User's Manual</li> <li>MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Head Module User's Manual</li> <li>QCPU User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>GX Works2 Version1 Operating Manual (Simple Project, Function Block)</li> </ul>				

# Error Codes •Error code list

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

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



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

### Output labels

Name (Comment)	Label name	Data	Initial	Description
		type	value	
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	M+LD62-IEF_PresentValStorage				
	Execution command		B : FB_EN	FB_ENO : B	Execution status
	Module start XY addres	ss ——	W : i_Start_IO_No	FB_OK : B	Completed without error
	Station N	o. <u> </u>	W : i_Station_No o_Pro	esentValue : D	Present value
	Slave module start XY addres	ss ——	W : i_SlvStart_IO_No	FB_ERROR : B	Error flag
	Own station chann	el ——	W∶i_CH_N₀	ERROR_ID : W	Error code
	Target C	н —	W : i_CH		
		-			
Applicable hardware	High-speed counter	LD6	2, LD62D		
and software	module				
	CC-Link IE field	CC-I	Link IE field network ma	ster/local m	odule
	network module	CC-I	Link IE field network hea	ad module	
	CPU module				
			Series		Model
		MELSEC-Q Series *1 Univ		Universal I	model QCPU *2
		MELSEC-L Series LCF		LCPU *3	
		*1 N	ot applicable to QCPU (	(A mode)	
		*2 T	he first five digits of the	serial numb	er are "12012" or later
		*3 TI	he first five digits of the	serial numb	er are "13012" or later.
	Engineering software	GX ۱	Works2 *1		
			Language		Software version
		Jap	anese version	Versio	on1.86Q or later
		Eng	glish version	Versic	on1.24A or later
		Chi	Chinese (Simplified) version		on1.49B or later
		Chinese (Traditional) version V		on Versio	on1.49B or later
		Korean version Version1.49B or later			on1.49B or later
		*1 For software versions applicable to the modules used, refer to			
		"R	Relevant manuals".		



Item	Description
Programming	Ladder
language	
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	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	1) The FB does not include error recovery processing. Program the error recovery
precautions	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	[When operation completes without error] [When an error occurs]				
	FB_EN (Execution command)       FB_EN0 (Execution command)         FB_EN0 (Execution status)       FB_EN0 (Execution status)         o.PresentValue (Present value)       Refreshing stop         FB_OK (Completed without error)       FB_ERROR (Error flag)         FB_ERROR (Error flag)       0         ERROR ID (Error code)       0				
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				
	<ul> <li>MELSEC-L CC-Link IE Field Network Head Module User's Manual</li> </ul>				
	•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.	Please try again after confirming the setting.	
	The target channel is not 1 or 2.		
D000 to DAF9	A CC-Link IE field network error occurred	Refer to Error Code List in the MELSEC-Q/L	
(Hexadecimal)	in the system.	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	Initial	Description
		type	value	
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON.
		Dit	OFF	OFF: Execution command is OFF.
Completed without	FB_OK	Bit	OFF	When ON, it indicates that the present value
error		Dit	ON	is being read.
Present value	o_PresentValue	Double	0	Store the present value.
		Word	0	
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has
		Bit		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	Monitors the present value for all channels.				
overview					
Symbol		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_Presen	tValue2 : D —— CH2 Present value		
	Own station channel —	-W∶i_CH_No FB_	ERROR : B —— Error flag		
		ER	ROR_ID : W Error code		
Applicable	High-speed counter	LD62, LD62D			
hardware and	module				
software	CC-Link IE field network	CC-Link IE field network ma	ster/local module		
	module	CC-Link IE field network hea	ad module		
	CPU module				
		Series	Model		
		MELSEC-Q Series *1	Universal model QCPU *2		
		MELSEC-L Series	LCPU *3		
		*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.		
	Engineering software	GX Works2 *1			
		Language	Software version		
		Japanese version	Version1.86Q or later		
		English version	Version1.24A or later		
		Chinese (Simplified) versio			
		Chinese (Traditional) version			
		Korean version Version1.49B or later			
		*1 For software versions app "Relevant manuals".	plicable to the modules used, refer to		



Item	Description		
Programming language	Ladder		
Number of	356 steps (for MELSEC-Q series universal model CPU)		
steps	*The number of steps of the FB in a program depends on the CPU model that is used and input		
	and output definition.		
Function	1) When FB_EN (Execution command) is turned ON, the present value is read from the buffer		
description	memory.		
Compiling method	Macro type		
Restrictions and precautions	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.		
	<ol> <li>Every input must be provided with a value for proper FB operation.</li> </ol>		
	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.		
	<ul> <li>8) Set the refresh parameters of the network parameter setting according to (3) in Section 1.4.</li> <li>9) Set the global label setting according to Section 1.5.</li> </ul>		
	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	[When operation completes without error]	[When an error occurs]			
	FB_EN (Execution command)         FB_ENO (Execution status)         o_PresentValue1 (CH1 Present value)         o_PresentValue2 (CH2 Present value)         FB_OK (Completed without error)         FB_ERROR (Error flag)         ERROR_ID (Error code)	FB_EN (Execution command)         FB_ENO (Execution status)         o_PresentValue1         CH1 Present value)         o_PresentValue2         (CH2 Present value)         FB_OK (Completed without error)         FB_ERROR (Error flag)         ERROR_ID (Error code)			
Relevant	•MELSEC-L High-Speed Counter Module User's Manual				
manuals	<ul> <li>MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual</li> </ul>				
	•MELSEC-L CC-Link IE Field Network Master/Lo	ocal Module User's Manual			
	•MELSEC-L CC-Link IE Field Network Head Module User's Manual				
	<ul> <li>QCPU User's Manual (Hardware Design, Maintenance and Inspection)</li> </ul>				
	•MELSEC-L CPU Module User' Manual (Hardware Design, Maintenance and Inspection)				
	•GX Works2 Version1 Operating Manual (Comm	non)			
	•GX Works2 Version1 Operating Manual (Simple	e Project, Function Block)			

# Error Codes

# •Error code list

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

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



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

### Output labels

•				
Name (Comment)	Label name	Data	Initial	Description
		type	value	
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON.
		Dit	011	OFF: Execution command is OFF.
Completed without	FB_OK	Bit	OFF	When ON, it indicates that the present value
error		DIL	UFF	is being read.
CH1 Present value	o_PresentValue1	Double	0	Store the present value of CH1.
		Word	0	
CH2 Present value	o_PresentValue2	Double	0	Store the present value of CH2.
		Word	0	
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.



#### M+LD62-IEF\_SetCoincidenceOut (Coincidence output function setting) 2.5

### **FB** Name

M+LD62-IEF\_SetCoincidenceOut

### **Function Overview**

Item	Description				
Function	Sets a coincidence output point and resets counter value coincidence for a specified channel.				
overview					
Symbol		M+LD62-IEF_SetCoincidenceOut			
	Execution comma	and ——B:FB_EN	FB_ENO : B	Execution status	
	Module start XY addr	ess —— 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 addr	ess —— W : i_SlvStart_IO_No	ERROR_ID : W	Error code	
	Own station chan	nel — W : i_CH_No			
	Target	CH —— W : i_CH			
	Coincidence output No.1 ena	ble — B : i_OutEnable_No1			
	Coincidence output No.2 ena	Coincidence output No.2 enable — B : i_OutEnable_No2			
	Coincidence output No.1 point sett	ting — D : i_SetPoint_No1			
	Coincidence output No.2 point sett	ting — D:i_SetPoint_No2			
Applicable	High-speed counter	LD62, LD62D			
hardware and	module				
software	CC-Link IE field network	CC-Link IE field network n	naster/local r	nodule	
	module	CC-Link IE field network h	nead module		
	CPU module				
		Series		Model	
		MELSEC-Q Series *1	Universal	I model QCPU *2	
		MELSEC-L Series	LCPU *3		
		*1 Not applicable to QCPL	J (A mode)		
		*2 The first five digits of th	e serial num	ber are "12012" or later	
		*3 The first five digits of th	e serial num	ber are "13012" or later.	



