

iQss

iQ Sensor Solution Reference Manual

SAFETY PRECAUTIONS

(Read these precautions before using this product.)

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

The precautions given in this manual are concerned with this product only. For the safety precautions for the programmable controller system, refer to the user's manual for the module used and the MELSEC iQ-R Module Configuration Manual. In this manual, the safety precautions are classified into two levels: " WARNING" and " CAUTION".

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

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

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

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

- Configure safety circuits external to the programmable controller to ensure that the entire system operates safely even when a fault occurs in the external power supply or the programmable controller.
 Failure to do so may result in an accident due to an incorrect output or malfunction.
 - (1) Emergency stop circuits, protection circuits, and protective interlock circuits for conflicting operations (such as forward/reverse rotations or upper/lower limit positioning) must be configured external to the programmable controller.
 - (2) When the programmable controller detects an abnormal condition, it stops the operation and all outputs are:
 - Turned off if the overcurrent or overvoltage protection of the power supply module is activated.
 - Held or turned off according to the parameter setting if the self-diagnostic function of the CPU module detects an error such as a watchdog timer error.
 - (3) All outputs may be turned on if an error occurs in a part, such as an I/O control part, where the CPU module cannot detect any error. To ensure safety operation in such a case, provide a safety mechanism or a fail-safe circuit external to the programmable controller. For a fail-safe circuit example, refer to the user's manual for the CPU module used and the MELSEC iQ-R Module Configuration Manual.
 - (4) Outputs may remain on or off due to a failure of a component such as a relay and transistor in an output circuit. Configure an external circuit for monitoring output signals that could cause a serious accident.
- In an output circuit, when a load current exceeding the rated current or an over current 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.
- Configure a circuit so that the programmable controller is turned on first and then the external power supply. If the external power supply is turned on first, an accident may occur due to an incorrect output or malfunction.
- Configure a circuit so that the external power supply is turned off first and then the programmable controller. If the programmable controller is turned off first, an accident may occur due to an incorrect output or malfunction.
- For the operating status of each station after a communication failure, refer to manuals for the network used. For the manuals, please consult your local Mitsubishi representative. Incorrect output or malfunction due to a communication failure may result in an accident.

- When connecting an external device with a CPU module or intelligent function module to modify data of a running programmable controller, configure an interlock circuit in the program to ensure that the entire system will always operate safely. For other forms of control (such as program modification, parameter change, forced output, or operating status change) of a running programmable controller, read the relevant manuals carefully and ensure that the operation is safe before proceeding. Improper operation may damage machines or cause accidents. When a Safety CPU is used, data cannot be modified while the Safety CPU is in SAFETY MODE.
- Especially, when a remote programmable controller is controlled by an external device, immediate action cannot be taken if a problem occurs in the programmable controller due to a communication failure. To prevent this, configure an interlock circuit in the program, and determine corrective actions to be taken between the external device and CPU module in case of a communication failure.
- Do not write any data to the "system area" and "write-protect area" of the buffer memory in the module. Also, do not use any "use prohibited" signals as an output signal from the CPU module to each module. Doing so may cause malfunction of the programmable controller system. For the "system area", "write-protect area", and the "use prohibited" signals, refer to the user's manual for the module used. For areas used for safety communications, they are protected from being written by users, and thus safety communications failure caused by data writing does not occur.
- If a communication cable is disconnected, the network may be unstable, resulting in a communication failure of multiple stations. Configure an interlock circuit in the program to ensure that the entire system will always operate safely even if communications fail. Incorrect output or malfunction due to a communication failure may result in an accident. When safety communications are used, an interlock by the safety station interlock function protects the system from an incorrect output or malfunction.

[Security Precautions]

 To maintain the security (confidentiality, integrity, and availability) of the programmable controller and the system against unauthorized access, denial-of-service (DoS) attacks, computer viruses, and other cyberattacks from external devices via the network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.

[Design Precautions] Precautions when connected to AnyWireASLINK

• The AnyWireASLINK system has no control function for ensuring safety.

[Design Precautions] Precautions when connected to CC-Link

 To set the automatic refresh parameter, specify the device Y for the remote output (RY) refresh device.

If a device other than 'Y', such as 'M' and 'L', is specified, CPU module holds the device status as is even after the module status is changed to STOP.

For the method for stopping a data link, refer to the user's manual for relevant CC-Link master/local module.

[Design Precautions]

Precautions when connected to CC-Link IE Field Network

• To set a refresh device in the network parameters, specify the device Y for the remote output (RY) refresh device.

If a device other than 'Y', such as 'M' and 'L', is specified, CPU module holds the device status as is even after the module status is changed to STOP.

[Design Precautions]

Precautions when connected to Ethernet

To prevent the malfunction of the programmable controller system due to harmful e-mails, take preventive measures (such as antivirus measures) so that the mail server for Ethernet module does not receive harmful e-mails.

- Do not install the control lines or communication cables together with the main circuit lines or power cables. Doing so may result in malfunction due to electromagnetic interference. Keep a distance of 100mm or more between those cables.
- During control of an inductive load such as a lamp, heater, or solenoid valve, a large current (approximately ten times greater than normal) may flow when the output is turned from off to on. Therefore, use a module that has a sufficient current rating.
- After the CPU module is powered on or is reset, the time taken to enter the RUN status varies depending on the system configuration, parameter settings, and/or program size. Design circuits so that the entire system will always operate safely, regardless of the time.
- Do not power off the programmable controller or reset the CPU module while the settings are being written. Doing so will make the data in the flash ROM and SD memory card undefined. The values need to be set in the buffer memory and written to the flash ROM and SD memory card again. Doing so also may cause malfunction or failure of the module.
- When changing the operating status of the CPU module from external devices (such as the remote RUN/STOP functions), select "Do Not Open by Program" for "Opening Method" of "Module Parameter". If "Open by Program" is selected, an execution of the remote STOP function causes the communication line to close. Consequently, the CPU module cannot reopen the line, and external devices cannot execute the remote RUN function.

CONDITIONS OF USE FOR THE PRODUCT

(1) MELSEC programmable controller ("the PRODUCT") shall be used in conditions;

i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and

ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries. MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT. ("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTs are required. For details, please contact the Mitsubishi Electric representative in your region.

(3) Mitsubishi Electric shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

INTRODUCTION

Thank you for purchasing the FA integrated engineering software MELSOFT.

This manual describes the functions provided by iQ Sensor Solution.

Before using the product, please read this manual and relevant manuals carefully and develop familiarity with the functions and performance of programmable controller/MELSOFT series to handle the product correctly.

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

Please make sure that the end users read this manual.

CONTENTS

| SAFETY PRECAUTIONS | 1 |
|-----------------------------------|------|
| CONDITIONS OF USE FOR THE PRODUCT | |
| INTRODUCTION. | 6 |
| RELEVANT MANUALS | . 11 |
| TERMS | .12 |
| GENERIC TERMS AND ABBREVIATIONS | . 12 |

PART 1 iQ Sensor Solution

| СН | APTER 1 iQ Sensor Solution | 14 |
|------------|--|------------------------------------|
| 1.1 | Features of iQ Sensor Solution | |
| | Easy startup | |
| | Easy tuning | |
| | Sensor/device monitor | |
| | Data backup/restoration | |
| 4.0 | How to Use iQ Sensor Solution Functions | 18 |
| 1.2 | | |
| | APTER 2 iQ Sensor Solution FUNCTIONS | 19 |
| | | 19 |
| CH | APTER 2 iQ Sensor Solution FUNCTIONS | <u>19</u> 19 |
| CH | APTER 2 iQ Sensor Solution FUNCTIONS Function List of iQ Sensor Solution | 19 19 19 |
| CH/ 2.1 | APTER 2 iQ Sensor Solution FUNCTIONS Function List of iQ Sensor Solution | 19 19 19 20 |
| CH/ 2.1 | APTER 2 iQ Sensor Solution FUNCTIONS Function List of iQ Sensor Solution | 19 |

PART 2 GX Works2

| СН | APTER 3 AnyWireASLINK | 26 |
|-----|--|------|
| 3.1 | Detecting Devices Supporting iQSS Automatically | . 28 |
| 3.2 | Verifying Devices Supporting iQSS Against System Configuration. | . 30 |
| 3.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | . 31 |
| 3.4 | Monitoring Devices Supporting iQSS | . 34 |
| 3.5 | Backing up/Restoring Data of Devices Supporting iQSS | . 36 |
| | Data backup | . 40 |
| | Data restoration | . 48 |
| СН | APTER 4 CC-Link | 56 |
| 4.1 | Detecting Devices Supporting iQSS Automatically | . 58 |
| | Detecting devices connected to a bridge module (NZ2AW1C2AL) | . 62 |
| 4.2 | Verifying Devices Supporting iQSS Against System Configuration. | . 65 |
| 4.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | . 68 |
| | Reading/writing parameters of devices supporting iQSS which are connected to a bridge module | |
| | (NZ2AW1C2AL) | . 70 |
| 4.4 | Monitoring Devices Supporting iQSS | .71 |
| | Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) | . 73 |
| 4.5 | Backing up/Restoring Data of Devices Supporting iQSS | .76 |

| СНА | PTER 5 CC-Link IE Field Network | 106 |
|-----|--|-----|
| 5.1 | Detecting Devices Supporting iQSS Automatically | 108 |
| | Detecting devices connected to a bridge module (NZ2AW1GFAL). | 111 |
| 5.2 | Verifying Devices Supporting iQSS Against System Configuration. | 114 |
| 5.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | 116 |
| | Reading/writing parameters of devices supporting iQSS which are connected to a bridge module | |
| | (NZ2AW1GFAL) | 117 |
| 5.4 | Monitoring Devices Supporting iQSS | 118 |
| | Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) | 119 |
| 5.5 | Backing up/Restoring Data of Devices Supporting iQSS | 121 |
| | Data backup | 127 |
| | Data restoration | 138 |

CHAPTER 6 Ethernet

149

| 6.1 | Detecting Devices Supporting iQSS Automatically | |
|-----|--|--|
| 6.2 | Applying the Communication Setting to a Device Supporting iQSS | |
| 6.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | |
| 6.4 | Monitoring Devices Supporting iQSS | |
| 6.5 | Backing up/Restoring Data of Devices Supporting iQSS | |
| | Data backup | |
| | Data restoration | |

PART 3 GX Works3

| СН | APTER 7 AnyWireASLINK | 180 |
|-----|---|-----|
| 7.1 | Detecting Devices Supporting iQSS Automatically | 182 |
| 7.2 | Verifying Devices Supporting iQSS Against System Configuration. | 184 |
| 7.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | |
| 7.4 | Monitoring Devices Supporting iQSS | 189 |
| 7.5 | Backing up/Restoring Data of Devices Supporting iQSS | 191 |
| | Data backup | 195 |
| | Data restoration | 204 |
| СН | APTER 8 CC-Link | 213 |
| 8.1 | Detecting Devices Supporting iQSS Automatically | 215 |
| | Detecting devices connected to a bridge module (NZ2AW1C2AL) | 218 |
| 8.2 | Verifying Devices Supporting iQSS Against System Configuration. | 222 |
| | Verifying devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) against a | |
| | system configuration | 222 |
| 8.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | 223 |
| | Reading/writing parameters of devices supporting iQSS which are connected to a bridge module | |
| | (NZ2AW1C2AL) | 225 |
| 8.4 | Monitoring Devices Supporting iQSS | 226 |
| | Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) | 228 |
| 8.5 | Backing up/Restoring Data of Devices Supporting iQSS | 230 |
| | Data backup | 235 |

| CHA | APTER 9 CC-Link IE TSN | 264 |
|------|---|------|
| 9.1 | Detecting Devices Supporting iQSS Automatically | 265 |
| | Detecting devices connected to a bridge module (NZ2AW1GNAL) | 265 |
| 9.2 | Reading/Writing Parameters from/to Devices Supporting iQSS | 268 |
| | Reading/writing parameters of devices supporting iQSS which are connected to a bridge module | |
| | (NZ2AW1GNAL) | |
| 9.3 | Monitoring Devices Supporting iQSS | |
| | Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL) | |
| СНА | APTER 10 CC-Link IE Field Network | 271 |
| 10.1 | Detecting Devices Supporting iQSS Automatically | |
| | Detecting devices connected to a bridge module (NZ2AW1GFAL). | |
| 10.2 | Verifying Devices Supporting iQSS Against System Configuration. | |
| | Verifying devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) against | st a |
| | system configuration | |
| 10.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | |
| | Reading/writing parameters of devices supporting iQSS which are connected to a bridge module | |
| | (NZ2AW1GFAL) | |
| 10.4 | Monitoring Devices Supporting iQSS | |
| | Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) | |
| 10.5 | Backing up/Restoring Data of Devices Supporting iQSS | 291 |
| | Data backup | 296 |
| | Data restoration | 311 |
| СНА | PTER 11 Ethernet | 325 |

| CHA | PIER 11 Ethernet | 325 |
|------|--|-----|
| 11.1 | Detecting Devices Supporting iQSS Automatically | |
| 11.2 | Applying the Communication Setting to a Device Supporting iQSS | |
| 11.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | |
| 11.4 | Monitoring Devices Supporting iQSS | |
| 11.5 | Backing up/Restoring Data of Devices Supporting iQSS | |
| | Data backup | |
| | Data restoration | |

PART 2 MI Configurator

| СНА | PTER 12 CC-Link IE Field Network | 358 |
|------|--|-----|
| 12.1 | Detecting Devices Supporting iQSS Automatically | |
| 12.2 | Reading/Writing Parameters from/to Devices Supporting iQSS | |
| СНА | PTER 13 Ethernet | 364 |
| 13.1 | Detecting Devices Supporting iQSS Automatically | |
| 13.2 | Applying the Communication Setting to a Device Supporting iQSS | |
| 13.3 | Reading/Writing Parameters from/to Devices Supporting iQSS | |
| APP | ENDIX | 370 |
| Appe | ndix 1 Useful Functions | |
| | Linkage with dedicated tools (association with properties) | |

| Command execution to slave station | . 371 |
|--|-------|
| Appendix 2 Devices that Support iQ Sensor Solution | . 372 |
| CPU module | . 372 |
| MELIPC | . 374 |
| Devices supporting iQSS (CPU module). | . 374 |
| Device supporting iQSS (MELIPC) | . 382 |
| Appendix 3 Engineering Tool and Version List | . 385 |
| GX Works2/MELSOFT Navigator | . 385 |
| GX Works3/MELSOFT Navigator | . 389 |
| MI Configurator | . 395 |
| Appendix 4 Considerations for Using Device Supporting iQSS | . 396 |
| AnyWireASLINK | . 396 |
| CC-Link | . 396 |
| CC-Link IE Field Network | . 398 |
| Ethernet | .400 |
| Appendix 5 Error Code List | . 401 |
| iQ Sensor Solution-related errors | . 401 |
| AnyWireASLINK | . 401 |
| CC-Link | 401 |
| CC-Link IE Field Network | . 403 |
| Ethernet (Error codes that occur on communication) | . 405 |
| Ethernet (Error codes of devices supporting iQSS). | . 408 |
| Appendix 6 Special Relay (SM)/Special Register (SD) | . 409 |
| Appendix 7 Event List | . 410 |
| Viewing an event history | 410 |
| How to read the event list | 410 |
| Event list | 411 |
| Appendix 8 Backup File Capacity | . 412 |
| Backup data file (.QBR) | 412 |
| System file for a data backup or restoration (.QSI, .BSI) | . 412 |
| INDEX | 414 |

INDEX

| REVISIONS | 16 |
|--------------------------|--------|
| INFORMATION AND SERVICES | 18 |
| TRADEMARKS | 18 |

RELEVANT MANUALS

| Manual name [manual number] | Description | Available form |
|---|--|-------------------------------|
| iQ Sensor Solution Reference Manual [SH-081133ENG] (this manual) | Operation methods of the online functions for iQ Sensor Solution | Print book e-Manual PDF |

Point P

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

e-Manual has the following features:

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

| Unless otherwise specified, | this manual u | uses the | following terms. |
|-----------------------------|---------------|----------|------------------|
| | | | |

| Term | Description |
|--------------------------------|---|
| Address | Device information set to a slave module to identify each node on the AnyWireASLINK network |
| Device supporting iQSS | A device which supports iQ Sensor Solution |
| Engineering tool | A tool used for setting up programmable controllers, programming, debugging, and maintenance |
| ID | Information to identify whether the module is an input module or output module based on an address assigned to a slave module of AnyWireASLINK |
| iQSS | iQ Sensor Solution. Cooperation of sensors, programmable controllers, HMI (Human Machine Interface), and engineering tool to facilitate the start-up or maintenance of sensors |
| MELSOFT Navigator | An integrated development environment included in MELSOFT iQ Works |
| Profile | Data that stores the information of a device supporting iQSS. By registering a profile in GX Works2, GX Works3, MI Configurator, and MELSOFT Navigator, the parameter settings and monitors corresponding to a registered module or device can be used. |
| Ver.2-compatible slave station | A slave station that supports the remote net Ver.2 mode or remote device net Ver.2 mode |

GENERIC TERMS AND ABBREVIATIONS

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

| Generic term/abbreviation | Description | |
|-----------------------------|--|--|
| AnyWireASLINK configuration | A system configuration connected with AnyWireASLINK | |
| ASLINKAMP | Sensor amplifiers that have an AnyWireASLINK interface | |
| ASLINKER | I/O devices that have an AnyWireASLINK interface | |
| CC IE Field configuration | System configuration connected with CC-Link IE Field Network | |
| CC-Link configuration | System configuration connected with CC-Link | |
| Ethernet configuration | System configuration connected with Ethernet | |
| Built-in Ethernet port CPU | L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU-PBT, Q03UDVCPU, Q04UDVCPU, Q04UDPVCPU, Q06UDVCPU, Q06UDPVCPU, Q13UDVCPU, Q13UDPVCPU, Q26UDVCPU, Q26UDPVCPU | |
| Ethernet-equipped module | The following modules when using an Ethernet function: • RJ71EN71 • CPU module | |
| RnENCPU | R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU | |
| Station sub-ID number | An ID number of a sensor connected to a communication unit for CC-Link and an AnyWireASLINK bridge module | |
| Actual system configuration | An actual system configuration connected to each network master module, an Ethernet-equipped module, built-in Ethernet port CPU, and bridge module | |
| Connection method | The sensor network and each network that can be connected using iQ Sensor Solution | |
| Sensor parameter | Parameters (such as threshold or sensor operation mode) of a device supporting iQSS | |
| Communication setting | The settings (such as IP address) to communicate using Ethernet | |
| Remote I/O module | Basic digital input modules and basic digital output modules of CC-Link IE Field Network. | |

PART 1 iQ Sensor Solution

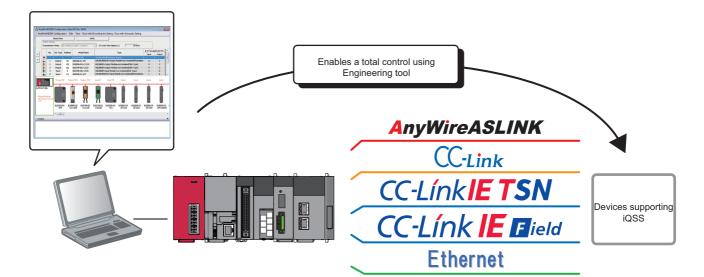
This part explains the overview of iQ Sensor Solution and its functions.

