

FACTORY AUTOMATION

Mitsubishi Electric Programmable Controller MELSEC iQ-F Series

Quick Connection Guide MELSERVO-JET/J5 Series for CC-Link IE Field Network Basic





INTRODUCTION

Thank you for purchasing the Mitsubishi Electric MELSEC iQ-F series programmable controllers.

This manual describes the settings for communications between FX5 CPU modules and servo amplifiers, which use the CC-Link IE Field Network Basic function.

Before using this product, please read this manual and the relevant manuals carefully and develop familiarity with the specifications to handle the product correctly.

When applying the program examples provided in this manual to an actual system, ensure the applicability and confirm that it will not cause system control problems.

Regarding use of this product

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, please contact Mitsubishi Electric sales office.
- This product has been manufactured under strict quality control. However when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions into the system.

Note

- If in doubt at any stage during the installation of the product, always consult a professional electrical engineer who is qualified and trained to the local and national standards. If in doubt about the operation or use, please contact your local Mitsubishi Electric representative.
- Mitsubishi Electric will not accept responsibility for actual use of the product based on these illustrative examples. Please use it after confirming the function and safety of the equipment and system.
- The content, specifications etc. of this manual may be changed, for improvement, without notice.
- The information in this manual has been carefully checked and is believed to be accurate; however, if you notice a doubtful point, an error, etc., please contact your local Mitsubishi Electric representative. When doing so, please provide the manual number given at the end of this manual.



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RELEVANT MANUALS

The following relevant manuals can be downloaded from the Mitsubishi Electric FA site. www.mitsubishielectric.com/fa/ref/ref.html?kisyu=plcf&manual=download_all

MELSEC iQ-F

[O: Available, —: Not available]

Manual name	Available form			
<manual number=""></manual>	e-Manual	PDF		
MELSEC iQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware) <sh-082452eng></sh-082452eng>	0	0		
MELSEC iQ-F FX5 User's Manual (Application) <jy997d55401></jy997d55401>	0	0		
MELSEC iQ-F FX5 User's Manual (Ethernet Communication) <jy997d56201></jy997d56201>	0	0		
MELSEC iQ-F PLCopen Motion Control FB Reference <sh-082351eng></sh-082351eng>	0	0		

AC servo MELSERVO

[O: Available, —: Not available]			
Manual name	Available form		
<manual number=""></manual>	e-Manual	PDF	
MR-JET-G User's Manual (Introduction) <ib-0300448eng></ib-0300448eng>	0	0	
MR-JET User's Manual (Hardware) <ib-0300453eng></ib-0300453eng>	0	0	
MR-JET User's Manual (Function) <ib-0300458eng></ib-0300458eng>	0	0	
MR-JET-G User's Manual (Communication Function) <ib-0300463eng></ib-0300463eng>	0	0	
MR-JET-G User's Manual (Object Dictionary) <ib-0300468eng></ib-0300468eng>	0	0	
MR-JET User's Manual (Adjustment) <ib-0300473eng></ib-0300473eng>	0	0	
MR-JET-G User's Manual (Parameters) <ib-0300478eng></ib-0300478eng>	0	0	
MR-JET User's Manual (Troubleshooting) <ib-0300483eng></ib-0300483eng>	0	0	
MR-J5-G/MR-J5W-G User's Manual (Introduction) <sh-030294eng></sh-030294eng>	0	0	
MR-J5 User's Manual (Hardware) <sh-030298eng></sh-030298eng>	0	0	
MR-J5 User's Manual (Function) <sh-030300eng></sh-030300eng>	0	0	
MR-J5-G/MR-J5W-G User's Manual (Communication Function) <sh-030302eng></sh-030302eng>	0	0	
MR-J5-G/MR-J5W-G User's Manual (Object Dictionary) <sh-030304eng></sh-030304eng>	0	0	
MR-J5 User's Manual (Adjustment) <sh-030306eng></sh-030306eng>	0	0	
MR-J5-G/MR-J5W-G User's Manual (Parameters) <sh-030308eng></sh-030308eng>	0	0	
MR-J5 User's Manual (Troubleshooting) <sh-030312eng></sh-030312eng>	0	0	
Rotary Servo Motor User's Manual (HG-KNS/HG-SNS) <ib-0300488eng></ib-0300488eng>	0	0	

Engineering software

[O: Available, —: Not available]

Manual name	Available form			
<manual number=""></manual>	e-Manual	PDF		
GX Works3 Operating Manual <sh-081215eng></sh-081215eng>	0	0		
Programmable Controller Engineering Software MELSOFT GX Works3 FB Quick Start Guide <l(na)-08475eng></l(na)-08475eng>	—	0		

Others

 $[\bigcirc: Available, -: Not available]$

Manual name	Available form		
<manual number=""></manual>	e-Manual	PDF	
CC-Link IE Field Network Basic Reference Manual <sh-081684eng></sh-081684eng>	0	0	

FEATURES

Point1

Simple and low-cost structures

Because the MR-JET-G becomes compatible with CC-Link IE Field Network Basic, the FX5 CPU module with built-in Ethernet port can be connected to the MR-JET-Gs in line topology^{*1}, which enables simple and low-cost network structures.



In addition, users can build more flexible networks by using Ethernet modules.



*1 Star topology, and the mixture of star and line topology can also be used.

*2 The following show the number of axes each module can control.

- FX5S/FX5UJ CPU module: 8 axes

- FX5U/FX5UC CPU module, FX5-ENET: 16 axes

Point2

Simpler and more user-friendly

FBs compatible with the specifications of PLCopen[®] Motion Control FBs are available.

Using the FBs enables the following: reduction of the time required for debugging or the costs on training; improvement of the reusability of software or the quality of equipment or machinery.



Point3

Simple settings using MR Configurator2

Operations from startup to maintenance of servo amplifiers can be easily performed on a personal computer by using MR Configurator2. MR Configurator2 provides various useful functions at every phase such as design, operation, and maintenance.



For features and functions of the servo amplifiers, refer to the following. MELSERVO-JET [L(NA)03187ENG]

1 PREPARATION

1.1 Applicable Models

The following models can be used for a series of operations described in this manual.



*1 The MR-JET-G-N1 cannot be used.

*2 The MR-J5-G-N1 and the MR-J5WD cannot be used.

1.2 Operation Flow Diagram

- **1.** Preparing the required products
- **2.** Setting the servo amplifiers
- **3.** Setting the programmable controller







- **4.** Checking the communication status
- **5.** Creating programs and checking the operation



9

1.3 Required Products

This manual describes the procedures required for the communications between FX5 CPU modules and servo amplifiers, using a system configuration example where one FX5S CPU module is connected to two servo amplifiers (MR-JET-G).





Use Ethernet o	ables complia	ant with the	following	standards.	

• Category 5 or higher, straight cable (double shielded / STP)

- IEEE 802.3 (100BASE-TX)
 - ANSI/TIA/EIA-568-B (Category 5)

Software

MR Configurator2

GX Works3

GX Works3 must import the following.

• Applicable software version: 1.080J or later

Applicable software version: 1.125F or later

Item	File name	Reference
FB library	MotionControl_CCLinkIEFBasic_F.mslm	Page 19 PROGRAMMABLE CONTROLLER SETTINGS
Profile	0x0002_MR-JET-G(E_CCIEFBasic)_1_en.cspp ^{*1}	Page 59 Downloading and Registering a Profile

*1 The file before decompression (such as *.zip) can also be imported.

1.4 System Configuration

This manual uses the system configuration where one FX5S CPU module is connected to two servo amplifiers (MR-JET-G). Use standard Ethernet cables for the connection and configure the system in line topology.

In this example, IP addresses are set to 192.168.3., and subnet masks are set to 255.255.255.0 for all the devices. Note that, when communicating between multiple devices in a same network, the first three values of the IP addresses (first to third octets) need to be the same. For IP addresses used for the devices, users can select them. For subnet masks, set the same address to all the devices.



* MR Configurator2 is automatically installed by installing GX Works3.

For the wiring of MR-JET-G to the power supply, refer to the following.

MR-JET User's Manual (Hardware) [3 SIGNALS AND WIRING]

For the wiring of MR-J5-G to the power supply, refer to the following.

Page 60 Power supply wiring

For the wiring of an FX5 CPU module to the power supply, refer to the following.

MELSEC iQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware) [13.4 Power Supply Wiring]

For the wiring between servo amplifiers and servo motors, refer to the following.

MR-JET User's Manual (Hardware) [3 SIGNALS AND WIRING]

Rotary Servo Motor User's Manual (HG-KNS/HG-SNS)

Point P

There is no difference between CN1A and CN1B of the servo amplifier, and thus the system configuration does not change by switching the Ethernet cable connection from CN1A connector to CN1B connector, or vice versa.



Top side of the MR-JET-G

Ethernet cable connector (CN1B) Ethernet cable connector (CN1A)

2 SERVO AMPLIFIER SETTING

2.1 Switch Setting and Display

The IP address can be set with the rotary switches of the MR-JET-G. The communication status and alarm status of the network can be checked with the LEDs.



* A protective film is attached on the front of the servo amplifier before shipment.

No.	Name		Description				
[1]	Display		Indicates the servo status and an alarm number using one-digit, seven-segment LEDs.				
[2]	Rotary switches (SW1/SW2)		Sets the IP address of the servo amplifier. ($arsigma$ Page 14 Ethernet Parameter Settings)				
[3]	Servo status display LED (SRV)	SON	Off: Indicates Ready OFF and Servo OFF state. Flashing: Indicates Ready ON and Servo OFF state. On: Indicates Ready ON and Servo ON state.				
[4]	Network status display LED (N/W)	RUN	Off: Indicates that an alarm has occurred. On: Indicates that the power is on.				
		ERR	Off: Indicates that neither an alarm nor a warning has occurred. Flashing: Indicates that a warning has occurred. On: Indicates that an alarm has occurred.				
		LAA	Indicates the link status for CN1A. On: Link-up				
		LA B	Indicates the link status for CN1B. On: Link-up				

For details on the switch setting and the display of the MR-JET-G, refer to the following.

