

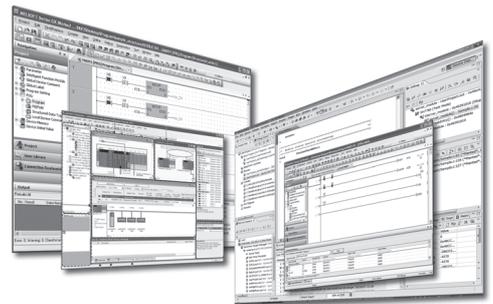


MELSOFT

Engineering Software

Predefined Protocol Support Tool For Positioning Operating Manual

-SW1DNN-SCMPTP-E



SAFETY PRECAUTIONS

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product only. For the safety precautions for the programmable controller system, refer to the user's manual for the CPU module used and MELSEC iQ-R Module Configuration Manual.

In this manual, the safety precautions are classified into two levels: "⚠ WARNING" and "⚠ CAUTION".

WARNING

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

CAUTION

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

Under some circumstances, failure to observe the precautions given under "⚠ CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

[Design Precautions]

WARNING

- To perform an operation, such as data change or operating status change, to running devices, such as a programmable controller, servo, robot, or server, from a personal computer equipped with this product, configure an interlock circuit outside of the devices so that the entire system always operates to the safety side. Additionally, read this manual carefully and ensure the safety before operations. Especially, in the above mentioned operations that are performed from external devices through network, any problems on devices may not be dealt with promptly due to an abnormal data communication.
 - Configure a safety circuit outside of the personal computer equipped with this product so that the entire system operates to the safety side even when a fault occurs in the personal computer. Failure to do so may result in an accident due to an incorrect output or malfunction.
 - To maintain the safety of the programmable controller system against unauthorized access from external devices via the network to the personal computer equipped with this product, take appropriate measures.
To maintain the safety of the system against unauthorized access from external devices via the Internet to the personal computer equipped with this product, take measures such as installing a firewall.
-

[Design Precautions]

CAUTION

- During application of each setting, do not perform the operation that forcibly turns the personal computer equipped with this product OFF.
Otherwise, the data will be undefined and resetting and re-registering data will be required. Additionally, doing so may cause the malfunction of this product.
-

[Startup and Maintenance Precautions]

CAUTION

- The online operations performed from a personal computer to a running CPU module (operations for a serial communication module) have to be executed after the manual has been carefully read and the safety has been ensured.
 - The positioning test functions such as positioning start, home position return, JOG, inching, or positioning data test must be executed with the CPU module set to STOP after the manual has been carefully read and the safety has been ensured.
Specially when executing the function on the network system, ensure the safety thoroughly since the machinery whose operation cannot be checked by an operator may be activated. The operation failure may cause the injury or machine damage.
 - Before testing the operation, set a low speed for the positioning data so that the operation can be stopped immediately upon occurrence of a hazardous condition.
 - Confirm and adjust the program and each parameter before operation. Unpredictable movements may occur depending on the machine.
-

[Operating Precautions]

CAUTION

- Do not go near the machine during operations such as the positioning test. Doing so may lead to injuries.
-

CONDITIONS OF USE FOR THE PRODUCT

- (1) This software shall be used under the following conditions:
 - i) that any failure occurred in this software, if any, shall not lead to any serious accident.
 - ii) that the backup and/or fail-safe functions are systematically performed outside the devices in the cases of any failure occurred in this software.
- (2) Mitsubishi assumes no responsibility and liability (including but not limited to, default liability, defect liability, quality assurance responsibility, tort liability, product liability) for the quality, performance, and safety of both this software and products using this software.

INTRODUCTION

Thank you for your patronage. We appreciate your purchase of the engineering software, MELSOFT series.

This manual describes the system configuration and functions to use Predefined Protocol Support Tool For Positioning.

Before using this product, please read this manual and the relevant manuals carefully and develop familiarity with the functions and performance of Predefined Protocol Support Tool For Positioning to handle it correctly.

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RELEVANT MANUALS

Manual name [manual number]	Description	Available form
Predefined Protocol Support Tool For Positioning Operating Manual [SH-082176ENG] (this manual)	System configuration, operation methods for each function, and troubleshooting in Predefined Protocol Support Tool For Positioning	e-Manual PDF
GX Works3 Operating Manual [SH-081215ENG]	System configurations, parameter settings, and operation methods for the online function in GX Works3	e-Manual PDF
Predefined Protocol Support For Positioning Function Block Library Reference (IAI Corporation) [BCN-P5999-1179]	Specifications, functions, and input/output labels of IAI controller function blocks	e-Manual PDF



e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.

e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- Hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.
- Sample programs can be copied to an engineering tool.

TERMS

Unless otherwise specified, this manual uses the following terms.

Term	Description
GX LogViewer	Software to display data collected by data logging.
GX Works3	An engineering tool for setting, programming, debugging, and maintaining programmable controllers.
Intelligent function module	A module that has functions other than an input or output, such as an A/D converter module and D/A converter module.

GENERIC TERMS AND ABBREVIATIONS

Unless otherwise specified, this manual uses the following generic terms and abbreviations.

Term	Description
Support Tool	An abbreviation for Predefined Protocol Support Tool For Positioning.

1 BEFORE USING THIS PRODUCT

Predefined Protocol Support Tool For Positioning (hereinafter referred to as Support Tool) is a tool for setting and debugging positioning control of an electric actuator via the MELSEC programmable controller.

This product supports early startup of the positioning control system with an electric actuator and reduction of the design man-hours for the system.

1.1 Features

This section shows the features of Support Tool.

Easy system startup without concerning a predefined protocol

By simply selecting a connected model, its protocol for communication is automatically set.

All the man-hours required for the conventional protocol design can be saved since there is no need to confirm the protocol specifications for each device.

Positioning and JOG operations without a program

Operations such as positioning and JOG can be performed with simple operations of the tool.

The system can be started up early since positioning control can be debugged without creating a program.

Operation check without a program

The positioning control status or an occurring alarm can be checked without concerning about sending/receiving communication commands.

A dedicated display device or program is not required.

The device operating status can be visualized in the screen of the tool and that significantly improves the debugging efficiency.

1.2 Help

The operation methods, specifications, and software version of Support Tool can be checked with the Help function.

Displaying the manual

Open the manual for Support Tool.

Operating procedure

Select [Help] ⇒ [Open Manual] ().

e-Manual Viewer starts and the manual appears.

Connecting to MITSUBISHI ELECTRIC FA Global Website

Open the MITSUBISHI ELECTRIC FA Global Website in a web browser.

Make sure your personal computer connects to the Internet in advance.

Operating procedure

Select [Help] ⇒ [Connection to MITSUBISHI ELECTRIC FA Global Website].

Checking the version

Display information such as the software version.

Operating procedure

Select [Help] ⇒ [Version information].

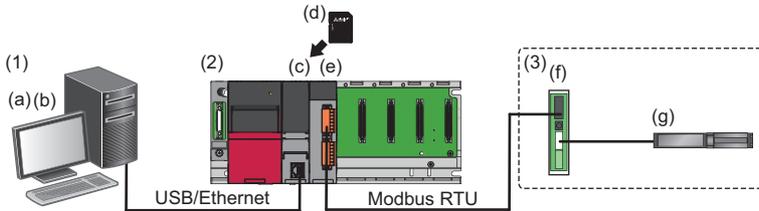
2 SYSTEM CONFIGURATION

This chapter explains the system configuration of Support Tool.

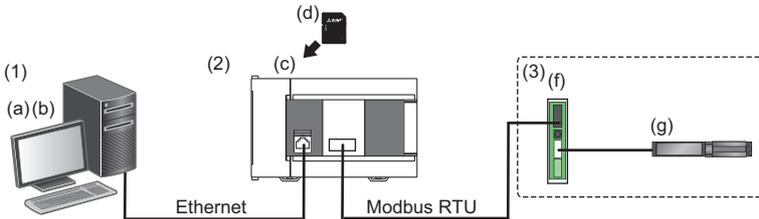
2.1 Overall System Configuration

This section shows the overall system configuration for using Support Tool.

- MELSEC iQ-R



- MELSEC iQ-F



System configuration			Cable/network	
(1)	Personal computer	(a)	Predefined Protocol Support Tool For Positioning	USB Ethernet
		(b)	GX Works3	
(2)	MELSEC programmable controller	(c)	CPU module	Serial communication (Modbus RTU)
		(d)	SD memory card	
		(e)	Serial communication module	
(3)	Electric actuator products	(f)	Electric actuator controller	—
		(g)	Electric actuator	

Software packages

The following shows the software packages supported by Support Tool.

Software package	Version
GX Works3	Version 1.055H or later
GX LogViewer	Version 1.100E or later

For the versions of GX Works3 which are supported by each version of Support Tool in which supported models are added, refer to the following:

☞ Page 45 Additions and Changes from Previous Version

Modules

Support Tool is supported by the following Mitsubishi Electric MELSEC modules.

Modules which can be specified for the connection route from the personal computer on which Support Tool runs are in accordance with the specifications of GX Works3.

For the mountability of an SD memory card and available SD cards, refer to the user's manual for the module used.