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 applica	ble to the modules used, refer to		
		"Relevant manuals".			
Programming	Ladder				
language					
Number of steps	676 steps (for MELSEC-Q	series universal model CPU)			
	*The number of steps of th	e FB in a program depends on th	e CPU model that is used and input		
	and output definition.				
Function	1) After turning ON i_Out	1) After turning ON i_OutEnable_No1 (Coincidence output No.1 enable), turn ON FB_EN			
description	(Execution command)	to enable i_SetPoint_No1 (Coinc	idence output No.1 point setting).		
	2) When i_OutEnable_N	o1 (Coincidence output No.1 enab	ole) 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 com	signal No. 1 reset command (RYn0) is not turned ON either. (The same operation is applied			
	to No.2)	No.2)			
	, _		o.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				
		•	dence signal No. 1 reset command		
	. ,		(Point No.1) (RXn2) is turned OFF,		
	-	. 1 reset command (RYn0) is turn	ed OFF. (The same operation is		
	applied to No.2)	anaa (paint No. 1) (PYp2) and avt	ornal coincidence output are turned		
			ernal coincidence output are turned ) (RXn2) and external coincidence		
	-	his FB while the present value is t	, , ,		
		not only, triggered by the FB_EN s			
	, .	nel setting value is out of range, the	•		
		ed, and the error code is stored ir	•		
		e explanation section for details.			
Compiling	Macro type				
method					



Item	Description
Restrictions and	1) The FB does not include error recovery processing. Program the error recovery processing
precautions	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	Pulsed execution (multiple scan execution type)
type	
Application	Refer to "Appendix 2 - FB Library Application Examples".
example	



Item	Description	
Timing chart	[When operation completes without error]	[When an error occurs]
	(When using CH1)	(When using CH1)
	FB_EN (Execution command)         FB_ENO (Execution status)         i OutEnable_No1 (Coincidence output No. 1 enable)         i SetPoint_No1 (Coincidence output No. 1 point setting)         Coincidence output No. 1 point setting         Coincidence output No. 1 point setting         Coincidence signal reset command (RYn0)         FB_EROR (Error flag)         ERROR_ID (Error code)         0	FB_EN (Execution command)         FB_ENO (Execution status)         i_OutEnable_No1 (Coincidence output No. 1 enable)         i_SetPoint_No1 (Coincidence output No. 1 point setting)         Coincidence output No. 1 point setting (UnG4 to 5)         Counter value coincidence (RXn2)         Coincidence signal reset command (RYn0)         FB_ERCR (Error flag)         ERROR_ID (Error code)
Relevant	•MELSEC-L High-Speed Counter Module User's	Manual
manuals	•MELSEC-Q CC-Link IE Field Network Master/L	ocal Module User's Manual
	•MELSEC-L CC-Link IE Field Network Master/Lo	ocal Module User's Manual
	•MELSEC-L CC-Link IE Field Network Head Mo	dule User's Manual
	•QCPU User's Manual (Hardware Design, Maint	enance and Inspection)
	•MELSEC-L CPU Module User's Manual (Hardw	
	•GX Works2 Version1 Operating Manual (Comm	ion)
	•GX Works2 Version1 Operating Manual (Simple	e Project, Function Block)

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



## Input labels

Name (Comment)	Label name	Data	Setting range	Description
		type		
Execution command	FB_EN		ON,OFF	ON: The FB is activated.
		Bit		OFF: The FB is not
				activated.
Module start XY	i_Start_IO_No		Depends on the I/O point	Specify the starting XY
address			range of the CPU.	address (in hexadecimal)
		Word	For details, refer to the	where the LD62/LD62D
		vvoru	CPU user's manual.	module is mounted. (For
				example, enter H10 for
				X10.)
Station No.	i_Station_No	Word	1~120	Specify the target station
		vvora		number.
Slave module start	i_SlvStart_IO_No		Depends on the I/O point	Specify the starting XY
XY address			range of the head module.	address (in hexadecimal)
		Word	For details, refer to the	where the LD62/LD62D
		vvoru	head module user's	module is mounted. (For
			manual.	example, enter H10 for
				X10.)
Own station channel	i_CH_No	Word	1~32	Specify the channel for
		vvoru		own station.
Target CH	i_CH	\\/ord	1~2	Specify the channel
		Word		number.
Coincidence output	i_OutEnable_No1		ON,OFF	ON: Use coincidence
No.1 enable				output No.1.
				OFF: Do not use
		D:+		coincidence output No.1.
		Bit		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	Initial	Description
		type	value	
Execution status	FB_ENO	Dit	OFF	ON: Execution command is ON.
		Bit	OFF	OFF: Execution command is OFF.
Completed without	FB_OK	Dit	OFF	When ON, it indicates that counter value
error		Bit	OFF	coincidence has been reset.
Error flag	FB_ERROR	Bit	OFF	When ON, it indicates that an error has
		DIL	UFF	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.



## 2.6 M+LD62-IEF\_CoincidenceOutEnable (Coincidence output enable setting)

#### FB Name

M+LD62-IEF\_CoincidenceOutEnable

#### **Function Overview**

Item	Description				
Function	Enables external coincidence output for a specified channel or all channels.				
overview					
Symbol	Γ	M+LD62-IEF_CoincidenceOutEnable			
	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		
	Target CH ——W	: i_CH			
Applicable			1		
Applicable hardware and	High-speed counter module	LD62, LD62D			
software	CC-Link IE field network	CC-Link IE field network mas	stor/local modula		
Soltware					
	module CPU module	CC-Link IE field network hea			
		Carias	Madal		
		Series	Model		
		MELSEC-Q Series *1	Universal model QCPU *2		
		MELSEC-L Series LCPU *3			
		*1 Not applicable to QCPU (			
		_	serial number are "12012" or later		
			serial number are "13012" or later.		
	Engineering software	GX Works2 *1			
		Language	Software version		
		Japanese version	Version1.86Q or later		
		English version	Version1.24A or later		
		Chinese (Simplified) version			
		Chinese (Traditional) version			
		Korean version Version1.49B or later			
			licable to the modules used, refer to		
		"Relevant manuals".			