MR-JET-G User's Manual (Introduction) [3.2 Switch setting and display of the servo amplifier]

For details on the switch setting and the display of the MR-J5-G, refer to the following.

Page 60 Display

2.2 List of Related Parameters

The following tables list the servo-amplifier parameters required to be set.

To perform Ethernet communications between servo amplifiers and connected devices, set the servo-amplifier parameters according to the communication specifications of the connected devices. If the initial setting is not configured or the setting has an error, data communications fail.

Related parameters

■Required setting parameters

The following table lists the parameters required to be set to use the FB library described in this manual. Be sure to set these parameters as shown below.

Parameter number	Parameter name	Initial value	Setting value	Description
PA01.0	Control mode selection	0	0	Set "Network standard mode".
PD13.2	INP output signal ON condition selection	0	1	Set "Within the in-position range and at the completion of command output".
PN13.0-3	Network protocol setting	0000h	0004h	Set "CC-Link IE Field Basic".
PN22.0	Default mapping mode selection	0	0	Set the mode 1.

■Optional setting parameters

The following table lists the parameters required to be set to use the program examples or for operation check described in this manual. Change the settings according to the system you use.

Parameter number	Parameter name	Initial value	Setting value	Description
PA04.2	Servo forced stop selection	0	1	Set "Disabled (The forced stop input EM1 and EM2 are not used)".
PA06	Electronic gear numerator	1	500	Set the numerator of the fraction of electronic gear to 500.
PA07	Electronic gear denominator	1	1	Set the denominator of the fraction of electronic gear to 1.
PD01.2	Input signal automatic ON selection	Oh	Ch	Set as follows. • Forward rotation stroke end (LSP): "ON". • Reverse rotation stroke end (LSN): "ON"
PT45	Homing method	37	-3	Set the data setting method.

For the MR-J5-G parameters, refer to the following.

Page 60 Parameters

2.3 Ethernet Parameter Settings

Connect the servo amplifiers and the personal computer with the Ethernet cables, and set the parameters.

This manual describes the parameter setting method using MR Configurator2.



1. When the power of servo amplifiers is off, set the fourth octet of IP addresses of servo amplifiers using the rotary switches.



- **2.** Power on the servo amplifiers.
- **3.** Start MR Configurator2, and select [Project] ⇒ [New].

8		IELSOFT MR Configurat	tor2 New p	roject								—	
ſ	Proj	ect View Parameter	Safety	Positioning-data	Monitor	Diagnosis	Test Mode	Adjustment	Tools	Window	Help		
l		New	Ctrl+N	C) 🔣 👯 🚚	iã 🖪 -	🗟 心 🕰							
	B	Open	Ctrl+O										
1		Close											
	H	Save	Ctrl+S										

4. Click [Switch to Multi-axis Project].

Model	MR-JET-G	
Operation mode		
Multi-ax. unification		
Station	00	1
Option unit	No Connection	1
Port No.	AUTO	
Com. speed	connection RS-422 (RS-232C)
Port No.	AUTO	~
O Network Jonet	Jeed/port No. autom	aucairy
C Network/condit	ct will be opened whe	enever
The last-used proje the application is re	star tea	
The last-used proje the application is re	ок [Cancel

5. Set as shown below. After the parameters are set, check the connection to the servo amplifiers by clicking [Communications Test]. When the connection has succeeded, click [OK].

Item		Setting value			
		Axis 1 Axis 2			
Connection Network		CC-Link IEF Basic			
Via		None			
PC side I/F	Protocol	UDP			
	Time-out	15			
	Retry	0 times			
Servo Amplifier Configuration	Model	MR-JET-G	MR-JET-G		
	IP address ^{*1}	192.168.3.1	192.168.3.2		

*1 For the fourth octet of IP addresses, the values set by the rotary switches in the step 1 are used. Thus, the IP addresses are as shown below.

· Station number 1: 192.168.3.1

· Station number 2: 192.168.3.2

Via:	PC side Con	I/F —	I/F	None	∼ net]		
	Prot	tocol		UDP	~	Time-out		1 🚔 s (1-15)
l L						Retry		0 🔿 times (0-3
						1000		
Dm	Servo	Amplifier	r Configuratio	n —				
627688		Axis	Model		IP address		Operation r	mode
	2.	1	MR-JET-G	×	192.168.3.	L.	-	
	2	2	MR-JET-G	~	192.168.3.2	2	-	~
	*			~	-2		.	×
Com	* The (serve The munication	e copied/ o param ne last-u on Test	/pasted/delete eter, etc.). sed project w	ed data in ill be oper	cludes not or ned wheneve	nly the mode	l of the serv tion is restar	o amplifier but also rted.
nfigurator2	X	is P roje g fr	roject (Servo ect, the settin om servo amp	Amplifier 1g value (l 1glifier on e	Direct Conne ike paramete ach correspo	ction) r) of servo a inding screer	mplifier is no 1.	ot read.

Precautions

When the communication test detects a connection failure, perform the following.

- Check the power supplies of the programmable controller and the servo amplifiers, wiring with Ethernet cables.
- Check the IP address and the subnet mask of the personal computer.
- Initialize the servo amplifiers.

For how to initialize servo amplifiers, refer to the following.

MR-JET-G User's Manual (Introduction) [4.6 Servo amplifier setting initialization]

2.4 Parameter Settings

1. Select [Parameter] ⇒ [Parameter Setting].

MELSOFT MR	l Coi	nfigurator2 New project							-	×
Project View	Par	ameter Safety Positioning-d	ata Monitor Diagnosis	Test Mode Adjustmen	t Tools	Window	Help			
i 🗅 🖻 💾 I 🖉	Þ	Parameter Setting	🐌 🛱 🖪 📲 🐨 🖙 🖗	F 🙊						
Project		Network Parameter								
🖃 📙 New proje		Axis Name Setting								
🖏 System		Parameter Converter								

2. Set each item from [List display]. Set the same value for both axis 1 and axis 2.

List display	No.	Name	Setting value
Basic	PA01	Operation mode	00003000h
	PA04	Function selection A-1	00002100h
	PA06	Electronic gear - Numerator	500
	PA07	Electronic gear -Denominator	1
I/O	PD01	Input signal automatic ON selection 1	00000C00h
	PD13	Function selection D-2	00000100h
Positioning control	PT45	Homing method	-3
Network	PN13	Network protocol setting	0000004h
	PN22	Function selection N-5	0000000h

■ When "Basic" is selected

Parameter Setting	, x							
📕 Axis1 🔽 📢 Re	ead 🚺 S	et To Default	: 🌄 Verify 👖 Parameter Copy 📄 Parameter Block					
Dpen PSave As	Copy	Paste 📉	Undo 膏 Redo		•			
Function display (L	Basic			(Selected	Items Write	Axis Writing	
Basic	No.	Abbr.	Name	Unit	t	Setting range	Axis1	Axis2
train/tilter	PA01	**STY	Operation mode			00003000-0001304	0000 3000	0000 3000
Extension	PAU2	*ARC	Regenerative option			0000000-000000FF	0000 0000	0000 0000
I/O	PA04	*AOP1	Function selection A-1			0000000-00002100	0000 2100	0000 2100
Extension 2	PA05	*FRP	For manufacturer setting	1	1	10000-10000	10000	10000
Extension 3	PA06	*CMX	Electronic gear - Numerator		11.	1-2147483647	500	500
Option	PA07	*CDV	Electronic gear - Denominator			1-2147483647	1	1
Special	PA08	ATU	Auto tuning mode			00000000-01110006	0000 0001	0000 0001
Motor extension	PA09	RSP	Auto tuning response			1-40	16	16
Multi encoder	PA10	INP	In-position range			0-16777215	1600	1600
Desitioning control	PA11	TLP	Forward rotation torque limit	%		0.0-1000.0	1000.0	1000.0
Positioning contro	PA12	TLN	Reverse rotation torque limit	%		0.0-1000.0	1000.0	1000.0
Network	PA13	*PLSS	For manufacturer setting			0000000-00000000	0000 0000	0000 0000

2.5 Write to Servo Amplifier

Write the set parameters to the servo amplifier.

1. Click the following icon on the toolbar to go online.



2. Click [Axis Writing].

Parameter Setting ×		۹ ۵
📔 Axis1 🛛 📢 Read 🕃 Set To Default 🧏 Verify 🗓 Parameter Copy 📄 Parameter Block		
Paste Open Save As		
Function display (L Common	Selected Items Write	Axis Writing

3. Click [Select All], and then click [Write]. After the writing is complete, reset the servo amplifier.

Axis1			
Axis2			
	—		
Perform veri	fication after wri t will not display	ting where ie w	ect All

2.6 Servo Amplifier Reset

Reset the servo amplifier. For some parameters, set values do not take effect unless the servo amplifier is reset. This manual describes the reset operation using MR Configurator2.

1. Click the [Software Reset] icon on the toolbar.

001	MELS	OFT MI	R Conf	igurator2 Ne	ew project	- [Paramete	r Setting]								
1	Project	View	File	Parameter S	Settina(Z)	Parameter	Safety	Positioning-data	Monitor	Diagnosis	Test Mode	Adjustment	Tools	Window	Help
	🗅 🔁 I	n <i>E</i>	10		Ø	毘 💐 💷 🕸	ã 🗈 🕇	🖲 🐨 📼 🐨 🔊							



2. Click [Select All], and then click [OK].

Axis1			
Axis2	_		
	□		_
			· · · · ·
Once a softwa the amplifier w for several sec Do you want to	re reset is start ill stop respondi onds. o execute?	ed, ng	lect All Cancel All

3 PROGRAMMABLE CONTROLLER SETTINGS

3.1 Part Names

For the part names of the FX5 CPU modules, refer to the following.

