MITSUBISHI ELECTRIC

Tension Controller

LE7-40GU
INSTRUCTION MANUAL (Communication)

SAFETY PRECAUTIONS

(Read these precautions before use.)

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

This manual classifies the safety precautions into two categories: [⚠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.

Depending on the circumstances, procedures indicated by [⚠CAUTION] may also cause severe injury.

It is important to follow all precautions for personal safety.

Store this manual in a safe place so that it can be read whenever necessary. Always forward it to the end user.

[DESIGN PRECAUTIONS]

⚠WARNING

- Make sure to set up the following safety circuits outside the tension controller to ensure safe system operation even during external power supply problems or tension controller failure. Otherwise, malfunctions may cause serious accidents.
  - Note that when an error occurs in a relay or transistor of an output circuit, the output might stay on or off. For output signals that may lead to serious accidents, external circuits and mechanisms should be designed to ensure safe machinery operation in such a case.
- Most importantly, set up the following: an emergency stop circuit, a protection circuit, an interlock circuit for opposite movements (such as normal vs. reverse rotation), and an interlock circuit (to prevent damage to the equipment at the upper and lower torque limits and upper and lower tension limits).
- In an output circuit, when a load current exceeding the current rating or an overcurrent caused by a load short-circuit flows for a long time, it may cause smoke and fire. To prevent this, configure an external safety circuit, such as a fuse.
- For the operating status of each station after a communication failure of the network, refer to relevant manuals for the network. Incorrect output or malfunction may result in an accident.

[DESIGN PRECAUTIONS]

⚠CAUTION

- If a power failure or an abnormal voltage drop occurs, the tension controller stops, and output is turned off.

[INSTALLATION PRECAUTIONS]

⚠WARNING

- Make sure to cut off all phases of the power supply externally before attempting installation or wiring work. Failure to do so may cause electric shock or damage to the product.
- Use the product within the generic environment specifications described in LE7-40GU APPLICATION MANUAL (SH-081822ENG). Never use the product in areas with excessive dust, oily smoke, conductive dusts, corrosive gas (salt air, Cl_2, H_2S, SO_2 or NO_2), flammable gas, vibration or impacts, or expose it to high temperature, condensation, or rain and wind. If the product is used in such conditions, electric shock, fire, malfunctions, deterioration or damage may occur.

[INSTALLATION PRECAUTIONS]

⚠CAUTION

- Do not touch the conductive parts of the product directly. Doing so may cause device failures or malfunctions.
- Always wear an anti-static wristband and discharge static electricity from the body before handling the extension option. Failure to do so may cause the extension option to fail or malfunction.
- When drilling screw holes or wiring, make sure that cutting and wiring debris do not enter the ventilation slits of the tension controller. Failure to do so may cause fire, equipment failures or malfunctions.
- Install the product on a flat surface. If the mounting surface is rough, undue force will be applied to the PC board, thereby causing nonconformities.
- Install the product securely using mounting screws or fixtures.
- Connect the extension options securely to their designated connectors. Loose connections may cause malfunctions.
- Make sure to affix the extension option with tapping screws. Tightening torque should follow the specifications in the manual. If the screws are tightened outside of the specified torque range, poor connections may cause malfunctions.
- Work carefully when using a screwdriver such as installation of the product. Failure to do so may cause damage to the product or accidents.
- Connect the input/output cables and power cable securely to their designated connectors. Loose connections may cause malfunctions.
- Turn off the power to the tension controller before attaching or detaching the optional devices. Failure to do so may cause equipment failures or malfunctions.

[WIRING PRECAUTIONS]

⚠WARNING

- Make sure to cut off all phases of the power supply externally before attempting installation or wiring work. Failure to do so may cause electric shock or damage to the product.
- Make sure to properly wire to the terminal block (Spring clamp type) in accordance with the following precautions. Failure to do so may cause electric shock, equipment failures, a short-circuit, wire breakage, malfunctions, or damage to the product.
  - The disposal size of the cable end should follow the dimensions described in the manual.
  - Twist the ends of stranded wires and make sure that there are no loose wires.
  - Do not solder-plate the electric wire ends.
  - Do not connect more than the specified number of wires or electric wires of unspecified size.
  - Affix the electric wires so that neither the terminal block nor the connected parts are directly stressed.

[WIRING PRECAUTIONS]

⚠CAUTION

- Perform class D grounding (grounding resistance: 100 Ω or less) of the grounding terminal on the tension controller with a wire 0.2 to 1.5 mm^2. Do not use common grounding with heavy electrical systems.
- Connect the power supply wiring to the dedicated terminals described in this manual. If an AC power supply is connected to a DC input/output terminal or DC power supply terminal, the tension controller will burn out.
- Do not wire vacant terminals externally. Doing so may damage the product.
- Install module so that excessive force will not be applied to terminal blocks, power wire, or communication cables. Failure to do so may result in wire damage/breakage or tension controller failure.
- Make sure to observe the following precautions in order to prevent any damage to the machinery or accidents due to malfunction of the tension controller due to the effects of noise.
  - Do not bundle the power line and communication cables together with or lay them close to the main circuit, high-voltage line, load line or power line. As a guideline, lay the power line, control line and communication cables at least 100 mm away from the main circuit, high-voltage line, load line or power line.
  - Ground the shield of the shielded wire or shielded cable at one point on the tension controller. However, do not use common grounding with heavy electrical systems.
  - Ground the shield of the analog input/output cable at one point on the signal receiving side. However, do not use common grounding with heavy electrical systems.

[STARTUP AND MAINTENANCE PRECAUTIONS]

⚠WARNING

- Do not touch any terminal while the tension controller's power is on. Doing so may cause electric shock or malfunctions.
- Before cleaning, cut off all phases of the power supply externally. Failure to do so in the power ON status may cause electric shock.

[STARTUP AND MAINTENANCE PRECAUTIONS]

⚠CAUTION

- Do not disassemble or modify the product. Doing so may cause fire, equipment failures, or malfunctions.
  *For repair, contact your local Mitsubishi Electric representative.
- Turn off the power to the tension controller before connecting or disconnecting any extension cable. Failure to do so may cause equipment failures or malfunctions.
- Turn off the power to the tension controller before attaching or detaching the optional devices. Failure to do so may cause equipment failures, or malfunctions.

[DISPOSAL PRECAUTIONS]

⚠CAUTION

- Please contact a certified electronic waste disposal company for the environmentally safe recycling and disposal of your device.

[TRANSPORTATION PRECAUTIONS]

⚠CAUTION

- The tension controller is a precision instrument. During transportation, avoid impacts larger than those specified in the general specifications described in LE7-40GU APPLICATION MANUAL (SH-081822ENG) by using dedicated packaging boxes and shock-absorbing palettes. Failure to do so may cause failures in the tension controller. After transportation, verify operation of the tension controller and check for damage of the mounting part, etc.
- When fumigants that contain halogen materials such as fluorine, chlorine, bromine, and iodine are used for disinfecting and protecting wooden packaging from insects, they cause malfunction when entering our products. Please take necessary precautions to ensure that remaining materials from fumigant do not enter our products, or treat packaging with methods other than fumigation (heat method). Additionally, disinfect and protect wood from insects before packing products.

INTRODUCTION

Thank you very much for purchasing the tension controller.
Before using, read this document, and thoroughly understand the functions and performance of the tension controller to use it correctly.

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, consult Mitsubishi Electric.
- 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 in 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 in the local and national standards. If in doubt about the operation or use, please consult the nearest Mitsubishi Electric representative.
- Since the examples indicated by this manual, technical bulletin, catalog, etc. are used as a reference, please use it after confirming the function and safety of the equipment and system. Mitsubishi Electric will accept no responsibility for actual use of the product based on these illustrative examples.
- This manual content, specification etc. may be changed, without a notice, for improvement.
- 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 the nearest Mitsubishi Electric representative. When doing so, please provide the manual number given at the end of this manual.

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RELEVANT MANUALS

Manual name <Manual number>	Description
LE7-40GU INSTRUCTION MANUAL <IB-0800569ENG>	How to handle and install the tension controller LE7-40GU
LE7-40GU APPLICATION MANUAL <SH-081822ENG>	How to handle, install and set the tension controller LE7-40GU
LE7-40GU INSTRUCTION MANUAL (Communication) <SH-081834ENG> (this manual)	How to wire and set the communication for the tension controller LE7-40GU
LE7-DCA INSTRUCTION MANUAL <IB-0800570>	How to handle and install the reel diameter calculation option LE7-DCA
LE7-DCA APPLICATION MANUAL <SH-081825ENG>	How to handle, install and set the reel diameter calculation option LE7-DCA
LE7-CCL INSTRUCTION MANUAL <IB-0800571>	How to handle and install the network option LE7-CCL
LE7-CCL APPLICATION MANUAL <SH-081828ENG>	How to handle, install and set the network option LE7-CCL

TERMS

Unless otherwise specified, this manual uses the following terms.

Terms	Description
Option	Generic term for extension options, memory cassette
Extension options	Generic term for reel diameter calculation option, network option
Reel diameter calculation option	Generic term for the reel diameter calculation option LE7-DCA
Network option	Generic term for the network option LE7-CCL
LE7-40GU	Abbreviation for the tension controller LE7-40GU
LE7-DCA	Abbreviation for the reel diameter calculation option LE7-DCA
LE7-CCL	Abbreviation for the network option LE7-CCL
LD-8EEPROM	Abbreviation for LD-8EEPROM type EEPROM cassette

1 OUTLINE OF COMMUNICATION FUNCTION

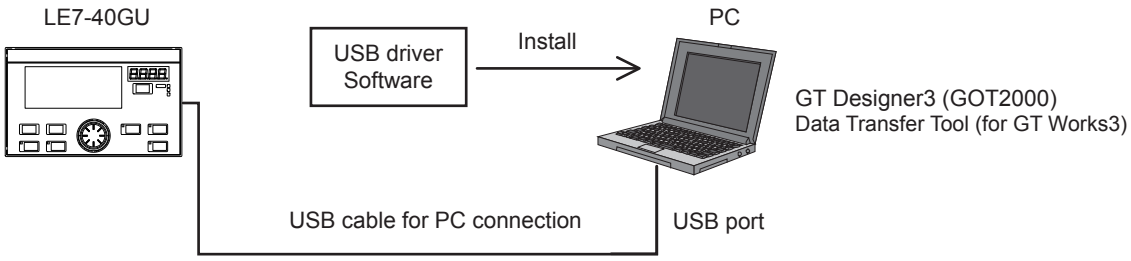
This chapter provides an outline of the communication function.

1.1 Communication with a Personal Computer (GT Designer 3 and Data Transfer Tool)

USB connection

LE7-40GU can be connected to a PC via USB.

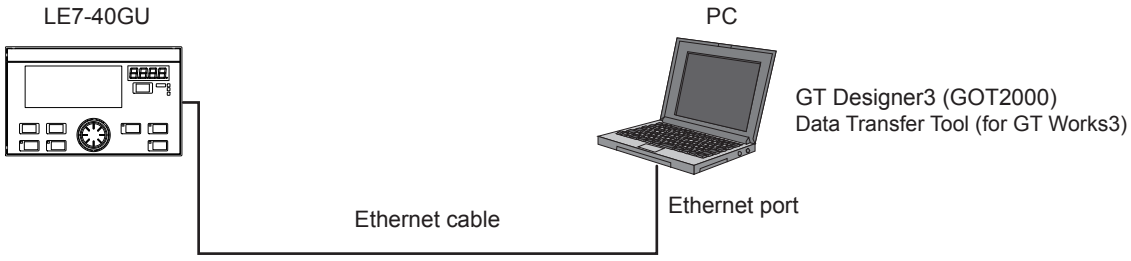
Screen data can be written to LE7-40GU from GT Designer 3 (GOT2000) and Data Transfer Tool (for GT Works 3).



Ethernet connection

LE7-40GU can be connected to a PC via Ethernet (100BASE-TX, 10BASE-T).

Screen data can be written to LE7-40GU from GT Designer 3 (GOT2000) and Data Transfer Tool (for GT Works 3).

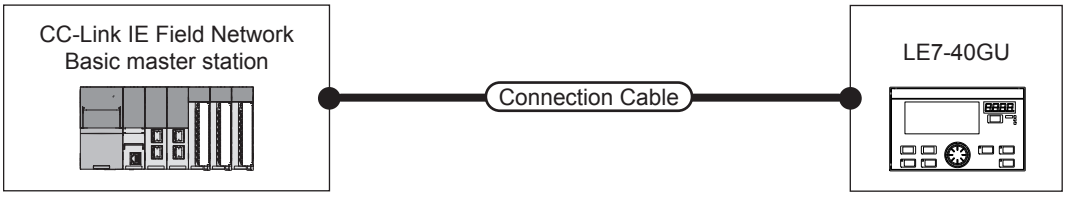


1.2 Ethernet Communication

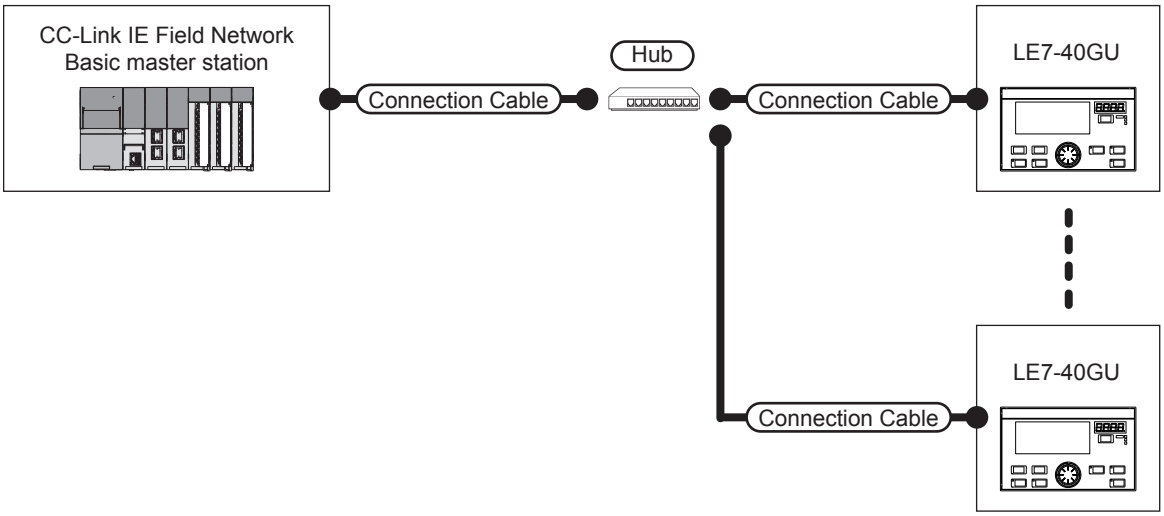
CC-Link IE Field Network Basic communication

LE7-40GU supports slave functionality for CC-Link IE field network basic communication.
LE7-40GU can communicate with all kinds of CC-Link IE field network basic communication master stations.

When connecting to one master station

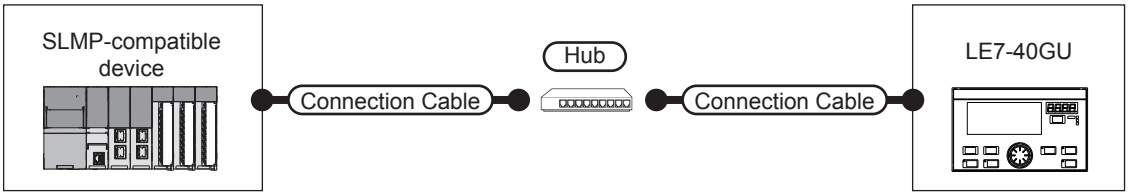


When connecting one master station and multiple LE7-40GU (slave stations)



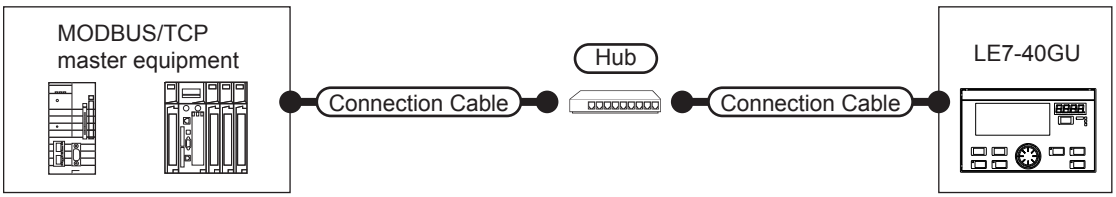
SLMP communication

LE7-40GU supports client functionality for SLMP communication.
LE7-40GU can communicate with various SLMP-compatible devices, and up to seven LE7-40GU units can be connected to one SLMP-compatible device to carry out data monitoring and parameter writing.



MODBUS/TCP (slave)

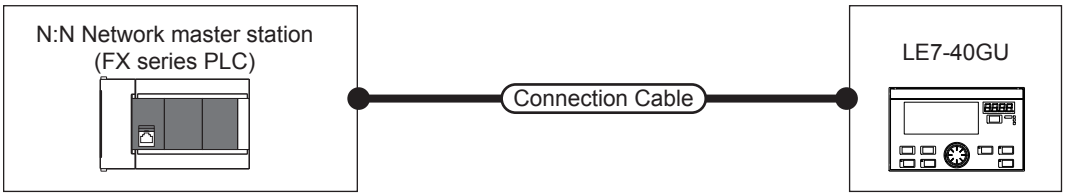
LE7-40GU can be operated as a slave station for MODBUS/TCP communication.
LE7-40GU (as a slave station) can perform data monitoring and parameter writing from up to four master stations.



1.3 RS-485 Communication

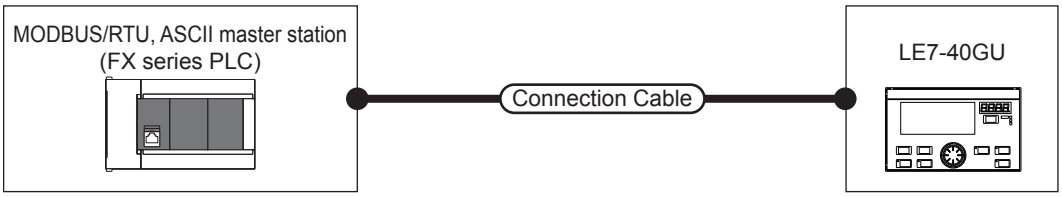
N:N Network

LE7-40GU can be operated as a local station for FX PLC N:N network communication.
Data monitoring and parameter writing from a master station FX PLC for up to seven local stations (LE7-40GU units) can be carried out.



MODBUS/RTU, ASCII (slave)

LE7-40GU can be operated as a slave station for MODBUS/RTU and ASCII communication.
Data monitoring and parameter writing from a master station for up to 247 slave stations (LE7-40GU units) can be carried out.



Precautions

RS-485 communication and CC-Link communication cannot be used simultaneously.

1.4 CC-Link Communication

LE7-40GU can be operated as a remote device station for CC-Link by connecting the optional LE7-CCL network option.
CCLink Ver. 1.10 and Ver. 2.00 are supported, so extended cyclic transmission can be performed.
For details on CC-Link Communication, refer to the following.
LE7-CCL APPLICATION MANUAL

Precautions

RS-485 communication and CC-Link communication cannot be used simultaneously.

2 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

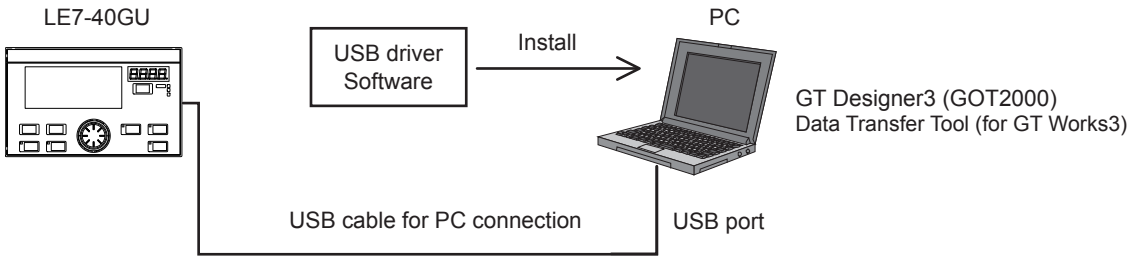
Data is transferred between the personal computer (GT Designer3, Data Transfer Tool) and LE7-40GU.
For details on data transfer, refer to the following.
<GT Designer3 (GOT2000)>
GT Designer3 (GOT2000) Screen Design Manual
<Data Transfer Tool (for GT Works3)>
Data Transfer Tool [GOT2000 Series] help

2.1 USB Connection

System configuration

Ensure that one of the following software packages is installed, and that the PC is equipped with a USB port.

- GT Designer3 (GOT2000)
- Data Transfer Tool (for GT Works3)*1



*1 Obtain Data Transfer Tool (for GT Works3) from your local Mitsubishi Electric representative.

Communication specifications

Communication specifications of the USB communication are as follows.

Item	Specifications
Transmission standard	Compliant with USB 2.0 (full speed compatible)
Isolation method	Photocoupler isolation (between communication line and CPU)
Maximum transmission distance	Up to 5 m
Transmission speed	9600/19200/38400/57600/115200 bps
Connector type	USB (Mini-B plug female)
USB cable	• MR-J3USBCBL3M [3 m] • GT09-C30USB-5P [3 m] (manufactured by Mitsubishi Electric System & Service Co., Ltd.)

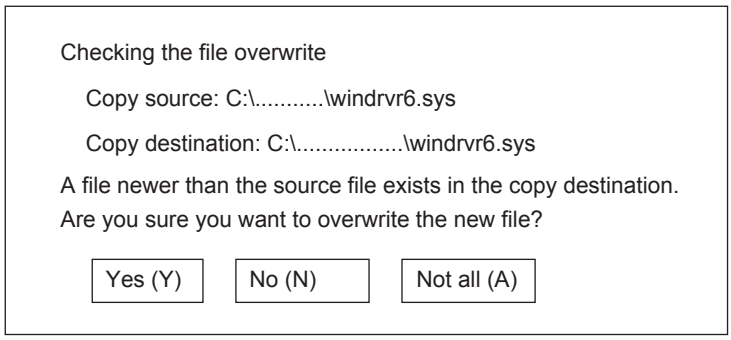
How to install the USB driver

Follow the procedure below.

1. Connect the A type connector of the USB cable to the USB port on the PC side.
2. Connect the Mini-B side of the USB cable to the USB interface of the LE7-40GU.
3. Switch on the LE7-40GU power supply.
4. The USB driver is installed automatically to the PC only when it is connected for the first time.

Point

When the USB driver of other products is installed, the confirmation message for overwriting the USB driver file (windrvr6.sys) may appear. If a new file already exists, click the [No] button and do not overwrite the file. When the file is overwritten, the USB communication of GT Designer3 and the LE7-40GU may not be properly executed.



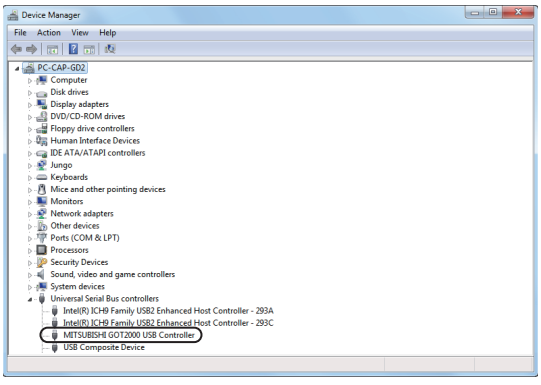
Precautions for using a USB cable

To transfer the data by connecting the personal computer and the LE7-40GU using a USB cable, do not set the resume function, the suspending function, the power saving function, or the standby mode of the personal computer. For the details of the resume function, the suspending function, the power saving function or the standby mode, refer to the manual of the personal computer or the Help of Windows.

If the USB cable is removed or the LE7-40GU is reset or powered off/on, the communication may not be recovered from an error. In this case, perform either of the following operations.

• Checking if the personal computer recognizes the USB.

Check that [MITSUBISHI GOT2000 USB Controller] is displayed in [USB (Universal Serial Bus) Controller] in the device manager.



• Restart the LE7-40GU.

Remove the USB cable from the LE7-40GU and power off the LE7-40GU. After the LE7-40GU is powered off, restart the LE7-40GU and connect a cable to communicate again.

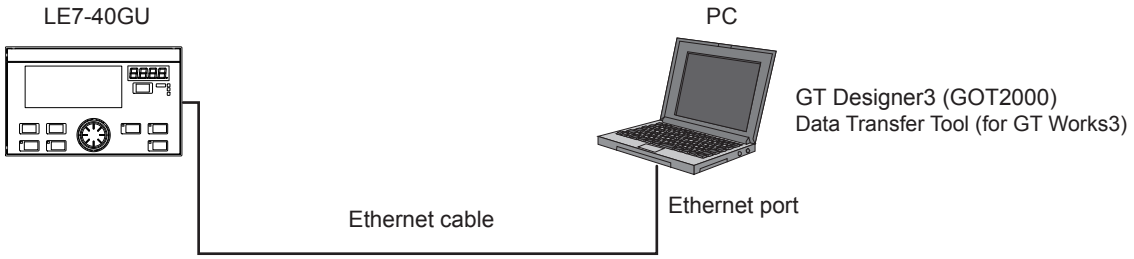
2.2 Ethernet Connection

System configuration

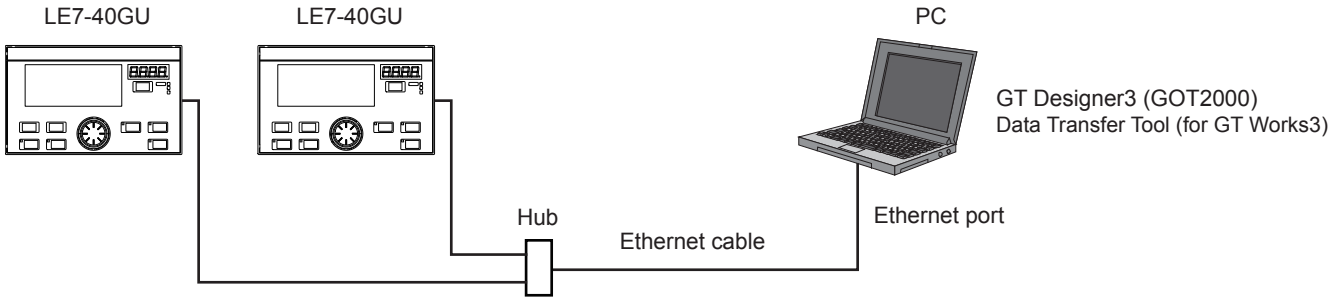
Ensure that one of the following software packages is installed, and that the PC is equipped with an Ethernet port.

- GT Designer3 (GOT2000)
- Data Transfer Tool (for GT Works3)*1

Direct connection



Connection via hub



*1 Obtain Data Transfer Tool (for GT Works3) from your local Mitsubishi Electric representative.

Communication specifications

The communication specifications of the Ethernet communication are as follows.

Item			Specification contents
Transmission specifications	Data transmission speed		100/10 Mbps
	Communication mode		Full duplex/half duplex*1
	Interface		RJ45 connector
	Transmission method		Baseband
	Maximum segment length (length between hub and node)		100 m
	Number of cascade connection stages	100BASE-TX	Up to 2 stages*3
		10BASE-T	Maximum 4 stages*3
Supported protocol			MELSOFT connection
Number of connections			MELSOFT connection (Up to 8 external devices can access one LE7-40GU simultaneously.)
Hub*1			Hubs with a 100BASE-TX or 10BASE-T*4 port can be used.
IP address			Initial value: 192.168.3.250
Cable used*2	In the case of 100BASE-TX connection		Ethernet standard compatible item cable category 5 or more (STP cable)
	In the case of 10BASE-T connection		Ethernet standard compatible item cable category 3 or more (STP cable)

*1 IEEE802.3x flow control is not supported.
*2 Straight cable can be used.
*3 This is the number of connectable stages when using a repeater hub. Check the manufacturer of the switching hub to be used for the number of connectable stages when using a switching hub.
*4 The port must comply with the IEEE802.3 100BASE-TX or IEEE802.3 10BASE-T standard.

3 CC-LINK IE FIELD NETWORK BASIC COMMUNICATION

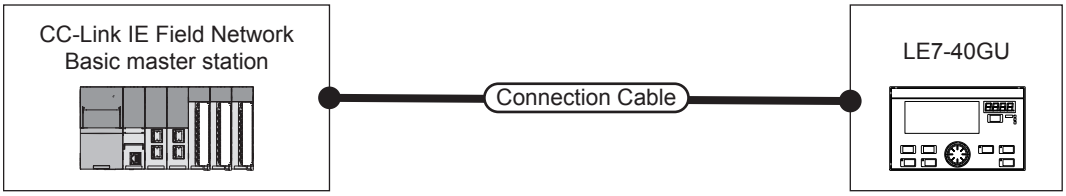
Since LE7-40GU supports the slave function of CC-Link IE Field Network Basic communication which is an open FA network, it can communicate with various CC-Link IE field network Basic master stations.

Precautions

- Since CC-Link IE Field Network Basic uses port No. [61451] as a device detection port, when port No. [61451] is used for another communication function, CC-Link IE Field Network Basic connection cannot be used.
- Since LE7-40GU handles a number of object functions besides the CC-Link IE Field Network Basic connection function, the response performance with respect to access from the master station may deteriorate. In such a case, it is necessary to adjust the link scan time or the timeout time on the master station side. The recommended setting value is 50 ms or more.

3.1 System Configuration

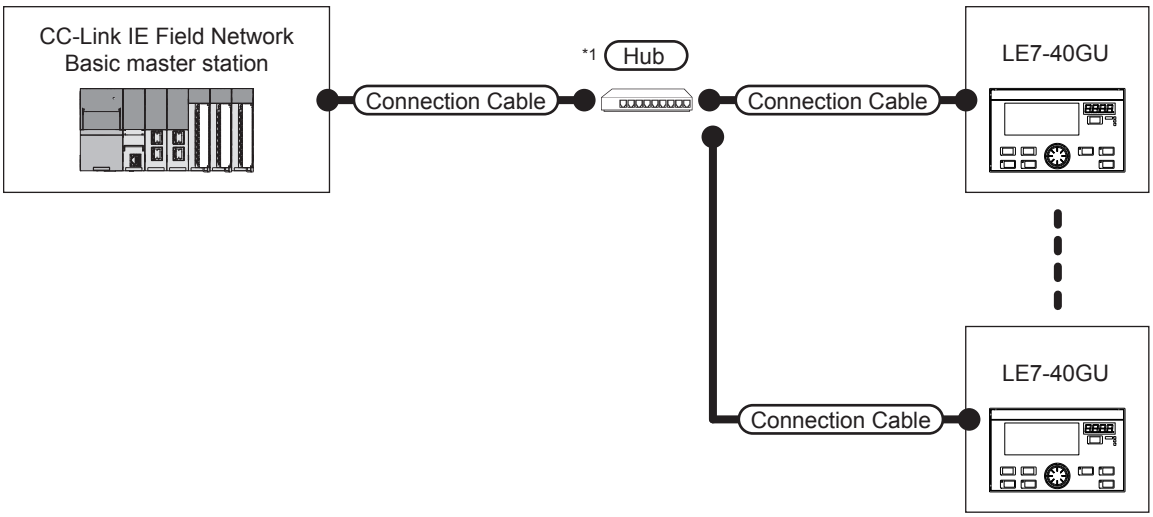
When connecting to one master station



Connection equipment	Communication form	Connection cable		Tension controller (slave station)		Number of connectable devices
		Cable type name*1	Maximum segment length	Optional equipment	Main unit	
CC-Link IE Field Network Basic master station	Ethernet	100BASE-TX Category 5 or more shield twisted pair cable (STP)	100 m	— (Built-in to main unit)	LE7-40GU	One LE7-40GU for one master station

*1 For twisted pair cable, please use a cross cable.

When connecting one master station and multiple LE7-40GU (slave stations)



*1 Please use a hub that meets the following conditions.
· Complies with IEEE802.3 (100BASE-TX) standard
· Automatic MDI/MDI-X function installed
· Equipped with auto negotiation function
· Switching hub (Layer 2 switch) (Repeater hub cannot be used.)

Connection equipment	Communication form	Connection cable		External device	Connection cable		Tension controller*3		Number of connectable devices
		Cable type name*4	Maximum segment length*3		Cable type Name*4	Maximum segment length*3	Optional equipment	Main unit	
CC-Link IE Field Network Basic master station	Ethernet*5	100BASE-TX Category 5 or more shield twisted pair cable (STP)	100 m	Hub*2	100BASE-TX Category 5 or more shield twisted pair cable (STP)	100 m	— (Built-in to main unit)	LE7-40GU	Maximum 64 units of LE7-40GU (slave station) for one master station

*2 Connect CC-Link IE Field Network Basic master station via a hub.
Use cables, connectors and hubs that satisfy the IEEE802.3 100BASE-TX standard.
*3 This is the length between the hub and the node.
The maximum distance depends on the Ethernet device used.
When using a repeater hub, the number of units that can be connected is as follows.
• 100 BASE-TX: Cascade connection maximum 2 (205 m)
When using a switching hub, the cascade connection between switching hubs has no theoretical limit on the number that can be cascaded.
*4 For the twisted pair cable, please use a straight cable.
*5 CC-Link IE Field Network Basic communication does not support connection beyond the router.

3.2 Communication Setting

Communication parameter settings

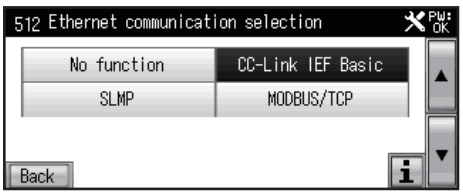
When using CC-Link IE Field Network Basic communication, set the communication parameters with the following procedure.

Setting with Data Transfer Tool

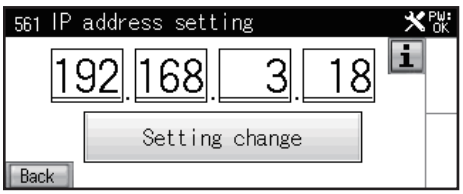
1. Obtain the "Screen package data for CC-Link IEF Basic" from your local Mitsubishi Electric representative.

2. Transfer the “Screen package data for CC-Link IEF Basic" to LE7-40GU with Data Transfer Tool (for GT Works3).
For more information on data transfer, refer to the following.
☞ Page 14 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

3. Select "CC-Link IEF Basic" on the "Ethernet communication selection" screen of the LE7-40GU screen.



4. If you want to change the IP address of LE7-40GU (default: 192.168.3.18), change it on the "IP address setting" screen of LE7-40GU.



5. Restart LE7-40GU.

Setting with GT Designer3 (GOT2000)

1. Obtain the "Screen package data for CC-Link IEF Basic" from your local Mitsubishi Electric representative.

2. Open the “Screen package data for CC-Link IEF Basic" in GT Designer3 (GOT2000) and change the settings of [Common] - [Controller Settings] - [CH2] as follows.

For details on the communication settings in GT Designer3 (GOT2000), refer to the following.

GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals)

<Controller Setting>

Setting name	Setting detail
Manufacturer	CLPA
Controller Type	CC-Link IE Field Network Basic
I/F	Ethernet:Multi
Driver	Ethernet(CC-Link IE Field Network Basic)

<Detail setting>

Property	Value
GOT Net No.	0 (Not used)
GOT Station	0 (Not used)
GOT Communication Port No.	61450 (Fixed)

3. Change the settings of [Common] - [GOT Ethernet Setting] - [GOT IP Address Setting] as follows.

For details on the communication settings in GT Designer3 (GOT2000), refer to the following.

GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals)

<GOT IP Address Setting>

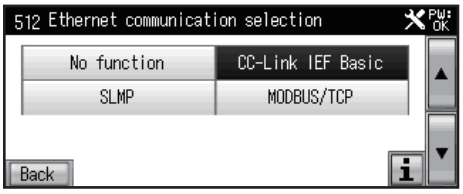
Setting name	Setting value
GOT IP Address	192.168.3.18 (optional)

4. Transfer the "Screen package data for CC-Link IEF Basic" to LE7-40GU with GT Designer3 (GOT2000)

For more information on data transfer, refer to the following.

☞ Page 14 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

5. Select "CC-Link IEF Basic" on the "Ethernet communication selection" screen of the LE7-40GU screen.



6. Restart LE7-40GU.

Link data configuration

LE7-40GU uses "1" for the number of occupied stations because the contents of the allocated link data does not change even if the number of occupied stations of the CC-Link IE Field Network Basic slave station is changed.

*1 When using other than "1" for the number of occupied stations, all functions except remote input/output and remote register become non-functioning.

Remote input/output

Each remote input/output has 48 points.

The remaining area becomes non-functioning and cannot be used.

• Remote output (Master Station → Slave Station)

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
RY00	Run/Stop	Run	Stop
RY01	Reel change B axis/A axis	B axis control	A axis control
RY02	Control output OFF/ON	Control output OFF	Control output ON
RY03	Auto/Manual	Automatic control	Manual control
RY04	Stall memory ON/OFF	Stall memory ON	Stall memory OFF
RY05	Gain 1 ON/OFF	Gain 1 ON	Gain 1 OFF
RY06	Gain 2 ON/OFF	Gain 2 ON	Gain 2 OFF
RY07	Inching ON/OFF	Inching ON	Inching OFF
RY08	Cutting torque ON/OFF	Cutting torque ON	Cutting torque OFF
RY09	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
RY0A	Predrive ON/OFF	Predrive ON	Predrive OFF
RY0B	Memory hold ON/OFF	Memory hold ON	Memory hold OFF
RY0C	Reverse run/Forward run	Reverse run operation	Forward run operation
RY0D	—	—	—
RY0E	—	—	—
RY0F	—	—	—
RY10	Alarm reset ON/OFF	Alarm reset ON	Alarm reset OFF
RY11	Reel diameter reset ON/OFF	Reel diameter reset ON	Reel diameter reset OFF
RY12	Measurement length and remaining length reset ON/OFF	Measurement length and remaining length reset ON	Measurement length and remaining length reset OFF
RY13	—	—	—
RY14	—	—	—
RY15	—	—	—
RY16	—	—	—
RY17	—	—	—
RY18	Zero adjustment execution	Execution	Normal
RY19	Span adjustment execution	Execution	Normal
RY1A	Maximum diameter teaching execution	Start maximum diameter teaching execution	Normal
RY1B	Minimum diameter teaching execution	Start minimum diameter teaching execution	Normal
RY1C	Control gain tuning execution	Start control gain tuning execution	Normal
RY1D	Speed teaching execution	Start speed teaching execution	Normal
RY1E	—	—	—
RY1F	—	—	—
RY20	Data copy execution	Start data copy execution	Normal
RY21	Data initial execution	Start data initial execution	Normal
RY22	—	—	—
RY23	—	—	—
RY24	—	—	—
RY25	—	—	—
RY26	—	—	—

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
RY27	—	—	—
RY28	—	—	—
RY29	—	—	—
RY2A	—	—	—
RY2B	—	—	—
RY2C	Link tension monitor digit ×10/×1	Link tension monitor digit ×10	Link tension monitor digit ×1
RY2D	Continuous settings execution	Start continuous settings execution	Normal
RY2E	Continuous monitor execution	Start continuous monitor execution	Normal
RY2F	Request command execution	Start request command execution	Normal
RY30 to 3F	System use area		

• Remote input (Slave Station → Master Station)

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
RX00	Run/Stop	Run	Stop
RX01	Output ON/OFF	Output ON	Output OFF
RX02	B-axis controlled/A-axis controlled	B-axis controlled	A-axis controlled
RX03	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
RX04	Predrive being executed	Predrive being executed	Normal
RX05	Memory hold being executed	Memory hold being executed	Normal
RX06	Reverse running/Forward running	Reverse running	Forward running
RX07	—	—	—
RX08	Manual control	Manual control	—
RX09	Automatic control	Automatic control	—
RX0A	Auto lamp flicker in operation/ stopped	Auto lamp flicker in operation	Auto lamp flicker stopped
RX0B	Stall setting output being executed	Stall setting output being executed	Normal
RX0C	Stall memory output being executed	Stall memory output being executed	Normal
RX0D	Start timer operation being executed	Start timer operation being executed	Normal
RX0E	Stop timer operation being executed	Stop timer operation being executed	Normal
RX0F	Preset timer operation being executed	Preset timer operation being executed	Normal
RX10	Cut torque operation being executed	Cut torque operation being executed	Normal
RX11	Inching operation being executed	Inching operation being executed	Normal
RX12	—	—	—
RX13	Zero adjustment being executed	Zero adjustment being executed	Normal
RX14	Span adjustment being executed	Span adjustment being executed	Normal
RX15	Maximum diameter teaching being executed	Speed teaching being executed	Normal
RX16	Minimum diameter teaching being executed	Speed teaching being executed	Normal
RX17	Control gain tuning being executed	Control gain tuning being executed	Normal
RX18	Speed teaching being executed	Speed teaching being executed	Normal
RX19	Tension upper limit detection ON/ OFF	Tension upper limit detection ON	Tension upper limit detection OFF
RX1A	Tension lower limit detection ON/OFF	Tension lower limit detection ON	Tension lower limit detection OFF
RX1B	Detection outside tension range ON/ OFF	Detection outside tension range ON	Detection outside tension range OFF
RX1C	Reel diameter detection 1 ON/OFF	Reel diameter detection 1 ON	Reel diameter detection 1 OFF
RX1D	Reel diameter detection 2 ON/OFF	Reel diameter detection 2 ON	Reel diameter detection 2 OFF
RX1E	Reel diameter detection 3 ON/OFF	Reel diameter detection 3 ON	Reel diameter detection 3 OFF
RX1F	Measurement length/remaining length detection 1 ON/OFF	Measurement length/remaining length detection 1 ON	Measurement length/remaining length detection 1 OFF
RX20	Measurement length/remaining length detection 2 ON/OFF	Measurement length/remaining length detection 2 ON	Measurement length/remaining length detection 2 OFF
RX21	Measurement length/remaining length detection 3 ON/OFF	Measurement length/remaining length detection 3 ON	Measurement length/remaining length detection 3 OFF

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
RX22	Peripheral speed synchronization detection ON/OFF	Peripheral speed synchronization detection ON	Peripheral speed synchronization detection OFF
RX23	Alarm occurrence detection	Alarm occurrence	Normal
RX24	Parameter protection being executed	Parameter protection being executed	Normal
RX25	Settings password matching being executed	Settings password matching being executed	Settings password does not match
RX26	Monitor password matching being executed	Monitor password matching being executed	Monitor password does not match
RX27	—	—	—
RX28	Data copy being executed	Data copy being executed	Normal
RX29	Data initial being executed	Data initial being executed	Normal
RX2A	—	—	—
RX2B	—	—	—
RX2C	—	—	—
RX2D	Continuous settings being executed	Continuous settings being executed	Normal
RX2E	Continuous monitor being executed	Continuous monitor being executed	Normal
RX2F	Request command completion	Request command completion	Normal
RX30 to 3F	System use area		

Remote register

Remote register uses 12 points for both RWw and RWr.

The remaining area becomes non-functioning and cannot be used.

CC-Link IE Field Network Basic master station→LE7-40GU		
Device No.	**Signal name**	
RWw n	Continuous settings 1	
RWw n+1	Continuous settings 2	
RWw n+2	Request command 0	Request code 0
RWw n+3	Setting data 0	
RWw n+4	Request command 1	Request code 1
RWw n+5	Setting data 1	
RWw n+6	Continuous settings 3	
RWw n+7	Continuous settings 4	
RWw n+8	Request command 2	Request code 2
RWw n+9	Setting data 2	
RWw n+10	Request command 3	Request code 3
RWw n+11	Setting data 3	
RWw n+12 to 15	Unavailable	

LE7-40GU→CC-Link IE Field Network Basic master station	
Device No.	**Signal name**
RWr n	Continuous monitor 1
RWr n+1	Continuous monitor 2
RWr n+2	Continuous monitor 3
RWr n+3	Continuous monitor 4
RWr n+4	Request command execution result 0
RWr n+5	Request command execution result 1
RWr n+6	Continuous monitor 5
RWr n+7	Continuous monitor 6
RWr n+8	Continuous monitor 7
RWr n+9	Continuous monitor 8
RWr n+10	Request command execution result 2
RWr n+11	Request command execution result 3
RWw n+12 to 15	Unavailable

Continuous setting/continuous monitoring

Data specified in advance can be set and monitored continuously by setting the continuous setting execution (RY2E) and continuous monitor execution (RY2E) in the master station to ON.
For continuous setting data, the data set for RAM writing is not stored during a power failure.
The latest data existing in LE7-40GU when the master station gives the send request can be monitored continuously.
However, regarding the update of parameters for which the monitor update cycle is specified by the setting in LE7-40GU, the data is updated in the specified update cycle if the specified update cycle is longer than the monitor update cycle in the send request given by the master station.

Continuous settings

1. Data write to devices with continuous settings 1 to 16
2. Turn on continuous settings execution

Continuous monitor

1. Turn on continuous monitor execution
2. Read the data of the devices of continuous monitors 1 to 16

Access by request command

For any access to data in LE7-40GU from the master station, data can be read and written by handshake between the "request command execution (RY2F)" flag and the "request command completion (RX2F)" flag.
This access is performed using a 2-word word device of the master station.
This 2-word data is comprised of the request command, to which the upper 4 bits of the first word are assigned, and the request code, to which the lower 2 bits are assigned, and the setting data, to which the next word is assigned.

bit 15 to 12	bit 11 to 0
Request command	Request code
Setting data	

There are three types of request command, Data Monitor, Writing to RAM, and Writing to RAM + ROM, according to the selection of data reading and writing method.

Monitor	Writing to RAM	Writing to RAM + ROM
Writing data is reflected in the settings based on a data read request from the master station but is not stored in the case of a power failure.	Writing data is reflected in the settings based on a data write request from the master station but is not stored in the case of a power failure.	Perform the above RAM write + data power failure write.

In the ROM for storage against power interruption, the allowable number of times of writing is limited. Accordingly, data cyclically written and updated by the PLC must be written only to the RAM.

Request command	Contents of execution	Execution result
H0	Monitor	Monitored value
H1	Writing to RAM	Writing result
H2	Writing to RAM + ROM	Writing result

The request code is the data number (address) of the data that executes the request command. The subsequent data setting is the data to be written to the data number, and if the request command is the monitor, the data setting data is ignored.
When double word data is written to send data in the master station, and the handshake is executed by turning ON/OFF the request command execution flag and request command completion flag as follows, LE-70GU sends back the request command execution request.

1. The master station is set to request command execution ON.
2. LE7-40GU executes processing when receiving turning ON of the request command execution by the master station.
3. LE7-40GU turns ON the request command completion.
4. The master station receives the request command completion ON.
5. The master station is set to request command execution OFF.

6. LE7-40GU receives turning OFF of the request command execution by the master station.

7. LE7-40GU turns OFF the request command completion.

8. The master station receives the request command completion OFF.

Please perform reading of the execution results of the request command between step 4 and 5 of the handshake procedure.
If an error occurs, in the execution result with respect to the request command from the master station, turn on the network alarm occurrence flag and output the device number where the alarm occurred to the network alarm device number monitor.
For the request command execution result, refer to the following.
📖LE7-CCL APPLICATION MANUAL

Request code

The numerical value of each parameter corresponding to the request code is treated as real number data without a decimal point.
In addition, the minimum and maximum values are determined for LE7-40GU, and when a value exceeding this data is written, it is automatically rewritten to the minimum or maximum value.
In this case, an "Out of data range" alarm is generated.