1 iQ Sensor Solution

2 iQ Sensor Solution FUNCTIONS

1 iQ Sensor Solution

iQ Sensor Solution is a solution to manage both partner products and programmable controllers with an engineering tool. By sharing design information including system design and programming in the whole control system, the system design efficiency and the programming efficiency can be improved, and the total cost of design, startup, operation, and maintenance can be reduced.



1.1 Features of iQ Sensor Solution

By performing the functions of an engineering tool supporting iQ Sensor Solution, the information of devices supporting iQSS connected to various networks can easily be saved/restored.

Easy startup

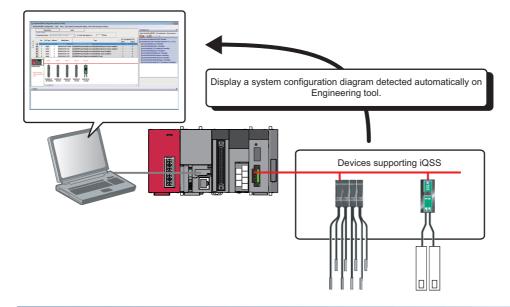
A system configuration diagram can easily be displayed on the screen of an engineering tool by detecting devices supporting iQSS in the actual system configuration.

In addition, the displayed system configuration can be verified against the actual system configuration, and the communication setting for Ethernet devices can easily be configured.

Automatic detection of connected devices

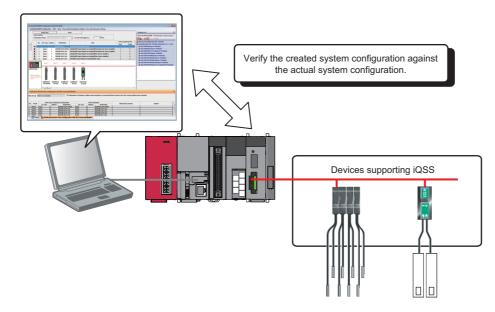
A system configuration diagram can automatically be created on the screen of an engineering tool by detecting devices supporting iQSS in an actual system configuration.

Consequently, man-hours for creating a system configuration diagram at the system startup can be reduced.



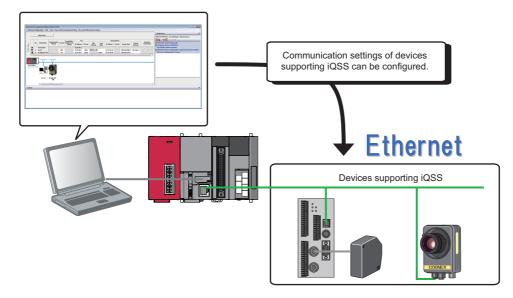
Verification of connected devices and configurations

A displayed system configuration can be verified against the actual system configuration. The modification man-hours at the system startup can be reduced.



Reflection of the communication setting

The communication setting, such as an IP address, for the different type of sensors can be set in the same setting screen. The setting man-hours can be reduced since the setting can be set to a device supporting iQSS without starting dedicated tools.

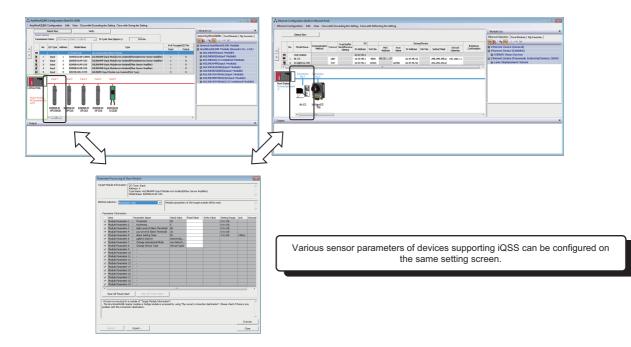


Easy tuning

Sensor parameters can be set efficiently in the same setting screen for sensors of different manufacturers.

Sensor parameter read/write

Sensor parameters can be set by the same operation without starting dedicated tools for each manufacturer.



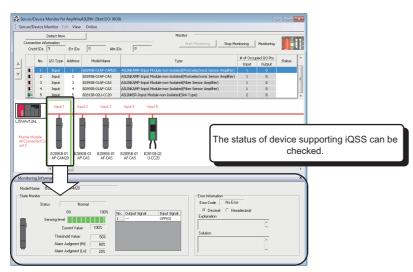
Sensor/device monitor

Device supporting iQSS in the actual system configuration can be displayed in a single screen.

Sensor/device monitor

The status of devices supporting iQSS in the actual system configuration can be monitored.

The status and details on devices supporting iQSS can also be checked in the "Monitoring Information" window.



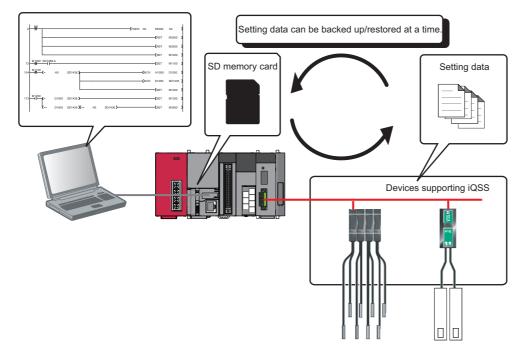
Data backup/restoration

The information of devices supporting iQSS can be backed up (saved) to /restored from an SD memory card.

Data backup/restoration

The information of devices supporting iQSS in the actual system configuration can be backed up (saved) to/restored from an SD memory card.

Man-hours for changing settings can be reduced since data restoration/utilization are simplified.



1.2 How to Use iQ Sensor Solution Functions

iQ Sensor Solution provides iQ Sensor Solution functions using an engineering tool.

The information of devices supporting iQSS can easily be backed up/restored with the iQ Sensor Solution functions.

For the engineering tools for which these functions can be used, refer to the following:

Page 385 Engineering Tool and Version List

Procedures from detecting devices to backing up/restoring data

The following shows the procedure to backup/restore the information of devices supporting iQSS in iQ Sensor Solution.

Operating procedure

| 1. Easy startup |
|----------------------------|
| \bigtriangledown |
| |
| |
| |
| 2. Easy tuning |
| $\overline{\nabla}$ |
| 3. Sensor/device monitor |
| $\overline{\Box}$ |
| 4. Data backup/restoration |
| |

1. Easy startup

Automatic detection of connected devices

Detect the devices supporting iQSS connected to a network in the configuration window of an engineering tool.

Verification of connected devices and configurations

Verify the system configuration displayed in the configuration window of an engineering tool against the actual system configuration.

Reflection of the communication setting

Apply the communication setting set in the configuration window of an engineering tool to devices supporting iQSS.

- **2.** Easy tuning
- Sensor parameter read/write

Read/Write the parameters of devices supporting iQSS with an engineering tool.

3. Sensor/device monitor

Sensor/device monitor

Monitor the connection status of a device supporting iQSS with an engineering tool.

- 4. Data backup/restoration
- Data backup/restoration

Backup/restore the information of devices supporting iQSS using the menu of an engineering tool or a program.

2 iQ Sensor Solution FUNCTIONS

iQ Sensor Solution functions provide easy operations such as the communication setting, programming, data management, monitoring, and data backup/restoration for devices supporting iQSS with an engineering tool.

2.1 Function List of iQ Sensor Solution

The following functions are available for iQ Sensor Solution.

| Purpose | iQ Sensor Solution function | Description |
|-------------------------|--|--|
| Easy startup | Automatic detection of connected devices | To detect devices supporting iQSS, which are connected to a master module or a built-in Ethernet port CPU, and display the information in a configuration window. |
| | Verification of connected devices and configurations | To verify the actual system configuration against the displayed system configuration. |
| | Reflection of the communication setting | To apply the communication setting to devices supporting iQSS. |
| Easy tuning | Sensor parameter read/write | To read and write the sensor parameters of devices supporting iQSS. |
| Sensor/device monitor | Sensor/device monitor | To graphically monitor the status of devices supporting iQSS. |
| Data backup/restoration | Data backup/restoration | To backup (save) the information of devices supporting iQSS in an SD memory card. In addition, this function restores the information of devices supporting iQSS which was backed up (saved) in an SD memory card. |
| Useful function | Linkage with dedicated tools (association with properties) | To start the dedicated tools that is associated with properties and display manuals by double-clicking the images of devices supporting iQSS on 'Device map area'. |
| | Command execution to slave stations | To execute commands to a slave station connected to the master/local module. |

Before using iQ Sensor Solution functions

Before using iQ Sensor Solution functions, configure the settings required for communication with devices supporting iQSS in advance.

iQ Sensor Solution functions cannot be performed unless the communication with devices supporting iQSS is established. For the system configuration and parameter setting, refer to the manual for the device that supports iQ Sensor Solution to be used.

Profile registration

iQ Sensor Solution functions cannot be performed unless the profiles of devices supporting iQSS are registered to an engineering tool.

Register a profile of a device supporting iQSS in advance.

A profile can be registered only by a user logged on to a personal computer with the administrator authority.

For details on the registration methods of a profile, refer to the following:

GX Works2 Version 1 Operating Manual (Common)

GX Works3 Operating Manual

MI Configurator Operating Manual

2.2 Function List of iQ Sensor Solution for Each Connection Method

The following tables list the iQ Sensor Solution functions available for each connection method and their references.

GX Works2

In a system configured with the following series, the iQ Sensor Solution functions can be performed using an engineering tool, GX Works2 or MELSOFT Navigator.

- MELSEC-L
- MELSEC-Q
- MELSEC-F

AnyWireASLINK

| Purpose | iQ Sensor Solution function | Reference |
|-------------------------|--|--|
| Easy startup | Automatic detection of connected devices | Page 28 Detecting Devices Supporting iQSS Automatically |
| | Verification of connected devices and configurations | ের্জ Page 30 Verifying Devices Supporting iQSS Against System Configuration |
| Easy tuning | Sensor parameter read/write | Page 31 Reading/Writing Parameters from/to Devices Supporting iQSS |
| Sensor/device monitor | Sensor/device monitor | Page 34 Monitoring Devices Supporting iQSS |
| Data backup/restoration | Data backup/restoration | Page 36 Backing up/Restoring Data of Devices Supporting iQSS |
| Useful function | Linkage with dedicated tools (association with properties) | 13^{3} Page 370 Linkage with dedicated tools (association with properties) |

CC-Link

| Purpose | iQ Sensor Solution function | Reference |
|-------------------------|--|--|
| Easy startup | Automatic detection of connected devices | Page 58 Detecting Devices Supporting iQSS Automatically |
| | Verification of connected devices and configurations | ের্শ Page 65 Verifying Devices Supporting iQSS Against System Configuration |
| Easy tuning | Sensor parameter read/write | Page 68 Reading/Writing Parameters from/to Devices Supporting iQSS |
| Sensor/device monitor | Sensor/device monitor | Page 71 Monitoring Devices Supporting iQSS |
| Data backup/restoration | Data backup/restoration | Page 76 Backing up/Restoring Data of Devices Supporting iQSS |
| Useful function | Linkage with dedicated tools (association with properties) | SP Page 370 Linkage with dedicated tools (association with properties) |
| | Command execution to slave stations | Page 371 Command execution to slave station |

CC-Link IE Field Network

| Purpose | iQ Sensor Solution function | Reference |
|-------------------------|--|--|
| Easy startup | Automatic detection of connected devices | ST Page 108 Detecting Devices Supporting iQSS Automatically |
| | Verification of connected devices and configurations ^{*1} | CP Page 114 Verifying Devices Supporting iQSS Against System Configuration |
| Easy tuning | Sensor parameter read/write | CP Page 116 Reading/Writing Parameters from/to Devices Supporting iQSS |
| Sensor/device monitor | Sensor/device monitor | ST Page 118 Monitoring Devices Supporting iQSS |
| Data backup/restoration | Data backup/restoration ^{*2} | ST Page 121 Backing up/Restoring Data of Devices Supporting iQSS |
| Useful function | Linkage with dedicated tools (association with properties) | \searrow Page 370 Linkage with dedicated tools (association with properties) |
| | Command execution to slave stations | Page 371 Command execution to slave station |

*1 This function can be performed to a device supporting iQSS, which is connected to a bridge module (NZ2AW1GFAL).

*2 The backup/restoration function can be performed with a program.

| CC-Link IE Field Network Basic | | |
|--------------------------------|--|---|
| Purpose | iQ Sensor Solution function | Reference |
| Easy startup | Automatic detection of connected devices | CC-Link IE Field Network Basic Reference Manual |
| | Reflection of the communication setting | |
| Easy tuning | Sensor parameter read/write | |
| Useful function | Linkage with dedicated tools (association with properties) | Page 370 Linkage with dedicated tools (association with properties) |
| | Command execution to slave stations | Page 371 Command execution to slave station |

| Ethernet | | |
|--|---|--|
| iQ Sensor Solution function | Reference | |
| Automatic detection of connected devices | Page 151 Detecting Devices Supporting iQSS Automatically | |
| Reflection of the communication setting | $\boxtimes\sp{scale}$ Page 153 Applying the Communication Setting to a Device Supporting iQSS | |
| Sensor parameter read/write | CP Page 155 Reading/Writing Parameters from/to Devices Supporting iQSS | |
| Sensor/device monitor | Page 157 Monitoring Devices Supporting iQSS | |
| Data backup/restoration | Page 159 Backing up/Restoring Data of Devices Supporting iQSS | |
| Linkage with dedicated tools (association with properties) | \searrow Page 370 Linkage with dedicated tools (association with properties) | |
| | Automatic detection of connected devices Reflection of the communication setting Sensor parameter read/write Sensor/device monitor Data backup/restoration Linkage with dedicated tools (association with | |

GX Works3

In a system configured with the following series, the iQ Sensor Solution functions can be performed using an engineering tool, GX Works3 or MELSOFT Navigator.

- MELSEC iQ-R
- MELSEC iQ-L*1
- MELSEC iQ-F
- *1 The MELSEC iQ-L series system is configured with an LHCPU and MELSEC-L series modules.

AnyWireASLINK

| Purpose | iQ Sensor Solution function | Reference |
|-------------------------|--|--|
| Easy startup | Automatic detection of connected devices | Page 182 Detecting Devices Supporting iQSS Automatically |
| | Verification of connected devices and configurations | Series Page 184 Verifying Devices Supporting iQSS Against System Configuration |
| Easy tuning | Sensor parameter read/write | C3 Page 186 Reading/Writing Parameters from/to Devices Supporting iQSS |
| Sensor/device monitor | Sensor/device monitor | Page 189 Monitoring Devices Supporting iQSS |
| Data backup/restoration | Data backup/restoration | Page 191 Backing up/Restoring Data of Devices Supporting iQSS |
| Useful function | Linkage with dedicated tools (association with properties) | Page 370 Linkage with dedicated tools (association with properties) |

CC-Link

| Purpose | iQ Sensor Solution function | Reference | |
|-------------------------|--|--|--|
| Easy startup | Automatic detection of connected devices | n of connected devices Supporting iQSS Automatically | |
| Easy tuning | Sensor parameter read/write | Series Page 223 Reading/Writing Parameters from/to Devices Supporting iQSS | |
| Sensor/device monitor | Sensor/device monitor | Page 226 Monitoring Devices Supporting iQSS | |
| Data backup/restoration | Data backup/restoration | Page 230 Backing up/Restoring Data of Devices Supporting iQSS | |
| Useful function | Command execution to slave stations | FP Page 371 Command execution to slave station | |

CC-Link IE TSN

| Purpose | iQ Sensor Solution function Reference | | |
|-----------------------|--|--|--|
| Easy startup | Automatic detection of connected devices | | |
| Easy tuning | Sensor parameter read/write | CF Page 268 Reading/Writing Parameters from/to Devices Supporting iQSS | |
| Sensor/device monitor | Sensor/device monitor | Page 269 Monitoring Devices Supporting iQSS | |

CC-Link IE Field Network

| Purpose | iQ Sensor Solution function Reference | | |
|-------------------------|--|--|--|
| Easy startup | Automatic detection of connected devices | ST Page 272 Detecting Devices Supporting iQSS Automatically | |
| Easy tuning | Sensor parameter read/write | Series Page 280 Reading/Writing Parameters from/to Devices Supporting iQSS | |
| Sensor/device monitor | Sensor/device monitor | Page 288 Monitoring Devices Supporting iQSS | |
| Data backup/restoration | Data backup/restoration | Page 291 Backing up/Restoring Data of Devices Supporting iQSS | |
| Useful function | Linkage with dedicated tools (association with properties) | | |
| | Command execution to slave stations | SP Page 371 Command execution to slave station | |

| CC-Link IE Field Network Basic | | | |
|--------------------------------|--|--|--|
| Purpose | iQ Sensor Solution function | Reference | |
| Easy startup | Automatic detection of connected devices | CC-Link IE Field Network Basic Reference Manual | |
| | Reflection of the communication setting | | |
| Easy tuning | Sensor parameter read/write | | |
| Useful function | Linkage with dedicated tools (association with properties) | SP Page 370 Linkage with dedicated tools (association with properties) | |
| | Command execution to slave stations | Page 371 Command execution to slave station | |

| Ethernet | | | |
|-------------------------|--|---|--|
| Purpose | iQ Sensor Solution function | Reference | |
| Easy startup | Automatic detection of connected devices | Services Supporting iQSS Automatically | |
| | Reflection of the communication setting | $\ensuremath{\mathbb{C}}\xspace^{329}$ Applying the Communication Setting to a Device Supporting iQSS | |
| Easy tuning | Sensor parameter read/write | C3 Page 331 Reading/Writing Parameters from/to Devices Supporting iQSS | |
| Sensor/device monitor | Sensor/device monitor | Page 333 Monitoring Devices Supporting iQSS | |
| Data backup/restoration | Data backup/restoration | Page 334 Backing up/Restoring Data of Devices Supporting iQSS | |
| Useful function | Linkage with dedicated tools (association with properties) | Page 370 Linkage with dedicated tools (association with properties) | |

2

MI Configurator

In a system configured with a MELIPC, the iQ Sensor Solution functions can be performed using an engineering tool, MI Configurator.

| CC-Link IE Field Network | | | |
|---|--|--|--|
| Purpose iQ Sensor Solution function Reference | | | |
| Easy startup | Automatic detection of connected devices | Page 359 Detecting Devices Supporting iQSS Automatically | |
| Easy tuning | Sensor parameter read/write | CP Page 361 Reading/Writing Parameters from/to Devices Supporting iQSS | |

CC-Link IE Field Network Basic

| Purpose | iQ Sensor Solution function | Reference |
|--------------|--|---|
| Easy startup | Automatic detection of connected devices | CC-Link IE Field Network Basic Reference Manual |
| | Reflection of the communication setting | |
| Easy tuning | Sensor parameter read/write | |

Ethernet

| Purpose | iQ Sensor Solution function | Reference | |
|--------------|--|---|--|
| Easy startup | Automatic detection of connected devices | ST Page 365 Detecting Devices Supporting iQSS Automatically | |
| | Reflection of the communication setting | \boxtimes Page 367 Applying the Communication Setting to a Device Supporting iQSS | |
| Easy tuning | Sensor parameter read/write | CP Page 369 Reading/Writing Parameters from/to Devices Supporting iQSS | |

PART 2 GX Works2

This part explains the operation methods when using the iQ Sensor Solution functions in GX Works2/ MELSOFT Navigator.