Item	Description
Programming	Ladder
language	
Number of	344 steps (for MELSEC-Q series universal model CPU)
steps	*The number of steps of the FB in a program depends on the CPU model that is used and input
	and output definition.
Function	1) By turning ON/OFF FB_EN (Execution command), the coincidence output is
description	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	Macro type
method	
Restrictions	1) The FB does not include error recovery processing. Program the error recovery processing
and precautions	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.
	<ol> <li>This FB uses index registers Z9 and Z8. Please do not use these index registers in an interrupt program.</li> </ol>
	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	Pulsed execution (1 scan execution type)
type	
	1



Item	Description				
Application	Refer to "Appendix 2 - FB Library Application Examples".				
example					
Timing chart	[When operation completes without error]	[When an error occurs]			
	(When using CH1)	(When using CH1)			
	FB_EN (Execution command)         FB_ENO (Execution status)         Coincidence signal enable command (RYn2)         FB_OK (Completed without error)         FB_ERROR (Error flag)         ERROR_ID (Error code)         0	FB_EN (Execution command)         FB_ENO (Execution status)         Coincidence signal enable command (RYn2)         FB_OK (Completed without error)         FB_ERROR (Error flag)         ERROR JD (Error code)			
Relevant	MELSEC-L High-Speed Counter Module User's Manual				
manuals	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 Mo	dule User's Manual			
	<ul> <li>QCPU User's Manual (Hardware Design, Maintenance and Inspection)</li> </ul>				
	•MELSEC-L CPU Module User's Manual (Hardw	vare Design, Maintenance and Inspection)			
	•GX Works2 Version1 Operating Manual (Comm	non)			
	•GX Works2 Version1 Operating Manual (Simple	e Project, Function Block)			

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



#### Input labels

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

#### Output labels

Name (Comment)	Label name	Data	Initial	Description
		type	value	
Execution status	FB_ENO	Dit	OFF	ON: Execution command is ON.
		Bit	UFF	OFF: Execution command is OFF.
Completed without	FB_OK	Bit	OFF	When ON, it indicates that coincidence
error		DIL	UFF	signal enable command is ON.
Error flag	FB_ERROR	Bit OFF		When ON, it indicates that an error has
		ы	UFF	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.



## 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		M+LD62-IEF_PresetOperation	
	Execution command ——	B : FB_EN FB_E	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_ERF	ROR : B Error flag
	Slave module start XY address ——	W : i_SlvStart_IO_No ERROF	R_ID:W Error code
	Own station channel ——	W∶i_CH_N₀	
	Target CH ——	W : i_CH	
	Preset value ——	D : i_PresetValue	
Applicable	High-speed counter	LD62, LD62D	
hardware and	module		
software	CC-Link IE field network	CC-Link IE field network mast	ter/local module
	module	CC-Link IE field network head module	
	CPU module		
		Series	Model
		MELSEC-Q Series *1	Universal model QCPU *2
		MELSEC-L Series	LCPU *3
		*1 Not applicable to QCPU (A	mode)
		*2 The first five digits of the se	erial number are "12012" or later
		*3 The first five digits of the se	erial number are "13012" or later.
	Engineering software	GX Works2 *1	
		Language	Software version
		Japanese version	Version1.86Q or later
		English version	Version1.24A or later
		Chinese (Simplified) version	
		Chinese (Traditional) version	
		Korean version	Version1.49B or later
		*1 For software versions appli "Relevant manuals".	icable to the modules used, refer to
			icable to the modules used, refer to



Item	Description	
Programming	Ladder	
language		
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 inpu	
	and output definition.	
Function	1) By turning ON FB_EN (Execution command), the present value is replaced with	
description	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	1) The FB does not include error recovery processing. Program the error recovery processing	
precautions	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	Refer to "Appendix 2 - FB Library Application Examples".	
example		



Item	Description		
Timing chart	[When operation completes without error]	[When an error occurs]	
	(When using CH1)	(When using CH1)	
	FB_EN (Execution command)         FB_ENO (Execution status)         i_PresetValue (Preset value)         Preset value (Un\G0 to 1)         Preset command (RYn1)         Present value (Un\G2 to 3)         FB_OK (Completed without error)	FB_EN (Execution command)         FB_ENO (Execution status)         i. PresetValue (Preset value)         Preset value (Un\Go to 1)         Preset command (RYn1)         Present value (Un\Go to 3)         FB_OK (Completed without error)	
	FB_ERROR (Error flag)       ERROR_ID (Error code)       0	FB_ERROR (Error flag)       ERROR_ID (Error code)       0       Error code	
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 M	odule User's Manual	
	•QCPU User's Manual (Hardware Design, Mair	ntenance and Inspection)	
	•MELSEC-L CPU Module User's Manual (Hard	lware Design, Maintenance and Inspection)	
	•GX Works2 Version1 Operating Manual (Com	mon)	
	•GX Works2 Version1 Operating Manual (Simp	le Project, Function Block)	

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



## Input labels

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



#### Output labels

Name (Comment)	Label name	Data	Initial	Description
		type	value	
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON.
		ы	OFF	OFF: Execution command is OFF.
Completed without	FB_OK	Bit	OFF	When ON, it indicates that preset command
error		DIL	UFF	is ON.
Error flag	FB_ERROR		When ON, it indicates that an error has	
		Bit OFF		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.



#### 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		M+LD62-IEF_CountDisableO	peration
	Execution command -	B : FB_EN	FB_ENO : B —— Execution status
	Module start XY address -	W:i_Start_IO_No	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:WError code
	Own station channel -	───W:i_CH_No	
	Target CH -	——W : i_CH	
Applicable hardware	High-speed counter	LD62, LD62D	·
and software	module		
	CC-Link IE field	CC-Link IE field network ma	ster/local module
	network module	CC-Link IE field network hea	ad module
	CPU module		
		Series	Model
		MELSEC-Q Series *1	Universal model QCPU *2
		MELSEC-L Series	LCPU *3
		*1 Not applicable to QCPU (	(A mode)
		*2 The first five digits of the	serial number are "12012" or later
		-	serial number are "13012" or later.
	Engineering software	GX Works2 *1	
		Language	Software version
		Japanese version	Version1.86Q or later
		English version	Version1.24A or later
		Chinese (Simplified) versio	
		Chinese (Traditional) version	
		Korean version	Version1.49B or later
			olicable to the modules used, refer to
		"Relevant manuals".	



Item	Description		
Programming	Ladder		
language			
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	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	1) The FB does not include error recovery processing. Program the error recovery		
precautions	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.		
	<ul> <li>11) Set the global label setting according to Section 1.5.</li> <li>12) Only one master/least medule can be controlled by the CC Link IE Field system EP. To</li> </ul>		
	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 Medules"		
EP operation type	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	[When operation completes without error]	[When an error occurs]	
	(When using CH1)	(When using CH1)	
	FB_EN (Execution command)         FB_ENO (Execution status)         Counter function selection (Un(S9)         Counter function selection start command (RYn6)         o_DisableStart (Count disable operating flag)         FB_ERROR (Error flag)         ERROR_ID (Error code)	FB_EN (Execution command)         FB_ENO (Execution status)         Counter function selection (Un/G9)         Counter function selection stat command (RYn6)         o_DisableStart (Count disable operating flag)         FB_ERROR (Error flag)         ERROR_ID (Error code)	
Relevant manuals	•MELSEC-L High-Speed Counter Module Us •MELSEC-Q CC-Link IE Field Network Mast •MELSEC-L CC-Link IE Field Network Mast •MELSEC-L CC-Link IE Field Network Head •QCPU User's Manual (Hardware Design, M •MELSEC-L CPU Module User's Manual (Ha •GX Works2 Version1 Operating Manual (Co	er/Local Module User's Manual er/Local Module User's Manual Module User's Manual laintenance and Inspection) ardware Design, Maintenance and Inspection) ommon)	

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



#### Input labels

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

#### Output labels

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



## 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		M+LD62-IEF_LatchCounterOperation		
	Execution command —	B : FB_EN FB_EN	O : B —— Execution status	
	Module start XY address —		DK : B ——— Completed without error	
	Station No. —	W : i_Station_No o_LatchCou	nt : D ——— Latch count value	
	Slave module start XY address —		DR : B ——— Error flag	
	Own station channel —	— W∶i_CH_No ERROR_I	D : W —— Error code	
	Target CH —	— W : i_СН		
Applicable hardware	High speed counter	LD62, LD62D		
and software	High-speed counter module			
	CC-Link IE field	CC-Link IE field network mas	ster/local module	
	network module	CC-Link IE field network hea		
	CPU module			
		Series	Model	
		MELSEC-Q Series *1	Universal model QCPU *2	
		MELSEC-L Series	LCPU *3	
		*1 Not applicable to QCPU (A mode)		
		*2 The first five digits of the s	serial number are "12012" or later	
		*3 The first five digits of the s	serial number are "13012" or later.	
	Engineering software	GX Works2 *1		
		Language	Software version	
		Japanese version	Version1.86Q or later	
		English version	Version1.24A or later	
		Chinese (Simplified) versio		
		Chinese (Traditional) versio		
		Korean version	Version1.49B or later	
		*1 For software versions applicable to the modules used, refer to		
		"Relevant manuals".		