MELSEC iQ-R

■CPU module

Product name	Generic term	Model name
PLC CPU	RnCPU	R00CPU, R01CPU, R02CPU, R04CPU, R08CPU, R16CPU, R32CPU, R120CPU
	RnENCPU	R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU
Process CPU (process mode)	RnPCPU	R08PCPU, R16PCPU, R32PCPU, R120PCPU
Remote head module	—	RJ72GF15-T2, RJ72GF15-T2(SR), RJ72GF15-T2(LR)

For CPU modules that can be used with a serial communication module, refer to the following:

 MELSEC iQ-R Module Configuration Manual

■Serial communication module

This tool supports the serial communication using the following modules.

- RJ71C24
- RJ71C24-R2
- RJ71C24-R4

MELSEC iQ-F

This tool supports the serial communication using the following CPU modules.

Generic term	Model name
FX5UCPU	FX5U-32MR/DS, FX5U-32MR/ES, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/ES, FX5U-32MT/ESS, FX5U-64MR/DS, FX5U-64MR/ES, FX5U-64MT/DS, FX5U-64MT/DSS, FX5U-64MT/ES, FX5U-64MT/ESS, FX5U-80MR/DS, FX5U-80MR/ES, FX5U-80MT/DS, FX5U-80MT/DSS, FX5U-80MT/ES, FX5U-80MT/ESS
FX5UCCPU	FX5UC-32MR/DS-TS, FX5UC-32MT/D, FX5UC-32MT/DS-TS, FX5UC-32MT/DSS, FX5UC-32MT/DSS-TS, FX5UC-64MT/D, FX5UC-64MT/DSS, FX5UC-96MT/D, FX5UC-96MT/DSS

CPU modules the firmware versions of which are 1.200 or later are available.

For the versions of GX Works3, refer to the following:

 Page 45 Additions and Changes from Previous Version

For available communication boards and communication adapters, refer to the user's manual for the module used.

Connection configuration between a CPU module and a personal computer

The following shows configurations to connect a CPU module to a personal computer.

Available connection routes differ depending on the series of the CPU module.

○: Available, —: Not available

Connection route		MELSEC iQ-R	MELSEC iQ-F
USB		○	—
Ethernet	Direct connection	○	○
	Connection through an Ethernet port	○	○

Connection through a USB port

Connect a CPU module to a personal computer with a USB cable.

For available cables, refer to the user's manual for the module used.

Point

When using a USB cable for the first time, install the USB driver.

 Page 48 USB Driver Installation Procedure

Connection through an Ethernet port

Connect a CPU module to a personal computer with an Ethernet board that is built-in to the personal computer or commercially available.

For an RnENCPU, use the Ethernet port of the CPU part to connect to the personal computer. An Ethernet port of the network part cannot be used for this connection.

■Direct connection

A CPU module can be directly connected to a personal computer on a 1:1 basis with an Ethernet cable without a hub.

Specifying the IP address of the CPU module is not required.

Point

Do not communicate by connecting to LAN line directly. This may increase the line load and affect the communications of other devices.

■Connection through an Ethernet port

A CPU module can also be connected to a personal computer via a hub on the same local network.

The IP address of the CPU module needs to be specified. In addition, set the same network address as the CPU module in the network settings of the personal computer.

Point

- Connection can be established with a LAN cable only. Connection via the Internet is not available.
- Do not configure the direct connection settings when connecting a CPU module to a personal computer on a 1:1 basis.

Connection configuration between a CPU module and electric actuator products

Up to two communication channels can be set to connect a CPU module to electric actuator products.

Available channels differ depending on the series of the CPU module.

For the MELSEC iQ-R series, the channels of a mounted communication module can be used.

For the MELSEC iQ-F series, the channels of a CPU module, communication board, or communication adapter can be used.

○: Available, —: Not available

Connection route	MELSEC iQ-R	MELSEC iQ-F
CH1	○ (Serial communication module)	○ (CPU module built-in RS-485 port)
CH2	○ (Serial communication module)	○ (Communication board)
CH3	—	○ (Communication adapter)
CH4	—	○ (Communication adapter)

Serial communication (Modbus RTU) is used to communicate from each channel to electric actuator controllers.

2.2 Supported Manufacturers and Models

This section shows supported products.

Electric actuator controller

Manufacturer	Type	Series	Type and model	
IAI Corporation	Built-in Controller Type Actuator	RCP6S	RCP6S ^{*1}	
	Controller	PCON	PCON-CA/CB/CFA/CFB PCON-C/SE PCON-CF PCON-CY PCON-CYB	
			DCON	DCON-CA/CB DCON-CYB
			ACON	ACON-CA/CB ACON-C/SE ACON-CY ACON-CYB
	SCON	SCON-CA/CAL/CB SCON-CB-F ^{*1*2} SCON-C		

*1 Positioning data cannot be read from or written to this model with Support Tool.
Use Teaching Pendant or PC Software manufactured by IAI Corporation.

*2 The positioning start cannot be executed with the positioning test function of Support Tool.
Use Teaching Pendant or PC Software manufactured by IAI Corporation.

2.3 Operating Environment

For the operating environment for Support Tool, refer to the following:

 Predefined Protocol Support Tool For Positioning Installation Instructions

3 PROCEDURES TO START SUPPORT TOOL

This chapter explains the procedures from obtaining Support Tool to starting it.

3.1 How to Obtain Support Tool

For information on how to obtain Support Tool, please consult your local Mitsubishi representative.

3.2 Installation and Uninstallation

For installing and uninstalling Support Tool, refer to the following:

 Predefined Protocol Support Tool For Positioning Installation Instructions

3.3 Settings in GX Works3

This section shows required operations in GX Works3 before starting Support Tool.

Operating procedure

1. Start GX Works3.
2. Set parameters.
3. Set a connection destination.
4. Write the parameters to the connection target module.

Point

For details on the operations of GX Works3, refer to the following:

 GX Works3 Operating Manual

Parameter setting items

Before starting Support Tool, set the following parameters in GX Works3 and write them to the module.

■MELSEC iQ-R

Set the module parameters of a serial communication module.

"Parameter" ⇒ "Module Information" ⇒ "(module name)" ⇒ "Module Parameter" in the Navigation window

Setting data

Item	Setting value	
Communication protocol setting	Predefined protocol	
Communication speed setting	Set the value according to the setting of an electric actuator controller to be used.	
Transmission setting	Data bit	8
	Parity bit	None
	Stop bit	1
Communication control specification	Echo back enable/prohibit specification	Echo back prohibit

Point

For a setting example, refer to the following:

 Page 49 Setting Example

■MELSEC iQ-F

1. Specify the detailed model name of a CPU module in the system parameters.

"Parameter" ⇒ "System Parameter" ⇒ "I/O Assignment Setting" in the Navigation window

2. Set the module parameters of a CPU module or a communication adapter.

- Built-in RS-485 port (CH1)

"Parameter" ⇒ "FX5UCPU" ⇒ "Module Parameter" ⇒ "485 Serial Port" in the Navigation window

- Communication board (CH2)

"Parameter" ⇒ "FX5UCPU" ⇒ "Module Parameter" ⇒ "Expansion Board" in the Navigation window

- Communication adapter (CH3/CH4)

"Parameter" ⇒ "Module Information" ⇒ ADP1 to ADP6 (communication adapter) ⇒ "Module Parameter" in the Navigation window

Setting data

Item		Setting value
Communication Protocol Type		Predefined Protocol Support Function
Advanced Settings	Data Length	8bit
	Parity Bit	None
	Stop Bit	1bit
	Baud Rate	Set the value according to the setting of an electric actuator controller to be used.

3.4 Display Language Switching

Support Tool supports multiple languages; therefore, the display language such as one on the menu can be switched on a personal computer.

The display language of the tool follows the one set in GX Works3.

For the method to switch the display language of GX Works3, refer to the following:

 GX Works3 Operating Manual

Precautions

- If the display language differs from the one for the operating system, texts may not displayed properly in the screen. (Displayed texts may get cut.)
- To switch the display language in Windows® 10, supplemental fonts of the target language are required. The fonts can be added by the following operation.

Select [Settings] ⇒ [Apps] ⇒ [Apps & features] ⇒ [Manage optional features] ⇒ [Add a feature] from Windows Start.

3.5 Start and End

This section shows the procedures for starting and ending Support Tool.

Start

Support Tool is started from the menu of GX Works3.

Operating procedure

1. Select [Tool] ⇒ [Module Tool List] from the menu of GX Works3.
The "Module Tool List" screen appears.
2. Select a series for "Module Series Selection" in the screen.
3. Select "Predefined Protocol Support Tool For Positioning".
4. Click the [OK] button.

Point

Multiple pieces of Support Tool cannot be started at the same time.