3 AnyWireASLINK

4 CC-Link

5 CC-Link IE Field Network

6 Ethernet

3 AnyWireASLINK

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC-L series connected to AnyWireASLINK.

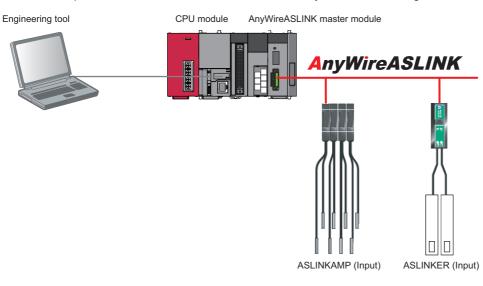
Refer to this chapter for series other than MELSEC-L series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for AnyWireASLINK using the following system configuration.



| Туре | | Model name | Manufacturer | |
|--|-----------|---|--------------|--|
| Engineering tool | GX Works2 | SWnDND-GXW2 and SWnDNC-GXW2 ('n' indicates its version.) Mitsubishi Electric C | | |
| CPU module | LCPU | L26CPU-BT | | |
| AnyWireASLINK master module | | LJ51AW12AL | | |
| ASLINKAMP (Input) Photoelectric sensor B289SB-01AP-CAM20 (ASLINKAMP master) AnyWire Co B289SB-01AP-CAS (ASLINKAMP slave) AnyWire Co | | AnyWire Corporation | | |
| Fiber sensor | | B289SB-01AF-CAS (ASLINKAMP slave) B289SB-01AF-CAS (ASLINKAMP slave) | | |
| ASLINKER (Input) | | B281SB-02U-CC20 | | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for AnyWireASLINK, refer to the following:

IP Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set PLC parameters and other settings required for communication with a device supporting iQSS such as the address setting and the device parameter setting.

■Address settings

Make sure to set the address occupied by a slave module so as not to exceed the number of operating points set in a master module.

For details on the settings, refer to the following:

MELSEC-Q/L AnyWireASLINK Master Module User's Manual

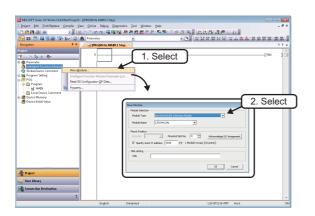
3.1 Detecting Devices Supporting iQSS Automatically

A slave module connected to an AnyWireASLINK master module can be detected and the information can be displayed in the "AnyWireASLINK Configuration" window.

For the creation method of a new project and the operation methods of the "AnyWireASLINK Configuration" window, refer to the following:

GX Works2 Version 1 Operating Manual (Intelligent Function Module)

Operating procedure



Double-click

- **1.** Create a new project in an engineering tool.
- **2.** Add the data of AnyWireASLINK master module to "Intelligent Function Module" on the Project view.

3. Double-click "AnyWireASLINK Configuration" on the Project view.

- Image: contract of the second of the seco
- **4.** Click the [Detect Now] button in the "AnyWireASLINK Configuration" window.

- MESOFT Series GX Works2
 Even

 Detect. Now will be executed.
 Do you want to executed.

 Very want to execute?
 Nease confirm that the connection Detration PLC's correct.

 Hease confirm that the chared because the configuration is generated by reading the information of the connection of the connection because the configuration is generated by reading the information of the connected module is accured from the master module.

 The information of the connected module is accured from the master module.

 Transmoon Point's into the target of the becate to the configuration is not execute after the power supply is turned ON, place execute address auto-recognition.

 Detecte Detect Now after Address Auto-recognition

 Address auto-recognition

 Address auto-recognition

 Address auto-recognition

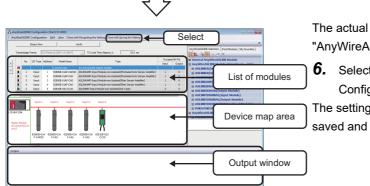
 Address auto-recognition

 Address auto-recognition

 Address auto-recognition
- **5.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

MELSEC-Q/L AnyWireASLINK Master Module User's Manual



The actual system configuration is displayed in the "AnyWireASLINK Configuration" window.

6. Select [Close with Saving the Setting] in the "AnyWireASLINK Configuration" window.

The setting in the "AnyWireASLINK Configuration" window is saved and completed.

Considerations when detecting devices supporting iQSS

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

MELSEC-Q/L AnyWireASLINK Master Module User's Manual

■Operation on error

A system configuration may not be detected if an error occurs on the AnyWireASLINK master module.

If an error code is displayed, take corrective actions by referring to the manual for the AnyWireASLINK master module, then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

■Scan time for automatic detection

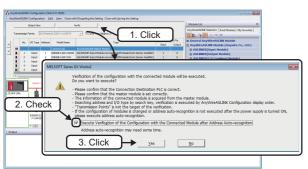
When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

3.2 Verifying Devices Supporting iQSS Against System Configuration

The system configuration displayed in the "AnyWireASLINK Configuration" window can be verified against the slave modules connected to an AnyWireASLINK master module.

The result is displayed in the "Verification Result of the Configuration with the Connected Module" window. Verify a system configuration when it is manually created or edited.

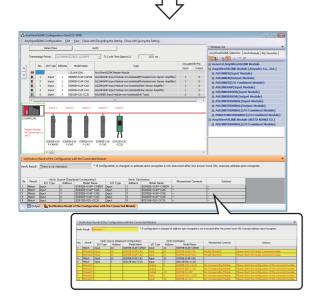
Operating procedure



- **1.** Click the [Verify] button in the "AnyWireASLINK Configuration" window.
- 2. When an automatic address detection is required, select the checkbox of "Execute Verification of the Configuration with the Connected Module after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

MELSEC-Q/L AnyWireASLINK Master Module User's Manual



The verification results are displayed in the "Verification Result of the Configuration with the Connected Module" window.

Point P

The display is switched by right-clicking on the "Verification Result of the Configuration with the Connected Module" window and selecting "Display All"/"Display Mismatch Only"/"Display other than Match." The cursor jumps to the corresponding location in the "AnyWireASLINK Configuration" window by double-clicking the row with "Mismatch" in the "Verification Result of the Configuration with the Connected Module" window.

3.3 Reading/Writing Parameters from/to Devices Supporting iQSS

Parameters can be read from and written to a slave module.

For the operation methods of the "AnyWireASLINK Configuration" window, refer to the following:

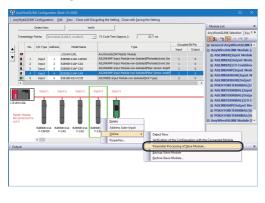
GX Works2 Version 1 Operating Manual (Intelligent Function Module)

Point P

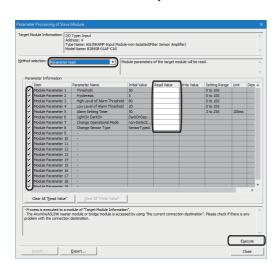
- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (I Page 36 Backing up/Restoring Data of Devices Supporting iQSS)
- The useful function (linkage with dedicated tools) can also be used in the "AnyWireASLINK Configuration" window. (SP Page 370 Linkage with dedicated tools (association with properties))

Operating procedure

■Reading parameters



 Select a target device supporting iQSS in 'List of modules' or 'Device map area' in the "AnyWireASLINK Configuration" window, then right-click it and select [Online] ⇒ [Parameter Processing of Slave Module] from the shortcut menu.



The "Parameter Processing of Slave Module" screen appears.

- 2. Select "Parameter read."
- **3.** Select a parameter to be read.
- **4.** Click the [Execute] button.

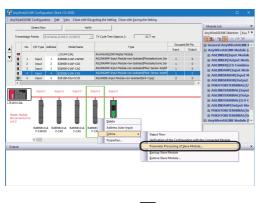
The selected parameter is read and the value is displayed in the column of "Read Value."

Writing parameters

Address: 4 Type Name: ASLINKAMP-Inpu Model Name: B28958-01AF-C/

J)

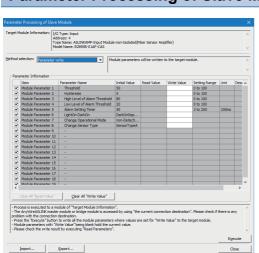
old the c



The "Parameter Processing of Slave Module" screen appears.

- 2. Select "Parameter write."
- **3.** Select a parameter to be written.
- 4. Enter a value in the column of "Write Value."
- 5. Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.



"Parameter Processing of Slave Module" screen

| Item | | Description | |
|---|----------------------------------|--|--|
| Target Module Information | | Information for the selected slave module is displayed. | |
| Method selection | | Select processing to be executed for the selected slave module. Parameter read: Parameters are read from the selected slave module. Parameter write: Parameters are written to the selected slave module. | |
| Parameter Information [Clear All "Read Value"] button | | Click this to clear all setting details that are read by "Parameter read." | |
| | [Clear All "Write Value"] button | Click this to clear all setting details that are written by "Parameter write." | |
| [Import] button | | Click this to read contents of parameter processing created in a CSV file. | |
| [Export] button | | Click this to output contents of parameter processing set in this screen to a CSV file. | |

Considerations

■Operation after writing parameters

When parameters of a slave module are written, the slave module operates according to the parameters; therefore, note that the slave module may change its operation. Turning the power OFF and ON is not required after the parameter writing. For details on the parameters, refer to the manual for a slave module used.

A blank in "Write Value"

The device parameter of which "Write Value" is blank retains the value written in a slave module. However, if no parameters have values in "Write Value," "Parameter write" cannot be executed.

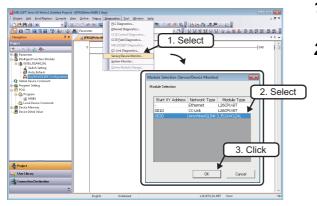
■Operation on error

If a module being used has an error, parameters of a slave module may not be read/written properly. If an error code is displayed, take corrective actions by referring to the manual for the module used, then read/write parameters again.

3.4 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Operating procedure

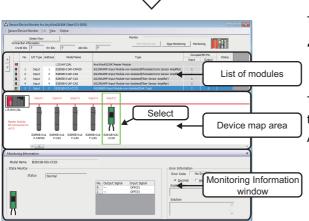


- 2. Select an AnyWireASLINK master module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.

- **3.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

MELSEC-Q/L AnyWireASLINK Master Module User's Manual



The "Sensor/Device Monitor for AnyWireASLINK" screen appears.

4. Select a target device supporting iQSS to be monitored in 'List of modules' or 'Device map area' in the "Sensor/Device Monitor for AnyWireASLINK" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window. (I Page 396 AnyWireASLINK)

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

"Module With No Profile Found"

"General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a master module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in an AnyWireASLINK master module.

If an error code is displayed, resolve the cause by referring to the manual for the AnyWireASLINK master module, then perform the sensor/device monitor function again.

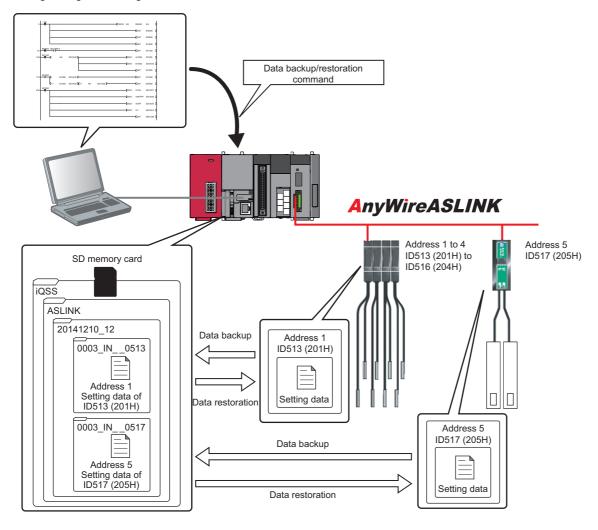
MELSEC-Q/L AnyWireASLINK Master Module User's Manual

■Replacing a slave module while displaying the sensor/device monitor

If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

3.5 Backing up/Restoring Data of Devices Supporting iQSS

Backing up the information of a device supporting iQSS to an SD memory card and restoring it to a module simplifies the setting change for changeover.



Point P

In such a case as limited production of diversified products, the data backup/restoration function is useful for switching multiple sensor settings from for product A to for product B in a batch.

| Function | Reference |
|------------------|--|
| Data backup | Page 40 Data backup |
| | Page 41 Program execution for data backup |
| Data restoration | Page 48 Data restoration |
| | Page 49 Program execution for data restoration |

Backup folder/file

Backup data is created in the 'iQSS' folder in the root directory when backing up the data.

If no 'iQSS' folder exists when backing up the data, an 'iQSS' folder will be newly created.

Up to 100 backup folders (date_number) can be created in the 'ASLINK' folder.

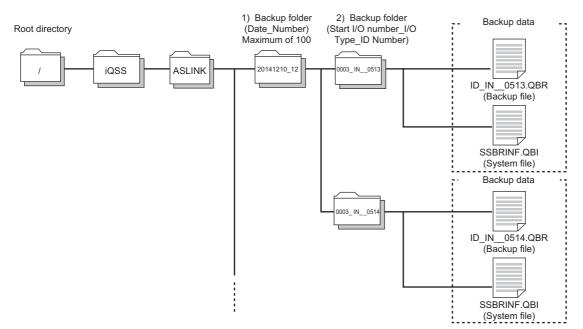
Do not change a backup folder name, configuration or saved file. Otherwise, data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



Backup folder name

1) Date_Number

| 2014 12 10 12 | |
|--|--|
| $\uparrow \uparrow \uparrow \uparrow - \downarrow$ | —— Arbitrary number (2-digit (00 to 99) decimal) |
| | —— Backup date (2-digit decimal) |
| | —— Backup month (2-digit decimal) |
| | —— Backup year (4-digit decimal) |

2) Start I/O number_I/O type_ID number

 0003
 IN_
 0513

 ID number (4-digit decimal)
 ID number (4-digit decimal)

 OUT or IN_ (OUT: output slave module IN_: input/combined slave module)

 AnyWireASLINK master module start I/O number (4-digit hexadecimal) (A value of start I/O number divided by 16)

Backup file name

Points to be checked before data backup/restoration

Check the availability of data backup/restoration

The data can be backed up and restored when an AnyWireASLINK master module satisfies the following conditions.

Perform the automatic address detection function and the parameter batch read function before data backup/restoration.

| Condition to be checked | Master module X/Y signal | Signal status |
|---------------------------------------|--------------------------|-------------------|
| Module READY | Xn0 | ON |
| DP/DN short error | Xn1 | OFF |
| Transmission cable voltage drop error | Xn3 | OFF |
| DP/DN disconnection error | Xn4 | OFF |
| Slave module alarm signal | X(n+1)0 | OFF ^{*1} |
| Parameter access completion flag | X(n+1)1 | ON |
| Parameter access error | X(n+1)2 | OFF |
| Automatic address detection flag | X(n+1)4 | OFF |

*1 Excluding when the error code is 0131H.

Considerations for data backup/restoration

■Use of an SD memory card

• During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card.

Otherwise, the data backup or restoration will be interrupted and the data will not be backed up or restored properly.

• Normal backup data cannot be created if the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during a data backup.

■Operations with a display unit during data backup

If any of the following operations are performed with a display unit during data backup, the operation will be completed

abnormally and the error is displayed on the display unit.

| Operation name | |
|--|--|
| Project data batch save/load function | |
| File deletion in the "Memory card operation menu" screen of a display unit | |

■Unavailable operations and functions at the same time as data backup

If any of the following operations and functions are performed during data backup, the backup will be completed abnormally and the error cause is stored in SD1452 (iQ Sensor Solution backup/restoration error cause in a module). The error is returned to the request source which performs the operation or function.

| Operation/function name ^{*1} | |
|---|--|
| Operation with an engineering tool | Change TC setting |
| | Online change (ladder mode) |
| | Online change (inactive block) for SFC program |
| | Write to PLC (including writing data to the CPU module during RUN) |
| | Write title |
| | Password/keyword |
| | New (registration/change) |
| | • Delete |
| | • Disable |
| | Format PLC memory |
| | Clear PLC memory (clear all file registers) |
| | Arrange PLC memory |
| | Delete PLC data |
| | Write/delete PLC user data |
| | Program memory batch download |
| | CPU module change function with SD memory card |
| | Sampling trace function |
| | Start trace |
| | Register trace |
| | Write to PLC |
| | Writing protocol setting data to the CPU module (predefined protocol support function) |
| | Project data batch save/load function |
| Operations with CPU Module Logging Configuration Tool | Data logging function |
| | Deleting/writing the data logging setting |
| | Stopping data logging operation |
| | Deleting data logging file(s) |
| Others | Writing or deleting files using FTP or MC protocol |
| | File transfer function (FTP server) of the built-in Ethernet function |
| | File transfer function (FTP client) of the built-in Ethernet function |
| | Register/cancel display unit menu |
| | CPU module data backup/restoration function |

*1 Available operations and functions differ between LCPUs and QCPUs. For details, refer to the user's manual of a CPU module used. When data is backed up or restored during a data logging, the performance of the data logging will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing is temporarily increased. Consequently, a timeout error may occur in other communications.

To avoid a timeout error, review the value set for "Service Processing Setting" on the [PLC System] tab in "PLC parameter."

■Backup folder name

Do not change an underscore and a subsequent number of a backup folder name (date_number). If they are changed, the data may not be restored properly.

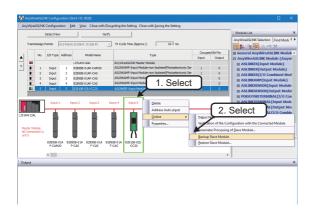
20141210_12

Do not change.

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each ID by using an engineering tool.

Operating procedure



2. Read the message and click the [Yes] or [OK] button. Data is backed up.

Considerations for a data backup

■Setting the backup setting

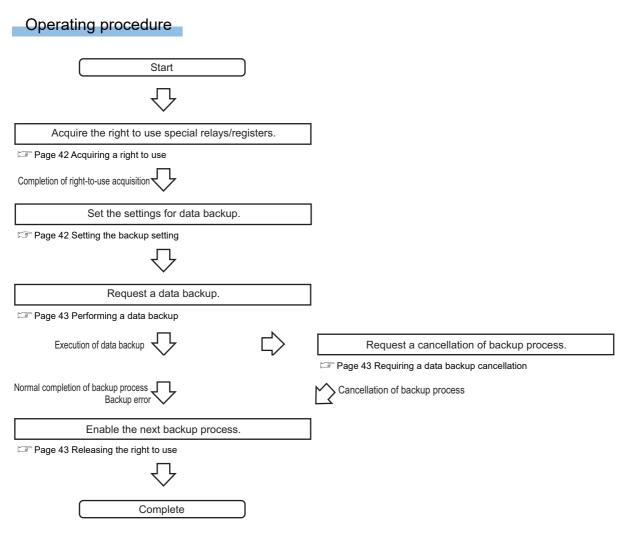
The initial values of the backup setting (SD1438 and SD1444) are as follows:

- SD1438 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1444 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (EP Page 41 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card with a program.