3.2 Downloading the FB Library

In this manual, the FB library for servo amplifiers compatible with CC-Link IE Field Network Basic is used. To obtain the FB library, please contact your local Mitsubishi Electric representative.

3.3 Importing the FB Library

This section describes how to register the obtained FB library to GX Works3.

Decompress the FB library folder (zip file) before registering the FB library.

1. Start GX Works3, and select [Project] ⇒ [New].

Set as follows, and click [OK].

Item	Setting value
Series	FX5CPU
Туре	FX5S
Program Language	FBD/LD



2. Select [Project] ⇒ [Library Operation] ⇒ [Register to Library List] ⇒ [Library].

тя м	FLSOFT GX Works3 (Untitled Project)	- (ProgramF	udv : ProgPou (PRG) (FBD/LD) (Sten *)	- 🗆 X
Droi	act Edit Find/Paplace Convert	View C	Nine Debug Recording Disportice Tool Window Help	- ···
	vew Dpen	Ctrl+N Ctrl+O	me beng recording programs in an and they 그는 바이에 백력 백성의 부가 위해 관람이 통해 문부 운영을 많이 있으면 100% 같이 해야 했다. 같은 것은 것은 것은 같은 것은 여러 분위	
P	Close Save Save As	Ctrl+S	PM (III DP DI II C 40 (III P) (IIII P) (IIIII P) (IIII P) (IIIII P) (IIIIII P) (IIIII P) (IIIII P) (IIIII P) (IIIII P) (IIIIII P) (IIIII P) (IIIII P) (↓ ♦ ►
	Delete Project Verify Project Revision Change Module Type/Operation Me Data Operation Acligent Function Module Open Other Format File	ode >		
	Library Operation	•	Export Library(S)	
	Security	•	Register to Library List	
4	Printer Setup Page Setup Print Preview Print Stat GY Work?	Ctrl+P	Derece from Lobrary Lost Update the Display Information of Library Show Program/FB/FUN File Update Library POU Update Library POU Update Library POU	
1	Exit(Q)		Help(M)	

3. When the following window appears, click [OK].

MELSOFT	GX Works3	×
1	Library is registered to the list. Specified files is imported to the GX Works3. To replace the library with the one imported before, please execute 'Register to Library List'.	
	ОК	

4. Select the "MotionControl_CCLinkIEFBasic_F.mslm" file in the decompressed FB library folder, and click [Open].



5. The selected file is added to [Library] in the "Element Selection" window.

MELSOFT GX Works3 (Untitled Project) - [ProgramBody : ProgPou [PRG] [FBD/LD] 0Step *]	- 🗆 X
. Project Edit Find/Replace Convert View Online Debug Recording Diagnostics Tool Window Help	_ 6 ×
: 1 🞦 💾 중 것 💿 👘 🗧 : 2 🕹 1 월 1 월 1 월 1 월 1 월 1 월 1 월 1 월 1 월 1	👻 👷 💷 🖉 🥥 🚝 Maxi 👻
1289 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Navigation 🕂 🕹 👬 ProgPou (PRG) [Local Label Set 🐴 ProgramBody : ProgPou (PRG) 🗴 4 🕨	Element Selection T
95- 92- 41 · · ·	< [Find POU) 前為為國留口 · · · · · · · · · · · · · · · · · · ·
Physical Section 2017	Production Provides and All
The Model Comparation	User Library
🖅 FB/FUN	Ligrary Ligrary MotionControl_CCLinklEFBasic_F MotionControl_CCLinklEFBasic_F
III (jii Label	MotionControl CCLink/EFBasic F
a source	[Version]
	1.02 [Last Change]
	2022/01/13 18:27:06
	[Japanese] このうくづきりけ、 CCU Jak IST voil はなかしのことりないた大切取り たつてなしていたい MPU IST、CH こりついた大切取り たいフラリ 不住用します
	[English]
	This library is used in a system in which the CC-Link IE Field Network Basic-equipped master modules and MK-JET-G servo amplifiers are connected.
Connection Destina 🏪 Navigation	POU List Favorites History Module Library
	FX5S Host (R=17, C=19) CAP NUM _:



If the "Element Selection" window is not displayed, go to the menu bar, and select [View] ⇔ [Docking Window] ⇔ [Element Selection] to open the window.

3.4 Communication Settings of GX Works3

Connect the personal computer, the programmable controller, and servo amplifiers with the Ethernet cables. Perform the communications test before setting parameters for the programmable controller,



1. Select [Online] ⇒ [Current Connection Destination].



2. Select [Other Connection Method], and then click [Other Connection Method].



3. Select [Ethernet Board] of "PC side I/F", and then double-click [PLC Module] of "PLC side I/F".

Specify Conne	ction Destination Connection		×
PC side I/F	Serial Ethernet USB Board		
	Network No Station No F	Protocol TCP	
PLC side I/F		PLC Mode FX5CPU	
Other Station Setting	No Specification Other Station(Single Network)	Connection Channel List CPU Module Direct Coupled Setting	
	Time Out (Sec.) 30 Retry Times 0	Connection Test	
Network Communication Route	Ethernet	PLC Type	
		System Image	
		ОК	
		Cancel	

4. Select [Connection via HUB], input "192.168.3.250" for "IP Address", and click [OK].

PLC side I/F Detailed Setting of PLC Module	×
PLC Mode EX5CD1	
O Ethernat Bart Diract Connection	Connection via HUR
* Diasea salart 'Connection via HLIB' when you use HLIB even	
if there is only one target device to communicate.	IP Address 192 168 3 250
Direct Connection' is selected during communication, the line becomes overloaded. This might affect other devices'	IP Input Format DEC 🗸
communication.	O Host Name
Search for the FX5CPU on network.	
Response Wait Time 2 sec. Display Only CPU Ty	pe of Project(V) Find(S)
Selection IP Address input	for the following courses
 No response within a specific time period. Compared via a router or subact mark is different. 	for the following causes:
 - Connected via a router of subject mask is different. - 'No response to search for CPU module on network' is set 	in module parameter.
IP address CPU Type Label	Comment
<	>
	UK Cancel

5. Select [No Specification] of "Target Station", and then click [Communication Test]. When the connection has succeeded, click [OK].

Specify Connec	tion Destination Conne	ction				×
PC side I/F	Serial Ethern USB Board	et i				
		Network No	Station No	Protocol TCP		
PLC side I/F	PLC GOT Module					
				PLC	Mode FX5	5CPU
	IP Address/Host Name	192.168.3.250				
Other Station Setting		MELSOFT GX Works3		×	Cor	nnection Channel List
	No Specification	Successfully c	onnected with the F)	SSCPU.	CPU Mo	dule Direct Coupled Setting
	Time Out (Sec.) 30	-				Connection Test
Network Communication				ОК	PLC Type	FX5S
Route	Ethernet					Custom Inner
						System Image
						ОК
						Cancel

Precautions

When the communications test detects a connection failure, perform the following.

- · Check the power supplies of the programmable controller and the servo amplifiers, wiring with Ethernet cables.
- · Check the IP address and the subnet mask of the personal computer.
- Initialize the programmable controller.

For how to initialize the programmable controller, refer to the following.

GX Works3 Operating Manual [18.6 Initializing/Clearing a Memory]

3.5 Parameter Settings

This section describes how to set parameters required for the programmable controller using GX Works3.

1. In the "Navigation" window of GX Works3, select [Parameter] ⇒ [FX5SCPU] ⇒ [Module Parameter] ⇒ [Ethernet Port].



Point P

If the "Navigation" window is not displayed, go to the menu bar, and select [View] \Rightarrow [Docking Window] \Rightarrow [Navigation] to open the window.

2. Set an IP address and a subnet mask in "Own Node Settings" of "Basic Settings".

In this manual, the following setting values are used. (For the setting values, refer to 🖙 Page 11 System Configuration.)

Item	Setting value
IP Address	192.168.3.250
Subnet Mask	255.255.255.0



Point P

An IP address is not set by default. When an IP address is not set, the CPU module operates with IP address 192.168.3.250.

3. In "CC-Link IEF Basic Setting", select "Use" for "To Use or Not to Use CC-Link IEF Basic Settings", and double-click "Detailed Setting" of "Network Configuration Settings".

ſ	Module Parameter Ethernet Port		×]
I	Setting Item List	Setting Item		
	Put the Setting Item to Search Image: Control of the Section Settings Image: Control of the Section Settings Image: Control of the Settings Image: Control of the Section Settings Image: Control of the Settings Image: Control of the Section Settings Image: Control of the Settings	Bem Own Node Settings	Setting 192 . 168 . 3 . 250 25 . 255 . 25 . 0 	
		MODBUS/TCP Settings To Use or Not to Use MODBUS/TCP Setting Device Assignment External Device Configuration External Device Configuration	Not Used «Detailed Setting» «Detailed Setting»	Double-click
		Explanation Set the setting for cyclic transmission. Set the Station N, Number of Occupied Stations. IP Addres To set the CC-Link. IE Reld Network Basic, it is required to se	a, Subnet Mask, and the like.	
	Item List Find Result	Check Restore the Default Se	ttings	
1			Apply	

4. Click [Detect Now].

12	🖧 CC-Link IEF Basic Configuration — 🗆 X																
i c	C-Link/EF Basic Configuration Edit. View Close with Discarding the Setting Close with Reflecting the Setting																
	D	etect Now	Link	Scan Setting													Module List ×
	connecceu c	counc j u															CC-Link IEF Basic Selection Find Modu 4 +
	No.	Model Name	STA#	Station Type		RX/RY Setting		RV	Nw/RWr S	Setting	Group No.	RSVD STA	IP Address	Subnet Mask	MAC Address	Comment	<u>₩</u> ₩ <u>₩</u> ×≥
\mathbf{w}		Uash Chabies		Masker Chabies	Po	ints S	tart En	nd Poli	nts Start	End			102 168 2 250	255 255 255 0			CC-Link IEF Basic Module (General)
_		HUSE SEALION	0	Master Station			_		_				192.108.3.230	235.235.255.0			CC-Link IEF Basic Module (Mitsubish
																	Input Module
																	Output Module
																	■ 1/0 Combined Module
																	Servo Amplifier(MELSERVO-J4 Se
																	Inverter(EP-A900 Series)
																	E Inverter (FR-E800 Series)
																	E Inverter (TK Toob Series)
-	_																
Host	Station																
Al	Connected Co																
un To	t:0 tal STA#:0																
		<														>	

When the MR-JET-G profile is not registered, refer to the following.