End

Operating procedure

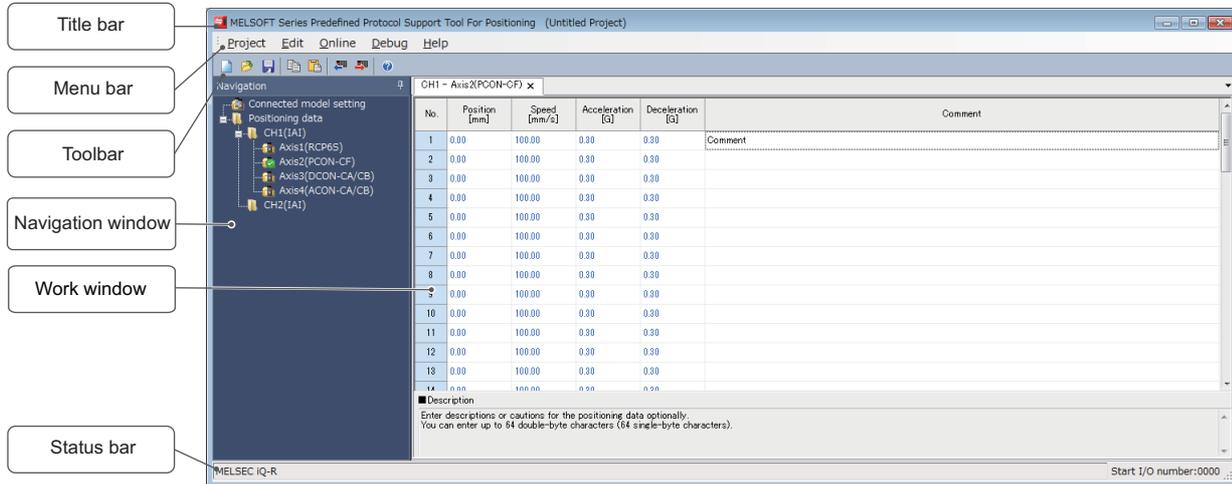
1. Select [Project] ⇒ [Exit].

4 SCREEN CONFIGURATION

This chapter explains the screen configuration of Support Tool.

4.1 Main frame

This section shows the main frame configuration.



Name	Description	Reference
Title bar	To display the tool name and a project file name.	—
Menu bar	To display menus.	Page 19 Menu List
Toolbar	To display tool icons.	—
Navigation window	To display contents of a project in a tree format.	Page 20 PROJECT MANAGEMENT
Work window	A main screen used for setting.	—
Status bar	To display the series name of a project. For the MELSEC IQ-R series, the start I/O number of a connection target module is displayed.	Page 26 Setting a Start I/O Number

4.2 Menu List

This section shows the menu configuration of Support Tool.

[Project]	
⇒ [New]	Page 21 Creating a project
⇒ [Open]	Page 21 Opening a project
⇒ [Close]	—
⇒ [Save]	Page 22 Saving a project
⇒ [Save As]	
⇒ [Exit]	Page 17 End
[Edit]	
⇒ [Copy]	Page 30 Copying/pasting data
⇒ [Paste]	
⇒ [Change Channel]	Page 30 Changing channels
⇒ [Change Edit Format] ⇒ [Simple]	Page 29 Switching the simple and detailed display formats
⇒ [Change Edit Format] ⇒ [Detail]	
[Online]	
⇒ [Set Start I/O Number]	Page 26 Setting a Start I/O Number
⇒ [Write the Predefined Protocol Information]	Page 27 Writing Predefined Protocol Information
⇒ [Read Positioning Data]	Page 33 Reading Positioning Data
⇒ [Write Positioning Data]	Page 31 Writing Positioning Data
[Debug]	
⇒ [Positioning Test]	Page 34 POSITIONING TEST
[Help]	
⇒ [Open Manual]	Page 10 Displaying the manual
⇒ [Connection to MITSUBISHI ELECTRIC FA Global Website]	Page 10 Connecting to MITSUBISHI ELECTRIC FA Global Website
⇒ [Version information]	Page 10 Checking the version

5 PROJECT MANAGEMENT

This chapter explains basic operations and management of a project.

5.1 Project File and Data Configuration

Support Tool regards positioning data settings for one serial communication module or MELSEC iQ-F series CPU module as one project.

Created projects are saved in their respective files.

For considerations to use a file created in a different version of Support Tool, refer to the following:

☞ Page 47 Using a Project in a Different Version

Data to be created in a project is displayed in the Navigation window.

Data configuration

The following shows data displayed in a tree. (Default data names are used.)

Data displayed in the Navigation window

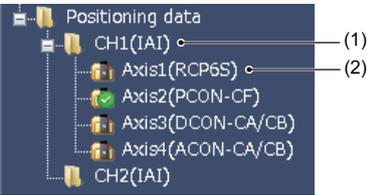
■ Connected model setting

Creation method: ☞ Page 25 Setting a Connected Model

Figure	Item	Description
	Connected model setting	Data to set values required for a connection destination model and for sending/receiving its predefined protocol.

■ Positioning data

Creation method: ☞ Page 28 POSITIONING DATA SETTINGS

Figure	Item	Description
	(1) CH number (manufacturer name)	The channel number of a module to be used and the manufacturer name of a connected model set to the channel are displayed. ☞ Page 24 Selecting a Manufacturer
	(2) Axis number (connected model)	Axis numbers and their respective connected models configured in the "Connected model setting" screen are displayed. By double-clicking each item, a screen to set positioning data for the axis appears. ☞ Page 29 Setting and Editing Positioning Data The icon indicates a positioning data status. <ul style="list-style-type: none"> : Initial value or unedited : Edited (no error) : Error

5.2 Creating a Project File

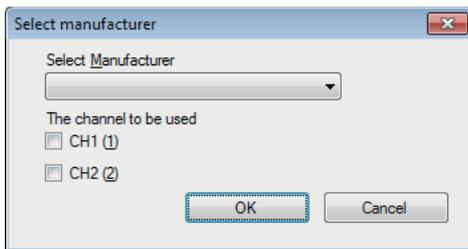
This section explains the methods for creating, opening, and saving a project.

Creating a project

Select the manufacturer of a connected model and the channel of a module to be used to create a new project.

Window

[Project] ⇒ [New] ()



For the operations in the "Select manufacturer" screen, refer to the following:

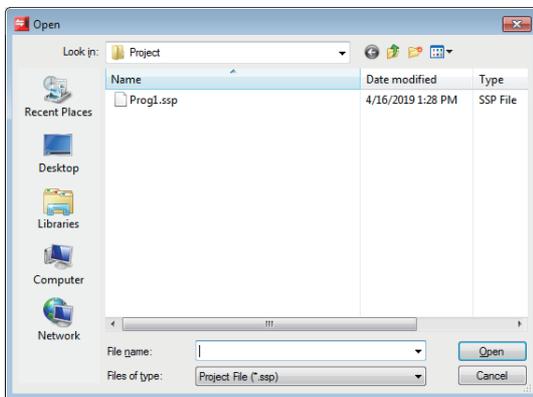
 Page 24 Selecting a Manufacturer

Opening a project

Read a project saved on a personal computer or another data storage device.

Window

[Project] ⇒ [Open] ()



Operating procedure

Set each item and click the [Open] button.

Precautions

- Projects of the MELSEC series different from a project opened in the start source GX Works3 cannot be opened.
- For considerations to open a project in a version different from the one in which the project was created, refer to the following:

 Page 47 Using a Project in a Different Version

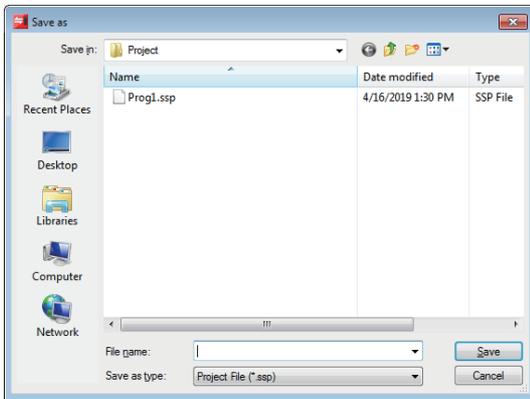
Saving a project

Save a project on the personal computer or another data storage device.

Saving projects under the specified name

Window

[Project] ⇒ [Save As]



Operating procedure

Set each item and click the [Save] button.

Precautions

For the unusable character strings for a project or path name, refer to the following:

☞ Page 46 Unusable Character String (Reserved Word)

Overwriting a project

Operating procedure

Select [Project] ⇒ [Save] ().

6 SYSTEM SETTINGS

Data communication can be performed with Support Tool by setting items for the system configuration. The following table shows the items to be set.

Item	MELSEC iQ-R	MELSEC iQ-F	Reference
Settings for connecting a personal computer to the programmable controller system	Connection Destination Specification		Page 15 Settings in GX Works3
	Start I/O number of a serial communication module	—	Page 26 Setting a Start I/O Number
Settings for communicating from a programmable controller system to a supported product	Module parameters (Communication protocol setting, Communication speed setting, Transmission setting, Communication control specification)	Module parameters (Communication Protocol Type, Detailed Setting)	Page 15 Settings in GX Works3
	Channel (CH1, CH2) of the serial communication module	Up to two channels from the following options: <ul style="list-style-type: none"> • CPU module (CH1) • Communication board (CH2) • Communication adapter (CH3, CH4) 	Page 24 Selecting a Manufacturer
	Manufacturer name		Page 24 Selecting a Manufacturer
	Connected model		Page 25 Setting a Connected Model
	Module and memory where protocol setting data is to be written		Page 27 Writing Predefined Protocol Information

Set the items by the following procedure.