Execution method of data backup

The target device for data backup can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- Special relays (SM) and special registers (SD) are used for data backup.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

■Setting the backup setting

1. Setting a target module type

Set the target module type for data backup to the lower 8 bits of SD1437.

| Target module type | Description |
|--------------------|-----------------------------|
| 1H: AnyWireASLINK | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data backup to the upper 8 bits of SD1437.

| Execution unit | Description |
|-----------------|---|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the AnyWireASLINK interface module with the specified start I/O number. |
| 2H: ID unit | Set this to specify only the device supporting iQSS with the specified ID number among the devices supporting iQSS which are connected to the AnyWireASLINK interface module with the specified start I/O number. |

3. Setting a number for a data backup folder name

Set the number for a backup folder name to SD1438.

| Target folder | Description |
|--|---|
| FFFH: Automatic specification (default) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. The oldest folder is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 00 to 99: Target folder specification | Set the number for a backup folder name. When another folder with the same number exists, the operation will be as follows: For module unit • The backup folder with the same number is deleted, and a new backup folder is created. For ID unit • Data in the backup folder with the same number is overwritten. |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Setting the execution unit', set the start I/O number of a target device for data backup to SD1439.

| Target device (Module) | Description | |
|----------------------------|--|--|
| 0 to FFH: Start I/O number | When '1H' (module unit) is set for the execution unit, set the value obtained by dividing the start I/O number of an AnyWireASLINK master module, which is connected to a target device supporting iQSS, by 16. | |

Setting an ID number

When '2H' (ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the ID number of a target device for data backup to SD1440.

For details on the setting method of an ID number, refer to the manual of the AnyWireASLINK device used.

| Target device (ID number) | Description |
|---|--|
| 0 to 255 (0FFH): Output slave module ID number | When '2H' (ID unit) is set for the execution unit, set the ID number of a target device supporting iQSS. |
| 512 (200H) to 767 (2FFH): Input/ combined slave module ID number ^{*1} | |

*1 Specify the address + 512 (200H) for an input/combined slave module.

5. Setting the operation setting when a data backup error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to backup data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data backup

Data is backed up if SM1436 is turned ON while SD1446 is '1H' (ready).

Once data is backed up, SD1446 will be '2H' (being executed).

■Requiring a data backup cancellation

The data backup stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data backup is completed (including a cancellation or an error), the right to use is released and the next data backup is ready to be performed.

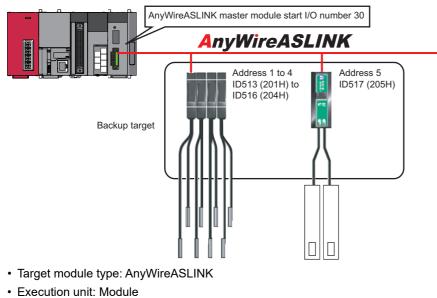
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data backup

Example of a system configuration

The following shows the example of a system configuration for data backup.



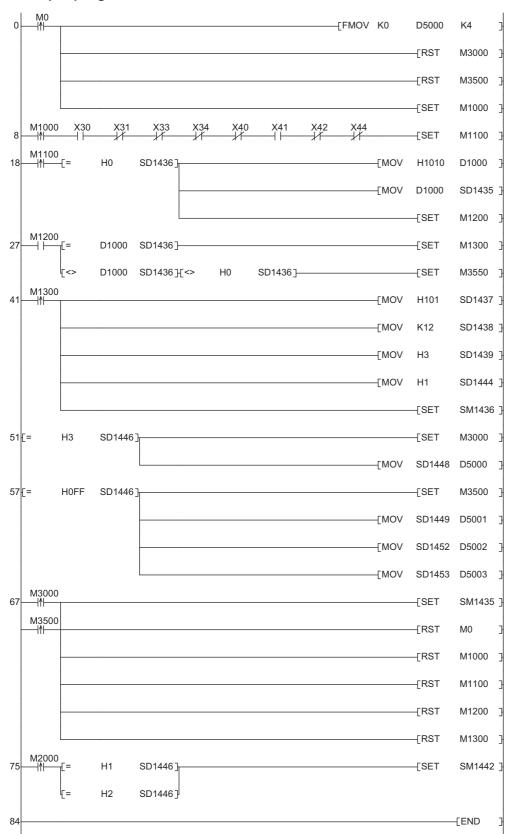
- Folder number setting: 12
- Target device (target module): Start I/O No.30
- Operation setting on error: Stop

■Devices used in the program

| Device | Description | Value |
|--------|---|--------------------------------------|
| M0 | Initialization trigger | — |
| M1000 | Backup execution trigger | _ |
| M1100 | Backup right-to-use request trigger | — |
| M1200 | Backup right-to-use confirmation trigger | _ |
| M1300 | Backup setting and starting trigger | — |
| M2000 | Backup execution cancellation trigger | — |
| M3000 | Backup execution normal completion display | — |
| M3500 | Backup execution abnormal completion display | - |
| M3550 | Backup right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | - |
| D5000 | Backup number of normally completed devices | — |
| D5001 | Backup number of devices completed with an error | - |
| D5002 | Backup error cause in a module | — |
| D5003 | Backup error cause in a device | _ |
| SM1435 | Backup execution enabled | — |
| SM1436 | Backup request | - |
| SM1442 | Backup cancellation request | - |
| SD1435 | Backup use request | 1010H |
| SD1436 | Backup right-to-use acquisition status | - |
| SD1437 | Backup target module/execution unit setting | Lower 8 bits: 1H Upper 8 bits: 1H |
| SD1438 | Backup folder number setting | 12 |
| SD1439 | Backup target setting (target module) | ЗН |
| SD1444 | Operation setting when a data backup error occurs | 1H |
| SD1446 | Backup execution status | — |
| SD1448 | Backup number of normally completed devices | _ |
| SD1449 | Backup number of devices completed with an error | _ |
| SD1452 | Backup error cause in a module | _ |
| SD1453 | Backup error cause in a device | _ |
| X30 | Module READY | _ |
| X31 | DP/DN short error | - |
| X33 | Transmission cable voltage drop error | - |
| X34 | DP/DN disconnection error | - |
| X40 | Slave module alarm signal | - |
| X41 | Parameter access completion flag | - |
| X42 | Parameter access error | - |
| X44 | Automatic address detection flag | - |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.



■Sample program

[Initialization]

| - | • | | | | |
|----------|--|--|--|--|--|
| (0) | Initialize the execution result. | | | | |
| | Initialize the normal completion display. | | | | |
| | Initialize the abnormal completion display. | | | | |
| | Set the backup execution trigger. | | | | |
| [Execut | ing data backup] | | | | |
| (8) | Set the backup right-to-use request trigger. | | | | |
| [Reque | sting backup right to use] | | | | |
| (18) | Store the right-to-use number. | | | | |
| | Set the backup right-to-use request trigger. | | | | |
| | Set the backup right-to-use confirmation trigger. | | | | |
| [Check | ing backup right to use] | | | | |
| (27) | Set the backup setting and starting trigger. | | | | |
| | Display the right-to-use acquisition failure. | | | | |
| [Setting | and starting data backup] | | | | |
| (41) | Set the target module/execution unit. | | | | |
| | Set the target folder number. | | | | |
| | Set the target module. | | | | |
| | Set the operation setting when a data backup error occurs. | | | | |
| | Set the backup request. | | | | |
| [Check | ing data backup execution] | | | | |
| (51) | Display the normal completion. | | | | |
| | Save the number of normally completed devices. | | | | |
| (57) | Display the abnormal completion. | | | | |
| | Save the number of devices completed with an error. | | | | |
| | Save the error code (module error). | | | | |
| | Save the error code (device error). | | | | |
| [Enablii | [Enabling the next data backup process] | | | | |
| (67) | Enable the data backup execution. | | | | |
| | Clear the initialization trigger. | | | | |
| | Clear the backup execution trigger. | | | | |
| | Clear the backup right-to-use request trigger. | | | | |
| | | | | | |

Clear the backup right-to-use confirmation trigger.

Clear the backup setting and starting trigger.

[Setting for cancelling the process]

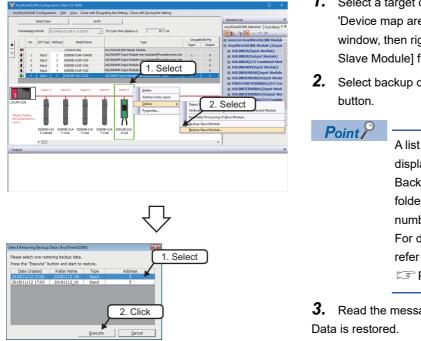
(75) Set the backup cancellation request.

3

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each ID by using an engineering tool.

Operating procedure



- Select a target device supporting iQSS in 'List of modules' or 'Device map area' in the "AnyWireASLINK Configuration" window, then right-click it and select [Online]

 [Restore Slave Module] from the shortcut menu.
- **2.** Select backup data to be restored, and click the [Execute] button.

A list of the backup folder names (date_number) is displayed in the column of "Folder Name." Backup data is stored in backup folders for each folder name (Start I/O number_I/O type_ID number) in an SD memory card. For details on the backup folder configuration, refer to the following:

3. Read the message and click the [OK] button. Data is restored.

Considerations for data restoration

Setting the restoration setting

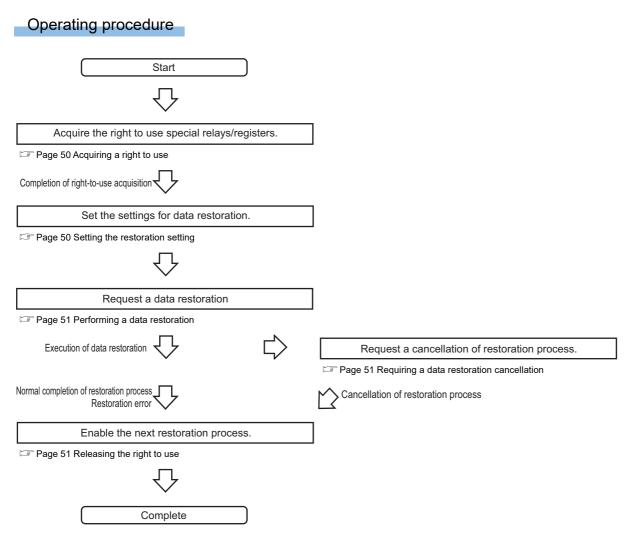
The initial value of the restoration setting (SD1444) is as follows:

• Lower 8 bits of SD1444 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (🖙 Page 49 Program execution for data restoration)

Program execution for data restoration

The information saved in an SD memory card can be restored to a device supporting iQSS with a program.



Execution method of data restoration

The target device for data restoration can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- Special relays (SM) and special registers (SD) are used for data restoration.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

■Setting the restoration setting

1. Setting a target module type

Set the target module type for data restoration to the lower 8 bits of SD1437.

| Target module type | Description |
|--------------------|-----------------------------|
| 1H: AnyWireASLINK | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data restoration to the upper 8 bits of SD1437.

| Execution unit | Description |
|-----------------|---|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the AnyWireASLINK interface module with the specified start I/O number. |
| 2H: ID unit | Set this to specify only the device supporting iQSS with the specified ID number among the devices supporting iQSS which are connected to the AnyWireASLINK interface module with the specified start I/O number. |

3. Selecting a folder for data restoration

Set the number for backup folder name, from which data is to be restored, to SD1438.

| Target folder | Description |
|---------------------------------------|--|
| 00 to 99: Target folder specification | Specify the number among the numbers for backup folder name, 00 to 99. |

4. Setting a target device

· Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Setting the execution unit', set the start I/O number of a target device for data restoration to SD1439.

| Target device (Module) | Description |
|----------------------------|--|
| 0 to FFH: Start I/O number | When '1H' (module unit) is set for the execution unit, set the value obtained by dividing the start I/O number of an |
| | AnyWireASLINK master module, which is connected to a target device supporting iQSS, by 16. |

• Setting an ID number

When '2H' (ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the ID number of a target device for data restoration to SD1440.

For details on the setting method of an ID number, refer to the manual of the AnyWireASLINK device used.

| Target device (ID number) | Description |
|---|--|
| 0 to 255 (0FFH): Output slave module ID number | When '2H' (ID unit) is set for the execution unit, set the ID number of a target device supporting iQSS. |
| 512 (200H) to 767 (2FFH): Input/ combined slave module ID number ^{*1} | |

*1 Specify the address + 512 (200H) for an input/combined slave module.

5. Setting the operation setting when a data restoration error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to in order to restore data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data restoration

Data is restored if SM1439 is turned ON while SD1446 is '1H' (ready).

Once data is restored, SD1446 will be '2H' (being executed).

■Requiring a data restoration cancellation

The data restoration stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data restoration is completed (including a cancellation or an error), the right to use is released and the next data restoration is ready to be performed.

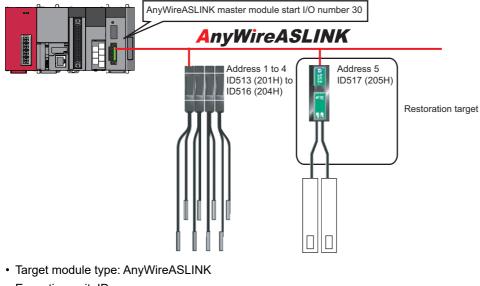
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data restoration

Example of a system configuration

The following shows the example of a system configuration for data restoration.



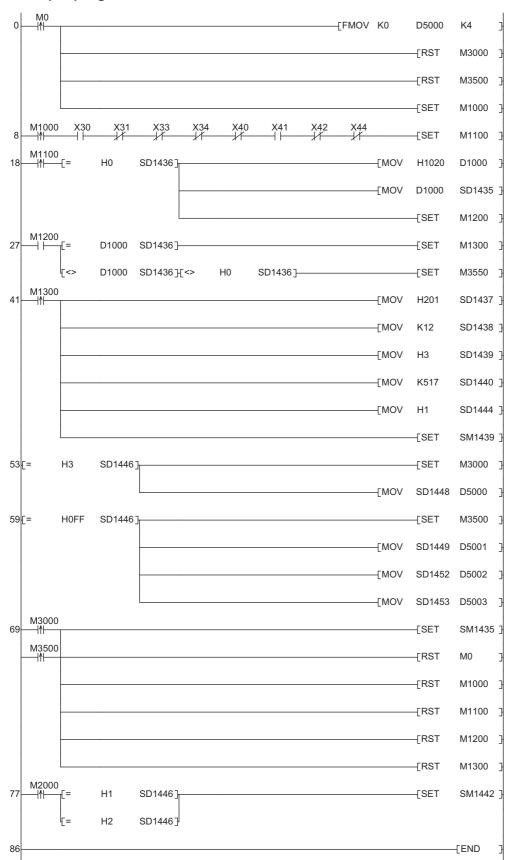
- Execution unit: ID
- Folder number setting: 12
- Target device (target module): Start I/O No.30
- Target device (ID number): Address 5, ID517 (205H)
- Operation setting on error: Stop

■Devices used in the program

| Device | Description | Value |
|--------|--|--------------------------------------|
| MO | Initialization trigger | - |
| M1000 | Restoration execution trigger | — |
| M1100 | Restoration right-to-use request trigger | — |
| M1200 | Restoration right-to-use confirmation trigger | — |
| M1300 | Restoration setting and starting trigger | — |
| M2000 | Restoration execution cancellation trigger | — |
| M3000 | Restoration execution normal completion display | — |
| M3500 | Restoration execution abnormal completion display | — |
| M3550 | Restoration right-to-use acquisition failure | — |
| D1000 | Right-to-use number storage area | — |
| D5000 | Restoration number of normally completed devices | — |
| D5001 | Restoration number of devices completed with an error | — |
| D5002 | Restoration error cause in a module | — |
| D5003 | Restoration error cause in a device | — |
| SM1435 | Restoration execution enabled | - |
| SM1439 | Restoration request | - |
| SM1442 | Restoration cancellation request | — |
| SD1435 | Restoration use request | 1020H |
| SD1436 | Restoration right-to-use acquisition status | — |
| SD1437 | Restoration target module/execution unit setting | Lower 8 bits: 1H Upper 8 bits: 2H |
| SD1438 | Restoration folder number setting | 12 |
| SD1439 | Restoration target setting (target module) | ЗН |
| SD1440 | Restoration target setting (target device 1) | 517 |
| SD1444 | Operation setting when a data restoration error occurs | 1H |
| SD1446 | Restoration execution status | — |
| SD1448 | Restoration number of normally completed devices | — |
| SD1449 | Restoration number of devices completed with an error | - |
| SD1452 | Restoration error cause in a module | - |
| SD1453 | Restoration error cause in a device | - |
| X30 | Module READY | — |
| X31 | DP/DN short error | — |
| X33 | Transmission cable voltage drop error | — |
| X34 | DP/DN disconnection error | - |
| X40 | Slave module alarm signal | - |
| X41 | Parameter access completion flag | - |
| X42 | Parameter access error | — |
| X44 | Automatic address detection flag | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.



■Sample program

[Initialization]

- Initialize the execution result.
 Initialize the normal completion display.
 Initialize the abnormal completion display.
 Set the restoration execution trigger.
- [Executing data restoration]
- (8) Set the restoration right-to-use request trigger.
- [Requesting restoration right to use]
- (18) Store the right-to-use number.
 - Set the restoration right-to-use request trigger.
- Set the restoration right-to-use confirmation trigger.

[Checking restoration right to use]

- (27) Set the restoration setting and starting trigger.Display the right-to-use acquisition failure.
- [Setting and starting data restoration]
- (41) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the target device 1.
 - Set the operation setting when a data restoration error occurs. Set the restoration request.
- [Checking data restoration execution]
- (53) Display the normal completion.
- Save the number of normally completed devices.(59) Display the abnormal completion.
 - Display the abnormal completion.
 Save the number of devices completed with an error.
 Save the error code (module error).
 Save the error code (device error).
- [Enabling the next data restoration process]
- (69) Enable the data restoration execution.
 Clear the initialization trigger.
 Clear the restoration execution trigger.
 Clear the restoration right-to-use request trigger.
 Clear the restoration right-to-use confirmation trigger.
 - Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (77) Set the restoration cancellation request.

3

4 CC-Link

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC-L series connected to CC-Link.

Refer to this chapter for series other than MELSEC-L series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for CC-Link using the following system configuration.

Engineering tool CPU module CC-Link master/local module





Analog input module (Voltage/current input)

CC-Link Sensor supporting iQSS

| Туре | | Model name | Manufacturer | |
|---|---|--|--|--|
| Engineering tool | GX Works2 | SWnDND-GXW2 and SWnDNC-GXW2 ('n' indicates its version.) | Mitsubishi Electric Corporation | |
| CPU module | LCPU | L26CPU-BT | 1 | |
| CC-Link master/local module | | LJ61BT11 | | |
| Analog input module (voltage/current input) | | AJ65SBT2B-64AD | | |
| CC-Link sensor supporting iQSS | Communication unit for CC-Link | SC-GU3-01 | Panasonic Industrial Devices SUNX Co., Ltd. | |
| | Head-separated dual display digital pressure sensor | DPS-401 | | |
| | Digital fiber sensor | FX-501 | | |
| | Digital laser sensor | LS-403 | | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for CC-Link, refer to the following:

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set network parameters and other settings required for communication with a device supporting iQSS.

Before using iQ Sensor Solution functions

Setting refresh devices (network parameter)

Some iQ Sensor Solution functions cannot be performed if devices to refresh the data of remote input (RX), remote output (RY), remote register (RWr), and remote register (RWw) are not set.

Set devices used to data refresh in advance.

For setting devices used to data refresh, refer to the following:

MELSEC-L CC-Link System Master/Local Module User's Manual

Checking if "Read Model Name of Slave Station" is selected

The model name of a slave station can be read only when the checkbox of "Read Model Name of Slave Station" is selected. Check that the checkbox of "Read Model Name of Slave Station" is selected, and write data to a CPU module in advance. If the checkbox is not selected, write data to a CPU module in accordance with the following procedure.