Page 59 Downloading and Registering a Profile

5. The information of the servo amplifiers connected to the programmable controller is displayed in the table. Check the settings of model name, reserved station, IP address, and subnet mask, and click [Close with Reflecting the Setting]. In this manual, the following setting values are used. (For the setting values, refer to Page 11 System Configuration.) If a displayed value is different from the one in the table below, correct the value.

Model Name	STA#	RSVD STA	IP Address	Subnet Mask
MR-JET-G	1	No Setting	192.168.3.1	255.255.255.0
MR-JET-G	2	No Setting	192.168.3.2	255.255.255.0



When the following window appears, click [Yes].



6. Next, set parameters to automatically perform data transfer between link devices of the servo amplifiers and devices of the programmable controller. Double-click "Detailed Setting" of "Refresh Settings".

Module Parameter Ethernet Port			×
Setting Item List	Setting Item		
Input the Setting Item to Search	Item	Setting	
iii	Own Node Settings		
	IR Address	192 169 2 260	
	Subnat Mark	255 255 255 0	
Basic Settings	Default Gateway	233.233.233.0	
CC-Link IEF Basic Settings	Communication Data Code	Binary	
MODBUS/TCP Settings	CC-Link IEF Basic Settings		
External Device Configuration	To Use or Not to Use CC-Link IEF Basic Setting	Use	
M. Call Application Settings	Married Cartananta Californi	about the differences	
	Refresh Settings	<detailed setting=""></detailed>	
	To Use or Not to Use MODBUS/TCP Setting	Not Used	Double-click
	Enternal Davies Configuration	<detailed setting=""></detailed>	Bedble eller
	External Device Configuration	(Detailed Setting)	
	External Device Comparation	Columna Settings	-
	Explanation		
	Set the Refresh. The setting is necessary to transfer data automatically betwe device, file register, and refresh data register). To set the CC-Link IE Field Network Basic, it is required to se	en the link device (RX/RY/RWr/RWw) and CPU device (user t the Network Configuration Settings and Refresh Setting.	^
			~
Item List Find Result	Check Restore the Default Se	attings	
		Apply	

7. Select "Specify Device" for the refresh targets on the CPU module side, and set the names and start addresses of the devices to be assigned to the link devices. After the setting, click [Apply]. In this manual, the following setting values are used.

Device name of the link side	Target	Device Name	Start
RX	Specify Device	В	00000
RY	Specify Device	В	00080
RWr	Specify Device	W	00000
RWw	Specify Device	W	00040



Data flow between the master station and remote stations using link devices

This manual describes data communications using cyclic transmission, for which the link devices of the servo amplifiers are used. Each link device is assigned as shown below. For how to set global labels, refer to the following.

■MR-JET-G (Station number 1)

Assignment target device on the programmable controller side	Number of points	Link device on the servo amplifier side
B0 to B3F	64	RX0 to RX3F
B80 to BBF	64	RY0 to RY3F
W0 to W1F	32	RWr0 to RWr1F
W40 to W5F	32	RWw0 to RWw1F

■MR-JET-G (Station number 2)

Assignment target device on the programmable controller side	Number of points	Link device on the servo amplifier side
B40 to B7F	64	RX40 to RX7F
BC0 to BFF	64	RY40 to RY7F
W20 to W3F	32	RWr20 to RWr3F
W60 to W7F	32	RWw20 to RWw3F



Precautions

The above areas are used as the link devices for network. Do not use these areas for the other purposes.

Labels for starting communications

Among the link devices, some are assigned to labels for starting cyclic communications, as shown below.

Label name (Station number 1)	Label name (Station number 2)	Description
G_stlinkIEF.bnRX[H3F]	G_stlinkIEF.bnRX[H7F]	Cyclic communication ready
G_stlinkIEF.bnRY[H3F]	G_stlinkIEF.bnRY[H7F]	Cyclic communication ready command

3.6 Adding Structures and Global Labels

This section describes how to add structures and global labels in the FB library to the project.

Addition of structures

1. Select [MotionControl_CCLinkIEFBasic_F] ⇔ [Structured Data Type] in the registered FB library. Right-click on [Structured Data Type] and select [Add to Project].



2. The following will be added to [Structured Data Types] of [Label].



- MC_Setting_CCLinkIEFBasic_F Setting Information
- MC_Monitor_CCLinkIEFBasic_F Monitor Information
- AXIS_REF_CCLinkIEFBasic_F Axis Information
- MC_SystemArea_CCLinkIEFBasic_F System Area

Addition of global labels 1

1. Select [Label] ⇒ [Global Label] ⇒ [Global]. Double-click [Global] and set as follows.

Label Name ^{*1}	Class ^{*2}
AxisInfo1	VAR_GLOBAL
AxisInfo2	VAR_GLOBAL



2. Set Data Type as shown below.

Label Name	Data Type	Class
AxisInfo1	AXIS_REF_CCLinkIEFBasic_F	VAR_GLOBAL
AxisInfo2	AXIS_REF_CCLinkIEFBasic_F	VAR_GLOBAL

MELSOFT GX Works3 (Untitled Project) - [Global [Global Label Setting]] —									
Project Edit Find/Replace Convert View Online Debug Recording Diagnostics Tool Window Help									
· ▶ ● ● ● ⑦ ●									
변수에 해 그 그 Å 및 및 및 A 및 관광 · · · · · · · · · · · · · · · · · ·									
동료 제 위에 이 관 관 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이									
Navigation 🕂 🛪	Glob	al [Global Label Setting] 🛛 🗙				Click			
P∰+ P⊏ 🍄 All 🛛 🛨	<filter></filter>		Easy Display 🧭 Display	Setting	n uhec <u>k</u>	CIICK			
H Project		Label Name	Data Type		Class	Assign (Device/Label)	Initial Value	Constant	English(Display Tan
EL Module Configuration	1	AxisInfo1	AXIS_REF_CCLinkIEFBasic_F		AR_GLOBAL	 Detailed Setting 			
🗖 🔚 Program	2	AxisInfo2	AXIS_REF_CCLinkIEFBasic_F		AR_GLOBAL	 Detailed Setting 			
FB/FUN	3			1		*			

To set Data Type, click [...] and follow the step in the figure below.

Type Category	Data Type
Structured Data Type	AXIS_REF_CCLinkIEFBasic_F



3. Input comments (English) as shown below.

Label Name	Data Type	Class	English
AxisInfo1	AXIS_REF_CCLinkIEFBasic_F	VAR_GLOBAL	Axis information 1
AxisInfo2	AXIS_REF_CCLinkIEFBasic_F	VAR_GLOBAL	Axis information 2

MELSOFT GX Works3 (Untitled Project	:) - [Global [Global Label Settin	ng]]					
Project Edit Find/Replace Conv	ert View Online Debu	g Recording Diagnostics Tool Win	dow Help				
፤ 🗅 🔁 💾 🎒 🕲 🖉	- 🚽 🕷 🗅 🗗 🗠 🔿	(📴 🖼 🖄 🏩 📮 🖉 👧 🛃	R R 🐘 🖉 🥔		100% 🔹 🛫		
변역 및 48 CC M M 및 영향 및 상 (C E 방양 무상 등 Ter 국고 등 18, 한 비미 대 문 , 한 비 이 오 문 (S C P M Max							
동물 가 바람 이 관 관 수 있는 것 같아요. 이 가 가 가 가 가 가 가 가 가 가 가 가 가 가 가 가 가 가							
Navigation 🗸 🗸	Navigation 🛛 🕹 × 🕀 Global [Global Label Setting] ×						
	Pg- Pc 🎄 All Clier> Easy Deplay (C) Digitaly Setting Check						
The Madula Confirmation	Label Name	Data Type	Class	Assign (Device/Label)	Initial Value	Constant	English(Display Target)
E Nodule Comguration	1 AxisInfo1 2 AxisInfo2	AXIS_REF_CCUnkIEFBasic_F AXIS_REF_CCUnkIEFBasic_F	VAR_GLOBAL	Detailed Setting Detailed Setting	7		Axis information 1 Axis information 2
di Initial	3			•			

*1 Any desired label name can be set.

- *2 The field will be displayed by clicking [Detailed Display].
- *3 When [Detailed Display] is selected, [Easy Display] is displayed.

Addition of structures (labels)

1. Right-click on [Structured Data Types] in [Label], and select [Add New Data]. Input "stRemoteReg"^{*1} for "Data Name", and click [OK].



2. Set labels for the structure as shown below. For how to input the label names and comments (English), refer to 🖙 Page 30 Addition of global labels 1.