Item	Description
Programming	Ladder
language	
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	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	1) The FB does not include error recovery processing. Program the error recovery
precautions	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	[When operation completes without error]	[When an error occurs]		
	(When using CH1) FB_EN (Execution command) FB_ENO (Execution status) Counter function selection (Un\S9) Counter function selection stat command (RYn6) o_LatchCount (Latch count value)	(When using CH1)		
	FB_OK (Completed without error)       FB_ERROR (Error flag)       ERROR_ID (Error code)	FB_OK (Completed without error) FB_ERROR (Error flag) ERROR_ID (Error code) 0 Error code 0		
Relevant manuals	<ul> <li>MELSEC-L High-Speed Counter Module User's Manual</li> <li>MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Head Module User's Manual</li> <li>QCPU User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>GX Works2 Version1 Operating Manual (Common)</li> </ul>			
	•GX Works2 Version1 Operating Manual (Sir	mple Project, Function Block)		

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



## 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	Initial	Description
		type	value	
Execution status	FB_ENO	Bit	OFF	ON: Execution command is ON.
		DIL	OFF	OFF: Execution command is OFF.
Completed without	FB_OK	Dit	OFF	When ON, it indicates that the execution
error				command for latch counter is ON.
Latch count value	o_LatchCount	Double	0	Store the latch count value.
		Word	0	
Error flag	FB_ERROR	Bit OFF		When ON, it indicates that an error has
		Bit		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.



## 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	M+LD62-IEF_SamplingOperation		ation	
	Execution comman	nd	B_ENO : B Execution status	
	Module start XY addres	ss ———W : i_Start_IO_No	FB_OK : B Completed without error	
	Station N	o. ——W : i_Station_No        o_Sampling	gCount : D Sampling count value	
	Slave module start XY addres	ss	ERROR : B Error flag	
	Own station chann	el	ROR_ID : W Error code	
	Target C	н ———— W : i_CH		
	Sampling time setting (unit: 10ms	s) ——W : i_SamplingTime		
Applicable hardware	High-speed counter	LD62, LD62D		
and software	module			
	CC-Link IE field	CC-Link IE field network ma		
	network module	CC-Link IE field network hea	ad module	
	CPU module			
		Series	Model	
		MELSEC-Q Series *1	Universal model QCPU *2	
		MELSEC-L Series	LCPU *3	
		*1 Not applicable to QCPU (	· · · ·	
		_	serial number are "12012" or later	
		_	serial number are "13012" or later.	
	Engineering software	GX Works2 *1		
		Language	Software version	
		Japanese version	Version1.86Q or later	
		English version	Version1.24A or later	
		Chinese (Simplified) versio		
		Chinese (Traditional) version		
		Korean version	Version1.49B or later	
		*1 For software versions applicable to the modules used, refer to		
		"Relevant manuals".		



Item	Description
Programming	Ladder
language	
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	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	1) The FB does not include error recovery processing. Program the error recovery
precautions	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	[When operation completes without error] (When using CH1) FB_EN (Execution command) FB_ENO (Execution status) Counter function selection (Un\G9) i_SamplingTime (SamplingTime (Sampling time setting (unit: 10ms)) Sampling time setting (Un\G10)	[When an error occurs] (When using CH1) FB_EN (Execution command) FB_ENO (Execution status) Counter function selection (Un(3) i_Sampling time setting (unit: 10ms)) Sampling time setting (Un(G10) No setting		
	Counter function selection start command (RYn6) Sampling counter flag (Un\G11) 0_Sampling count value) FB_OK (Completed without error) FB_ERROR (Error flag) ERROR_ID (Error code) 0 0 0 0 0 0 0 0 0 0 0 0 0	Counter function selection start command (RYn6) Sampling counter flag (Un\G11) o_SamplingCount (SamplingCount value) FB_OK (Completed without error) FB_ERROR (Error flag) ERROR_ID (Error code) 0 Error code 0		
Relevant manuals	<ul> <li>MELSEC-L High-Speed Counter Module User's Manual</li> <li>MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Head Module User's Manual</li> <li>QCPU User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>MELSEC-L CPU Module User' Manual (Hardware Design, Maintenance and Inspection)</li> <li>GX Works2 Version1 Operating Manual (Simple Project, Function Block)</li> </ul>			

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



## Input labels

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



#### Output labels

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



## 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		M+LD62-IEF_PeriodicPulseCo	unter		
	Execution comman	d — B : FB_EN FB	ENO : B Execution status		
	Module start XY addres	s — W : i_Start_IO_No F	B_OK : B Completed without error		
	Station No	o. ——W : i_Station_No        o_Previous	Value : D —— Periodic pulse count, previous value		
	Slave module start XY addres	s — W : i_SlvStart_IO_No o_Present	Value : D — Periodic pulse count, present value		
	Own station channe	el — W : i_CH_No FB_El	RROR : B Error flag		
	Target Cl	H — W : i_CH ERRO	DR_ID:W Error code		
	Periodic time setting (unit: 10 ms	) ——— W : i_PeriodTime			
Applicable hardware	High-speed counter	LD62, LD62D			
and software	module				
	CC-Link IE field	CC-Link IE field network ma	ster/local module		
	network module				
	CPU module				
		Series	Model		
		MELSEC-Q Series *1	Universal model QCPU *2		
		MELSEC-L Series	LCPU *3		
		*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.		
	Engineering software	GX Works2 *1			
		Language	Software version		
		Japanese version	Version1.86Q or later		
		English version	Version1.24A or later		
		Chinese (Simplified) versio			
		Chinese (Traditional) version			
		Korean version	Version1.49B or later		
		*1 For software versions applicable to the modules used, refer to			
		"Relevant manuals".			