Operating procedure

| eration Setting Module 1 | × |
|----------------------------------|---|
| Parameter Name | |
| 1 | Occupied Station 1 |
| Data Link Faulty Station Setting | Expanded Cyclic Setting |
| T Hold Input Data | Single |
| Case of CPU STOP Setting | Block Data Assurance per Station |
| Clears Compulsorily | Enable Setting |
| | Auto Detect Setting of the Connected Device – Please select Read Model Name of Slave Station in Auto Detection of the connected device. The start of data ink may be slow after selecting the Rem. |
| 2. Click | Read Model Name of Slave Station |
| | 1. Check |
| OK | Cancel |

For details on the display methods of the "Network Parameter - CC-Link Module Configuration" screen, refer to the following:

GX Works2 Version 1 Operating Manual (Common)

- **1.** Click the [Operation Setting] button in the "Network Parameter CC-Link Module Configuration" screen.
- **2.** Select the checkbox of "Read Model Name of Slave Station" in the "Operation Setting" screen, and click the [OK] button.
- **3.** Click the [End] button, and select [Online] \Rightarrow [Write to PLC].
- 4. Power OFF to ON or reset the CPU module.

Including a device connected to a communication module as a target

Some or all remote registers of a target device are used in a system while performing an iQ Sensor Solution function. Therefore, add "Remote register use prohibited status (SW0160 to SW0163)" to the interlock when creating a program.

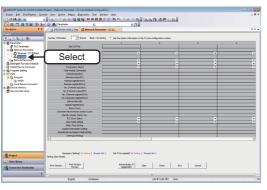
4.1 Detecting Devices Supporting iQSS Automatically

A slave station connected to a CC-Link master/local module can be detected and the information can be displayed in the "CC-Link Configuration" window.

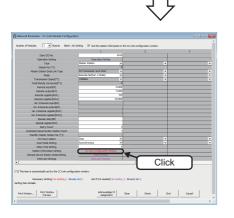
For the creation method of a new project and the operation methods of the "CC-Link Configuration" window, refer to the following:

GX Works2 Version 1 Operating Manual (Common)

Operating procedure





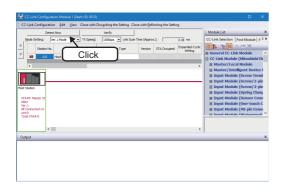


- **1.** Create a new project in an engineering tool.
- 2. Select "Parameter" ⇔ "Network Parameter" ⇔ "CC-Link" on the Project view.

- **3.** Select the checkbox of "Set the station information in the CC-Link configuration window."
- **4.** Select "Number of Modules."
- 5. Read the message and click the [OK] button.
- **6.** Select and enter necessary parameters in the "Network Parameter CC-Link Module Configuration" screen.
- **7.** Check that the checkbox of "Read Model Name of Slave Station" is selected in the "Operation Setting" screen.

 $\ensuremath{\mathbb{I}}\xspace$ Page 57 Checking if "Read Model Name of Slave Station" is selected

8. Click the [CC-Link Configuration Setting] button.



9. Click the [Detect Now] button in the "CC-Link Configuration" window.

10. Read the message and select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object," then click the [Yes] button.

In any of the following cases, select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object."

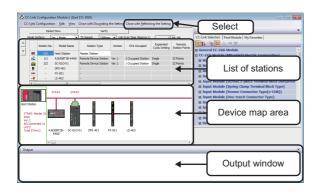
- The automatic detection function of connected devices is used for the first time.
- The CPU module was reset or turned OFF.
- The actual system configuration was changed.

The actual system configuration is displayed in the "CC-Link Configuration" window.

11. Select [Close with Reflecting the Setting] in the "CC-Link Configuration" window.

The setting in the "CC-Link Configuration" window is applied to the network parameter and completed.





Considerations when detecting devices supporting iQSS

Mode setting and transmission rate

Once an automatic detection of connected devices is performed, the mode setting and the transmission rate which have been set in a CC-Link master/local module are also detected.

■Operation on error

The system configuration cannot be detected if an error occurs on the master station. Take corrective actions and perform an automatic detection of connected devices again.

■An error in settings

Error information is displayed in the "Output" window when an error occurred. Double-click the information and correct the error at the jumped destination.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

Display of "Module With No Profile Found"

When "Module with No Profile Found" is displayed, it can be changed to "General CC-Link Module" by the following operation: Select a target module, and select [CC-Link Configuration] \Rightarrow [Change Module] \Rightarrow [Change to General CC-Link Module].

■Automatic CC-Link startup

When the automatic CC-Link startup is used, power OFF to ON or reset the CPU module after writing the data to a CPU module. By performing automatic detection of connected devices again, the model name of a slave station can be read. For details on the automatic CC-Link startup function, refer to the following:

■Non-sequential station number of slave stations

When an automatic detection of connected devices is performed in a system configuration in which the station numbers of slave stations are not sequential, a general-purpose remote I/O station is automatically set for a station without a station number as a reserved station.

Arrange the stations and change the modules in accordance with the actual module configuration.

Display of "General Module"

After performing an automatic detection of connected devices, a reserved station and a station which is not included in the network parameter are displayed as "General Module."

In that case, turn the power OFF, and ON again in the order from the slave station to the master station. Then, perform an automatic detection of connected devices again.

System configuration change

When a system configuration is changed (stations are added or changed), a slave station may not be detected. In that case, turn the power OFF, and ON again in the order from the slave station to the master station. Then, perform an automatic detection of connected devices again.

Standby master station in a system configuration

When a standby master station is included in a system configuration, the last station number is set for the station. Change the station number in accordance with the actual system configuration.

■Operation switching from the standby master operation to the master operation

When the standby master operation is switched to the master operation, a station whose operation is switched to the master operation will not be detected.

In that case, turn the power OFF, and ON again in the order from the standby master station to the master station. Then, perform an automatic detection of connected devices again.

■Not setting automatic refresh parameters

The following iQ Sensor Solution functions cannot be performed if the automatic refresh parameters (remote input (RX), remote output (RY), remote register (RWr), and remote register (RWw)) are not set.

- · Automatic detection function of a device supporting iQSS which is connected to a bridge module
- Sensor parameter read/write function

Write the automatic refresh parameters to a CPU module before performing an iQ Sensor Solution function.

For details on the automatic refresh parameters, refer to the following:

MELSEC-L CC-Link System Master/Local Module User's Manual

■Unselecting the "Read Model Name of Slave Station" checkbox

The following iQ Sensor Solution functions cannot be performed because the model name of a slave station cannot be read unless the checkbox of "Read Model Name of Slave Station" in the "Operation Setting" screen is selected.

- Automatic detection of connected devices, verification of connected devices and configurations
- · Sensor/device monitor
 - "General CC-Link module" is displayed in the "Sensor/Device Monitor for CC-Link" screen.

Data backup/restoration

Select the checkbox of "Read Model Name of Slave Station," and write data to a CPU module before performing an iQ Sensor Solution function.

When selecting the checkbox of "Read Model Name of Slave Station," refer to the following:

Page 57 Checking if "Read Model Name of Slave Station" is selected

Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

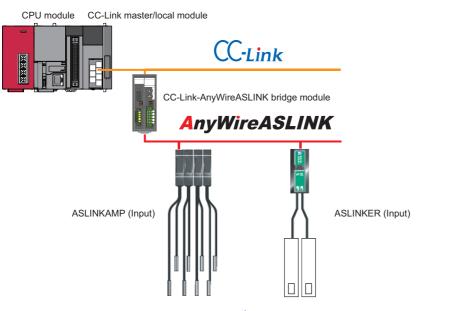
Detecting devices connected to a bridge module (NZ2AW1C2AL)

To display devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL), on a system configuration diagram, first a bridge module (NZ2AW1C2AL) needs to be detected in the "CC-Link Configuration" window. Then, perform an automatic detection of connected devices in the "AnyWireASLINK Configuration" window in order to detect and display devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL).

For the considerations when detecting devices supporting iQSS connected to a bridge module (NZ2AW1C2AL), refer to the following:

Page 64 Considerations when detecting devices connected to a bridge module

System configuration



| Туре | | Model name | Manufacturer |
|--|--------------|---|---------------------------------|
| CPU module | LCPU | L26CPU-BT | Mitsubishi Electric Corporation |
| CC-Link master/local module | | LJ61BT11 | |
| CC-Link-AnyWireASLINK bridge module | | NZ2AW1C2AL | |
| ASLINKAMP (Input) Photoelectric sensor | | B289SB-01AP-CAM20 (ASLINKAMP master) B289SB-01AP-CAS (ASLINKAMP slave) | AnyWire Corporation |
| | Fiber sensor | B289SB-01AF-CAS (ASLINKAMP slave) B289SB-01AF-CAS (ASLINKAMP slave) | |
| ASLINKER (Input) | | B281SB-02U-CC20 | |

Setting the operation mode for CC-Link Ver.2-compatible slave station

A bridge module (NZ2AW1C2AL) is a CC-Link Ver.2-compatible slave station.

To detect and display a bridge module (NZ2AW1C2AL) on a system configuration diagram, set the operation mode in which CC-Link Ver.2-compatible slave station works.

The following table shows the combinations of the parameter setting for a CC-Link master/local module and the CC-Link operation mode for a bridge module (NZ2AW1C2AL).

| CC-Link master/local module (L26CPU-BT, L26CPU-PBT, LJ61BT11, QJ61BT11N) | | Bridge module (NZ2AW1C2AL) |
|--|------------------------------------|----------------------------|
| Parameter setting item | | CC-Link operation mode |
| Mode | Station information (station type) | |
| Remote net Ver.2 mode | Ver.2 remote device station | Ver.2.00 |
| Remote net additional mode | | |

For the information of the version and mode of CC-Link, refer to the following:

- Carl Method Market Master/Local Module User's Manual
- CC-Link-AnyWireASLINK Bridge Module User's Manual

Operating procedure

Select

Click

-



2. Selec

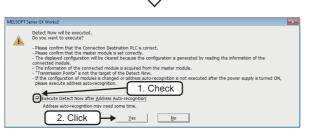
1. Detect and display a bridge module (NZ2AW1C2AL) in the "CC-Link Configuration" window.

For the method for detecting and displaying a bridge module (NZ2AW1C2AL) automatically in the "CC-Link Configuration" window, refer to the following:

Page 58 Detecting Devices Supporting iQSS Automatically

2. Select a bridge module (NZ2AW1C2AL) in 'List of stations' or 'Device map area' in the "CC-Link Configuration" window, then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.

3. Click the [Detect Now] button in the "AnyWireASLINK Configuration" window.



4. When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual



The devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL), are displayed in the "AnyWireASLINK Configuration" window.

5. Select [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

The setting of the "AnyWireASLINK Configuration" window is enabled and the window is closed.

Considerations when detecting devices connected to a bridge module

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), configure the settings required for communication (such as an address and device parameters) in advance. Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission

points set for a bridge module (NZ2AW1C2AL).

For details on the address setting, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

Settings in the "AnyWireASLINK Configuration" window

After performing an automatic detection of connected devices, the settings of a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL) are not saved until [Close with Reflecting the Setting] is selected in the "CC-Link Configuration" window.

Make sure to select [Close with Reflecting the Setting] in the "CC-Link Configuration" window after selecting [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

■Operation on error

A system configuration may not be detected if an error occurs on a bridge module (NZ2AW1C2AL).

If an error code is displayed, take corrective actions by referring to the manual for a bridge module (NZ2AW1C2AL), then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Scan time for automatic detection

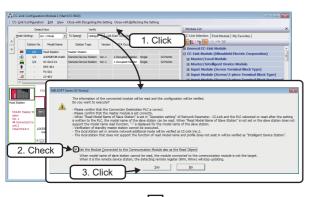
When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

4.2 Verifying Devices Supporting iQSS Against System Configuration

The system configuration displayed in the "CC-Link Configuration" window can be verified against the slave stations connected to a CC-Link master/local module.

The result is displayed in the "Verification Result of the Configuration with the Connected Module" window. Verify a system configuration when it is manually created or edited.

Operating procedure

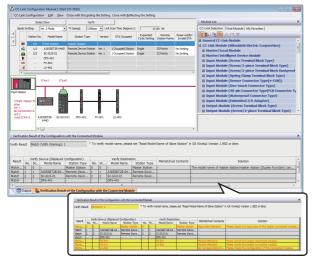


- **1.** Click the [Verify] button in the "CC-Link Configuration" window.
- **2.** Read the message and select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object," then click the [Yes] button.

In any of the following cases, select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object."

- The verification function of connected devices and configurations is used for the first time
- The CPU module was reset or turned OFF.
- The actual system configuration was changed.

The verification results are displayed in the "Verification Result of the Configuration with the Connected Module" window.



Point P

- The display is switched by right-clicking on the "Verification Result of the Configuration with the Connected Module" window and selecting "Display All"/"Display Mismatch Only"/"Display other than Match."
- The cursor jumps to the corresponding location in the "CC-Link Configuration" window by double-clicking the row with "Mismatch" in the "Verification Result of the Configuration with the Connected Module" window.

■Verification method of devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL)

A system configuration of devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL), can be verified by the following operation:

Operating procedure

- **1.** Select a bridge module (NZ2AW1C2AL) in 'List of stations' or 'Device map area' in the "CC-Link Configuration" window.
- **2.** Select [CC-Link Configuration] ⇒ [Open System Configuration] ⇒ [Open AnyWireASLINK Configuration].
- **3.** Select [AnyWireASLINK Configuration] ⇒ [Online] ⇒ [Verification of the Configuration with the Connected Module] in the "AnyWireASLINK Configuration" window.

Considerations

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1C2AL).

For details on the address setting, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

4.3 Reading/Writing Parameters from/to Devices Supporting iQSS

Parameters can be read from and written to a slave station.

For the operation methods of the "CC-Link Configuration" window, refer to the following:

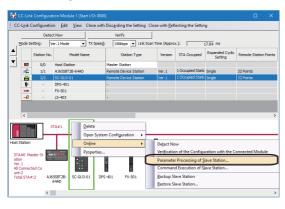
GX Works2 Version 1 Operating Manual (Common)

Point P

- When using a CC-Link master/local module (QJ61BT11N), the parameters of inverters (FR-A720 series and FR-A740 series) can be read/written.
- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (I Page 76 Backing up/Restoring Data of Devices Supporting iQSS)
- The useful functions (linkage with dedicated tools, and command execution to slave stations) can also be used in the "CC-Link Configuration" window. (I Page 370 Useful Functions)

Operating procedure

■Reading parameters

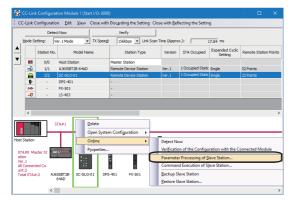


| | Jacard | I/O No.:0000 - Station | 40.12 | | | | | | | |
|---------------------|--|---|----------------------|---------------------------------|-----------|-----------------|----------|----------------|------------------------------------|-----|
| thod sel | ection: Get_Paramete | r Unit1 | Ì | | | | | | | |
| | Set_Paramete eter Inte Get_Paramete set Paramete | r_Unit2 | .) | 1 | | | | | | |
| Chedo | Select Al | Cancel All Selections | | | | | | | | |
| | lame | Initial Value | Unit | Read Value | Unit | Write Value | Unit | Setting Range | Description | ^ |
| 100 | le 1 Display setup | | | | | | | | | 1 |
| | Module 1_Detection_! | /alue | | | | | | -1013 to 1051 | I acquire an indication level disp | É. |
| | Module 1 DisplayMod | e Pressure_lev | el | | | | | | 0:Pressure level, 2:Peak8Botto | |
| | Module 1_Eco | Eco_OFF | | | | | | | 0:ECO OFF, 1:ECO ON, 2:Man | |
| | Module 1_Hold | OFF | | | | | | | 0:Peak/bottom value in the dig | ł . |
| | Module 1_DisplayLock | OFF | | | | | | | 0:Display lock OFF, 1:Display lo | 5 |
| | Module 1 HoldValueC | lear 0x0000 | | | | | | 0x0000 | I dear the peak value and a bo | |
| Modul | e 1_Basic_setup | | | | | | | | | 1 |
| | Module 1_Threshould | OUT1-1 | | | | | | -1013 to 1051 | A set range of the threshold ch | 5 |
| | Module 1 Threshould | OLTT1-2 | | | | | | -1013 to 1051 | & set range of the threshold d | ١× |
| | Clear All "Read V | alue" | | ⊆lear All 'Write | s Valus' | | | | | |
| Proces | o option | | The | re is no option in | the se | lected process. | | | | |
| -Accest -Procest | ses the PLC CPU by using is is executed according | of remote I/O or remote Ig the current connectio I to the parameters writ lisplayed on the screen, | n destin en in th | ation. Please chi e PLC CPU. | eck if th | | lem with | the connection | destination. | |

- The "Parameter Processing of Slave Station" screen appears.
- **2.** Select a target to be read.
- **3.** Select a parameter to be read.
- **4.** Click the [Execute] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

Writing parameters



 Select a target device supporting iQSS in 'List of stations' or 'Device map area' in the "CC-Link Configuration" window, then right-click it and select [Online] ⇒ [Parameter Processing of Slave Station] from the shortcut menu.

The "Parameter Processing of Slave Station" screen appears.

- **2.** Select a target to be written.
- **3.** Select a parameter to be written.
- 4. Enter a value in the column of "Write Value."
- **5.** Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

Seriel Sector Se

Considerations

Operation after writing parameters

When parameters of a slave station are written, the slave station operates according to the parameters; therefore, note that the slave station may change its operation.

For details on parameters, refer to the manual for a slave station used.

A blank in "Write Value"

"Parameter write" cannot be executed if there is even one blank in "Write Value."

■Operation on error

If a module being used has an error, parameters of slave stations may not be read/written properly. Take corrective actions and read/write parameters again.

Reading/writing parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL)

Parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) can be read and written.