Label Name ^{*2}	Data Type	English
bnRX	Bit (0127)	RX information
bnRY	Bit (0127)	RY information
unRWr Word [Unsigned]/Bit String [16-bit] (063)		RWr information
unRWw	Word [Unsigned]/Bit String [16-bit] (063)	RWw information

WE NOT COT CY Wester 2 (Initial differential) (allowed and a filtered)							
WELSOFT GX Works3 (Untitled Project)	MELSOFT GX Works3 (Untitled Project) - [stRemoteReg [Structure Setting]]						
Project Edit Find/Replace Convert View Online Debug Recording Diagnostics Tool Window Help							
i 🗅 📂 💾 🎒 🙄 🖉	: 🗅 🔒 💾 🎒 😏 💿 👘 🖡 🔚 👗 🗠 🖆 🖏 📾 🖏 🖏 🖏 🚚 💭 🎘 🌄 🌄 🐘 💭 🚚 💭 📿 🕀 🗤 100%						
	- 🖼 🚟 🥝 🖾 🗉 🖉 🖀) 🗣 🚧 🐉 🐨 🔤 🛋 🖼 🛍	I				
: 동물 3 뺨 뺨 [일 등 編] (3)	226.						
Navigation 🛛 🗸 🗙	stRemoteReg [Structure Setting] ×					
	<filter></filter>	Show Details(Y) 🔊 Disp	lay Setting Check				
The Project	Label Name	Data Type	English(Display Target)				
Module Configuration	1 bnRX	Bit(0127)	RX information				
🖽 🔚 Program	2 bnRY	Bit(0127)	RY information				
FB/FUN	3 unRWr	Word [Unsigned]/Bit String [16-bit](063)	RWr information				
🗉 🥼 Label	4 unRWw	Word [Unsigned]/Bit String [16-bit](063)	RWw information				
n 🕞 Global Label	5						
C C Structured Data Times	6		Click				
	7						
e Mic System Area Count	8						
E WC_Petrog_CCTURREE	9						
AXIS_NET_COLUMNET Bas	11						
🚰 MC_Monitor_CCLinkIB	12	3					
📑 stifemetelleg	13						
🖬 🎒 Device	14						
🖬 🎒 Parameter	15						
	16						

To set Data Type, click [...] and follow the step in the figures below.

Label Name	Data Type	Element (1 dimension) ^{*3}	Element (2 dimensions) ^{*3}
bnRX, bnRY	Bit	128	0
unRWr, unRWw	Word [Unsigned]/Bit String [16-bit]	64	0



- *1 Any desired data name can be set.
- *2 Set the specified label names. (fixed)
- *3 This field can be set when "Array" is selected.

Addition of global labels 2

1. Select [Label] ⇔ [Global Label] ⇔ [Global]. Double-click [Global] and set the label as follows. For how to input the label name, class, and comment (English), refer to S Page 30 Addition of global labels 1.

Label Name ^{*1}	Data Type ^{*2}	Class ^{*3}	English
G_stLinkIEF	stRemoteReg	VAR_GLOBAL	Link device



To set Data Type, click [...] and follow the step in the figure below.

Type Category	Data Type
Structured Data Type	stRemoteReg

Type Categor Simple T	es Data Type	Data Type AXIS_REF_CI MC_Monitor_ MC_Settion MC_Suptor	CLinkIEFBasic_ CCLinkIEFBasic CCLinkIEFBasic	F CF F Provide E
Array Element				
ARRAY	Element (1 c	limension)		1 🔺
	Element (2 d	imensions)		0
	Element (20			
	Element (3 d	imensions)		0

2. Double-click "Detailed Setting" of "G_stLinkIEF" set in step 1. "Detailed Setting" is located in [Assign (Device/Label)] column. Deselect [Use Bit Specification], set the device as shown below, and click [OK].

Label Name	Data Type	Device
bnRX	Bit (0127)	B0 ^{*5}
bnRY	Bit (0127)	B80 ^{*5}
unRWr	Word [Unsigned]/Bit String [16-bit] (063)	WO
unRWw	Word [Unsigned]/Bit String [16-bit] (063)	W40

•	Globa	al [Global Label Setting] 🗙				
<	Filter>		Eas <u>y</u> Display 🛞 Display S	Settin	g Check	
		Label Name	Data Type		Class	Assign (Device/Label)
	1	AxisInfo1	AXIS_REF_CCLinkIEFBasic_F		VAR_GLOBAL -	Detailed Setting
	2	AxisInfo2	AXIS_REF_CCLinkIEFBasic_F		VAR_GLOBAL	Detailed Setting
	3	G_stLinkIEF	stRemoteReg		VAR_GLOBAL	Detailed Setting



- *1 Set the specified label name. (fixed)
- *2 Set the data name of the structure you have specified before here. (🖙 Page 32 Addition of structures (labels)) Because the data type can be selected in "Data Type Selection", you do not need to input characters in this field.
- *3 The field will be displayed by clicking [Detailed Setting].
- *4 When [Detailed Setting] is selected, [Easy Display] is displayed.
- *5 To input this value in the field, [Use Bit Specification] must be deselected.

3.7 Writing Data to the Programmable Controller

Write the parameter settings and programs to the programmable controller. Before the write execution, the operation to determine the parameters and programs is required.

Execute the write to the programmable controller while the CPU module is in STOP state.

1. Select [Convert] ⇒ [Rebuild All].



2. Click [OK].



3. Select [Online] ⇒ [Write to PLC].

Project Edit Find/Replace Co	onvert View	Online	Debug	Recording	Diagnostics
i 🗅 🔁 💾 🎒 😒 i 🥑	E	Cu	rrent Cor	nection Desti	nation
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		P Re	ad from P	PLC	
·		💵 Wr	rite to PLC	S	
Navigation I X	ProgramB	Vei	rify with P	PLC	
		Re	mote Ope	eration(S)	
		Sat	fety PLC (Operation	+
		Re	dundant l	PLC Operation	n(G) 🕨
All Project					

4. Click [Parameter + Program], and click [Execute].

)ata Operat	tion								-		
Setting	Related Functions										
, 	🗊 wite 🛄 👯 📰 🕫	. 의	ø	🗍 Verf	- 🖳	Delete					
arameter +	Program(E) Select All	Legend									
openn	Deselect All(N)	 CPUI 	Built-in Me	mory	SD SD	Memory Card	Intelligent Function Module				
dule Nar	ta Name	*			Detail	Title	Last Change	Size (Byte)			
- Մո	l Project										
ė 🚯	meter										
	System Parameter/CPU Parameter						1/14/2022 3:53:18 PM	Not Calculate	в		
	Nodule Parameter	2					1/14/2022 3:53:14 PM	Not Calculate	d		
	4emory Card Parameter						1/14/2022 3:53:14 PM	Not Calculate	d		
	Remote Password	2					1/14/2022 3:53:14 PM	Not Calculate	d		
ė 🛍	val Label										
14	Slobal Label Setting						1/14/2022 3:53:19 PM	Not Calculate	8		
ė 🔚	gram										
- 4	MAIN						1/14/2022 3:53:20 PM	Not Calculate	в		
0	ice Memory										
1 1 4	AATM				Detail		1/14/2022 2-52-10 PM				
Disp ory Capaci	mory Capacity 👔 🗋 Check 1	femory Capacit	y before Wr	iting							
Size Cal	Program Memory								Free		
									47995/4800	aStep	
and	Data Memory		-		6VB	0	Davies Comments 2026	10.4840	Free		
Used	Flogramiticely toerko		50/800/101	w.ive.//ive		101010246	Device commenceable	LV-TOND			
Increased	SD Nemory Card								Free		
Decreased									0/088		
Free: 5%	s Program:0/0KB	Re	storation In	lo:0/0KB		Parameter:0/0KB	Device Comment:0/0KB				
								Euro da		0	

5. When the following window appears, click [Yes to all].

MELSOFT GX	Works3			
<u> </u>	The follow Are you su	ing file already exists, re you want to overwrite	e it?	
System Pai CPU Paran Module Par Global Labe Program Fil	rameter neter ameter I Setting Fik Ie(MAIN)	2		~
				~
Yes	5	Yes to all		
No		No to all	Cancel	

6. After the writing is complete, reset (or power off and on) the programmable controller.

4 COMMUNICATIONS CHECK OVER CC-Link IE Field Network Basic

Check communications over CC-Link IE Field Network Basic while the servo amplifiers are connected to the programmable controller.



1. In GX Works3, select [View] ⇒ [Docking Window] ⇒ [Watch 1], and click [Watch 1].



- 2. Register the following in "Name".
- G_stLinkIEF.bnRX[63]
- G_stLinklEF.bnRX[127]
- G_stLinkIEF.bnRY[63]
- G_stLinklEF.bnRY[127]

ſ	Vatch 1 T										
	HIIPON 1 FOFF 北FON/OFF toggle ⊇ Update										
	Name	Current Value	Display Format	Data Type	English	Forced Input/Output Status	Device Test with Execution				
ſ	<pre> @ G_stLinkIEF.bnRX[63] </pre>	-	BIN	Bit	RX information						
I	<pre> @ G_stLinkIEF.bnRX[127] </pre>		BIN	Bit	RX information	-					
I	G_stLinkIEF.bnRY[63]	-	BIN	Bit	RY information						
I	<pre> @ G_stLinkIEF.bnRY[127] </pre>		BIN	Bit	RY information	-					

3. Select [Online] ⇒ [Watch] ⇒ [Start Watching]. Click [Start Watching] to go online.

MELSOFT GX Works3 (Untitled Project) - (Progra	mBody - ProgRou (PRG) (FRD/I D) 3Step)	
: Project Edit Find/Replace Convert View	Online Debug Recording Diagnostics	Tool Window Help
🗅 📂 💾 🍜 😒 🥥 📃 💽 🚽 🗄	current Connection Destination	🕅 💏 🗮 🔣 🌇 🐘 🔎 🦊 🖉
1 🔁 🔄 💷 🖿 🗰 🖬 🖏 📟 💥	Read from PLC	
։ ►	Write to PLC	· · · · · · · · · · · · · · · · · · ·
Navigation 4 × 1 ProgramB	Verify with PLC	KIEFBasic E S
	Remote Operation(S)	
	Safety PLC Operation •	
All	Redundant PLC Operation(G)	
Project	CPU Memory Operation	
	Delete PLC Data	
FB/FUN	User Data	
🖬 🌆 Label	Set Clock	
🖬 🚰 Device	- ionitor	
🖬 📴 Parameter	FB Property Management (Opline)	
	Week	
	watch	Start Watching
	User Auther tion >	yp Watching Shift+Ait+F3
		ter to Watch Window →

4. Click [ON] while the rows of G_stLinkIEF.bnRY[63] and G_stLinkIEF.bnRY[127] are selected.

	Watch 1[Watching]						# >
	HON TO HON/OFF to	ggle 🛛 🗷 Update					
ľ	Name	Current Value	Display Format	Data Type	English	Forced Input/Output Status	Device Test with Execution
	GIICK	OFF	BIN	Bit	RX information		
	A.C.	OFF	DTM	D#	DV information		
	G_stLinkIEF.bnRY[63]	OFF	BIN	Bit	RY information	-	-
	G_stLinkIEF.bnRY[127]	OFF	BIN	Bit	RY information	-	-

When communications have no problems

"Current Value" of G_stLinkIEF.bnRX[63] and G_stLinkIEF.bnRX[127] turn ON.