Operating procedure

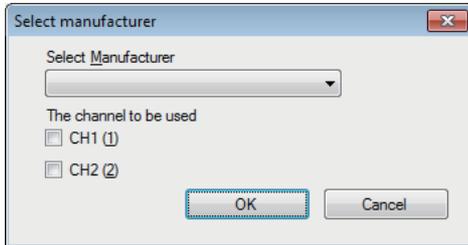
1. Set parameters and a connection destination in GX Works3. (☞ Page 15 Settings in GX Works3)
2. Start Support Tool. (☞ Page 17 Start)
3. Select a manufacturer and create a new project. (☞ Page 24 Selecting a Manufacturer)
4. Set a connected model. (☞ Page 25 Setting a Connected Model)
5. For the MELSEC iQ-R series, set the start I/O number of a serial communication module. (☞ Page 26 Setting a Start I/O Number)
6. Write protocol setting data for a predefined protocol. (☞ Page 27 Writing Predefined Protocol Information)

6.1 Selecting a Manufacturer

Set the manufacturer of a connected model.

Window

[Project] ⇒ [New] ()



Operating procedure

1. Select the manufacturer name of a connected model.

2. Select the checkbox of the channel to be used.

For the MELSEC iQ-F series, up to two channels can be selected from CH1 to CH4.

3. Click the [OK] button.

Precautions

Channels which are not implemented to a module can also be selected. (Example: CH2 can be selected for an FX5UC.)

Make sure that the set channel can be used before starting the communication; check the parameter settings in GX Works3 and the installation statuses of a communication board and communication adapter.

6.2 Setting a Connected Model

Set a model to be connected and items for sending/receiving its protocol.

Window

"Connected model setting" in the Navigation window

Item	CH1	CH2
Manufacturer	IAI	IAI
End axis No.	4	4
Axis1Model	1:RCP6S	
Axis2Model	4:PCDN-CF	
Axis3Model	7:DCDN-CA/CB	
Axis4Model	9:ACDN-CA/CB	
Axis5Model		
Axis6Model		
Axis7Model		
Axis8Model		
Axis9Model		
Axis10Model		
Axis11Model		
Axis12Model		
Axis13Model		
Axis14Model		
Axis15Model		
Axis16Model		

Item	CH1	CH2
Clear OS area (receive data area) before protocol execution	Yes	Yes
Receive Wait Time [x100ms]	30	30
Number of Send Retries [times]	3	3
Send Retry Interval [x10ms]	100	100
Send Standby Time [x10ms]	0	0
Send Monitoring Time [x100ms]	30	30

■ Description
Please select the model connected to the axis.
When the positioning data is set, once you change the model to the unselected state, the positioning data setting is initialized.

Apply

Operating procedure

Set each item and click the [Apply] button.

Axes to which models are set are displayed in the Navigation window.

Connected Model Setting

Select a controller type to be connected for the axis number to be used.

Setting data

Item	Description
End axis No.	Enter the last axis number to be checked. For the later axis numbers, whether or not an error exists in their set contents will not be checked when the settings are applied.
Axis1Model to Axis16Model	Select a model to be connected.

Protocol send/receive setting

Setting data

Item	Description	Setting range	Initial value	
Receive settings	Clear OS area (receive data area) before protocol execution	Select whether to clear the OS area (receive data area) of the module before the protocol execution. For the MELSEC iQ-F series, this item cannot be selected. (Fixed to "Yes")	• No • Yes	Yes
	Receive Wait Time	Set waiting time after the module turns to the 'waiting for reception' status.	9 to 60	30

Item	Description	Setting range	Initial value
Send settings	Number of Send Retries	Set the number of times the module retries to send when the sending from the module has not been completed within the set time of "Send Monitoring Time".	0 to 10 3
	Send Retry Interval	Set the interval between the failure of sending from the module and the retry when the sending from the module has not been completed within the set time of "Send Monitoring Time".	0 to 500 100
	Send Standby Time	Set standby time between when a protocol set to the module turns to the execution status and when it actually sends the data. By setting this item, the send timing of the module can be adjusted to readiness of target devices to receive data.	0 to 500 0
	Send Monitoring Time	Set waiting time between when the module turns to the 'sending' status and when the sending is completed.	11 to 200 30

For details on each item and operations when a communication error occurs, refer to the following:

📖 MELSEC iQ-R Serial Communication Module User's Manual(Application)

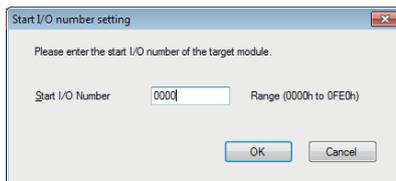
📖 MELSEC iQ-F FX5 User's Manual (Serial Communication)

6.3 Setting a Start I/O Number

Set the start I/O number of a serial communication module to be used for communication.

Window

[Online] ⇒ [Set Start I/O Number]



Operating procedure

1. Set a start I/O number.
2. Click the [OK] button.

Point

The set start I/O number is displayed on the status bar.

Start I/O number:0000

6.4 Writing Predefined Protocol Information

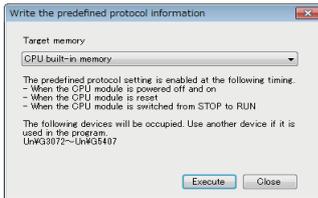
Write protocol setting data to a CPU module or a serial communication module.
Protocol setting data is automatically set based on the information set in a project.
The data is written to the module extended parameters.

Point

- For MELSEC iQ-R series, set a start I/O number before writing data.
- Contents in "Connected model setting" of a project are written. Check the set contents before writing.

Window

[Online] ⇔ [Write the Predefined Protocol Information]



Operating procedure

1. Select a module or a memory where protocol setting data is to be written.
 - CPU built-in memory: The data is written to a CPU module.
 - SD memory card: The data is written to the SD memory card mounted on a CPU module.
 - Intelligent function module: The data is written to the serial communication module with the set start I/O number.
2. Click the [Execute] button.
3. Apply the settings by resetting the CPU module or turning the power OFF and ON.

For the MELSEC iQ-R series, the settings are applied when the status of a CPU module switches from STOP to RUN.

Precautions

The following devices are used to write predefined protocol information.

- MELSEC iQ-R: 'user setting area' (Un\G3072 to 5407) of a serial communication module
- MELSEC iQ-F: file registers (R0 to R1801)

Make sure not to overlap with the devices used for other controls.

7 POSITIONING DATA SETTINGS

This chapter explains the methods to set positioning data.

About positioning data

Positioning data is data for positioning control of a connected electric actuator. Set the position which the actuator is moved to, moving speed, acceleration and deceleration, etc.

This data corresponds to position data for IAI controllers.

No.	Position [mm]	Speed [mm/s]	Acceleration [G]	Deceleration [G]	Push [%]	Threshold [%]	Positioning width [mm]	Zone + [mm]	Zone - [mm]	Acceleration/Deceleration mode	Incremental	Gain set	Suppression No.
1	0.00	100.00	0.30	0.30	0	0	0.10	0.00	0.00	0	0	0	0
2	100.00	100.00	0.30	0.30	0	0	0.10	0.00	0.00	0	0	0	0
3	150.00	200.00	0.30	0.30	50	0	30.00	0.00	0.00	0	0	0	0
4	300.00	400.00	1.00	1.00	0	0	0.10	0.00	0.00	0	0	0	0
5	200.00	200.00	0.30	0.30	0	0	0.10	250.00	230.00	0	0	0	1
6	500.00	50.00	0.10	1.00	0	0	0.10	0.00	0.00	0	0	0	2

By specifying positioning data written to a controller, the operation of an electric actuator can be controlled.

Positioning data can be set to each controlled axis of the actuators in Support Tool.

The axes to which positioning data is to be set are displayed in the Navigation window.

7.1 Creating Positioning Data

This section shows the procedure to create new positioning data in a project.

Positioning data displayed in the Navigation window can be changed in the "Connected model setting" screen.