Operating procedure

| Detect Now | Verify | | | | | | |
|---|--|--|--------------------------|-------------------|---|---------------|--|
| missign Points: 512 Points | (I:256 P, O:256 P) v TX Cyde Ti | me (Approx.): | 10.7 ms | | | | |
| | | | | Occup | ied Bit Pts | | |
| No. I/O Type Address | Model Name | Туре | | Input | | | |
| | NZ2AW1C2AL CC-Link-An | yWireASLINK Bridge M | lodule | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| u. | | | | | | | |
| | | | | | | | |
| dule tted Co | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| < | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | Module | | | | | | |
| odule Information: I/O | Turne from the | | | | | | |
| Adc | Type: Input fress: 2 | | | | | | |
| Typ | e Name: ASLINKAMP-Input Modul | e-non-Isolated(P | hotoelectronic S | ensor Amplifier) |) | | |
| Mod | del Name: B289SB-01AP-CAS | | | | | | |
| | | | | | | | |
| | | | - Calman America America | | | | |
| election: Parameter re | ad 🖌 Mi | odule parameters | | odule will be rea | | | |
| in director i c | | odule parameters | of the target m | odule will be rea | 50. | | |
| Parameter re Parameter re Parameter with | ad | odule parameters | or the target m | odule wil be rea | 50. | | |
| Parameter re Parameter with | ad | odule parameters | or the target m | odule will be rea | 50. | | |
| Parameter re Parameter with Item | ad rite | Initial Value | Read Value | Write Value | Setting Range | Unit | |
| Parameter re Parameter with meter Information Item Module Parameter 1 | ad rite Parameter Name Threshold | Initial Value | | | Setting Range 0 to 100 | Unit | |
| Parameter re Parameter with meter Information Item Module Parameter 1 Module Parameter 2 | ad rite Parameter Name Threshold Hysteresis | Initial Value | | | Setting Range 0 to 100 0 to 100 | Unit | |
| Parameter re Parameter re Parameter with meter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 3 | ad rite Parameter Name Threshold Hysteresis High Level of Alarm Threshold | Initial Value 50 5 80 | | | Setting Range 0 to 100 0 to 100 0 to 100 | Unit | |
| Parameter of Parameter of Parameter with meter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 4 | od itte Parameter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold | Initial Value 50 5 80 20 | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter re Parameter wer meter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 4 Module Parameter 5 | orite Parameter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer | Initial Value 50 5 80 20 50 | | | Setting Range 0 to 100 0 to 100 0 to 100 | Unit 100ms | |
| Parameter re Parameter re Parameter vi meter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 6 | ad Parameter Name Threshold Hysteresis High Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn | Initial Value 50 5 80 20 50 DarkOnSep | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter re Parameter wer meter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 4 Module Parameter 5 | ad tte Parameter Name Threshold High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn Change Operational Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter re Parameter we Parameter we meter Information Item Nodule Parameter 1 Module Parameter 3 Module Parameter 4 Module Parameter 5 Module Parameter 7 | ad Parameter Name Threshold Hysteresis High Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn | Initial Value 50 5 80 20 50 DarkOnSep | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter re Parameter re Parameter vol meter Information Item Nodule Parameter 1 Nodule Parameter 3 Nodule Parameter 4 Nodule Parameter 5 Nodule Parameter 5 Nodule Parameter 7 Nodule Parameter 9 Nodule Parameter 9 Nodule Parameter 10 Nodule Parameter 10 | Paramèter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer Lightion Darkion Change Operational Mode Change Operational Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Terrent Learning of the second | ad Drasheter Name Threshold Hypteresis Hypt Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Ther LightOn DarkOn Chunge Genetional Mode Chunge Sensor Type | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter of Parameter of Parameter of Nodule Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 4 Module Parameter 5 Module Parameter 5 Module Parameter 9 Module Parameter 10 Module Parameter 10 Module Parameter 10 Module Parameter 10 | ad | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter Information Reading Parameter 2 Module Parameter 2 Module Parameter 2 Module Parameter 2 Module Parameter 4 Module Parameter 5 Module Parameter 5 Module Parameter 9 Module Parameter 9 Module Parameter 1 Module Parameter 1 Module Parameter 11 Module Parameter 13 | et and a second | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Example in Common Commenter in Common Tem Module Parameter 1 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 1 Module Parameter 11 Module Paramet | ad | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Termination Termination Termination Termination Module Parameter 1 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 9 Module Parameter 11 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 15 Module | ad | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Item Works of the second secon | ed | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Termination Termination Termination Termination Module Parameter 1 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 9 Module Parameter 11 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 15 Module | ed | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Termination Termination Termination Termination Termination Module Parameter 1 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 10 Module Parameter 12 Module Parameter 15 Module Parame | An And And And And And And And And And A | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter in Parameter in Received in the second second parameter i Received in the second second parameter i Received in the second second parameter i Received parameter i Rece | An And And And And And And And And And A | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter in Parameter in Received in the second second parameter i Received in the second second parameter i Received in the second second parameter i Received parameter i Rece | An And And And And And And And And And A | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter un Parameter vironalion Tem Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 10 Module Parameter 10 Module Parameter 11 Module Parameter | An and a second | Drittal Value 50 5 80 20 5x0DarkOSep SensorTypeA | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter variante en la conservación de la conserv | Arr Control Co | Initial Value 50 5 20 20 20 20 20 20 20 20 20 20 | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | |
| Parameter un meter information Version and the second backle Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 10 Module Parameter 1 | Arraneter Name Parameter Name Threakvid High Level of Alarm Threakvid Low Level of Alarm Threakvid Alarm Steing Timer Lightch Daskfor Change Sensor Type Change Alarm Steing Timer Change Sensor Type C | Initial Value 50 5 20 20 20 20 20 20 20 20 20 20 | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | |
| Parameter un Parameter un Module Parameter 1 Module Parameter 2 Module Parameter 2 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 10 Module Parameter 10 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 10 Module | Arraneter Name Parameter Name Threakvid High Level of Alarm Threakvid Low Level of Alarm Threakvid Alarm Steing Timer Lightch Daskfor Change Sensor Type Change Alarm Steing Timer Change Sensor Type C | Initial Value 50 5 20 20 20 20 20 20 20 20 20 20 | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | |
| Parameter un Parameter un Module Parameter 1 Module Parameter 2 Module Parameter 2 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 10 Module Parameter 10 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 10 Module | Arraneter Name Parameter Name Threakvid High Level of Alarm Threakvid Low Level of Alarm Threakvid Alarm Steing Timer Lightch Daskfor Change Sensor Type Change Alarm Steing Timer Change Sensor Type C | Initial Value 50 5 20 20 20 20 20 20 20 20 20 20 | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | |

- Detect devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) in the "AnyWireASLINK Configuration" window. (
 Page 62 Detecting devices connected to a bridge module (NZ2AW1C2AL))
- Read or write parameters of the detected devices. (EP Page 31 Reading/Writing Parameters from/to Devices Supporting iQSS)

4.4 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Operating procedure

Check

W1007Erose 08 Mond ()seeneroed; COUNT of the one of t

- **1.** Select [Diagnostics] ⇒ [Sensor/Device Monitor] with an engineering tool.
- Select a CC-Link master/local module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.

4

3. Read the message and select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object," then click the [Yes] button.

In any of the following cases, select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object."

- The automatic detection function of connected devices is used for the first time.
- The CPU module was reset or turned OFF.

• The actual system configuration was changed.

The "Sensor/Device Monitor for CC-Link" screen appears.

 Select a target device supporting iQSS to be monitored in 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC-Link" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a master station.

If an error code is displayed, resolve the cause by referring to the manual for the CC-Link master/local module, then perform the sensor/device monitor function again.

Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL)

Devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) can be displayed in the "Sensor/Device Monitor for CC-Link" screen by the following operation.

Operating procedure

| ensor/Device Monitor | | 0030) | | | | | - 0 | |
|--|--|--|---|---|---------------------------------|--|---|--------------|
| | | | | | | | | |
| Detect | Now | | м | onitor | | | 1 | |
| | | | | Start Mo | nkoring St | op Monitoring N | Ionitoring | 1 |
| Station No. | Model Name | Station Type | Version ST | A Occupied | Expanded Cyclic Setting | Remote Station | n Points Re | esei Inva |
| | Host Station NZ2AW 1C2AL | Master Station Remote Device Station | Ver.2 4 0 | cupied Stati | Double | 224 Points | No | se |
| | | | | | | | | |
| < | | | | | | | | |
| STA | #1-4 | | | | | | | |
| | L | | | | | | | - |
| t Station | | | | | | | | |
| TA#0 Master St Ion | Personal Per | | | | | | | |
| ion er.2 I Connected Co | E. | | | | | | | |
| nt: 1 otal STA#:4 NZ24 | W1C2 AL | | | | | | | |
| | | | | | | | | |
| < | | | | | | | | |
| onitoring Information | | | _ | | _ | | _ | |
| Model Name | | | | | | | | |
| itate Monitor | | | | | | | | |
| Status | | | | | | | | |
| | Item Name | 0. | urrent Value | _ | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | \checkmark | | | | | |
| | | | | | | | | |
| | or for CC-Link (Start I/O: 00 | 30) | | | | - | □ × | |
| Sensor/Device Monitor | Edit View Online | 30) | Meeter | | | - | □ × | |
| | Edit View Online | 30) | Monitor | et Monitoring | Stop Monito | ring Monitoring | • × | |
| Sensor/Device Monitor | Edit View Online | 30) | | rt Monitoring | | ring Monitoring | | |
| Sensor/Device Monitor | Edit View Online | 30) Station Type | | | | ring Moritoring mote Station Points | Reserved/Er r smald STA | |
| Sensor/Device Monitor Detect I Station No. | Edit View Online Now Model Name Kost Station | | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Sensor/Device Monitor Detect I Station No. | Edit View Online | Station Type | 2. Version STA Occu | | ided Cyclic Re etting Re | mote Station Points | | |
| Sensor/Device Monitor Detect I Station No. | Edit View Online Now Model Name Kost Station | Station Type | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Sensor/Device Monitor Detect I Station No. Station No. III 0,0 H III 1/1 P | Edit View Online Now Model Name Kost Station (22XV/1C2XL | Station Type | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Sensol/Device Monitor Detect I Station No. 00 10 10 10 10 10 10 10 10 10 10 10 10 | Edit View Online Now Model Name Note Station 4224W1C2AL | Station Type | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Sensol/Device Monitor Detect I Station No. 00 10 10 10 10 10 10 10 10 10 10 10 10 | Edit View Online Now Model Name Not Station COMPTICIAL | Station Type Mariter Station Remote Device Station | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Detect I Station No. 0,0 F C Station No. C Station No. Station Station S | Edit View Online Nodel Name bot Station cr2xWSC2AL Psr4 Parameter Prc Parameter Prc | Station Type | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Station No. | Edit View Online Nodel Hame Nodel Hame Nodel Hame Station Edit Station Edit Conversel Detect Now Parameter Prc Conversel Detect Now Parameter Prc Bactop State Ba | Sation Type Nater Sation Remote Dence Station cessing of Save Station cation of Save Station | 2. Version STA Occu | pied Expan | ided Cyclic Re etting Re | mote Station Points | Reserved,Er r Invalid STA | |
| Station No. | Edit View Online Nodel Name test Station COXWICAL | Station Type Nater Station Renote Device Station Renote Device Station receiling of Siney Station Ration Station | Version STA Occupied | pied Expers | ded Cyclic Re etting 224 Por | mote Station Points | Reserved,Er r Invalid STA | |
| Staton No. Staton | Edit View Online tow Model Name Model Name Edit Station E | Station Type Nater Station Renote Device Station Renote Device Station receiling of Siney Station Ration Station | Version STA Occupied | pied Expers | ided Cyclic Re etting Re | mote Station Points | Reserved/Br r broadd STA No Sectory | |
| Station No. Detect 1 Station No. Detect 1 Station No. Detect 1 Station No. Detect 1 Station No. Station No. Stat | Edit View Online Wedd Name Medd Name ent Staten C2XWICCNL B1-4 Deect Now Ration Save Ration Save Rat | Station Type Nater Station Renote Device Station Renote Device Station receiling of Siney Station Ration Station | Version STA Occupied | pied Expers | ded Cyclic Re etting 224 Por | mote Station Points | Reserved for r broadd STA No Sectory > | |
| Staton Ne. | EAR View Online Nodel Name test Station CDWVIC2AL PLAN Parameter Pro- Parameter Pro- Parameter States Convenant Bar Restore States Properties. | Station Type Nater Station Renote Device Station Renote Device Station receiling of Siney Station Ration Station | Version STA Occupied | pied Expers | ded Cyclic Re etting 224 Por | mote Station Points | Reserved/Br r broadd STA No Sectory | |
| EntertiDevice Monitor Detection Station No. Entertime Station No. Entertime Station St | Edit View Online Wedd Name Medd Name ent Staten C2XWICCNL B1-4 Deect Now Ration Save Ration Save Rat | Station Type Nater Station Renote Device Station Renote Device Station receiling of Siney Station Ration Station | Version STA Occupied | pied Expers | ded Cyclic Re etting 224 Por | mote Station Points | Reserved for r broadd STA No Sectory > | |
| intercificence file of the sector of the sec | View Online Woo View Online View Onli | Station Type Nater Station Renote Device Station Renote Device Station receiling of Siney Station Ration Station | Version STA Occupied | pied Expers | ded Cyclic Re etting 224 Por | mote Station Points | Reserved for r broadd STA No Sectory > | |
| EntertiDevice Monitor Detection Station No. Entertime Station No. Entertime Station St | Yee Online Yee Online Yee Online Yee | Saton Type Marker Saton Remote Dence Saton Remote Dence Saton Cessing of Slave Sation Address Sation Configuration | Urision STA Occu Verg. 2 4 Occupient | pied Expansion Static Double WireASLINK 1 | Configuration | mote Station Points | Reserved for r broadd STA No Sectory > | |
| intercificence file of the sector of the sec | List View Online tee Model Passe Hit Station Factor | Station Type Variate Station Remote Station Remote Service Station Station Configuration Configurati | Version STA Con- Version STA Con- Version STA Con- Version STA Con- Version State Con- Ve | pied Expers | Configuration | mote Station Points | Reserved for r broadd STA No Sectory > | |
| intercificence file of the sector of the sec | View Online Wood Hame Model Hame Model Hame View Other Model Hame View Other Model | Station Type Nater Station Prevent Device Station receiving of Stave Station receiving of Stave Station Station Configuration Configuration Grif(0) ge drog error Grif(0) Grif | Ursion STA Con. STA Con. yr, 2 4 Concerce 2 Open Anyl t Value | pied Expansion Static Double WireASLINK 1 | Configuration | mote Station Points | Reserved for r broadd STA No Sectory > | |
| intercificence file of the sector of the sec | tes View Online View Onli | Saton Type Variant Station Remote Station Remote Searce Station Remote Searce Station Station Station Configuration Configuratio | Version STA Occ. Version STA Occ. Version 2 4 Occusedo | pied Expansion Static Double WireASLINK 1 | Configuration | mote Station Points | Reserved for r broadd STA No Sectory > | |
| ensor/Device Monitor Device 1 Station No. Station No. | View Online View Online View | Sation Type Neter Sation Remote Series Sation Remote Series Sation Configuration Confi | Version STA Occ. STA Occ. Concerns Concerns trabue | pied Expansion Static Double WireASLINK 1 | Configuration | mote Station Points | Reserved for r broadd STA No Sectory > | |

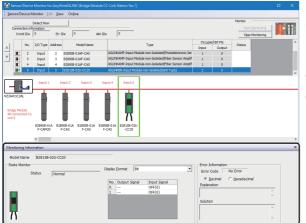
Open the "Sensor/Device Monitor for CC-Link" screen.
 (Image 71 Monitoring Devices Supporting iQSS)

 Select a bridge module (NZ2AW1C2AL) in 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC-Link" screen, then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.

3. When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Autorecognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual



The "Sensor/Device Monitor for AnyWireASLINK" screen appears.

4. Select a target device supporting iQSS to be monitored in 'List of modules' or 'Device map area' in the "Sensor/Device Monitor for AnyWireASLINK" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices connected to a bridge module

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1C2AL).

For details on the address setting, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

• "Module With No Profile Found"

• "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- · Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a bridge module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a bridge module (NZ2AW1C2AL).

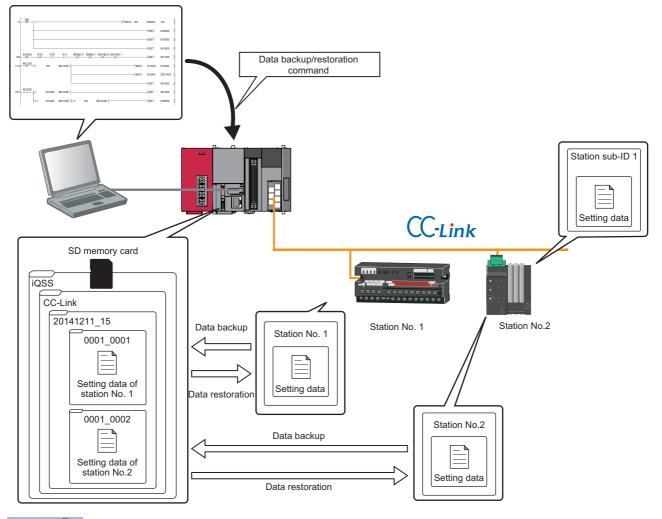
If an error code is displayed, resolve the cause by referring to the manual for a bridge module (NZ2AW1C2AL), then perform the sensor/device monitor function again.

■Replacing a slave module while displaying the sensor/device monitor

If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

4.5 Backing up/Restoring Data of Devices Supporting iQSS

Backing up the information of a device supporting iQSS to an SD memory card and restoring it to a module simplifies the setting change for changeover.



Point P

In such a case as limited production of diversified products, the data backup/restoration function is useful for switching multiple sensor settings from for product A to for product B in a batch.

| Function | Reference |
|------------------|--|
| Data backup | Page 82 Data backup |
| | Page 83 Program execution for data backup |
| Data restoration | Page 94 Data restoration |
| | Page 95 Program execution for data restoration |

Backup folder/file

Backup data is created in the 'iQSS' folder in the root directory when backing up the data.

If no 'iQSS' folder exists when backing up the data, an 'iQSS' folder will be newly created.

Up to 100 backup folders (date_number) can be created in the 'CC-Link' folder.

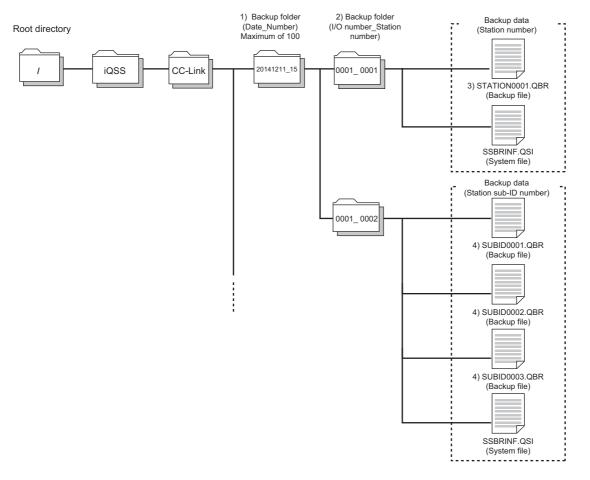
Do not change a backup folder name, configuration or saved file. Otherwise, data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



■Backup folder name

1) Date_Number

_

| 2014 | 12 | 11 | 15 | |
|------|----|----|----|---|
| | 1 | 1 | | Arbitrary number (2-digit (00 to 99) decimal) |
| | | L | | —— Backup date (2-digit decimal) |
| | | | | —— Backup month (2-digit decimal) |
| | | | | —— Backup year (4-digit decimal) |

2) Start I/O number_Station number

0001 0001

——— Station number (4-digit decimal)
——— CC-Link master/local module start I/O number (4-digit hexadecimal) (A value of start I/O number divided by 16)

■Backup file name

3) Station number

STATON0001.QBR

Station number (4-digit decimal)

4) Station sub-ID number

SUBID0001.QBR

Station sub-ID number (4-digit decimal)

Points to be checked before data backup/restoration

Check the availability of data backup/restoration

The data can be backed up and restored when a CC-Link master/local module and a bridge module (NZ2AW1C2AL) satisfy the following conditions.

Perform the automatic address detection function and the parameter batch read function before data backup/restoration.