Item	Description				
Programming	Ladder				
language					
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	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	1) The FB does not include error recovery processing. Program the error recovery				
precautions	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.				
	<ol> <li>When two or more of these FBs are used, precaution must be taken to avoid repetition of the target channel.</li> </ol>				
	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	n Examples".		
Timing chart	[When operation completes without error]	[When an error occurs]		
	(When using CH1)	(When using CH1)		
	FB_EN (Execution command)         FB_ENO (Execution status)         Counter function selection (Un(S9)         1.PeriodTime (Periodic time setting (unit: 10 ms))         Periodic time setting (Un(S10)         Counter function selection status)         0.Periodic time setting (Un(S10)         Counter function selection status)         0.Periodic pulse count, previous value         0.Periodic pulse count, previous value)         0.Periodic pulse count, present Value)         FB_OK (Completed without error)         FB_ERROR (Error flag)         ERROR_ID (Error code)	FB_EN (Execution command)         FB_ENO (Execution status)         Counter function selection (UnG9)         i. PeriodTime (Periodic time setting (unit: 10 ms))         Periodic time setting (UnitG10)         Counter function selection start command (RYn6)         o_PreviousValue (Periodic pulse count, previous value)         o_PresentValue (Periodic pulse count, previous value)         o_PresentValue (Periodic pulse count, present value)         o_PresentValue (Completed without error)         FB_CROR (Error flag)         ERROR_ID (Error code)		
Relevant manuals	<ul> <li>MELSEC-L High-Speed Counter Module User's Manual</li> <li>MELSEC-Q CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Master/Local Module User's Manual</li> <li>MELSEC-L CC-Link IE Field Network Head Module User's Manual</li> <li>QCPU User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>MELSEC-L CPU Module User's Manual (Hardware Design, Maintenance and Inspection)</li> <li>GX Works2 Version1 Operating Manual (Simple Project, Function Block)</li> </ul>			

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



## Input labels

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



#### Output labels

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



## 2.12 M+LD62-IEF\_OverflowDetection (Overflow detection)

#### FB Name

M+LD62-IEF\_OverflowDetection

## **Function Overview**

Item	Description			
Function overview	Detects overflow.			
Symbol		M+LD62-IEF_OverflowDetection		
	Execution command—	B : FB_EN FB_EN	NO : B Execution status	
	Module start XY address –	W : i_Start_IO_No o_Overfl	ow : B —— Overflow occurrence flag	
	Station No. –	W : i_Station_No FB_ERR	OR : B —— Error flag	
	Slave module start XY address –			
	Own station channel –			
	Target CH –	W : i_CH		
Applicable hardware	High-speed counter	LD62, LD62D		
and software				
	CC-Link IE field	CC-Link IE field network master/local module CC-Link IE field network head module		
	network module			
	CPU module			
		Series	Model	
		MELSEC-Q Series *1	Universal model QCPU *2	
		MELSEC-L Series LCPU *3		
		<ul> <li>*1 Not applicable to QCPU (A mode)</li> <li>*2 The first five digits of the serial number are "12012" or later</li> <li>*3 The first five digits of the serial number are "13012" or later.</li> <li>GX Works2 *1</li> </ul>		
	Engineering software			
		Language	Software version	
		Japanese version	Version1.86Q or later	
		English version	Version1.24A or later	
		Chinese (Simplified) versio	n Version1.49B or later	
		Chinese (Traditional) version	on Version1.49B or later	
		Korean version	Version1.49B or later	
	*1 For software versions applicable to the modules used,		blicable to the modules used, refer to	
		"Relevant manuals".		



Item	Description
Programming	Ladder
language	
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	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	1) The FB does not include error recovery processing. Program the error recovery
precautions	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	[When operation completes without error] [When an error occurs]							
	FB_EN (Execution command)         FB_ENO (Execution status)         Overflow detection (Un(38)         o_Overflow (Overflow occurrence flag)         FB_EROR (Error flag)         ERROR_ID (Error code)							
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)							

# 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 A CC-Link IE field network error occurred 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	Setting range	Description				
		type						
Execution command	FB_EN		ON,OFF	ON: The FB is activated.				
		Bit		OFF: The FB is not				
				activated.				

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(Hexadecimal)

in the system.

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

#### Output labels

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

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".						

1)	Enter the network	parameters for the second module.
.,		

	Module 1		Module 2		Module 3	
Network Type	CC IE Field (Master Station)	1	CC IE Field (Master Station)	-	None	•
Start I/O No.	0	0 0		0020		
Network No.		1				
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	•	-	
			02	-		



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 Assignment Method Points/Start	j- The colu	, mn contents for refresh device eopen the window after comple									
C Start/End		The second se									
			RX	/RY Setti	ng	RWW	/RWr Se	etting		Refres	h Device
Number of PL	Station No.	Station Type	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.	•"Link Side Points"	:512
		<ul><li>"Link Side Start"</li></ul>	:0200
		•"PLC Side Dev. Name"	:SB
		•"PLC Side Start"	:0200
Transfer SW	Set the link refresh range of SW device.	<ul> <li>"Link Side Points"</li> </ul>	:512
		<ul><li>"Link Side Start"</li></ul>	:0200
		•"PLC Side Dev. Name"	:SW
		•"PLC Side Start"	:0000
Transfer 1	Set the link refresh range of RX device.	•"Link Side Dev. Name"	:RX
		<ul> <li>"Link Side Points"</li> </ul>	:16
		•"Link Side Start":0000	
		•"PLC Side Dev. Name"	:M
		•"PLC Side Start"	:1056
Transfer 2	Set the link refresh range of RY device.	•"Link Side Dev. Name"	:RY
		<ul> <li>"Link Side Points"</li> </ul>	: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.

Points/Start Start/End											
			Link Si	da					PLC Sid	40	
	Dev. N	ame	Points	Start	End		Dev. I	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	+	М	-	16	1024	1039
Transfer 2	RY	+	16	0000	000F	+	М	-	16	2048	2063
Transfer 3					6	++		1000	22	50 1	
Transfer 4		-				+	3	-	11		
Transfer 5		-				+	3	-	ii.		
Transfer 6		-				+	3	-	ii.		
Transfer 7		-				+	3	-	3		
Transfer 8	-	-				+	3	+	11		



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).

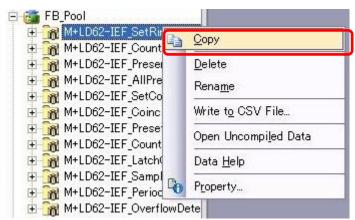
Item	Description
Class	Select "VAR_GLOBAL".
Label Name	Enter "M_F_RY2".
Data type	Select "Bit".
Device	Enter the refresh device set for the refresh parameter with a prefix "Z8".

▼ M_F_RX	in:u			
	Bit		M1024Z9	RX refresh device
▼ M_F_RY	Bit		M2048Z8	RY refresh device
<ul> <li>M_F_RX2</li> </ul>	Bit		M1056Z9	RX refresh device
▼ M_F_RY2	Bit		M2080Z8	RY refresh device
000		A CARLES AND		
		✓ M_F_RX2 Bit	▼ M_F_RX2 Bit	✓ M_F_RX2         Bit         M105628           ✓ M_F_RY2         Bit         M208028

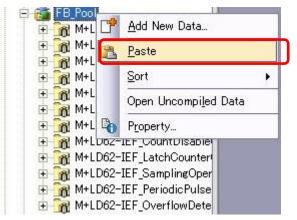


Appendix 1.3 Copying MELSOFT Library to Create an FB for the Second Module

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.

Data Paste	<b>×</b>
Data Type: Function Block	
Copy Source Data Name	
M+LD62-IEF_SetRingCounter	
Data Name After Paste	ОК
M+LD62-IEF_SetRingCounter_02	Cancel



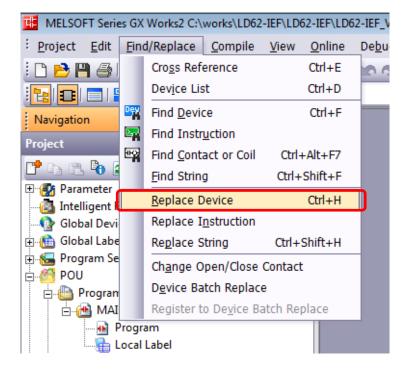
🐵 💮 M+LD62-IEF_SetCoincidenceOut Coincidence output fnc set FB
🗄 🞆 M+LD62-IEF_CoincidenceOutEnable Coincidence output enable set FB
🕀 🎆 M+LD62-IEF_PresetOperation Preset function operation FB
🛨 🚮 M+LD62-IEF CountDisableOperation Disable count fnc operation FB
🗄 🎆 M+LD62-IEF_LatchCounterOperation Latch counter fnc operation FB
🛨 📷 M+LD62-IEF SamplingOperation Sampling counter function OP FB
🗄 🎆 M+LD62-IEF_PeriodicPulseCounter Periodic pulse counter fnc OP FB
M+LD62-IEF OverflowDetection Overflow detection FB
🖅 🙀 M+LD62-IEF_SetRingCounter_02 R ng counter setting FB
E Structured Data Types
Local Device Comment



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

1) Open "Program" of the added FB.