Watch 1[Watching] 4 x										
MILION 1 POFF 1/POFF toggle 2 Update										
Name	Current Value	Display Format	Data Type	English	Forced Input/Output Status	Device Test with Execution				
G_stLinkIEF.bnRX[63]	ON	BIN		RX information						
G_stLinkIEF.bnRX[127]	ON	BIN	Bit	RX information						
Se o accurace round (oo)	on	BIN	Bit	RY information						
G_stLinkIEF.bnRY[127]	ON	BIN	Bit	RY information						

After checking that the communications are normal, turn OFF G_stLinkIEF.bnRY[63] and G_stLinkIEF.bnRY[127] so that G_stLinkIEF.bnRX[63] and G_stLinkIEF.bnRX[127] turn OFF.

When communications have errors

"Current Value" of G_stLinkIEF.bnRX[63] and G_stLinkIEF.bnRX[127] do not turn ON. Check parameter settings or error status.

For parameter settings, refer to the following.

Page 25 Parameter Settings

For how to check the error status, refer to the following.

Page 54 TROUBLESHOOTING

5.1 Operation

MR-JET-G (Station number 1)

This program is to specify a target position and command speed, and to execute the relative positioning. The MR-JET-G on the station number 1 performs the positioning according to the instructions.



MR-JET-G (Station number 2)

This program is to specify a target position and command speed, and to execute the relative positioning. The MR-JET-G on the station number 2 performs the positioning according to the instructions.



5.2 Adding the FB Library

This section describes how to add the function blocks (FBs) in the FB library to the project.

[FBs to be added]

- MC_Power_CCLinkIEFBasic_F
- MCv_Home_CCLinkIEFBasic_F
- MC_MoveRelative_CCLinkIEFBasic_F

MELSOFT GX Works3 (Untitled Pro	ext) - [ProgramBody : ProgPou [PRG] [FBD/LD] 35tep]	– 🗆 ×
Project Edit Find/Replace Co	wert View Online Debug Recording Diagnostics Tool Window Help	_ 8 >
i 🗅 😁 💾 😂 😒 🛛 💓	▼, 16 10 16 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17	× .
12 A P 0 0 0 0 A 7	■ 電磁器 4 回 2 2 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
i⊢+++++++++++++++	- 特殊专家 医医白目白 医中毒素素	
Navigation 🛛 🖓 🗙	🔮 ProgramBody : ProgPou (PRG) 🗴 🎁 MC_Setting_CCUinkEFBasic_FS 4 🖡 V 👻 Element Selection	ų 3
9 C A	(Find POU) 約約約倍以以論会正×量	
All -	Display Target: Al	
Project	User Library	
Module Configuration	La MotionControl CCLink/EFBasic F MotionControl CCLink/EFBasic F	
5 FB/FUN	a Gen FR	_
🖬 🌆 Label	The Country Infection	
Device Device Device	Copercontentionada	_
	MC_MoveAbsolute_CCLinkEFBasic_F Absolute Value Positioning	
	ig MC_MoveAddtrive_CCLinkIFBasic_F Commanded Position Change MC_MoveRelative CCLinkIFBasic_F Relative	
		_
	an MC. Power_CCLinklifFBasic_F Operable	
	B MC, Stop, C.Link/EFBasic, F G Delete from Linkow List	
	Generation of Library	
	Right-click Show Program/EB/FUN File	
	Registre Circlet Control Registre Contro	
	Add to Project	
	rtopan Crest	e FB File
I II	Select FBEII E when adding the second EB or	later
		Control II.
	FBFILE	
	Create FB File	
	cicate i b nie	

2. The FBs will be added to [FBFILE] of [FB/FUN].



5.3 Local Labels

Set local labels to use for the programs.

How to set local labels

1. In the "Navigation" window, select [Program] ⇔ [Scan] ⇔ [MAIN] ⇔ [ProgPou] ⇔ [Local Label]. Double-click [Local Label].



2. Set the local labels as shown below. For how to input the label name, class, and comment (English), refer to F Page 30 Addition of global labels 1.

Label Name	Data Type	Class	English
PowerStatus	Bit (12)	VAR	Ready to operate status
PowerErrorID	Word [Unsigned]/Bit String [16-bit] (12)	VAR	Error code
Distance	Double Word [Signed] (12)	VAR	Movement amount

Pro	gPou [PRG] [Local Label Se	ett ×		Cli	ck	Deta	ailed Dis	play]. ^{*1}		
Filter>			Eas <u>y</u> Display 🕙	Display	Sett	ing	Check_			
	Label Name		Data Type				Class	Initial Value	Constant	English(Display Target)
1	PowerStatus	Bit(12)				VAR	-			Ready to operate status
2	PowerErrorID	Word [Un	signed]/Bit String [16-bit](12)			VAR	-			Error code
3	Distance	Double W	ford [Signed](12)			VAR	•			Movement amount
								Click		

To set Data Type, click [...] and follow the step in the figures below.

Setting value	Type Category Data Type		Element (1 dimension) ^{*2}	Element (2 dimensions) ^{*2}
Bit (12)	Simple Types	Bit	3	0
Word [Unsigned]/Bit String [16-bit] (12)	Simple Types	Word [Unsigned]/Bit String [16-bit]	3	0
Double Word [Signed] (12)	Simple Types	Double Word [Signed]	3	0







[Double Word [Signed] (1..2)]



For the data type having a suffix of (0..2), correct the suffix to (1..2).^{*3}

ProgPou [PRG] [Local Label Sett ×						Comment	(0, 0) to (1			
<filter> Easy Display 🔇 Display S</filter>			Sett	Correct (02) to (12).						
	Label Name	1	Data Tura			1	Class	Initial Value	Constant	English(Display Target)
1	PowerStatus	Bit(02)]	1.12	VAR	-			Ready to operate status
2	PowerErrorID	Word [Uns	signed]/Bit String [16-bit](02))		VAR	+	l i		Error code
3	Distance	Double We	ord [Signed](02)	8	1.3	VAR	-			Movement amount

*1 When [Detailed Setting] is selected, [Easy Display] is displayed.

- *2 This field can be set when "Array" is selected.
- *3 When the suffix is corrected, a value for "Element (1 dimension)" in the "Data Type Selection" window is changed to 2.

List of local labels

The following table lists the local labels to be used in this manual. Set them by referring to "How to set local labels".

Label Name	Data Type	Class	English
PowerStatus	Bit (12)	VAR	Ready to operate status
PowerBusy	Bit (12)	VAR	Ready to operate (executing)
PowerError	Bit (12)	VAR	Ready to operate (error)
PowerErrorID	Word [Unsigned]/Bit String [16-bit] (12)	VAR	Error code
HomeDone	Bit (12)	VAR	OPR completed
HomeBusy	Bit (12)	VAR	OPR (executing)
HomeCommandAborted	Bit (12)	VAR	OPR interrupted
HomeError	Bit (12)	VAR	OPR (error)
HomeErrorID	Word [Unsigned]/Bit String [16-bit] (12)	VAR	Error code
MoveRelDone	Bit (12)	VAR	Relative positioning completed
MoveRelBusy	Bit (12)	VAR	Relative positioning (executing)
MoveRelCommandAborted	Bit (12)	VAR	Relative positioning interrupted
MoveRelError	Bit (12)	VAR	Relative positioning (error)
MoveRelErrorID	Word [Unsigned]/Bit String [16-bit] (12)	VAR	Error code
Distance	Double Word [Signed] (12)	VAR	Movement amount
Velocity	Double Word [Signed] (12)	VAR	Speed

5.4 Device Comments

Set device comments to use for the programs.

In the "Navigation" window, select [Device] ⇔ [Device Comment] ⇔ [Common Device Comment]. Double-click [Common Device Comment] and set the comments as shown below.

Device Name	English
X0	Servo ON command
X1	OPR execution
X2	30000 pulses setting
X3	-30000 pulses setting
X4	20r/min setting
X5	40r/min setting
X6	Relative positioning execution
X10	Servo ON command
X11	OPR execution
X12	30000 pulses setting
X13	-30000 pulses setting
X14	20r/min setting
X15	40r/min setting
X16	Relative positioning execution



*1 Input X0 here when the devices of X0 and later are not displayed on the screen.

5.5 How to Use the FB Library

Select an FB registered in the library from "Element Selection" window, and drag and drop it to the program editor. Create an input ladder and an output ladder of the pasted FB to create a program.

Arrange the FB input ladder to the left side, and output ladder to the right side of the window in the same manner as standard ladder programs.

FB	Label Name	Comment
MC_Power_CCLinkIEFBasic_F	MC_Power_CCLinkIEFBasic_F_1	Ready to operate FB1
	MC_Power_CCLinkIEFBasic_F_2	Ready to operate FB2
MCv_Home_CCLinkIEFBasic_F	MCv_Home_CCLinkIEFBasic_F_1	OPR FB1
	MCv_Home_CCLinkIEFBasic_F_2	OPR FB2
MC_MoveRelative_CCLinkIEFBasic_F	MC_MoveRelative_CCLinkIEFBasic_F_1	Relative positioning FB1
	MC_MoveRelative_CCLinkIEFBasic_F_2	Relative positioning FB2



Point P

When the program editor is not displayed, in the "Navigation" window, select [Program] \Rightarrow [Scan] \Rightarrow [MAIN] \Rightarrow [ProgPou] \Rightarrow [ProgramBody], and double-click [ProgramBody].