Operating procedure

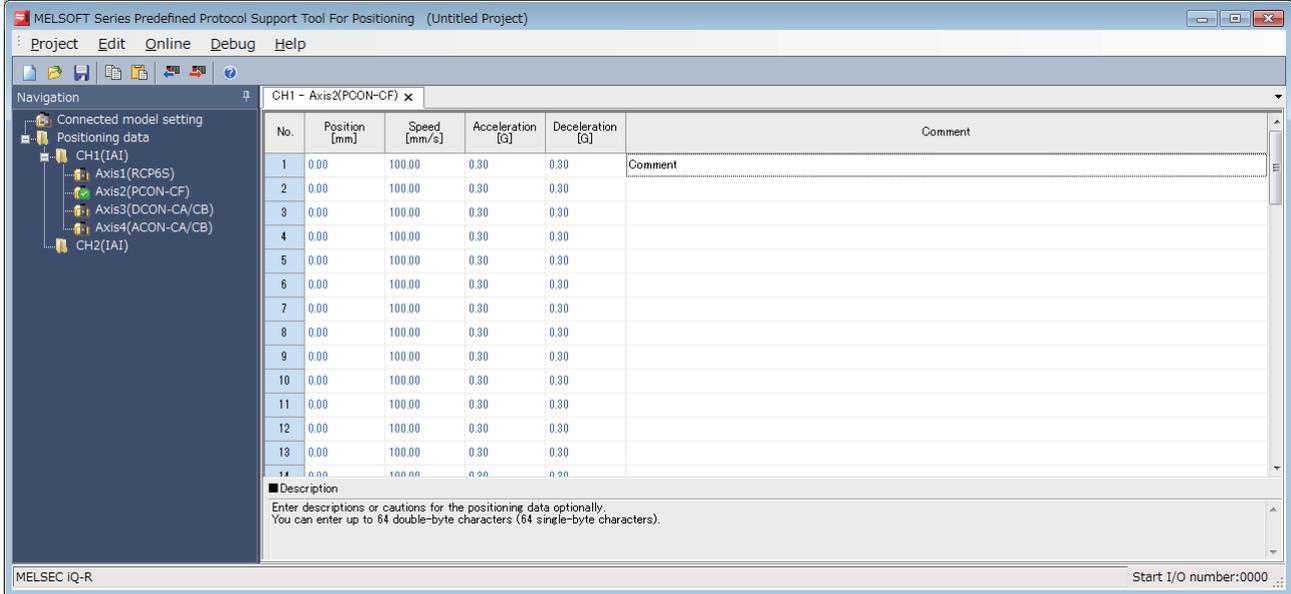
1. Configure "Connected model setting" in the Navigation window. (Page 25 Setting a Connected Model)
Axes to which models are set are displayed in the Navigation window.
2. Select an axis in the Navigation window, and double-click it or press the **Enter** key.
A screen to set its positioning data appears.
3. Enter a value for each item in the screen.

7.2 Setting and Editing Positioning Data

This section shows items to be set for positioning data and respective editing methods.

Window

"Positioning data" ⇒ "(CH)" ⇒ "(Axis)" in the Navigation window.



Setting data

The following table shows the setting items for the simple display.

Item	Description	Setting range	Initial value
Position	Set the target position by a relative distance from the home position (unit: mm).	-9999.99 to 9999.99	0.00
Speed	Set the speed in the operation (unit: mm).	0.01 to 9999.98	100.00
Acceleration	Set the acceleration (unit: G) at the operation start.	0.01 to 9.99	0.30
Deceleration	Set the deceleration (unit: G) at the operation completion (stop).	0.01 to 9.99	0.30
Comment	Enter a description or caution for the positioning data as necessary. It is not written to a controller. Manage the positioning data with comments as a project and save it to a file. Comments that are written to the positioning data of a controller from another tool cannot be read.	64 characters	Blank

Items other than above can be set by switching to the detailed display.

For details on each setting item, refer to the manual of the controller used.



Values outside of the set range may be stored when positioning data of a controller is read.
If an error occurs in the set value, the icon indicating an error (🚫) is displayed in the Navigation window.
If the error cannot be found in the simple display, switch to the detailed display to check the error.

Switching the simple and detailed display formats

Simple display and detailed display can be switched by the following operations.

- [Edit] ⇒ [Change Edit Format] ⇒ [Simple]
- [Edit] ⇒ [Change Edit Format] ⇒ [Detail]

Copying/pasting data

Data of a project being edited, that of another project, and tabular format data created with Excel® can be utilized by the following operations.

- [Edit] ⇨ [Copy] ()
- [Edit] ⇨ [Paste] ()

Point

Copied data is stored in the clipboard as texts.

When multiple cells are selected, a line feed character is stored as the line separator, and a tab character as the column separator.

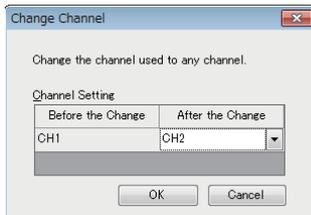
When pasting the data to Excel, select "Text" on the [Number] tab of "Format Cells" in Excel to display the copied character string as is.

Changing channels

Connected model settings and positioning data which are set to a channel can be moved to another channel.

Window

[Edit] ⇨ [Change Channel]



Operating procedure

1. Select a channel to be changed to.
2. Click the [OK] button.

Point

The "Change Channel" screen can also be displayed by right-clicking an axis in the Navigation window and selecting [Change Channel] from the shortcut menu.

8 POSITIONING DATA OPERATIONS

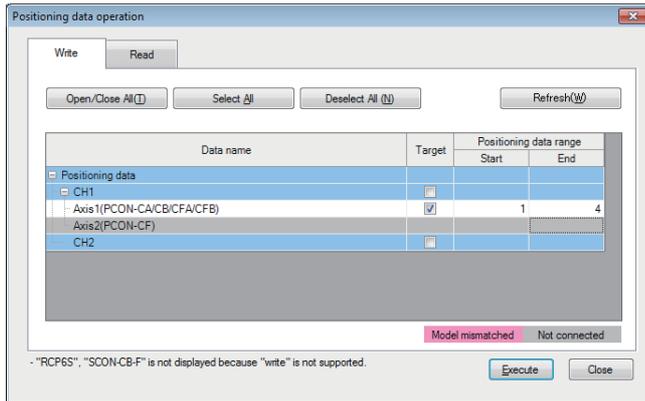
This chapter explains operations to write/read positioning data to/from a controller.

8.1 Writing Positioning Data

Write created positioning data to a controller.

Window

[Online] ⇒ [Write Positioning Data] ()



Point

For details of the "Connected axis check" screen, refer to the following:

 [Page 32 Checking a Connected Axis](#)

Operating procedure

1. Select the [Write] tab in the "Positioning data operation" screen.
2. Select the checkbox of target positioning data.
3. Set "Positioning data range" of the positioning data whose checkbox is selected.
4. Click the [Execute] button.

The positioning data is written to a controller.

Point

In the following cases, check the settings and the actual system connection status.

- Model mismatched (background color: pink): The model whose connection is confirmed does not match with the one set as the connected model.
- Not connected (background color: gray): Connection cannot be confirmed.

Checking a Connected Axis

The "Connected axis check" screen appears at the first positioning data writing or reading after the following operations:

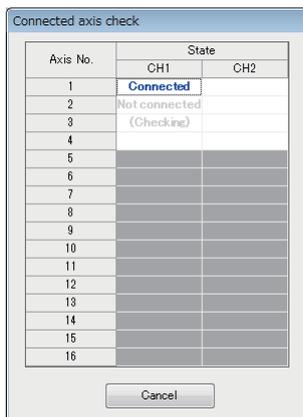
- Starting Support Tool
- Clicking the [Apply] button after changing "End axis No." or "Model" in the "Connected model setting" screen
- Changing channels ( Page 30 Changing channels)

The "Connected axis check" screen does not appear when the check has been executed.

The screen can be displayed by clicking the [Refresh] button in the "Positioning data operation" screen.

Window

[Online] ⇒ [Write Positioning Data] ()/[Read Positioning Data] ()



The check result is displayed in the "State" column.

- Blank: not yet checked
- (Checking): check in progress
- Connected: connected properly
- Not supported: connection confirmed but unsupported
- Not connected: no connection

Point

The "Positioning data operation" screen is not displayed if there is an error in the check.

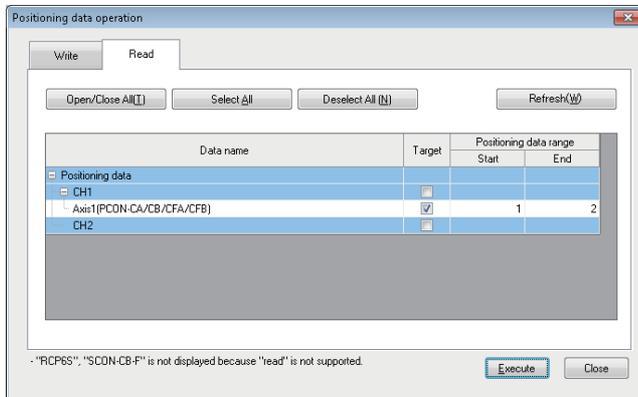
The check can be interrupted by clicking the [Cancel] button; however, information of axes whose connection had been confirmed before the interruption is displayed in the "Positioning data operation" screen.

8.2 Reading Positioning Data

Read positioning data from a controller.

Window

[Online] ⇒ [Read Positioning Data] ()



Point

For details of the "Connected axis check" screen, refer to the following:

 Page 32 Checking a Connected Axis

Operating procedure

1. Select the [Read] tab in the "Positioning data operation" screen.
2. Select the checkbox of target positioning data.
3. Set "Positioning data range" of the positioning data whose checkbox is selected.
4. Click the [Execute] button.

The positioning data is read from a controller.

Point

Values outside of the set range may be stored when positioning data of a controller is read.

If an error occurs in the set value, the icon indicating an error () is displayed in the Navigation window.