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H000(0)	—	—	—	—	—	—
H001(1)	Total tension	Monitor	—	0 or less	2000 or more	N/×10 N
H002(2)	Left tension	Monitor	—	0 or less	2000 or more	N/×10 N
H003(3)	Right tension	Monitor	—	0 or less	2000 or more	N/×10 N
H004(4)	Left input voltage	Monitor	—	-1500 or less	1500 or more	mV
H005(5)	Right input voltage	Monitor	—	-1500 or less	1500 or more	mV
H006(6)	—	—	—	—	—	—
H007(7)	—	—	—	—	—	—
H008(8)	—	—	—	—	—	—
H009(9)	—	—	—	—	—	—
H00A(10)	—	—	—	—	—	—
H00B(11)	—	—	—	—	—	—
H00C(12)	—	—	—	—	—	—
H00D(13)	—	—	—	—	—	—
H00E(14)	—	—	—	—	—	—
H00F(15)	—	—	—	—	—	—
H010(16)	Tension upper limit detection	Setting	—	0	Tension full scale	N/×10 N
H011(17)	Tension lower limit detection	Setting	—	0	Tension full scale	N/×10 N
H012(18)	Detection outside target tension range	Setting	—	0	50	%
H013(19)	Tension display filter	Setting	—	5	80	sec
H014(20)	Tension detection filter	Setting	—	0	80	sec
H015(21)	Tension output filter	Setting	—	0	80	sec
H016(22)	—	—	—	—	—	—
H017(23)	—	—	—	—	—	—
H018(24)	—	—	—	—	—	—
H019(25)	—	—	—	—	—	—
H01A(26)	—	—	—	—	—	—
H01B(27)	—	—	—	—	—	—
H01C(28)	—	—	—	—	—	—
H01D(29)	—	—	—	—	—	—
H01E(30)	—	—	—	—	—	—
H01F(31)	—	—	—	—	—	—
H020(32)	Sensor input type selection	Setting	—	0 (LX type), 1 (strain gauge)		—
H021(33)	Tension full scale	Setting	—	1	2000	N/×10 N
H022(34)	Tension display decimal point selection	Setting	—	0 (1), 1 (0.1), 2 (0.01)		—
H023(35)	Tension display unit selection	Setting	—	0 (N), 1 (×10 N)		—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H024(36)	Span target tension	Setting	—	1	Tension full scale	N/×10 N
H025(37)	Left manual zero calibration	Setting	—	-999	999	N/×10 N
H026(38)	Right manual zero calibration	Setting	—	-999	999	N/×10 N
H027(39)	Left manual span calibration	Setting	—	50	300	%
H028(40)	Right manual span calibration	Setting	—	50	300	%
H029(41)	—	—	—	—	—	—
H02A(42)	—	—	—	—	—	—
H02B(43)	—	—	—	—	—	—
H02C(44)	—	—	—	—	—	—
H02D(45)	—	—	—	—	—	—
H02E(46)	—	—	—	—	—	—
H02F(47)	—	—	—	—	—	—
H030(48)	Reel diameter	Monitor	—	1	2000	mmϕ
H031(49)	Target line velocity	Monitor	LE7-DCA	0	10000	m/min
H032(50)	Line acceleration	Monitor	LE7-DCA	0	50	m/min/sec
H033(51)	Measurement length/remaining length	Monitor	LE7-DCA	—	—	m
H034(52)	Reel rotational speed	Monitor	LE7-DCA	65000	1	r/min
H035(53)	New reel rotational speed	Monitor	LE7-DCA	3600	1	r/min
H036(54)	Constant slip ROTO speed command output	Monitor	LE7-DCA	1000	0.1	%
H037(55)	Predrive rotation speed command output	Monitor	LE7-DCA	1000	0.1	%
H038(56)	Predrive target rotation speed	Monitor	LE7-DCA	3600	1	r/min
H039(57)	Reel diameter CALC adapter ROM version	Monitor	LE7-DCA	999	0.01	—
H03A(58)	—	—	—	—	—	—
H03B(59)	—	—	—	—	—	—
H03C(60)	—	—	—	—	—	—
H03D(61)	—	—	—	—	—	—
H03E(62)	—	—	—	—	—	—
H03F(63)	—	—	—	—	—	—
H040(64)	Initial diameter	Setting	LE7-DCA	1	2000	mmϕ
H041(65)	Material thickness	Setting	LE7-DCA	0	10000	μm
H042(66)	Reel diameter detection 1	Setting	LE7-DCA	0	2000	mmϕ
H043(67)	Reel diameter detection 2	Setting	LE7-DCA	0	2000	mmϕ
H044(68)	Reel diameter detection 3	Setting	LE7-DCA	0	2000	mmϕ
H045(69)	Measurement/remaining length detection 1	Setting	LE7-DCA	0	65000	m
H046(70)	Measurement/remaining length detection 2	Setting	LE7-DCA	0	65000	m
H047(71)	Measurement/remaining length detection 3	Setting	LE7-DCA	0	65000	m
H048(72)	Accelerating judgment acceleration	Setting	LE7-DCA	0	10	m/min/sec
H049(73)	Reel rotational speed gain	Setting	LE7-DCA	0	150	%
H04A(74)	Reel rotational speed bias	Setting	LE7-DCA	0	100	%
H04B(75)	Reel rotational speed startup gain	Setting	LE7-DCA	1	5	Time (s)
H04C(76)	Reel rotational speed startup timer	Setting	LE7-DCA	0	10	sec
H04D(77)	Predrive time	Setting	LE7-DCA	0	200	sec
H04E(78)	Predrive bias	Setting	LE7-DCA	-10	10	%
H04F(79)	—	—	—	—	—	—
H050(80)	Maximum diameter	Setting	—	Minimum diameter	2000	mmϕ
H051(81)	Minimum diameter	Setting	—	1	Maximum diameter	mmϕ
H052(82)	Teaching speed	Setting	LE7-DCA	1	10000	m/min
H053(83)	Velocity electronic gear ratio	Setting	LE7-DCA	9000	18000	%
H054(84)	Reel selection	Setting	LE7-DCA	0(unwinding), 1(winding)		—
H055(85)	Number of reel pulse	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H056(86)	Reel diameter calculation cycle	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H057(87)	MEAS/RMN length calculation switch	Setting	LE7-DCA	0 (measurement length), 1 (remaining length)		—
H058(88)	Material thickness unit	Setting	LE7-DCA	0 (×1), 1 (×0.1)		—
H059(89)	Maximum line acceleration	Setting	LE7-DCA	1	50	m/min/sec
H05A(90)	Maximum reel rotational speed	Setting	LE7-DCA	1	3600	r/min
H05B(91)	Detection output selection	Setting	LE7-DCA	0 (Reel diameter), (measurement length/ remaining length)		—
H05C(92)	Detection output holding selection	Setting	LE7-DCA	0 (non-holding), 1 (holding)		—
H05D(93)	Run/Stop judgment selection	Setting	LE7-DCA	0 (contact + internal), 1 (contact), 2 (internal)		—
H05E(94)	Run judgment speed	Setting	LE7-DCA	Stop judgment speed	30	m/min
H05F(95)	Stop judgment speed	Setting	LE7-DCA	1	Run judgment speed	m/min
H060(96)	—	—	—	—	—	—
H061(97)	—	—	—	—	—	—
H062(98)	—	—	—	—	—	—
H063(99)	—	—	—	—	—	—
H064(100)	—	—	—	—	—	—
H065(101)	—	—	—	—	—	—
H066(102)	—	—	—	—	—	—
H067(103)	—	—	—	—	—	—
H068(104)	—	—	—	—	—	—
H069(105)	—	—	—	—	—	—
H06A(106)	—	—	—	—	—	—
H06B(107)	—	—	—	—	—	—
H06C(108)	—	—	—	—	—	—
H06D(109)	—	—	—	—	—	—
H06E(110)	—	—	—	—	—	—
H06F(111)	—	—	—	—	—	—
H070(112)	Target tension	Monitor	—	0	2000	N/×10 N
H071(113)	Control output	Monitor	—	-1000 or less	1000 or more	%
H072(114)	Torque output	Monitor	—	-1000 or less	1000 or more	%
H073(115)	—	—	—	—	—	—
H074(116)	—	—	—	—	—	—
H075(117)	Control output voltage for powder	Monitor	—	260 or more	0.1	V
H076(118)	Control output current for powder	Monitor	—	400 or more	0.01	A
H077(119)	—	—	—	—	—	—
H078(120)	—	—	—	—	—	—
H079(121)	—	—	—	—	—	—
H07A(122)	—	—	—	—	—	—
H07B(123)	—	—	—	—	—	—
H07C(124)	—	—	—	—	—	—
H07D(125)	—	—	—	—	—	—
H07E(126)	—	—	—	—	—	—
H07F(127)	—	—	—	—	—	—
H080(128)	Tension setting	Setting	—	1	Tension full scale	N/×10 N
H081(129)	Manual setting	Setting	—	-1000	1000	%
H082(130)	Stall setting	Setting	—	0	1000	%
H083(131)	Start timer	Setting	—	0	300	sec
H084(132)	Stop timer	Setting	—	0	1000	sec
H085(133)	Stop gain	Setting	—	5	400	%
H086(134)	Stop bias	Setting	—	0	100	%

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H087(135)	Acceleration/deceleration torque setting	Setting	LE7-DCA	0	1000	%
H088(136)	Gain 1	Setting	—	5	400	%
H089(137)	Gain 2	Setting	—	5	400	%
H08A(138)	Internal taper ratio	Setting	—	0	80	%
H08B(139)	External linear line taper ratio	Setting	—	0	100	%
H08C(140)	New reel preset	Setting	—	0	1000	%
H08D(141)	New reel preset timer	Setting	—	0	300	sec
H08E(142)	Cutting torque	Setting	—	0	1000	%
H08F(143)	—	—	—	—	—	—
H090(144)	Broken line taper corner 1	Setting	—	1	2000	mmϕ
H091(145)	Broken line taper ratio 1	Setting	—	0	100	%
H092(146)	Broken line taper corner 2	Setting	—	1	2000	mmϕ
H093(147)	Broken line taper ratio 2	Setting	—	0	100	%
H094(148)	Broken line taper corner 3	Setting	—	1	2000	mmϕ
H095(149)	Broken line taper ratio 3	Setting	—	0	100	%
H096(150)	Broken line taper corner 4	Setting	—	1	2000	mmϕ
H097(151)	Broken line taper ratio 4	Setting	—	0	100	%
H098(152)	Broken line taper corner 5	Setting	—	1	2000	mmϕ
H099(153)	Broken line taper ratio 5	Setting	—	0	100	%
H09A(154)	Broken line taper corner 6	Setting	—	1	2000	mmϕ
H09B(155)	Broken line taper ratio 6	Setting	—	0	100	%
H09C(156)	Broken line taper corner 7	Setting	—	1	2000	mmϕ
H09D(157)	Broken line taper ratio 7	Setting	—	0	100	%
H09E(158)	Broken line taper corner 8	Setting	—	1	2000	mmϕ
H09F(159)	Broken line taper ratio 8	Setting	—	0	100	%
H0A0(160)	Proportional gain	Setting	—	0	100	%
H0A1(161)	Integral time	Setting	—	0	100	%
H0A2(162)	Dead band gain	Setting	—	0	100 - Proportional gain	%
H0A3(163)	Dead band width	Setting	—	0	100	%
H0A4(164)	Tension control filter	Setting	—	0	40	sec
H0A5(165)	Static mechanical loss A	Setting	—	-1000	1000	%
H0A6(166)	Static mechanical loss B	Setting	—	-1000	1000	%
H0A7(167)	Kinetic mechanical loss A	Setting	LE7-DCA	-1000	1000	%
H0A8(168)	Kinetic mechanical loss B	Setting	LE7-DCA	-1000	1000	%
H0A9(169)	Mass correction gain A	Setting	LE7-DCA	0	100	%
H0AA(170)	Mass correction gain B	Setting	LE7-DCA	0	100	%
H0AB(171)	Mass correction bias A	Setting	LE7-DCA	0	100	%
H0AC(172)	Mass correction bias B	Setting	LE7-DCA	0	100	%
H0AD(173)	—	—	—	—	—	—
H0AE(174)	—	—	—	—	—	—
H0AF(175)	—	—	—	—	—	—
H0B0(176)	Control mode selection	Setting	LE7-DCA	0 (feedback control), 1 (open loop control)		—
H0B1(177)	Integral feedback limit	Setting	—	0	101	%
H0B2(178)	Feedback selection during the stop timer	Setting	—	0 (invalid), 1 (valid)		—
H0B3(179)	Automatic control output polarity selection	Setting	—	0 (forward), 1 (reverse)		—
H0B4(180)	Open-loop control ratio	Setting	LE7-DCA	0	100	%
H0B5(181)	Taper function selection	Setting	—	0 (no function), 1 (internal taper), 2 (linear line taper (external)), 3 (broken line taper (external)), 4 (direct taper)		—
H0B6(182)	Selection of two reel's switching FUNC	Setting	—	0 (invalid), 1 (valid)		—
H0B7(183)	Internal taper standard selection	Setting	—	0 (zero standard), 1 (stall standard)		—
H0B8(184)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0B9(185)	Mechanical loss function selection	Setting	LE7-DCA	0 (fixed mechanical loss), 1 (high function mechanical loss)		—
H0BA(186)	Stall automatic calculation gain	Setting	LE7-DCA	0	100	%
H0BB(187)	New reel preset AUTO calculation gain	Setting	LE7-DCA	0	100	%
H0BC(188)	Control output upper limit	Setting	—	Control output lower limit	101	%
H0BD(189)	Control output lower limit	Setting	—	-101	Control output upper limit	%
H0BE(190)	—	—	—	—	—	—
H0BF(191)	—	—	—	—	—	—
H0C0(192)	Load model	Setting	—	0	200	—
H0C1(193)	Rated current	Setting	—	0	400	A
H0C2(194)	Maximum torque correction	Setting	—	50	250	%
H0C3(195)	Nonlinear correction 0	Setting	—	0	1000	%
H0C4(196)	Nonlinear correction 10	Setting	—	0	1000	%
H0C5(197)	Nonlinear correction 20	Setting	—	0	1000	%
H0C6(198)	Nonlinear correction 30	Setting	—	0	1000	%
H0C7(199)	Nonlinear correction 40	Setting	—	0	1000	%
H0C8(200)	Nonlinear correction 50	Setting	—	0	1000	%
H0C9(201)	Nonlinear correction 60	Setting	—	0	1000	%
H0CA(202)	Nonlinear correction 70	Setting	—	0	1000	%
H0CB(203)	Nonlinear correction 80	Setting	—	0	1000	%
H0CC(204)	Nonlinear correction 90	Setting	—	0	1000	%
H0CD(205)	—	—	—	—	—	—
H0CE(206)	—	—	—	—	—	—
H0CF(207)	—	—	—	—	—	—
H0D0(208)	—	—	—	—	—	—
H0D1(209)	Weak excitation	Setting	—	0	1000	%
H0D2(210)	Over current detection filter	Setting	—	0	20	sec
H0D3(211)	—	—	—	—	—	—
H0D4(212)	—	—	—	—	—	—
H0D5(213)	—	—	—	—	—	—
H0D6(214)	—	—	—	—	—	—
H0D7(215)	—	—	—	—	—	—
H0D8(216)	—	—	—	—	—	—
H0D9(217)	—	—	—	—	—	—
H0DA(218)	—	—	—	—	—	—
H0DB(219)	—	—	—	—	—	—
H0DC(220)	—	—	—	—	—	—
H0DD(221)	—	—	—	—	—	—
H0DE(222)	—	—	—	—	—	—
H0DF(223)	—	—	—	—	—	—
H0E0(224)	Contact input monitor	Monitor	—	0	0xFFFF	—
H0E1(225)	Contact output monitor	Monitor	—	0	0xFFFF	—
H0E2(226)	General-purpose analog input 1 monitor	Monitor	—	0	100	%
H0E3(227)	General-purpose analog input 2 monitor	Monitor	—	0	100	%
H0E4(228)	General-purpose analog input 3 monitor	Monitor	—	0	100	%
H0E5(229)	General-purpose analog output 1 monitor	Monitor	—	0	100	%
H0E6(230)	General-purpose analog output 2 monitor	Monitor	—	0	100	%
H0E7(231)	Analog output monitor for TENS control	Monitor	—	0	100	%
H0E8(232)	Analog output monitor for new reel preset	Monitor	—	0	100	%
H0E9(233)	Contact input monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EA(234)	Contact output monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0EB(235)	Alarm display	Monitor	—	0	63	—
H0EC(236)	Network alarm device No.	Monitor	—	0	999	—
H0ED(237)	Main unit ROM version	Monitor	—	0	999	—
H0EE(238)	Network adapter ROM version	Monitor	LE7-CCL	0	999	—
H0EF(239)	Communication signal monitor	Monitor	—	0	0xFFFF	—
H0F0(240)	Contact input 1 function selection	Setting	—	0 (no function), 1 (run/stop), 2 (control output OFF/ON), 3 (stall memory), 4 (inching ON/OFF), 5 (constant tension ON/OFF), 6 (gain 1 ON/OFF), 7 (gain 2 ON/OFF), 8 (automatic/manual), 9 (reel change ON/OFF), 10 (cut torque ON/OFF), 11 (alarm reset ON/OFF)		—
H0F1(241)	Contact input 2 function selection	Setting	—			—
H0F2(242)	Contact input 3 function selection	Setting	—			—
H0F3(243)	Contact input 4 function selection	Setting	—			—
H0F4(244)	Contact input 5 function selection	Setting	—			—
H0F5(245)	Contact input 6 function selection	Setting	—			—
H0F6(246)	—	—	—	—	—	—
H0F7(247)	—	—	—	—	—	—
H0F8(248)	Contact output 1 function selection	Setting	—	0 (no function), 1 (tension lower limit detection), 2 (tension upper limit detection), 3 (detection outside tension range), 4 (alarm occurrence detection)		—
H0F9(249)	Contact output 2 function selection	Setting	—			—
H0FA(250)	—	—	—	—	—	—
H0FB(251)	—	—	—	—	—	—
H0FC(252)	—	—	—	—	—	—
H0FD(253)	—	—	—	—	—	—
H0FE(254)	—	—	—	—	—	—
H0FF(255)	—	—	—	—	—	—
H100(256)	Analog input mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H101(257)	Analog input 1 function selection	Setting	—	0 (no function), 1 (tension setting), 2 (stall setting), 3 (straight line taper ratio setting), 4 (new axis preset setting), 5 (manual setting), 6 (tension input), 7 (Reel diameter input)		—
H102(258)	Analog input 2 function selection	Setting	—			—
H103(259)	Analog input 3 function selection	Setting	—			—
H104(260)	—	—	—	—	—	—
H105(261)	—	—	—	—	—	—
H106(262)	—	—	—	—	—	—
H107(263)	—	—	—	—	—	—
H108(264)	Analog output mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H109(265)	Analog output 1 function selection	Setting	—	0 (no function), 1 (tension monitor), 2 (Reel diameter monitor), 3 (tension setting monitor), 4 (A-axis Reel shaft rotational speed output), 5 (B-axis Reel shaft rotational speed output)		—
H10A(266)	Analog output 2 function selection	Setting	—			—
H10B(267)	Analog output 1 gain	Setting	—	500	3000	%
H10C(268)	Analog output 2 gain	Setting	—	500	3000	%
H10D(269)	Analog output 1 bias	Setting	—	-500	500	%
H10E(270)	Analog output 2 bias	Setting	—	-500	500	%
H10F(271)	—	—	—	—	—	—
H110(272)	Two reel's switching FUNC output mode	Setting	—	0 (no internal switching), 1 (with internal switching)		—
H111(273)	Control output mode selection	Setting	—	0 (0 to 5 V mode), 1 (-5 to 5 V mode), 2 (0 to 10 V mode), 3 (-10 to 10 V mode), 4 (0 to 8 V mode), 5 (- 8 to 8 V mode), 6 (0 to 2.7 V mode), 7 (-2.7 to 2.7 V mode), 8 (1 to 5 V mode)		—
H112(274)	Control output gain	Setting	—	500	3000	%
H113(275)	New reel preset output gain	Setting	—	500	3000	%
H114(276)	Control output bias	Setting	—	-500	500	%
H115(277)	New reel preset output bias	Setting	—	-500	500	%
H116(278)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H117(279)	—	—	—	—	—	—
H118(280)	—	—	—	—	—	—
H119(281)	—	—	—	—	—	—
H11A(282)	—	—	—	—	—	—
H11B(283)	—	—	—	—	—	—
H11C(284)	—	—	—	—	—	—
H11D(285)	—	—	—	—	—	—
H11E(286)	—	—	—	—	—	—
H11F(287)	—	—	—	—	—	—
H120(288)	Set setting password	Setting	—	0	32000	—
H121(289)	Input setting password	Setting	—	0	32000	—
H122(290)	Set monitor password	Setting	—	0	32000	—
H123(291)	Input monitor password	Setting	—	0	32000	—
H124(292)	—	—	—	—	—	—
H125(293)	—	—	—	—	—	—
H126(294)	—	—	—	—	—	—
H127(295)	—	—	—	—	—	—
H128(296)	—	—	—	—	—	—
H129(297)	—	—	—	—	—	—
H12A(298)	—	—	—	—	—	—
H12B(299)	—	—	—	—	—	—
H12C(300)	—	—	—	—	—	—
H12D(301)	—	—	—	—	—	—
H12E(302)	—	—	—	—	—	—
H12F(303)	—	—	—	—	—	—
H130(304)	Alarm history 1	Monitor	—	0	63	—
H131(305)	Alarm history 2	Monitor	—	0	63	—
H132(306)	Alarm history 3	Monitor	—	0	63	—
H133(307)	Alarm history 4	Monitor	—	0	63	—
H134(308)	Alarm history 5	Monitor	—	0	63	—
H135(309)	Alarm history 6	Monitor	—	0	63	—
H136(310)	Alarm history 7	Monitor	—	0	63	—
H137(311)	Alarm history 8	Monitor	—	0	63	—
H138(312)	Alarm history holding selection	Setting	—	0 (no holding), 1 (holding)		—
H139(313)	Alarm display time	Setting	—	0	301	sec
H13A(314)	Alarm operation selection 1	Setting	—	0	0xFFFF	—
H13B(315)	Alarm operation selection 2	Setting	—	0	0xFFFF	—
H13C(316)	Alarm operation selection 3	Setting	—	0	0xFFFF	—
H13D(317)	Alarm operation selection 4	Setting	—	0	0xFFFF	—
H13E(318)	—	—	—	—	—	—
H13F(319)	—	—	—	—	—	—
H140(320)	—	—	—	—	—	—
H141(321)	—	—	—	—	—	—
H142(322)	—	—	—	—	—	—
H143(323)	—	—	—	—	—	—
H144(324)	—	—	—	—	—	—
H145(325)	—	—	—	—	—	—
H146(326)	—	—	—	—	—	—
H147(327)	—	—	—	—	—	—
H148(328)	—	—	—	—	—	—
H149(329)	—	—	—	—	—	—
H14A(330)	—	—	—	—	—	—

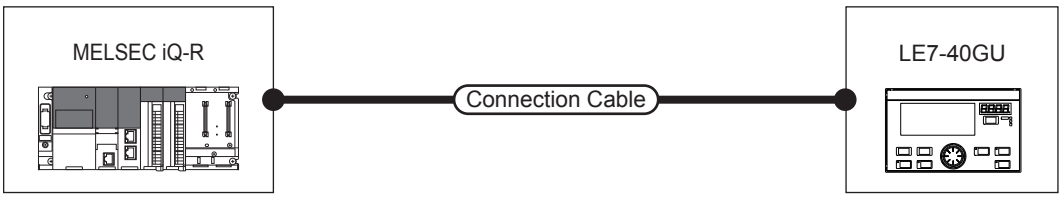
Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H14B(331)	—	—	—	—	—	—
H14C(332)	—	—	—	—	—	—
H14D(333)	—	—	—	—	—	—
H14E(334)	—	—	—	—	—	—
H14F(335)	—	—	—	—	—	—
H150(336)	—	—	—	—	—	—
H151(337)	—	—	—	—	—	—
H152(338)	—	—	—	—	—	—
H153(339)	—	—	—	—	—	—
H154(340)	—	—	—	—	—	—
H155(341)	—	—	—	—	—	—
H156(342)	—	—	—	—	—	—
H157(343)	—	—	—	—	—	—
H158(344)	—	—	—	—	—	—
H159(345)	—	—	—	—	—	—
H15A(346)	—	—	—	—	—	—
H15B(347)	—	—	—	—	—	—
H15C(348)	—	—	—	—	—	—
H15D(349)	—	—	—	—	—	—
H15E(350)	—	—	—	—	—	—
H15F(351)	—	—	—	—	—	—
H160(352)	—	—	—	—	—	—
H161(353)	—	—	—	—	—	—
H162(354)	—	—	—	—	—	—
H163(355)	—	—	—	—	—	—
H164(356)	—	—	—	—	—	—
H165(357)	—	—	—	—	—	—
H166(358)	—	—	—	—	—	—
H167(359)	—	—	—	—	—	—
H168(360)	—	—	—	—	—	—
H169(361)	—	—	—	—	—	—
H16A(362)	—	—	—	—	—	—
H16B(363)	—	—	—	—	—	—
H16C(364)	—	—	—	—	—	—
H16D(365)	—	—	—	—	—	—
H16E(366)	—	—	—	—	—	—
H16F(367)	—	—	—	—	—	—
H170(368)	—	—	—	—	—	—
H171(369)	—	—	—	—	—	—
H172 (370)	—	—	—	—	—	—
H173(371)	—	—	—	—	—	—
H174(372)	—	—	—	—	—	—
H175(373)	—	—	—	—	—	—
H176(374)	—	—	—	—	—	—
H177(375)	—	—	—	—	—	—
H178(376)	—	—	—	—	—	—
H179(377)	—	—	—	—	—	—
H17A(378)	—	—	—	—	—	—
H17B(379)	—	—	—	—	—	—
H17C(380)	—	—	—	—	—	—
H17D(381)	—	—	—	—	—	—
H17E(382)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H17F(383)	—	—	—	—	—	—
H180(384)	Open-loop control base torque	Setting	LE7-DCA	0	1000	%
H181(385)	Direct taper ratio	Setting	—	0	1000	%
H182(386)	Link tension monitor filter	Setting	—	0	80	sec
H183(387)	Tension input	Setting	—	0	2000	N/×10 N
H184(388)	Reel diameter input	Setting	—	0	2000	mmϕ
H185(389)	—	—	—	—	—	—
H186(390)	—	—	—	—	—	—
H187(391)	—	—	—	—	—	—
H188(392)	—	—	—	—	—	—
H189(393)	—	—	—	—	—	—
H18A(394)	—	—	—	—	—	—
H18B(395)	—	—	—	—	—	—
H18C(396)	—	—	—	—	—	—
H18D(397)	—	—	—	—	—	—
H18E(398)	—	—	—	—	—	—
H18F(399)	—	—	—	—	—	—

3.3 Reference Program

A basic example program (GX Works3) for CC-Link IE Field Network Basic communication is described.

System configuration



Settings

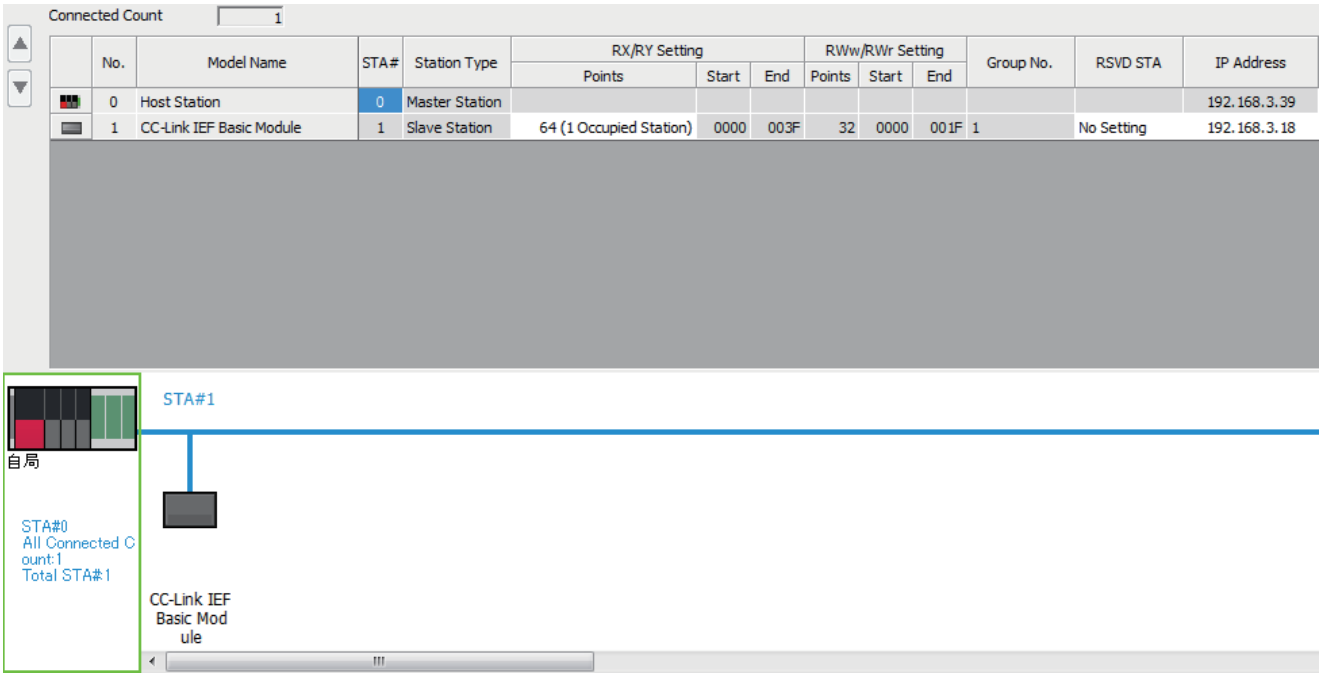
■Own node settings

Item	
Own Node Settings	
Parameter Setting Method	Parameter Editor
IP Address	
IP Address	192 . 168 . 3 . 39
Subnet Mask	. . .
Default Gateway	. . .
Enable/Disable Online Change	Disable All (SLMP)
Communication Data Code	Binary
Opening Method	Do Not Open by Program
CC-Link IEF Basic Setting	
To Use or Not to Use CC-Link IEF Basic Setting	Enable
Network Configuration Settings	<Detailed Setting>
Refresh Settings	<Detailed Setting>
External Device Configuration	
External Device Configuration	<Detailed Setting>

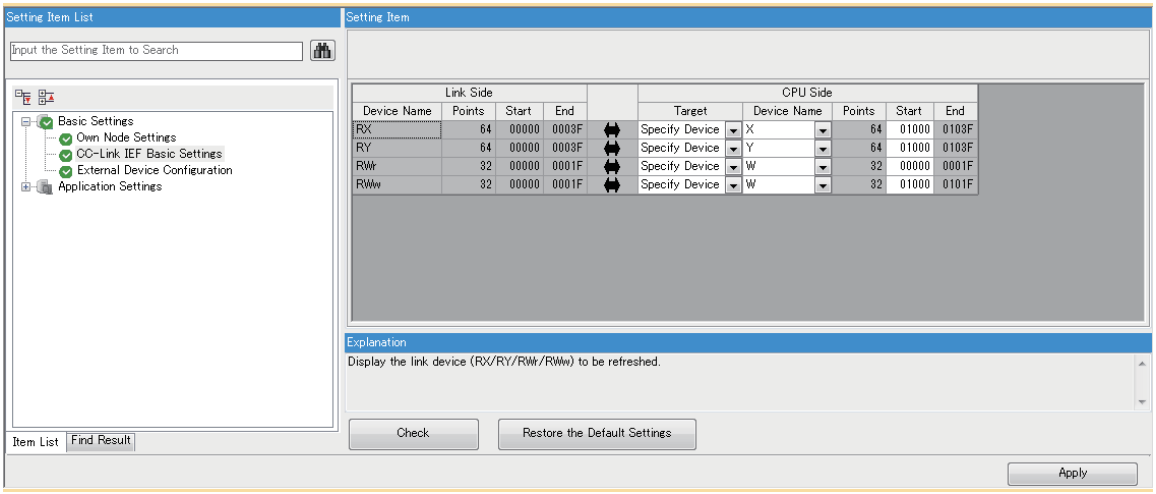
■CC-Link IEF Basic setting

To use or not use CC-Link IEF Basic setting: Enable

Network configuration settings



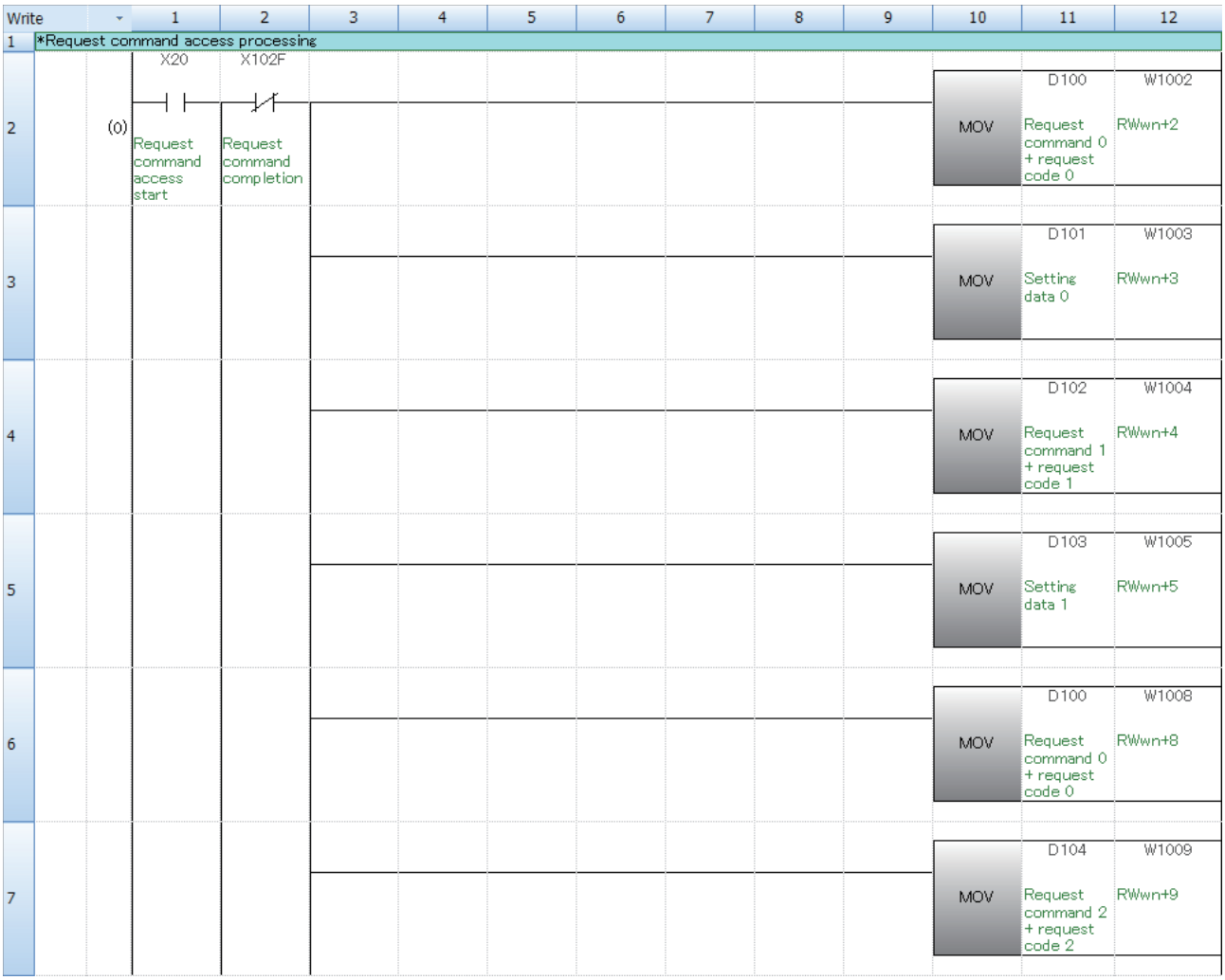
Refresh settings

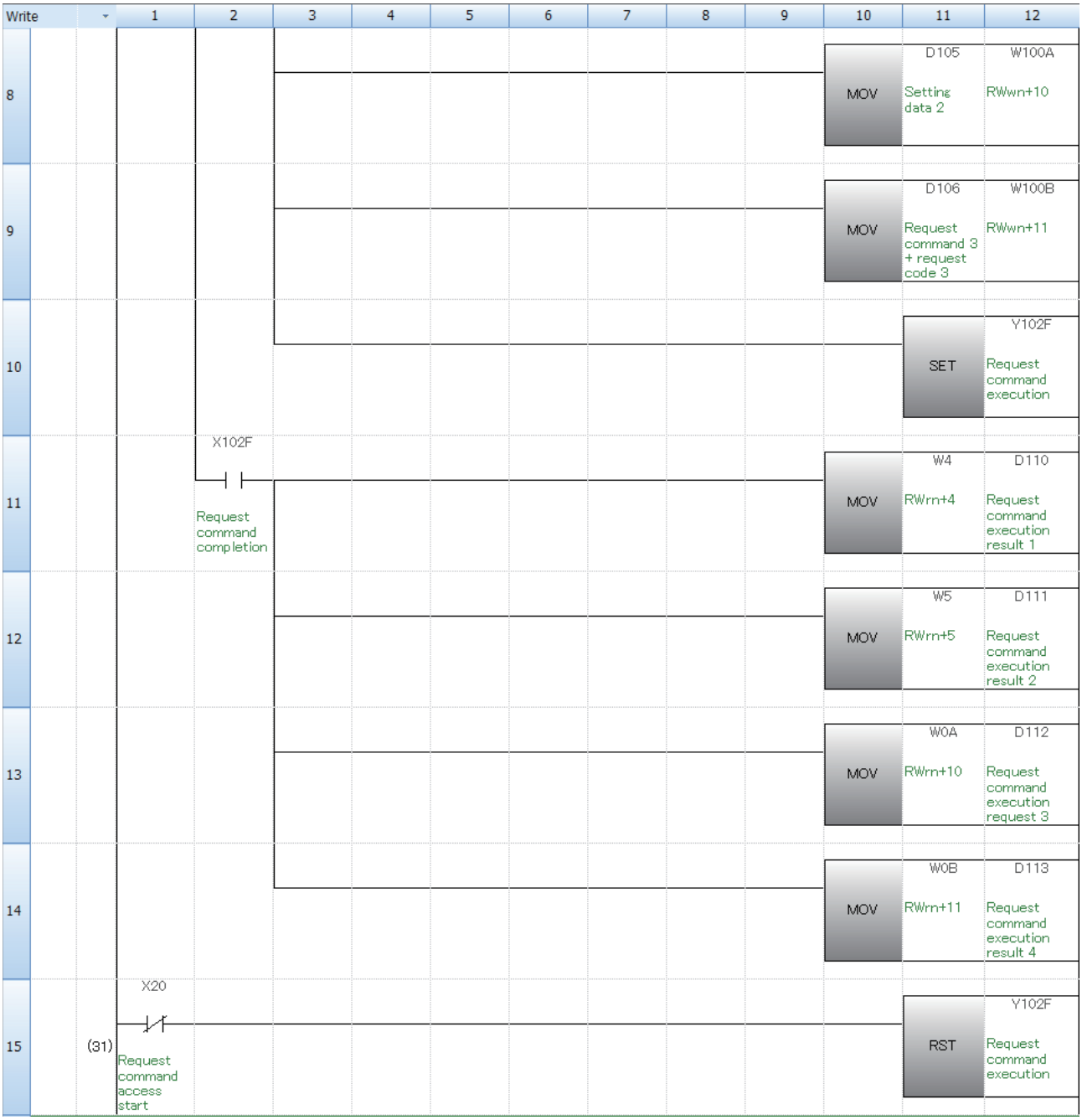


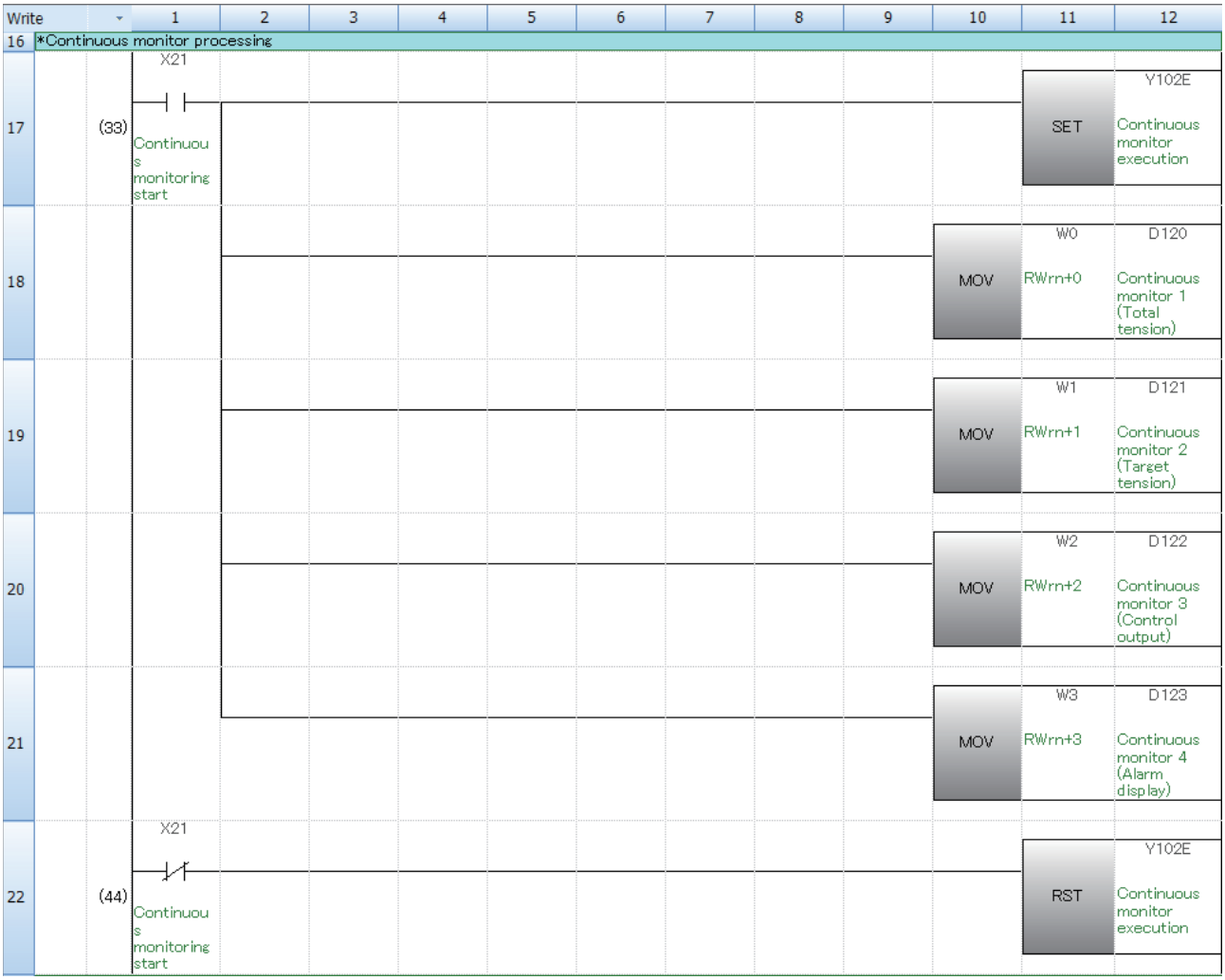
■External device configuration

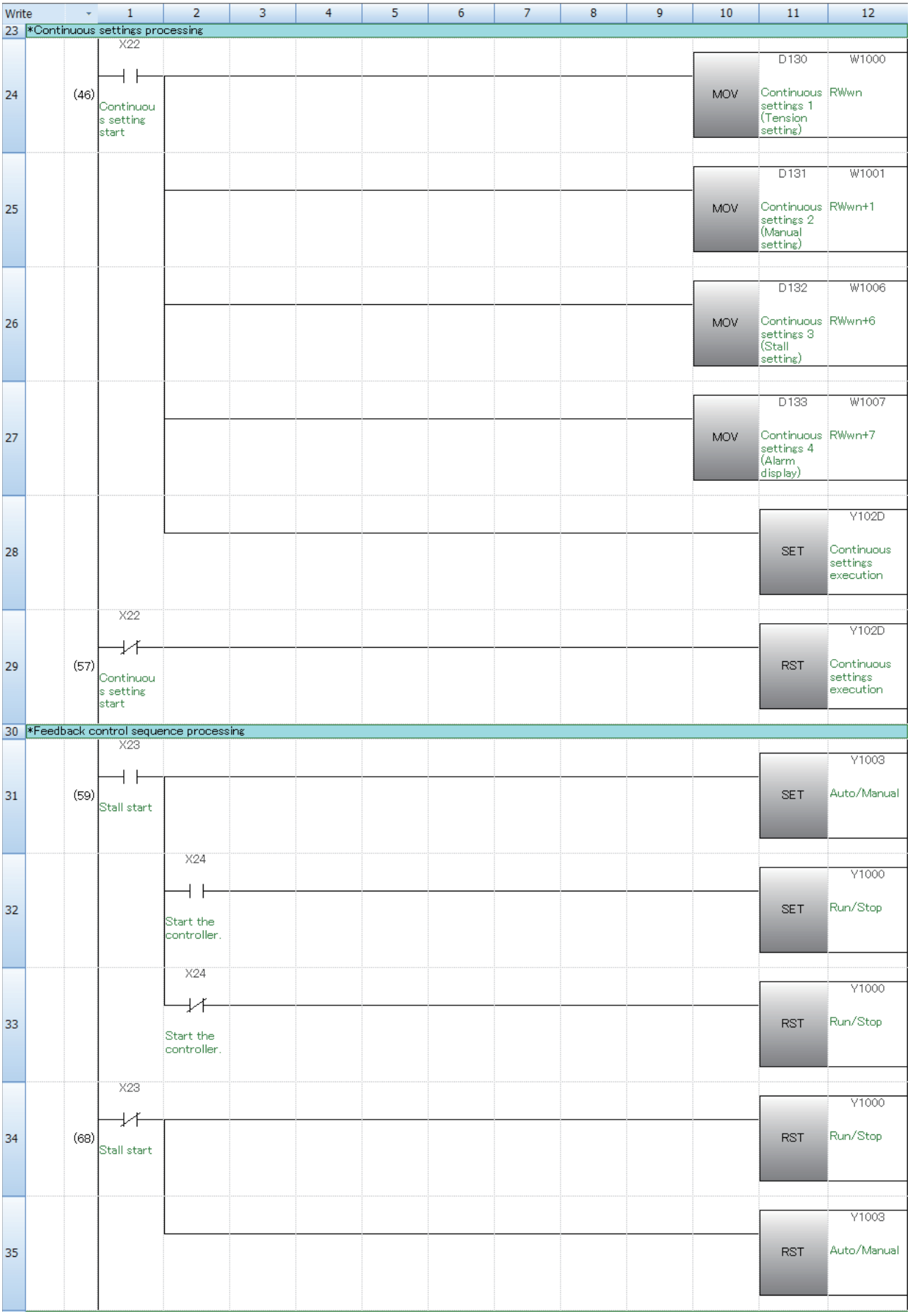
Setting is unnecessary.

Program example




Write
1
2
3
4
5
6
7
8
9
10
11
12
8
MOV
D105
Setting data 2
W100A
RWwn+10
9
MOV
D106
Request command 3 + request code 3
W100B
RWwn+11
10
SET
Y102F
Request command execution
11
X102F
Request command completion
MOV
W4
RWrn+4
D110
Request command execution result 1
12
MOV
W5
RWrn+5
D111
Request command execution result 2
13
MOV
W0A
RWrn+10
D112
Request command execution request 3
14
MOV
W0B
RWrn+11
D113
Request command execution result 4
15
X20
(31)
Request command access start
RST
Y102F
Request command execution


Write
1
2
3
4
5
6
7
8
9
10
11
12
16
*Continuous monitor processing
17
X21
(33)
Continuous monitoring start
SET
Y102E
Continuous monitor execution
18
MOV
W0
RWrn+0
D120
Continuous monitor 1 (Total tension)
19
MOV
W1
RWrn+1
D121
Continuous monitor 2 (Target tension)
20
MOV
W2
RWrn+2
D122
Continuous monitor 3 (Control output)
21
MOV
W3
RWrn+3
D123
Continuous monitor 4 (Alarm display)
22
X21
(44)
Continuous monitoring start
RST
Y102E
Continuous monitor execution


Write
1
2
3
4
5
6
7
8
9
10
11
12
23 *Continuous settings processing
X22
24 (46) Continuous setting start
MOV D130 W1000 Continuous settings 1 (Tension setting) RWwn
25 MOV D131 W1001 Continuous settings 2 (Manual setting) RWwn+1
26 MOV D132 W1006 Continuous settings 3 (Stall setting) RWwn+6
27 MOV D133 W1007 Continuous settings 4 (Alarm display) RWwn+7
28 SET Y102D Continuous settings execution
X22
29 (57) Continuous setting start
RST Y102D Continuous settings execution
30 *Feedback control sequence processing
X23
31 (59) Stall start
SET Y1003 Auto/Manual
X24
32 Start the controller.
SET Y1000 Run/Stop
X24
33 Start the controller.
RST Y1000 Run/Stop
X23
34 (68) Stall start
RST Y1000 Run/Stop
35 RST Y1003 Auto/Manual

Write
1
2
3
4
5
6
7
8
9
10
11
12
36 *Status monitoring processing
37 (71) X1000 Run/Stop Y30 Running lamp
38 (74) X1008 Manual control Y31 Manual control lamp
39 (76) X1009 Automatic control Y32 Automatic control lamp
40 (78) X100A Auto lamp flicker in operation/ stopped Y33 Auto lamp flicker in operation lamp
41 (80) X102F Request command completion Y34 Request command completion lamp
42 (82) X102E Continuou s monitor being executed Y35 Continuous monitor being executed lamp
43 (84) X102D Continuou s settings being executed Y36 Continuous settings being executed lamp
44 (86) [END]

Using method of ladder

Required data is stored to D100 to D133, and each function is executed in X20 to X24.

List of used devices (The allocation is an example.)

Device name	Classification*1	Allocation function	Use
D100 to D106	Setting	Request command + request code/data setting 1 to 4	Device set to use the request command
D110 to D113	Setting	Request command execution result 1 to 4	Request command execution result is stored.
D120 to D123	Setting	Continuous monitor 1 to 4	Continuous monitor execution result is stored.
D130 to D133	Setting	Continuous setting 1 to 4	Setting value of continuous setting is stored.
X20	Setting	Start request command access execution	Execute request command.
X21	Setting	Start continuous monitor execution	Start to execute continuous monitor.
X22	Setting	Start continuous setting execution	Start to execute continuous setting.
X23	Setting	Start stall execution	Start to execute stall.
X24	Monitoring	Start operation	Start to operate.
Y30	Monitoring	Run	Run: ON/Stop: OFF
Y31	Monitoring	Manual control	Manual control ON
Y32	Monitoring	Automatic control	Automatic control ON
Y33	Monitoring	Auto lamp flicker in operation	Auto lamp flicker in operation ON
Y34	Monitoring	Request command completion	ON when request command is completed
Y35	Monitoring	Continuous monitor being executed	ON when continuous monitor is being executed.
Y36	Monitoring	Continuous settings being executed	ON when continuous setting is being executed.

*1 Classification
Setting: items to be set/input when using functions
Monitoring: items to monitor output when using functions

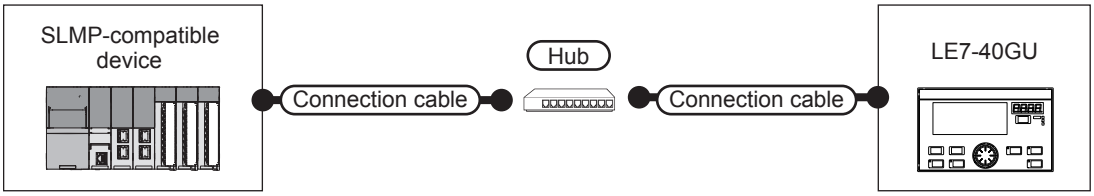
4 SLMP COMMUNICATION

Since the LE7-40GU supports the SLMP communication function which is an open FA network, it can communicate with various SLMP-compatible devices. Also, up to seven LE7-40GU units can be connected to one SLMP-compatible device to carry out data monitoring and parameter writing.

Precautions

If you replace an external device or an SLMP equipment due to a malfunction, the MAC address of the connected device changes, so communication may not be possible. (When exchanged with the same IP address equipment)
If you replace a device in the Ethernet, restart all the devices in the network.

4.1 System Configuration



Connection equipment	Communication form	Connection cable		External device	Connection cable		Tension controller*2		Number of connectable devices
		Cable type name*4	Maximum segment length*3		Cable type name*4	Maximum segment length*3	Optional equipment	Main unit	
SLMP equipment	Ethernet	• 1000BASE-T 100BASE-TX Category 5 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP) • 10BASE-T Category 3 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP)	100 m	Hub*1	• 1000BASE-T 100BASE-TX Category 5 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP) • 10BASE-T Category 3 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP)	100 m	— (Built-in to main unit)	LE7-40GU	Up to seven units can be connected to one SLMP compatible device The maximum number of connected units may be seven or less depending on the SLMP equipment used*5

*1 Please connect with SLMP equipment via a hub.
Use cables, connectors, and hubs that satisfy the IEEE 802.3 10BASE-T/100BASE-TX/1000BASE-T standard.
*2 When connecting LE7-40GU to 10 BASE (- T/2/5) compliant equipment, use it in a network environment where 10 Mbps/100 Mbps can be mixed using a switching hub.
*3 This is the length between the hub and the node.
The maximum distance depends on the Ethernet device used.
When using a repeater hub, the number of units that can be connected is as follows.
· 10BASE-T: Cascade connection up to 4 units (500 m)
· 100BASE-TX: Cascade connection up to 2 units (205 m)
When using a switching hub, the cascade connection between switching hubs has no theoretical limit on the number that can be cascaded.
Please check with the manufacturer of the switching hub used for any restrictions.
*4 For the twisted pair cable, please use a straight cable.
*5 For details, refer to the manual of the SLMP equipment used.

4.2 Communication Setting

Communication parameter settings

When using SLMP communication, set the communication parameters with the following procedure.

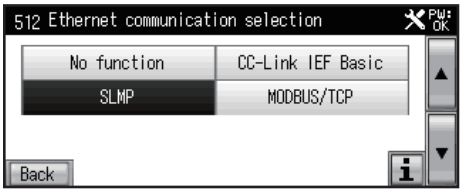
Setting with Data Transfer Tool

1. Obtain the "Screen package data for SLMP communication" from your local Mitsubishi Electric representative.
2. Transfer the "Screen package data for SLMP communication" to LE7-40GU with Data Transfer Tool (for GT Works3).

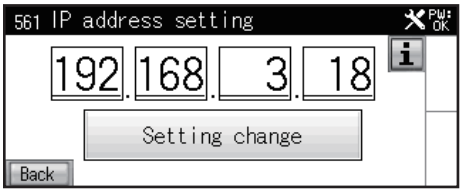
For more information on data transfer, refer to the following.

☞ Page 14 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

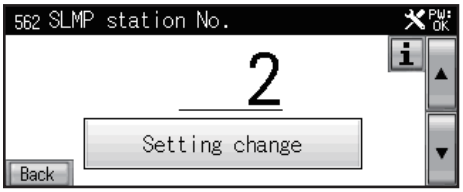
3. Select "SLMP" on the "Ethernet communication selection" screen of the LE7-40GU screen.



4. If you want to change the IP address of LE7-40GU (default: 192.168.3.18), change it on the "IP address setting" screen of the LE7-40GU screen.



5. If you want to change the SLMP station No. (default: 2), change it on the "SLMP station number" screen on the LE7-40GU screen.



6. Restart LE7-40GU.

Precautions

For SLMP communication, only the LE7-40GU station No. and IP address can be changed on the LE7-40GU screen.
To change the port number or SLMP equipment communication settings, they must be set with GT Designer3 (GOT2000).

Setting with GT Designer3 (GOT2000)

1. Obtain the "Screen package data for SLMP communication" from your local Mitsubishi Electric representative.

2. Open the "Screen package data for SLMP communication" in GT Designer3 (GOT2000) and change the settings of [Common] - [Controller Setting] - [CH2] as follows.

For details on the communication settings in GT Designer3 (GOT2000), refer to the following.

GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals)

<Controller Setting>

Setting name	Setting detail
Manufacturer	CLPA
Controller Type	SLMP
I/F	Ethernet:Multi
Driver	Ethernet(SLMP), Gateway

<Detail setting>

Property	Value
GOT Net No.	1
GOT Station	2 to 7
GOT Communication Port No.	5031
Retry(Times)	3
Startup Time(Sec)	3
Timeout Time(Sec)	3
Delay Time(ms)	0
Message Format	4E frame
Communication deta code	Binary code
Device read points(Points)	960
Device write points(Points)	960
Device read random points(Points)	0
Device write random point(Points)	0

<Ethernet Controller Setting>

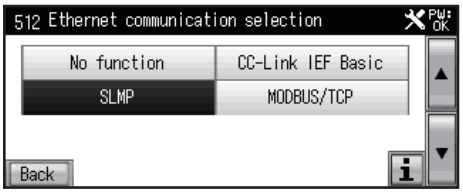
Setting name	Setting value
Net No.	1
Station	1
Unit tType	SLMP
IP Address	192.168.3.250
Port No.	49152
Communication	UDP

3. Transfer the "Screen package data for SLMP communication" to LE7-40GU with GT Designer3 (GOT2000).

For more information on data transfer, refer to the following.

☞ Page 14 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

4. Select "SLMP" on the "Ethernet communication selection" screen of the LE7-40GU screen.



5. Restart LE7-40GU.

Link data configuration

Link data of SLMP server equipment and LE7-40GU uses D100 to D179 of SLMP equipment D device.