- ⊞ M+LD62-IEF\_CoincidenceOutEnable Coincidence output enable set FE
   M+LD62-IEF\_PresetOperation Preset function operation FB ÷ 🕀 🎆 M+LD62-IEF\_CountDisableOperation Disable count fnc operation FB 🕀 🚮 M+LD62-IEF\_LatchCounterOperation Latch counter fnc operation FB 🗄 🙀 M+LD62-IEF\_SamplingOperation Sampling counter function OP FB Image: M+LD62-IEF\_PeriodicPulseCounter Periodic pulse counter fnc OP FB 🗄 🎆 M+LD62-IEF\_OverflowDetection Overflow detection FB E M+LD62-IEF\_SetRingCounter\_02 Ring counter setting FB 🖬 Program 🖶 Local Label 🖪 Structured Data Types
- 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.

Find/Replace	Find/Replace					
Device Instruction String Open/Close Contact Device Batch Result Error Log						
Fin <u>d</u> In	(Current Window)	▼ <u>B</u> rowse				
Find Device	M_F_RY	Eind Next				
Replace De <u>v</u> ice	Replace Device M_F_RY2 All Find					
Device Point	1 DEC V	<u>R</u> eplace				
Find Direction	Option					
• From Top	🗖 Digit	Device Comment				
C Down	Multiple word	C Mov <u>e</u>				
C⊔p	Consecutive search	С <u>С</u> ору				
	with enter key					
<u> </u>						

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]

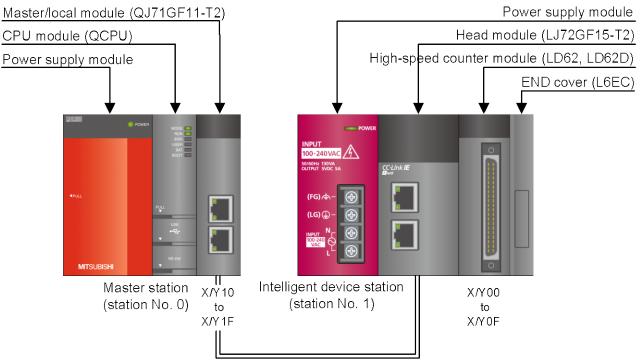
If MELSOFT Library is upgraded, MELSOFT Library FBs can be upgraded by importing them again. However, the FBs that were created by following these procedures for the second and subsequent modules are not upgraded even if the FBs are imported again.

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



LD62 FB application examples are as follows.

#### 1) System configuration



Ethernet cable (1000BASE-T)

#### 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)	
MO	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	Present value monitoring FB ready	
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/RY setting	Points	16
	Start	0000

# d) Refresh Parameters

Item	Link Side P		PLC 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	Μ	1024
Transfer 2	RY	16	0000	Μ	2048

# e) Slave Station Information

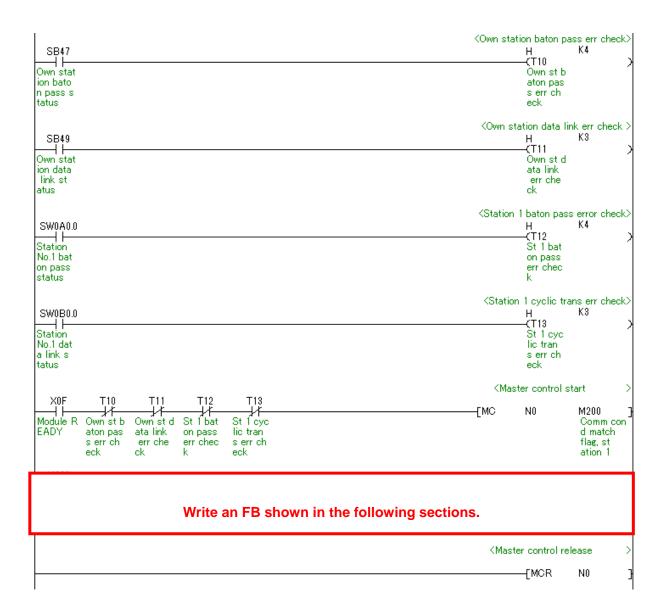
Item	Setting value
Mode	Online
Network No.	1
Station No.	1



# 5) Programs

#### Interlock program

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



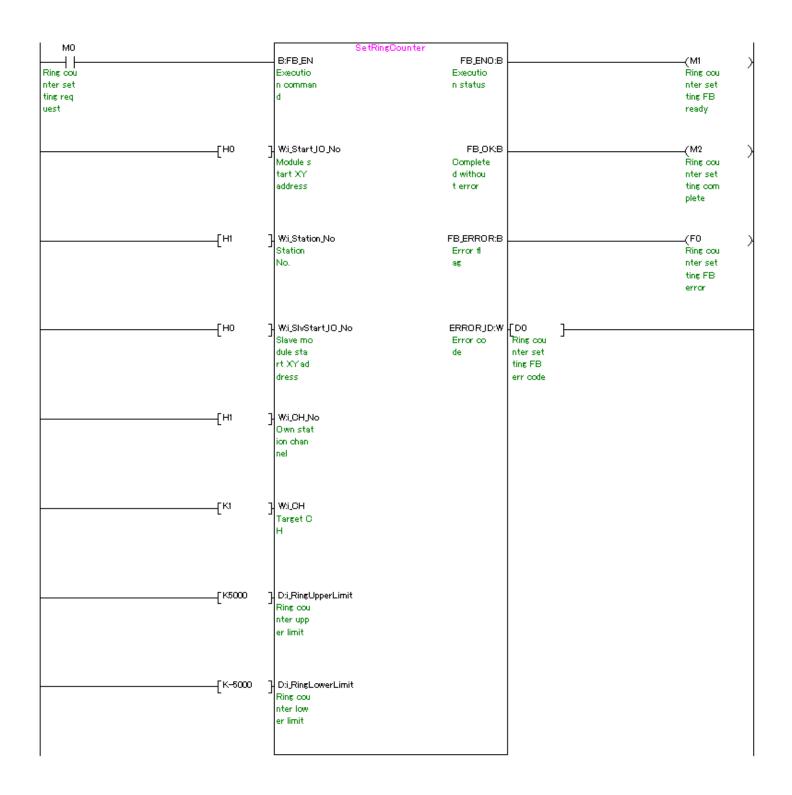


Label name	Setting	Description	
	value		
i_Start_IO_No	HO	Set the starting XY address where the LD62/LD62D module is mounted to 0H.	
i_Station_No	H1	Set the target station to 1H.	
i_SlvStart_IO_No	HO	Set the starting XY address where the LD62/LD62D module is mounted to 0H.	
i_CH_No	H1	Set the own station 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.	