2. The FB is pasted to the program editor.



3. Arrange a busbar, contact X0, and G_stLinkIEF.bnRX[H3F] in the program editor, and link them to Enable of the FB.



4. Link Axis information to the left side of the FB. Link the output to the right side of the FB.



5. Repeat these steps to create the ladder.



In this manual, the FB library provided by Mitsubishi Electric is used.

For how to set the FB library, refer to the following.

 \boxtimes Page 19 Downloading the FB Library

 $\ensuremath{\boxtimes}\xspace$ Page 20 Importing the FB Library

5

5.6 Program Examples

The following programs are designed to control the servo amplifiers. The programs use the FBs for servo amplifiers compatible with CC-Link IE Field Network Basic.

This section provides the sample programs for the station number 1 and station number 2.

Initial setting



Starting communications using CC-Link IE Field Network Basic



Servo ON



OPR



Setting the movement amounts



Setting the speed



Relative positioning



5.7 Writing Data to the Programmable Controller

Write the programs and the settings to the programmable controller. For how to do it, refer to the following.

5.8 Operation Check

After writing the programs and the parameters to the programmable controller, check whether the programmable controller and servo amplifiers communicate data properly.

Check it by following the procedures below.

Point P

An input signal X, such as Servo ON, can be forcibly turned on in the program of GX Works3 by following the steps below.

• Press the F3 key while the FBD/LD program is displayed in GX Works3. (The monitor execution status is entered.)

2 Place the cursor on a device (such as X0) or a label (such as bnRY[H4F]) to be turned on.

3 Pressing the Enter key while the Shift key is being pressed turns on the device or label.

(Doing the same once again turns it off.)

To clear the monitor execution status, press the F3 key while the Att key is being pressed.

Starting cyclic communications



*1 The program turns on Cyclic communication ready command when the programmable controller enters the RUN state. (SP Page 47 Starting communications using CC-Link IE Field Network Basic)

Servo ON



Executing the OPR



<Check with MR Configurator2.>*1

Font 1	Opt 💽 Line height 15 🛟 🐯 Cle	ear Restart Pause	Setting	
No.	Item	Unit	Axis1	Axis2
1	Cumulative feedback pulses	pulse	4383	-445
2	Servo motor speed	r/min mm/s	0	
3	Droop pulse	pulse	-1	
4	Cumulative cmd. pulses	pulse	0	
<i>k</i>	Campon	i ulas la		
11	Unit total power consumption	NV0	1	
23	Current position	pulse	0	1
24	Command position	pulse	0	3
25	Remaining command distance	pulse	0	
26	Command number	Station -	0	

Executing the relative positioning



<Check with MR Configurator2.>*1

Before positioning start

- C					
8	×	All	alau	Di	1
	Y		nlav	Di	

Font 1	.0pt 🔹 Line height 15 📑 🔂 Cl	ear CURestart	EstSetting	
No.	Item	Unit	Axis1	Axis2
1	Cumulative feedback pulses	pulse	4383	- <mark>4</mark> 457
2	Servo motor speed	r/min mm/s	0	0
3	Droop pulse	pulse	-1	1
4	Cumulative cmd. pulses	pulse	0	0
R.	2	i dastr		
	LIDIE TOTAL DOWIEF CODSUMPTION	1 WD	-	
23	Current position	pulse	0	0
29	Command position	puise	U	U
25	Remaining command distance	pulse	0	0
26	Command number		0	0

Positioning in progress

	Display All ×			
Font 1	10pt 🔹 Line height 15 🔹 🐺 Cle	ear Restart Pause	Setting	
No.	Item	Unit	Axis1	Axis2
1	Cumulative feedback nulses	nulse	9530461	-11306052
2	Servo motor speed	r/min mm/s	20	-40
5	Droop puise	puise	92100	-100033
4	Cumulative cmd, pulses	pulse	10000	59754
			_	
23	Current position	pulse	19462	-23454
24	Command position	pulse	19663	-23859
25	Remaining command distance	pulse	10338	6141
26	Command number		0	0

At the completion of positioning

	Display All ×			
Font 1	.0pt 🔹 Line height 15 🛟 🐺 Cl	ear Restart DPause	Setting	
No.	Item	Unit	Axis1	Axis2
1	Cumulative feedback nulses	nulse	15004381	15004458
2	Servo motor speed	r/min mm/s	0	0
٢	proop puise	puise	-1	4
4	Cumulative cmd. pulses	pulse	30000	-30000
<u>K</u>	2			
-				
23	Current position	pulse	30000	-30000
24	Command position	pulse	30000	-30000
25	Remaining command distance	pulse	U	U
26	Command number		0	0

*1 For how to check the servo amplifier state with MR Configurator2, refer to the following.

How to check the servo amplifier state

1. Place MR Configurator2 online, select [Monitor] ⇒ [Display All], and click [Display All].

For how to go online, refer to the following.

Page 17 Write to Servo Amplifier

MELSOFT MR Configurator2 New project										
: Project View Parameter	Safety Positioning-dat	Monit	tor Diagnosis Test Mo	de Adjustment	Tools V	Vindow Help				
i 🗅 🖻 💾 🖉 🖓 i 🔽	📙 🖉 I 🖸 🖏		Display All							
Project \mp ×		- 2	I/O Monitor							
, ⊡		ŧã	Graph							
🖏 System Setting			ABS Data Display							
🕀 🚛 Axis1:MR-JET-G Sta	<mark>ar</mark> .		Object Monitor							
🗄 🚛 Axis2:MR-JET-G Sta	ar 🛛									

2. The servo amplifier state is quantified and displayed by each item.

Display All ×							
Font 1	Font 10pt • Line height 15 💠 💀 Clear 🖓 Restart 🖓 Pause 🕏 Setting						
No.	Item	Unit	Axis1	Axis2			
1	Cumulative feedback pulses	pulse	4383	-4457			
2	Servo motor speed	r/min mm/s	0	0			
3	Droop pulse	pulse	-1	1			
4	Cumulative cmd. pulses	pulse	0	0			
5	Command pulse frequency	kpulse/s	0	0			
6	Regenerative load ratio	%	0	0			
7	Effective load ratio	%	0	0			
8	Peak load ratio	%	0	1			
9	Torque/Instantaneous torque	%	0	-1			
10	Within one-revolution position	pulse	1938454	3071631			
11	ABS counter	rev	5119	-29697			
12	Load inertia moment ratio	times	7.00	7.00			
13	Bus voltage	V	283	283			
14	Servo motor thermistor temperature	٥C	9999	9999			
15	Cumulative feedback pulses (Motor unit)	pulse	4383	-4457			
16	Electrical angle	pulse	1938453	3071631			
17	Internal temperature of encoder	٥C	76	77			
18	Settling time	ms	0	0			
19	Oscillation detection frequency	Hz	0	0			
20	Number of tough drive operations	times	0	0			
21	Unit power consumption	W	12	12			
22	Unit total power consumption	Wh	1	1			
23	Current position	pulse	0	0			
24	Command position	pulse	0	0			
25	Remaining command distance	pulse	0	0			
26	Command number		0	0			

6 TROUBLESHOOTING

6.1 Checking Procedure

This section describes how to check the state of the programmable controller and the servo amplifiers.

Check with the LED status

Check the communication status with the LEDs of the programmable controller and the servo amplifiers. For the programmable controller, Page 55 Check with the LED status For the servo amplifiers, Page 57 Check with the display LED

Check depending on the error

Check the following depending on the error that has occurred in the programmable controller or the servo amplifiers. For the programmable controller, IP Page 55 Check of error details For the servo amplifiers, IP Page 57 Check with MR Configurator2

■Wiring

Page 11 System Configuration

• Are the Ethernet cables fully inserted?

■Communication settings

For the programmable controller, SP Page 25 Parameter Settings

For the servo amplifiers, S Page 14 Ethernet Parameter Settings

- · Do the parameter settings on GX Works3 match with the parameter settings on the servo amplifiers?
- · Are the IP addresses and the subnet masks of the programmable controller and the servo amplifiers set properly?





(or power off and on) the servo amplifier. If not, a new value does not take effect.

Programs

Page 47 Program Examples

· Are the programs created as shown in the program examples?



Servo amplifier

Check with the LED status

Check the programmable controller status with the LED.



Check of error details

Go to the menu bar of GX Works3. Select [Diagnostics] ⇔ [CC-Link IEF Basic Diagnostics]. The network status are listed, and error details of the programmable controller can be checked at "Detailed Diagnostics".