For the method to edit positioning data, refer to the following:

 Page 29 Setting and Editing Positioning Data

9 POSITIONING TEST

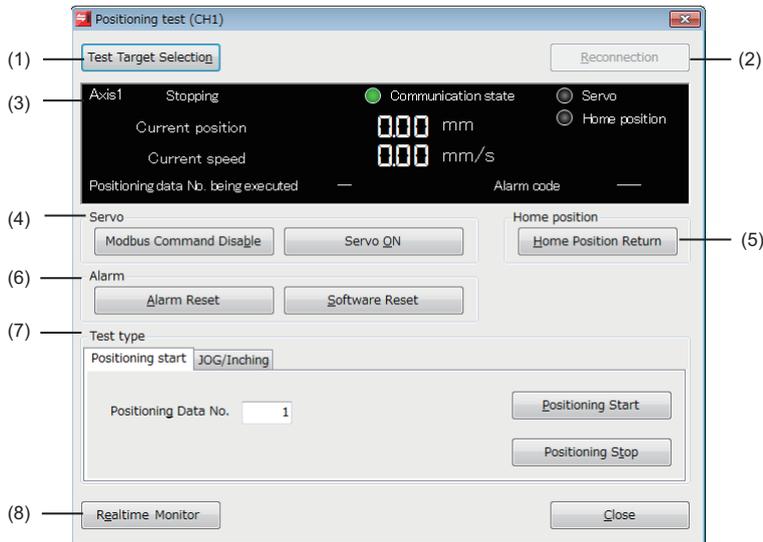
This chapter explains the positioning test functions.

A positioning test function adjusts positioning operation while monitoring the operation of an electric actuator.

Window

[Debug] ⇄ [Positioning Test]

Select a channel number and an axis number of a test target in the "Select test target" screen.



Point

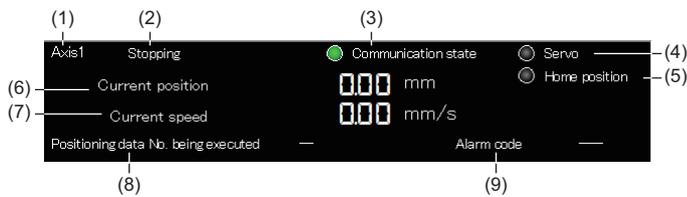
The "Positioning test" screen can also be displayed by right-clicking an axis in the Navigation window and selecting [Positioning Test] from the shortcut menu.

Displayed items

Item	Description	Reference
(1)	[Test Target Selection] button To display the "Select test target" screen. The channel number and axis number of a test target can be selected in the "Select test target" screen. The status of the selected test target is displayed in the monitor area.	—
(2)	[Reconnection] button To restart communication with a CPU module. This button can not be selected when communication is successfully established.	—
(3)	Monitor area To display the status of a test target.	Page 35 Monitoring Target Axis
(4)	[Modbus Command Disable] button/ [Modbus Command Enable] button To send a command for switching between PIO and Modbus. Modbus command needs to be enabled to perform home position return, switch a servo ON or OFF, and execute each function of tests.	—
	[Servo OFF] button/ [Servo ON] button To send a servo ON or OFF command to a controller. A servo needs to be turned ON to execute operation such as home position return, positioning start, and the forward and reverse rotations of JOG/Inching.	—
(5)	Home position [Home Position Return] button To send a home position return command to a controller.	—
(6)	Alarm [Alarm Reset] button To reset an alarm.	Page 40 Checking Controller and Module Statuses
	[Software Reset] button To restart a controller.	
(7)	Test type [Positioning start] tab To execute or stop the set positioning data.	Page 38 Positioning start
	[JOG/Inching] tab To execute JOG or inching operation.	Page 39 JOG/Inching
(8)	[Realtime monitor] button To display the status of a test target with the realtime monitor function of GX LogViewer.	Page 36 Realtime monitor

9.1 Monitoring Target Axis

This section shows the status of a test target.



Displayed items

Item	Description
(1) Axis	To display an axis number of a test target.
(2) Axis operation status	To display an axis operation status. The status follows Moving signal (MOVE), Push-motion operation in progress (PUSH), and Home return status (GHMS) of a controller. <ul style="list-style-type: none"> • Stopping: MOVE (0), PUSH (0), GHMS (0) • Moving: MOVE (1), PUSH (0), GHMS (0) • Pushing: PUSH (1) • Home position returning: GHMS (1)
(3) Communication state	To display the communication status with an electronic actuator controller. <ul style="list-style-type: none"> • ON: Communication in progress (fixed cycle monitoring in progress) • OFF: Communication not executed
(4) Servo	To display a servo status. The status follows Servo ON status (SV) in Device status register 1 (DSS1) of a controller. <ul style="list-style-type: none"> • ON: Servo ON • OFF: Servo OFF When the status is turned OFF, a controller does not accept any movement command.
(5) Home position	To display a home return status. The status follows Home return status (HEND) in Device status register 1 (DSS1) of a controller. <ul style="list-style-type: none"> • ON: Home return complete • OFF: Home return not yet complete When the status is turned OFF, a controller does not accept any movement command.
(6) Current position	To display the current position of an electric actuator in units of 0.01 mm.
(7) Current speed	To display the current speed of an electric actuator in units of 0.01 mm/sec.
(8) Positioning data No. being executed	To display a positioning data number being executed or executed last.
(9) Alarm icon	To display an icon corresponding to the alarm levels. <ul style="list-style-type: none"> •  : Minor failure •  : Major failure
Alarm code	To display the alarm code of an occurring alarm.

Realtime monitor

The status of a test target can be displayed with the realtime monitor function of GX LogViewer.

Operating procedure

1. Click the [Realtime monitor] button.

The "Realtime Monitor Setting" screen of GX LogViewer appears.

Monitor values can be updated only while the lamp indicating the communication status of a positioning test is ON.

2. Configure the settings for monitoring in the "Realtime Monitor Setting" screen.

3. Click the [Monitor Start] button in the screen.

For the method for using GX LogViewer, refer to the following:

 GX LogViewer Version 1 Operating Manual

Precautions

The displayed screen for the realtime monitor function of GX LogViewer is closed by either of the following operations.

Save the necessary monitoring result in GX LogViewer in advance.

- Closing the "Positioning test" screen
- Changing a test target by clicking the [Test Target Selection] button

Modules supporting this function

This function is not available for the MELSEC iQ-F series.

For modules supporting the realtime monitor function of GX LogViewer, refer to the following:

 GX LogViewer Version 1 Operating Manual

Monitored item list

The following shows the items monitored by the realtime monitor function.

■IAI

Item	Data Type
Major Failure Alarm	Bit
Minor Failure Alarm	Bit
Current position Monitor	Double word [signed]
Current speed Monitor	Double word [signed]
Modbus Command Enable/Disable	Bit
Servo	Bit
Home Position Return Complete	Bit

Restriction

The values of a current position monitor and current speed monitor are displayed in integers.

The values after the decimal point are rounded down.

9.2 Test

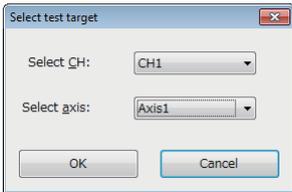
This section describes the operation methods for each test function.

Preparation

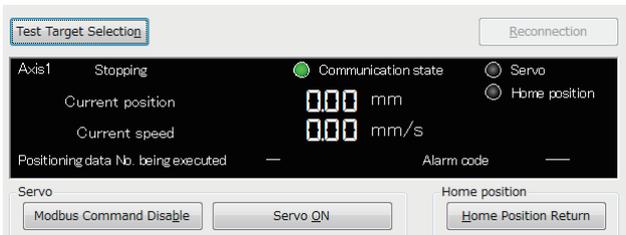
Perform the following operation before using a positioning start or JOG/Inching function.

Operating procedure

1. [Debug] ⇒ [Positioning Test]
2. Select a channel number and an axis number of a test target in the "Select test target" screen.



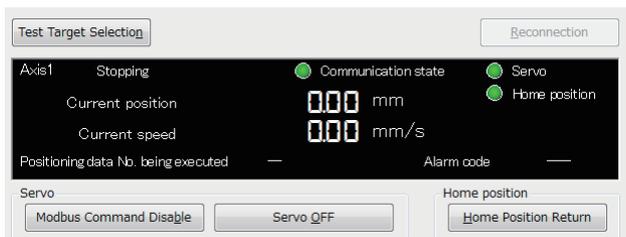
The "Positioning test" screen appears.



A test target can be changed in the "Select test target" screen by clicking the [Test Target Selection] button on the "Positioning test" screen.

3. When the [Modbus Command Enable] button is displayed, click the button.
4. When the [Servo ON] button is displayed, click the button.
5. Click the [Home Position Return] button.

When the preparation is completed, both lamps of "Servo" and "Home position" are ON in the monitor area.