SLMP server equipment→LE7-40GU		
Device No. (server equipment)	**Signal name**	
D100	Station No. command	
D101	Input signal 0 to 15	
D102	Input signal 16 to 31	
D103	Input signal 32 to 47	
D104	Continuous settings 1	
D105	Continuous settings 2	
D106	Request command 0	Request code 0
D107	Setting data 0	
D108	Request command 1	Request code 1
D109	Setting data 1	

LE7-40GU→SLMP server equipment	
Device No. (server equipment)	**Signal name**
Dn	—
Dn+1	Output signal 0 to 15
Dn+2	Output signal 16 to 31
Dn+3	Output signal 32 to 47
Dn+4	Continuous monitor 1
Dn+5	Continuous monitor 2
Dn+6	Continuous monitor 3
Dn+7	Setting monitor 4
Dn+8	Request command 0 execution result
Dn+9	Settings command 1 execution result

*1 Dn switches according to the LE7-40GU SLMP station No. setting. (Station No. 1: D 110, Station No. 2: D 120 ⋯ Station No. 7: D 170)

Station Number command

Determine the station No. of the LE7-40GU to be accessed by the station No. command of the SLMP equipment D device (D 106).

By setting the station No. command to 0, simultaneous settings can be done for all LE7-40GU units.

Station No. command	Function
1 to 7	Individual access to designated LE7-40GU
0	Simultaneous access to all LE7-40GU units

Continuous setting/continuous monitoring

By simply turning on continuous settings execution (D103, b13) and continuous monitor execution (D103, b14) of SLMP equipment, preset data can be set and monitored continuously.

For continuous setting data, the data set for RAM writing is not stored during a power failure.

The latest data existing in LE7-40GU when the master station gives the send request can be monitored continuously.

However, regarding the update of parameters for which the monitor update cycle is specified by the setting in LE7-40GU, the data is updated in the specified update cycle if the specified update cycle is longer than the monitor update cycle in the send request given by the master station.

Access by request command

For any access to data in LE7-40GU from the SLMP equipment, data can be read and written by handshake between the "request command execution" flag and the "request command completion" flag.
Double word data from the SLMP equipment is used for this access.
This 2-word data is comprised of the request command, to which the upper 4 bits of the first word are assigned, and the request code, to which the lower 2 bits are assigned, and the setting data, to which the next word is assigned.

bit 15 to 12	bit 11 to 0
Request command	Request code
Setting data	

There are three types of request command, Data Monitor, Writing to RAM, and Writing to RAM + ROM, according to the selection of data reading and writing method.

Monitor	Writing to RAM	Writing to RAM + ROM
Writing data is reflected in the settings based on a data read request from the SLMP equipment but is not stored against power interruption.	Writing data is reflected in the settings based on a data write request from the SLMP equipment but is not stored against power interruption.	Execute data writing to the RAM + ROM (for storage against power interruption).

Since there is a limit on the number of writable times in the ROM for power failure storage, it is necessary to write the data where write updates are performed periodically from the PLC only to RAM.

Request command	Contents of execution	Execution result
H0	Monitor	Monitored value
H1	Writing to RAM	Writing result
H2	Writing to RAM + ROM	Writing result

The request code indicates the data No. (address) of data for which the request command is executed. Also, the subsequent data setting is the data to be written to that data number.
If the request command is a monitor, the data setting data is ignored.
When double word data is written to send data in the SLMP equipment, and the handshake is executed by turning ON/OFF the request command execution flag and request command completion flag as follows, LE7-40GU sends back the request command execution result.
If an error occurs, triggered by the request command from the SLMP equipment, the local station turns ON the network alarm occurrence flag and outputs the device No. that has the error to the monitor of the device number of the network alarm.

1. SLMP compatible device executes request command (D103, b15) ON.
2. The LE7-40GU processes in accordance with the SLMP equipment request command execution ON.
3. LE7-40GU turns ON the request command completion.
4. The SLMP equipment receives request command completion (Dn+3, b15) ON.
5. The SLMP equipment sets request command completion OFF.
6. The LE7-40GU receives request command execution OFF from the SLMP equipment.
7. LE7-40GU turns OFF the request command completion.
8. The SLMP equipment receives turning OFF of the request command completion.

Please perform reading of the execution results of the request command between step 4 and 5 of the handshake procedure.
For the request command execution result, refer to the following.
LE7-CCL APPLICATION MANUAL

Request code

The numerical value of each parameter corresponding to the request code is treated as real number data without a decimal point.
In addition, the minimum and maximum values are determined for LE7-40GU, and when a value exceeding this data is written, it is automatically rewritten to the minimum or maximum value.
In this case, an "Out of data range" alarm is generated.

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H000(0)	—	—	—	—	—	—
H001(1)	Total tension	Monitor	—	0 or less	2000 or more	N/×10 N
H002(2)	Left tension	Monitor	—	0 or less	2000 or more	N/×10 N
H003(3)	Right tension	Monitor	—	0 or less	2000 or more	N/×10 N
H004(4)	Left input voltage	Monitor	—	-1500 or less	1500 or more	mV
H005(5)	Right input voltage	Monitor	—	-1500 or less	1500 or more	mV
H006(6)	—	—	—	—	—	—
H007(7)	—	—	—	—	—	—
H008(8)	—	—	—	—	—	—
H009(9)	—	—	—	—	—	—
H00A(10)	—	—	—	—	—	—
H00B(11)	—	—	—	—	—	—
H00C(12)	—	—	—	—	—	—
H00D(13)	—	—	—	—	—	—
H00E(14)	—	—	—	—	—	—
H00F(15)	—	—	—	—	—	—
H010(16)	Tension upper limit detection	Setting	—	0	Tension full scale	N/×10 N
H011(17)	Tension lower limit detection	Setting	—	0	Tension full scale	N/×10 N
H012(18)	Detection outside target tension range	Setting	—	0	50	%
H013(19)	Tension display filter	Setting	—	5	80	sec
H014(20)	Tension detection filter	Setting	—	0	80	sec
H015(21)	Tension output filter	Setting	—	0	80	sec
H016(22)	—	—	—	—	—	—
H017(23)	—	—	—	—	—	—
H018(24)	—	—	—	—	—	—
H019(25)	—	—	—	—	—	—
H01A(26)	—	—	—	—	—	—
H01B(27)	—	—	—	—	—	—
H01C(28)	—	—	—	—	—	—
H01D(29)	—	—	—	—	—	—
H01E(30)	—	—	—	—	—	—
H01F(31)	—	—	—	—	—	—
H020(32)	Sensor input type selection	Setting	—	0 (LX type), 1 (strain gauge)		—
H021(33)	Tension full scale	Setting	—	1	2000	N/×10 N
H022(34)	Tension display decimal point selection	Setting	—	0 (1), 1 (0.1), 2 (0.01)		—
H023(35)	Tension display unit selection	Setting	—	0 (N), 1 (×10 N)		—
H024(36)	Span target tension	Setting	—	1	Tension full scale	N/×10 N
H025(37)	Left manual zero calibration	Setting	—	-999	999	N/×10 N
H026(38)	Right manual zero calibration	Setting	—	-999	999	N/×10 N
H027(39)	Left manual span calibration	Setting	—	50	300	%
H028(40)	Right manual span calibration	Setting	—	50	300	%
H029(41)	—	—	—	—	—	—
H02A(42)	—	—	—	—	—	—
H02B(43)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H02C(44)	—	—	—	—	—	—
H02D(45)	—	—	—	—	—	—
H02E(46)	—	—	—	—	—	—
H02F(47)	—	—	—	—	—	—
H030(48)	Reel diameter	Monitor	—	1	2000	mmϕ
H031(49)	Target line velocity	Monitor	LE7-DCA	0	10000	m/min
H032(50)	Line acceleration	Monitor	LE7-DCA	0	50	m/min/sec
H033(51)	Measurement length/remaining length	Monitor	LE7-DCA	—	—	m
H034(52)	Reel rotational speed	Monitor	LE7-DCA	65000	1	r/min
H035(53)	New reel rotational speed	Monitor	LE7-DCA	3600	1	r/min
H036(54)	Constant slip ROTO speed command output	Monitor	LE7-DCA	1000	0.1	%
H037(55)	Predrive rotation speed command output	Monitor	LE7-DCA	1000	0.1	%
H038(56)	Predrive target rotation speed	Monitor	LE7-DCA	3600	1	r/min
H039(57)	Reel diameter CALC adapter ROM version	Monitor	LE7-DCA	999	0.01	—
H03A(58)	—	—	—	—	—	—
H03B(59)	—	—	—	—	—	—
H03C(60)	—	—	—	—	—	—
H03D(61)	—	—	—	—	—	—
H03E(62)	—	—	—	—	—	—
H03F(63)	—	—	—	—	—	—
H040(64)	Initial diameter	Setting	LE7-DCA	1	2000	mmϕ
H041(65)	Material thickness	Setting	LE7-DCA	0	10000	μm
H042(66)	Reel diameter detection 1	Setting	LE7-DCA	0	2000	mmϕ
H043(67)	Reel diameter detection 2	Setting	LE7-DCA	0	2000	mmϕ
H044(68)	Reel diameter detection 3	Setting	LE7-DCA	0	2000	mmϕ
H045(69)	Measurement/remaining length detection 1	Setting	LE7-DCA	0	65000	m
H046(70)	Measurement/remaining length detection 2	Setting	LE7-DCA	0	65000	m
H047(71)	Measurement/remaining length detection 3	Setting	LE7-DCA	0	65000	m
H048(72)	Accelerating judgment acceleration	Setting	LE7-DCA	0	10	m/min/sec
H049(73)	Reel rotational speed gain	Setting	LE7-DCA	0	150	%
H04A(74)	Reel rotational speed bias	Setting	LE7-DCA	0	100	%
H04B(75)	Reel rotational speed startup gain	Setting	LE7-DCA	1	5	Time (s)
H04C(76)	Reel rotational speed startup timer	Setting	LE7-DCA	0	10	sec
H04D(77)	Predrive time	Setting	LE7-DCA	0	200	sec
H04E(78)	Predrive bias	Setting	LE7-DCA	-10	10	%
H04F(79)	—	—	—	—	—	—
H050(80)	Maximum diameter	Setting	—	Minimum diameter	2000	mmϕ
H051(81)	Minimum diameter	Setting	—	1	Maximum diameter	mmϕ
H052(82)	Teaching speed	Setting	LE7-DCA	1	10000	m/min
H053(83)	Velocity electronic gear ratio	Setting	LE7-DCA	9000	18000	%
H054(84)	Reel selection	Setting	LE7-DCA	0(unwinding), 1(winding)		—
H055(85)	Number of reel pulse	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H056(86)	Reel diameter calculation cycle	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H057(87)	MEAS/RMN length calculation switch	Setting	LE7-DCA	0 (measurement length), 1 (remaining length)		—
H058(88)	Material thickness unit	Setting	LE7-DCA	0 (×1), 1 (×0.1)		—
H059(89)	Maximum line acceleration	Setting	LE7-DCA	1	50	m/min/sec
H05A(90)	Maximum reel rotational speed	Setting	LE7-DCA	1	3600	r/min
H05B(91)	Detection output selection	Setting	LE7-DCA	0 (Reel diameter), (measurement length/ remaining length)		—
H05C(92)	Detection output holding selection	Setting	LE7-DCA	0 (non-holding), 1 (holding)		—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H05D(93)	Run/Stop judgment selection	Setting	LE7-DCA	0 (contact + internal), 1 (contact), 2 (internal)		—
H05E(94)	Run judgment speed	Setting	LE7-DCA	Stop judgment speed	30	m/min
H05F(95)	Stop judgment speed	Setting	LE7-DCA	1	Run judgment speed	m/min
H060(96)	—	—	—	—	—	—
H061(97)	—	—	—	—	—	—
H062(98)	—	—	—	—	—	—
H063(99)	—	—	—	—	—	—
H064(100)	—	—	—	—	—	—
H065(101)	—	—	—	—	—	—
H066(102)	—	—	—	—	—	—
H067(103)	—	—	—	—	—	—
H068(104)	—	—	—	—	—	—
H069(105)	—	—	—	—	—	—
H06A(106)	—	—	—	—	—	—
H06B(107)	—	—	—	—	—	—
H06C(108)	—	—	—	—	—	—
H06D(109)	—	—	—	—	—	—
H06E(110)	—	—	—	—	—	—
H06F(111)	—	—	—	—	—	—
H070(112)	Target tension	Monitor	—	0	2000	N/×10 N
H071(113)	Control output	Monitor	—	-1000 or less	1000 or more	%
H072(114)	Torque output	Monitor	—	-1000 or less	1000 or more	%
H073(115)	—	—	—	—	—	—
H074(116)	—	—	—	—	—	—
H075(117)	Control output voltage for powder	Monitor	—	260 or more	0.1	V
H076(118)	Control output current for powder	Monitor	—	400 or more	0.01	A
H077(119)	—	—	—	—	—	—
H078(120)	—	—	—	—	—	—
H079(121)	—	—	—	—	—	—
H07A(122)	—	—	—	—	—	—
H07B(123)	—	—	—	—	—	—
H07C(124)	—	—	—	—	—	—
H07D(125)	—	—	—	—	—	—
H07E(126)	—	—	—	—	—	—
H07F(127)	—	—	—	—	—	—
H080(128)	Tension setting	Setting	—	1	Tension full scale	N/×10 N
H081(129)	Manual setting	Setting	—	-1000	1000	%
H082(130)	Stall setting	Setting	—	0	1000	%
H083(131)	Start timer	Setting	—	0	300	sec
H084(132)	Stop timer	Setting	—	0	1000	sec
H085(133)	Stop gain	Setting	—	5	400	%
H086(134)	Stop bias	Setting	—	0	100	%
H087(135)	Acceleration/deceleration torque setting	Setting	LE7-DCA	0	1000	%
H088(136)	Gain 1	Setting	—	5	400	%
H089(137)	Gain 2	Setting	—	5	400	%
H08A(138)	Internal taper ratio	Setting	—	0	80	%
H08B(139)	External linear line taper ratio	Setting	—	0	100	%
H08C(140)	New reel preset	Setting	—	0	1000	%
H08D(141)	New reel preset timer	Setting	—	0	300	sec
H08E(142)	Cutting torque	Setting	—	0	1000	%

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H08F(143)	—	—	—	—	—	—
H090(144)	Broken line taper corner 1	Setting	—	1	2000	mmϕ
H091(145)	Broken line taper ratio 1	Setting	—	0	100	%
H092(146)	Broken line taper corner 2	Setting	—	1	2000	mmϕ
H093(147)	Broken line taper ratio 2	Setting	—	0	100	%
H094(148)	Broken line taper corner 3	Setting	—	1	2000	mmϕ
H095(149)	Broken line taper ratio 3	Setting	—	0	100	%
H096(150)	Broken line taper corner 4	Setting	—	1	2000	mmϕ
H097(151)	Broken line taper ratio 4	Setting	—	0	100	%
H098(152)	Broken line taper corner 5	Setting	—	1	2000	mmϕ
H099(153)	Broken line taper ratio 5	Setting	—	0	100	%
H09A(154)	Broken line taper corner 6	Setting	—	1	2000	mmϕ
H09B(155)	Broken line taper ratio 6	Setting	—	0	100	%
H09C(156)	Broken line taper corner 7	Setting	—	1	2000	mmϕ
H09D(157)	Broken line taper ratio 7	Setting	—	0	100	%
H09E(158)	Broken line taper corner 8	Setting	—	1	2000	mmϕ
H09F(159)	Broken line taper ratio 8	Setting	—	0	100	%
H0A0(160)	Proportional gain	Setting	—	0	100	%
H0A1(161)	Integral time	Setting	—	0	100	%
H0A2(162)	Dead band gain	Setting	—	0	100 - Proportional gain	%
H0A3(163)	Dead band width	Setting	—	0	100	%
H0A4(164)	Tension control filter	Setting	—	0	40	sec
H0A5(165)	Static mechanical loss A	Setting	—	-1000	1000	%
H0A6(166)	Static mechanical loss B	Setting	—	-1000	1000	%
H0A7(167)	Kinetic mechanical loss A	Setting	LE7-DCA	-1000	1000	%
H0A8(168)	Kinetic mechanical loss B	Setting	LE7-DCA	-1000	1000	%
H0A9(169)	Mass correction gain A	Setting	LE7-DCA	0	100	%
H0AA(170)	Mass correction gain B	Setting	LE7-DCA	0	100	%
H0AB(171)	Mass correction bias A	Setting	LE7-DCA	0	100	%
H0AC(172)	Mass correction bias B	Setting	LE7-DCA	0	100	%
H0AD(173)	—	—	—	—	—	—
H0AE(174)	—	—	—	—	—	—
H0AF(175)	—	—	—	—	—	—
H0B0(176)	Control mode selection	Setting	LE7-DCA	0 (feedback control), 1 (open loop control)		—
H0B1(177)	Integral feedback limit	Setting	—	0	101	%
H0B2(178)	Feedback selection during the stop timer	Setting	—	0 (invalid), 1 (valid)		—
H0B3(179)	Automatic control output polarity selection	Setting	—	0 (forward), 1 (reverse)		—
H0B4(180)	Open-loop control ratio	Setting	LE7-DCA	0	100	%
H0B5(181)	Taper function selection	Setting	—	0 (no function), 1 (internal taper), 2 (linear line taper (external)), 3 (broken line taper (external)), 4 (direct taper)		—
H0B6(182)	Selection of two reel's switching FUNC	Setting	—	0 (invalid), 1 (valid)		—
H0B7(183)	Internal taper standard selection	Setting	—	0 (zero standard), 1 (stall standard)		—
H0B8(184)	—	—	—	—	—	—
H0B9(185)	Mechanical loss function selection	Setting	LE7-DCA	0 (fixed mechanical loss), 1 (high function mechanical loss)		—
H0BA(186)	Stall automatic calculation gain	Setting	LE7-DCA	0	100	%
H0BB(187)	New reel preset AUTO calculation gain	Setting	LE7-DCA	0	100	%
H0BC(188)	Control output upper limit	Setting	—	Control output lower limit	101	%
H0BD(189)	Control output lower limit	Setting	—	-101	Control output upper limit	%
H0BE(190)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0BF(191)	—	—	—	—	—	—
H0C0(192)	Load model	Setting	—	0	200	—
H0C1(193)	Rated current	Setting	—	0	400	A
H0C2(194)	Maximum torque correction	Setting	—	50	250	%
H0C3(195)	Nonlinear correction 0	Setting	—	0	1000	%
H0C4(196)	Nonlinear correction 10	Setting	—	0	1000	%
H0C5(197)	Nonlinear correction 20	Setting	—	0	1000	%
H0C6(198)	Nonlinear correction 30	Setting	—	0	1000	%
H0C7(199)	Nonlinear correction 40	Setting	—	0	1000	%
H0C8(200)	Nonlinear correction 50	Setting	—	0	1000	%
H0C9(201)	Nonlinear correction 60	Setting	—	0	1000	%
H0CA(202)	Nonlinear correction 70	Setting	—	0	1000	%
H0CB(203)	Nonlinear correction 80	Setting	—	0	1000	%
H0CC(204)	Nonlinear correction 90	Setting	—	0	1000	%
H0CD(205)	—	—	—	—	—	—
H0CE(206)	—	—	—	—	—	—
H0CF(207)	—	—	—	—	—	—
H0D0(208)	—	—	—	—	—	—
H0D1(209)	Weak excitation	Setting	—	0	1000	%
H0D2(210)	Over current detection filter	Setting	—	0	20	sec
H0D3(211)	—	—	—	—	—	—
H0D4(212)	—	—	—	—	—	—
H0D5(213)	—	—	—	—	—	—
H0D6(214)	—	—	—	—	—	—
H0D7(215)	—	—	—	—	—	—
H0D8(216)	—	—	—	—	—	—
H0D9(217)	—	—	—	—	—	—
H0DA(218)	—	—	—	—	—	—
H0DB(219)	—	—	—	—	—	—
H0DC(220)	—	—	—	—	—	—
H0DD(221)	—	—	—	—	—	—
H0DE(222)	—	—	—	—	—	—
H0DF(223)	—	—	—	—	—	—
H0E0(224)	Contact input monitor	Monitor	—	0	0xFFFF	—
H0E1(225)	Contact output monitor	Monitor	—	0	0xFFFF	—
H0E2(226)	General-purpose analog input 1 monitor	Monitor	—	0	100	%
H0E3(227)	General-purpose analog input 2 monitor	Monitor	—	0	100	%
H0E4(228)	General-purpose analog input 3 monitor	Monitor	—	0	100	%
H0E5(229)	General-purpose analog output 1 monitor	Monitor	—	0	100	%
H0E6(230)	General-purpose analog output 2 monitor	Monitor	—	0	100	%
H0E7(231)	Analog output monitor for TENS control	Monitor	—	0	100	%
H0E8(232)	Analog output monitor for new reel preset	Monitor	—	0	100	%
H0E9(233)	Contact input monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EA(234)	Contact output monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EB(235)	Alarm display	Monitor	—	0	63	—
H0EC(236)	Network alarm device No.	Monitor	—	0	999	—
H0ED(237)	Main unit ROM version	Monitor	—	0	999	—
H0EE(238)	Network adapter ROM version	Monitor	LE7-CCL	0	999	—
H0EF(239)	Communication signal monitor	Monitor	—	0	0xFFFF	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0F0(240)	Contact input 1 function selection	Setting	—	0 (no function), 1 (run/stop), 2 (control output OFF/ON), 3 (stall memory), 4 (inching ON/OFF), 5 (constant tension ON/OFF), 6 (gain 1 ON/OFF), 7 (gain 2 ON/OFF), 8 (automatic/manual), 9 (reel change ON/OFF), 10 (cut torque ON/OFF), 11 (alarm reset ON/OFF)		—
H0F1(241)	Contact input 2 function selection	Setting	—			—
H0F2(242)	Contact input 3 function selection	Setting	—			—
H0F3(243)	Contact input 4 function selection	Setting	—			—
H0F4(244)	Contact input 5 function selection	Setting	—			—
H0F5(245)	Contact input 6 function selection	Setting	—			—
H0F6(246)	—	—	—	—	—	—
H0F7(247)	—	—	—	—	—	—
H0F8(248)	Contact output 1 function selection	Setting	—	0 (no function), 1 (tension lower limit detection), 2 (tension upper limit detection), 3 (detection outside tension range), 4 (alarm occurrence detection)		—
H0F9(249)	Contact output 2 function selection	Setting	—			—
H0FA(250)	—	—	—	—	—	—
H0FB(251)	—	—	—	—	—	—
H0FC(252)	—	—	—	—	—	—
H0FD(253)	—	—	—	—	—	—
H0FE(254)	—	—	—	—	—	—
H0FF(255)	—	—	—	—	—	—
H100(256)	Analog input mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H101(257)	Analog input 1 function selection	Setting	—	0 (no function), 1 (tension setting), 2 (stall setting), 3 (straight line taper ratio setting), 4 (new axis preset setting), 5 (manual setting), 6 (tension input), 7 (Reel diameter input)		—
H102(258)	Analog input 2 function selection	Setting	—			—
H103(259)	Analog input 3 function selection	Setting	—			—
H104(260)	—	—	—	—	—	—
H105(261)	—	—	—	—	—	—
H106(262)	—	—	—	—	—	—
H107(263)	—	—	—	—	—	—
H108(264)	Analog output mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H109(265)	Analog output 1 function selection	Setting	—	0 (no function), 1 (tension monitor), 2 (Reel diameter monitor), 3 (tension setting monitor), 4 (A-axis Reel shaft rotational speed output), 5 (B-axis Reel shaft rotational speed output)		—
H10A(266)	Analog output 2 function selection	Setting	—			—
H10B(267)	Analog output 1 gain	Setting	—	500	3000	%
H10C(268)	Analog output 2 gain	Setting	—	500	3000	%
H10D(269)	Analog output 1 bias	Setting	—	-500	500	%
H10E(270)	Analog output 2 bias	Setting	—	-500	500	%
H10F(271)	—	—	—	—	—	—
H110(272)	Two reel's switching FUNC output mode	Setting	—	0 (no internal switching), 1 (with internal switching)		—
H111(273)	Control output mode selection	Setting	—	0 (0 to 5 V mode), 1 (-5 to 5 V mode), 2 (0 to 10 V mode), 3 (-10 to 10 V mode), 4 (0 to 8 V mode), 5 (- 8 to 8 V mode), 6 (0 to 2.7 V mode), 7 (-2.7 to 2.7 V mode), 8 (1 to 5 V mode)		—
H112(274)	Control output gain	Setting	—	500	3000	%
H113(275)	New reel preset output gain	Setting	—	500	3000	%
H114(276)	Control output bias	Setting	—	-500	500	%
H115(277)	New reel preset output bias	Setting	—	-500	500	%
H116(278)	—	—	—	—	—	—
H117(279)	—	—	—	—	—	—
H118(280)	—	—	—	—	—	—
H119(281)	—	—	—	—	—	—
H11A(282)	—	—	—	—	—	—
H11B(283)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H11C(284)	—	—	—	—	—	—
H11D(285)	—	—	—	—	—	—
H11E(286)	—	—	—	—	—	—
H11F(287)	—	—	—	—	—	—
H120(288)	Set setting password	Setting	—	0	32000	—
H121(289)	Input setting password	Setting	—	0	32000	—
H122(290)	Set monitor password	Setting	—	0	32000	—
H123(291)	Input monitor password	Setting	—	0	32000	—
H124(292)	—	—	—	—	—	—
H125(293)	—	—	—	—	—	—
H126(294)	—	—	—	—	—	—
H127(295)	—	—	—	—	—	—
H128(296)	—	—	—	—	—	—
H129(297)	—	—	—	—	—	—
H12A(298)	—	—	—	—	—	—
H12B(299)	—	—	—	—	—	—
H12C(300)	—	—	—	—	—	—
H12D(301)	—	—	—	—	—	—
H12E(302)	—	—	—	—	—	—
H12F(303)	—	—	—	—	—	—
H130(304)	Alarm history 1	Monitor	—	0	63	—
H131(305)	Alarm history 2	Monitor	—	0	63	—
H132(306)	Alarm history 3	Monitor	—	0	63	—
H133(307)	Alarm history 4	Monitor	—	0	63	—
H134(308)	Alarm history 5	Monitor	—	0	63	—
H135(309)	Alarm history 6	Monitor	—	0	63	—
H136(310)	Alarm history 7	Monitor	—	0	63	—
H137(311)	Alarm history 8	Monitor	—	0	63	—
H138(312)	Alarm history holding selection	Setting	—	0 (no holding), 1 (holding)		—
H139(313)	Alarm display time	Setting	—	0	301	sec
H13A(314)	Alarm operation selection 1	Setting	—	0	0xFFFF	—
H13B(315)	Alarm operation selection 2	Setting	—	0	0xFFFF	—
H13C(316)	Alarm operation selection 3	Setting	—	0	0xFFFF	—
H13D(317)	Alarm operation selection 4	Setting	—	0	0xFFFF	—
H13E(318)	—	—	—	—	—	—
H13F(319)	—	—	—	—	—	—
H140(320)	—	—	—	—	—	—
H141(321)	—	—	—	—	—	—
H142(322)	—	—	—	—	—	—
H143(323)	—	—	—	—	—	—
H144(324)	—	—	—	—	—	—
H145(325)	—	—	—	—	—	—
H146(326)	—	—	—	—	—	—
H147(327)	—	—	—	—	—	—
H148(328)	—	—	—	—	—	—
H149(329)	—	—	—	—	—	—
H14A(330)	—	—	—	—	—	—
H14B(331)	—	—	—	—	—	—
H14C(332)	—	—	—	—	—	—
H14D(333)	—	—	—	—	—	—
H14E(334)	—	—	—	—	—	—
H14F(335)	—	—	—	—	—	—

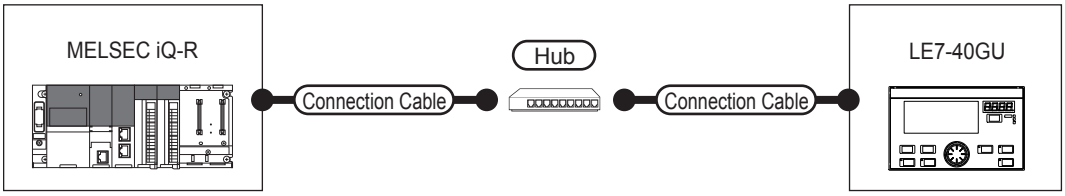
Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H150(336)	—	—	—	—	—	—
H151(337)	—	—	—	—	—	—
H152(338)	—	—	—	—	—	—
H153(339)	—	—	—	—	—	—
H154(340)	—	—	—	—	—	—
H155(341)	—	—	—	—	—	—
H156(342)	—	—	—	—	—	—
H157(343)	—	—	—	—	—	—
H158(344)	—	—	—	—	—	—
H159(345)	—	—	—	—	—	—
H15A(346)	—	—	—	—	—	—
H15B(347)	—	—	—	—	—	—
H15C(348)	—	—	—	—	—	—
H15D(349)	—	—	—	—	—	—
H15E(350)	—	—	—	—	—	—
H15F(351)	—	—	—	—	—	—
H160(352)	—	—	—	—	—	—
H161(353)	—	—	—	—	—	—
H162(354)	—	—	—	—	—	—
H163(355)	—	—	—	—	—	—
H164(356)	—	—	—	—	—	—
H165(357)	—	—	—	—	—	—
H166(358)	—	—	—	—	—	—
H167(359)	—	—	—	—	—	—
H168(360)	—	—	—	—	—	—
H169(361)	—	—	—	—	—	—
H16A(362)	—	—	—	—	—	—
H16B(363)	—	—	—	—	—	—
H16C(364)	—	—	—	—	—	—
H16D(365)	—	—	—	—	—	—
H16E(366)	—	—	—	—	—	—
H16F(367)	—	—	—	—	—	—
H170(368)	—	—	—	—	—	—
H171(369)	—	—	—	—	—	—
H172 (370)	—	—	—	—	—	—
H173(371)	—	—	—	—	—	—
H174(372)	—	—	—	—	—	—
H175(373)	—	—	—	—	—	—
H176(374)	—	—	—	—	—	—
H177(375)	—	—	—	—	—	—
H178(376)	—	—	—	—	—	—
H179(377)	—	—	—	—	—	—
H17A(378)	—	—	—	—	—	—
H17B(379)	—	—	—	—	—	—
H17C(380)	—	—	—	—	—	—
H17D(381)	—	—	—	—	—	—
H17E(382)	—	—	—	—	—	—
H17F(383)	—	—	—	—	—	—
H180(384)	Open-loop control base torque	Setting	LE7-DCA	0	1000	%
H181(385)	Direct taper ratio	Setting	—	0	1000	%
H182(386)	Link tension monitor filter	Setting	—	0	80	sec
H183(387)	Tension input	Setting	—	0	2000	N/×10 N

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H184(388)	Reel diameter input	Setting	—	0	2000	mmϕ
H185(389)	—	—	—	—	—	—
H186(390)	—	—	—	—	—	—
H187(391)	—	—	—	—	—	—
H188(392)	—	—	—	—	—	—
H189(393)	—	—	—	—	—	—
H18A(394)	—	—	—	—	—	—
H18B(395)	—	—	—	—	—	—
H18C(396)	—	—	—	—	—	—
H18D(397)	—	—	—	—	—	—
H18E(398)	—	—	—	—	—	—
H18F(399)	—	—	—	—	—	—

4.3 Reference Program

A basic example program (GX Works3) for SLMP communication is described.

System configuration



Parameter settings

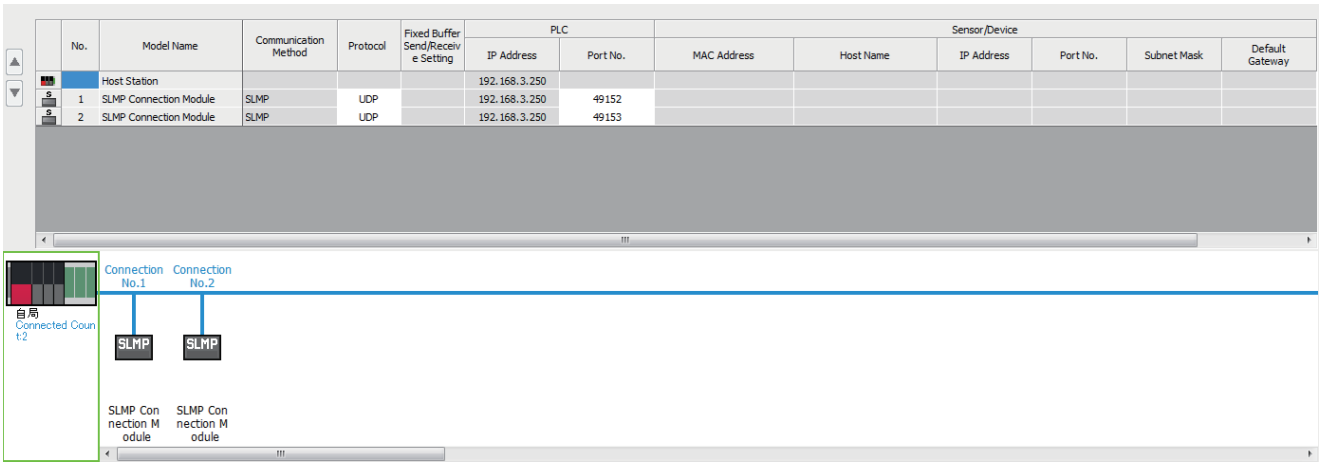
■Own node settings

Item	
Own Node Settings	
Parameter Setting Method	Parameter Editor
IP Address	
IP Address	192 . 168 . 3 . 250
Subnet Mask	. . .
Default Gateway	. . .
Enable/Disable Online Change	Enable All (SLMP)
Communication Data Code	Binary
Opening Method	Do Not Open by Program
CC-Link IEF Basic Setting	
To Use or Not to Use CC-Link IEF Basic Setting	Disable
Network Configuration Settings	<Detailed Setting>
Refresh Settings	<Detailed Setting>
External Device Configuration	
External Device Configuration	<Detailed Setting>

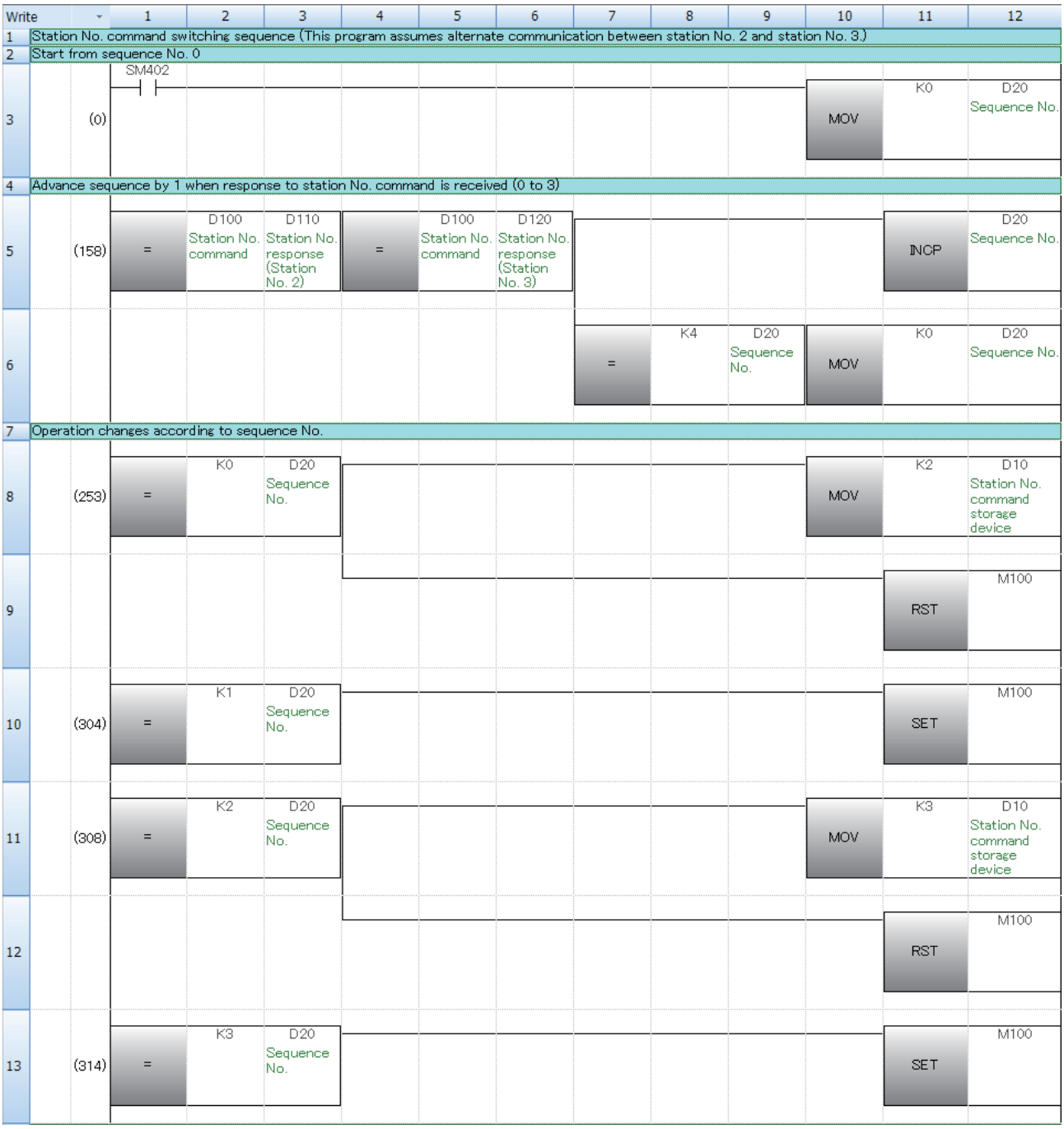
■CC-Link IEF Basic setting

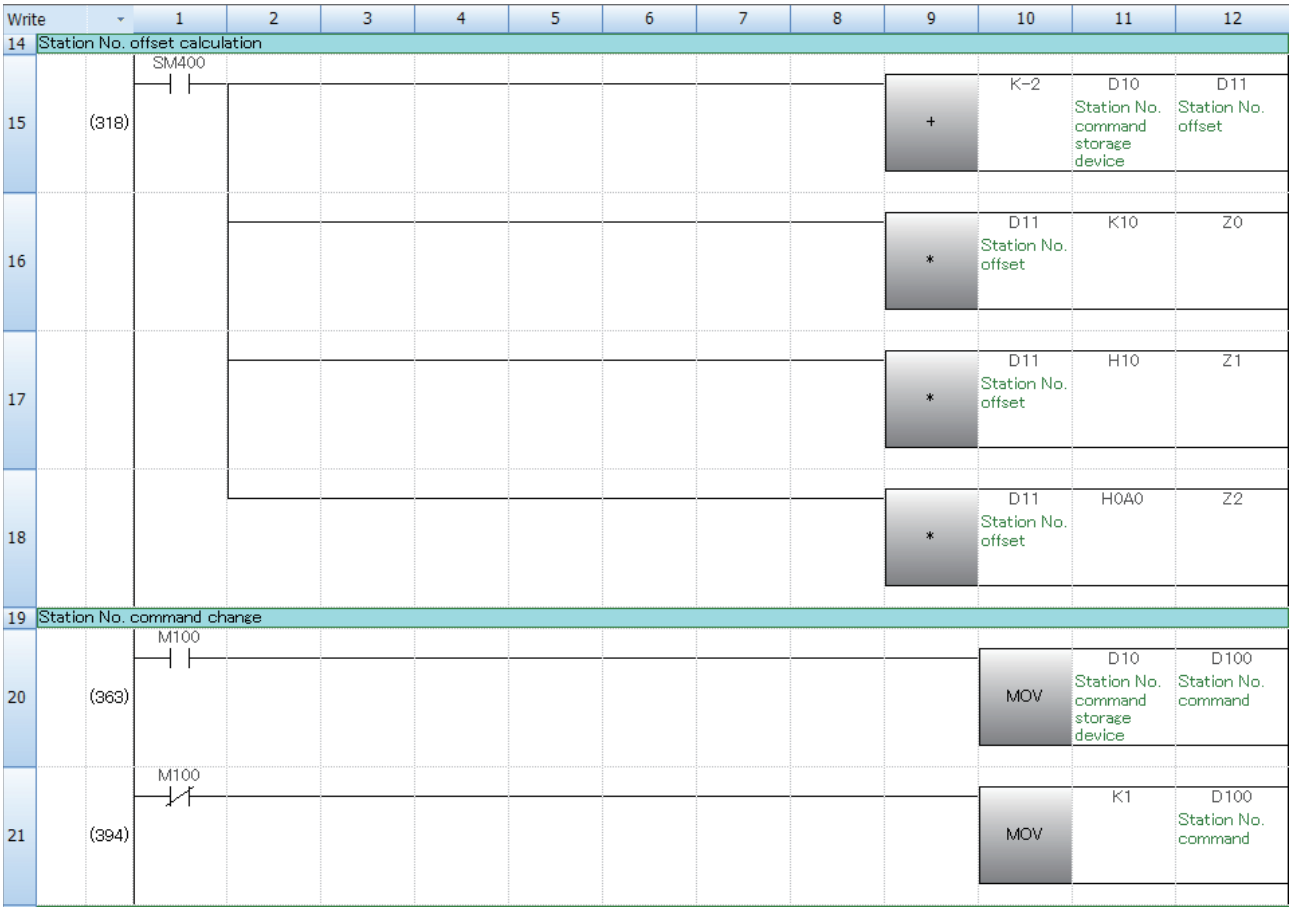
To use or not use CC-Link IEF Basic setting: Disable

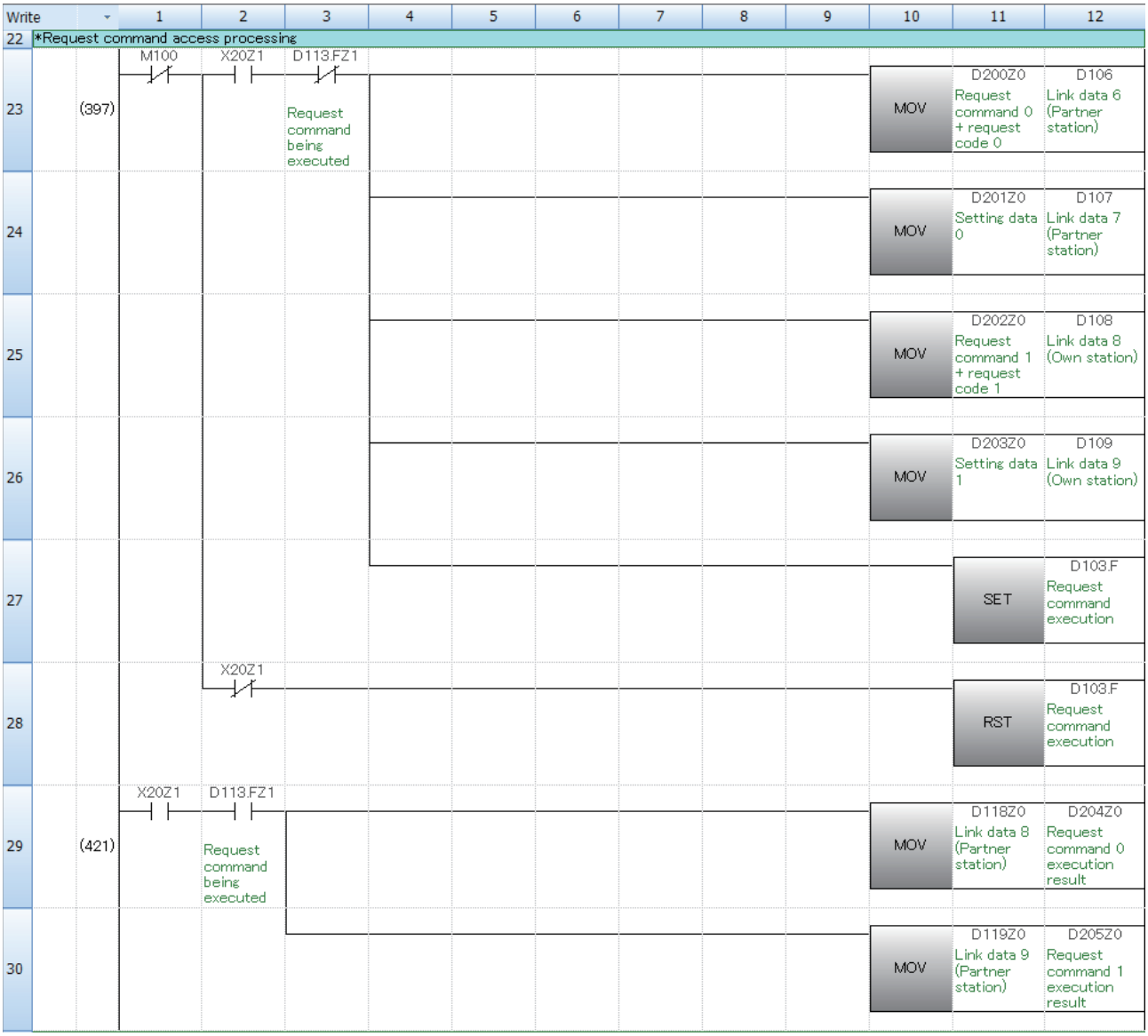
■External device configuration

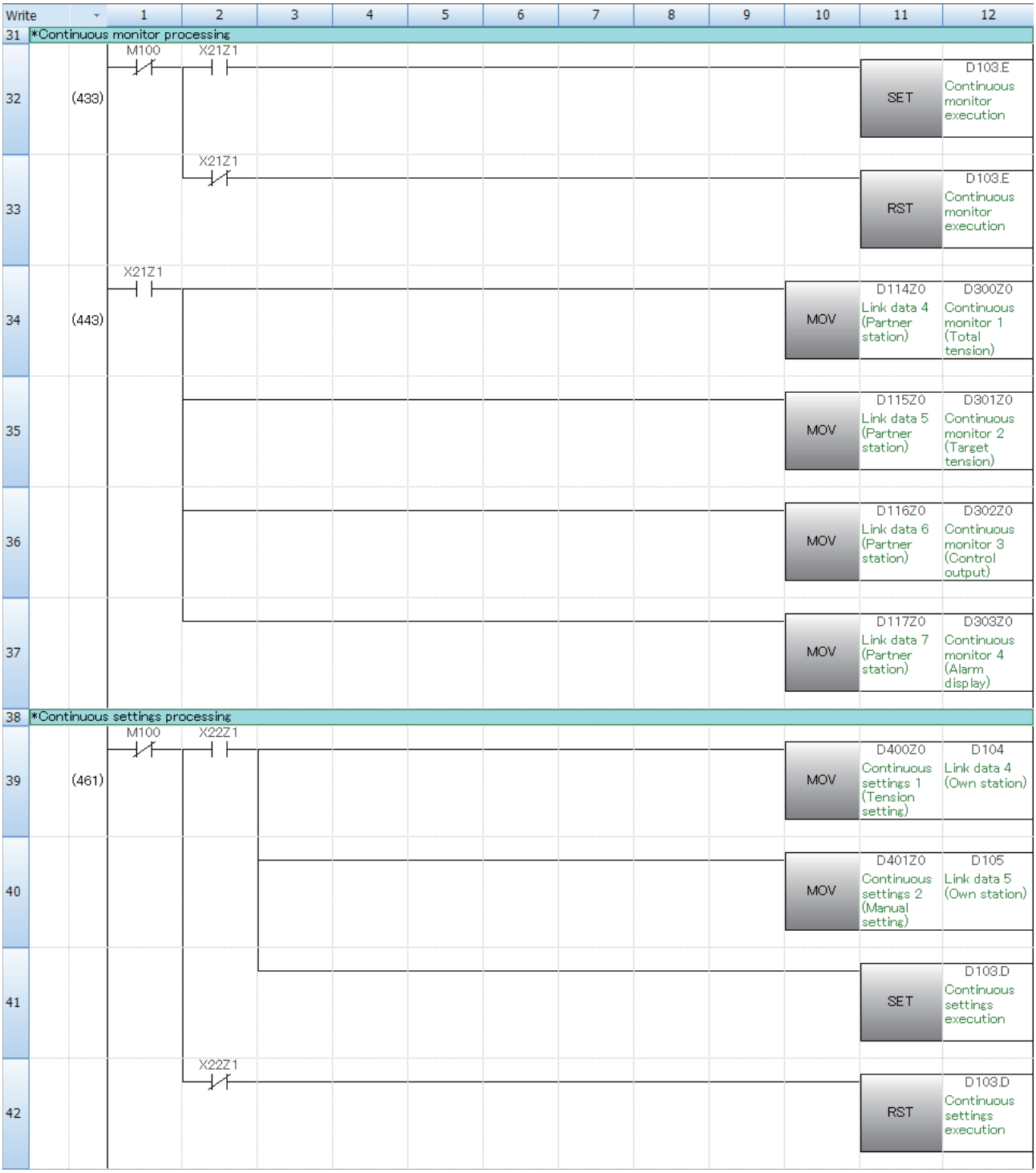


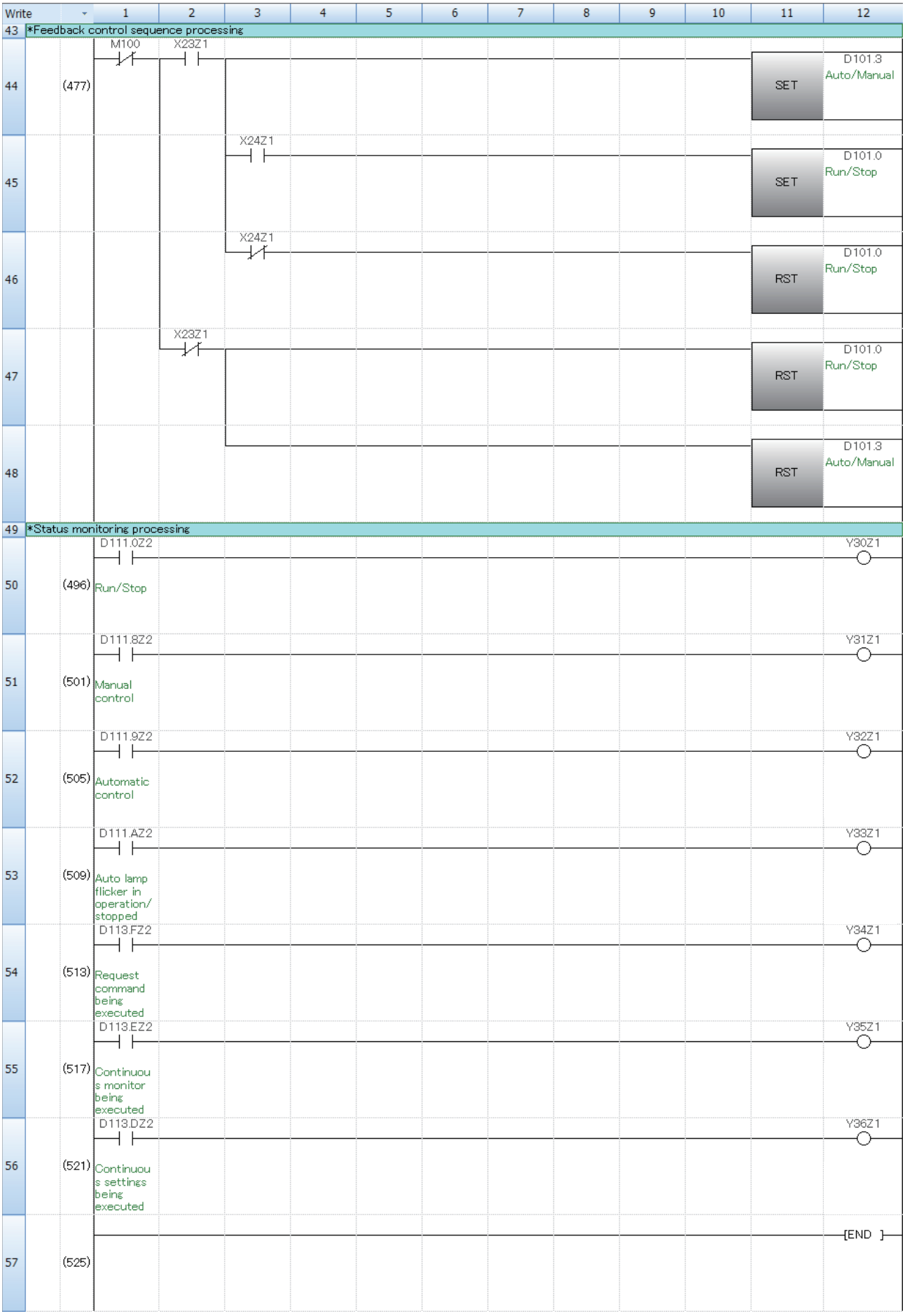
Program example




Write
1
2
3
4
5
6
7
8
9
10
11
12
14 Station No. offset calculation
SM400
15
(318)
+
K-2
D10
Station No. command storage device
D11
Station No. offset
16
*
D11
Station No. offset
K10
Z0
17
*
D11
Station No. offset
H10
Z1
18
*
D11
Station No. offset
H0A0
Z2
19 Station No. command change
M100
20
(363)
MOV
D10
Station No. command storage device
D100
Station No. command
M100
21
(394)
MOV
K1
D100
Station No. command


Write
1
2
3
4
5
6
7
8
9
10
11
12
22 *Request command access processing
M100
X20Z1
D113.FZ1
23
(397)
Request command being executed
MOV
D200Z0
Request command 0 + request code 0
D106
Link data 6 (Partner station)
24
MOV
D201Z0
Setting data 0
D107
Link data 7 (Partner station)
25
MOV
D202Z0
Request command 1 + request code 1
D108
Link data 8 (Own station)
26
MOV
D203Z0
Setting data 1
D109
Link data 9 (Own station)
27
SET
D103.F
Request command execution
X20Z1
28
RST
D103.F
Request command execution
X20Z1
D113.FZ1
29
(421)
Request command being executed
MOV
D118Z0
Link data 8 (Partner station)
D204Z0
Request command 0 execution result
30
MOV
D119Z0
Link data 9 (Partner station)
D205Z0
Request command 1 execution result


Write
1
2
3
4
5
6
7
8
9
10
11
12
31 *Continuous monitor processing
M100
X21Z1
32 (433)
SET
D103.E
Continuous monitor execution
X21Z1
33
RST
D103.E
Continuous monitor execution
X21Z1
34 (443)
MOV
D114Z0
Link data 4 (Partner station)
D300Z0
Continuous monitor 1 (Total tension)
35
MOV
D115Z0
Link data 5 (Partner station)
D301Z0
Continuous monitor 2 (Target tension)
36
MOV
D116Z0
Link data 6 (Partner station)
D302Z0
Continuous monitor 3 (Control output)
37
MOV
D117Z0
Link data 7 (Partner station)
D303Z0
Continuous monitor 4 (Alarm display)
38 *Continuous settings processing
M100
X22Z1
39 (461)
MOV
D400Z0
Continuous settings 1 (Tension setting)
D104
Link data 4 (Own station)
40
MOV
D401Z0
Continuous settings 2 (Manual setting)
D105
Link data 5 (Own station)
41
SET
D103.D
Continuous settings execution
X22Z1
42
RST
D103.D
Continuous settings execution


Write
1
2
3
4
5
6
7
8
9
10
11
12
43 *Feedback control sequence processing
M100
X23Z1
44 (477)
SET
D101.3
Auto/Manual
X24Z1
45
SET
D101.0
Run/Stop
X24Z1
46
RST
D101.0
Run/Stop
X23Z1
47
RST
D101.0
Run/Stop
48
RST
D101.3
Auto/Manual
49 *Status monitoring processing
D111.0Z2
Y30Z1
50 (496) Run/Stop
D111.8Z2
Y31Z1
51 (501) Manual control
D111.9Z2
Y32Z1
52 (505) Automatic control
D111.AZ2
Y33Z1
53 (509) Auto lamp flicker in operation/ stopped
D113.FZ2
Y34Z1
54 (513) Request command being executed
D113.EZ2
Y35Z1
55 (517) Continuous monitor being executed
D113.DZ2
Y36Z1
56 (521) Continuous settings being executed
[END]
57 (525)

Ladder Operation

Operation is changed depending on the sequence No. When the PLC is started, the sequence No. 1 is set, and the station No. command is changed as the following table (station No. 1). When the station No. response (station No. 2) and the station No. response (station No. 3) match with the station No. command, the sequence No. increases by one. When the process up to sequence No. 3 is complete, the number returns to 0.