The 'n' indicates the address assigned to the master station by the station number setting.

| Module | Condition to be checked | Remote device RX signal | Signal status |
|-----------------------------------|---|-------------------------|-------------------|
| CC-Link master/local module | Module error | Xn0 | OFF |
| | Module READY | XnF | ON |
| | Host station data link status | Xn1 | ON |
| | Other station data link status ^{*1} | SW0080 to SW0083 | OFF |
| | Remote register use prohibited status ^{*1} | SW0160 to SW0163 | OFF |
| Bridge module (NZ2AW1C2AL) | Remote READY | RX(n+D)B | ON |
| (CC-Link operation mode Ver.2.00) | DP/DN short error | RXn1 | OFF |
| | Transmission cable voltage drop error | RXn3 | OFF |
| | DP/DN disconnection error | RXn4 | OFF |
| | Slave module alarm signal | RX(n+1)0 | OFF ^{*2} |
| | Parameter access completion flag | RX(n+1)1 | ON |
| | Parameter access error | RX(n+1)2 | OFF |
| | Automatic address detection flag | RX(n+1)4 | OFF |

*1 Set the target station.

*2 Excluding when the error code is 0131H.

The "Read Model Name of Slave Station" checkbox in the "Operation Setting" screen

Check that the checkbox of "Read Model Name of Slave Station" is selected in the "Operation Setting" screen before performing the data backup/restoration function. If it is not selected, the data backup/restoration function cannot be performed.

For details on the "Read Model Name of Slave Station" checkbox in the "Operation Setting" screen, refer to the following:

■Interlock setting

Some or all remote registers of a target device are used in the system during a data backup/restoration. Therefore, add "Remote register use prohibited status (SW0160 to SW0163)" to the interlock when creating a program.

The station whose operating status is switched from the standby master station to master station

The data backup/restoration function cannot be performed to a station in which the operation was switched from the standby master operation to the master operation.

In that case, turn the power OFF, and ON again in the order from the standby master station to the master station. Then, perform a data backup/restoration.

Considerations for data backup/restoration

■Use of an SD memory card

• During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card.

Otherwise, the data backup or restoration will be interrupted and the data will not be backed up or restored properly.

 Normal backup data cannot be created if the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during a data backup.

■Operations with a display unit during data backup

If any of the following operations are performed with a display unit during data backup, the operation will be completed abnormally and the error is displayed on the display unit.

Operation name

Project data batch save/load function

File deletion in the "Memory card operation menu" screen of a display unit

■Unavailable operations and functions at the same time as data backup

If any of the following operations and functions are performed during data backup, the backup will be completed abnormally and the error cause is stored in SD1452 (iQ Sensor Solution backup/restoration error cause in a module). The error is returned to the request source which performs the operation or function.

| Operation/function name ^{*1} | | |
|---|---|--|
| Operation with an engineering tool | Change TC setting | |
| | Online change (ladder mode) | |
| | Online change (inactive block) for SFC program | |
| | Write to PLC (including writing data to the CPU module during RUN) | |
| | Write title | |
| | Password/keyword New (registration/change) Delete Disable | |
| | Format PLC memory | |
| | | |
| | Clear PLC memory (clear all file registers) | |
| | Arrange PLC memory | |
| | Delete PLC data | |
| | Write/delete PLC user data | |
| | Program memory batch download | |
| | CPU module change function with SD memory card | |
| | Sampling trace function Start trace Register trace Write to PLC | |
| | Writing protocol setting data to the CPU module (predefined protocol support function) | |
| | Project data batch save/load function | |
| Operations with CPU Module Logging Configuration Tool | Data logging function Deleting/writing the data logging setting Stopping data logging operation Deleting data logging file(s) | |
| Others | Writing or deleting files using FTP or MC protocol | |
| | File transfer function (FTP server) of the built-in Ethernet function | |
| | File transfer function (FTP client) of the built-in Ethernet function | |
| | Register/cancel display unit menu | |
| | CPU module data backup/restoration function | |

*1 Available operations and functions differ between LCPUs and QCPUs. For details, refer to the user's manual of a CPU module used. When data is backed up or restored during a data logging, the performance of the data logging will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing is temporarily increased. Consequently, a timeout error may occur in other communications.

To avoid a timeout error, review the value set for "Service Processing Setting" on the [PLC System] tab in "PLC parameter."

■Backup folder name

Do not change an underscore and a subsequent number of a backup folder name (date_number).

If they are changed, the data may not be restored properly.

20141210_12

Do not change.

When backing up the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL):

Backup data is stored in the 'CC-Link' backup folder.

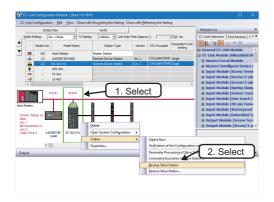
The 'station sub-ID number' is equivalent to the 'ID' of a slave module connected to AnyWireASLINK.

The backup file (STATION0000.QBR) of the bridge module is not created.

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each station by using an engineering tool.

Operating procedure



- **2.** Read the message and click the [Yes] or [OK] button. Data is backed up.

Execution method of data backup for a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL)

Data can be backed up for a device supporting iQSS, which is connected to a bridge module (NZ2AW1C2AL), by the following method.

Operating procedure

- 1. Select a bridge module (NZ2AW1C2AL) in 'List of stations' or 'Device map area' in the "CC-Link Configuration" window.
- 2. Right-click the module and select [Open System Configuration] ⇒ [Open AnyWireASLINK Configuration] from the shortcut menu.
- 3. Select a target device supporting iQSS in 'List of stations' or 'Device map area' in the "AnyWireASLINK Configuration" window, then right-click it and select [Online] ⇔ [Backup Slave Module] from the shortcut menu.

Considerations for a data backup

■Setting the backup setting

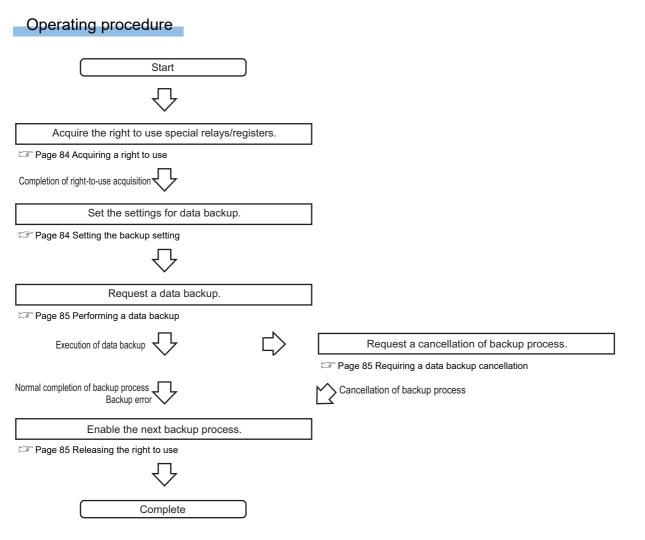
The initial values of the backup setting (SD1438 and SD1444) are as follows:

- SD1438 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1444 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (EP Page 83 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card with a program.



Execution method of data backup

The target device for data backup can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- Special relays (SM) and special registers (SD) are used for data backup.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

■Setting the backup setting

1. Setting a target module type

Set the target module type for data backup to the lower 8 bits of SD1437.

| Target module type | Description |
|--------------------|-----------------------------|
| 2H: CC-Link | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data backup to the upper 8 bits of SD1437.

| Execution unit | Description |
|-------------------------|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the CC-Link master/local module with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the following devices supporting iQSS which are connected to the CC-Link master/local module with the specified start I/O number: device supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the module with the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the device supporting iQSS with the specified station sub-ID number which is connected to the module with the specified station number among the devices supporting iQSS which are connected to the CC-Link IE Field Network master/local module with the specified start I/O number. |

3. Setting a number for a data backup folder name

Set the number for a backup folder name to SD1438.

| Target folder | Description |
|--|--|
| FFFH: Automatic specification (default) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. The oldest folder is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 00 to 99: Target folder specification | Set the number for a backup folder name. When another folder with the same number exists, the operation will be as follows: For module unit • The backup folder with the same number is deleted, and a new backup folder is created. For station unit or station sub-ID unit • Data in the backup folder with the same number is overwritten. |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Setting the execution unit', set the start I/O number of a target device for data backup to SD1439.

| Target device (Module) | Description |
|----------------------------|---|
| 0 to FFH: Start I/O number | When '1H' (module unit) is set for the execution unit, set the value obtained by dividing the start I/O number of a CC- |
| | Link master/local module, which is connected to a target device supporting iQSS, by 16. |

Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station number of a target device for data backup to SD1440.

| Target device (Station number) | Description |
|--------------------------------|---|
| 1 to 64: Station number | When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set the station number of a target device supporting iQSS or a device supporting iQSS which is connected to the module with the specified station number. |

• Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station sub-ID number of a target device for data backup to SD1441.

| Target device (Station sub-ID number) | Description |
|---------------------------------------|--|
| 0 to 9999: Station sub-ID number | When '3H' (station sub-ID unit) is set for the execution unit, set the station sub-ID number of a target device supporting iQSS. |

Precautions

To backup the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), set the ID number of AnyWireASLINK to SD1441.

For details on the ID number (SD1440) of AnyWireASLINK, refer to the following:

Page 42 Setting the backup setting

5. Setting the operation setting when a data backup error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to backup data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data backup

Data is backed up if SM1436 is turned ON while SD1446 is '1H' (ready).

Once data is backed up, SD1446 will be '2H' (being executed).

Check that the other station data link status (SW0080 to SW0083) indicates that a data link is in process before performing a data backup.

■Requiring a data backup cancellation

The data backup stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data backup is completed (including a cancellation or an error), the right to use is released and the next data backup is ready to be performed.

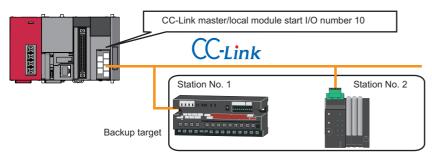
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data backup

■Example of a system configuration

The following shows the example of a system configuration for data backup.



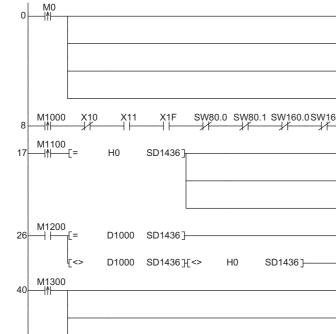
- Target module type: CC-Link
- Execution unit: Module
- Folder number setting: 15
- Target device (target module): Start I/O No.10
- Operation setting on error: Stop

■Devices used in the program

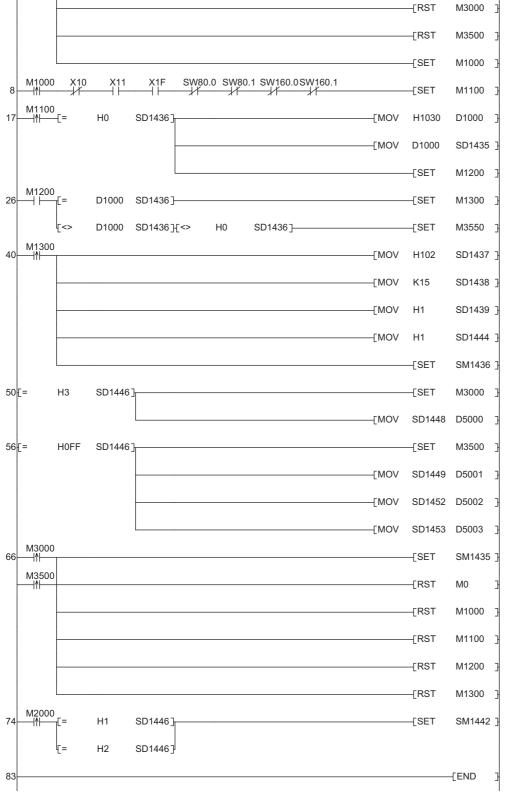
| Device | Description | Value |
|---------|--|--------------------------------------|
| M0 | Initialization trigger | - |
| M1000 | Backup execution trigger | - |
| M1100 | Backup right-to-use request trigger | - |
| M1200 | Backup right-to-use confirmation trigger | - |
| M1300 | Backup setting and starting trigger | - |
| M2000 | Backup execution cancellation trigger | - |
| M3000 | Backup execution normal completion display | - |
| M3500 | Backup execution abnormal completion display | - |
| M3550 | Backup right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | - |
| D5000 | Backup number of normally completed devices | _ |
| D5001 | Backup number of devices completed with an error | - |
| D5002 | Backup error cause in a module | - |
| D5003 | Backup error cause in a device | - |
| SM1435 | Backup execution enabled | - |
| SM1436 | Backup request | - |
| SM1442 | Backup cancellation request | - |
| SD1435 | Backup use request | 1030H |
| SD1436 | Backup right-to-use acquisition status | - |
| SD1437 | Backup target module/execution unit setting | Lower 8 bits: 2H Upper 8 bits: 1H |
| SD1438 | Backup folder number setting | 15 |
| SD1439 | Backup target setting (target module) | 1H |
| SD1444 | Operation setting when a data backup error occurs | 1H |
| SD1446 | Backup execution status | - |
| SD1448 | Backup number of normally completed devices | - |
| SD1449 | Backup number of devices completed with an error | - |
| SD1452 | Backup error cause in a module | - |
| SD1453 | Backup error cause in a device | - |
| SW80.0 | Station No.1 data link status | - |
| SW80.1 | Station No.2 data link status | - |
| SW160.0 | Station No.1 remote register use prohibited status | - |
| SW160.1 | Station No.2 remote register use prohibited status | - |
| X10 | Module error | - |
| X11 | Host station data link status | - |
| X1F | Module READY | - |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.



Sample program



-[FMOV K0

D5000

K4

7

[Initialization]

Initialize the execution result.
 Initialize the normal completion display.
 Initialize the abnormal completion display.
 Set the backup execution trigger.

[Executing data backup and checking data link status]

Check that the other station data link status (SW0080 to SW0083) indicates that a data link is in process before making a data backup request.

- (8) Set the backup right-to-use request trigger.
- [Requesting backup right to use]
- (17) Store the right-to-use number.

Set the backup right-to-use request trigger.

- Set the backup right-to-use confirmation trigger.
- [Checking backup right to use]
- (26) Set the backup setting and starting trigger. Display the right-to-use acquisition failure.
- [Setting and starting data backup]
- (40) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the operation setting when a data backup error occurs. Set the backup request.
- [Checking data backup execution]
- (50) Display the normal completion.
- Save the number of normally completed devices.
- (56) Display the abnormal completion.
 Save the number of devices completed with an error.
 Save the error code (module error).
 Save the error code (device error).
- [Enabling the next data backup process]
- (66) Enable the data backup execution.
 Clear the initialization trigger.
 Clear the backup execution trigger.
 Clear the backup right-to-use request trigger.
 Clear the backup right-to-use confirmation trigger.
 Clear the backup setting and starting trigger.

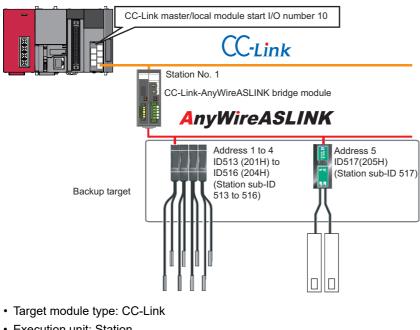
[Setting for cancelling the process]

(74) Set the backup cancellation request.

Example of a data backup (bridge module (NZ2AW1C2AL))

Example of a system configuration

The following shows the example of a system configuration for data backup.



- Execution unit: Station
- Folder number setting: 18
- Target device (target module): Start I/O No.10
- Target device (station number): Station No. 1
- · Operation setting on error: Stop

■Devices used in the program

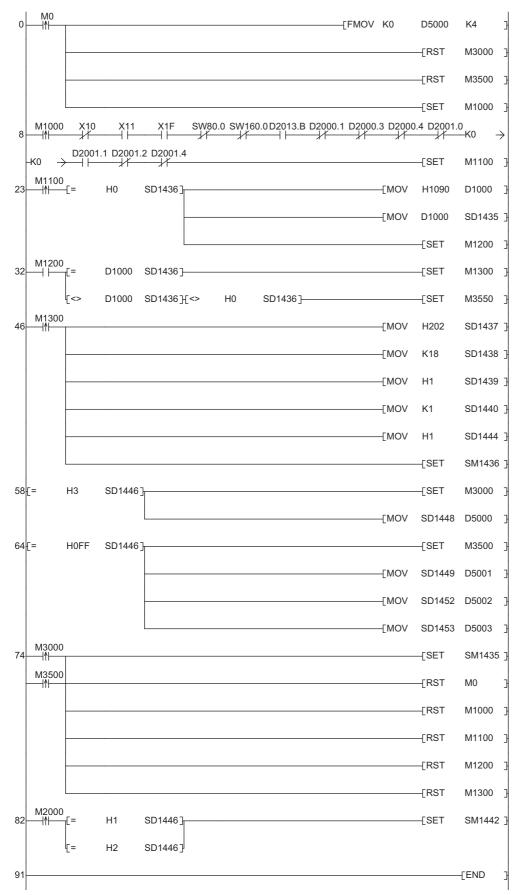
| Device | Description | Value |
|-----------------------|--|--------------------------------------|
| MO | Initialization trigger | — |
| M1000 | Backup execution trigger | — |
| M1100 | Backup right-to-use request trigger | — |
| M1200 | Backup right-to-use confirmation trigger | — |
| M1300 | Backup setting and starting trigger | — |
| M2000 | Backup execution cancellation trigger | — |
| M3000 | Backup execution normal completion display | — |
| M3500 | Backup execution abnormal completion display | — |
| M3550 | Backup right-to-use acquisition failure | — |
| D1000 | Right-to-use number storage area | — |
| D2000.1 ^{*1} | DP/DN short error | — |
| D2000.3 ^{*1} | Transmission cable voltage drop error | — |
| D2000.4 ^{*1} | DP/DN disconnection error | — |
| D2001.0 ^{*1} | Slave module alarm signal | — |
| D2001.1 ^{*1} | Parameter access completion flag | — |
| D2001.2 ^{*1} | Parameter access error | — |
| D2001.4 ^{*1} | Automatic address detection flag | — |
| D2013.B ^{*1} | Remote READY | — |
| D5000 | Backup number of normally completed devices | — |
| D5001 | Backup number of devices completed with an error | — |
| D5002 | Backup error cause in a module | — |
| D5003 | Backup error cause in a device | - |
| SM1435 | Backup execution enabled | - |
| SM1436 | Backup request | - |
| SM1442 | Backup cancellation request | — |
| SD1435 | Backup use request | 1090H |
| SD1436 | Backup right-to-use acquisition status | - |
| SD1437 | Backup target module/execution unit setting | Lower 8 bits: 2H Upper 8 bits: 2H |
| SD1438 | Backup folder number setting | 18 |
| SD1439 | Backup target setting (target module) | 1H |
| SD1440 | Backup target setting (target device 1) | 1 |
| SD1444 | Operation setting when a data backup error occurs | 1H |
| SD1446 | Backup execution status | — |
| SD1448 | Backup number of normally completed devices | — |
| SD1449 | Backup number of devices completed with an error | — |
| SD1452 | Backup error cause in a module | — |
| SD1453 | Backup error cause in a device | — |
| SW80.0 | Station No.1 data link status | - |
| SW160.0 | Station No.1 remote register use prohibited status | - |
| X10 | Module error | _ |
| X11 | Host station data link status | - |
| X1F | Module READY | - |
| | | |

*1 A device used when the remote input (RX) is set to D2000.