#### M+LD62-IEF\_SetRingCounter (Ring counter setting)

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



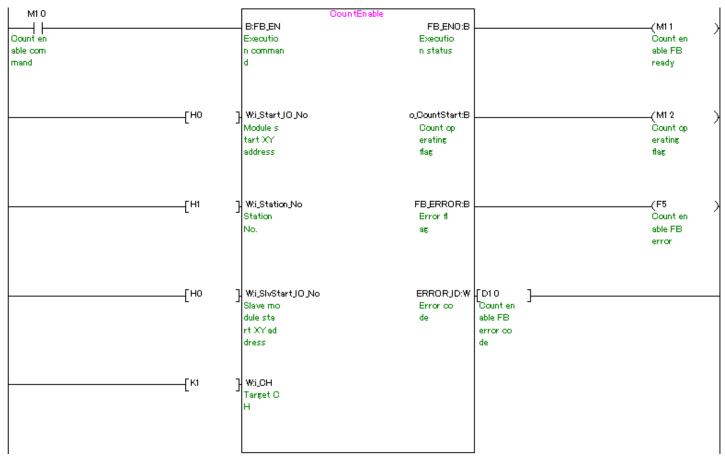




Label name	Setting	Description
	value	
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH	K1	Set the target channel to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

#### M+LD62-IEF\_CountEnable (Count enable operation)

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

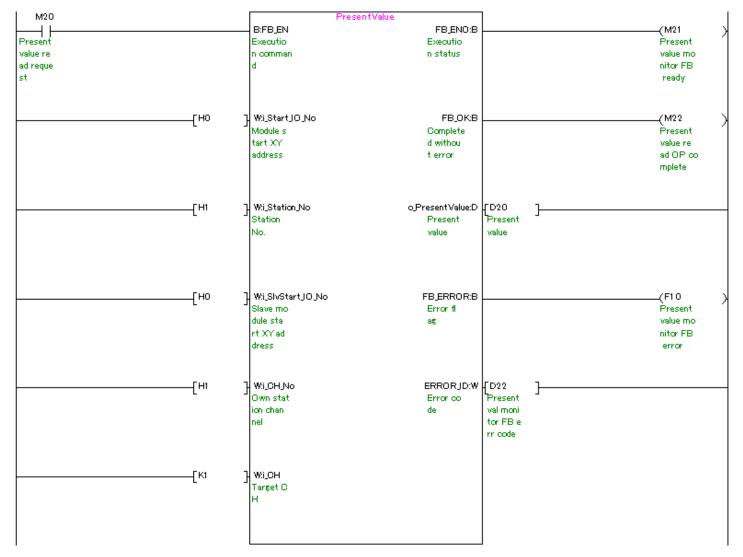




Label name	Setting	Description
	value	
i_Start_IO_No	HO	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	HO	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel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

#### M+LD62-IEF\_PresentValStorage (Present value monitoring)

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

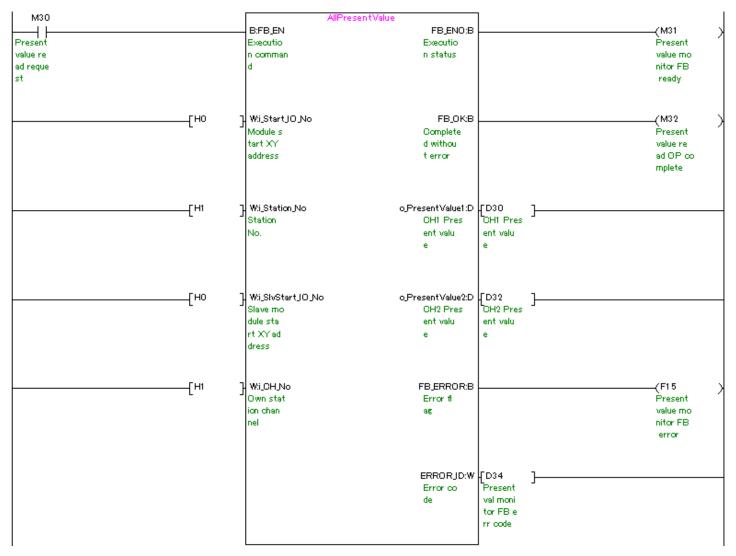




Label name	Setting	Description
	value	
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel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

M+LD62-IEF\_AllPresentValStorage (Present value monitoring (All CHs))

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

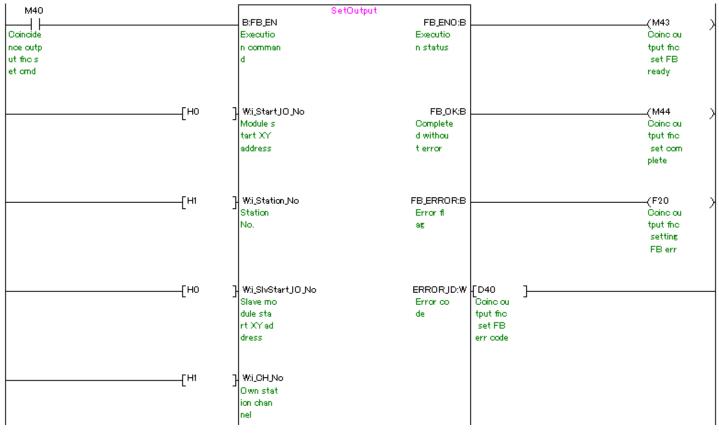




Label name	Setting	Description
	value	
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel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

M+LD62-IEF\_SetCoincidenceOut (Coincidence output function setting)

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.)

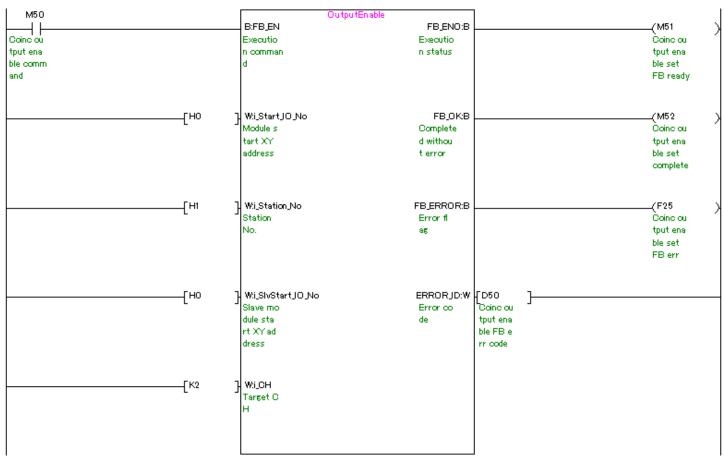


[  [кі	] Wi_OH Target C H
M41 Coincide noe outp ut No. 1 enable	Bii_OutEnable_No1 Coincide nce outp ut No.1 enable
M42 Coincide nce outp ut No. 2 enable	Bij_OutEnable_No2 Coincide noe outp ut No2 enable
[K1000	D:i_SetPoint_No1 Coincide nce outp ut No.1 point se
[K1500	] D:i_SetPoint_No2 Coincide noe autp ut No.2 point se



Label name	Setting	Description
	value	
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.





Label name	Setting	Description
	value	
i_Start_IO_No	HO	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	HO	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.