Sequence No. (D20)	Station No. command (D100)	Station No. offset (D10)	Station No. command being changed (M100)	Available		Description
				Setting	Monitoring	
0	1	2	OFF	○	○	Change the setting value of station No. 2.
1	2	2	ON	×	○	Change the station No. command to 2. Setting value is reflected.
2	1	3	OFF	○	○	Change the setting value of station No. 3.
3	3	3	ON	×	○	Change the station No. command to 3. Setting value is reflected.

Using method of ladder

List of used devices (The allocation is an example.)

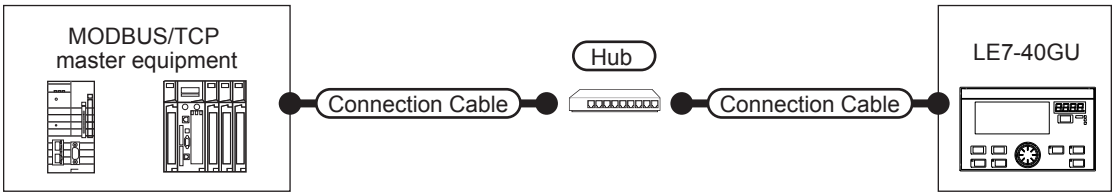
Device name		Classification*1	Allocation function	Use
Station No. 2	Station No. 3			
D200 to D203	D210 to D213	Setting	Request command + request code/data setting 1 to 2	Device set to use the request command
D204 to D205	D214 to D215	Setting	Request command execution result 1 to 2	Request command execution result is stored.
D300 to D303	D310 to D313	Setting	Continuous monitor 1 to 4	Continuous monitor execution result is stored.
D400 to D401	D410 to D413	Setting	Continuous setting 1 to 2	Setting value of continuous setting is stored.
X20	X30	Setting	Start request command access execution	Execute request command.
X21	X31	Setting	Start continuous monitor execution	Start to execute continuous monitor.
X22	X32	Setting	Start continuous setting execution	Start to execute continuous setting.
X23	X33	Setting	Start stall execution	Start to execute stall.
X24	X34	Monitoring	Start operation	Start to operate.
Y30	Y40	Monitoring	Run	Run: ON/Stop: OFF
Y31	Y41	Monitoring	Manual control	Manual control ON
Y32	Y42	Monitoring	Automatic control	Automatic control ON
Y33	Y43	Monitoring	Auto lamp flicker in operation	Auto lamp flicker in operation ON
Y34	Y44	Monitoring	Request command completion	ON when request command is completed
Y35	Y45	Monitoring	Continuous monitor being executed	ON when continuous monitor is being executed.
Y36	Y46	Monitoring	Continuous settings being executed	ON when continuous setting is being executed.
D100 to D109		System	Link data (Station No. 1)	Setting items such as input signal are stored.
D110 to D119		System	Link data (Station No. 2)	Monitored item from station No. 2 is stored.
D120 to D129		System	Link data (Station No. 3)	Monitored item from station No. 3 is stored.
D20		System	Sequence No.	Processing is changed by the sequence No.
M100		System	Station No. command being changed	Turn ON when the station No. command is being written.
D10		System	Station No. command storage device	Offset the device according to the station No.
D11		System	Station No. offset	Used to offset the device

*1 Classification
Setting: items to be set/input when using functions
Monitoring: items to monitor output when using functions
System: Used for internal processing, setting is unnecessary

5 MODBUS/TCP (SLAVE)

Since LE7-40GU supports the slave function of MODBUS/TCP communication which is an open FA network, it can communicate with various MODBUS/TCP master equipment. Also, LE7-40GU (as a slave station) can perform data monitoring and parameter writing from up to four master stations.

5.1 System Configuration



Connection equipment	Communication form	Connection cable		External device	Connection cable		Tension controller*2		Number of connectable devices
		Cable type name*4	Maximum segment length*3		Cable type name*4	Maximum segment length*3	Optional equipment	Main unit	
MODBUS/TCP master device	Ethernet	• 100BASE-TX Category 5 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP) • 10BASE-T Category 3 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP)	100 m	Hub*1	• 100BASE-TX Category 5 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP) • 10BASE-T Category 3 or more of shield twisted pair cable (STP) or unshielded twisted pair cable (UTP)	100 m	— (Built-in to main unit)	LE7-40GU	Master equipment: When LE7-40GU is N:1, four or less master equipment for one LE7-40GU) Master equipment: When LE7-40GU is 1:N, the following number of LE7-40GU units for one master device. Depending on the MODBUS/TCP master equipment used*5

*1 Connect with MODBUS/TCP master equipment via a hub.
Use cables, connectors, and hubs that satisfy the IEEE 802.3 10BASE-T/100BASE-TX/1000BASE-T standard.

*2 When connecting LE7-40GU to 10BASE (-T/2/5) compliant equipment, please use it in a network environment where 10 Mbps/100 Mbps can be mixed using a switching hub.

*3 This is the length between the hub and the node.
The maximum distance depends on the Ethernet device used.
When using a repeater hub, the number of units that can be connected is as follows.
· 10BASE-T: Cascade connection up to 4 units (500 m)
· 100BASE-TX: Cascade connection up to 2 units (205 m)
When using a switching hub, the cascade connection between switching hubs has no theoretical limit on the number that can be cascaded.
Please check with the manufacturer of the switching hub used for any restrictions.

*4 For the twisted pair cable, please use a straight cable.

*5 For details, refer to the manual of the MODBUS/TCP master equipment used.

5.2 Communication Setting

Communication parameter settings

When using MODBUS/TCP communication (slave), set the communication parameters with the following procedure.

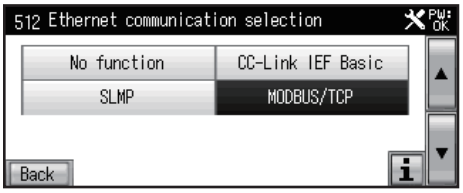
Setting with Data Transfer Tool

1. Obtain the "Screen package data for MODBUS/TCP" from your local Mitsubishi Electric representative.
2. Transfer the "Screen package data for MODBUS/TCP" to LE7-40GU with Data Transfer Tool (for GT Works3).

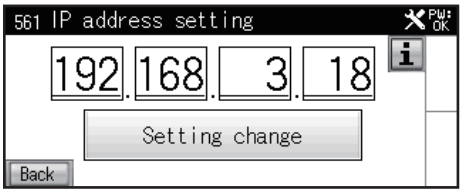
For more information on data transfer, refer to the following.

☞ Page 14 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

3. Select "MODBUS/TCP" on the "Ethernet communication selection" screen of the LE7-40GU screen.



4. If you want to change the IP address of LE7-40GU (default: 192.168.3.18), change it on the "IP address setting" screen of the LE7-40GU screen.



5. Restart LE7-40GU.

Precautions

For MODBUS/TCP communication, only the IP address can be changed on the LE7-40GU screen.
To change the port number, it must be set in GT Designer3 (GOT2000).

Setting with GT Designer3 (GOT2000)

1. Obtain the "Screen package data for MODBUS/TCP" from your local Mitsubishi Electric representative.

2. Open the "Screen package data for MODBUS/TCP" in GT Designer3 (GOT2000) and change the settings of [Common] - [Controller Settings] - [CH2] as follows.

For details on the communication settings in GT Designer3 (GOT2000), refer to the following.

GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals)

<Controller Setting>

Setting name	Setting detail
Manufacturer	MODBUS
Controller Type	MODBUS Slave
I/F	Ethernet:Multi
Driver	MODBUS/TCP Slave, Gateway

<Detail setting>

Property	Value
GOT Net No.	0 (Fixed)
GOT Station	255 (Fixed)
GOT Communication Port No.	502 (Optional)
Delay Time(ms)	0
32bit Storage	LH Order

3. Change the settings of [Common] - [GOT Ethernet Setting] - [GOT IP Address Setting] as follows.

For details on the communication settings in GT Designer3 (GOT2000), refer to the following.

GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals)

<GOT IP Address Setting>

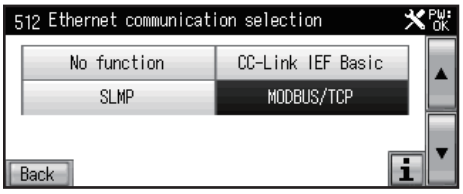
Setting name	Setting value
GOT IP Address	192.168.3.18 (optional)

4. Transfer the "Screen package data for MODBUS/TCP" to LE7-40GU with GT Designer3 (GOT2000).

For more information on data transfer, refer to the following.

Page 14 COMMUNICATION WITH A PERSONAL COMPUTER (GT DESIGNER3, DATA TRANSFER TOOL)

5. Select "MODBUS/TCP" on the "Ethernet communication selection" screen of the LE7-40GU screen.



6. Restart LE7-40GU.

Bit device

The input relay (1) and the coil (0) each have 48 points. The remaining area becomes non-functioning and cannot be used.

• Input relay (1) (Master station→Slave station)

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
100001	Run/Stop	Run	Stop
100002	Reel change B axis/A axis	B axis control	A axis control
100003	Control output OFF/ON	Control output OFF	Control output ON
100004	Auto/Manual	Automatic control	Manual control
100005	Stall memory ON/OFF	Stall memory ON	Stall memory OFF
100006	Gain 1 ON/OFF	Gain 1 ON	Gain 1 OFF
100007	Gain 2 ON/OFF	Gain 2 ON	Gain 2 OFF
100008	Inching ON/OFF	Inching ON	Inching OFF
100009	Cutting torque ON/OFF	Cutting torque ON	Cutting torque OFF
100010	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
100011	Predrive ON/OFF	Predrive ON	Predrive OFF
100012	Memory hold ON/OFF	Memory hold ON	Memory hold OFF
100013	Reverse run/Forward run	Reverse run operation	Forward run operation
100014	—	—	—
100015	—	—	—
100016	—	—	—
100017	Alarm reset ON/OFF	Alarm reset ON	Alarm reset OFF
100018	Reel diameter reset ON/OFF	Reel diameter reset ON	Reel diameter reset OFF
100019	Measurement length and remaining length reset ON/OFF	Measurement length and remaining length reset ON	Measurement length and remaining length reset OFF
100020	—	—	—
100021	—	—	—
100022	—	—	—
100023	—	—	—
100024	—	—	—
100025	Zero adjustment execution	Execution	Normal
100026	Span adjustment execution	Execution	Normal
100027	Maximum diameter teaching execution	Start maximum diameter teaching execution	Normal
100028	Minimum diameter teaching execution	Start minimum diameter teaching execution	Normal
100029	Control gain tuning execution	Start control gain tuning execution	Normal
100030	Speed teaching execution	Start speed teaching execution	Normal
100031	—	—	—
100032	—	—	—
100033	Data copy execution	Start data copy execution	Normal
100034	Data initial execution	Start data initial execution	Normal
100035	—	—	—
100036	—	—	—
100037	—	—	—
100038	—	—	—
100039	—	—	—
100040	—	—	—
100041	—	—	—
100042	—	—	—
100043	—	—	—
100044	—	—	—
100045	Link tension monitor digit ×10/×1	Link tension monitor digit ×10	Link tension monitor digit ×1
100046	Continuous settings execution	Start continuous settings execution	Normal

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
100047	Continuous monitor execution	Start continuous monitor execution	Normal
100048	Request command execution	Start request command execution	Normal
After 100049	System use area		

• Coil (0) (Slave station→Master station)

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
000001	Run/Stop	Run	Stop
000002	Output ON/OFF	Output ON	Output OFF
000003	B-axis controlled/A-axis controlled	B-axis controlled	A-axis controlled
000004	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
000005	Predrive being executed	Predrive being executed	Normal
000006	Memory hold being executed	Memory hold being executed	Normal
000007	Reverse running/Forward running	Reverse running	Forward running
000008	—	—	—
000009	Manual control	Manual control	—
000010	Automatic control	Automatic control	—
000011	Auto lamp flicker in operation/ stopped	Auto lamp flicker in operation	Auto lamp flicker stopped
000012	Stall setting output being executed	Stall setting output being executed	Normal
000013	Stall memory output being executed	Stall memory output being executed	Normal
000014	Start timer operation being executed	Start timer operation being executed	Normal
000015	Stop timer operation being executed	Stop timer operation being executed	Normal
000016	Preset timer operation being executed	Preset timer operation being executed	Normal
000017	Cut torque operation being executed	Cut torque operation being executed	Normal
000018	Inching operation being executed	Inching operation being executed	Normal
000019	—	—	—
000020	Zero adjustment being executed	Zero adjustment being executed	Normal
000021	Span adjustment being executed	Span adjustment being executed	Normal
000022	Maximum diameter teaching being executed	Speed teaching being executed	Normal
000023	Minimum diameter teaching being executed	Speed teaching being executed	Normal
000024	Control gain tuning being executed	Control gain tuning being executed	Normal
000025	Speed teaching being executed	Speed teaching being executed	Normal
000026	Tension upper limit detection ON/ OFF	Tension upper limit detection ON	Tension upper limit detection OFF
000027	Tension lower limit detection ON/OFF	Tension lower limit detection ON	Tension lower limit detection OFF
000028	Detection outside tension range ON/ OFF	Detection outside tension range ON	Detection outside tension range OFF
000029	Reel diameter detection 1 ON/OFF	Reel diameter detection 1 ON	Reel diameter detection 1 OFF
000030	Reel diameter detection 2 ON/OFF	Reel diameter detection 2 ON	Reel diameter detection 2 OFF
000031	Reel diameter detection 3 ON/OFF	Reel diameter detection 3 ON	Reel diameter detection 3 OFF
000032	Measurement length/remaining length detection 1 ON/OFF	Measurement length/remaining length detection 1 ON	Measurement length/remaining length detection 1 OFF
000033	Measurement length/remaining length detection 2 ON/OFF	Measurement length/remaining length detection 2 ON	Measurement length/remaining length detection 2 OFF
000034	Measurement length/remaining length detection 3 ON/OFF	Measurement length/remaining length detection 3 ON	Measurement length/remaining length detection 3 OFF
000035	Peripheral speed synchronization detection ON/OFF	Peripheral speed synchronization detection ON	Peripheral speed synchronization detection OFF
000036	Alarm occurrence detection	Alarm occurrence	Normal
000037	Parameter protection being executed	Parameter protection being executed	Normal
000038	Settings password matching being executed	Settings password matching being executed	Settings password does not match
000039	Monitor password matching being executed	Monitor password matching being executed	Monitor password does not match

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
000040	—	—	—
000041	Data copy being executed	Data copy being executed	Normal
000042	Data initial being executed	Data initial being executed	Normal
000043	—	—	—
000044	—	—	—
000045	—	—	—
000046	Continuous settings being executed	Continuous settings being executed	Normal
000047	Continuous monitor being executed	Continuous monitor being executed	Normal
000048	Request command completion	Request command completion	Normal
After 100049	System use area		

Word device

The word device uses 12 points for both the holding register (4) and the input register (3). The remaining area becomes non-functioning and cannot be used.

• Holding register (4) (Master station→Slave station)

Modbus TCP master station→LE7-40GU		
Device No.	**Signal name**	
400001	Continuous settings 1	
400002	Continuous settings 2	
400003	Request command 0	Request code 0
400004	Setting data 0	
400005	Request command 1	Request code 1
400006	Setting data 1	
400007	Continuous settings 3	
400008	Continuous settings 4	
400009	Request command 2	Request code 2
400010	Setting data 2	
400011	Request command 3	Request code 3
400012	Setting data 3	
400013 to 16	Unavailable	

• Input register (3) (Slave station→Master station)

Modbus TCP master station→LE7-40GU		
Device No.	**Signal name**	
400001	Continuous settings 1	
400002	Continuous settings 2	
400003	Request command 0	Request code 0
400004	Setting data 0	
400005	Request command 1	Request code 1
400006	Setting data 1	
400007	Continuous settings 3	
400008	Continuous settings 4	
400009	Request command 2	Request code 2
400010	Setting data 2	
400011	Request command 3	Request code 3
400012	Setting data 3	
400013 to 16	Unavailable	

Function code

The LE7-40GU (slave) supports the following function codes (subfunction codes).

Function code (Subfunction code)	Function	Number of accessible device one [unit: points]
0x01	Read Coils	1 to 2000
0x02	Read Discrete Inputs	1 to 2000
0x03	Read Holding Registers	1 to 125
0x04	Read Input Registers	1 to 125
0x05	Write Single Coil	1
0x06	Write Single Register	1
0x0F	Write Multiple Coils	1 to 1968
0x10	Write Multiple Register	1 to 123

Continuous setting/continuous monitoring

Data specified in advance can be set and monitored continuously by setting the continuous setting execution (RY2E) and continuous monitor execution (RY2E) in the master station to ON.
For continuous setting data, the data set for RAM writing is not stored during a power failure.
The latest data existing in LE7-40GU when the master station gives the send request can be monitored continuously.
However, regarding the update of parameters for which the monitor update cycle is specified by the setting in LE7-40GU, the data is updated in the specified update cycle if the specified update cycle is longer than the monitor update cycle in the send request given by the master station.

Continuous settings

1. Data write to devices with continuous settings 1 to 16
2. Turn on continuous settings execution

Continuous monitor

1. Turn on continuous monitor execution
2. Read the data of the devices of continuous monitors 1 to 16

Access by request command

For any access to data in LE7-40GU from the master station, data can be read and written by handshake between the "request command execution (RY2F)" flag and the "request command completion (RX2F)" flag.
This access is performed using a 2-word word device of the master station.
This 2-word data is comprised of the request command, to which the upper 4 bits of the first word are assigned, and the request code, to which the lower 12 bits are assigned, and the setting data, to which the next word is assigned.

bit 15 to 12	bit 11 to 0
Request command	Request code
Setting data	

There are three types of request command, Data Monitor, Writing to RAM, and Writing to RAM + ROM, according to the selection of data reading and writing method.

Monitor	Writing to RAM	Writing to RAM + ROM
Writing data is reflected in the settings based on a data read request from the master station but is not stored in the case of a power failure.	Writing data is reflected in the settings based on a data write request from the master station but is not stored in the case of a power failure.	Perform the above RAM write + data power failure write.

In the ROM for storage against power interruption, the allowable number of times of writing is limited. Accordingly, data cyclically written and updated by the PLC must be written only to the RAM.

Request command	Contents of execution	Execution result
H0	Monitor	Monitored value
H1	Writing to RAM	Writing result
H2	Writing to RAM + ROM	Writing result

The request code is the data number (address) of the data that executes the request command. The subsequent data setting is the data to be written to the data number, and if the request command is the monitor, the data setting data is ignored.
When double word data is written to send data in the master station, and the handshake is executed by turning ON/OFF the request command execution flag and request command completion flag as follows, LE-70GU sends back the request command execution request.

1. The master station is set to request command execution ON.
2. LE7-40GU executes processing when receiving turning ON of the request command execution by the master station.
3. LE7-40GU turns ON the request command completion.
4. The master station receives the request command completion ON.
5. The master station is set to request command execution OFF.
6. LE7-40GU receives turning OFF of the request command execution by the master station.
7. LE7-40GU turns OFF the request command completion.
8. The master station receives the request command completion OFF.

Please perform reading of the execution results of the request command between step 4 and 5 of the handshake procedure.
If an error occurs, in the execution result with respect to the request command from the master station, turn on the network alarm occurrence flag and output the device number where the alarm occurred to the network alarm device number monitor.
For the request command execution result, refer to the following.
📖LE7-CCL APPLICATION MANUAL

Request code

The numerical value of each parameter corresponding to the request code is treated as real number data without a decimal point.
In addition, the minimum and maximum values are determined for LE7-40GU, and when a value exceeding this data is written, it is automatically rewritten to the minimum or maximum value.
In this case, an "Out of data range" alarm is generated.

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H000(0)	—	—	—	—	—	—
H001(1)	Total tension	Monitor	—	0 or less	2000 or more	N/×10 N
H002(2)	Left tension	Monitor	—	0 or less	2000 or more	N/×10 N
H003(3)	Right tension	Monitor	—	0 or less	2000 or more	N/×10 N
H004(4)	Left input voltage	Monitor	—	-1500 or less	1500 or more	mV
H005(5)	Right input voltage	Monitor	—	-1500 or less	1500 or more	mV
H006(6)	—	—	—	—	—	—
H007(7)	—	—	—	—	—	—
H008(8)	—	—	—	—	—	—
H009(9)	—	—	—	—	—	—
H00A(10)	—	—	—	—	—	—
H00B(11)	—	—	—	—	—	—
H00C(12)	—	—	—	—	—	—
H00D(13)	—	—	—	—	—	—
H00E(14)	—	—	—	—	—	—
H00F(15)	—	—	—	—	—	—
H010(16)	Tension upper limit detection	Setting	—	0	Tension full scale	N/×10 N
H011(17)	Tension lower limit detection	Setting	—	0	Tension full scale	N/×10 N
H012(18)	Detection outside target tension range	Setting	—	0	50	%
H013(19)	Tension display filter	Setting	—	5	80	sec
H014(20)	Tension detection filter	Setting	—	0	80	sec
H015(21)	Tension output filter	Setting	—	0	80	sec
H016(22)	—	—	—	—	—	—
H017(23)	—	—	—	—	—	—
H018(24)	—	—	—	—	—	—
H019(25)	—	—	—	—	—	—
H01A(26)	—	—	—	—	—	—
H01B(27)	—	—	—	—	—	—
H01C(28)	—	—	—	—	—	—
H01D(29)	—	—	—	—	—	—
H01E(30)	—	—	—	—	—	—
H01F(31)	—	—	—	—	—	—
H020(32)	Sensor input type selection	Setting	—	0 (LX type), 1 (strain gauge)		—
H021(33)	Tension full scale	Setting	—	1	2000	N/×10 N
H022(34)	Tension display decimal point selection	Setting	—	0 (1), 1 (0.1), 2 (0.01)		—
H023(35)	Tension display unit selection	Setting	—	0 (N), 1 (×10 N)		—
H024(36)	Span target tension	Setting	—	1	Tension full scale	N/×10 N
H025(37)	Left manual zero calibration	Setting	—	-999	999	N/×10 N
H026(38)	Right manual zero calibration	Setting	—	-999	999	N/×10 N
H027(39)	Left manual span calibration	Setting	—	50	300	%
H028(40)	Right manual span calibration	Setting	—	50	300	%
H029(41)	—	—	—	—	—	—
H02A(42)	—	—	—	—	—	—
H02B(43)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H02C(44)	—	—	—	—	—	—
H02D(45)	—	—	—	—	—	—
H02E(46)	—	—	—	—	—	—
H02F(47)	—	—	—	—	—	—
H030(48)	Reel diameter	Monitor	—	1	2000	mmϕ
H031(49)	Target line velocity	Monitor	LE7-DCA	0	10000	m/min
H032(50)	Line acceleration	Monitor	LE7-DCA	0	50	m/min/sec
H033(51)	Measurement length/remaining length	Monitor	LE7-DCA	—	—	m
H034(52)	Reel rotational speed	Monitor	LE7-DCA	65000	1	r/min
H035(53)	New reel rotational speed	Monitor	LE7-DCA	3600	1	r/min
H036(54)	Constant slip ROTO speed command output	Monitor	LE7-DCA	1000	0.1	%
H037(55)	Predrive rotation speed command output	Monitor	LE7-DCA	1000	0.1	%
H038(56)	Predrive target rotation speed	Monitor	LE7-DCA	3600	1	r/min
H039(57)	Reel diameter CALC adapter ROM version	Monitor	LE7-DCA	999	0.01	—
H03A(58)	—	—	—	—	—	—
H03B(59)	—	—	—	—	—	—
H03C(60)	—	—	—	—	—	—
H03D(61)	—	—	—	—	—	—
H03E(62)	—	—	—	—	—	—
H03F(63)	—	—	—	—	—	—
H040(64)	Initial diameter	Setting	LE7-DCA	1	2000	mmϕ
H041(65)	Material thickness	Setting	LE7-DCA	0	10000	μm
H042(66)	Reel diameter detection 1	Setting	LE7-DCA	0	2000	mmϕ
H043(67)	Reel diameter detection 2	Setting	LE7-DCA	0	2000	mmϕ
H044(68)	Reel diameter detection 3	Setting	LE7-DCA	0	2000	mmϕ
H045(69)	Measurement/remaining length detection 1	Setting	LE7-DCA	0	65000	m
H046(70)	Measurement/remaining length detection 2	Setting	LE7-DCA	0	65000	m
H047(71)	Measurement/remaining length detection 3	Setting	LE7-DCA	0	65000	m
H048(72)	Accelerating judgment acceleration	Setting	LE7-DCA	0	10	m/min/sec
H049(73)	Reel rotational speed gain	Setting	LE7-DCA	0	150	%
H04A(74)	Reel rotational speed bias	Setting	LE7-DCA	0	100	%
H04B(75)	Reel rotational speed startup gain	Setting	LE7-DCA	1	5	Time (s)
H04C(76)	Reel rotational speed startup timer	Setting	LE7-DCA	0	10	sec
H04D(77)	Predrive time	Setting	LE7-DCA	0	200	sec
H04E(78)	Predrive bias	Setting	LE7-DCA	-10	10	%
H04F(79)	—	—	—	—	—	—
H050(80)	Maximum diameter	Setting	—	Minimum diameter	2000	mmϕ
H051(81)	Minimum diameter	Setting	—	1	Maximum diameter	mmϕ
H052(82)	Teaching speed	Setting	LE7-DCA	1	10000	m/min
H053(83)	Velocity electronic gear ratio	Setting	LE7-DCA	9000	18000	%
H054(84)	Reel selection	Setting	LE7-DCA	0(unwinding), 1(winding)		—
H055(85)	Number of reel pulse	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H056(86)	Reel diameter calculation cycle	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H057(87)	MEAS/RMN length calculation switch	Setting	LE7-DCA	0 (measurement length), 1 (remaining length)		—
H058(88)	Material thickness unit	Setting	LE7-DCA	0 (×1), 1 (×0.1)		—
H059(89)	Maximum line acceleration	Setting	LE7-DCA	1	50	m/min/sec
H05A(90)	Maximum reel rotational speed	Setting	LE7-DCA	1	3600	r/min
H05B(91)	Detection output selection	Setting	LE7-DCA	0 (Reel diameter), (measurement length/ remaining length)		—
H05C(92)	Detection output holding selection	Setting	LE7-DCA	0 (non-holding), 1 (holding)		—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H05D(93)	Run/Stop judgment selection	Setting	LE7-DCA	0 (contact + internal), 1 (contact), 2 (internal)		—
H05E(94)	Run judgment speed	Setting	LE7-DCA	Stop judgment speed	30	m/min
H05F(95)	Stop judgment speed	Setting	LE7-DCA	1	Run judgment speed	m/min
H060(96)	—	—	—	—	—	—
H061(97)	—	—	—	—	—	—
H062(98)	—	—	—	—	—	—
H063(99)	—	—	—	—	—	—
H064(100)	—	—	—	—	—	—
H065(101)	—	—	—	—	—	—
H066(102)	—	—	—	—	—	—
H067(103)	—	—	—	—	—	—
H068(104)	—	—	—	—	—	—
H069(105)	—	—	—	—	—	—
H06A(106)	—	—	—	—	—	—
H06B(107)	—	—	—	—	—	—
H06C(108)	—	—	—	—	—	—
H06D(109)	—	—	—	—	—	—
H06E(110)	—	—	—	—	—	—
H06F(111)	—	—	—	—	—	—
H070(112)	Target tension	Monitor	—	0	2000	N/×10 N
H071(113)	Control output	Monitor	—	-1000 or less	1000 or more	%
H072(114)	Torque output	Monitor	—	-1000 or less	1000 or more	%
H073(115)	—	—	—	—	—	—
H074(116)	—	—	—	—	—	—
H075(117)	Control output voltage for powder	Monitor	—	260 or more	0.1	V
H076(118)	Control output current for powder	Monitor	—	400 or more	0.01	A
H077(119)	—	—	—	—	—	—
H078(120)	—	—	—	—	—	—
H079(121)	—	—	—	—	—	—
H07A(122)	—	—	—	—	—	—
H07B(123)	—	—	—	—	—	—
H07C(124)	—	—	—	—	—	—
H07D(125)	—	—	—	—	—	—
H07E(126)	—	—	—	—	—	—
H07F(127)	—	—	—	—	—	—
H080(128)	Tension setting	Setting	—	1	Tension full scale	N/×10 N
H081(129)	Manual setting	Setting	—	-1000	1000	%
H082(130)	Stall setting	Setting	—	0	1000	%
H083(131)	Start timer	Setting	—	0	300	sec
H084(132)	Stop timer	Setting	—	0	1000	sec
H085(133)	Stop gain	Setting	—	5	400	%
H086(134)	Stop bias	Setting	—	0	100	%
H087(135)	Acceleration/deceleration torque setting	Setting	LE7-DCA	0	1000	%
H088(136)	Gain 1	Setting	—	5	400	%
H089(137)	Gain 2	Setting	—	5	400	%
H08A(138)	Internal taper ratio	Setting	—	0	80	%
H08B(139)	External linear line taper ratio	Setting	—	0	100	%
H08C(140)	New reel preset	Setting	—	0	1000	%
H08D(141)	New reel preset timer	Setting	—	0	300	sec
H08E(142)	Cutting torque	Setting	—	0	1000	%

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H08F(143)	—	—	—	—	—	—
H090(144)	Broken line taper corner 1	Setting	—	1	2000	mmϕ
H091(145)	Broken line taper ratio 1	Setting	—	0	100	%
H092(146)	Broken line taper corner 2	Setting	—	1	2000	mmϕ
H093(147)	Broken line taper ratio 2	Setting	—	0	100	%
H094(148)	Broken line taper corner 3	Setting	—	1	2000	mmϕ
H095(149)	Broken line taper ratio 3	Setting	—	0	100	%
H096(150)	Broken line taper corner 4	Setting	—	1	2000	mmϕ
H097(151)	Broken line taper ratio 4	Setting	—	0	100	%
H098(152)	Broken line taper corner 5	Setting	—	1	2000	mmϕ
H099(153)	Broken line taper ratio 5	Setting	—	0	100	%
H09A(154)	Broken line taper corner 6	Setting	—	1	2000	mmϕ
H09B(155)	Broken line taper ratio 6	Setting	—	0	100	%
H09C(156)	Broken line taper corner 7	Setting	—	1	2000	mmϕ
H09D(157)	Broken line taper ratio 7	Setting	—	0	100	%
H09E(158)	Broken line taper corner 8	Setting	—	1	2000	mmϕ
H09F(159)	Broken line taper ratio 8	Setting	—	0	100	%
H0A0(160)	Proportional gain	Setting	—	0	100	%
H0A1(161)	Integral time	Setting	—	0	100	%
H0A2(162)	Dead band gain	Setting	—	0	100 - Proportional gain	%
H0A3(163)	Dead band width	Setting	—	0	100	%
H0A4(164)	Tension control filter	Setting	—	0	40	sec
H0A5(165)	Static mechanical loss A	Setting	—	-1000	1000	%
H0A6(166)	Static mechanical loss B	Setting	—	-1000	1000	%
H0A7(167)	Kinetic mechanical loss A	Setting	LE7-DCA	-1000	1000	%
H0A8(168)	Kinetic mechanical loss B	Setting	LE7-DCA	-1000	1000	%
H0A9(169)	Mass correction gain A	Setting	LE7-DCA	0	100	%
H0AA(170)	Mass correction gain B	Setting	LE7-DCA	0	100	%
H0AB(171)	Mass correction bias A	Setting	LE7-DCA	0	100	%
H0AC(172)	Mass correction bias B	Setting	LE7-DCA	0	100	%
H0AD(173)	—	—	—	—	—	—
H0AE(174)	—	—	—	—	—	—
H0AF(175)	—	—	—	—	—	—
H0B0(176)	Control mode selection	Setting	LE7-DCA	0 (feedback control), 1 (open loop control)		—
H0B1(177)	Integral feedback limit	Setting	—	0	101	%
H0B2(178)	Feedback selection during the stop timer	Setting	—	0 (invalid), 1 (valid)		—
H0B3(179)	Automatic control output polarity selection	Setting	—	0 (forward), 1 (reverse)		—
H0B4(180)	Open-loop control ratio	Setting	LE7-DCA	0	100	%
H0B5(181)	Taper function selection	Setting	—	0 (no function), 1 (internal taper), 2 (linear line taper (external)), 3 (broken line taper (external)), 4 (direct taper)		—
H0B6(182)	Selection of two reel's switching FUNC	Setting	—	0 (invalid), 1 (valid)		—
H0B7(183)	Internal taper standard selection	Setting	—	0 (zero standard), 1 (stall standard)		—
H0B8(184)	—	—	—	—	—	—
H0B9(185)	Mechanical loss function selection	Setting	LE7-DCA	0 (fixed mechanical loss), 1 (high function mechanical loss)		—
H0BA(186)	Stall automatic calculation gain	Setting	LE7-DCA	0	100	%
H0BB(187)	New reel preset AUTO calculation gain	Setting	LE7-DCA	0	100	%
H0BC(188)	Control output upper limit	Setting	—	Control output lower limit	101	%
H0BD(189)	Control output lower limit	Setting	—	-101	Control output upper limit	%
H0BE(190)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0BF(191)	—	—	—	—	—	—
H0C0(192)	Load model	Setting	—	0	200	—
H0C1(193)	Rated current	Setting	—	0	400	A
H0C2(194)	Maximum torque correction	Setting	—	50	250	%
H0C3(195)	Nonlinear correction 0	Setting	—	0	1000	%
H0C4(196)	Nonlinear correction 10	Setting	—	0	1000	%
H0C5(197)	Nonlinear correction 20	Setting	—	0	1000	%
H0C6(198)	Nonlinear correction 30	Setting	—	0	1000	%
H0C7(199)	Nonlinear correction 40	Setting	—	0	1000	%
H0C8(200)	Nonlinear correction 50	Setting	—	0	1000	%
H0C9(201)	Nonlinear correction 60	Setting	—	0	1000	%
H0CA(202)	Nonlinear correction 70	Setting	—	0	1000	%
H0CB(203)	Nonlinear correction 80	Setting	—	0	1000	%
H0CC(204)	Nonlinear correction 90	Setting	—	0	1000	%
H0CD(205)	—	—	—	—	—	—
H0CE(206)	—	—	—	—	—	—
H0CF(207)	—	—	—	—	—	—
H0D0(208)	—	—	—	—	—	—
H0D1(209)	Weak excitation	Setting	—	0	1000	%
H0D2(210)	Over current detection filter	Setting	—	0	20	sec
H0D3(211)	—	—	—	—	—	—
H0D4(212)	—	—	—	—	—	—
H0D5(213)	—	—	—	—	—	—
H0D6(214)	—	—	—	—	—	—
H0D7(215)	—	—	—	—	—	—
H0D8(216)	—	—	—	—	—	—
H0D9(217)	—	—	—	—	—	—
H0DA(218)	—	—	—	—	—	—
H0DB(219)	—	—	—	—	—	—
H0DC(220)	—	—	—	—	—	—
H0DD(221)	—	—	—	—	—	—
H0DE(222)	—	—	—	—	—	—
H0DF(223)	—	—	—	—	—	—
H0E0(224)	Contact input monitor	Monitor	—	0	0xFFFF	—
H0E1(225)	Contact output monitor	Monitor	—	0	0xFFFF	—
H0E2(226)	General-purpose analog input 1 monitor	Monitor	—	0	100	%
H0E3(227)	General-purpose analog input 2 monitor	Monitor	—	0	100	%
H0E4(228)	General-purpose analog input 3 monitor	Monitor	—	0	100	%
H0E5(229)	General-purpose analog output 1 monitor	Monitor	—	0	100	%
H0E6(230)	General-purpose analog output 2 monitor	Monitor	—	0	100	%
H0E7(231)	Analog output monitor for TENS control	Monitor	—	0	100	%
H0E8(232)	Analog output monitor for new reel preset	Monitor	—	0	100	%
H0E9(233)	Contact input monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EA(234)	Contact output monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EB(235)	Alarm display	Monitor	—	0	63	—
H0EC(236)	Network alarm device No.	Monitor	—	0	999	—
H0ED(237)	Main unit ROM version	Monitor	—	0	999	—
H0EE(238)	Network adapter ROM version	Monitor	LE7-CCL	0	999	—
H0EF(239)	Communication signal monitor	Monitor	—	0	0xFFFF	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0F0(240)	Contact input 1 function selection	Setting	—	0 (no function), 1 (run/stop), 2 (control output OFF/ON), 3 (stall memory), 4 (inching ON/OFF), 5 (constant tension ON/OFF), 6 (gain 1 ON/OFF), 7 (gain 2 ON/OFF), 8 (automatic/manual), 9 (reel change ON/OFF), 10 (cut torque ON/OFF), 11 (alarm reset ON/OFF)		—
H0F1(241)	Contact input 2 function selection	Setting	—			—
H0F2(242)	Contact input 3 function selection	Setting	—			—
H0F3(243)	Contact input 4 function selection	Setting	—			—
H0F4(244)	Contact input 5 function selection	Setting	—			—
H0F5(245)	Contact input 6 function selection	Setting	—			—
H0F6(246)	—	—	—	—	—	—
H0F7(247)	—	—	—	—	—	—
H0F8(248)	Contact output 1 function selection	Setting	—	0 (no function), 1 (tension lower limit detection), 2 (tension upper limit detection), 3 (detection outside tension range), 4 (alarm occurrence detection)		—
H0F9(249)	Contact output 2 function selection	Setting	—			—
H0FA(250)	—	—	—	—	—	—
H0FB(251)	—	—	—	—	—	—
H0FC(252)	—	—	—	—	—	—
H0FD(253)	—	—	—	—	—	—
H0FE(254)	—	—	—	—	—	—
H0FF(255)	—	—	—	—	—	—
H100(256)	Analog input mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H101(257)	Analog input 1 function selection	Setting	—	0 (no function), 1 (tension setting), 2 (stall setting), 3 (straight line taper ratio setting), 4 (new axis preset setting), 5 (manual setting), 6 (tension input), 7 (Reel diameter input)		—
H102(258)	Analog input 2 function selection	Setting	—			—
H103(259)	Analog input 3 function selection	Setting	—			—
H104(260)	—	—	—	—	—	—
H105(261)	—	—	—	—	—	—
H106(262)	—	—	—	—	—	—
H107(263)	—	—	—	—	—	—
H108(264)	Analog output mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H109(265)	Analog output 1 function selection	Setting	—	0 (no function), 1 (tension monitor), 2 (Reel diameter monitor), 3 (tension setting monitor), 4 (A-axis Reel shaft rotational speed output), 5 (B-axis Reel shaft rotational speed output)		—
H10A(266)	Analog output 2 function selection	Setting	—			—
H10B(267)	Analog output 1 gain	Setting	—	500	3000	%
H10C(268)	Analog output 2 gain	Setting	—	500	3000	%
H10D(269)	Analog output 1 bias	Setting	—	-500	500	%
H10E(270)	Analog output 2 bias	Setting	—	-500	500	%
H10F(271)	—	—	—	—	—	—
H110(272)	Two reel's switching FUNC output mode	Setting	—	0 (no internal switching), 1 (with internal switching)		—
H111(273)	Control output mode selection	Setting	—	0 (0 to 5 V mode), 1 (-5 to 5 V mode), 2 (0 to 10 V mode), 3 (-10 to 10 V mode), 4 (0 to 8 V mode), 5 (- 8 to 8 V mode), 6 (0 to 2.7 V mode), 7 (-2.7 to 2.7 V mode), 8 (1 to 5 V mode)		—
H112(274)	Control output gain	Setting	—	500	3000	%
H113(275)	New reel preset output gain	Setting	—	500	3000	%
H114(276)	Control output bias	Setting	—	-500	500	%
H115(277)	New reel preset output bias	Setting	—	-500	500	%
H116(278)	—	—	—	—	—	—
H117(279)	—	—	—	—	—	—
H118(280)	—	—	—	—	—	—
H119(281)	—	—	—	—	—	—
H11A(282)	—	—	—	—	—	—
H11B(283)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H11C(284)	—	—	—	—	—	—
H11D(285)	—	—	—	—	—	—
H11E(286)	—	—	—	—	—	—
H11F(287)	—	—	—	—	—	—
H120(288)	Set setting password	Setting	—	0	32000	—
H121(289)	Input setting password	Setting	—	0	32000	—
H122(290)	Set monitor password	Setting	—	0	32000	—
H123(291)	Input monitor password	Setting	—	0	32000	—
H124(292)	—	—	—	—	—	—
H125(293)	—	—	—	—	—	—
H126(294)	—	—	—	—	—	—
H127(295)	—	—	—	—	—	—
H128(296)	—	—	—	—	—	—
H129(297)	—	—	—	—	—	—
H12A(298)	—	—	—	—	—	—
H12B(299)	—	—	—	—	—	—
H12C(300)	—	—	—	—	—	—
H12D(301)	—	—	—	—	—	—
H12E(302)	—	—	—	—	—	—
H12F(303)	—	—	—	—	—	—
H130(304)	Alarm history 1	Monitor	—	0	63	—
H131(305)	Alarm history 2	Monitor	—	0	63	—
H132(306)	Alarm history 3	Monitor	—	0	63	—
H133(307)	Alarm history 4	Monitor	—	0	63	—
H134(308)	Alarm history 5	Monitor	—	0	63	—
H135(309)	Alarm history 6	Monitor	—	0	63	—
H136(310)	Alarm history 7	Monitor	—	0	63	—
H137(311)	Alarm history 8	Monitor	—	0	63	—
H138(312)	Alarm history holding selection	Setting	—	0 (no holding), 1 (holding)		—
H139(313)	Alarm display time	Setting	—	0	301	sec
H13A(314)	Alarm operation selection 1	Setting	—	0	0xFFFF	—
H13B(315)	Alarm operation selection 2	Setting	—	0	0xFFFF	—
H13C(316)	Alarm operation selection 3	Setting	—	0	0xFFFF	—
H13D(317)	Alarm operation selection 4	Setting	—	0	0xFFFF	—
H13E(318)	—	—	—	—	—	—
H13F(319)	—	—	—	—	—	—
H140(320)	—	—	—	—	—	—
H141(321)	—	—	—	—	—	—
H142(322)	—	—	—	—	—	—
H143(323)	—	—	—	—	—	—
H144(324)	—	—	—	—	—	—
H145(325)	—	—	—	—	—	—
H146(326)	—	—	—	—	—	—
H147(327)	—	—	—	—	—	—
H148(328)	—	—	—	—	—	—
H149(329)	—	—	—	—	—	—
H14A(330)	—	—	—	—	—	—
H14B(331)	—	—	—	—	—	—
H14C(332)	—	—	—	—	—	—
H14D(333)	—	—	—	—	—	—
H14E(334)	—	—	—	—	—	—
H14F(335)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H150(336)	—	—	—	—	—	—
H151(337)	—	—	—	—	—	—
H152(338)	—	—	—	—	—	—
H153(339)	—	—	—	—	—	—
H154(340)	—	—	—	—	—	—
H155(341)	—	—	—	—	—	—
H156(342)	—	—	—	—	—	—
H157(343)	—	—	—	—	—	—
H158(344)	—	—	—	—	—	—
H159(345)	—	—	—	—	—	—
H15A(346)	—	—	—	—	—	—
H15B(347)	—	—	—	—	—	—
H15C(348)	—	—	—	—	—	—
H15D(349)	—	—	—	—	—	—
H15E(350)	—	—	—	—	—	—
H15F(351)	—	—	—	—	—	—
H160(352)	—	—	—	—	—	—
H161(353)	—	—	—	—	—	—
H162(354)	—	—	—	—	—	—
H163(355)	—	—	—	—	—	—
H164(356)	—	—	—	—	—	—
H165(357)	—	—	—	—	—	—
H166(358)	—	—	—	—	—	—
H167(359)	—	—	—	—	—	—
H168(360)	—	—	—	—	—	—
H169(361)	—	—	—	—	—	—
H16A(362)	—	—	—	—	—	—
H16B(363)	—	—	—	—	—	—
H16C(364)	—	—	—	—	—	—
H16D(365)	—	—	—	—	—	—
H16E(366)	—	—	—	—	—	—
H16F(367)	—	—	—	—	—	—
H170(368)	—	—	—	—	—	—
H171(369)	—	—	—	—	—	—
H172 (370)	—	—	—	—	—	—
H173(371)	—	—	—	—	—	—
H174(372)	—	—	—	—	—	—
H175(373)	—	—	—	—	—	—
H176(374)	—	—	—	—	—	—
H177(375)	—	—	—	—	—	—
H178(376)	—	—	—	—	—	—
H179(377)	—	—	—	—	—	—
H17A(378)	—	—	—	—	—	—
H17B(379)	—	—	—	—	—	—
H17C(380)	—	—	—	—	—	—
H17D(381)	—	—	—	—	—	—
H17E(382)	—	—	—	—	—	—
H17F(383)	—	—	—	—	—	—
H180(384)	Open-loop control base torque	Setting	LE7-DCA	0	1000	%
H181(385)	Direct taper ratio	Setting	—	0	1000	%
H182(386)	Link tension monitor filter	Setting	—	0	80	sec
H183(387)	Tension input	Setting	—	0	2000	N/×10 N

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H184(388)	Reel diameter input	Setting	—	0	2000	mmϕ
H185(389)	—	—	—	—	—	—
H186(390)	—	—	—	—	—	—
H187(391)	—	—	—	—	—	—
H188(392)	—	—	—	—	—	—
H189(393)	—	—	—	—	—	—
H18A(394)	—	—	—	—	—	—
H18B(395)	—	—	—	—	—	—
H18C(396)	—	—	—	—	—	—
H18D(397)	—	—	—	—	—	—
H18E(398)	—	—	—	—	—	—
H18F(399)	—	—	—	—	—	—

Precautions

■About transmission delay

"Transmission delay" is a setting for low-speed devices that cannot respond quickly to transmission responses.

"Transmission delay" is initially set to 0 ms and it is necessary to set it with GT Designer3 (GOT2000) in order to change it.

For details on settings, refer to the following..

GOT2000 Series Connection Manual (Microcomputers, MODBUS/Fieldbus Products, Peripherals)

■Error code (MODBUS Exception Codes) returned by LE7-40GU (slave) to the MODBUS master equipment

LE7-40GU (slave) supports the following error codes (MODBUS Exception Codes) in response to a request from the MODBUS master equipment.

When the following errors occur, LE7-40GU will not generate a system alarm.

This section explains the contents, cause, and remedy for each error code.

• Commonly generated error codes for requests from master equipment

Error code (HEX)	Category	Contents	Cause	Remedy
0x01	—	ILLEGAL FUNCTION (illegal function code)	A function code not supported by LE7-40GU was received.	A function code not supported by LE7-40GU was received.

• Error code generated in response to a read request from the master equipment

Error code (HEX)	Category	Contents	Cause	Remedy
0x02	Read/Write	ILLEGAL DATAADDRESS (illegal data address)	You have accessed a device out of range.	Please check whether the device to be accessed is incorrect.

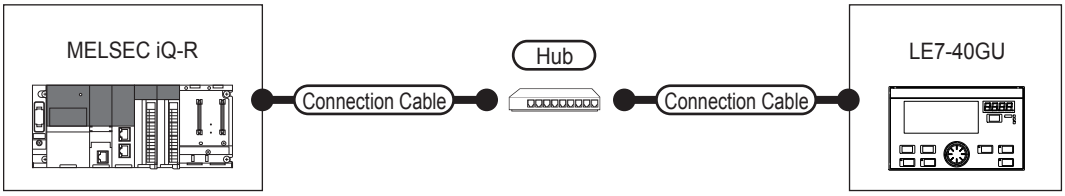
• Error code generated in response to a write request from the master equipment

Error code (HEX)	Category	Contents	Cause	Remedy
0x02	Read/Write	ILLEGAL DATAADDRESS (illegal data address)	You have accessed a device out of range.	Please check whether the device to be accessed is incorrect.
0x03	Write	ILLEGAL DATA VALUE (illegal data value)	The consistency of the request packet (the number of writing points, the number of bytes of write data and the number of write data) is not established.	Make sure that normal packets are being transmitted from the master equipment.

5.3 Reference Program

A basic example program (GX Works3) for MODBUS/TCP (SLAVE) communication is described.