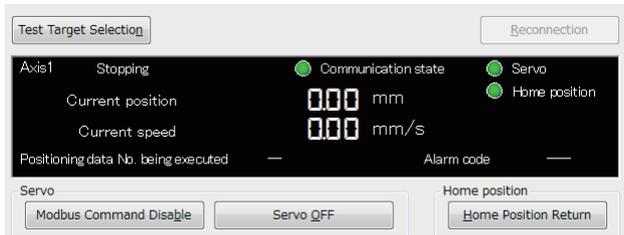


Positioning start

Positioning data can be executed by specifying a number.

Operating procedure

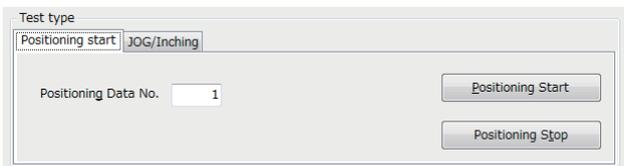
1. Check that both lamps of "Servo" and "Home position" are ON in the monitor area of the "Positioning test" screen.



When the lamps are OFF, refer to the following:

☞ Page 37 Preparation

2. Select the [Positioning start] tab.



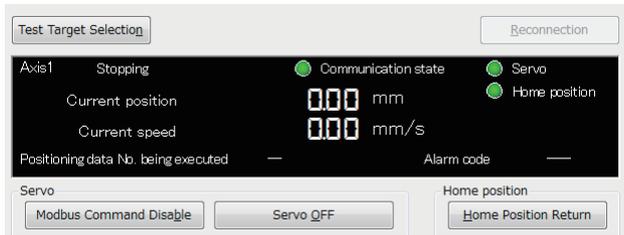
3. Enter the positioning data number to be executed in "Positioning Data No.".
4. Click the [Positioning Start] button.
5. The executing positioning control is decelerated and then stopped by clicking the [Positioning Stop] button.

JOG/Inching

The current position of an axis can be moved by setting its speed or movement amount.

Operating procedure

1. Check that both lamps of "Servo" and "Home position" are ON in the monitor area of the "Positioning test" screen.



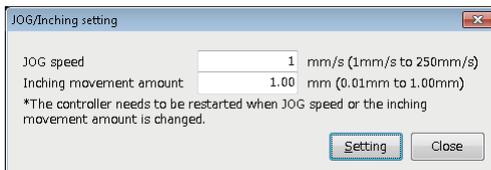
When the lamps are OFF, refer to the following:

☞ Page 37 Preparation

2. Select the [JOG/Inching] tab.



3. Click the [JOG/Inching Setting] button.
4. Enter JOG operation speed or the amount of movement in inching operation in the "JOG/Inching setting" screen.



Item	Description
JOG speed	To enter the JOG operation speed.
Inching movement amount	To enter the travel distance of inching operation per time.

5. Click the [Setting] button in the "JOG/Inching setting" screen.
6. Select "JOG" or "Inching" in the [JOG/Inching] tab.
 - JOG: The current position moves at the set speed during pressing the [Forward Rotation] or [Reverse Rotation] button.
 - Inching: The current position moves by the set movement amount by clicking the [Forward Rotation] or [Reverse Rotation] button.
7. Click the [Forward Rotation] or [Reverse Rotation] button.
 - Forward Rotation: The current position moves toward the positive direction.
 - Reverse Rotation: The current position moves toward the negative direction.

Point

When "Inching" is selected, an inching is executed by the following key input.

- Forward Rotation:
- Reverse Rotation:

When "JOG" is selected, JOG operation is not executed even if the and keys are pressed.

10 TROUBLESHOOTING

This chapter explains the errors which may occur when using Support Tool, and corrective actions correspond to those errors.

10.1 Checking Controller and Module Statuses

This section shows the methods of checking an alarm occurred in a controller and an error occurred in the module of a programmable controller system.

Checking error descriptions of a module

Check the status of each module, network, and entire system of a programmable controller system by using the system monitor function in GX Works3.

Point

For details on troubleshooting, refer to the manual of the module used.

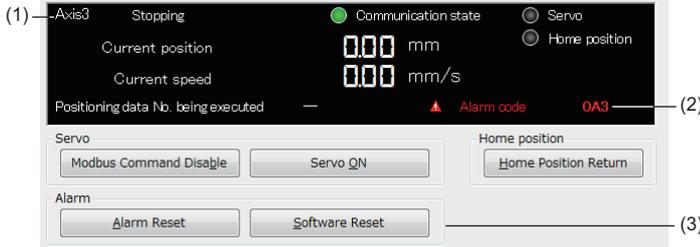
- For the error descriptions of a serial communication module and the details on troubleshooting, refer to the following:
 -  MELSEC iQ-R Serial Communication Module User's Manual(Application)
 - For details on troubleshooting for MELSEC iQ-F series CPU modules, refer to the user's manual (hardware) of the module used.
-

Checking alarm descriptions of a controller

An alarm occurred in a controller is displayed on the "Positioning test" screen.

Window

[Debug] ⇒ [Positioning Test]



Displayed items

Item			Description
(1)	Axis		To display a connection target axis number.
(2)	Occurring alarm	Alarm icon	To display an icon corresponding to the alarm levels. : Minor failure: An alarm at the message level : Major failure: An alarm at the operation release or cold start level
		Alarm code	To display an alarm code of a controller. For the alarm levels, causes, and corrective actions, refer to the manual of the controller used.
(3)	A button to be pressed after taking a corrective action.	[Alarm Reset] button	To reset an alarm. Press the button when the alarm is at the level of "operation release" in the alarm code of a controller.
		[Software Reset] button	To restart a controller. Press the button when the alarm is at the level of "cold start" in the alarm code of a controller.

Point

A controller should be reset after removing the alarm cause. The cause may not be removed if the same alarm occurs again after the alarm is reset. A motor may cause malfunction when the reset is repeated without removing the cause.

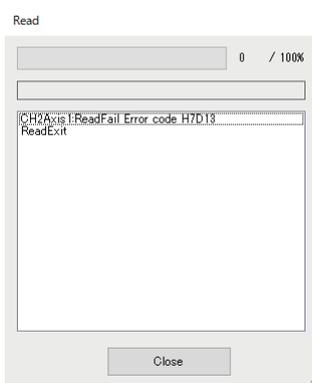
For the details on the controller alarm, refer to the manual of the controller used.

Checks when writing to/reading from positioning data

When an error occurred during writing to or reading from positioning data, an occurring error and an alarm are displayed in the "Write" or "Read" screen.

Window

Select [Online] ⇒ [Write Positioning Data] or [Read Positioning Data] and click the [Execute] button.



10.2 Troubleshooting by Symptom

When the functions of Support Tool may not operate normally, check the following items and perform troubleshooting.

Category	Symptom
Installation and uninstallation	When installing this product, .NET Framework 4.0 is installed at the same time and the personal computer is restarted. After the restart of the personal computer, restarting of the personal computer is prompted again and unable to install this product. Restarting the personal computer again and again does not solve this problem.
	When installing this product, a message that indicates .NET Framework 3.5 (including .NET 2.0 and 3.0) is disabled appears and unable to install.
Display and operation of Support Tool	Contents in the screen may not be displayed properly.
Access to connected devices	Cannot communicate with the module.

Troubleshooting on installation and uninstallation

Symptom	Check point	Corrective action
The screen related to the license terms of Microsoft® Visual Basic® PowerPacks 10.0 appears.	—	Microsoft Visual Basic PowerPacks 10.0 is the required component for Support Tool. Check the license terms and install the component.
When installing this product, .NET Framework 4.0 is installed at the same time and the personal computer is restarted. After the restart of the personal computer, restarting of the personal computer is prompted again and unable to install this product. Restarting the personal computer again and again does not solve this problem.	Was the setting tool installed as the user with the administrator authority?	.NET Framework 4.0 must be installed with the administrator authority. Install the setting tool again with a user with the administrator authority.
When installing this product, a message that indicates .NET Framework 3.5 (including .NET 2.0 and 3.0) is disabled appears and unable to install.	Is .NET Framework 3.5 (including .NET 2.0 and 3.0) enabled?	Enable .NET Framework 3.5 (including .NET 2.0 and 3.0), and then install the setting tool again.

Troubleshooting on the display and operation of Support Tool

Symptom	Check point	Corrective action
Support Tool does not operate properly.	Was the product installed with "setup.exe"?	The required components are not installed if Support Tool is installed with "setup.msi". Install the product with "setup.exe".
Contents in the screen may not be displayed properly. (For example, overlapping of icons, text overflowing from the frame of a button, etc.)	Is the size of the text and/or other items in the screen changed to a value other than the default value (such as 96 DPI, 100%, and 9 pt) in Windows settings?	<ul style="list-style-type: none"> Return the settings to the defaults. For Windows 10 (version 1703 or later)^{*1}, the display of Windows 10 can be displayed with high DPI scaling by using a Windows 10 function^{*2}. <ol style="list-style-type: none"> Select 'ComUnitTool.exe'^{*3}, then select [Properties] on the right-click menu. Select the checkbox of "Override high DPI scaling behavior. Scaling performed by:" in the [Compatibility] tab, then select "System" from the pull-down list. Click the [OK] button.

*1 The Windows version can be checked by the following procedure.