# M+LD62-IEF\_PresetOperation (Preset function operation)

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

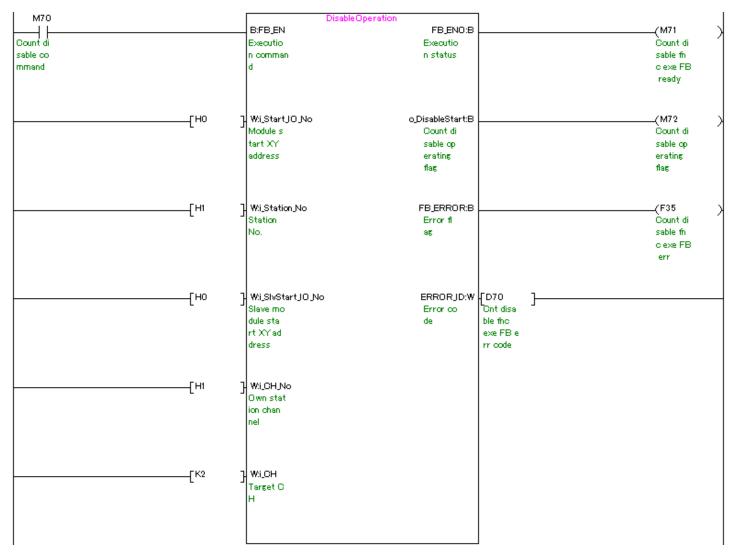
M60		Dperation	
	B:FB_EN	FB_ENO:B	(M61)
Preset f	Executio	Executio	Preset f
no execu	n comman	n status	no execu
tion com	d		tion FB
mand			ready
[но	7 WijStartJOJNo	FB_OK:B	(M62 )
	Module s	Complete	Preset f
	tart XY	d withou	nc execu
	address	terror	tion com
	dual coo	( criter	plete
			piece
[H1	] Wi_Station_No	FB_ERROR:B	(F30 )
-	Station	Error fl	Preset f
	No.	85	unction
			executio
			n FB err
[но	7 WijSlyStartJOjNo	ERRORJD:W [D60 ]	
	Slave mo	Error co Preset f	
	dule sta	de no exe F	
	rt XY ad	Berror	
	dress	code	
	uress	0006	
	-		
[H1	H WILCHINO		
	Own stat		
	ion chan		
	nel		
Гкі	] wilch		
	Target C		
	H		
ELVOE/			
[K250	0 ] D:i_PresetValue		
	Preset v		
	alue		
	-		I



Label name	Setting	Description
	value	
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.

#### M+LD62-IEF\_CountDisableOperation (Count disable function operation)

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

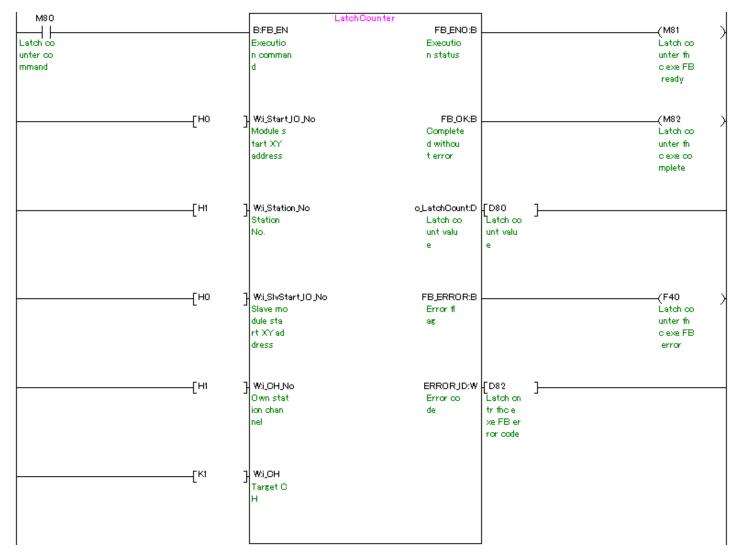




Label name	Setting	Description
	value	
i_Start_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel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

#### M+LD62-IEF\_LatchCounterOperation (Latch counter function operation)

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



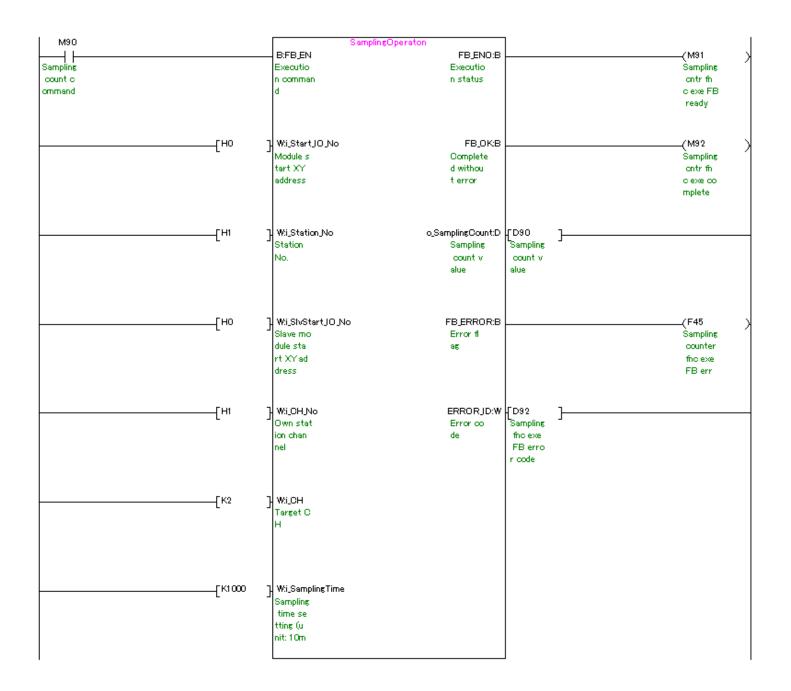


Label name	Setting	Description
	value	
i_Start_IO_No	HO	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel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

# M+LD62-IEF\_SamplingOperation (Sampling counter function operation)

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.



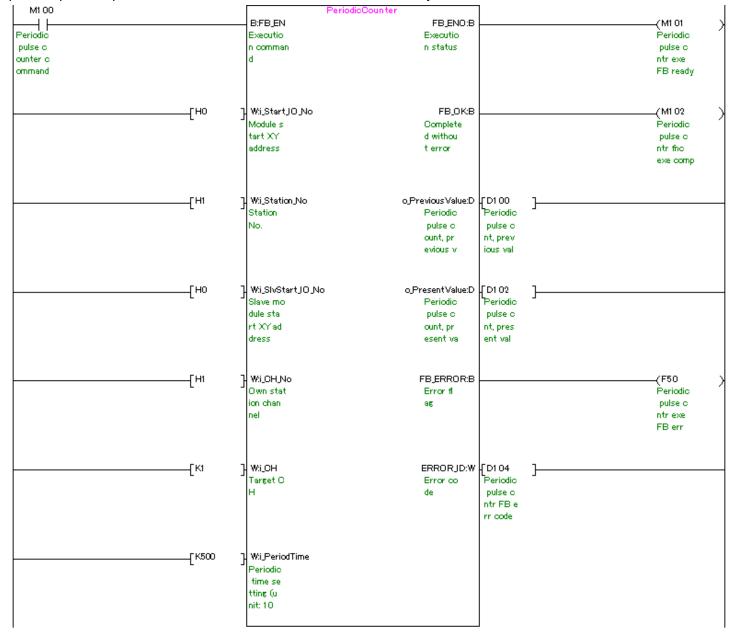




Label name	Setting	Description
	value	
i_Start_IO_No	HO	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_Station_No	H1	Set the station No. to 1H.
i_SlvStart_IO_No	H0	Set the starting XY address where the LD62/LD62D module is mounted to 0H.
i_CH_No	H1	Set the own station channel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

#### M+LD62-IEF\_PeriodicPulseCounter (Periodic pulse counter function operation)

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.





Label name	Setting	Description
	value	
i_Start_IO_No	HO	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	HO	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.

#### M+LD62-IEF\_OverflowDetection (Overflow detection)

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