System configuration



Settings

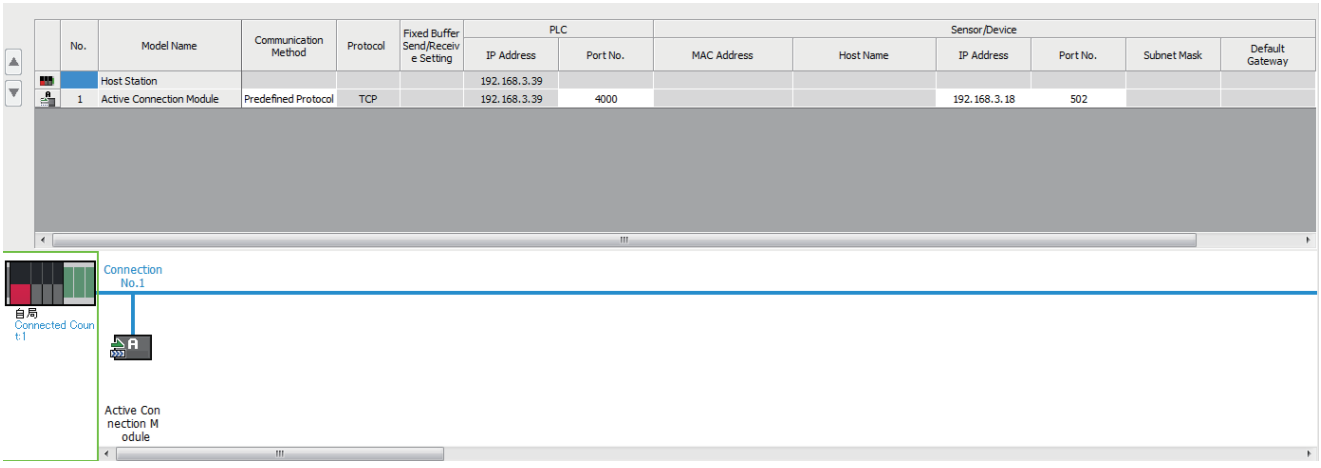
■Own node settings

Item	
Own Node Settings	
Parameter Setting Method	Parameter Editor
IP Address	
IP Address	192 . 168 . 3 . 39
Subnet Mask	. . .
Default Gateway	. . .
Enable/Disable Online Change	Enable All (SLMP)
Communication Data Code	Binary
Opening Method	Do Not Open by Program
CC-Link IEF Basic Setting	
To Use or Not to Use CC-Link IEF Basic Setting	Disable
Network Configuration Settings	<Detailed Setting>
Refresh Settings	<Detailed Setting>
External Device Configuration	
External Device Configuration	<Detailed Setting>

■CC-Link IEF Basic setting

To use or not use CC-Link IEF Basic setting: Disable

■External device configuration



■Predefined protocol support function

Protocol setting

Protocol No.	Manufacturer	Model	Protocol Name	Communication Type	-> Send <- Receive	Packet Name	Packet Setting
1	General-purpose protocol	MODBUS/TCP	04: RD IN Registers	Send&Receive			
					->	Request	Variable Set
					<-(1)	Normal response	Variable Set
					<-(2)	Error response	Variable Set
2	General-purpose protocol	MODBUS/TCP	16: WR Multi Registers	Send&Receive			
					->	Request	Variable Set
					<-(1)	Normal response	Variable Set
					<-(2)	Error response	Variable Set
Add							

For packet setting, set in edit→device batch setting.

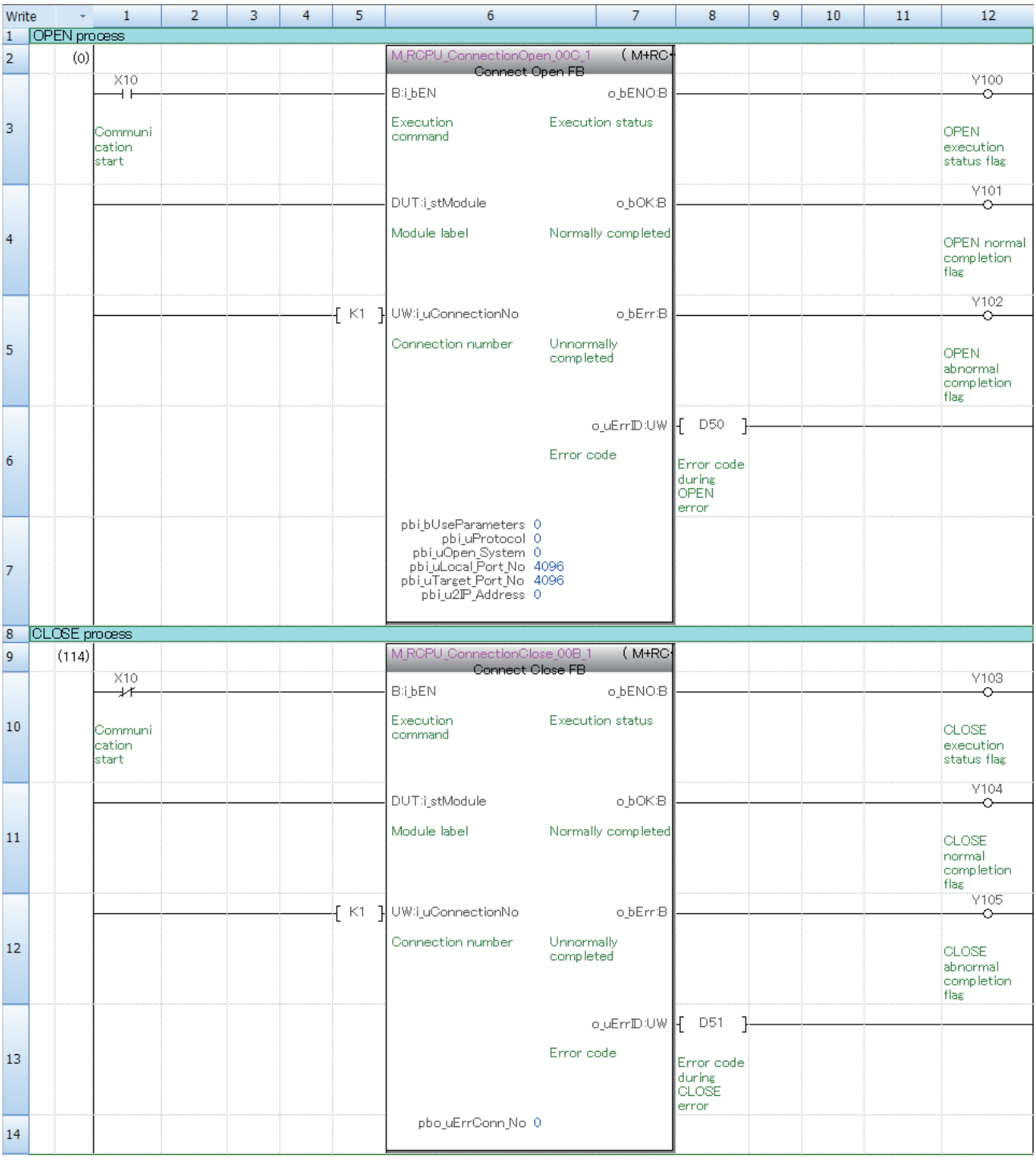
Protocol No. 1: D1000 and later

Protocol No. 2: D2000 and later

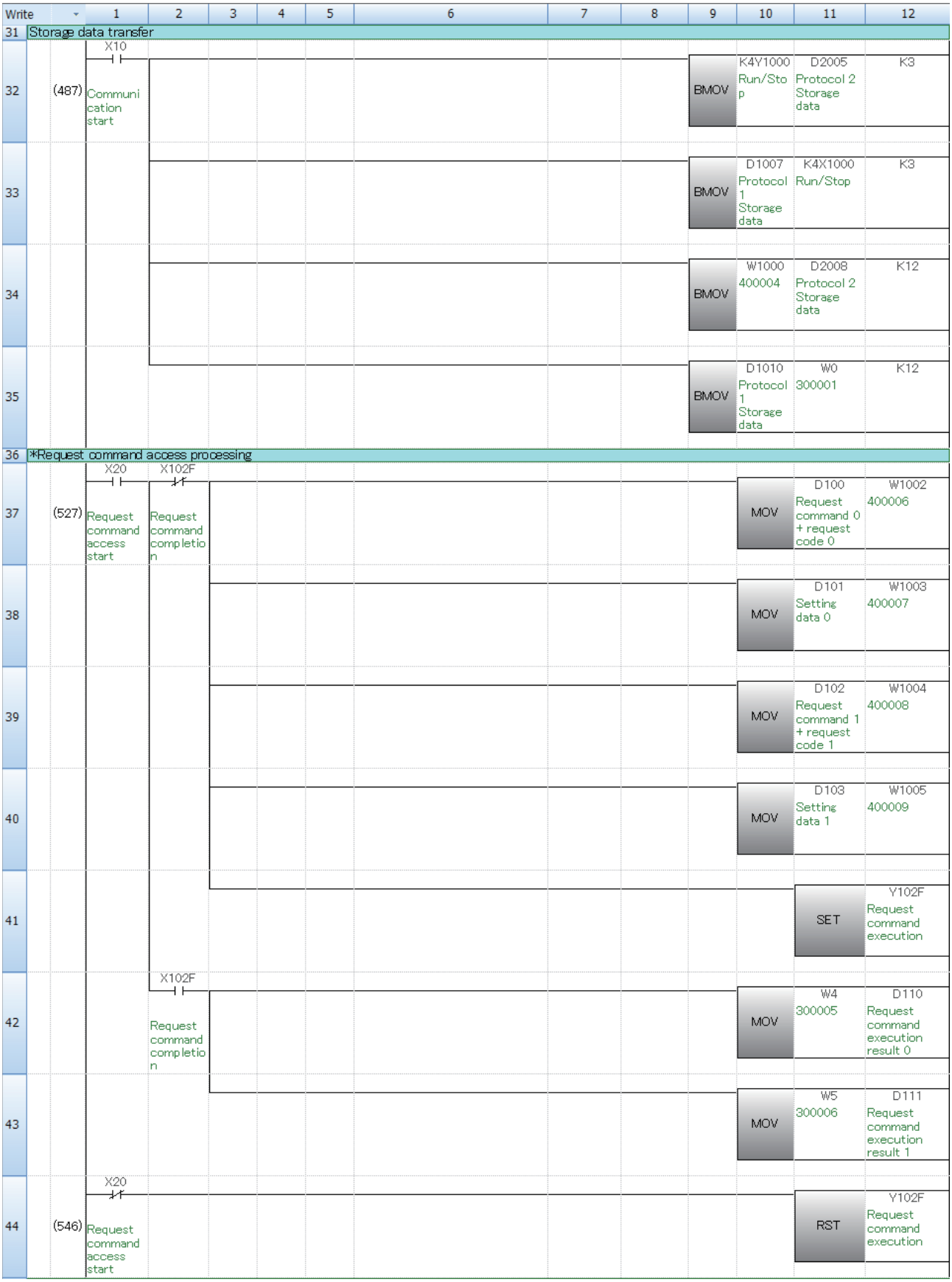
For the detailed setting method, refer to the following.

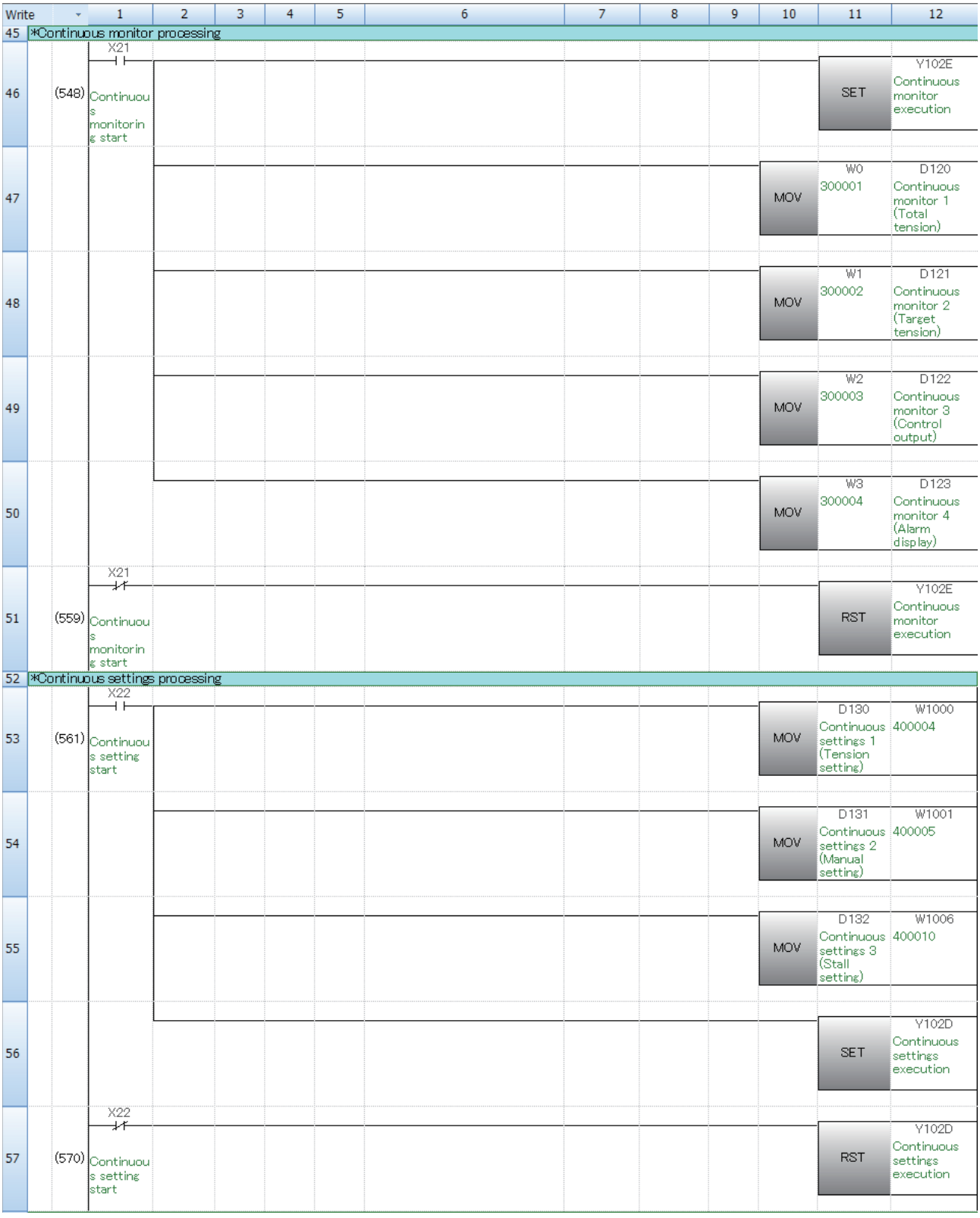
MELSEC iQ-R Ethernet User's Manual (Application)

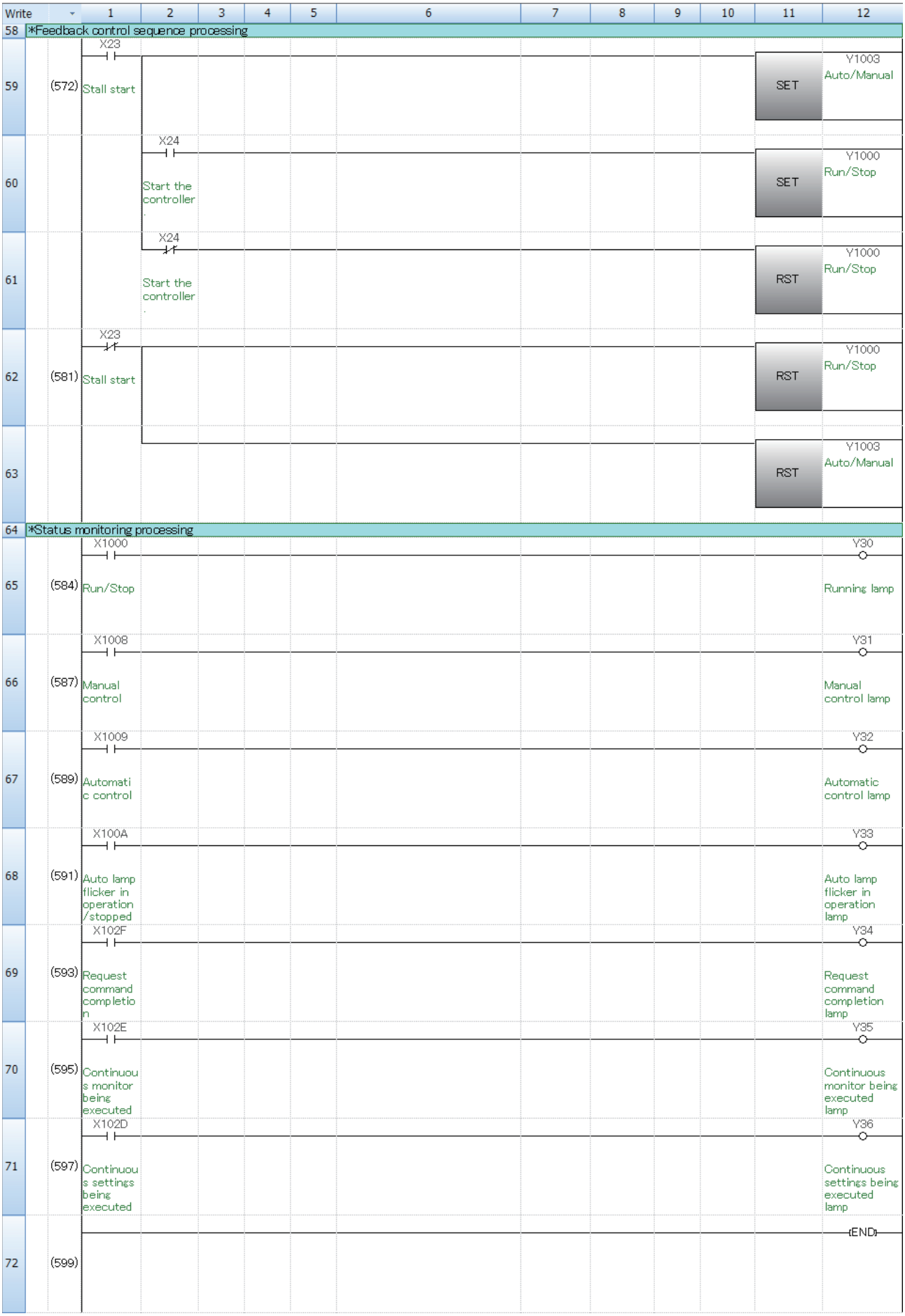
Program example



Write
1 2 3 4 5 6 7 8 9 10 11 12
15 Communication protocol support function Designation of protocol execution order
SM400
16 (215) Always ON
MOV K1 D2 Protocol No. 1
17
MOV K2 D3 Protocol No. 2
18 Communication protocol support function Protocol 1 setting
X10
19 (301) Communi cation start
MOV K0 D1000 Protcol 1 Transaction ID
20
MOV K255 D1001 Protcol 1 Protcol ID
21
MOV K0 D1002 Protcol 1 Head holding register number
22
MOV K16 D1003 Protcol 1 Read points
23 Communication protocol support function Protocol 2 setting
X10
24 (370) Communi cation start
MOV K0 D2000 Protcol 2 Transaction ID
25
MOV K255 D2001 Protcol 2 Protcol ID
26
MOV K0 D2002 Protcol 2 Head holding register number
27
MOV K16 D2003 Protcol 2 Read points
28
MOV K32 D2004 Protcol 2 Device data length
29 Protocol support function execution
SM411 Y101
30 (441) 0.2s clock OPEN normal completio n flag
SP.ECPRT CL U0 K1 K2 D0 Number of protocol execution times Y106 Protocol execution complete flag


Write
1
2
3
4
5
6
7
8
9
10
11
12
31 Storage data transfer
X10
32 (487) Communication start
BMOV K4Y1000 Run/Stop D2005 Protocol 2 Storage data K3
33
BMOV D1007 Protocol 1 Storage data K4X1000 Run/Stop K3
34
BMOV W1000 400004 D2008 Protocol 2 Storage data K12
35
BMOV D1010 Protocol 1 Storage data W0 300001 K12
36 *Request command access processing
X20
X102F
37 (527) Request command access start
Request command completion
MOV D100 Request command 0 + request code 0 W1002 400006
38
MOV D101 Setting data 0 W1003 400007
39
MOV D102 Request command 1 + request code 1 W1004 400008
40
MOV D103 Setting data 1 W1005 400009
41
SET Y102F Request command execution
X102F
42
Request command completion
MOV W4 300005 D110 Request command execution result 0
43
MOV W5 300006 D111 Request command execution result 1
X20
44 (546) Request command access start
RST Y102F Request command execution


Write
1 2 3 4 5 6 7 8 9 10 11 12
45 *Continuous monitor processing
X21
46 (548) Continuous monitoring start
SET Y102E Continuous monitor execution
47
MOV W0 300001 D120 Continuous monitor 1 (Total tension)
48
MOV W1 300002 D121 Continuous monitor 2 (Target tension)
49
MOV W2 300003 D122 Continuous monitor 3 (Control output)
50
MOV W3 300004 D123 Continuous monitor 4 (Alarm display)
X21
51 (559) Continuous monitoring start
RST Y102E Continuous monitor execution
52 *Continuous settings processing
X22
53 (561) Continuous setting start
MOV D130 Continuous settings 1 (Tension setting) W1000 400004
54
MOV D131 Continuous settings 2 (Manual setting) W1001 400005
55
MOV D132 Continuous settings 3 (Stall setting) W1006 400010
56
SET Y102D Continuous settings execution
X22
57 (570) Continuous setting start
RST Y102D Continuous settings execution


Write
1
2
3
4
5
6
7
8
9
10
11
12
58 *Feedback control sequence processing
X23
59 (572) Stall start
SET
Y1003
Auto/Manual
X24
60 Start the controller
SET
Y1000
Run/Stop
X24
61 Start the controller
RST
Y1000
Run/Stop
X23
62 (581) Stall start
RST
Y1000
Run/Stop
63
RST
Y1003
Auto/Manual
64 *Status monitoring processing
X1000
65 (584) Run/Stop
Y30
Running lamp
X1008
66 (587) Manual control
Y31
Manual control lamp
X1009
67 (589) Automatic control
Y32
Automatic control lamp
X100A
68 (591) Auto lamp flicker in operation /stopped
Y33
Auto lamp flicker in operation lamp
X102F
69 (593) Request command completion
Y34
Request command completion lamp
X102E
70 (595) Continuous monitor being executed
Y35
Continuous monitor being executed lamp
X102D
71 (597) Continuous settings being executed
Y36
Continuous settings being executed lamp
72 (599)
END

Using method of ladder

1. Turn ON X10 (start communication), and connect with LE7-40GU.

2. After X10 is executed, the required data for D100 to D133 are stored, and each function is executed in X20 to X24.

List of used devices (The allocation is an example.)

Device name	Classification[*1]	Allocation function	Use
X10	Setting	Communication start	OPEN process to LE7-40GU (Active device) is performed, and after OPEN normal completion, communication by MODBUS/TCP protocol is started. (Turn on 5 seconds after turning on the power supply of LE7-40GU.)[*2*3]
D100 to D106	Setting	Request command + request code/data setting 0 to 3	Device set to use the request command
D110 to D113	Setting	Request command execution result 0 to 3	Request command execution result is stored.
D120 to D127	Setting	Continuous monitor 1 to 4	Continuous monitor execution result is stored.
D130 to D133	Setting	Continuous setting 1 to 3	Setting value of continuous setting is stored.
X20	Setting	Start request command access execution	Execute request command.
X21	Setting	Start continuous monitor execution	Start to execute continuous monitor.
X22	Setting	Start continuous setting execution	Start to execute continuous setting.
X23	Setting	Start stall execution	Start to execute stall.
X24	Setting	Start operation	Start to operate.
Y30	Monitoring	Run	Run: ON/Stop: OFF
Y31	Monitoring	Manual control	Manual control ON
Y32	Monitoring	Automatic control	Automatic control ON
Y33	Monitoring	Auto lamp flicker in operation	Auto lamp flicker in operation ON
Y34	Monitoring	Request command completion	ON when request command is completed
Y35	Monitoring	Continuous monitor being executed	ON when continuous monitor is being executed.
Y36	Monitoring	Continuous settings being executed	ON when continuous setting is being executed.
Y100	Monitoring	OPEN execution status flag	This flag is turned on during the execution of FB for OPEN process.[*2]
Y101	Monitoring	OPEN normal completion flag	This flag is turned on when FB for OPEN process is completed normally.[*2]
Y102	Monitoring	OPEN abnormal completion flag	This flag is turned on when FB for OPEN process is completed abnormally.[*2]
Y103	Monitoring	CLOSE execution status flag	This flag is turned on during the execution of FB for CLOSE process.[*2]
Y104	Monitoring	CLOSE normal completion flag	This flag is turned on when FB for CLOSE process is completed normally.[*2]
Y105	Monitoring	CLOSE abnormal completion flag	This flag is turned on when FB for CLOSE process is completed abnormally.[*2]
Y106	Monitoring	Protocol execution complete flag	ON for one scan by a completion of SP.ECPRTCL instruction[*2]
D50	Monitoring	Error code during OPEN error	An error code is stored at the time of abnormal completion.[*2]
D51	Monitoring	Error code during CLOSE error	An error code is stored at the time of abnormal completion.[*2]
D0 to D16	System	Device for SP.ECPRTCL	Device used in an application instruction SP.ECPRTCL[*3]
D1000 to D1134	System	Device for protocol No. 1 (04: RD IN Register)	Store the data used in protocol communication.[*4]
D2000 to D2134	System	Device for protocol No. 2 (16: WR Multi Register)	

*1 Classification
Setting: items to be set/input when using functions
Monitoring: items to monitor output when using functions
System: Used for internal processing, setting is unnecessary

*2 For details of the device, refer to the following.
MELSEC iQ-R Ethernet/CC-Link IE Function Block Reference

*3 For details of the device, refer to the following.
MELSEC iQ-R Programming Manual (Instructions, Standard Functions/Function Blocks)

*4 For details of the device, refer to the following.
MELSEC iQ-R Ethernet User's Manual (Application)

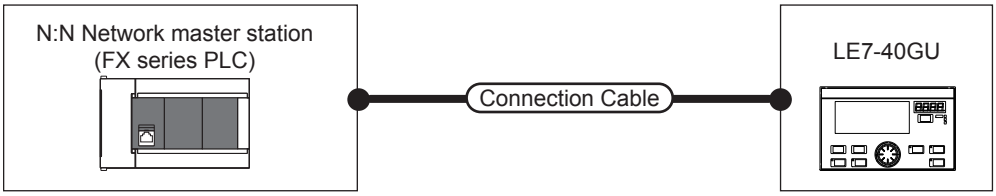
6 N:N NETWORK

LE7-40GU can be operated as a local station for FX PLC N:N network communication.
Data monitoring and parameter writing from a master station FX PLC for up to seven local stations (LE7-40GU units) can be carried out.

Precautions

- For 5 seconds after turning on the power of LE7-40GU, data from master station will not be accepted.
- Initial setting of LE7-40GU can not be done only with N:N Network.
- Simultaneous use of N:N Network and CC-Link communication is not possible.

6.1 System Configuration



Connection equipment	Communication form	Connection cable	Tension controller (Local station)		Connectable No. of units
		Cable type name	Optional equipment	Main unit	
FX5 PLC (master station)	RS-485	User created	— (Built-in to main unit)	LE7-40GU	Up to seven local stations (LE7-40GU) from the master station

6.2 Wiring

This section describes wiring.

Selection of cable

Use the following procedure to select cables.

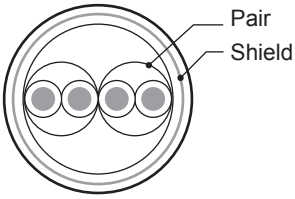
Twisted pair cable

Use a shield twisted pair wire for connection with RS-485 communication equipment.

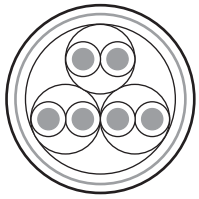
■RS-485 cable specification

Item	Specifications
Cable type	Shielded cable
Pairs	2 p, 3 p
Conductor resistance (20℃)	88.0 Ω/km or less
Insulation resistance	10000 MΩ-km or more
Withstand voltage	500 V DC1 minute
Capacitance (1 kHz)	An average of 60 nF/km or less
Characteristic impedance (100 kHz)	110±10 Ω

■Construction drawing of the cables (reference)



Construction drawing example of
a two twisted-pair cable



Construction drawing example of
a three twisted-pair cable

Spring clamp terminal block

Connection to LE7-40GU should be performed as the following procedure.

■Wire size

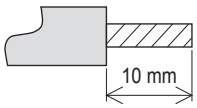
No. of wire per terminal	Wire size		
	Single wire/Strandwire	Ferrules with insulation sleeve	Ferrules withoutinsulation sleeve
One wire	AWG24 to 16	AWG23 to 16	AWG23 to 16

■Treatment of wire ends

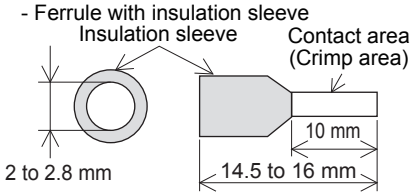
Strip the cable about 10 mm from the tip to connect a wire ferrule at the striped area. Failure to do so may result in electric shock or short circuit between adjacent terminals because of the conductive part. If the wire strip length is too short, it may result in the poor contact to the spring clamp terminal part.

When using a wire ferrule with an insulating sleeve, choose a wire with proper cable sheath referring to the above outside dimensions, otherwise the wire cannot be inserted easily.

- Strand wire/single wire



- Ferrule with insulation sleeve



The following table shows wire ferrules and tools for wire ferrules compatible with the terminal block. Use of items other than these may result in not being able to remove the wire ferrule, so carefully check that the wire ferrule can be unplugged.

<Reference product>

Manufacturer	Model	Wire size	Crimp tool
PHOENIX CONTACT GmbH & Co. KG	AI 0.5-10 WH	0.5 mm^2	CRIMPFOX 6
	AI 0.75-10 GY	0.75 mm^2	
	A 1.0-10	1.0 mm^2	
	A 1.5-10	1.5 mm^2	

■Connection and disconnection of the cable

Spring clamp terminal block is push-in type, therefore, wiring without a tool is possible by simply inserting the connecting terminal to the terminal block. However, the stranded wire does not comply with the push-in type, and a tool is required for connecting cables.

• Connection of the cable

Fully insert a cable or bar solderless terminal whose end has been properly processed into the wire insertion opening.

If the cable or bar solderless terminal cannot be inserted with this procedure, fully insert the cable or bar solderless terminal while pushing the open/close button with a flathead screwdriver having a tip width of 2.0 to 2.5 mm. After fully inserting the cable, remove the screwdriver.

Do not tighten terminal screws exceeding the specified torque range. Otherwise it may cause equipment failure or malfunction.

When wiring with the thick electric wire, make sure to prevent the conductive parts from protruding to the front of the terminal block.

<Reference>

Manufacturer	Model
PHOENIX CONTACT GmbH & Co. KG	SZS 0.4×2.5 VDE

• Disconnection of the cable

While pushing the open/close button with a flathead screwdriver having a tip width of 2.0 to 2.5 mm, disconnect the cable or bar solderless terminal.

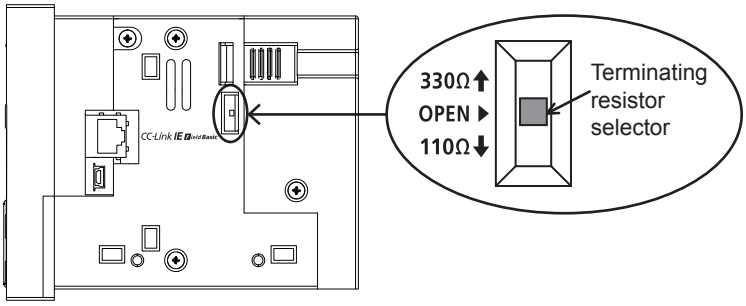
Terminating resistor settings

Be sure to install terminating resistors at both ends of the line.

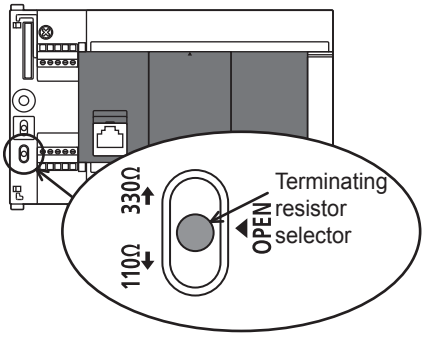
LE7-40GU, the built-in RS-485 port of the CPU module, FX5-485-BD, and FX5-485ADP, have built-in terminating resistors.

Set to 110 Ω with the terminating resistor changeover switch.

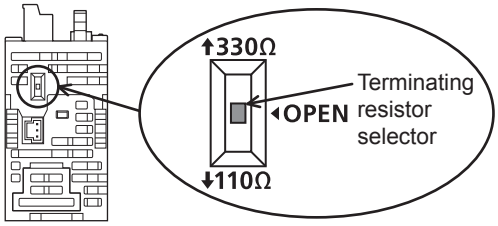
■LE7-40GU (Left side)



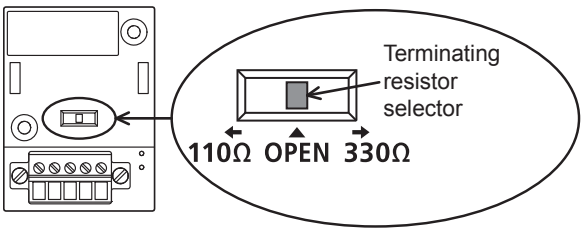
■FX5U CPU module built-in RS-485 port



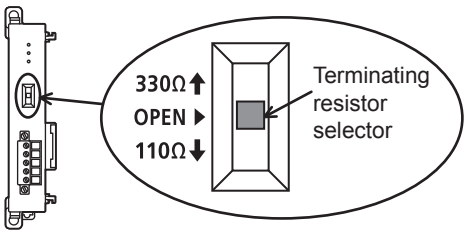
■FX5UC CPU module built-in RS-485 port



■FX5-485-BD

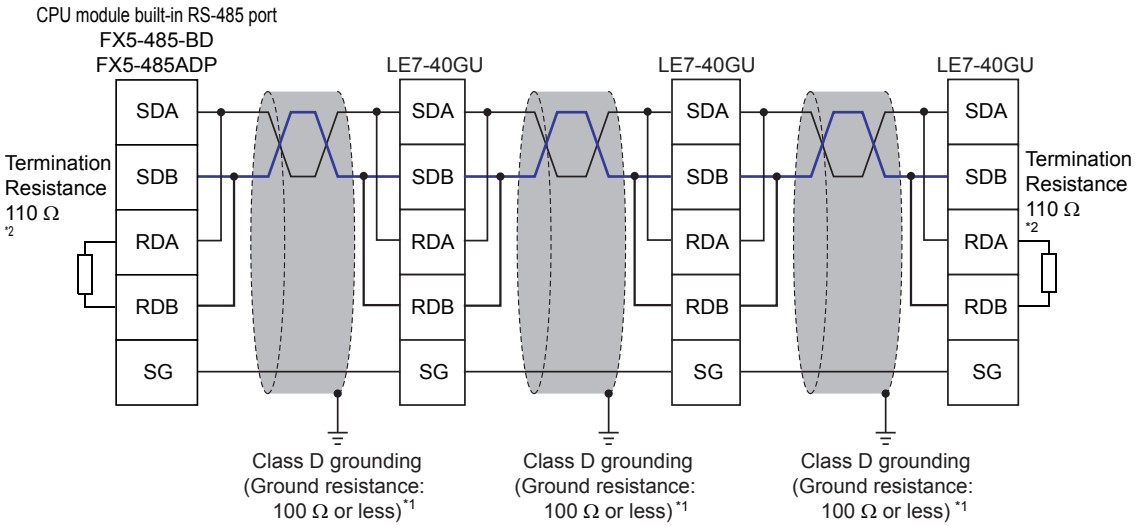


■FX5-485ADP



Connection diagram

Use single pair wiring for N:N Network wiring.



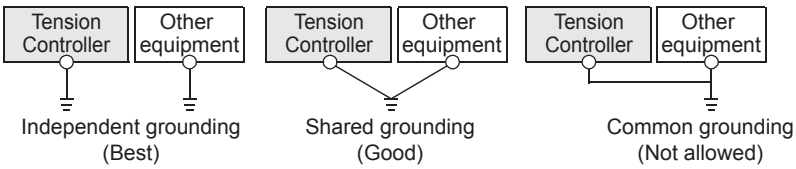
*1 Be sure to apply Class D grounding to the shield of the twisted pair cable to be connected.

*2 Terminal resistor should be attached to both ends of the line. LE7-40GU, the built-in RS-485 port of the CPU module, FX5-485-BD, and FX5-485ADP, have built-in terminating resistors. Set the terminal resistor with the selector.

Grounding

Grounding should be performed as stated below.

- Perform Class D grounding. (Ground resistance: 100 Ω or less)
- Independent grounding should be performed for best results.
- When independent grounding cannot be performed, perform "shared grounding" as shown in the following figure.



The grounding wire size should be AWG 24 to 16 (cross-section area: 0.2 to 1.5 mm^2).

The grounding point should be close to the tension controller, and all grounding wires should be as short as possible.

6.3 Communication Setting

Communication specifications

The communication specification of the N:N Network is as follows.

Communication specifications

Item	Specifications
Transmission standard	Conforms to RS-485 standard
Maximum transmission distance	50 m
Communication method	Bidirectional half-duplex
Wiring method	One-pair wiring
Communication procedure	N:N Network (pattern 2 only)
Transmission speed (baud rate)	N:N Network: 38,400 (bps)
Insulation	Non-isolated (between the communication line and CPU)

Link pattern

LE7-40GU supports pattern 2 as a link pattern.

For pattern 2, it is possible to exchange link data of 64 bit devices (M) and 8 word devices (D) at each station.

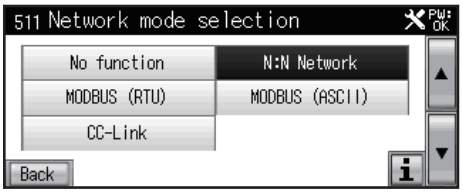
This is used to monitor and configure the local stations from the master station.

Station No.		Pattern 2	
		Bit device (M)	Word device (D)
		64 devices per station	8 devices per station
Master station	Station No. 0	M1000 to M1063	D0 to D7
Local station	Station No. 1	M1064 to M1127	D10 to D17
	Station No. 2	M1128 to M1191	D20 to D27
	Station No. 3	M1192 to M1255	D30 to D37
	Station No. 4	M1256 to M1319	D40 to D47
	Station No. 5	M1320 to M1383	D50 to D57
	Station No. 6	M1384 to M1447	D60 to D67
	Station No. 7	M1448 to M1511	D70 to D77

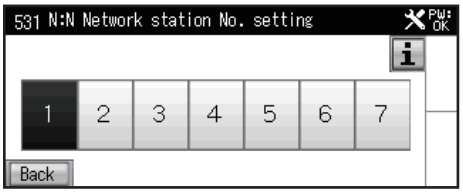
Communication parameter settings

When using N:N Network, set the communication parameters with the following procedure.

1. On the LE7-40GU screen "Network mode selection" screen, select "N:N Network".



2. Change to 1 to 7[*1] in accordance with the local station No. to be assigned with the "N:N Network station No. setting" on the LE7-40GU screen, in accordance with the local station No. to be assigned.



3. Restart LE7-40GU.

*1 If the set value is "0", N:N Network will not operate.

Link data configuration

The contents of the link data differs depending on the master and local station areas.

The following shows the details of device M and D.

• Device M configuration of the master station

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
M1000	Run/Stop	Run	Stop
M1001	Reel change B axis/A axis	B axis control	A axis control
M1002	Control output OFF/ON	Control output OFF	Control output ON
M1003	Auto/Manual	Automatic control	Manual control
M1004	Stall memory ON/OFF	Stall memory ON	Stall memory OFF
M1005	Gain 1 ON/OFF	Gain 1 ON	Gain 1 OFF
M1006	Gain 2 ON/OFF	Gain 2 ON	Gain 2 OFF
M1007	Inching ON/OFF	Inching ON	Inching OFF
M1008	Cutting torque ON/OFF	Cutting torque ON	Cutting torque OFF
M1009	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
M1010	Predrive ON/OFF	Predrive ON	Predrive OFF
M1011	Memory hold ON/OFF	Memory hold ON	Memory hold OFF
M1012	Reverse run/Forward run	Reverse run operation	Forward run operation
M1013	—	—	—
M1014	—	—	—
M1015	—	—	—
M1016	Alarm reset ON/OFF	Alarm reset ON	Alarm reset OFF
M1017	Reel diameter reset ON/OFF	Reel diameter reset ON	Reel diameter reset OFF
M1018	Measurement length and remaining length reset ON/OFF	Measurement length and remaining length reset ON	Measurement length and remaining length reset OFF
M1019	—	—	—
M1020	—	—	—
M1021	—	—	—
M1022	—	—	—
M1023	—	—	—
M1024	Zero adjustment execution	Execution	Normal
M1025	Span adjustment execution	Execution	Normal
M1026	Maximum diameter teaching execution	Start maximum diameter teaching execution	Normal
M1027	Minimum diameter teaching execution	Start minimum diameter teaching execution	Normal
M1028	Control gain tuning execution	Start control gain tuning execution	Normal
M1029	Speed teaching execution	Start speed teaching execution	Normal
M1030	—	—	—
M1031	—	—	—
M1032	—	—	—
M1033	—	—	—
M1034	—	—	—
M1035	—	—	—
M1036	—	—	—
M1037	—	—	—
M1038	—	—	—
M1039	—	—	—
M1040	—	—	—
M1041	—	—	—
M1042	—	—	—
M1043	—	—	—
M1044	Link tension monitor digit ×10/×1	Link tension monitor digit ×10	Link tension monitor digit ×1
M1045	Continuous settings execution	Start continuous settings execution	Normal
M1046	Continuous monitor execution	Start continuous monitor execution	Normal

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
M1047	Request command execution	Start request command execution	Normal
M1048	—	—	—
M1049	—	—	—
M1050	—	—	—
M1051	—	—	—
M1052	—	—	—
M1053	—	—	—
M1054	—	—	—
M1055	—	—	—
M1056	—	—	—
M1057	—	—	—
M1058	—	—	—
M1059	—	—	—
M1060	—	—	—
M1061	—	—	—
M1062	—	—	—
M1063	—	—	—

• Device M configuration of the local station

Mn is the first device of the M device of each local station. (Station No.1: M1064, Station No. 2: M1128···)

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
Mn+0	Run/Stop	Run	Stop
Mn+1	Output ON/OFF	Output ON	Output OFF
Mn+2	B-axis controlled/A-axis controlled	B-axis controlled	A-axis controlled
Mn+3	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
Mn+4	Predrive being executed	Predrive being executed	Normal
Mn+5	Memory hold being executed	Memory hold being executed	Normal
Mn+6	Reverse running/Forward running	Reverse running	Forward running
Mn+7	—	—	—
Mn+8	Manual control	Manual control	—
Mn+9	Automatic control	Automatic control	—
Mn+10	Auto lamp flicker in operation/stopped	Auto lamp flicker in operation	Auto lamp flicker stopped
Mn+11	Stall setting output being executed	Stall setting output being executed	Normal
Mn+12	Stall memory output being executed	Stall memory output being executed	Normal
Mn+13	Start timer operation being executed	Start timer operation being executed	Normal
Mn+14	Stop timer operation being executed	Stop timer operation being executed	Normal
Mn+15	Preset timer operation being executed	Preset timer operation being executed	Normal
Mn+16	Cut torque operation being executed	Cut torque operation being executed	Normal
Mn+17	Inching operation being executed	Inching operation being executed	Normal
Mn+18	—	—	—
Mn+19	Zero adjustment being executed	Zero adjustment being executed	Normal
Mn+20	Span adjustment being executed	Span adjustment being executed	Normal
Mn+21	Maximum diameter teaching being executed	Speed teaching being executed	Normal
Mn+22	Minimum diameter teaching being executed	Speed teaching being executed	Normal
Mn+23	Control gain tuning being executed	Control gain tuning being executed	Normal
Mn+24	Speed teaching being executed	Speed teaching being executed	Normal
Mn+25	Tension upper limit detection ON/OFF	Tension upper limit detection ON	Tension upper limit detection OFF
Mn+26	Tension lower limit detection ON/OFF	Tension lower limit detection ON	Tension lower limit detection OFF
Mn+27	Detection outside tension range ON/OFF	Detection outside tension range ON	Detection outside tension range OFF
Mn+28	Reel diameter detection 1 ON/OFF	Reel diameter detection 1 ON	Reel diameter detection 1 OFF
Mn+29	Reel diameter detection 2 ON/OFF	Reel diameter detection 2 ON	Reel diameter detection 2 OFF
Mn+30	Reel diameter detection 3 ON/OFF	Reel diameter detection 3 ON	Reel diameter detection 3 OFF

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
Mn+31	Measurement length/remaining length detection 1 ON/OFF	Measurement length/remaining length detection 1 ON	Measurement length/remaining length detection 1 OFF
Mn+32	Measurement length/remaining length detection 2 ON/OFF	Measurement length/remaining length detection 2 ON	Measurement length/remaining length detection 2 OFF
Mn+33	Measurement length/remaining length detection 3 ON/OFF	Measurement length/remaining length detection 3 ON	Measurement length/remaining length detection 3 OFF
Mn+34	Peripheral speed synchronization detection ON/OFF	Peripheral speed synchronization detection ON	Peripheral speed synchronization detection OFF
Mn+35	Alarm occurrence detection	Alarm occurrence	Normal
Mn+36	Parameter protection being executed	Parameter protection being executed	Normal
Mn+37	Settings password matching being executed	Settings password matching being executed	Settings password does not match
Mn+38	Monitor password matching being executed	Monitor password matching being executed	Monitor password does not match
Mn+39	—	—	—
Mn+40	—	—	—
Mn+41	—	—	—
Mn+42	—	—	—
Mn+43	—	—	—
Mn+44	—	—	—
Mn+45	Continuous settings being executed	Continuous settings being executed	Normal
Mn+46	Continuous monitor being executed	Continuous monitor being executed	Normal
Mn+47	Request command completion	Request command completion	Normal
Mn+48	—	—	—
Mn+49	—	—	—
Mn+50	—	—	—
Mn+51	—	—	—
Mn+52	—	—	—
Mn+53	—	—	—
Mn+54	—	—	—
Mn+55	—	—	—
Mn+56	—	—	—
Mn+57	—	—	—
Mn+58	—	—	—
Mn+59	—	—	—
Mn+60	—	—	—
Mn+61	—	—	—
Mn+62	—	—	—
Mn+63	—	—	—

• Device D configuration of the master station and local station

Dn is the first device of the D device of each local station. (Station No. 1: D10, Station No. 2: D20···)

Master station		
Device No	**Signal name**	
D0	Station No. command	
D1	Continuous settings 1	
D2	Continuous settings 2	
D3	—	
D4	Request command 0	Request code 0
D5	Setting data 0	
D6	Request command 1	Request code 1
D7	Setting data 1	

Local station	
Device No.	**Signal name**
Dn+0	Continuous monitor 1
Dn+1	Continuous monitor 2
Dn+2	Continuous monitor 3
Dn+3	Continuous monitor 4
Dn+4	Continuous monitor 5
Dn+5	—
Dn+6	Request command 0 execution result
Dn+7	Request command 1 execution result

Station Number command

The D device (D 0) station No. command of the master station determines the station No. of the local station to be accessed. By setting the station No. command to 0, simultaneous setting and simultaneous monitoring can be performed for all local stations.

Station No. command	Function
1 to 7	Individual access to the specified local station
0	Simultaneous access to all the local stations

Continuous setting/continuous monitoring

When continuous setting execution and continuous monitor execution of the master station are turning on, data set by continuous setting function selection and continuous monitoring function selection can be set and monitored continuously.
For continuous setting data, the data set for RAM writing is not stored in a power failure.
Continuous monitor data can monitor the latest data of the local station at the time when there is a transmission request from the master station.
However, in updating parameters with a monitor update period in the setting of the local station, if this update period setting is longer than the transmission request from the master station, data update is performed by this update cycle.

Continuous settings

1. Data write to devices with continuous settings 1 to 16
2. Turn on continuous settings execution.

Continuous monitor

1. Turn on continuous monitor execution.
2. Read the data of the devices of continuous monitors 1 to 16.

Access by request command

For any data access from the master station to the local station, data can be read or written by handshaking between the "request command execution" flag and the "request command completion" flag.
This access is performed using a 2-word word device of the master station.
In the double word data, the 4 high-order bits of the first word are assigned to the request command and the 12 low-order bits are assigned to the request code, and the second word is assigned as the word for the set data.

bit 15 to 12	bit 11 to 0
Request command	Request code
Setting data	

There are three types of request command, Data Monitor, Writing to RAM, and Writing to RAM + ROM, according to the selection of data reading and writing method.

Monitor	Writing to RAM	Writing to RAM + ROM
Writing data is reflected in the settings based on a data read request from the master station but is not stored in the case of a power failure.	Writing data is reflected in the settings based on a data write request from the master station but is not stored in the case of a power failure.	Perform the above RAM write + data power failure write.

In the ROM for storage against power interruption, the allowable number of times of writing is limited. Accordingly, data cyclically written and updated by the PLC must be written only to the RAM.

Request command	Contents of execution	Execution result
H0	Monitor	Monitored value
H1	Writing to RAM	Writing result
H2	Writing to RAM + ROM	Writing result

The request code indicates the data No. (address) of data for which the request command is executed. Also, the subsequent data setting is the data to be written to that data number.
If the request command is a monitor, the data setting data is ignored.
When double word data is written to send data in the master station, and the handshake is executed by turning ON/OFF the request command execution flag and request command completion flag as follows, the local station sends back the request command execution request.

1. The master station is set to request command execution ON.
2. The local station processes in accordance with the master station request command execution ON.
3. The local station is set to request command completion ON.
4. The master station receives the request command completion ON.
5. The master station is set to request command execution OFF.
6. The local station receives the request command execution OFF from the master station.
7. The local station is set to request command completion OFF.
8. The master station receives the request command completion OFF.

Please perform reading of the execution results of the request command between step 4 and 5 of the handshake procedure.
If an error occurs, triggered by the request command from the master station, the local station turns ON the network alarm occurrence flag and outputs the device No. that has the error to the monitor of the device number of the network alarm.
For the request command execution result, refer to the following.
LE7-CCL APPLICATION MANUAL

Request code

The numerical value of each parameter corresponding to the request code is treated as real number data without a decimal point.
In addition, the minimum and maximum values are determined for LE7-40GU, and when a value exceeding this data is written, it is automatically rewritten to the minimum or maximum value.
In this case, an "Out of data range" alarm is generated.