- 1 Press Windows key + **R**, or select [Windows System] ⇒ [Run] from Windows Start.
- 2 Enter 'winver' in the "Run" screen.
- 3 Check the version in the displayed screen.

*2 Support Tool display will be blurred by enlarging.

The following lists the setting values for "Change the size of text, apps, and other items" and the recommended display resolution for each setting value in Windows 10.

- Setting value: 100%, display resolution: 1024 × 768 dots or more
- Setting value: 125%, display resolution: 1900 × 1200 dots or more
- Setting value: 150%, display resolution: 1900 × 1200 dots or more
- Setting value: 175%, display resolution: 2880 × 1620 dots or more
- Setting value: 200%, display resolution: 2880 × 1620 dots or more
- Setting value: 225%, display resolution: 3840 × 2160 dots or more
- Setting value: 250%, display resolution: 3840 × 2160 dots or more

*3 'ComUnitTool.exe' is stored in the folder where Support Tool is installed.

The following is an example of a storage location.

- 64-bit version operating system: C:\Program Files (x86)\MELSOFT\SCMPTP\ComUnitTool.exe
- 32-bit version operating system: C:\Program Files\MELSOFT\SCMPTP\ComUnitTool.exe

Troubleshooting on accessing to the connection destination device

Symptom	Check point	Corrective action
Cannot communicate with the module. (Cannot operate online)	Is there a disconnection along the connection route?	<ul style="list-style-type: none"> Connect the cables properly. Replace the cable with new one.
	Is Windows firewall enabled on the personal computer?	Disable Windows firewall on the personal computer.
	Is antivirus software blocking Ethernet communications?	<ul style="list-style-type: none"> Change the antivirus software settings to allow Ethernet communications. Lower the antivirus software's security setting level. Stop the antivirus software.
	Is there any problem on the personal computer?	Replace it with another personal computer.
	Is connecting and disconnecting a USB cable, resetting the CPU module, or turning the power ON or OFF performed frequently during communication with a CPU module?	<p>A communication error may occur and it may not be recovered if connecting and disconnecting a USB cable, resetting the CPU module, or turning the power ON or OFF is performed frequently during communication with a CPU module.</p> <p>If the operation is not recovered from an error, remove the USB cable. Then, connect it again after five or more seconds. (Even after this operation, an error may occur at initial communication. However, communication will be successful after that.)</p>
	Do the module type and operation mode set in the start source GX Works3 project match with the actual connected programmer controller CPU module?	<p>End Support Tool, and then restart it after matching the module type and operation mode of the project with the actual connection destination in GX Works3.</p> <p>Note that the module type, operation mode, or connection route which is changed in GX Works3 while Support Tool is running will not be applied to Support Tool.</p>
Does the model set in Support Tool match with the actual connected electric actuator product?	<p>Check the connected model settings, and try to communicate again.</p> <p> Page 25 Setting a Connected Model</p>	

When an abnormality exists in a module, the functions of setting tool may not operate normally. Refer to the user's manual of each CPU and perform troubleshooting.

APPENDIX

Appendix 1 Additions and Changes from Previous Version

This section shows the additions and changes with upgrade.

Module type

Supported version	Type	Model name	Supported version of GX Works3
Version 1.001B	MELSEC iQ-F series CPU module	FX5UCPU, FX5UCCPU	Version 1.060N or later When the display language is set to English: Version 1.061P or later

Functions and operability

■Version 1.001B

Item	Description	Reference
Realtime monitor	GX LogViewer can be started and data of positioning operations can be displayed on the trend graph.	Page 36 Realtime monitor
Changing channels	Connected model settings and positioning data set to a channel can be moved to another selected channel.	Page 30 Changing channels

Appendix 2 Unusable Character String (Reserved Word)

Reserved words may not be used for names.

When the character strings defined as reserved words are used for names, an error occurs at the registration or conversion.

Precautions

Characters are not case-sensitive.

Unusable character strings for project name

Category		Character string
Invalid character	Symbol	", %, ', *, /, :, <, >, ?, \,
Windows® reserved word		COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9, AUX, CON, PRN, NUL, CLOCK\$, END_MARK

Appendix 3 Using a Project in a Different Version

This section explains the considerations for using a project in a different version from the one in which the project was created.

Note the following contents to use a project.

Using a project in a later version

■ Using a project, which was created in version 1.000A, in version 1.001B or later

There is no restrictions.

Using a project in an earlier version

■ Using a project, which was created in version 1.001B or later, in version 1.000A

A project cannot be opened since there is no data consistency.

Appendix 4 USB Driver Installation Procedure

To communicate with a CPU module via USB, installing a USB driver is required.

If multiple MELSOFT products are installed previously, refer to the folder where the first MELSOFT product is installed.

Operating procedure

- 1.** Connect the personal computer and the CPU module with a USB cable, and power ON the programmable controller.
- 2.** Update a driver software in Windows Device Manager. The drive software is stored in the "Easysocket\USBDrivers" folder where GX Works3 is installed.

For details on the procedure, refer to the following:

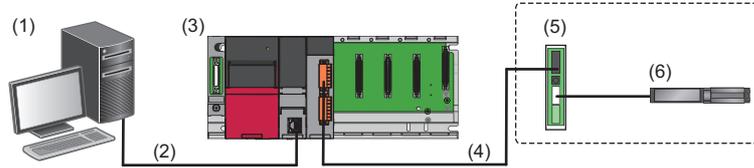
 GX Works3 Operating Manual

Appendix 5 Setting Example

This section shows an operation example in a simple system using Support Tool.

System configuration

Configure the sample system using the following devices and software.



Device/software		Model/description	
(1)	Personal computer	OS	Microsoft Windows 10 (Professional)
	Engineering tool	GX Works3	SW1DND-GXW3
	Predefined Protocol Support Tool For Positioning		SW1DNN-SCMPTP
(2)	Connection between a personal computer and a CPU module	USB cable (Direct connection)	USB cable (USB A type — USB miniB type)
(3)	Programmable controller system	CPU module	R08CPU
		Serial communication module	RJ71C24-R4
(4)	Connection between a serial communication module and a controller		Modbus RTU
(5)	Controller		PCON-CB
(6)	Electric actuator		RCP3-TA

Settings in GX Works3

Configure the settings in GX Works3 by following the procedure below before starting Support Tool.

Operating procedure

1. Select "Parameter" ⇒ "Module Information" in the Navigation window of GX Works3, then right-click it and select [Add New Module] from the shortcut menu.
2. Select each item as follows in the "Add New Module" screen.

Item	Setting value	
Module Type	Information Module	
Module Name	RJ71C24-R4	
Advanced Settings	Mounted Slot No.	0
	Start I/O No. Specification	Not Set

3. Set the following items to "CH1" in the created 'Module Parameter'.

Item	Setting value	
Communication protocol setting	Predefined protocol	
Communication speed setting	38400 bps (Set the value according to the setting of an electric actuator controller to be used.)	
Transmission setting	Data bit	8
	Parity bit	None
	Stop bit	1
Communication control specification	Echo back enable/prohibit specification	Echo back prohibit

4. Write the set parameters to the programmable controller system.

System settings in Support Tool

Start Support Tool and configure the settings by following the procedure below.

Operating procedure

1. Start Predefined Protocol Support Tool For Positioning from the menu of GX Works3. (☞ Page 17 Start and End)
2. Select [Project] ⇒ [New].

Set the following items in the "Select manufacturer" screen.

Item	Setting value
Select Manufacturer	IAI
The channel to be used	CH1

3. Select "Connected model setting" in the Navigation window.

Set the following items in the "Connected model setting" screen.

Item	Setting value
End axis No.	4
Axis1Model	2: PCON-CA/CB/CFA/CFB
Clear OS area (receive data area) before protocol execution	Yes
Receive Wait Time	30
Number of Send Retries	3
Send Retry Interval	100
Send Standby Time	0
Send Monitoring Time	30

4. Select [Online] ⇒ [Set Start I/O Number].
Set the start I/O number of the serial communication module.
5. Select [Online] ⇒ [Write the Predefined Protocol Information].
Select "Intelligent function module".
6. Enable the parameters by resetting the CPU module.

Positioning data settings and writing

Set positioning data and write it to the controller.

Operating procedure

1. Select 'Axis1' in the Navigation window and double-click it.

Enter a value for each item for the positioning data. (☞ Page 29 Setting and Editing Positioning Data)

Item	Setting value
Position	10.00
Speed	100.00
Acceleration	0.30
Deceleration	0.30

2. Select [Online] ⇨ [Write Positioning Data].

Write the created positioning data to the controller. (☞ Page 31 Writing Positioning Data)

Positioning test

Execute the positioning data written to the controller.

Operating procedure

1. Select 'Axis1' in the Navigation window, then right-click it and select [Positioning Test] from the short cut menu.
2. Check that both lamps of "Servo" and "Home position" are ON in the monitor area of the "Positioning test" screen. When the lamps are OFF, click the [Modbus Command Enable], [Servo ON], and [Home Position Return] buttons.
3. Enter the positioning data number to be executed in "Positioning Data No.".
4. Click the [Positioning Start] button.
5. Check the operation status in the monitor area of the "Positioning test" screen.

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