CC-Link IEF Bi	asic Diagnostic	s						×	
CC.I	ink I	Field	Change	IP Address Display	Monitor Sta	atus			
		Basis	DEC	OHEX		Monitorin	Start Monitoring Stop Monitor	ring	
_		Basic							
Master Sta	ation Status								
(Paramete	r)	2 IP /	ddress 192.168.3.2	50 Error Code	e No Error		Error Details.	····	
Network S	Status								
 Rough E 	Diagnostics —								
Link Scar	n Time/Error St	tations	3	500	A disclosures	1	Error Stor: 2 Unfixed Stor: 0		
Grou	up No.1	Present	³ ms Maximun	1 500 ms	Minimum	1 ms	Endr Stills, 2 Officed Stills, 0	Click [Error Details] of	
Grou	up No.2	Present	ms Maximun	n ms	Minimum	ms	-	a desired station number	
Grou	up No.3	Present	ms Maximun	n ms	Minimum	ms	-	to check the error details.	
Grou	up No.4	Present	ms Maximun	n ms	Minimum	ms	-		
- Detailed	Diagnostics –								
Diagnostic	cs Target Grou	Group No.1	\sim						
Station No	. Occpd Stns	Reserved Station	IP Address	Transmission Status	Disconnection	s Time-out (Count The Latest Error Error Dotain		
1	1	No Setting	192.168.3.1	Transmitting	2	6	CFE8 Error Details.		
2	1	NO Second	192.108.3.2	mansmiccing	2	0	CFE6 Enter Discussion		
						Station No. 1		×	
								~	
						Error Code	CFE8		
						Error Details	Type: Network Error - There is no response from slave stat	tion	
						_			
						-			
						Corrective	- Check the slave station disconnectio	on detection setting in	
						Actions	master station parameter (Network Co	Configuration Settings).	
Clear Lat	test Error Code	2					 Check the slave station which is disc 	connected.	
						-	 Take noise reduction measures. 		
								Close	

List of error codes

Error code	Error name	Error details and cause	Action
CFC0H	Cyclic transmission error (master station)	The cyclic transmission cannot be performed because multiple master stations exist in the same network address.	Check whether the master stations are properly placed in the networks.
CFC1H	Cyclic transmission error (master station)	The cyclic transmission cannot be performed because an error has occurred in cyclic transmission.	Take measures to reduce noise. If the same error is displayed again after the retry, please consult your local Mitsubishi representative.
CFC8H	Cyclic transmission error (master station)	The cyclic transmission cannot be performed because a remote station controlled by another master station exists.	Check whether the master stations are properly placed in the networks. Check the remote station where the error has occurred.
CFC9H	Cyclic transmission error (master station)	The cyclic transmission cannot be performed because two or more remote stations having the same IP address exist in the same network address.	Check the status of remote stations in the networks. Check the remote stations where the error has occurred.
CFD0H	Master station error	The port No. (61450) to be used for CC-Link IE Field Network Basic has already been used.	Check and correct the port No. used in Ethernet function.
CFD1H	Master station error	An invalid value has been set for the subnet mask.	Check the parameter setting.
CFE0H	Cyclic transmission error (remote station)	The cyclic transmission was executed for the remote station controlled by another master station.	Check whether the master stations are properly placed in the networks. Check the remote station where the error has occurred.
CFE1H	Cyclic transmission error (remote station)	The number of occupied stations that has been specified from the master station is unusable.	Check the number of occupied stations in the master station parameter (Network Configuration Settings).
CFE8H	Cyclic transmission error (remote station)	There is no response from the remote station.	Check the remote station disconnection detection setting in the master station parameter (Network Configuration Settings). Check the status of remote stations in the networks. Check the remote station which is disconnected. Take measures to reduce noise.
CFE9H	Cyclic transmission error (remote station)	Two or more remote stations having the same IP address exist in the same network address.	Check the remote stations where the error has occurred.
CFF0H	Remote station error	An error has occurred in a remote station.	Check the remote station where the error has occurred.

The following table lists the error codes related to the CC-Link IE Field Network Basic function.

For details on troubleshooting, refer to the following.

CC-Link IE Field Network Basic Reference Manual [9 TROUBLESHOOTING]

For details on the error codes, refer to the following.

MELSEC iQ-F FX5 User's Manual (Application) [Appendix 3 Error Code]

6.3 Checking the Servo Amplifiers

Check with the display LED

The operation status can be checked with the servo status display LED of the servo amplifier.



For details on the LEDs of the servo amplifier, refer to the following.

Page 12 Switch Setting and Display

For details on the display of MR-J5-G servo amplifiers, refer to the following.

🖙 Page 60 Display

Check with MR Configurator2

Go to the menu bar of MR Configurator2. Select [Diagnosis] ⇒ [Alarm Display]. If an error has occurred on the servo system, the details of the alarm or the warning can be checked with the following window.

1							
J Axis1	×					_	
D.	Name		Est. occurrence time	Est. elapsed time (h)		
016.3	Encoder initial com	nunication error 1	3/22/2022 6:05:05 PM	0			
[/	AL. 016.3_Enc	oder initial communication	- Receive data err	or 3]			Ţ
	Cause		Check/action metho	d	N	lodel	ſ
1	1. The encoder of	able has been disconnected.	Check if the encoder ca	ible is connected co	orrectly. [.	JET- 3]	l
	2. The servo par communicati	ameter settings for the on method are incorrect.	Set the servo paramete encoder cable commun type/four-wire type). [JET-G]: [Pr. PC04.3 En communication methor	r correctly according nication method (tw coder cable d selection]	g to the o-wire		ĺ
3. There is a problem with the encoder cable.			Check if the encoder cable has been disconnected or has shorted. If there is a problem				•
dditiona	l information:(Alarm re	set disable)	currence Data Display	Causes Again	Occurred	Alarm Res	et
larm his	tory			0	-		
	Number	Name		Power-on une [n]	100	le	_
TNEW	010.1	Encoder initial communication	error 1	125			
2	010.1	Lindervoltage	CITOL 1	125			
3	016.3	Encoder initial communication	error 1	125		-	
4	010.1	Undervoltage		125		-	
5	016.3	Encoder initial communication	error 1	125		-	
-	010.1	Undervoltage		125		-	1
0							

For details on alarm numbers of the MR-JET-G, refer to the following.

MR-JET User's Manual (Troubleshooting)

For details on alarm numbers of the MR-J5-G, refer to the following.

Page 60 Alarm numbers

APPENDICES

Appendix 1 Application Examples of the FB Library

The following table lists the FBs included in the FB library for servo amplifiers compatible with CC-Link IE Field Network Basic. Create programs by combining the FBs according to applications.

List of FBs for servo amplifiers compatible with CC-Link IE Field Network Basic

Name	Description
MC_Power_CCLinkIEFBasic_F (Ready to operate)	Sets the servo amplifier of the specified axis to the ready-to-operate state.
MCv_Home_CCLinkIEFBasic_F (OPR)	Executes the OPR for the specified axis.
MC_Stop_CCLinklEFBasic_F (Forced stop)	Stops the specified axis forcibly.
MC_Halt_CCLinkIEFBasic_F (Stop)	Stops the specified axis.
MC_MoveAbsolute_CCLinkIEFBasic_F (Absolute positioning)	Sets a target position (absolute position) for the specified axis, and executes the positioning.
MC_MoveRelative_CCLinkIEFBasic_F (Relative positioning)	Moves the object a specified movement amount from the position of current value of specified axis.
MC_MoveAdditive_CCLinkIEFBasic_F (Target position change)	Adds a specified relative position to the positioning command of the specified axis immediately before the execution, and executes the positioning.
MC_MoveVelocity_CCLinkIEFBasic_F (Speed control)	Controls the speed of specified axis with a set value.
MC_TorqueControl_CCLinkIEFBasic_F (Torque control)	Performs a torque control for the specified axis with a set value.
MC_Reset_CCLinkIEFBasic_F (Axis error reset)	Clears an error of the specified axis.
MCv_ReadMultiObject_FX5CPUEN (Multiple objects read)	Reads multiple objects from the servo amplifier by using the FX5 CPU module.
MCv_WriteMultiObject_FX5CPUEN (Multiple objects write)	Writes data to multiple objects of the servo amplifier by using the FX5 CPU module.
MCv_ChangeMapping_FX5CPUEN (Mapping change)	Changes the mapping of servo amplifiers to be communicated with using the CC-Link IE Field Network Basic. The mapping change is performed by using the FX5 CPU module.

Examples of programs using FBs

Program example	FB used	Reference
Servo ON	MC_Power_CCLinkIEFBasic_F (Ready to operate)	☞ Page 47 Servo ON
OPR	MCv_Home_CCLinkIEFBasic_F (OPR)	☞ Page 48 OPR
Relative positioning	MC_MoveRelative_CCLinkIEFBasic_F (Relative positioning)	Page 49 Relative positioning

For examples of the other programs, refer to the following.

MELSEC iQ-F PLCopen Motion Control FB Reference [4 OPERATION EXAMPLES]

Appendix 2 Downloading and Registering a Profile

A profile is the data that stores information of a connected device (such as a model).

A profile can be used on a personal computer after it is registered using GX Works3 and shared with other MELSOFT products. Once a profile is registered using GX Works3, the profile data is reflected to other MELSOFT products.

To register or delete a profile, log on to the personal computer as a user with the administrator privilege, and close the project in advance.

- 1. To obtain the profile data, please contact your local Mitsubishi Electric representative.
- 2. Start GX Works3, and select [Tool] ⇒ [Profile Management] ⇒ [Register].



3. Select the obtained file on the "Register Profile" window, and click [Register]. A profile is a compressed file (such as *.zip, *.ipar, and *.cspp). Register the profile without decompressing.



Appendix 3 Supplementary Information

Information on servo amplifiers

The following are the manuals and sections having information of the MR-J5-G.

■Power supply wiring

MR-J5 User's Manual (Hardware) [3 SIGNALS AND WIRING]

■Display

MR-J5-G/MR-J5W-G User's Manual (Introduction) [3.2 Switch setting and display of the servo amplifier]

■Parameters

CMR-J5-G/MR-J5W-G User's Manual (Parameters)

Link devices (RWr, RWw, RX, RY)

MR-J5-G/MR-J5W-G User's Manual (Communication Function) [2.4 APPENDIX]

■Alarm numbers

MR-J5 User's Manual (Troubleshooting)

REVISIONS

Revision date	Version	Description
May 2022	А	First edition
January 2023	В	Modified parts Front cover, INTRODUCTION, RELEVANT MANUALS, TRADEMARKS

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Please confirm the following product warranty details before using this product. MELSEC iQ-F FX5S/FX5UJ/FX5U/FX5UC User's Manual (Hardware) [WARRANTY] MR-JET-G User's Manual (Introduction) [WARRANTY] MR-J5-G/MR-J5W-G User's Manual (Introduction) [WARRANTY]

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- Before using the product introduced in this manual, please read the manuals for the product carefully to handle the product correctly.
- This product has been manufactured as a general-purpose part for general industries, etc., and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
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