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H000(0)	—	—	—	—	—	—
H001(1)	Total tension	Monitor	—	0 or less	2000 or more	N/×10 N
H002(2)	Left tension	Monitor	—	0 or less	2000 or more	N/×10 N
H003(3)	Right tension	Monitor	—	0 or less	2000 or more	N/×10 N
H004(4)	Left input voltage	Monitor	—	-1500 or less	1500 or more	mV
H005(5)	Right input voltage	Monitor	—	-1500 or less	1500 or more	mV
H006(6)	—	—	—	—	—	—
H007(7)	—	—	—	—	—	—
H008(8)	—	—	—	—	—	—
H009(9)	—	—	—	—	—	—
H00A(10)	—	—	—	—	—	—
H00B(11)	—	—	—	—	—	—
H00C(12)	—	—	—	—	—	—
H00D(13)	—	—	—	—	—	—
H00E(14)	—	—	—	—	—	—
H00F(15)	—	—	—	—	—	—
H010(16)	Tension upper limit detection	Setting	—	0	Tension full scale	N/×10 N
H011(17)	Tension lower limit detection	Setting	—	0	Tension full scale	N/×10 N
H012(18)	Detection outside target tension range	Setting	—	0	50	%
H013(19)	Tension display filter	Setting	—	5	80	sec
H014(20)	Tension detection filter	Setting	—	0	80	sec
H015(21)	Tension output filter	Setting	—	0	80	sec
H016(22)	—	—	—	—	—	—
H017(23)	—	—	—	—	—	—
H018(24)	—	—	—	—	—	—
H019(25)	—	—	—	—	—	—
H01A(26)	—	—	—	—	—	—
H01B(27)	—	—	—	—	—	—
H01C(28)	—	—	—	—	—	—
H01D(29)	—	—	—	—	—	—
H01E(30)	—	—	—	—	—	—
H01F(31)	—	—	—	—	—	—
H020(32)	Sensor input type selection	Setting	—	0 (LX type), 1 (strain gauge)		—
H021(33)	Tension full scale	Setting	—	1	2000	N/×10 N
H022(34)	Tension display decimal point selection	Setting	—	0 (1), 1 (0.1), 2 (0.01)		—
H023(35)	Tension display unit selection	Setting	—	0 (N), 1 (×10 N)		—
H024(36)	Span target tension	Setting	—	1	Tension full scale	N/×10 N
H025(37)	Left manual zero calibration	Setting	—	-999	999	N/×10 N
H026(38)	Right manual zero calibration	Setting	—	-999	999	N/×10 N
H027(39)	Left manual span calibration	Setting	—	50	300	%
H028(40)	Right manual span calibration	Setting	—	50	300	%
H029(41)	—	—	—	—	—	—
H02A(42)	—	—	—	—	—	—
H02B(43)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H02C(44)	—	—	—	—	—	—
H02D(45)	—	—	—	—	—	—
H02E(46)	—	—	—	—	—	—
H02F(47)	—	—	—	—	—	—
H030(48)	Reel diameter	Monitor	—	1	2000	mmϕ
H031(49)	Target line velocity	Monitor	LE7-DCA	0	10000	m/min
H032(50)	Line acceleration	Monitor	LE7-DCA	0	50	m/min/sec
H033(51)	Measurement length/remaining length	Monitor	LE7-DCA	—	—	m
H034(52)	Reel rotational speed	Monitor	LE7-DCA	65000	1	r/min
H035(53)	New reel rotational speed	Monitor	LE7-DCA	3600	1	r/min
H036(54)	Constant slip ROTO speed command output	Monitor	LE7-DCA	1000	0.1	%
H037(55)	Predrive rotation speed command output	Monitor	LE7-DCA	1000	0.1	%
H038(56)	Predrive target rotation speed	Monitor	LE7-DCA	3600	1	r/min
H039(57)	Reel diameter CALC adapter ROM version	Monitor	LE7-DCA	999	0.01	—
H03A(58)	—	—	—	—	—	—
H03B(59)	—	—	—	—	—	—
H03C(60)	—	—	—	—	—	—
H03D(61)	—	—	—	—	—	—
H03E(62)	—	—	—	—	—	—
H03F(63)	—	—	—	—	—	—
H040(64)	Initial diameter	Setting	LE7-DCA	1	2000	mmϕ
H041(65)	Material thickness	Setting	LE7-DCA	0	10000	μm
H042(66)	Reel diameter detection 1	Setting	LE7-DCA	0	2000	mmϕ
H043(67)	Reel diameter detection 2	Setting	LE7-DCA	0	2000	mmϕ
H044(68)	Reel diameter detection 3	Setting	LE7-DCA	0	2000	mmϕ
H045(69)	Measurement/remaining length detection 1	Setting	LE7-DCA	0	65000	m
H046(70)	Measurement/remaining length detection 2	Setting	LE7-DCA	0	65000	m
H047(71)	Measurement/remaining length detection 3	Setting	LE7-DCA	0	65000	m
H048(72)	Accelerating judgment acceleration	Setting	LE7-DCA	0	10	m/min/sec
H049(73)	Reel rotational speed gain	Setting	LE7-DCA	0	150	%
H04A(74)	Reel rotational speed bias	Setting	LE7-DCA	0	100	%
H04B(75)	Reel rotational speed startup gain	Setting	LE7-DCA	1	5	Time (s)
H04C(76)	Reel rotational speed startup timer	Setting	LE7-DCA	0	10	sec
H04D(77)	Predrive time	Setting	LE7-DCA	0	200	sec
H04E(78)	Predrive bias	Setting	LE7-DCA	-10	10	%
H04F(79)	—	—	—	—	—	—
H050(80)	Maximum diameter	Setting	—	Minimum diameter	2000	mmϕ
H051(81)	Minimum diameter	Setting	—	1	Maximum diameter	mmϕ
H052(82)	Teaching speed	Setting	LE7-DCA	1	10000	m/min
H053(83)	Velocity electronic gear ratio	Setting	LE7-DCA	9000	18000	%
H054(84)	Reel selection	Setting	LE7-DCA	0(unwinding), 1(winding)		—
H055(85)	Number of reel pulse	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H056(86)	Reel diameter calculation cycle	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H057(87)	MEAS/RMN length calculation switch	Setting	LE7-DCA	0 (measurement length), 1 (remaining length)		—
H058(88)	Material thickness unit	Setting	LE7-DCA	0 (×1), 1 (×0.1)		—
H059(89)	Maximum line acceleration	Setting	LE7-DCA	1	50	m/min/sec
H05A(90)	Maximum reel rotational speed	Setting	LE7-DCA	1	3600	r/min
H05B(91)	Detection output selection	Setting	LE7-DCA	0 (Reel diameter), (measurement length/ remaining length)		—
H05C(92)	Detection output holding selection	Setting	LE7-DCA	0 (non-holding), 1 (holding)		—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H05D(93)	Run/Stop judgment selection	Setting	LE7-DCA	0 (contact + internal), 1 (contact), 2 (internal)		—
H05E(94)	Run judgment speed	Setting	LE7-DCA	Stop judgment speed	30	m/min
H05F(95)	Stop judgment speed	Setting	LE7-DCA	1	Run judgment speed	m/min
H060(96)	—	—	—	—	—	—
H061(97)	—	—	—	—	—	—
H062(98)	—	—	—	—	—	—
H063(99)	—	—	—	—	—	—
H064(100)	—	—	—	—	—	—
H065(101)	—	—	—	—	—	—
H066(102)	—	—	—	—	—	—
H067(103)	—	—	—	—	—	—
H068(104)	—	—	—	—	—	—
H069(105)	—	—	—	—	—	—
H06A(106)	—	—	—	—	—	—
H06B(107)	—	—	—	—	—	—
H06C(108)	—	—	—	—	—	—
H06D(109)	—	—	—	—	—	—
H06E(110)	—	—	—	—	—	—
H06F(111)	—	—	—	—	—	—
H070(112)	Target tension	Monitor	—	0	2000	N/×10 N
H071(113)	Control output	Monitor	—	-1000 or less	1000 or more	%
H072(114)	Torque output	Monitor	—	-1000 or less	1000 or more	%
H073(115)	—	—	—	—	—	—
H074(116)	—	—	—	—	—	—
H075(117)	Control output voltage for powder	Monitor	—	260 or more	0.1	V
H076(118)	Control output current for powder	Monitor	—	400 or more	0.01	A
H077(119)	—	—	—	—	—	—
H078(120)	—	—	—	—	—	—
H079(121)	—	—	—	—	—	—
H07A(122)	—	—	—	—	—	—
H07B(123)	—	—	—	—	—	—
H07C(124)	—	—	—	—	—	—
H07D(125)	—	—	—	—	—	—
H07E(126)	—	—	—	—	—	—
H07F(127)	—	—	—	—	—	—
H080(128)	Tension setting	Setting	—	1	Tension full scale	N/×10 N
H081(129)	Manual setting	Setting	—	-1000	1000	%
H082(130)	Stall setting	Setting	—	0	1000	%
H083(131)	Start timer	Setting	—	0	300	sec
H084(132)	Stop timer	Setting	—	0	1000	sec
H085(133)	Stop gain	Setting	—	5	400	%
H086(134)	Stop bias	Setting	—	0	100	%
H087(135)	Acceleration/deceleration torque setting	Setting	LE7-DCA	0	1000	%
H088(136)	Gain 1	Setting	—	5	400	%
H089(137)	Gain 2	Setting	—	5	400	%
H08A(138)	Internal taper ratio	Setting	—	0	80	%
H08B(139)	External linear line taper ratio	Setting	—	0	100	%
H08C(140)	New reel preset	Setting	—	0	1000	%
H08D(141)	New reel preset timer	Setting	—	0	300	sec
H08E(142)	Cutting torque	Setting	—	0	1000	%

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H08F(143)	—	—	—	—	—	—
H090(144)	Broken line taper corner 1	Setting	—	1	2000	mmϕ
H091(145)	Broken line taper ratio 1	Setting	—	0	100	%
H092(146)	Broken line taper corner 2	Setting	—	1	2000	mmϕ
H093(147)	Broken line taper ratio 2	Setting	—	0	100	%
H094(148)	Broken line taper corner 3	Setting	—	1	2000	mmϕ
H095(149)	Broken line taper ratio 3	Setting	—	0	100	%
H096(150)	Broken line taper corner 4	Setting	—	1	2000	mmϕ
H097(151)	Broken line taper ratio 4	Setting	—	0	100	%
H098(152)	Broken line taper corner 5	Setting	—	1	2000	mmϕ
H099(153)	Broken line taper ratio 5	Setting	—	0	100	%
H09A(154)	Broken line taper corner 6	Setting	—	1	2000	mmϕ
H09B(155)	Broken line taper ratio 6	Setting	—	0	100	%
H09C(156)	Broken line taper corner 7	Setting	—	1	2000	mmϕ
H09D(157)	Broken line taper ratio 7	Setting	—	0	100	%
H09E(158)	Broken line taper corner 8	Setting	—	1	2000	mmϕ
H09F(159)	Broken line taper ratio 8	Setting	—	0	100	%
H0A0(160)	Proportional gain	Setting	—	0	100	%
H0A1(161)	Integral time	Setting	—	0	100	%
H0A2(162)	Dead band gain	Setting	—	0	100 - Proportional gain	%
H0A3(163)	Dead band width	Setting	—	0	100	%
H0A4(164)	Tension control filter	Setting	—	0	40	sec
H0A5(165)	Static mechanical loss A	Setting	—	-1000	1000	%
H0A6(166)	Static mechanical loss B	Setting	—	-1000	1000	%
H0A7(167)	Kinetic mechanical loss A	Setting	LE7-DCA	-1000	1000	%
H0A8(168)	Kinetic mechanical loss B	Setting	LE7-DCA	-1000	1000	%
H0A9(169)	Mass correction gain A	Setting	LE7-DCA	0	100	%
H0AA(170)	Mass correction gain B	Setting	LE7-DCA	0	100	%
H0AB(171)	Mass correction bias A	Setting	LE7-DCA	0	100	%
H0AC(172)	Mass correction bias B	Setting	LE7-DCA	0	100	%
H0AD(173)	—	—	—	—	—	—
H0AE(174)	—	—	—	—	—	—
H0AF(175)	—	—	—	—	—	—
H0B0(176)	Control mode selection	Setting	LE7-DCA	0 (feedback control), 1 (open loop control)		—
H0B1(177)	Integral feedback limit	Setting	—	0	101	%
H0B2(178)	Feedback selection during the stop timer	Setting	—	0 (invalid), 1 (valid)		—
H0B3(179)	Automatic control output polarity selection	Setting	—	0 (forward), 1 (reverse)		—
H0B4(180)	Open-loop control ratio	Setting	LE7-DCA	0	100	%
H0B5(181)	Taper function selection	Setting	—	0 (no function), 1 (internal taper), 2 (linear line taper (external)), 3 (broken line taper (external)), 4 (direct taper)		—
H0B6(182)	Selection of two reel's switching FUNC	Setting	—	0 (invalid), 1 (valid)		—
H0B7(183)	Internal taper standard selection	Setting	—	0 (zero standard), 1 (stall standard)		—
H0B8(184)	—	—	—	—	—	—
H0B9(185)	Mechanical loss function selection	Setting	LE7-DCA	0 (fixed mechanical loss), 1 (high function mechanical loss)		—
H0BA(186)	Stall automatic calculation gain	Setting	LE7-DCA	0	100	%
H0BB(187)	New reel preset AUTO calculation gain	Setting	LE7-DCA	0	100	%
H0BC(188)	Control output upper limit	Setting	—	Control output lower limit	101	%
H0BD(189)	Control output lower limit	Setting	—	-101	Control output upper limit	%
H0BE(190)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0BF(191)	—	—	—	—	—	—
H0C0(192)	Load model	Setting	—	0	200	—
H0C1(193)	Rated current	Setting	—	0	400	A
H0C2(194)	Maximum torque correction	Setting	—	50	250	%
H0C3(195)	Nonlinear correction 0	Setting	—	0	1000	%
H0C4(196)	Nonlinear correction 10	Setting	—	0	1000	%
H0C5(197)	Nonlinear correction 20	Setting	—	0	1000	%
H0C6(198)	Nonlinear correction 30	Setting	—	0	1000	%
H0C7(199)	Nonlinear correction 40	Setting	—	0	1000	%
H0C8(200)	Nonlinear correction 50	Setting	—	0	1000	%
H0C9(201)	Nonlinear correction 60	Setting	—	0	1000	%
H0CA(202)	Nonlinear correction 70	Setting	—	0	1000	%
H0CB(203)	Nonlinear correction 80	Setting	—	0	1000	%
H0CC(204)	Nonlinear correction 90	Setting	—	0	1000	%
H0CD(205)	—	—	—	—	—	—
H0CE(206)	—	—	—	—	—	—
H0CF(207)	—	—	—	—	—	—
H0D0(208)	—	—	—	—	—	—
H0D1(209)	Weak excitation	Setting	—	0	1000	%
H0D2(210)	Over current detection filter	Setting	—	0	20	sec
H0D3(211)	—	—	—	—	—	—
H0D4(212)	—	—	—	—	—	—
H0D5(213)	—	—	—	—	—	—
H0D6(214)	—	—	—	—	—	—
H0D7(215)	—	—	—	—	—	—
H0D8(216)	—	—	—	—	—	—
H0D9(217)	—	—	—	—	—	—
H0DA(218)	—	—	—	—	—	—
H0DB(219)	—	—	—	—	—	—
H0DC(220)	—	—	—	—	—	—
H0DD(221)	—	—	—	—	—	—
H0DE(222)	—	—	—	—	—	—
H0DF(223)	—	—	—	—	—	—
H0E0(224)	Contact input monitor	Monitor	—	0	0xFFFF	—
H0E1(225)	Contact output monitor	Monitor	—	0	0xFFFF	—
H0E2(226)	General-purpose analog input 1 monitor	Monitor	—	0	100	%
H0E3(227)	General-purpose analog input 2 monitor	Monitor	—	0	100	%
H0E4(228)	General-purpose analog input 3 monitor	Monitor	—	0	100	%
H0E5(229)	General-purpose analog output 1 monitor	Monitor	—	0	100	%
H0E6(230)	General-purpose analog output 2 monitor	Monitor	—	0	100	%
H0E7(231)	Analog output monitor for TENS control	Monitor	—	0	100	%
H0E8(232)	Analog output monitor for new reel preset	Monitor	—	0	100	%
H0E9(233)	Contact input monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EA(234)	Contact output monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EB(235)	Alarm display	Monitor	—	0	63	—
H0EC(236)	Network alarm device No.	Monitor	—	0	999	—
H0ED(237)	Main unit ROM version	Monitor	—	0	999	—
H0EE(238)	Network adapter ROM version	Monitor	LE7-CCL	0	999	—
H0EF(239)	Communication signal monitor	Monitor	—	0	0xFFFF	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0F0(240)	Contact input 1 function selection	Setting	—	0 (no function), 1 (run/stop), 2 (control output OFF/ON), 3 (stall memory), 4 (inching ON/OFF), 5 (constant tension ON/OFF), 6 (gain 1 ON/OFF), 7 (gain 2 ON/OFF), 8 (automatic/manual), 9 (reel change ON/OFF), 10 (cut torque ON/OFF), 11 (alarm reset ON/OFF)		—
H0F1(241)	Contact input 2 function selection	Setting	—			—
H0F2(242)	Contact input 3 function selection	Setting	—			—
H0F3(243)	Contact input 4 function selection	Setting	—			—
H0F4(244)	Contact input 5 function selection	Setting	—			—
H0F5(245)	Contact input 6 function selection	Setting	—			—
H0F6(246)	—	—	—	—	—	—
H0F7(247)	—	—	—	—	—	—
H0F8(248)	Contact output 1 function selection	Setting	—	0 (no function), 1 (tension lower limit detection), 2 (tension upper limit detection), 3 (detection outside tension range), 4 (alarm occurrence detection)		—
H0F9(249)	Contact output 2 function selection	Setting	—			—
H0FA(250)	—	—	—	—	—	—
H0FB(251)	—	—	—	—	—	—
H0FC(252)	—	—	—	—	—	—
H0FD(253)	—	—	—	—	—	—
H0FE(254)	—	—	—	—	—	—
H0FF(255)	—	—	—	—	—	—
H100(256)	Analog input mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H101(257)	Analog input 1 function selection	Setting	—	0 (no function), 1 (tension setting), 2 (stall setting), 3 (straight line taper ratio setting), 4 (new axis preset setting), 5 (manual setting), 6 (tension input), 7 (Reel diameter input)		—
H102(258)	Analog input 2 function selection	Setting	—			—
H103(259)	Analog input 3 function selection	Setting	—			—
H104(260)	—	—	—	—	—	—
H105(261)	—	—	—	—	—	—
H106(262)	—	—	—	—	—	—
H107(263)	—	—	—	—	—	—
H108(264)	Analog output mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H109(265)	Analog output 1 function selection	Setting	—	0 (no function), 1 (tension monitor), 2 (Reel diameter monitor), 3 (tension setting monitor), 4 (A-axis Reel shaft rotational speed output), 5 (B-axis Reel shaft rotational speed output)		—
H10A(266)	Analog output 2 function selection	Setting	—			—
H10B(267)	Analog output 1 gain	Setting	—	500	3000	%
H10C(268)	Analog output 2 gain	Setting	—	500	3000	%
H10D(269)	Analog output 1 bias	Setting	—	-500	500	%
H10E(270)	Analog output 2 bias	Setting	—	-500	500	%
H10F(271)	—	—	—	—	—	—
H110(272)	Two reel's switching FUNC output mode	Setting	—	0 (no internal switching), 1 (with internal switching)		—
H111(273)	Control output mode selection	Setting	—	0 (0 to 5 V mode), 1 (-5 to 5 V mode), 2 (0 to 10 V mode), 3 (-10 to 10 V mode), 4 (0 to 8 V mode), 5 (- 8 to 8 V mode), 6 (0 to 2.7 V mode), 7 (-2.7 to 2.7 V mode), 8 (1 to 5 V mode)		—
H112(274)	Control output gain	Setting	—	500	3000	%
H113(275)	New reel preset output gain	Setting	—	500	3000	%
H114(276)	Control output bias	Setting	—	-500	500	%
H115(277)	New reel preset output bias	Setting	—	-500	500	%
H116(278)	—	—	—	—	—	—
H117(279)	—	—	—	—	—	—
H118(280)	—	—	—	—	—	—
H119(281)	—	—	—	—	—	—
H11A(282)	—	—	—	—	—	—
H11B(283)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H11C(284)	—	—	—	—	—	—
H11D(285)	—	—	—	—	—	—
H11E(286)	—	—	—	—	—	—
H11F(287)	—	—	—	—	—	—
H120(288)	Set setting password	Setting	—	0	32000	—
H121(289)	Input setting password	Setting	—	0	32000	—
H122(290)	Set monitor password	Setting	—	0	32000	—
H123(291)	Input monitor password	Setting	—	0	32000	—
H124(292)	—	—	—	—	—	—
H125(293)	—	—	—	—	—	—
H126(294)	—	—	—	—	—	—
H127(295)	—	—	—	—	—	—
H128(296)	—	—	—	—	—	—
H129(297)	—	—	—	—	—	—
H12A(298)	—	—	—	—	—	—
H12B(299)	—	—	—	—	—	—
H12C(300)	—	—	—	—	—	—
H12D(301)	—	—	—	—	—	—
H12E(302)	—	—	—	—	—	—
H12F(303)	—	—	—	—	—	—
H130(304)	Alarm history 1	Monitor	—	0	63	—
H131(305)	Alarm history 2	Monitor	—	0	63	—
H132(306)	Alarm history 3	Monitor	—	0	63	—
H133(307)	Alarm history 4	Monitor	—	0	63	—
H134(308)	Alarm history 5	Monitor	—	0	63	—
H135(309)	Alarm history 6	Monitor	—	0	63	—
H136(310)	Alarm history 7	Monitor	—	0	63	—
H137(311)	Alarm history 8	Monitor	—	0	63	—
H138(312)	Alarm history holding selection	Setting	—	0 (no holding), 1 (holding)		—
H139(313)	Alarm display time	Setting	—	0	301	sec
H13A(314)	Alarm operation selection 1	Setting	—	0	0xFFFF	—
H13B(315)	Alarm operation selection 2	Setting	—	0	0xFFFF	—
H13C(316)	Alarm operation selection 3	Setting	—	0	0xFFFF	—
H13D(317)	Alarm operation selection 4	Setting	—	0	0xFFFF	—
H13E(318)	—	—	—	—	—	—
H13F(319)	—	—	—	—	—	—
H140(320)	—	—	—	—	—	—
H141(321)	—	—	—	—	—	—
H142(322)	—	—	—	—	—	—
H143(323)	—	—	—	—	—	—
H144(324)	—	—	—	—	—	—
H145(325)	—	—	—	—	—	—
H146(326)	—	—	—	—	—	—
H147(327)	—	—	—	—	—	—
H148(328)	—	—	—	—	—	—
H149(329)	—	—	—	—	—	—
H14A(330)	—	—	—	—	—	—
H14B(331)	—	—	—	—	—	—
H14C(332)	—	—	—	—	—	—
H14D(333)	—	—	—	—	—	—
H14E(334)	—	—	—	—	—	—
H14F(335)	—	—	—	—	—	—

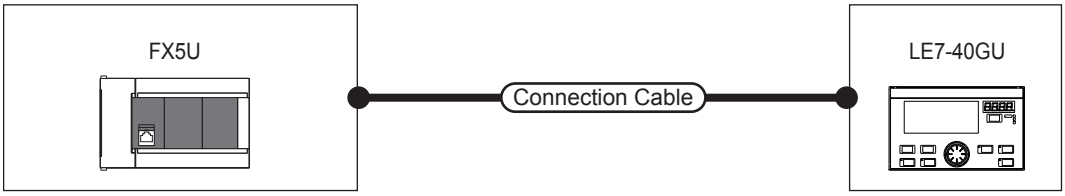
Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H150(336)	—	—	—	—	—	—
H151(337)	—	—	—	—	—	—
H152(338)	—	—	—	—	—	—
H153(339)	—	—	—	—	—	—
H154(340)	—	—	—	—	—	—
H155(341)	—	—	—	—	—	—
H156(342)	—	—	—	—	—	—
H157(343)	—	—	—	—	—	—
H158(344)	—	—	—	—	—	—
H159(345)	—	—	—	—	—	—
H15A(346)	—	—	—	—	—	—
H15B(347)	—	—	—	—	—	—
H15C(348)	—	—	—	—	—	—
H15D(349)	—	—	—	—	—	—
H15E(350)	—	—	—	—	—	—
H15F(351)	—	—	—	—	—	—
H160(352)	—	—	—	—	—	—
H161(353)	—	—	—	—	—	—
H162(354)	—	—	—	—	—	—
H163(355)	—	—	—	—	—	—
H164(356)	—	—	—	—	—	—
H165(357)	—	—	—	—	—	—
H166(358)	—	—	—	—	—	—
H167(359)	—	—	—	—	—	—
H168(360)	—	—	—	—	—	—
H169(361)	—	—	—	—	—	—
H16A(362)	—	—	—	—	—	—
H16B(363)	—	—	—	—	—	—
H16C(364)	—	—	—	—	—	—
H16D(365)	—	—	—	—	—	—
H16E(366)	—	—	—	—	—	—
H16F(367)	—	—	—	—	—	—
H170(368)	—	—	—	—	—	—
H171(369)	—	—	—	—	—	—
H172 (370)	—	—	—	—	—	—
H173(371)	—	—	—	—	—	—
H174(372)	—	—	—	—	—	—
H175(373)	—	—	—	—	—	—
H176(374)	—	—	—	—	—	—
H177(375)	—	—	—	—	—	—
H178(376)	—	—	—	—	—	—
H179(377)	—	—	—	—	—	—
H17A(378)	—	—	—	—	—	—
H17B(379)	—	—	—	—	—	—
H17C(380)	—	—	—	—	—	—
H17D(381)	—	—	—	—	—	—
H17E(382)	—	—	—	—	—	—
H17F(383)	—	—	—	—	—	—
H180(384)	Open-loop control base torque	Setting	LE7-DCA	0	1000	%
H181(385)	Direct taper ratio	Setting	—	0	1000	%
H182(386)	Link tension monitor filter	Setting	—	0	80	sec
H183(387)	Tension input	Setting	—	0	2000	N/×10 N

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H184(388)	Reel diameter input	Setting	—	0	2000	mmϕ
H185(389)	—	—	—	—	—	—
H186(390)	—	—	—	—	—	—
H187(391)	—	—	—	—	—	—
H188(392)	—	—	—	—	—	—
H189(393)	—	—	—	—	—	—
H18A(394)	—	—	—	—	—	—
H18B(395)	—	—	—	—	—	—
H18C(396)	—	—	—	—	—	—
H18D(397)	—	—	—	—	—	—
H18E(398)	—	—	—	—	—	—
H18F(399)	—	—	—	—	—	—

6.4 Reference Program

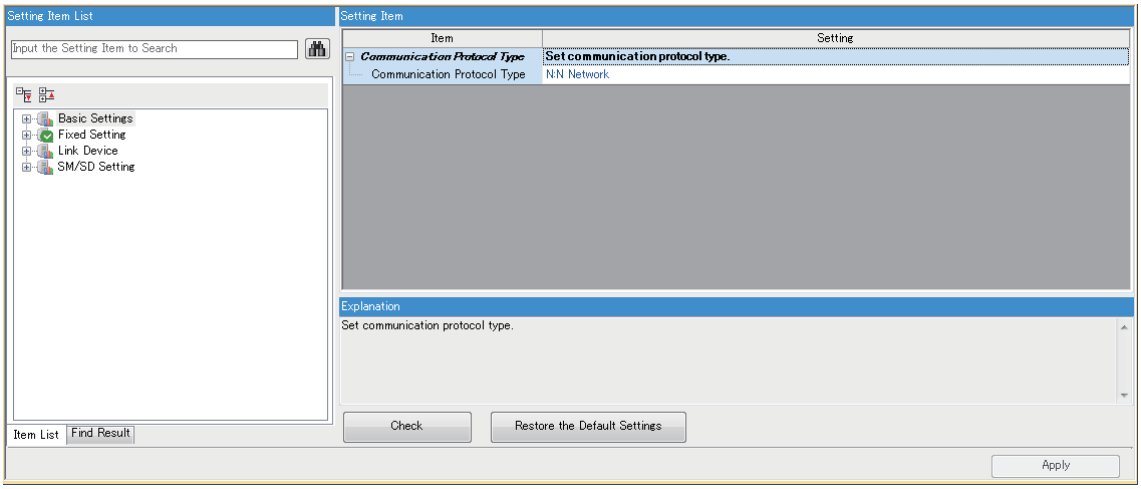
A basic example program (GX Works3) for N:N Network is described.

System configuration



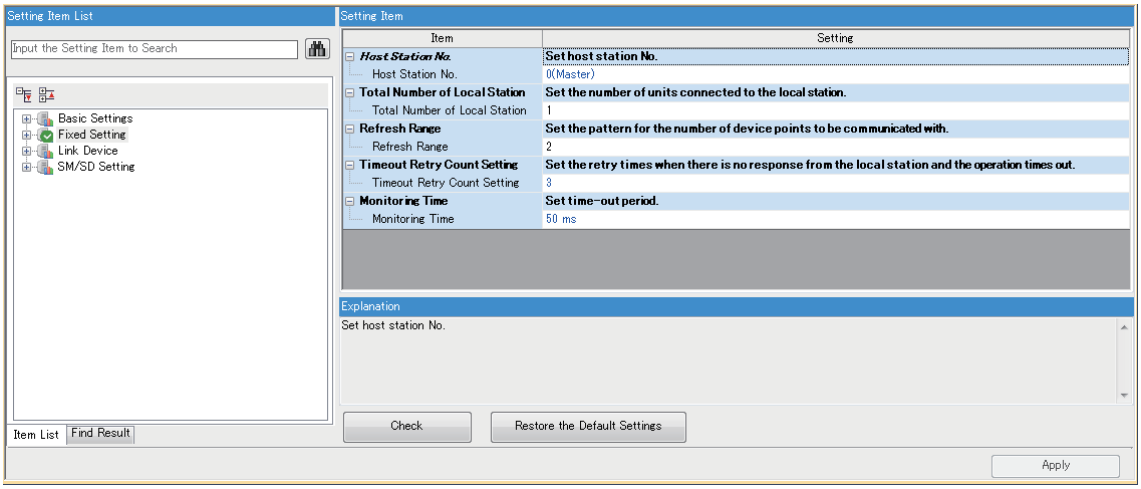
Setting

■Basic settings



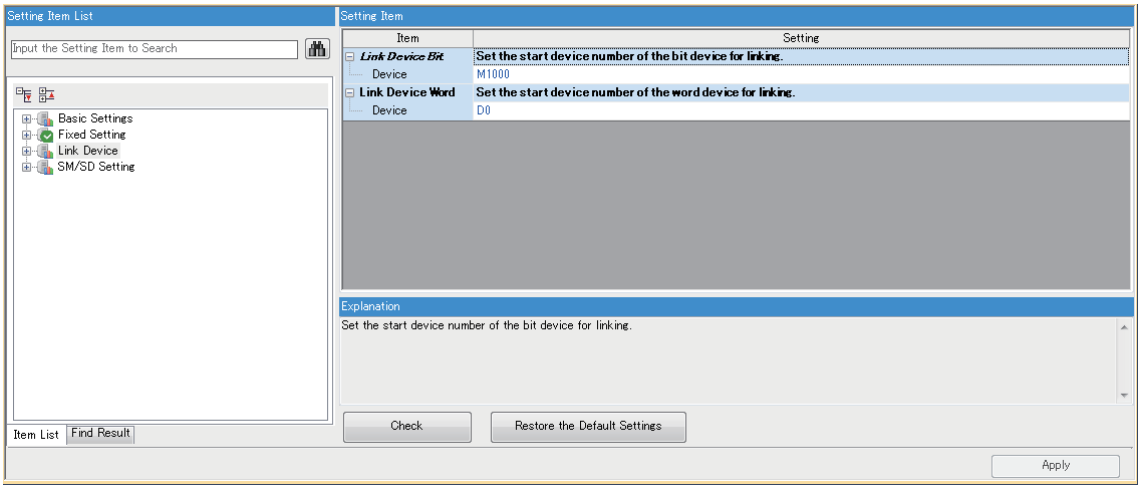
Item	Setting
Communication protocol type	N:N Network

■Fixed setting



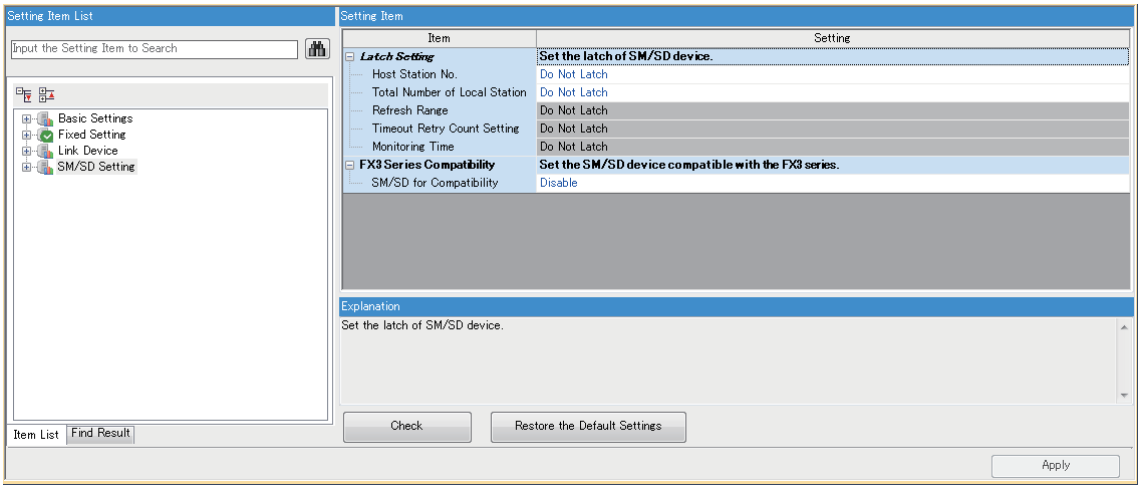
Item	Setting
Host station No.	0(master)
Total number of local station	1
Refresh range	2
Timeout retry count setting	3
Monitoring time	50 ms

■Link device



Item	Setting
Link device bit	M1000
Link device word	D0

■SM/SD setting



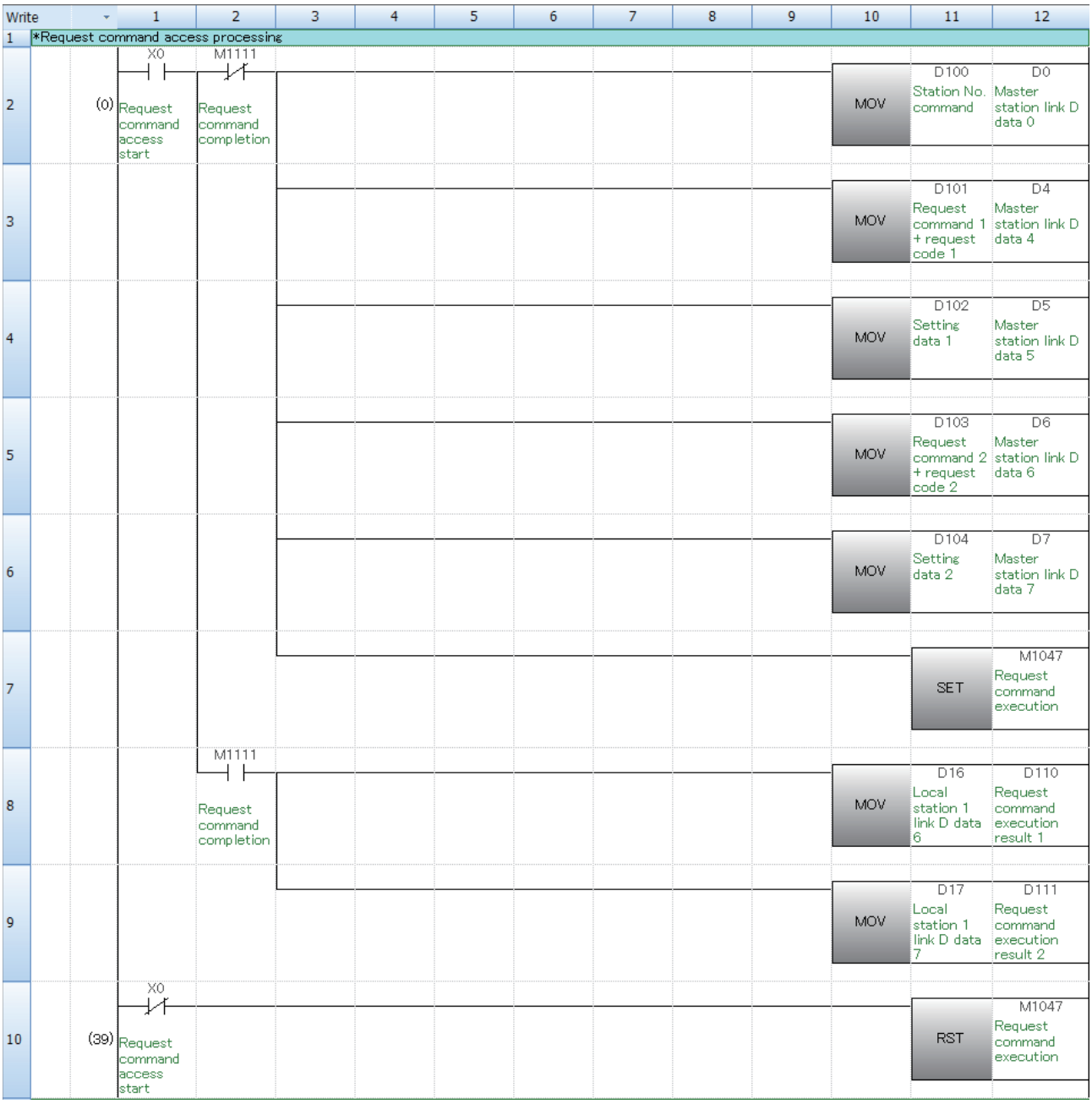
Latch setting

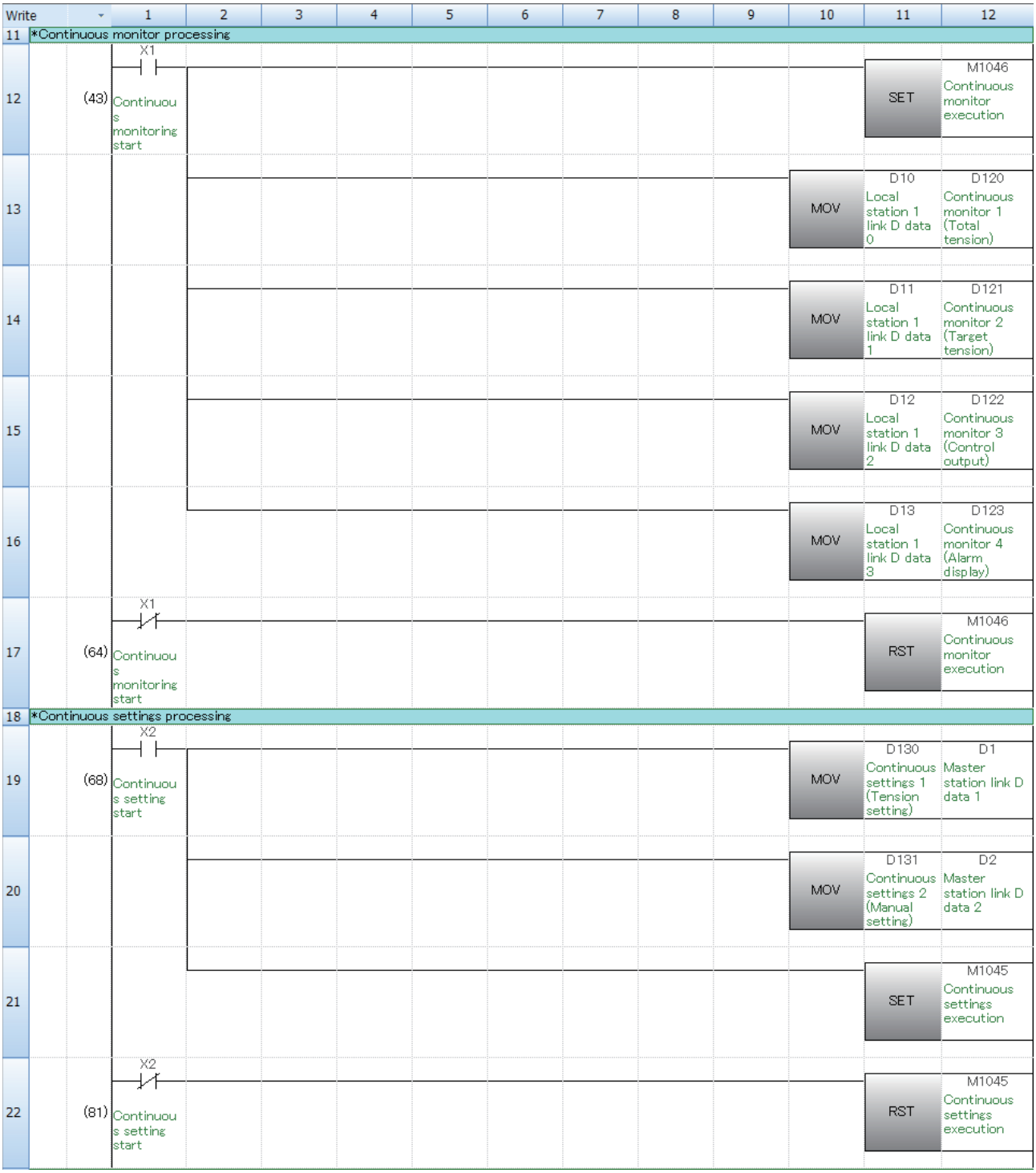
Item	Setting
Host station No.	Do not latch
Total number of local station	Do not latch

FX3 series compatibility

Item	Setting
SM/SD for compatibility	Disable

Program example




Write
1
2
3
4
5
6
7
8
9
10
11
12
11 *Continuous monitor processing
X1
12 (43) Continuous monitoring start
SET M1046 Continuous monitor execution
13 MOV D10 Local station 1 link D data 0 D120 Continuous monitor 1 (Total tension)
14 MOV D11 Local station 1 link D data 1 D121 Continuous monitor 2 (Target tension)
15 MOV D12 Local station 1 link D data 2 D122 Continuous monitor 3 (Control output)
16 MOV D13 Local station 1 link D data 3 D123 Continuous monitor 4 (Alarm display)
X1
17 (64) Continuous monitoring start
RST M1046 Continuous monitor execution
18 *Continuous settings processing
X2
19 (68) Continuous setting start
MOV D130 Continuous settings 1 (Tension setting) D1 Master station link D data 1
20 MOV D131 Continuous settings 2 (Manual setting) D2 Master station link D data 2
21 SET M1045 Continuous settings execution
X2
22 (81) Continuous setting start
RST M1045 Continuous settings execution

Write
1
2
3
4
5
6
7
8
9
10
11
12
23 *Feedback control sequence processing
X3
24 (85) Stall start
SET
M1003
Auto/Manual
X4
25 Start the controller.
SET
M1000
Run/Stop
X4
26 Start the controller.
RST
M1000
Run/Stop
X3
27 (100) Stall start
RST
M1000
Run/Stop
28
RST
M1003
Auto/Manual
29 *Status monitoring processing
M1064
30 (106) Run/Stop
Y10
Running lamp
M1072
31 (111) Manual control
Y11
Manual control lamp
M1073
32 (115) Automatic control
Y12
Automatic control lamp
M1074
33 (119) Auto lamp flicker in operation/ stopped
Y13
Auto lamp flicker in operation lamp
M1111
34 (123) Request command completion
Y14
Request command completion lamp
M1110
35 (127) Continuous monitor being executed
Y15
Continuous monitor being executed lamp
M1109
36 (131) Continuous settings being executed
Y16
Continuous settings being executed lamp
37 (135)
[END]

Using method of ladder

Required data is stored to D100 to D131, and each function is executed in X0 to X4.

List of used devices (The allocation is an example.)

Device name	Classification*1	Allocation function	Use
D100	Setting	Station No. command	Device set for individual access to each station No.
D101 to D104	Setting	Request command + request code/data setting 1 to 2	Device set to use the request command
D110 to D111	Monitoring	Request command execution result 1 to 2	Request command execution result is stored.
D120 to D123	Monitoring	Continuous monitor 1 to 4	Continuous monitor execution result is stored.
D130 to D131	Setting	Continuous setting 1 to 2	Setting value of continuous setting is stored.
X0	Setting	Start request command access execution	Execute request command.
X1	Setting	Start continuous monitor execution	Start to execute continuous monitor.
X2	Setting	Start continuous setting execution	Start to execute continuous setting.
X3	Setting	Start stall execution	Start to execute stall.
X4	Setting	Start operation	Start to operate.
Y10	Monitoring	Run	Run: ON/Stop: OFF
Y11	Monitoring	Manual control	Manual control ON
Y12	Monitoring	Automatic control	Automatic control ON
Y13	Monitoring	Auto lamp flicker in operation	Auto lamp flicker in operation ON
Y14	Monitoring	Request command completion	ON when request command is completed
Y15	Monitoring	Continuous monitor being executed	ON when continuous monitor is being executed.
Y16	Monitoring	Continuous settings being executed	ON when continuous setting is being executed.

*1 Classification
Setting: items to be set/input when using functions
Monitoring: items to monitor output when using functions

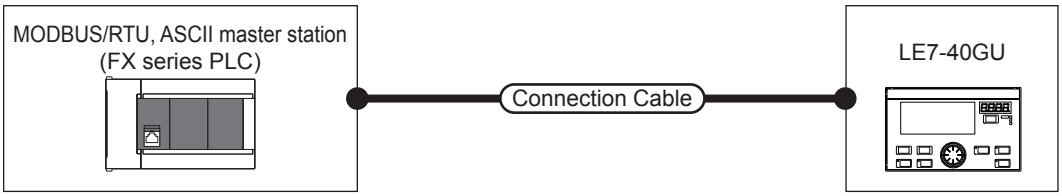
7 MODBUS/RTU, ASCII (SLAVE)

LE7-40GU can be operated as a slave station for MODBUS/RTU and ASCII communication.
Data monitoring and parameter writing from a master station for up to 247 slave stations (LE7-40GU units) can be carried out.

Precautions

- For 5 seconds after turning on the power of LE7-40GU, data from master station will not be accepted.
- Initial setting of LE7-40GU can not be done only by MODBUS communication.
- Simultaneous use of MODBUS communication and CC-Link communication is not possible.

7.1 System Configuration



Connection equipment	Communication form	Connection cable		Tension controller (Slave station)		Number of connectable devices
		Cable type name	Longest distance	Optional equipment	Main unit	
MODBUS/RTU, ASCII master device	RS-485	User created	1200 m*1	— (Built-in to main unit)	LE7-40GU	Up to 247 slave stations (LE7-40GU) from the master station

*1 The shortest specification on the MODBUS/RTU master device side takes precedence.

7.2 Wiring

This section describes wiring.

Selection of cable

Use the following procedure to select cables.

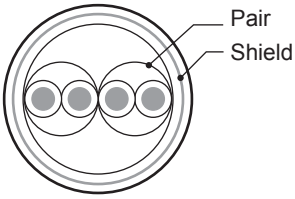
Twisted pair cable

Use a shield twisted pair wire for connection with RS-485 communication equipment.

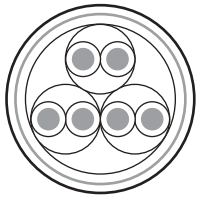
■RS-485 cable specification

Item	Specifications
Cable type	Shielded cable
Pairs	2 p, 3 p
Conductor resistance (20℃)	88.0 Ω/km or less
Insulation resistance	10000 MΩ-km or more
Withstand voltage	500 V DC 1 minute
Capacitance (1 kHz)	An average of 60 nF/km or less
Characteristic impedance (100 kHz)	110±10 Ω

■Construction drawing of the cables (reference)



Construction drawing example of
a two twisted-pair cable



Construction drawing example of
a three twisted-pair cable

Spring clamp terminal block

Connection to LE7-40GU should be performed as the following procedure.

■Wire size

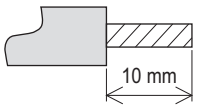
No. of wire per terminal	Wire size		
	Single wire/Strandwire	Ferrules with insulation sleeve	Ferrules withoutinsulation sleeve
One wire	AWG24 to 16	AWG23 to 16	AWG23 to 16

■Treatment of wire ends

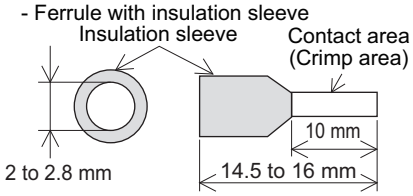
Strip the cable about 10 mm from the tip to connect a wire ferrule at the striped area. Failure to do so may result in electric shock or short circuit between adjacent terminals because of the conductive part. If the wire strip length is too short, it may result in the poor contact to the spring clamp terminal part.

When using a wire ferrule with an insulating sleeve, choose a wire with proper cable sheath referring to the above outside dimensions, otherwise the wire cannot be inserted easily.

- Strand wire/single wire



- Ferrule with insulation sleeve



The following table shows wire ferrules and tools for wire ferrules compatible with the terminal block. Use of items other than these may result in not being able to remove the wire ferrule, so carefully check that the wire ferrule can be unplugged.

<Reference product>

Manufacturer	Model	Wire size	Crimp tool
PHOENIX CONTACT GmbH & Co. KG	AI 0.5-10 WH	0.5 mm^2	CRIMPFOX 6
	AI 0.75-10 GY	0.75 mm^2	
	A 1.0-10	1.0 mm^2	
	A 1.5-10	1.5 mm^2	

■Connection and disconnection of the cable

Spring clamp terminal block is push-in type, therefore, wiring without a tool is possible by simply inserting the connecting terminal to the terminal block. However, the stranded wire does not comply with the push-in type, and a tool is required for connecting cables.

• Connection of the cable

Fully insert a cable or bar solderless terminal whose end has been properly processed into the wire insertion opening.

If the cable or bar solderless terminal cannot be inserted with this procedure, fully insert the cable or bar solderless terminal while pushing the open/close button with a flathead screwdriver having a tip width of 2.0 to 2.5 mm. After fully inserting the cable, remove the screwdriver.

Do not tighten terminal screws exceeding the specified torque range. Otherwise it may cause equipment failure or malfunction.

When wiring with the thick electric wire, make sure to prevent the conductive parts from protruding to the front of the terminal block.

<Reference>

Manufacturer	Model
PHOENIX CONTACT GmbH & Co. KG	SZS 0.4×2.5 VDE

• Disconnection of the cable

While pushing the open/close button with a flathead screwdriver having a tip width of 2.0 to 2.5 mm, disconnect the cable or bar solderless terminal.

Terminating resistor settings

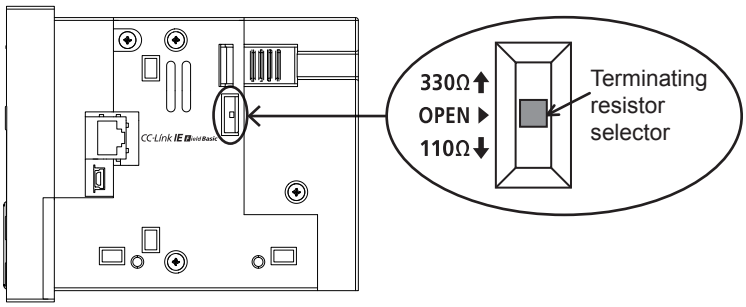
Be sure to install terminating resistors at both ends of the line.

LE7-40GU, the built-in RS-485 port of the CPU module, FX5-485-BD, and FX5-485ADP, have built-in terminating resistors.

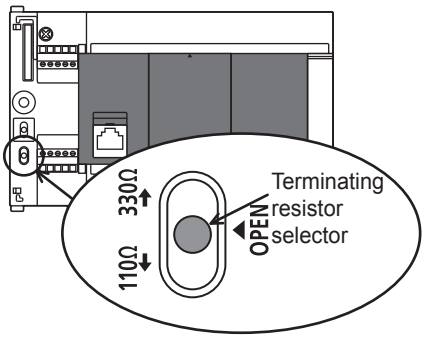
Set the terminating resistance with the terminating resistor changeover switch.

Wiring	Termination resistance changeover switch
Two-pair wiring	330 Ω
One-pair wiring	110 Ω

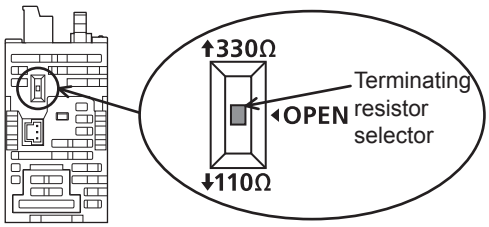
■LE7-40GU (Left side)



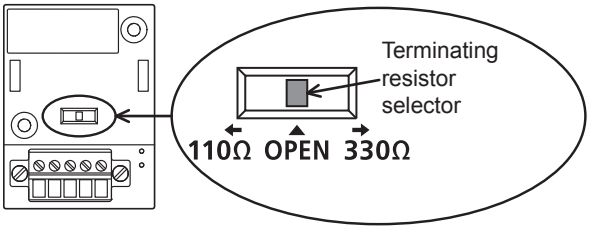
■FX5U CPU module built-in RS-485 port



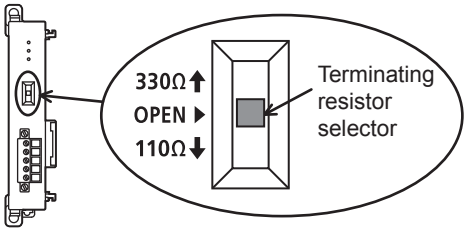
■FX5UC CPU module built-in RS-485 port



■FX5-485-BD



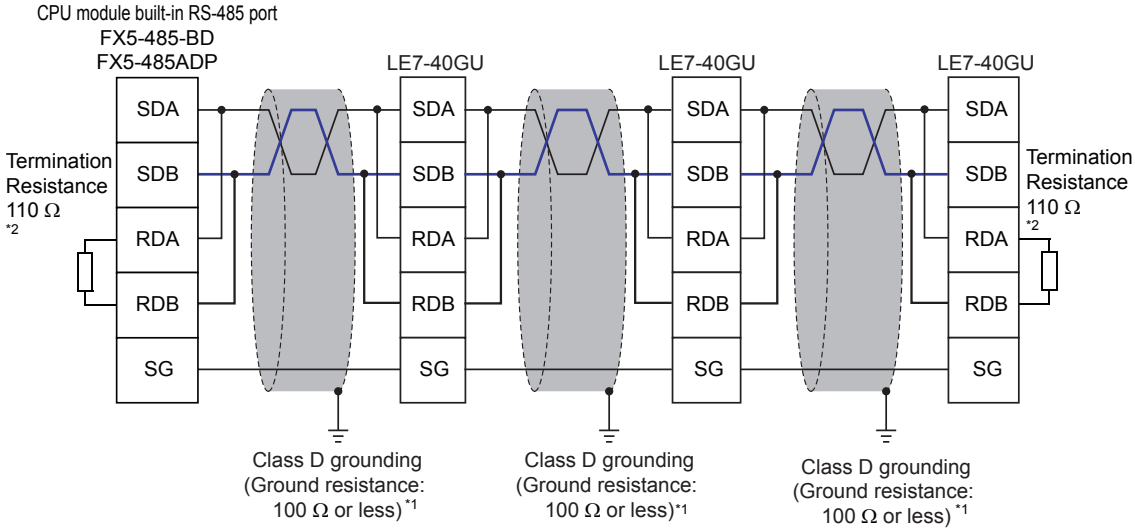
■FX5-485ADP



Connection diagram

The wiring shown below is a wiring example when the master station is an FX series PLC. If the pin number of the partner side is different, please wire as shown below according to the pin name.

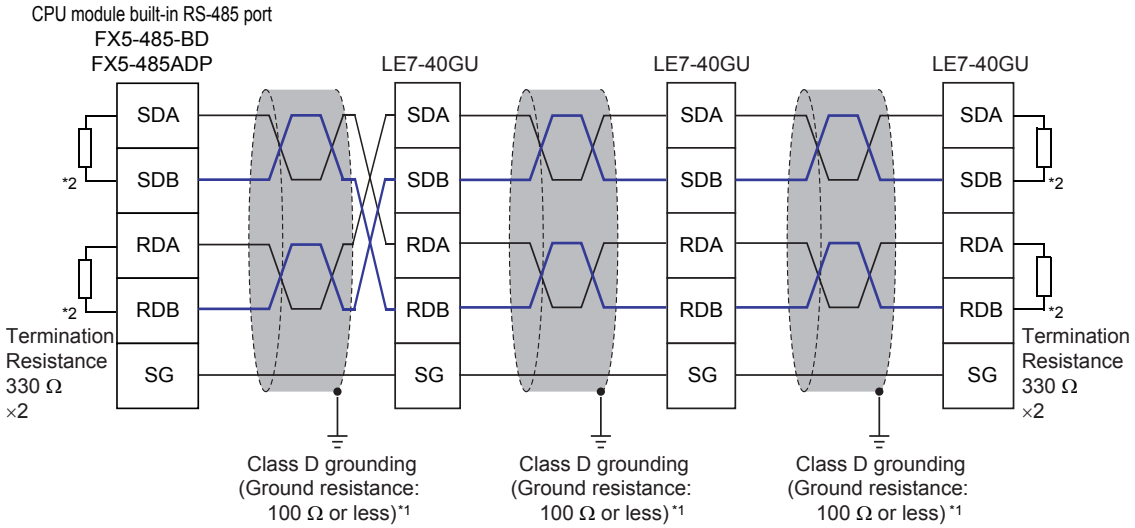
One-pair wiring (master station: FX series PLC)



*1 Be sure to apply Class D grounding to the shield of the twisted pair cable to be connected.

*2 Terminal resistor should be attached to both ends of the line. LE7-40GU, the built-in RS-485 port of the CPU module, FX5-485-BD, and FX5-485ADP, have built-in terminating resistors. Set the terminating resistor selector to 110Ω.

Two-pair wiring (master station: FX series PLC)



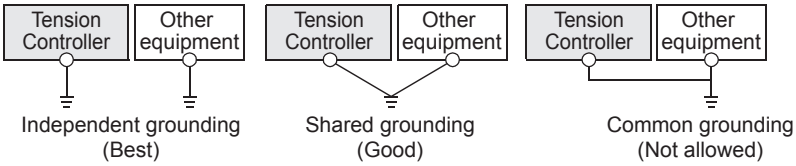
*1 Be sure to apply Class D grounding to the shield of the twisted pair cable to be connected.

*2 Terminal resistor should be attached to both ends of the line. LE7-40GU, the built-in RS-485 port of the CPU module, FX5-485-BD, and FX5-485ADP, have built-in terminating resistors. Set the terminating resistor selector to 330Ω.

Grounding

Grounding should be performed as stated below.

- Perform Class D grounding. (Ground resistance: 100 Ω or less)
- Independent grounding should be performed for best results.
- When independent grounding cannot be performed, perform "shared grounding" as shown in the following figure.



The grounding wire size should be AWG 24 to 16 (cross-section area: 0.2 to 1.5 mm^2).

The grounding point should be close to the tension controller, and all grounding wires should be as short as possible.

7.3 Communication Setting

Communication specifications

The communication specifications of MODBUS/RTU, ASCII communication are as follows.

Communication specifications

Item		Specifications
Transmission standard		RS-485 standard
Channels		1 channel
Transmission specifications	Communication method	Single master/multislave system
	Wiring method	One-pair wiring, two-pair wiring
	Transmission speed (baud rate)	The following can be chosen from. 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 (bps)
	Data length*1	7 or 8 bits
	Frame mode	RTU or ASCII
Slave function (LE7-40GU)	Number of request messages that can be simultaneously accepted	1 request
	Station No.	1 to 247
	Maximum size of data that can be written	64 words*2 or 1968 coils
	Maximum size of data that can be read	125 words or 2000 coils

*1 In RTU mode, set the data length to 8 bits.

*2 Maximum number of write words in one communication of LE7-40GU.

Used coil/holding register

The coil and holding register used for MODBUS communication of LE7-40GU are as follows.

The coil is an area to store bit data and the holding register is an area to store word data. Each slave station has coils from H0000 to H02F and H1000 to H102F as well as holding registers from H0000 to H015F and H1000 to H115F.

The usage of each kind of address is as follows.

- Coil (for Master station→Slave station)

An area in which the master station writes an instruction to the slave station

- Coil (for Slave station→Master station)

An area in which the slave station writes the execution result of the instruction from the master station.

By reading the area of this coil from the master station, it becomes possible to monitor the instruction execution result of the slave station by the master station.

• Holding register (for master station monitoring)

The status of the slave station monitored by the master station is stored in this area.

Slave station monitoring is performed by the master station by reading the area of the holding register by the master station.

• Holding register (for slave station RAM write)

An area to store data to be written to the RAM of the slave station.

• Holding register (for slave station RAM + ROM write)

An area to store the data to be written to the RAM and ROM of the slave station.

Type		Address	Data reading/writing by the master station
Coil (bit data)	For Master station→Slave station	H0000 to H002F	Writable
	For Slave station→Master station	H1000 to H102F	Readable
Holding register (word data)	For monitoring by the master station	H0000 to H015F	Readable
	For writing to RAM in the slave station		Readable/Writable
	For writing to RAM + ROM in the slave station	H1000 to H115F	Writable

Frame specifications

The frame specification of MODBUS communication is shown below.

The frame specification detail is as below.

No.	Area name	Direction	Contents
1	Address field	Master station→Slave station	0: Broadcast 1 to 247: Send the request message to the specified slave station.
		Slave station→Master station	Returns the own station No. of the slave station.
2	Function code	Master station→Slave station	Specify the function code that the master station instructs for the slave station.
		Slave station→Master station	• Normal completion: Returns the function code at the time of request. • Abnormal completion: Returns with the most significant bit ON.
3	Data	Master station→Slave station	Stores information for executing the function specified in the function code.
		Slave station→Master station	• Normal completion: Returns the execution result of the function specified by the function code. • Abnormal completion: Returns the error response code.
4	Error checking	Master station→Slave station	The sender computes the error check bit and gives it.
		Slave station→Master station	

Frame mode

There are two kinds of frame modes for the message which reads/writes the coil and holding registers.

■RTU mode

In RTU mode, frames are transmitted in binary code.

When the message is interrupted for a time corresponding to the communication time (depending on the transmission speed) of 3.5 characters, it is regarded as the end of the message.

Start	Address field	Function code	Data	Error check (CRC)	End (Start)	Address field
Interval of 3.5 character time or more	1 byte	1 byte	0 to 252 bytes	2 bytes	Interval of 3.5 character time or more	1 byte

■ASCII mode

This mode is used to transmit and receive frames in ASCII code characters (2 bytes).

Start	Address field	Function code	Data	Error check (LRC)	End
1 byte (3AH)	2 bytes	2 bytes	N×2 bytes (N=0 to 252)	2 bytes	2 bytes ((0DH)+(0AH))

List of supported MODBUS standard functions

The following table lists supported MODBUS standard functions.

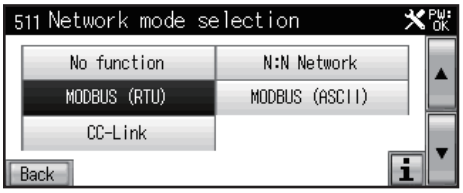
Function code	Function name	Description	Number of devices accessible in one message	Broadcast
01H	Coil reading	Coil reading (multiple points possible)	1 to 2000 points	×
03H	Holding register reading	Holding register reading (multiple points possible)	1 to 125 points	×
05H	Single coil writing	Coil writing (1 point only)	1 point	○
06H	Single register writing	Holding register writing (1 point only)	1 point	○
0FH	Multiple coil writing	Multiple point coil writing	1 to 1968 points	○
10H	Multiple register writing	Multiple point holding register writing	1 to 64 points	○

Communication parameter settings

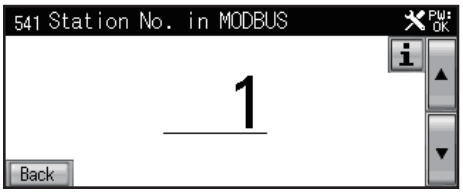
With this communication function, communication setting of LE7-40GU is necessary.

Communication setting procedure

1. Select "MODBUS (RTU)" or "MODBUS (ASCII)" on the "Network mode selection" screen of the LE7-40GU screen.

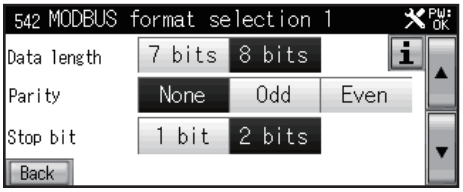


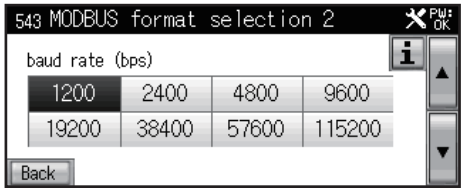
2. According to the slave station No. to be assigned, change "Station No. in MODBUS" on the LE7-40GU screen, in accordance with the slave station No. to be assigned to a value within "1" to "247"[*1] .



*1 If the set value is "0", MODBUS will not operate.

3. Change with "MODBUS format selection" on the LE7-40GU screen according to the communication format to be used.





Bit	Name	Description	
		0 (bit=OFF)	1 (bit=ON)
b0	Data length[*1]	7 bit	8 bits
b1 b2	Parity	b2, b1 (0, 0): Unavailable (0, 1): Odd (1, 0): Unavailable[*2] (1, 1): Even	
b3	Stop bit	1 bit	2 bits
b4 b5 b6 b7	Baud rate (bps)	b7, b6, b5, b4 (0, 0, 0, 0): Unavailable[*2] (0, 0, 0, 1): Unavailable[*2] (0, 0, 1, 0): Unavailable[*2] (0, 0, 1, 1): Unavailable[*2] (0, 1, 0, 0): Unavailable[*2] (0, 1, 0, 1): 1200 (0, 1, 1, 0): 2400 (0, 1, 1, 1): 4800	b7, b6, b5, b4 (1, 0, 0, 0): 9600 (1, 0, 0, 1): 19200 (1, 0, 1, 0): 38400 (1, 0, 1, 1): 57600 (1, 1, 0, 0): Unavailable[*2] (1, 1, 0, 1): 115200 (1, 1, 1, 0): Unavailable[*2] (1, 1, 1, 1): Unavailable[*2]
b8 to b15	Unavailable	—	

*1 When setting network mode selection to 3: MODBUS (RTU), data length (b0)=7 bits cannot be set.

*2 When parity (b1-2) and baud rate (b4-7) are made unavailable, network mode selection=0 (no function), N:N Network station No.=1, MODBUS station No.=1, MODBUS communication format=0x0051 can be rewritten at the next power ON after the setting.

4. Restart LE7-40GU.

Data exchange between the master station and the slave station

The master station reads and writes data from/to the coil and holding registers of the slave station, enabling monitoring of the slave station and setting of parameters.

Coil (bit data)

■Coil for Master station→Slave station

An area used to write instructions to the slave station.

■Coil for Slave station→Master station

The execution result of the instruction is an area for writing.

Holding register (word data)

■For monitoring by the master station

The status of the slave station monitored by the master station is stored in this area.

■For writing to RAM in the slave station

Data to be written to the RAM in the slave station is stored in this area.

RAM writing data is reflected in the settings, but is not stored in the case of power failure.

It can be written only to LE7-40GU.

■For writing to RAM + ROM in the slave station

An area to store data to perform the above RAM writing + data power failure writing.

In the ROM for storage against power interruption, the allowable number of times of writing is limited. Accordingly, data cyclically written and updated by the PLC must be written only to the RAM.

Point

- The numerical value of each parameter is treated as real data without a decimal point. The data defines the minimum value and the maximum value within LE7-40GU and automatically rewrites it to the minimum value or the maximum value when writing data outside the range. At that time, a network alarm "22" is output to the alarm display (H00EB) of the holding register.
- For holding registers where change of password of monitor, parameter list of setting items="○", if the password setting and the password input do not match, the holding register cannot be written to, the monitor value of the holding register is rewritten with a numerical value of maximum value +1, and the set numerical value can no longer be monitored.
- If an error occurs triggered by the request from the master station, the slave station turns ON the coil of the network alarm occurrence flag (H101A), and outputs the address of the holding register that has the error to the holding register of the device number of the network alarm (H00EC).

• Configuration of coil (from master station to slave station)

The configuration of the coil is as follows.

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
H0000(0)	Run/Stop	Run	Stop
H0001(1)	Reel change B axis/A axis	B axis control	A axis control
H0002(2)	Control output OFF/ON	Control output OFF	Control output ON
H0003(3)	Auto/Manual	Automatic control	Manual control
H0004(4)	Stall memory ON/OFF	Stall memory ON	Stall memory OFF
H0005(5)	Gain 1 ON/OFF	Gain 1 ON	Gain 1 OFF
H0006(6)	Gain 2 ON/OFF	Gain 2 ON	Gain 2 OFF
H0007(7)	Inching ON/OFF	Inching ON	Inching OFF
H0008(8)	Cutting torque ON/OFF	Cutting torque ON	Cutting torque OFF
H0009(9)	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
H000A(10)	Predrive ON/OFF	Predrive ON	Predrive OFF
H000B(11)	Memory hold ON/OFF	Memory hold ON	Memory hold OFF
H000C(12)	Reverse run/Forward run	Reverse run operation	Forward run operation
H000D(13)	—	—	—
H000E(14)	—	—	—
H000F(15)	—	—	—
H0010(16)	Alarm reset ON/OFF	Alarm reset ON	Alarm reset OFF
H0011(17)	Reel diameter reset ON/OFF	Reel diameter reset ON	Reel diameter reset OFF
H0012(18)	Measurement length and remaining length reset ON/OFF	Measurement length and remaining length reset ON	Measurement length and remaining length reset OFF
H0013(19)	—	—	—
H0014(20)	—	—	—
H0015(21)	—	—	—
H0016(22)	—	—	—
H0017(23)	—	—	—
H0018(24)	Zero adjustment execution	Execution	Normal
H0019(25)	Span adjustment execution	Execution	Normal
H001A(26)	Maximum diameter teaching execution	Start maximum diameter teaching execution	Normal
H001B(27)	Minimum diameter teaching execution	Start minimum diameter teaching execution	Normal
H001C(28)	Control gain tuning execution	Start control gain tuning execution	Normal
H001D(29)	Speed teaching execution	Start speed teaching execution	Normal
H001E(30)	—	—	—
H001F(31)	—	—	—
H0020(32)	Data copy execution	Start data copy execution	Normal
H0021(33)	Data initial execution	Start data initial execution	Normal
H0022(34)	—	—	—
H0023(35)	—	—	—
H0024(36)	—	—	—
H0025(37)	—	—	—
H0026(38)	—	—	—
H0027(39)	—	—	—
H0028(40)	—	—	—
H0029(41)	—	—	—
H002A(42)	—	—	—
H002B(43)	—	—	—
H002C(44)	Link tension monitor digit ×10/×1	Link tension monitor digit ×10	Link tension monitor digit ×1
H002D(45)	Continuous settings execution	Start continuous settings execution	Normal
H002E(46)	Continuous monitor execution	Start continuous monitor execution	Normal
H002F(47)	Request command execution	Start request command execution	Normal
H0030 (48) to H003F (63)	System use area		

• Configuration of coil (from slave station to master station)

The configuration of the coil is as follows.

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
H1000(4096)	Run/Stop	Run	Stop
H1001(4097)	Output ON/OFF	Output ON	Output OFF
H1002(4098)	B-axis controlled/A-axis controlled	B-axis controlled	A-axis controlled
H1003(4099)	Constant tension ON/OFF	Constant tension ON	Constant tension OFF
H1004(4100)	Predrive being executed	Predrive being executed	Normal
H1005(4101)	Memory hold being executed	Memory hold being executed	Normal
H1006(4102)	Reverse running/Forward running	Reverse running	Forward running
H1007(4103)	—	—	—
H1008(4104)	Manual control	Manual control	—
H1009(4105)	Automatic control	Automatic control	—
H100A(4106)	Auto lamp flicker in operation/ stopped	Auto lamp flicker in operation	Auto lamp flicker stopped
H100B(4107)	Stall setting output being executed	Stall setting output being executed	Normal
H100C(4108)	Stall memory output being executed	Stall memory output being executed	Normal
H100D(4109)	Start timer operation being executed	Start timer operation being executed	Normal
H100E(4110)	Stop timer operation being executed	Stop timer operation being executed	Normal
H100F(4111)	Preset timer operation being executed	Preset timer operation being executed	Normal
H1010(4112)	Cut torque operation being executed	Cut torque operation being executed	Normal
H1011(4113)	Inching operation being executed	Inching operation being executed	Normal
H1012(4114)	—	—	—
H1013(4115)	Zero adjustment being executed	Zero adjustment being executed	Normal
H1014(4116)	Span adjustment being executed	Span adjustment being executed	Normal
H1015(4117)	Maximum diameter teaching being executed	Speed teaching being executed	Normal
H1016(4118)	Minimum diameter teaching being executed	Speed teaching being executed	Normal
H1017(4119)	Control gain tuning being executed	Control gain tuning being executed	Normal
H1018(4120)	Speed teaching being executed	Speed teaching being executed	Normal
H1019(4121)	Tension upper limit detection ON/ OFF	Tension upper limit detection ON	Tension upper limit detection OFF
H101A(4122)	Tension lower limit detection ON/OFF	Tension lower limit detection ON	Tension lower limit detection OFF
H101B(4123)	Detection outside tension range ON/ OFF	Detection outside tension range ON	Detection outside tension range OFF
H101C(4124)	Reel diameter detection 1 ON/OFF	Reel diameter detection 1 ON	Reel diameter detection 1 OFF
H101D(4125)	Reel diameter detection 2 ON/OFF	Reel diameter detection 2 ON	Reel diameter detection 2 OFF
H101E(4126)	Reel diameter detection 3 ON/OFF	Reel diameter detection 3 ON	Reel diameter detection 3 OFF
H101F(4127)	Measurement length/remaining length detection 1 ON/OFF	Measurement length/remaining length detection 1 ON	Measurement length/remaining length detection 1 OFF
H1020(4128)	Measurement length/remaining length detection 2 ON/OFF	Measurement length/remaining length detection 2 ON	Measurement length/remaining length detection 2 OFF
H1021(4129)	Measurement length/remaining length detection 3 ON/OFF	Measurement length/remaining length detection 3 ON	Measurement length/remaining length detection 3 OFF
H1022(4130)	Peripheral speed synchronization detection ON/OFF	Peripheral speed synchronization detection ON	Peripheral speed synchronization detection OFF
H1023(4131)	Alarm occurrence detection	Alarm occurrence	Normal
H1024(4132)	Parameter protection being executed	Parameter protection being executed	Normal
H1025(4133)	Settings password matching being executed	Settings password matching being executed	Settings password does not match
H1026(4134)	Monitor password matching being executed	Monitor password matching being executed	Monitor password does not match
H1027(4135)	—	—	—
H1028(4136)	Data copy being executed	Data copy being executed	Normal
H1029(4137)	Data initial being executed	Data initial being executed	Normal

Device No.	Signal name	Signal name ON (data value=1)	OFF (data value=0)
H102A(4138)	—	—	—
H102B(4139)	—	—	—
H102C(4140)	—	—	—
H102D(4141)	Continuous settings being executed	Continuous settings being executed	Normal
H102E(4142)	Continuous monitor being executed	Continuous monitor being executed	Normal
H102F(4143)	Request command completion	Request command completion	Normal
H103F (4144) to H103F (4159)	System use area		

• Configuration of holding register (for master station monitoring, slave station RAM writing)

The configuration of the holding register is as follows.

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H000(0)	—	—	—	—	—	—
H001(1)	Total tension	Monitor	—	0 or less	2000 or more	N/×10 N
H002(2)	Left tension	Monitor	—	0 or less	2000 or more	N/×10 N
H003(3)	Right tension	Monitor	—	0 or less	2000 or more	N/×10 N
H004(4)	Left input voltage	Monitor	—	-1500 or less	1500 or more	mV
H005(5)	Right input voltage	Monitor	—	-1500 or less	1500 or more	mV
H006(6)	—	—	—	—	—	—
H007(7)	—	—	—	—	—	—
H008(8)	—	—	—	—	—	—
H009(9)	—	—	—	—	—	—
H00A(10)	—	—	—	—	—	—
H00B(11)	—	—	—	—	—	—
H00C(12)	—	—	—	—	—	—
H00D(13)	—	—	—	—	—	—
H00E(14)	—	—	—	—	—	—
H00F(15)	—	—	—	—	—	—
H010(16)	Tension upper limit detection	Setting	—	0	Tension full scale	N/×10 N
H011(17)	Tension lower limit detection	Setting	—	0	Tension full scale	N/×10 N
H012(18)	Detection outside target tension range	Setting	—	0	50	%
H013(19)	Tension display filter	Setting	—	5	80	sec
H014(20)	Tension detection filter	Setting	—	0	80	sec
H015(21)	Tension output filter	Setting	—	0	80	sec
H016(22)	—	—	—	—	—	—
H017(23)	—	—	—	—	—	—
H018(24)	—	—	—	—	—	—
H019(25)	—	—	—	—	—	—
H01A(26)	—	—	—	—	—	—
H01B(27)	—	—	—	—	—	—
H01C(28)	—	—	—	—	—	—
H01D(29)	—	—	—	—	—	—
H01E(30)	—	—	—	—	—	—
H01F(31)	—	—	—	—	—	—
H020(32)	Sensor input type selection	Setting	—	0 (LX type), 1 (strain gauge)		—
H021(33)	Tension full scale	Setting	—	1	2000	N/×10 N
H022(34)	Tension display decimal point selection	Setting	—	0 (1), 1 (0.1), 2 (0.01)		—
H023(35)	Tension display unit selection	Setting	—	0 (N), 1 (×10 N)		—
H024(36)	Span target tension	Setting	—	1	Tension full scale	N/×10 N
H025(37)	Left manual zero calibration	Setting	—	-999	999	N/×10 N
H026(38)	Right manual zero calibration	Setting	—	-999	999	N/×10 N
H027(39)	Left manual span calibration	Setting	—	50	300	%
H028(40)	Right manual span calibration	Setting	—	50	300	%
H029(41)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H02A(42)	—	—	—	—	—	—
H02B(43)	—	—	—	—	—	—
H02C(44)	—	—	—	—	—	—
H02D(45)	—	—	—	—	—	—
H02E(46)	—	—	—	—	—	—
H02F(47)	—	—	—	—	—	—
H030(48)	Reel diameter	Monitor	—	1	2000	mmϕ
H031(49)	Target line velocity	Monitor	LE7-DCA	0	10000	m/min
H032(50)	Line acceleration	Monitor	LE7-DCA	0	50	m/min/sec
H033(51)	Measurement length/remaining length	Monitor	LE7-DCA	—	—	m
H034(52)	Reel rotational speed	Monitor	LE7-DCA	65000	1	r/min
H035(53)	New reel rotational speed	Monitor	LE7-DCA	3600	1	r/min
H036(54)	Constant slip ROTO speed command output	Monitor	LE7-DCA	1000	0.1	%
H037(55)	Predrive rotation speed command output	Monitor	LE7-DCA	1000	0.1	%
H038(56)	Predrive target rotation speed	Monitor	LE7-DCA	3600	1	r/min
H039(57)	Reel diameter CALC adapter ROM version	Monitor	LE7-DCA	999	0.01	—
H03A(58)	—	—	—	—	—	—
H03B(59)	—	—	—	—	—	—
H03C(60)	—	—	—	—	—	—
H03D(61)	—	—	—	—	—	—
H03E(62)	—	—	—	—	—	—
H03F(63)	—	—	—	—	—	—
H040(64)	Initial diameter	Setting	LE7-DCA	1	2000	mmϕ
H041(65)	Material thickness	Setting	LE7-DCA	0	10000	μm
H042(66)	Reel diameter detection 1	Setting	LE7-DCA	0	2000	mmϕ
H043(67)	Reel diameter detection 2	Setting	LE7-DCA	0	2000	mmϕ
H044(68)	Reel diameter detection 3	Setting	LE7-DCA	0	2000	mmϕ
H045(69)	Measurement/remaining length detection 1	Setting	LE7-DCA	0	65000	m
H046(70)	Measurement/remaining length detection 2	Setting	LE7-DCA	0	65000	m
H047(71)	Measurement/remaining length detection 3	Setting	LE7-DCA	0	65000	m
H048(72)	Accelerating judgment acceleration	Setting	LE7-DCA	0	10	m/min/sec
H049(73)	Reel rotational speed gain	Setting	LE7-DCA	0	150	%
H04A(74)	Reel rotational speed bias	Setting	LE7-DCA	0	100	%
H04B(75)	Reel rotational speed startup gain	Setting	LE7-DCA	1	5	Time (s)
H04C(76)	Reel rotational speed startup timer	Setting	LE7-DCA	0	10	sec
H04D(77)	Predrive time	Setting	LE7-DCA	0	200	sec
H04E(78)	Predrive bias	Setting	LE7-DCA	-10	10	%
H04F(79)	—	—	—	—	—	—
H050(80)	Maximum diameter	Setting	—	Minimum diameter	2000	mmϕ
H051(81)	Minimum diameter	Setting	—	1	Maximum diameter	mmϕ
H052(82)	Teaching speed	Setting	LE7-DCA	1	10000	m/min
H053(83)	Velocity electronic gear ratio	Setting	LE7-DCA	9000	18000	%
H054(84)	Reel selection	Setting	LE7-DCA	0(unwinding), 1(winding)		—
H055(85)	Number of reel pulse	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H056(86)	Reel diameter calculation cycle	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H057(87)	MEAS/RMN length calculation switch	Setting	LE7-DCA	0 (measurement length), 1 (remaining length)		—
H058(88)	Material thickness unit	Setting	LE7-DCA	0 (×1), 1 (×0.1)		—
H059(89)	Maximum line acceleration	Setting	LE7-DCA	1	50	m/min/sec
H05A(90)	Maximum reel rotational speed	Setting	LE7-DCA	1	3600	r/min

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H05B(91)	Detection output selection	Setting	LE7-DCA	0 (Reel diameter), (measurement length/ remaining length)		—
H05C(92)	Detection output holding selection	Setting	LE7-DCA	0 (non-holding), 1 (holding)		—
H05D(93)	Run/Stop judgment selection	Setting	LE7-DCA	0 (contact + internal), 1 (contact), 2 (internal)		—
H05E(94)	Run judgment speed	Setting	LE7-DCA	Stop judgment speed	30	m/min
H05F(95)	Stop judgment speed	Setting	LE7-DCA	1	Run judgment speed	m/min
H060(96)	—	—	—	—	—	—
H061(97)	—	—	—	—	—	—
H062(98)	—	—	—	—	—	—
H063(99)	—	—	—	—	—	—
H064(100)	—	—	—	—	—	—
H065(101)	—	—	—	—	—	—
H066(102)	—	—	—	—	—	—
H067(103)	—	—	—	—	—	—
H068(104)	—	—	—	—	—	—
H069(105)	—	—	—	—	—	—
H06A(106)	—	—	—	—	—	—
H06B(107)	—	—	—	—	—	—
H06C(108)	—	—	—	—	—	—
H06D(109)	—	—	—	—	—	—
H06E(110)	—	—	—	—	—	—
H06F(111)	—	—	—	—	—	—
H070(112)	Target tension	Monitor	—	0	2000	N/×10 N
H071(113)	Control output	Monitor	—	-1000 or less	1000 or more	%
H072(114)	Torque output	Monitor	—	-1000 or less	1000 or more	%
H073(115)	—	—	—	—	—	—
H074(116)	—	—	—	—	—	—
H075(117)	Control output voltage for powder	Monitor	—	260 or more	0.1	V
H076(118)	Control output current for powder	Monitor	—	400 or more	0.01	A
H077(119)	—	—	—	—	—	—
H078(120)	—	—	—	—	—	—
H079(121)	—	—	—	—	—	—
H07A(122)	—	—	—	—	—	—
H07B(123)	—	—	—	—	—	—
H07C(124)	—	—	—	—	—	—
H07D(125)	—	—	—	—	—	—
H07E(126)	—	—	—	—	—	—
H07F(127)	—	—	—	—	—	—
H080(128)	Tension setting	Setting	—	1	Tension full scale	N/×10 N
H081(129)	Manual setting	Setting	—	-1000	1000	%
H082(130)	Stall setting	Setting	—	0	1000	%
H083(131)	Start timer	Setting	—	0	300	sec
H084(132)	Stop timer	Setting	—	0	1000	sec
H085(133)	Stop gain	Setting	—	5	400	%
H086(134)	Stop bias	Setting	—	0	100	%
H087(135)	Acceleration/deceleration torque setting	Setting	LE7-DCA	0	1000	%
H088(136)	Gain 1	Setting	—	5	400	%
H089(137)	Gain 2	Setting	—	5	400	%
H08A(138)	Internal taper ratio	Setting	—	0	80	%
H08B(139)	External linear line taper ratio	Setting	—	0	100	%

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H08C(140)	New reel preset	Setting	—	0	1000	%
H08D(141)	New reel preset timer	Setting	—	0	300	sec
H08E(142)	Cutting torque	Setting	—	0	1000	%
H08F(143)	—	—	—	—	—	—
H090(144)	Broken line taper corner 1	Setting	—	1	2000	mmϕ
H091(145)	Broken line taper ratio 1	Setting	—	0	100	%
H092(146)	Broken line taper corner 2	Setting	—	1	2000	mmϕ
H093(147)	Broken line taper ratio 2	Setting	—	0	100	%
H094(148)	Broken line taper corner 3	Setting	—	1	2000	mmϕ
H095(149)	Broken line taper ratio 3	Setting	—	0	100	%
H096(150)	Broken line taper corner 4	Setting	—	1	2000	mmϕ
H097(151)	Broken line taper ratio 4	Setting	—	0	100	%
H098(152)	Broken line taper corner 5	Setting	—	1	2000	mmϕ
H099(153)	Broken line taper ratio 5	Setting	—	0	100	%
H09A(154)	Broken line taper corner 6	Setting	—	1	2000	mmϕ
H09B(155)	Broken line taper ratio 6	Setting	—	0	100	%
H09C(156)	Broken line taper corner 7	Setting	—	1	2000	mmϕ
H09D(157)	Broken line taper ratio 7	Setting	—	0	100	%
H09E(158)	Broken line taper corner 8	Setting	—	1	2000	mmϕ
H09F(159)	Broken line taper ratio 8	Setting	—	0	100	%
H0A0(160)	Proportional gain	Setting	—	0	100	%
H0A1(161)	Integral time	Setting	—	0	100	%
H0A2(162)	Dead band gain	Setting	—	0	100 - Proportional gain	%
H0A3(163)	Dead band width	Setting	—	0	100	%
H0A4(164)	Tension control filter	Setting	—	0	40	sec
H0A5(165)	Static mechanical loss A	Setting	—	-1000	1000	%
H0A6(166)	Static mechanical loss B	Setting	—	-1000	1000	%
H0A7(167)	Kinetic mechanical loss A	Setting	LE7-DCA	-1000	1000	%
H0A8(168)	Kinetic mechanical loss B	Setting	LE7-DCA	-1000	1000	%
H0A9(169)	Mass correction gain A	Setting	LE7-DCA	0	100	%
H0AA(170)	Mass correction gain B	Setting	LE7-DCA	0	100	%
H0AB(171)	Mass correction bias A	Setting	LE7-DCA	0	100	%
H0AC(172)	Mass correction bias B	Setting	LE7-DCA	0	100	%
H0AD(173)	—	—	—	—	—	—
H0AE(174)	—	—	—	—	—	—
H0AF(175)	—	—	—	—	—	—
H0B0(176)	Control mode selection	Setting	LE7-DCA	0 (feedback control), 1 (open loop control)		—
H0B1(177)	Integral feedback limit	Setting	—	0	101	%
H0B2(178)	Feedback selection during the stop timer	Setting	—	0 (invalid), 1 (valid)		—
H0B3(179)	Automatic control output polarity selection	Setting	—	0 (forward), 1 (reverse)		—
H0B4(180)	Open-loop control ratio	Setting	LE7-DCA	0	100	%
H0B5(181)	Taper function selection	Setting	—	0 (no function), 1 (internal taper), 2 (linear line taper (external)), 3 (broken line taper (external)), 4 (direct taper)		—
H0B6(182)	Selection of two reel's switching FUNC	Setting	—	0 (invalid), 1 (valid)		—
H0B7(183)	Internal taper standard selection	Setting	—	0 (zero standard), 1 (stall standard)		—
H0B8(184)	—	—	—	—	—	—
H0B9(185)	Mechanical loss function selection	Setting	LE7-DCA	0 (fixed mechanical loss), 1 (high function mechanical loss)		—
H0BA(186)	Stall automatic calculation gain	Setting	LE7-DCA	0	100	%
H0BB(187)	New reel preset AUTO calculation gain	Setting	LE7-DCA	0	100	%

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0BC(188)	Control output upper limit	Setting	—	Control output lower limit	101	%
H0BD(189)	Control output lower limit	Setting	—	-101	Control output upper limit	%
H0BE(190)	—	—	—	—	—	—
H0BF(191)	—	—	—	—	—	—
H0C0(192)	Load model	Setting	—	0	200	—
H0C1(193)	Rated current	Setting	—	0	400	A
H0C2(194)	Maximum torque correction	Setting	—	50	250	%
H0C3(195)	Nonlinear correction 0	Setting	—	0	1000	%
H0C4(196)	Nonlinear correction 10	Setting	—	0	1000	%
H0C5(197)	Nonlinear correction 20	Setting	—	0	1000	%
H0C6(198)	Nonlinear correction 30	Setting	—	0	1000	%
H0C7(199)	Nonlinear correction 40	Setting	—	0	1000	%
H0C8(200)	Nonlinear correction 50	Setting	—	0	1000	%
H0C9(201)	Nonlinear correction 60	Setting	—	0	1000	%
H0CA(202)	Nonlinear correction 70	Setting	—	0	1000	%
H0CB(203)	Nonlinear correction 80	Setting	—	0	1000	%
H0CC(204)	Nonlinear correction 90	Setting	—	0	1000	%
H0CD(205)	—	—	—	—	—	—
H0CE(206)	—	—	—	—	—	—
H0CF(207)	—	—	—	—	—	—
H0D0(208)	—	—	—	—	—	—
H0D1(209)	Weak excitation	Setting	—	0	1000	%
H0D2(210)	Over current detection filter	Setting	—	0	20	sec
H0D3(211)	—	—	—	—	—	—
H0D4(212)	—	—	—	—	—	—
H0D5(213)	—	—	—	—	—	—
H0D6(214)	—	—	—	—	—	—
H0D7(215)	—	—	—	—	—	—
H0D8(216)	—	—	—	—	—	—
H0D9(217)	—	—	—	—	—	—
H0DA(218)	—	—	—	—	—	—
H0DB(219)	—	—	—	—	—	—
H0DC(220)	—	—	—	—	—	—
H0DD(221)	—	—	—	—	—	—
H0DE(222)	—	—	—	—	—	—
H0DF(223)	—	—	—	—	—	—
H0E0(224)	Contact input monitor	Monitor	—	0	0xFFFF	—
H0E1(225)	Contact output monitor	Monitor	—	0	0xFFFF	—
H0E2(226)	General-purpose analog input 1 monitor	Monitor	—	0	100	%
H0E3(227)	General-purpose analog input 2 monitor	Monitor	—	0	100	%
H0E4(228)	General-purpose analog input 3 monitor	Monitor	—	0	100	%
H0E5(229)	General-purpose analog output 1 monitor	Monitor	—	0	100	%
H0E6(230)	General-purpose analog output 2 monitor	Monitor	—	0	100	%
H0E7(231)	Analog output monitor for TENS control	Monitor	—	0	100	%
H0E8(232)	Analog output monitor for new reel preset	Monitor	—	0	100	%
H0E9(233)	Contact input monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EA(234)	Contact output monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H0EB(235)	Alarm display	Monitor	—	0	63	—
H0EC(236)	Network alarm device No.	Monitor	—	0	999	—
H0ED(237)	Main unit ROM version	Monitor	—	0	999	—
H0EE(238)	Network adapter ROM version	Monitor	LE7-CCL	0	999	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H0EF(239)	Communication signal monitor	Monitor	—	0	0xFFFF	—
H0F0(240)	Contact input 1 function selection	Setting	—	0 (no function), 1 (run/stop), 2 (control output OFF/ON), 3 (stall memory), 4 (inching ON/OFF), 5 (constant tension ON/ OFF), 6 (gain 1 ON/OFF), 7 (gain 2 ON/ OFF), 8 (automatic/manual), 9 (reel change ON/OFF), 10 (cut torque ON/OFF), 11 (alarm reset ON/OFF)		—
H0F1(241)	Contact input 2 function selection	Setting	—			—
H0F2(242)	Contact input 3 function selection	Setting	—			—
H0F3(243)	Contact input 4 function selection	Setting	—			—
H0F4(244)	Contact input 5 function selection	Setting	—			—
H0F5(245)	Contact input 6 function selection	Setting	—			—
H0F6(246)	—	—	—	—	—	—
H0F7(247)	—	—	—	—	—	—
H0F8(248)	Contact output 1 function selection	Setting	—	0 (no function), 1 (tension lower limit detection), 2 (tension upper limit detection), 3 (detection outside tension range), 4 (alarm occurrence detection)		—
H0F9(249)	Contact output 2 function selection	Setting	—			—
H0FA(250)	—	—	—	—	—	—
H0FB(251)	—	—	—	—	—	—
H0FC(252)	—	—	—	—	—	—
H0FD(253)	—	—	—	—	—	—
H0FE(254)	—	—	—	—	—	—
H0FF(255)	—	—	—	—	—	—
H100(256)	Analog input mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H101(257)	Analog input 1 function selection	Setting	—	0 (no function), 1 (tension setting), 2 (stall setting), 3 (straight line taper ratio setting), 4 (new axis preset setting), 5 (manual setting), 6 (tension input), 7 (Reel diameter input)		—
H102(258)	Analog input 2 function selection	Setting	—			—
H103(259)	Analog input 3 function selection	Setting	—			—
H104(260)	—	—	—	—	—	—
H105(261)	—	—	—	—	—	—
H106(262)	—	—	—	—	—	—
H107(263)	—	—	—	—	—	—
H108(264)	Analog output mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H109(265)	Analog output 1 function selection	Setting	—	0 (no function), 1 (tension monitor), 2 (Reel diameter monitor), 3 (tension setting monitor), 4 (A-axis Reel shaft rotational speed output), 5 (B-axis Reel shaft rotational speed output)		—
H10A(266)	Analog output 2 function selection	Setting	—			—
H10B(267)	Analog output 1 gain	Setting	—	500	3000	%
H10C(268)	Analog output 2 gain	Setting	—	500	3000	%
H10D(269)	Analog output 1 bias	Setting	—	-500	500	%
H10E(270)	Analog output 2 bias	Setting	—	-500	500	%
H10F(271)	—	—	—	—	—	—
H110(272)	Two reel's switching FUNC output mode	Setting	—	0 (no internal switching), 1 (with internal switching)		—
H111(273)	Control output mode selection	Setting	—	0 (0 to 5 V mode), 1 (-5 to 5 V mode), 2 (0 to 10 V mode), 3 (-10 to 10 V mode), 4 (0 to 8 V mode), 5 (- 8 to 8 V mode), 6 (0 to 2.7 V mode), 7 (-2.7 to 2.7 V mode), 8 (1 to 5 V mode)		—
H112(274)	Control output gain	Setting	—	500	3000	%
H113(275)	New reel preset output gain	Setting	—	500	3000	%
H114(276)	Control output bias	Setting	—	-500	500	%
H115(277)	New reel preset output bias	Setting	—	-500	500	%
H116(278)	—	—	—	—	—	—
H117(279)	—	—	—	—	—	—
H118(280)	—	—	—	—	—	—
H119(281)	—	—	—	—	—	—
H11A(282)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H11B(283)	—	—	—	—	—	—
H11C(284)	—	—	—	—	—	—
H11D(285)	—	—	—	—	—	—
H11E(286)	—	—	—	—	—	—
H11F(287)	—	—	—	—	—	—
H120(288)	Set setting password	Setting	—	0	32000	—
H121(289)	Input setting password	Setting	—	0	32000	—
H122(290)	Set monitor password	Setting	—	0	32000	—
H123(291)	Input monitor password	Setting	—	0	32000	—
H124(292)	—	—	—	—	—	—
H125(293)	—	—	—	—	—	—
H126(294)	—	—	—	—	—	—
H127(295)	—	—	—	—	—	—
H128(296)	—	—	—	—	—	—
H129(297)	—	—	—	—	—	—
H12A(298)	—	—	—	—	—	—
H12B(299)	—	—	—	—	—	—
H12C(300)	—	—	—	—	—	—
H12D(301)	—	—	—	—	—	—
H12E(302)	—	—	—	—	—	—
H12F(303)	—	—	—	—	—	—
H130(304)	Alarm history 1	Monitor	—	0	63	—
H131(305)	Alarm history 2	Monitor	—	0	63	—
H132(306)	Alarm history 3	Monitor	—	0	63	—
H133(307)	Alarm history 4	Monitor	—	0	63	—
H134(308)	Alarm history 5	Monitor	—	0	63	—
H135(309)	Alarm history 6	Monitor	—	0	63	—
H136(310)	Alarm history 7	Monitor	—	0	63	—
H137(311)	Alarm history 8	Monitor	—	0	63	—
H138(312)	Alarm history holding selection	Setting	—	0 (no holding), 1 (holding)		—
H139(313)	Alarm display time	Setting	—	0	301	sec
H13A(314)	Alarm operation selection 1	Setting	—	0	0xFFFF	—
H13B(315)	Alarm operation selection 2	Setting	—	0	0xFFFF	—
H13C(316)	Alarm operation selection 3	Setting	—	0	0xFFFF	—
H13D(317)	Alarm operation selection 4	Setting	—	0	0xFFFF	—
H13E(318)	—	—	—	—	—	—
H13F(319)	—	—	—	—	—	—
H140(320)	—	—	—	—	—	—
H141(321)	—	—	—	—	—	—
H142(322)	—	—	—	—	—	—
H143(323)	—	—	—	—	—	—
H144(324)	—	—	—	—	—	—
H145(325)	—	—	—	—	—	—
H146(326)	—	—	—	—	—	—
H147(327)	—	—	—	—	—	—
H148(328)	—	—	—	—	—	—
H149(329)	—	—	—	—	—	—
H14A(330)	—	—	—	—	—	—
H14B(331)	—	—	—	—	—	—
H14C(332)	—	—	—	—	—	—
H14D(333)	—	—	—	—	—	—
H14E(334)	—	—	—	—	—	—

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H14F(335)	—	—	—	—	—	—
H150(336)	—	—	—	—	—	—
H151(337)	—	—	—	—	—	—
H152(338)	—	—	—	—	—	—
H153(339)	—	—	—	—	—	—
H154(340)	—	—	—	—	—	—
H155(341)	—	—	—	—	—	—
H156(342)	—	—	—	—	—	—
H157(343)	—	—	—	—	—	—
H158(344)	—	—	—	—	—	—
H159(345)	—	—	—	—	—	—
H15A(346)	—	—	—	—	—	—
H15B(347)	—	—	—	—	—	—
H15C(348)	—	—	—	—	—	—
H15D(349)	—	—	—	—	—	—
H15E(350)	—	—	—	—	—	—
H15F(351)	—	—	—	—	—	—
H160(352)	—	—	—	—	—	—
H161(353)	—	—	—	—	—	—
H162(354)	—	—	—	—	—	—
H163(355)	—	—	—	—	—	—
H164(356)	—	—	—	—	—	—
H165(357)	—	—	—	—	—	—
H166(358)	—	—	—	—	—	—
H167(359)	—	—	—	—	—	—
H168(360)	—	—	—	—	—	—
H169(361)	—	—	—	—	—	—
H16A(362)	—	—	—	—	—	—
H16B(363)	—	—	—	—	—	—
H16C(364)	—	—	—	—	—	—
H16D(365)	—	—	—	—	—	—
H16E(366)	—	—	—	—	—	—
H16F(367)	—	—	—	—	—	—
H170(368)	—	—	—	—	—	—
H171(369)	—	—	—	—	—	—
H172(370)	—	—	—	—	—	—
H173(371)	—	—	—	—	—	—
H174(372)	—	—	—	—	—	—
H175(373)	—	—	—	—	—	—
H176(374)	—	—	—	—	—	—
H177(375)	—	—	—	—	—	—
H178(376)	—	—	—	—	—	—
H179(377)	—	—	—	—	—	—
H17A(378)	—	—	—	—	—	—
H17B(379)	—	—	—	—	—	—
H17C(380)	—	—	—	—	—	—
H17D(381)	—	—	—	—	—	—
H17E(382)	—	—	—	—	—	—
H17F(383)	—	—	—	—	—	—
H180(384)	Open-loop control base torque	Setting	LE7-DCA	0	1000	%
H181(385)	Direct taper ratio	Setting	—	0	1000	%
H182(386)	Link tension monitor filter	Setting	—	0	80	sec

Request code	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H183(387)	Tension input	Setting	—	0	2000	N/×10 N
H184(388)	Reel diameter input	Setting	—	0	2000	mmϕ
H185(389)	—	—	—	—	—	—
H186(390)	—	—	—	—	—	—
H187(391)	—	—	—	—	—	—
H188(392)	—	—	—	—	—	—
H189(393)	—	—	—	—	—	—
H18A(394)	—	—	—	—	—	—
H18B(395)	—	—	—	—	—	—
H18C(396)	—	—	—	—	—	—
H18D(397)	—	—	—	—	—	—
H18E(398)	—	—	—	—	—	—
H18F(399)	—	—	—	—	—	—

• Configuration of holding register (for slave station RAM+ROM writing)

The configuration of the holding register is as follows.

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1000(4096)	—	—	—	—	—	—
H1001(4097)	Total tension	Monitor	—	0 or less	2000 or more	N/×10 N
H1002(4098)	Left tension	Monitor	—	0 or less	2000 or more	N/×10 N
H1003(4099)	Right tension	Monitor	—	0 or less	2000 or more	N/×10 N
H1004(4100)	Left input voltage	Monitor	—	-1500 or less	1500 or more	mV
H1005(4101)	Right input voltage	Monitor	—	-1500 or less	1500 or more	mV
H1006(4102)	—	—	—	—	—	—
H1007(4103)	—	—	—	—	—	—
H1008(4104)	—	—	—	—	—	—
H1009(4105)	—	—	—	—	—	—
H100A(4106)	—	—	—	—	—	—
H100B(4107)	—	—	—	—	—	—
H100C(4108)	—	—	—	—	—	—
H100D(4109)	—	—	—	—	—	—
H100E(4110)	—	—	—	—	—	—
H100F(4111)	—	—	—	—	—	—
H1010(4112)	Tension upper limit detection	Setting	—	0	Tension full scale	N/×10 N
H1011(4113)	Tension lower limit detection	Setting	—	0	Tension full scale	N/×10 N
H1012(4114)	Detection outside target tension range	Setting	—	0	50	%
H1013(4115)	Tension display filter	Setting	—	5	80	sec
H1014(4116)	Tension detection filter	Setting	—	0	80	sec
H1015(4117)	Tension output filter	Setting	—	0	80	sec
H1016(4118)	—	—	—	—	—	—
H1017(4119)	—	—	—	—	—	—
H1018(4120)	—	—	—	—	—	—
H1019(4121)	—	—	—	—	—	—
H101A(4122)	—	—	—	—	—	—
H101B(4123)	—	—	—	—	—	—
H101C(4124)	—	—	—	—	—	—
H101D(4125)	—	—	—	—	—	—
H101E(4126)	—	—	—	—	—	—
H101F(4127)	Tension input filter	Setting	—	50	200	—
H1020(4128)	Sensor input type selection	Setting	—	0 (LX type), 1 (strain gauge)		—
H1021(4129)	Tension full scale	Setting	—	1	2000	N/×10 N
H1022(4130)	Tension display decimal point selection	Setting	—	0 (1), 1 (0.1), 2 (0.01)		—
H1023(4131)	Tension display unit selection	Setting	—	0 (N), 1 (×10 N)		—
H1024(4132)	Span target tension	Setting	—	1	Tension full scale	N/×10 N
H1025(4133)	Left manual zero calibration	Setting	—	-999	999	N/×10 N
H1026(4134)	Right manual zero calibration	Setting	—	-999	999	N/×10 N
H1027(4135)	Left manual span calibration	Setting	—	50	300	%
H1028(4136)	Right manual span calibration	Setting	—	50	300	%
H1029(4137)	—	—	—	—	—	—
H102A(4138)	Tension full scale×10 data	Setting	—	10	20000	—
H102B(4139)	Span adjustment data range switching	Monitor	—	0	15	—
H102C(4140)	Left zero adjustment data	Monitor	—	-32768	32767	—
H102D(4141)	Right zero adjustment data	Monitor	—	-32768	32767	—
H102E(4142)	Left span adjustment data	Setting	—	-32768	32767	—
H102F(4143)	Right span adjustment data	Setting	—	-32768	32767	—
H1030(4144)	Reel diameter	Monitor	—	1	2000	mmϕ
H1031(4145)	Target line velocity	Monitor	LE7-DCA	0	10000	m/min

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1032(4146)	Line acceleration	Monitor	LE7-DCA	0	50	m/min/sec
H1033(4147)	Measurement length/remaining length	Monitor	LE7-DCA	—	—	m
H1034(4148)	Reel rotational speed	Monitor	LE7-DCA	65000	1	r/min
H1035(4149)	New reel rotational speed	Monitor	LE7-DCA	3600	1	r/min
H1036(4150)	Constant slip ROTO speed command output	Monitor	LE7-DCA	1000	0.1	%
H1037(4151)	Predrive rotation speed command output	Monitor	LE7-DCA	1000	0.1	%
H1038(4152)	Predrive target rotation speed	Monitor	LE7-DCA	3600	1	r/min
H1039(4153)	Reel diameter CALC adapter ROM version	Monitor	LE7-DCA	999	0.01	—
H103A(4154)	—	—	—	—	—	—
H103B(4155)	—	—	—	—	—	—
H103C(4156)	—	—	—	—	—	—
H103D(4157)	—	—	—	—	—	—
H103E(4158)	—	—	—	—	—	—
H103F(4159)	—	—	—	—	—	—
H1040(4160)	Initial diameter	Setting	LE7-DCA	1	2000	mmϕ
H1041(4161)	Material thickness	Setting	LE7-DCA	0	10000	μm
H1042(4162)	Reel diameter detection 1	Setting	LE7-DCA	0	2000	mmϕ
H1043(4163)	Reel diameter detection 2	Setting	LE7-DCA	0	2000	mmϕ
H1044(4164)	Reel diameter detection 3	Setting	LE7-DCA	0	2000	mmϕ
H1045(4165)	Measurement/remaining length detection 1	Setting	LE7-DCA	0	65000	m
H1046(4166)	Measurement/remaining length detection 2	Setting	LE7-DCA	0	65000	m
H1047(4167)	Measurement/remaining length detection 3	Setting	LE7-DCA	0	65000	m
H1048(4168)	Accelerating judgment acceleration	Setting	LE7-DCA	0	10	m/min/sec
H1049(4169)	Reel rotational speed gain	Setting	LE7-DCA	0	150	%
H104A(4170)	Reel rotational speed bias	Setting	LE7-DCA	0	100	%
H104B(4171)	Reel rotational speed startup gain	Setting	LE7-DCA	1	5	Time (s)
H104C(4172)	Reel rotational speed startup timer	Setting	LE7-DCA	0	10	sec
H104D (4173)	Predrive time	Setting	LE7-DCA	0	200	sec
H104E(4174)	Predrive bias	Setting	LE7-DCA	-10	10	%
H104F(4175)	—	—	—	—	—	—
H1050(4176)	Maximum diameter	Setting	—	Minimum diameter	2000	mmϕ
H1051(4177)	Minimum diameter	Setting	—	1	Maximum diameter	mmϕ
H1052(4178)	Teaching speed	Setting	LE7-DCA	1	10000	m/min
H1053(4179)	Velocity electronic gear ratio	Setting	LE7-DCA	9000	18000	%
H1054(4180)	Reel selection	Setting	LE7-DCA	0 (unwinding), 1 (winding)		—
H1055(4181)	Number of reel pulse	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H1056(4182)	Reel diameter calculation cycle	Setting	LE7-DCA	0 (1 pulse), 1 (2 pulses), 2 (4 pulses), 3 (8 pulses), 4 (16 pulses)		—
H1057(4183)	MEAS/RMN length calculation switch	Setting	LE7-DCA	0 (measurement length), 1 (remaining length)		—
H1058(4184)	Material thickness unit	Setting	LE7-DCA	0 (×1), 1 (×0.1)		—
H1059(4185)	Maximum line acceleration	Setting	LE7-DCA	1	50	m/min/sec
H105A(4186)	Maximum reel rotational speed	Setting	LE7-DCA	1	3600	r/min
H105B(4187)	Detection output selection	Setting	LE7-DCA	0 (reel diameter), 1 (measurement length/ remaining length)		—
H105C(4188)	Detection output holding selection	Setting	LE7-DCA	0 (non-holding), 1 (holding)		—
H105D(4189)	Run/Stop judgment selection	Setting	LE7-DCA	0 (contact + internal), 1 (contact), 2 (internal)		—
H105E(4190)	Run judgment speed	Setting	LE7-DCA	Stop judgment speed	30	m/min
H105F(4191)	Stop judgment speed	Setting	LE7-DCA	1	Run judgment speed	m/min
H1060(4192)	—	—	—	—	—	—

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1061(4193)	—	—	—	—	—	—
H1062(4194)	—	—	—	—	—	—
H1063(4195)	—	—	—	—	—	—
H1064(4196)	—	—	—	—	—	—
H1065(4197)	—	—	—	—	—	—
H1066(4198)	—	—	—	—	—	—
H1067(4199)	—	—	—	—	—	—
H1068 (4200	—	—	—	—	—	—
H1069(4201)	—	—	—	—	—	—
H106A(4202)	—	—	—	—	—	—
H106B(4203)	—	—	—	—	—	—
H106C(4204)	—	—	—	—	—	—
H106D(4205)	—	—	—	—	—	—
H106E(4206)	—	—	—	—	—	—
H106F(4207)	—	—	—	—	—	—
H1070(4208)	Target tension	Monitor	—	0	2000	N/×10 N
H1071(4209)	Control output	Monitor	—	-1000 or less	1000 or more	%
H1072(4210)	Torque output	Monitor	—	-1000 or less	1000 or more	%
H1073(4211)	100% reel conversion torque	Monitor	—	0	60000	N·m
H1074(4212)	Estimated powder life time	Monitor	—	0	30000	Hr
H1075(4213)	Control output voltage for powder	Monitor	—	260 or more	0.1	V
H1076(4214)	Control output current for powder	Monitor	—	400 or more	0.01	A
H1077(4215)	—	—	—	—	—	—
H1078(4216)	—	—	—	—	—	—
H1079(4217)	—	—	—	—	—	—
H107A(4218)	—	—	—	—	—	—
H107B(4219)	—	—	—	—	—	—
H107C(4220)	—	—	—	—	—	—
H107D(4221)	—	—	—	—	—	—
H107E(4222)	—	—	—	—	—	—
H107F(4223)	Automatic control mode	Monitor	—	0	2	—
H1080(4224)	Tension setting	Setting	—	1	Tension full scale	N/×10 N
H1081(4225)	Manual setting	Setting	—	-1000	1000	%
H1082(4226)	Stall setting	Setting	—	0	1000	%
H1083(4227)	Start timer	Setting	—	0	300	sec
H1084(4228)	Stop timer	Setting	—	0	1000	sec
H1085(4229)	Stop gain	Setting	—	5	400	%
H1086(4230)	Stop bias	Setting	—	0	100	%
H1087(4231)	Acceleration/deceleration torque setting	Setting	LE7-DCA	0	1000	%
H1088(4232)	Gain 1	Setting	—	5	400	%
H1089(4233)	Gain 2	Setting	—	5	400	%
H108A(4234)	Internal taper ratio	Setting	—	0	80	%
H108B(4235)	External linear line taper ratio	Setting	—	0	100	%
H108C(4236)	New reel preset	Setting	—	0	1000	%
H108D(4237)	New reel preset timer	Setting	—	0	300	sec
H108E(4238)	Cutting torque	Setting	—	0	1000	%
H108F(4239)	—	—	—	—	—	—
H1090(4240)	Broken line taper corner 1	Setting	—	1	2000	mmϕ
H1091(4241)	Broken line taper ratio 1	Setting	—	0	100	%
H1092(4242)	Broken line taper corner 2	Setting	—	1	2000	mmϕ
H1093(4243)	Broken line taper ratio 2	Setting	—	0	100	%
H1094(4244)	Broken line taper corner 3	Setting	—	1	2000	mmϕ

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1095(4245)	Broken line taper ratio 3	Setting	—	0	100	%
H1096(4246)	Broken line taper corner 4	Setting	—	1	2000	mmϕ
H1097(4247)	Broken line taper ratio 4	Setting	—	0	100	%
H1098(4248)	Broken line taper corner 5	Setting	—	1	2000	mmϕ
H1099(4249)	Broken line taper ratio 5	Setting	—	0	100	%
H109A(4250)	Broken line taper corner 6	Setting	—	1	2000	mmϕ
H109B(4251)	Broken line taper ratio 6	Setting	—	0	100	%
H109C(4252)	Broken line taper corner 7	Setting	—	1	2000	mmϕ
H109D(4253)	Broken line taper ratio 7	Setting	—	0	100	%
H109E (4254)	Broken line taper corner 8	Setting	—	1	2000	mmϕ
H109F(4255)	Broken line taper ratio 8	Setting	—	0	100	%
H10A0(4256)	Proportional gain	Setting	—	0	100	%
H10A1(4257)	Integral time	Setting	—	0	100	%
H10A2(4258)	Dead band gain	Setting	—	0	100 - Proportional gain	%
H10A3(4259)	Dead band width	Setting	—	0	100	%
H10A4(4260)	Tension control filter	Setting	—	0	40	sec
H10A5(4261)	Static mechanical loss A	Setting	—	-1000	1000	%
H10A6(4262)	Static mechanical loss B	Setting	—	-1000	1000	%
H10A7(4263)	Kinetic mechanical loss A	Setting	LE7-DCA	-1000	1000	%
H10A8(4264)	Kinetic mechanical loss B	Setting	LE7-DCA	-1000	1000	%
H10A9(4265)	Mass correction gain A	Setting	LE7-DCA	0	100	%
H10AA(4266)	Mass correction gain B	Setting	LE7-DCA	0	100	%
H10AB(4267)	Mass correction bias A	Setting	LE7-DCA	0	100	%
H10AC(4268)	Mass correction bias B	Setting	LE7-DCA	0	100	%
H10AD(4269)	—	—	—	—	—	—
H10AE(4270)	—	—	—	—	—	—
H10AF(4271)	—	—	—	—	—	—
H10B0(4272)	Control mode selection	Setting	LE7-DCA	0 (feedback control), 1 (open loop control)		—
H10B1(4273)	Integral feedback limit	Setting	—	0	101	%
H10B2(4274)	Feedback selection during the stop timer	Setting	—	0 (invalid), 1 (valid)		—
H10B3(4275)	Automatic control output polarity selection	Setting	—	0 (forward), 1 (reverse)		—
H10B4(4276)	Open-loop control ratio	Setting	LE7-DCA	0	100	%
H10B5(4277)	Taper function selection	Setting	—	0 (no function), 1 (internal taper), 2 (linear line taper (external)), 3 (broken line taper (external)), 4 (direct taper)		—
H10B6(4278)	Selection of two reel's switching FUNC	Setting	—	0 (invalid), 1 (valid)		—
H10B7(4279)	Internal taper standard selection	Setting	—	0 (zero standard), 1 (stall standard)		—
H10B8(4280)	—	—	—	—	—	—
H10B9(4281)	Mechanical loss function selection	Setting	LE7-DCA	0 (fixed mechanical loss), 1 (high function mechanical loss)		—
H10BA(4282)	Stall automatic calculation gain	Setting	LE7-DCA	0	100	%
H10BB(4283)	New reel preset AUTO calculation gain	Setting	LE7-DCA	0	100	%
H10BC(4284)	Control output upper limit	Setting	—	Control output lower limit	101	%
H10BD(4285)	Control output lower limit	Setting	—	-101	Control output upper limit	%
H10BE(4286)	—	—	—	—	—	—
H10BF(4287)	—	—	—	—	—	—
H10C0(4288)	Load model	Setting	—	0	200	—
H10C1(4289)	Rated current	Setting	—	0	400	A
H10C2(4290)	Maximum torque correction	Setting	—	50	250	%
H10C3(4291)	Nonlinear correction 0	Setting	—	0	1000	%
H10C4(4292)	Nonlinear correction 10	Setting	—	0	1000	%

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H10C5(4293)	Nonlinear correction 20	Setting	—	0	1000	%
H10C6(4294)	Nonlinear correction 30	Setting	—	0	1000	%
H10C7(4295)	Nonlinear correction 40	Setting	—	0	1000	%
H10C8(4296)	Nonlinear correction 50	Setting	—	0	1000	%
H10C9(4297)	Nonlinear correction 60	Setting	—	0	1000	%
H10CA(4298)	Nonlinear correction 70	Setting	—	0	1000	%
H10CB(4299)	Nonlinear correction 80	Setting	—	0	1000	%
H10CC(4300)	Nonlinear correction 90	Setting	—	0	1000	%
H10CD(4301)	—	—	—	—	—	—
H10CE(4302)	—	—	—	—	—	—
H10CF(4303)	—	—	—	—	—	—
H10D0(4304)	Powder life prediction operation selection	Setting	—	0 (stop), 1 (execute)		—
H10D1(4305)	Weak excitation	Setting	—	0	1000	%
H10D2(4306)	Over current detection filter	Setting	—	0	20	sec
H10D3(4307)	Coil limit temperature	Setting	—	80	180	°C
H10D4(4308)	—	—	—	—	—	—
H10D5(4309)	—	—	—	—	—	—
H10D6(4310)	—	—	—	—	—	—
H10D7(4311)	—	—	—	—	—	—
H10D8(4312)	—	—	—	—	—	—
H10D9(4313)	—	—	—	—	—	—
H10DA(4314)	—	—	—	—	—	—
H10DB(4315)	—	—	—	—	—	—
H10DC(4316)	—	—	—	—	—	—
H10DD(4317)	—	—	—	—	—	—
H10DE(4318)	Selection of tension input	Setting	—	0	2	—
H10DF(4319)	Selection of reel diameter input	Setting	—	0	2	—
H10E0(4320)	Contact input monitor	Monitor	—	0	0xFFFF	—
H10E1(4321)	Contact output monitor	Monitor	—	0	0xFFFF	—
H10E2(4322)	General-purpose analog input 1 monitor	Monitor	—	0	100	%
H10E3(4323)	General-purpose analog input 2 monitor	Monitor	—	0	100	%
H10E4(4324)	General-purpose analog input 3 monitor	Monitor	—	0	100	%
H10E5(4325)	General-purpose analog output 1 monitor	Monitor	—	0	100	%
H10E6(4326)	General-purpose analog output 2 monitor	Monitor	—	0	100	%
H10E7(4327)	Analog output monitor for TENS control	Monitor	—	0	100	%
H10E8(4328)	Analog output monitor for new reel preset	Monitor	—	0	100	%
H10E9(4329)	Contact input monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H10EA(4330)	Contact output monitor for reel DIA CALC	Monitor	LE7-DCA	0	0xFFFF	—
H10EB(4331)	Alarm display	Monitor	—	0	63	—
H10EC(4332)	Network alarm device No.	Monitor	—	0	999	—
H10ED(4333)	Main unit ROM version	Monitor	—	0	999	—
H10EE(4334)	Network adapter ROM version	Monitor	LE7-CCL	0	999	—
H10EF(4335)	Communication signal monitor	Monitor	—	0	0xFFFF	—
H10F0(4336)	Contact input 1 function selection	Setting	—	0 (no function), 1 (run/stop), 2 (control output OFF/ON), 3 (stall memory), 4 (inching ON/OFF), 5 (constant tension ON/OFF), 6 (gain 1 ON/OFF), 7 (gain 2 ON/OFF), 8 (automatic/manual), 9 (reel change ON/OFF), 10 (cut torque ON/OFF), 11 (alarm reset ONOFF/OFF)		—
H10F1(4337)	Contact input 2 function selection	Setting	—			—
H10F2(4338)	Contact input 3 function selection	Setting	—			—
H10F3(4339)	Contact input 4 function selection	Setting	—			—
H10F4(4340)	Contact input 5 function selection	Setting	—			—
H10F5(4341)	Contact input 6 function selection	Setting	—			—
H10F6(4342)	—	—	—	—	—	—
H10F7(4343)	—	—	—	—	—	—

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H10F8(4344)	Contact output 1 function selection	Setting	—	0 (no function), 1 (tension lower limit detection), 2 (tension upper limit detection), 3 (detection outside tension range), 4 (alarm occurrence detection)		—
H10F9(4345)	Contact output 2 function selection	Setting	—			—
H10FA(4346)	—	—	—	—	—	—
H10FB(4347)	—	—	—	—	—	—
H10FC(4348)	—	—	—	—	—	—
H10FD(4349)	—	—	—	—	—	—
H10FE(4350)	—	—	—	—	—	—
H10FF(4351)	—	—	—	—	—	—
H1100(4352)	Analog input mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H1101(4353)	Analog input 1 function selection	Setting	—	0 (no function), 1 (tension setting), 2 (stall setting), 3 (straight line taper ratio setting), 4 (new axis preset setting), 5 (manual setting), 6 (tension input), 7 (reel diameter input)		—
H1102(4354)	Analog input 2 function selection	Setting	—			—
H1103(4355)	Analog input 3 function selection	Setting	—			—
H1104(4356)	—	—	—	—	—	—
H1105(4357)	—	—	—	—	—	—
H1106(4358)	—	—	—	—	—	—
H1107(4359)	—	—	—	—	—	—
H1108(4360)	Analog output mode selection	Setting	—	0 (0 to 5 V mode), 1 (0 to 10 V mode)		—
H1109(4361)	Analog output 1 function selection	Setting	—	0 (no function), 1 (tension monitor), 2 (reel diameter monitor), 3 (tension setting monitor), 4 (A-axis reel shaft rotational speed output), 5 (B-axis reel shaft rotational speed output)		—
H110A(4362)	Analog output 2 function selection	Setting	—			—
H110B(4363)	Analog output 1 gain	Setting	—	500	3000	%
H110C(4364)	Analog output 2 gain	Setting	—	500	3000	%
H110D(4365)	Analog output 1 bias	Setting	—	-500	500	%
H110E(4366)	Analog output 2 bias	Setting	—	-500	500	%
H110F(4367)	—	—	—	—	—	—
H1110(4368)	Two reel's switching FUNC output mode	Setting	—	0 (no internal switching), 1 (with internal switching)		—
H1111(4369)	Control output mode selection	Setting	—	0 (0 to 5 V mode), 1 (-5 to 5 V mode), 2 (0 to 10 V mode), 3 (-10 to 10 V mode), 4 (0 to 8 V mode), 5 (- 8 to 8 V mode), 6 (0 to 2.7 V mode), 7 (-2.7 to 2.7 V mode), 8 (1 to 5 V mode)		—
H1112(4370)	Control output gain	Setting	—	500	3000	%
H1113(4371)	New reel preset output gain	Setting	—	500	3000	%
H1114(4372)	Control output bias	Setting	—	-500	500	%
H1115(4373)	New reel preset output bias	Setting	—	-500	500	%
H1116(4374)	—	—	—	—	—	—
H1117(4375)	—	—	—	—	—	—
H1118(4376)	—	—	—	—	—	—
H1119(4377)	—	—	—	—	—	—
H111A(4378)	—	—	—	—	—	—
H111B(4379)	—	—	—	—	—	—
H111C(4380)	—	—	—	—	—	—
H111D(4381)	—	—	—	—	—	—
H111E(4382)	—	—	—	—	—	—
H111F(4383)	—	—	—	—	—	—
H1120(4384)	Set setting password	Setting	—	0	32000	—
H1121(4385)	Input setting password	Setting	—	0	32000	—
H1122(4386)	Set monitor password	Setting	—	0	32000	—
H1123(4387)	Input monitor password	Setting	—	0	32000	—

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1124(4388)	Menu No.	Setting	—	1	8	—
H1125(4389)	Language selection	Setting	—	1 (Japanese), 2 (English), 3 (Chinese)		—
H1126(4390)	Operation mode selection	Setting	—	1 (LE7-40GU), 2 (LE-40MT), 3 (LE-30CT)		—
H1127(4391)	Selection of function to use 1	Setting	—	0	0xFFFF	—
H1128(4392)	Selection of function to use 2	Setting	—	0	0xFFFF	—
H1129(4393)	Memory cassette backup selection	Setting	—	0 (backup not provided), 1 (backup provided)		—
H112A(4394)	Data copy selection	Setting	—	0 (No function) 1 (Copy to Menu 1), 2 (Copy to Menu 2) 3 (Copy to Menu 3) 4 (Copy to Menu 4), 5 (Copy to Menu 5), 6 (Copy to Menu 6), 7 (Copy to menu 7), 8 (Copy to Menu 8), 9 (Read from memory cassette), 10 (write to memory cassette), 11 (Check with memory cassette)		—
H112B(4395)	Data initialization selection	Setting	—	0 (no function), 1 (initialize all parameters)		—
H112C(4396)	—	—	—	—	—	—
H112D(4397)	—	—	—	—	—	—
H112E(4398)	—	—	—	—	—	—
H112F(4399)	—	—	—	—	—	—
H1130(4400)	Alarm history 1	Monitor	—	0	63	—
H1131(4401)	Alarm history 2	Monitor	—	0	63	—
H1132(4402)	Alarm history 3	Monitor	—	0	63	—
H1133(4403)	Alarm history 4	Monitor	—	0	63	—
H1134(4404)	Alarm history 5	Monitor	—	0	63	—
H1135(4405)	Alarm history 6	Monitor	—	0	63	—
H1136(4406)	Alarm history 7	Monitor	—	0	63	—
H1137(4407)	Alarm history 8	Monitor	—	0	63	—
H1138(4408)	Alarm history holding selection	Setting	—	0 (no holding), 1 (holding)		—
H1139(4409)	Alarm display time	Setting	—	0	301	sec
H113A(4410)	Alarm operation selection 1	Setting	—	0	0xFFFF	—
H113B(4411)	Alarm operation selection 2	Setting	—	0	0xFFFF	—
H113C(4412)	Alarm operation selection 3	Setting	—	0	0xFFFF	—
H113D(4413)	Alarm operation selection 4	Setting	—	0	0xFFFF	—
H113E(4414)	—	—	—	—	—	—
H113F(4415)	—	—	—	—	—	—
H1140(4416)	Network mode selection	Setting	—	0 (No function), 1 (N:N Network), 2 (MODBUS/RTU), 3 (MODBUS (ASCII)), 4 (CC-Link), 5 (CC-Link IEF)		—
H1141(4417)	Station No. in N:N Network	Setting	—	1	7	—
H1142(4418)	MODBUS station No.	Setting	—	1	247	—
H1143(4419)	MODBUS format selection	Setting	—	0	0xFFFF	—
H1144(4420)	CC-Link station No.	Setting	LE7-CCL	1	64	—
H1145(4421)	Number of occupied stations in CC-Link	Setting	LE7-CCL	0 (2 stations occupied), 1 (4 stations occupied)		—
H1146(4422)	Communication speed in CC-Link	Setting	LE7-CCL	0 (156k), 1 (625k), 2 (2.5M), 3 (5M), 4 (10M)		—
H1147(4423)	CC-Link version	Setting	—	0 (Ver.2.00), 1 (Ver.1.10)		—
H1148(4424)	Extended cyclic in CC-Link	Setting	LE7-CCL	0 (1x), 1 (2x), 2 (4x)		—
H1149(4425)	CC-Link IE network No.	Setting	LE7-CCL	1	239	—
H114A(4426)	CC-Link IE station No.	Setting	—	1	120	—
H114B(4427)	—	—	—	—	—	—
H114C(4428)	—	—	—	—	—	—
H114D(4429)	—	—	—	—	—	—
H114E(4430)	—	—	—	—	—	—
H114F(4431)	—	—	—	—	—	—

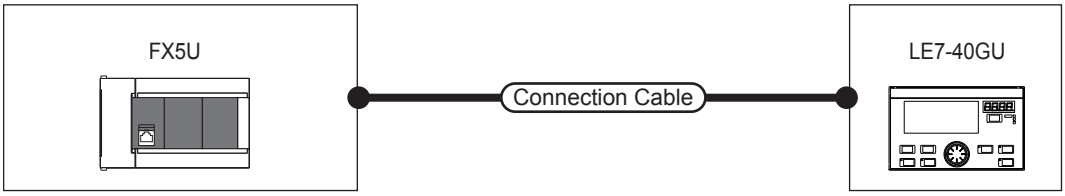
Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1150(4432)	Continuous monitoring FUNC selection 1	Setting	—	0	999	—
H1151(4433)	Continuous monitoring FUNC selection 2	Setting	—	0	999	—
H1152(4434)	Continuous monitoring FUNC selection 3	Setting	—	0	999	—
H1153(4435)	Continuous monitoring FUNC selection 4	Setting	—	0	999	—
H1154(4436)	Continuous monitoring FUNC selection 5	Setting	—	0	999	—
H1155(4437)	Continuous monitoring FUNC selection 6	Setting	—	0	999	—
H1156(4438)	Continuous monitoring FUNC selection 7	Setting	—	0	999	—
H1157(4439)	Continuous monitoring FUNC selection 8	Setting	—	0	999	—
H1158(4440)	Continuous monitoring FUNC selection 9	Setting		0	999	—
H1159(4441)	Continuous monitoring FUNC selection 10	Setting		0	999	—
H115A(4442)	Continuous monitoring FUNC selection 11	Setting		0	999	—
H115B(4443)	Continuous monitoring FUNC selection 12	Setting		0	999	—
H115C(4444)	Continuous monitoring FUNC selection 13	Setting		0	999	—
H115D(4445)	Continuous monitoring FUNC selection 14	Setting		0	999	—
H115E(4446)	Continuous monitoring FUNC selection 15	Setting		0	999	—
H115F(4447)	Continuous monitoring FUNC selection 16	Setting		0	999	—
H1160(4448)	Continuous setting function selection 1	Setting		0	999	—
H1161(4449)	Continuous setting function selection 2	Setting		0	999	—
H1162(4450)	Continuous setting function selection 3	Setting		0	999	—
H1163(4451)	Continuous setting function selection 4	Setting		0	999	—
H1164(4452)	Continuous setting function selection 5	Setting		0	999	—
H1165(4453)	Continuous setting function selection 6	Setting		0	999	—
H1166(4454)	Continuous setting function selection 7	Setting		0	999	—
H1167(4455)	Continuous setting function selection 8	Setting		0	999	—
H1168(4456)	Continuous setting function selection 9	Setting		0	999	—
H1169(4457)	Continuous setting function selection 10	Setting		0	999	—
H116A(4458)	Continuous setting function selection 11	Setting		0	999	—
H116B(4459)	Continuous setting function selection 12	Setting		0	999	—
H116C(4460)	Continuous setting function selection 13	Setting		0	999	—
H116D(4461)	Continuous setting function selection 14	Setting		0	999	—
H116E(4462)	Continuous setting function selection 15	Setting		0	999	—
H116F(4463)	Continuous setting function selection 16	Setting		0	999	—
H1170(4464)	Extended screen 1	Setting		0	999	—
H1171(4465)	Extended screen 2	Setting		0	999	—
H1172 (4466)	Extended screen 3	Setting		0	999	—
H1173(4467)	Extended screen 4	Setting		0	999	—
H1174(4468)	Extended screen 5	Setting		0	999	—
H1175(4469)	Extended screen 6	Setting		0	999	—
H1176(4470)	Extended screen 7	Setting		0	999	—
H1177(4471)	Extended screen 8	Setting		0	999	—
H1178(4472)	Power standby display	Setting		0 (displayed), 1 (not displayed)		—
H1179(4473)	Ethernet communication	Setting		0 (No function), 1 (CC-Link IEF Basic), 2 (SLMP)		—
H117A(4474)	SLMP station No.	Setting		1	7	—
H117B(4475)	—	—	—	—	—	—
H117C(4476)	—	—	—	—	—	—
H117D(4477)	—	—	—	—	—	—
H117E(4478)	—	—	—	—	—	—
H117F(4479)	—	—	—	—	—	—
H1180(4480)	Base torque in open-loop control	Setting	LE7-DCA	0	1000	%
H1181(4481)	Direct taper rate	Setting	—	0	1000	%
H1182(4482)	Link tension monitor filter	Setting	—	0	80	sec

Holding register	Name	Monitor/ settings	Extension option	Minimum value	Maximum value	Unit
H1183(4483)	Tension input	Setting	—	0	2000	N/×10 N
H1184(4484)	Reel diameter input	Setting	—	0	2000	mmϕ
H1185(4485)	—	—	—	—	—	—
H1186(4486)	—	—	—	—	—	—
H1187(4487)	—	—	—	—	—	—
H1188(4488)	—	—	—	—	—	—
H1189(4489)	—	—	—	—	—	—
H118A(4490)	—	—	—	—	—	—
H118B(4491)	—	—	—	—	—	—
H118C(4492)	—	—	—	—	—	—
H118D(4493)	—	—	—	—	—	—
H118E(4494)	—	—	—	—	—	—
H118F(4495)	—	—	—	—	—	—

7.4 Reference Program

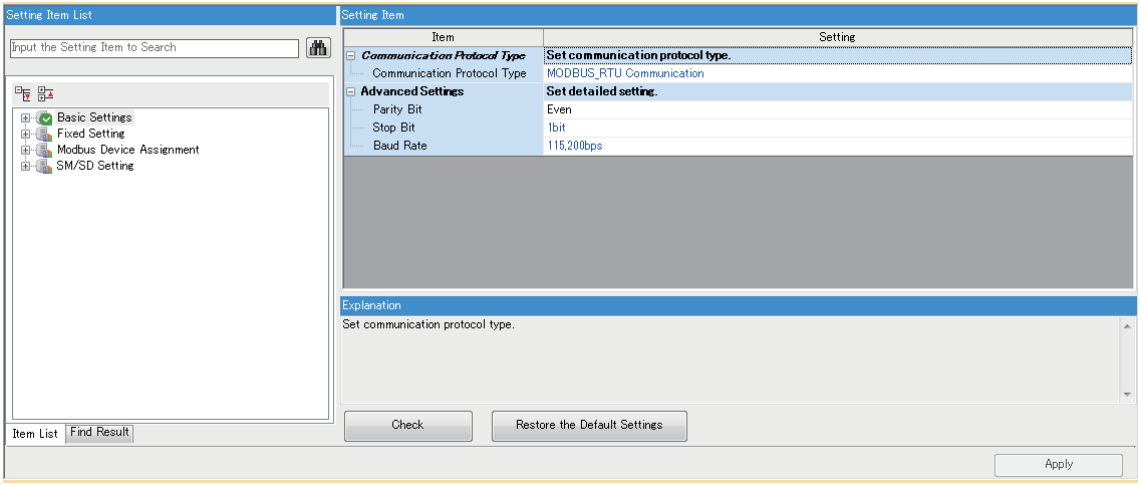
A basic example program (GX Works3) for MODBUS/RTU, ASCII(SLAVE) communication is described.

System configuration



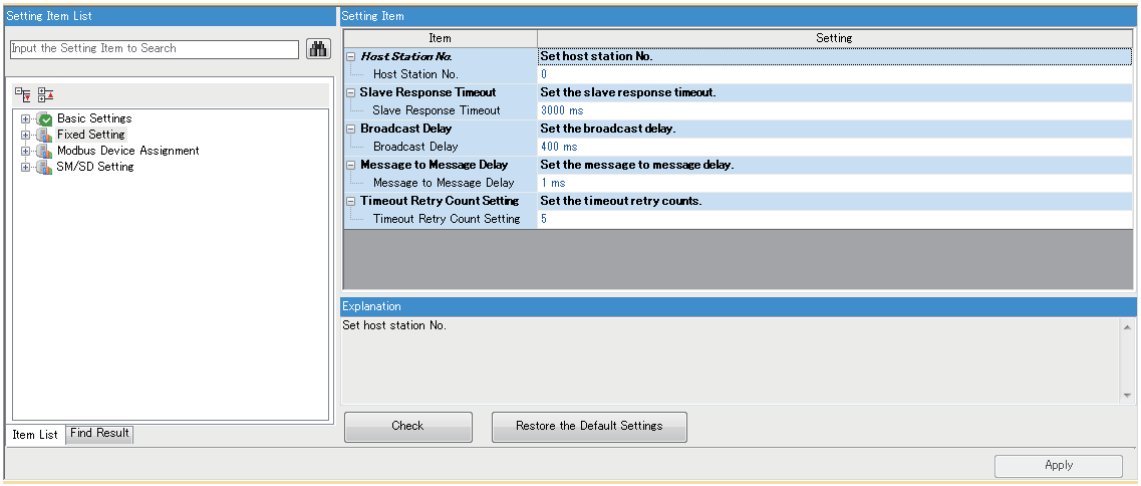
Settings

■Basic settings



Item	Setting
Communication protocol type	MODBUS_RTU Communication

■Fixed setting

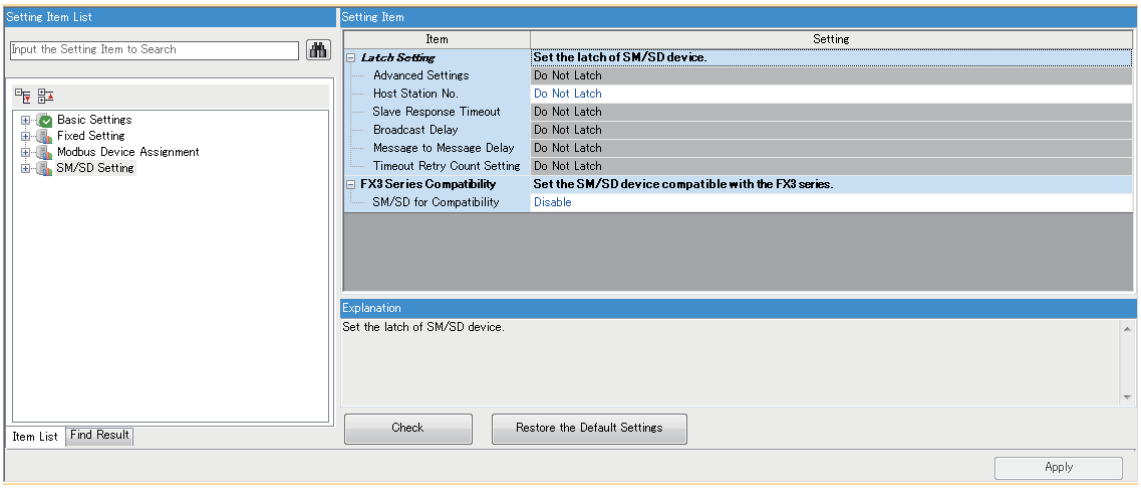


Item	Setting
Host station No.	0
Slave response timeout	3000 ms
Broadcast delay	400 ms
Message to message delay	1 ms
Timeout retry count setting	5

■Modbus device assignment

Setting is unnecessary.

■SM/SD setting



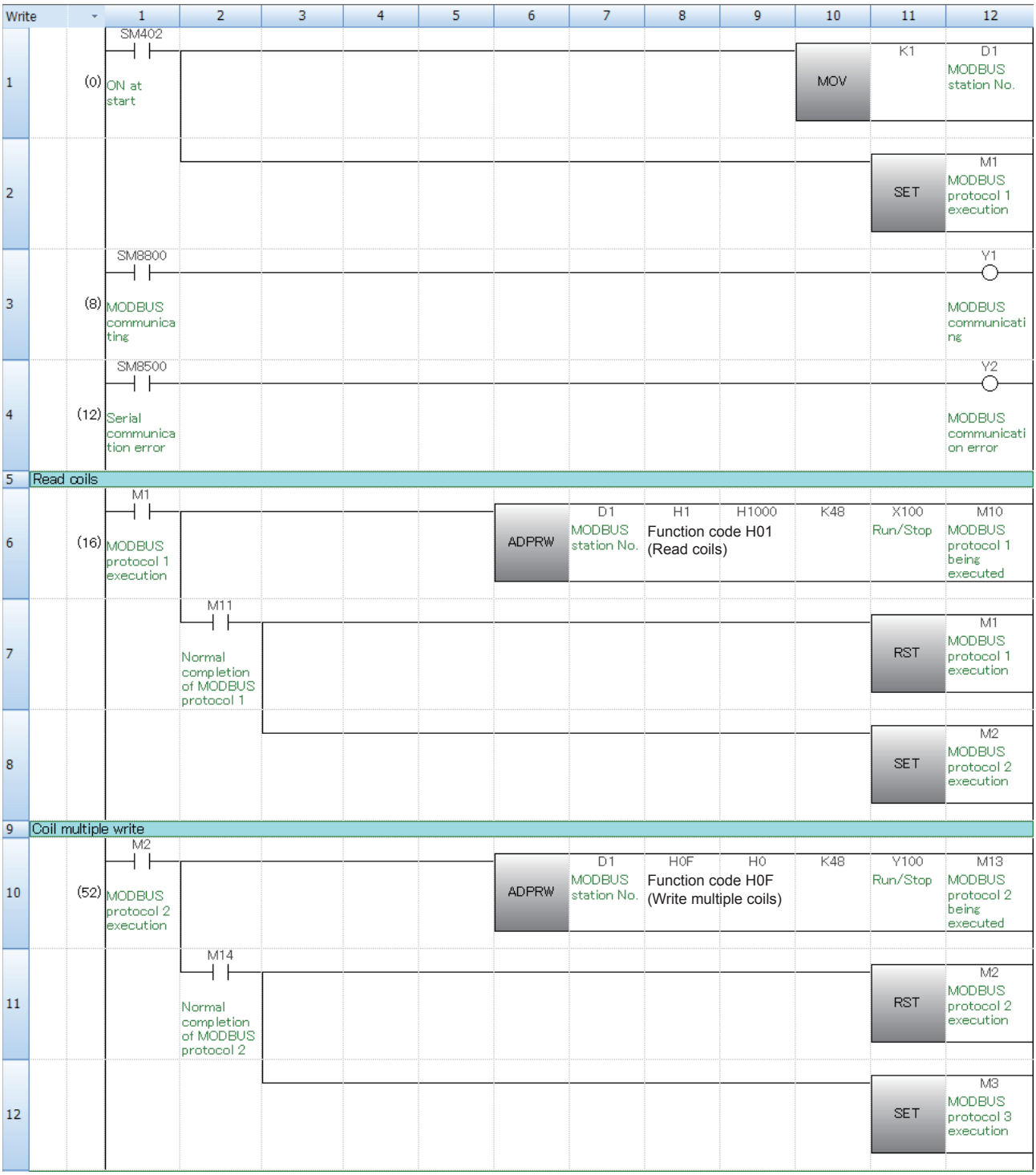
Latch setting

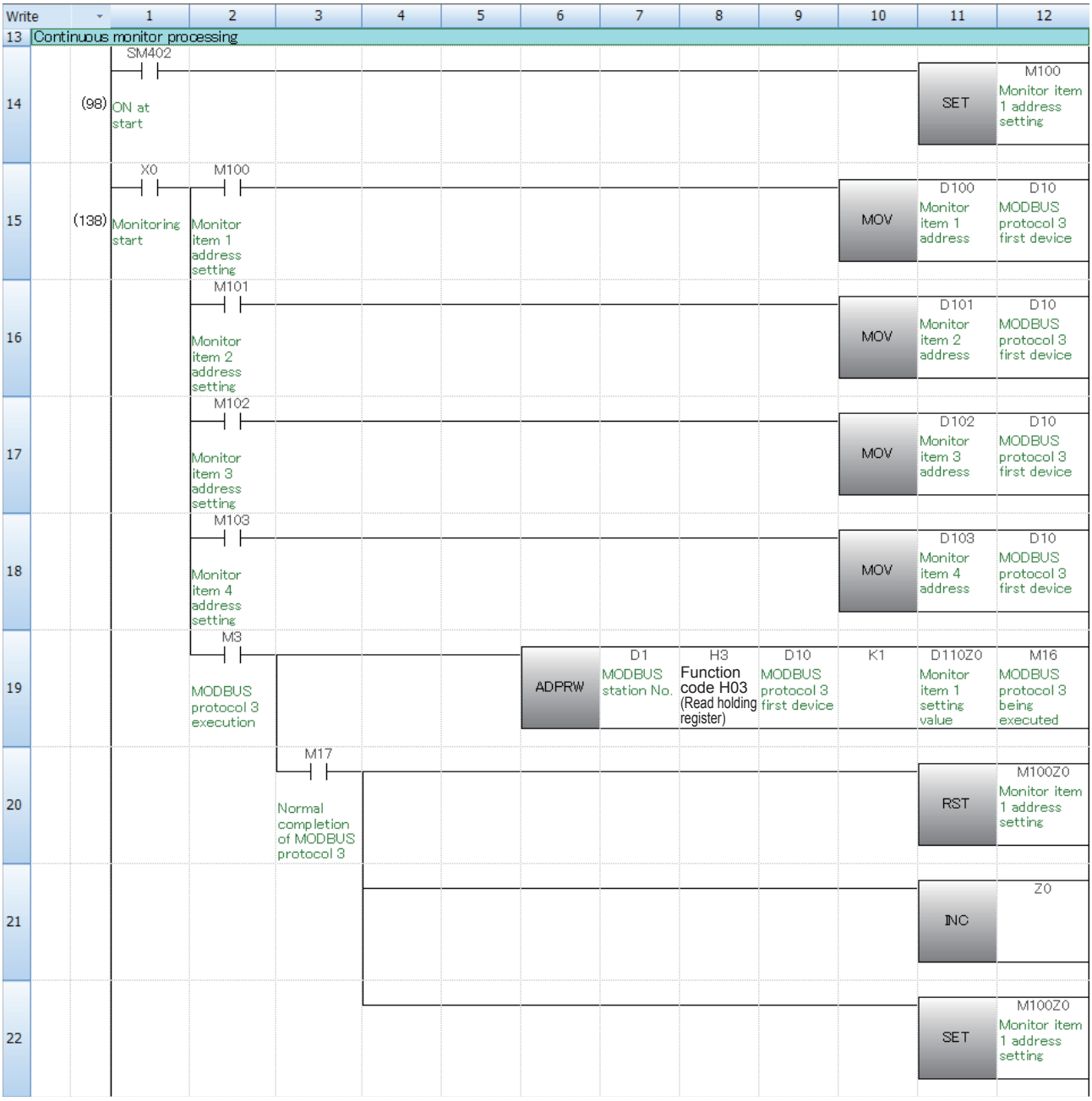
Item	Setting
Host station No.	Do not latch
Total number of local station	Do not latch

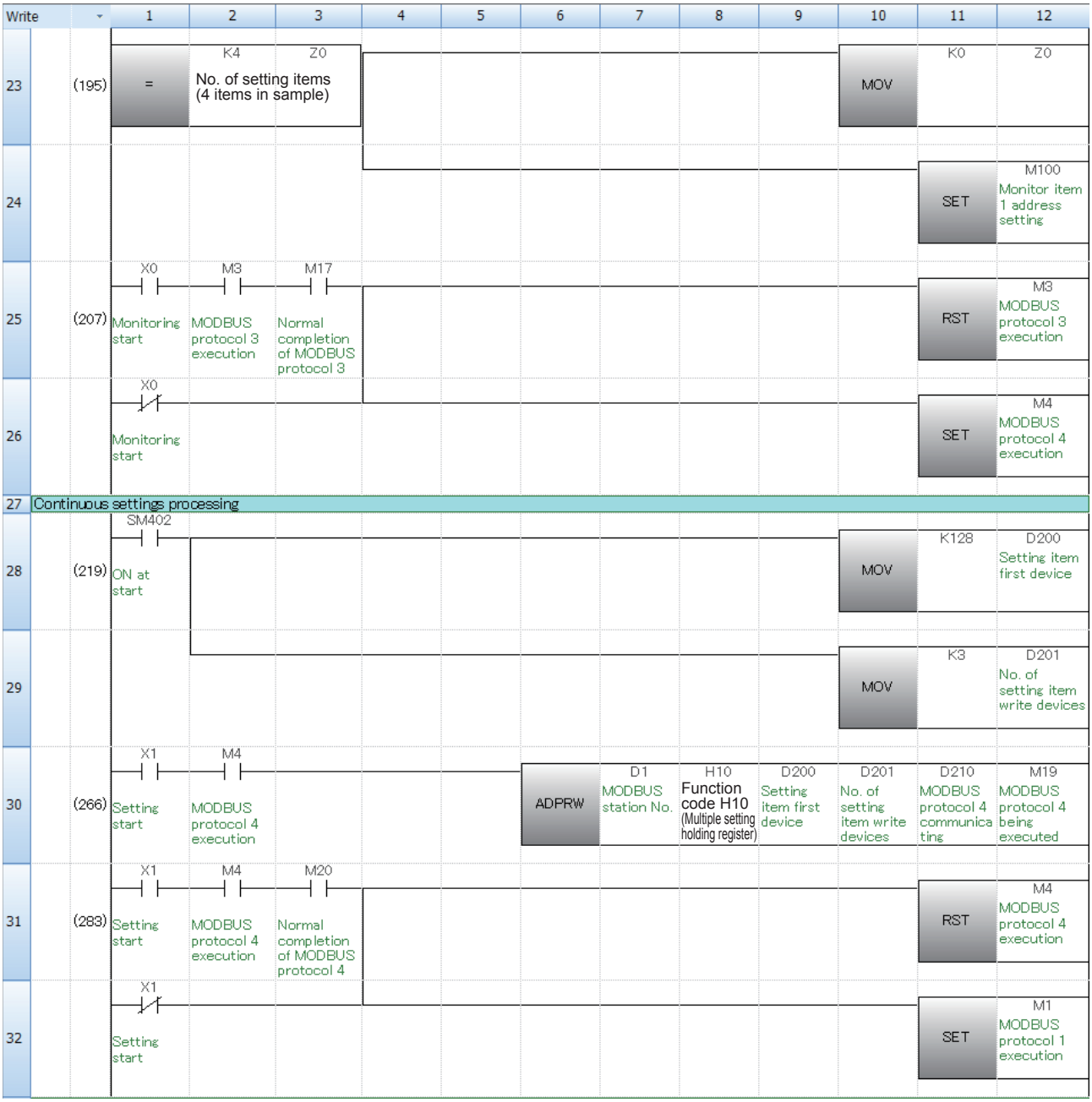
FX3 Series compatibility

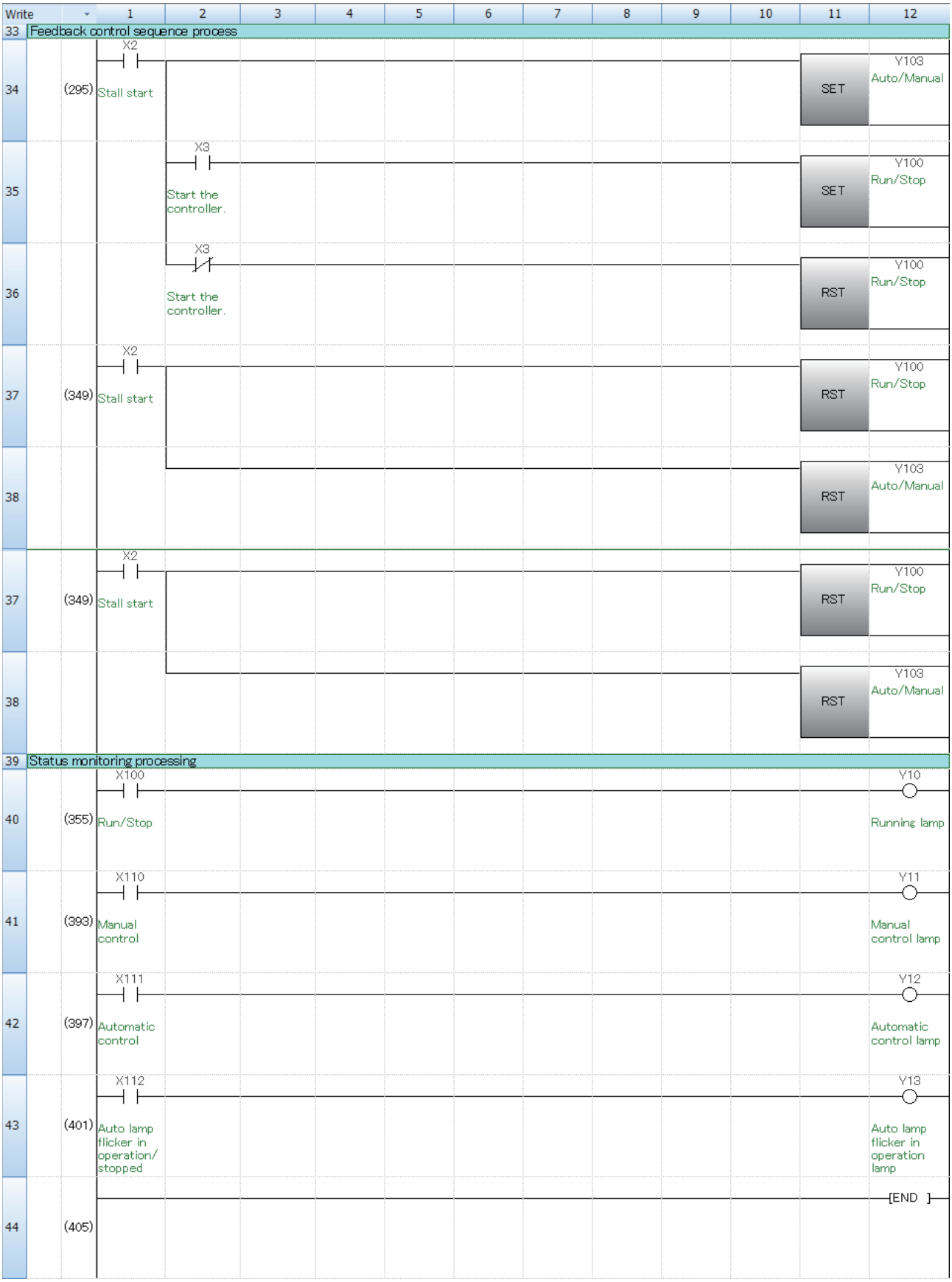
Item	Setting
SM/SD for compatibility	Disable

Program example




Write
1
2
3
4
5
6
7
8
9
10
11
12
13 Continuous monitor processing
14
(98)
SM402
ON at start
SET
M100
Monitor item 1 address setting
15
(138)
X0
Monitoring start
M100
Monitor item 1 address setting
MOV
D100
Monitor item 1 address
D10
MODBUS protocol 3 first device
16
M101
Monitor item 2 address setting
MOV
D101
Monitor item 2 address
D10
MODBUS protocol 3 first device
17
M102
Monitor item 3 address setting
MOV
D102
Monitor item 3 address
D10
MODBUS protocol 3 first device
18
M103
Monitor item 4 address setting
MOV
D103
Monitor item 4 address
D10
MODBUS protocol 3 first device
19
M3
MODBUS protocol 3 execution
ADPRW
D1
MODBUS station No.
H3
Function code H03 (Read holding register)
D10
MODBUS protocol 3 first device
K1
D110Z0
Monitor item 1 setting value
M16
MODBUS protocol 3 being executed
20
M17
Normal completion of MODBUS protocol 3
RST
M100Z0
Monitor item 1 address setting
21
INC
Z0
22
SET
M100Z0
Monitor item 1 address setting


Write
1 2 3 4 5 6 7 8 9 10 11 12
23 (195) = K4 Z0 No. of setting items (4 items in sample) MOV K0 Z0
24 SET M100 Monitor item 1 address setting
25 (207) X0 Monitoring start M3 MODBUS protocol 3 execution M17 Normal completion of MODBUS protocol 3 RST M3 MODBUS protocol 3 execution
26 X0 Monitoring start SET M4 MODBUS protocol 4 execution
27 Continuous settings processing
28 (219) SM402 ON at start MOV K128 D200 Setting item first device
29 MOV K3 D201 No. of setting item write devices
30 (266) X1 Setting start M4 MODBUS protocol 4 execution ADPRW D1 MODBUS station No. H10 Function code H10 (Multiple setting holding register) D200 Setting item first device D201 No. of setting item write devices D210 MODBUS protocol 4 communicating M19 MODBUS protocol 4 being executed
31 (283) X1 Setting start M4 MODBUS protocol 4 execution M20 Normal completion of MODBUS protocol 4 RST M4 MODBUS protocol 4 execution
32 X1 Setting start SET M1 MODBUS protocol 1 execution


Write
1
2
3
4
5
6
7
8
9
10
11
12
33 Feedback control sequence process
34 (295) X2 Stall start
SET Y103 Auto/Manual
35 X3 Start the controller.
SET Y100 Run/Stop
36 X3 Start the controller.
RST Y100 Run/Stop
37 (349) X2 Stall start
RST Y100 Run/Stop
38
RST Y103 Auto/Manual
37 (349) X2 Stall start
RST Y100 Run/Stop
38
RST Y103 Auto/Manual
39 Status monitoring processing
40 (355) X100 Run/Stop
Y10 Running lamp
41 (393) X110 Manual control
Y11 Manual control lamp
42 (397) X111 Automatic control
Y12 Automatic control lamp
43 (401) X112 Auto lamp flicker in operation/ stopped
Y13 Auto lamp flicker in operation lamp
44 (405)
[END]

7

Using method of ladder

- Monitored items: By storing the device number of items to be monitored to D100 to D103, and setting X0=ON, the monitored values are stored in D110 to D113.
- Setting items: By inputting the first device of setting items to D200, inputting the number of written devices to D201, set X1=ON, and the setting values stored in D210 or later are stored.
- Feedback control: By turning ON/OFF X2 and X3, the control status is changed.?

List of used devices (The allocation is an example.)

Device name	Classification*1	Allocation function	Use
D100 to D104	Setting	Monitored item 1 to 4	Device set for individual access to each station No.
D200	Setting	Request command + request code/data setting 1 to 2	Device set to use the request command
X100 to 157	Monitoring	Input signal	Store ON/OFF status of input signal.
Y100 to 157	Setting	Output signal	Store ON/OFF status of output signal.
D1	Setting	MODBUS station No.	Device to specify the station No. (station No.=1 at all times in a sample)
D100 to D103	Setting	Address of monitored item 1 to 4	Set the device No. to be monitored.
D110 to D113	Setting	Set value of monitored value 1 to 4	Set value which is monitored in monitored item 1 to 4 is stored.
D200	Setting	Setting items first device	Set the first device of items to be set. (D128: tension setting in a sample)
D201	Setting	The number of setting items written devices	Set the number of items to be set. (the three items, D128 to D130 in a sample)
to D210	Setting	Setting items set value	Store the set value to be set. (The three devices, D210 to D212 are used in a sample.)
D120 to D123	Monitoring	Continuous monitor 1 to 4	Continuous monitor execution result is stored.
D130 to D131	Setting	Continuous setting 1 to 2	Setting value of continuous setting is stored.
X0	Setting	Start request command access execution	Execute request command.
X1	Setting	Start continuous monitor execution	Start to execute continuous monitor.
X2	Setting	Start continuous setting execution	Start to execute continuous setting.
X3	Setting	Start stall execution	Start to execute stall.
Y1	Monitoring	In MODBUS communication	Turn ON during the execution of MODBUS communication
Y2	Monitoring	MODBUS communication error	Turn ON during the MODBUS communication error.
Y10	Monitoring	Run	Run: ON/Stop: OFF
Y11	Monitoring	Manual control	Manual control ON
Y12	Monitoring	Automatic control	Automatic control ON
Y13	Monitoring	Auto lamp flicker in operation	Auto lamp flicker in operation ON
M1 to 4	System	ADPRW execution flag	Execute adapter instructions successively.
M10 to 22	System	ADPRW execution status flag	Store the execution result of adapter instructions.
M100 to M103	System	Address setting of monitored item 1 to 4	Set monitored item 1 to 4 successively.

*1 Classification
Setting: items to be set/input when using functions
Monitoring: items to monitor output when using functions

REVISIONS

Revision date	Revision	Description
July 2018	A	First edition

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