Point **P**

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

Sample program



[Initialization]

Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Executing data backup and checking data link status] Check that the other station data link status (SW0080 to SW0083) indicates that a data link is in process before making a data backup request. Set the backup right-to-use request trigger. (8) [Requesting backup right to use] (23) Store the right-to-use number. Set the backup right-to-use request trigger. Set the backup right-to-use confirmation trigger. [Checking backup right to use] Set the backup setting and starting trigger. (32) Display the right-to-use acquisition failure. [Setting and starting data backup] (46) Set the target module/execution unit. Set the target folder number. Set the target module. Set the target device 1. Set the operation setting when a data backup error occurs. Set the backup request. [Checking data backup execution] Display the normal completion. (58) Save the number of normally completed devices. (64) Display the abnormal completion. Save the number of devices completed with an error. Save the error code (module error). Save the error code (device error). [Enabling the next data backup process] (74) Enable the data backup execution. Clear the initialization trigger. Clear the backup execution trigger. Clear the backup right-to-use request trigger. Clear the backup right-to-use confirmation trigger.

Clear the backup setting and starting trigger.

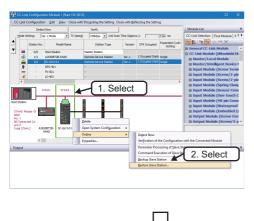
[Setting for cancelling the process]

(82) Set the backup cancellation request.

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each station by using an engineering tool.

Operating procedure





- Select a target device supporting iQSS in 'List of stations' or 'Device map area' in the "CC-Link Configuration" window, then right-click it and select [Online] ⇒ [Restore Slave Station] from the shortcut menu.
- **2.** Select backup data to be restored, and click the [Execute] button.

Point

A list of the backup folder names (date_number) is displayed in the column of "Folder Name." Backup data is stored in backup folders for each folder name (Start I/O number_Station number) in an SD memory card. For details on the backup folder configuration, refer to the following:

3. Read the message and click the [OK] button.

Data is restored.

■Data restoration method for a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL)

Data can be restored for a device supporting iQSS, which is connected to a bridge module (NZ2AW1C2AL), by the following method.

Operating procedure

- **1.** Select a bridge module (NZ2AW1C2AL) in 'List of stations' or 'Device map area' in the "CC-Link Configuration" window.
- **2.** Right-click the module and select [Open System Configuration] ⇒ [Open AnyWireASLINK Configuration] from the shortcut menu.
- 3. Select a target device supporting iQSS in 'List of stations' or 'Device map area' in the "AnyWireASLINK Configuration" window, then right-click it and select [Online] ⇒ [Restore Slave Module] from the shortcut menu.

Point P

When restoring data for a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), a list of the backup data name (date_number) stored in the backup folder of CC-Link is displayed in the "Folder Name" in the "Select Restoring Backup Data (AnyWireASLINK)" screen.

Backup data is stored in backup folders for each folder name (Station number/Station sub-ID number) in an SD memory card.

For details on the backup folder configuration, refer to the following:

Page 77 Backup folder configuration

Considerations for data restoration

Setting the restoration setting

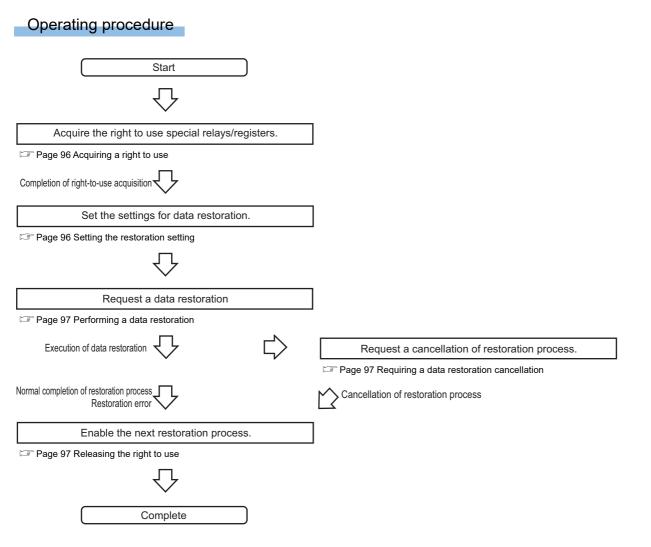
The initial value of the restoration setting (SD1444) is as follows:

Lower 8 bits of SD1444 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (I Page 95 Program execution for data restoration)

Program execution for data restoration

The information saved in an SD memory card can be restored to a device supporting iQSS with a program.



Execution method of data restoration

The target device for data restoration can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- Special relays (SM) and special registers (SD) are used for data restoration.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

■Setting the restoration setting

1. Setting a target module type

Set the target module type for data restoration to the lower 8 bits of SD1437.

| Target module type | Description |
|--------------------|-----------------------------|
| 2H: CC-Link | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data restoration to the upper 8 bits of SD1437.

| Execution unit | Description |
|-------------------------|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the CC-Link master/local module with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the following devices supporting iQSS which are connected to the CC-Link master/local module with the specified start I/O number: device supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the module with the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the device supporting iQSS with the specified station sub-ID number which is connected to the module with the specified station number among the devices supporting iQSS which are connected to the CC-Link IE Field Network master/local module with the specified start I/O number. |

3. Selecting a folder for data restoration

Set the number for backup folder name, from which data is to be restored, to SD1438.

| Target folder | Description | |
|--|-------------|--|
| 00 to 99: Target folder specification Specify the number among the numbers for backup folder name, 00 to 99. | | |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Setting the execution unit', set the start I/O number of a target device for data restoration to SD1439.

| Target device (Module) | Description | |
|----------------------------|---|--|
| 0 to FFH: Start I/O number | When '1H' (module unit) is set for the execution unit, set the value obtained by dividing the start I/O number of a CC- | |
| | Link master/local module, which is connected to a target device supporting iQSS, by 16. | |

• Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station number of a target device for data restoration to SD1440.

| Target device (Station number) | Description |
|--------------------------------|---|
| 1 to 64: Station number | When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set the station number of a target device supporting iQSS which is connected to the module with the specified station number. |

• Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station sub-ID number of a target device for data restoration to SD1441.

| Target device (Station sub-ID number) | Description |
|---------------------------------------|--|
| 0 to 9999: Station sub-ID number | When '3H' (station sub-ID unit) is set for the execution unit, set the station sub-ID number of a target device supporting iQSS. |

Precautions

To restore the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), set the ID number of AnyWireASLINK to SD1441.

For details on the ID number (SD1440) of AnyWireASLINK, refer to the following:

 $\ensuremath{\boxtimes}$ Page 50 Setting the restoration setting

5. Setting the operation setting when a data restoration error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to in order to restore data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data restoration

Data is restored if SM1439 is turned ON while SD1446 is '1H' (ready).

Once data is restored, SD1446 will be '2H' (being executed).

Check that the other station data link status (SW0080 to SW0083) indicates that a data link is in process before performing a data restoration.

■Requiring a data restoration cancellation

The data restoration stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data restoration is completed (including a cancellation or an error), the right to use is released and the next data restoration is ready to be performed.

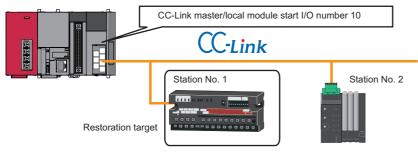
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data restoration

Example of a system configuration

The following shows the example of a system configuration for data restoration.



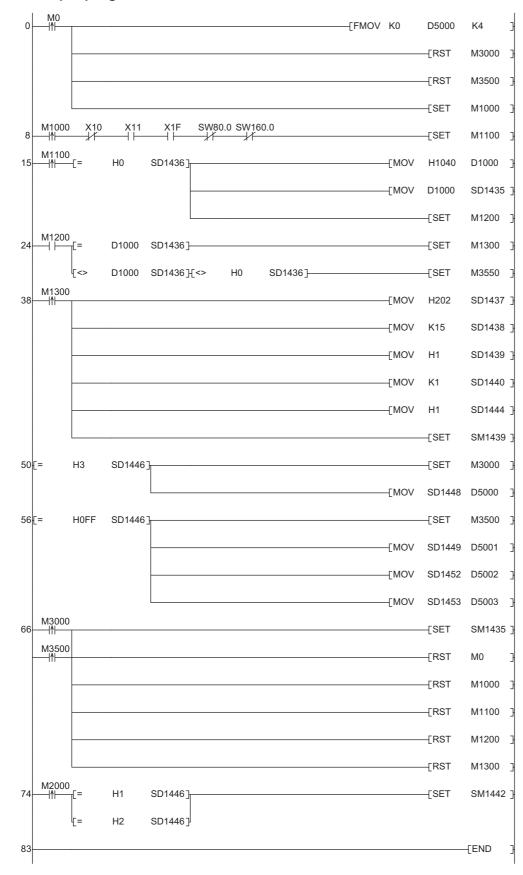
- Target module type: CC-Link
- Execution unit: Station
- Folder number setting: 15
- Target device (target module): Start I/O No.10
- Target device (station number): Station No. 1
- · Operation setting on error: Stop

■Devices used in the program

| Device | Description | Value | |
|---------|--|------------------|--|
| M0 | Initialization trigger | — | |
| M1000 | Restoration execution trigger | — | |
| M1100 | Restoration right-to-use request trigger | — | |
| M1200 | Restoration right-to-use confirmation trigger | — | |
| M1300 | Restoration setting and starting trigger | — | |
| M2000 | Restoration execution cancellation trigger | — | |
| M3000 | Restoration execution normal completion display | — | |
| M3500 | Restoration execution abnormal completion display | — | |
| M3550 | Restoration right-to-use acquisition failure | — | |
| D1000 | Right-to-use number storage area | - | |
| D5000 | Restoration number of normally completed devices | — | |
| D5001 | Restoration number of devices completed with an error | - | |
| D5002 | Restoration error cause in a module | - | |
| D5003 | Restoration error cause in a device | - | |
| SM1435 | Restoration execution enabled | — | |
| SM1439 | Restoration request | - | |
| SM1442 | Restoration cancellation request | - | |
| SD1435 | Restoration use request | 1040H | |
| SD1436 | Restoration right-to-use acquisition status | — | |
| SD1437 | Restoration target module/execution unit setting | Lower 8 bits: 2H | |
| | | Upper 8 bits: 2H | |
| SD1438 | Restoration folder number setting | 15 | |
| SD1439 | Restoration target setting (target module) | 1H | |
| SD1440 | Restoration target setting (target device 1) | 1 | |
| SD1444 | Operation setting when a data restoration error occurs | 1H | |
| SD1446 | Restoration execution status | | |
| SD1448 | Restoration number of normally completed devices | | |
| SD1449 | Restoration number of devices completed with an error | _ | |
| SD1452 | Restoration error cause in a module | _ | |
| SD1453 | Restoration error cause in a device | — | |
| SW80.0 | Station No.1 data link status | — | |
| SW160.0 | Station No.1 remote register use prohibited status | _ | |
| X10 | Module error | _ | |
| X11 | Host station data link status | - | |
| X1F | Module READY | | |

Point

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.



■Sample program

[Initialization]

(0)

Initialize the execution result. Initialize the normal completion display. Initialize the abnormal completion display. Set the restoration execution trigger.

[Executing data restoration and checking data link status]

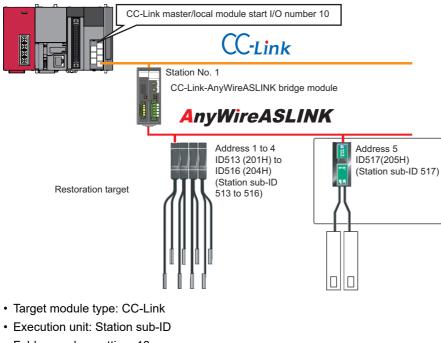
Check that the other station data link status (SW0080 to SW0083) indicates that a data link is in process before making a data restoration request.

- (8) Set the restoration right-to-use request trigger.
- [Requesting restoration right to use]
- (15) Store the right-to-use number
 - Set the restoration right-to-use request trigger.
 - Set the restoration right-to-use confirmation trigger.
- [Checking restoration right to use]
- (24) Set the restoration setting and starting trigger.
 - Display the right-to-use acquisition failure.
- [Setting and starting data restoration]
- (38) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the target device 1.
 - Set the operation setting when a data restoration error occurs.
 - Set the restoration request.
- [Checking data restoration execution]
- (50) Display the normal completion.
 - Save the number of normally completed devices.
- (56) Display the abnormal completion.
 - Save the number of devices completed with an error. Save the error code (module error). Save the error code (device error).
- [Enabling the next data restoration process]
- (66) Enable the data restoration execution.
 - Clear the initialization trigger.
 - Clear the restoration execution trigger.
 - Clear the restoration right-to-use request trigger.
 - Clear the restoration right-to-use confirmation trigger.
 - Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (74) Set the restoration cancellation request.

Example of a data restoration (bridge module (NZ2AW1C2AL))

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- Folder number setting: 18
- Target device (target module): Start I/O No.10
- Target device (station number): Station No. 1
- Target device (station sub-ID number): Station sub-ID 517
- Operation setting on error: Stop

■Devices used in the program

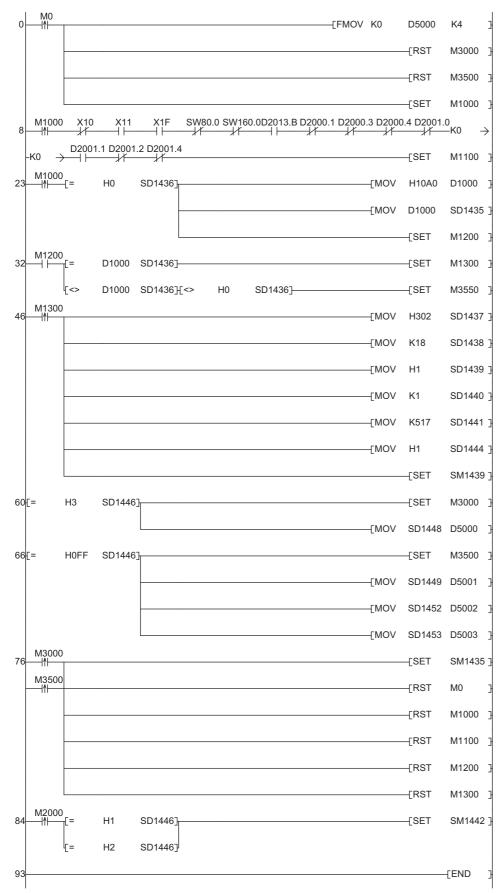
| N0 Initiation trager | Device | Description | Value | |
|---|-----------------------|--|-------|--|
| M100 Restoration right-to-use ordination trigger — M1200 Restoration setting and starting trigger — M2000 Restoration execution and defaulting trigger — M2000 Restoration execution and defaulting trigger — M3000 Restoration ingita-to-use anguistion failure — D1000 Right-to-use completion failure — D2000.3 ¹¹ Transmission cable voltage drop error — D2001.4 ¹¹ Parameter access completion flig — D2001.1 ¹¹ Parameter access completion flig — D2001.2 ¹¹ Parameter access and precision flig — D2001.4 ¹¹ Automatic address defection flig — D2001.4 ¹¹ Restoration number of dovices completed devices —< | MO | Initialization trigger | - | |
| M1200 Restoration right-to-use confirmation trigger | M1000 | Restoration execution trigger | — | |
| M1300Restoration securiton cancellation triggerM2000Restoration execution cancellation triggerM3000Restoration execution abornal completion displayM3500Restoration execution abornal completion displayM3500Restoration execution abornal completion displayM3500Restoration execution abornal completion displayM3500Restoration reputer storage areaD1000Right-to-use number storage areaD2000.11DP/DN short errorD2000.31Transmission cable voltage drop errorD2000.41DP/DN short errorD2001.01Stave module alarm signalD2001.11Parameter access completion flagD201.12Parameter access completion flagD201.13Restoration number of normally completed devicesD201.14Automatic address detection flagD201.15Restoration number of devicesD5001Restoration number of devicesD5002Restoration mumber of devicesD5013Restoration error cause in a deviceSM1435Restoration requestSM1435Restoration requestSM1435Restoration ingle devicesSD1437Restoration ingle setting (arget module)11SD1438Restoration ingle setting (arget module)14SD1439Restoration ingle setting (arget module)14< | M1100 | Restoration right-to-use request trigger | — | |
| M2000Restoration execution normal completion displayM3000Restoration execution normal completion displayM3500Restoration execution normal completion displayM3500Restoration right-to-use acquisition failureD1000Right-to-use number storage area-D2000.1'1DP/DN shot errorD2000.1'1DP/DN shot errorD2000.1'1DP/DN shot errorD2000.1'1DP/DN disconnection errorD2001.1'1Parameter access completion flagD2001.1'1Parameter access errorD2001.1'1Parameter access errorD2001.2'1Parameter access errorD2001.4'1Automatic address detection flagD201.4Automatic address detection flagD5000Restoration number of normally completed devicesD5001Restoration nerror cause in a deviceD5002Restoration error cause in a deviceSM1435Restoration error cause in a deviceSM1436Restoration error cause in a deviceSM1437Restoration cacuetor neatedSM1438Restoration cacuetor neatedSM1439Restoration cacuetor neatedSM1430Restoration cacuetor neatedSM1431Restoration use request10AOHSD1436Restoration inget ethnic (arget device 2)517SD1436Restoration target setting (arget de | M1200 | Restoration right-to-use confirmation trigger | — | |
| M3000Restoration execution normal completion displayM3500Restoration execution abnormal completion displayM3550Restoration right-to-use acquisition failureD1000Right-to-use acquisition failureD200.1°1DP/DN short errorD200.1°1DP/DN short errorD200.1°1DP/DN short errorD200.1°1DP/DN short errorD200.1°1DP/DN doncenction errorD200.1°1Slave module alam signalD200.1°1Parameter access errorD200.1°1Parameter access errorD200.1°1Automatic address detection flagD200.1°1Restoration number of normity completed devicesD200.1°1Restoration number of devices completed with an errorD200.1°1Restoration number of devices completed with an errorD5000Restoration error cause in a deviceD5001Restoration requestD5002Restoration requestSM1435Restoration requestSM1436Restoration requestSM1437Restoration requestSM1438Restoration request setting (arget module)1SD1438Restoration reget setting (arget module)1SD1439Restoration target setting (arget module)1SD1439Restoration setting (arget module)1SD1439Restoration target setting (arget module)1 <td>M1300</td> <td>Restoration setting and starting trigger</td> <td>—</td> | M1300 | Restoration setting and starting trigger | — | |
| MassioRestaration execution athormal completion display | M2000 | Restoration execution cancellation trigger | — | |
| M3S0Restoration right-to-use acquisition failure-D1000Right-to-use number storage area-D2000.1 ¹¹ DPIDN short error-D2000.3 ¹¹ Transmission cable voltage drop error-D2000.4 ¹¹ DPIDN disconnection error-D2001.1 ¹¹ DPIDN disconnection error-D2001.1 ¹¹ DPIA were module alarm signal-D2001.1 ¹¹ Parameter access completion flag-D2001.2 ¹¹ Parameter access error-D2001.4 ¹¹ Automatic address detection flag-D201.3 ¹¹ Remole READY-D5000Restoration number of normally completed devices-D5001Restoration number of devices completed with an error-D5002Restoration error cause in a module-D5003Restoration request-SM1435Restoration request-SM1435Restoration cause in a device-SM1435Restoration cause in a device-SM1435Restoration request-SM1435Restoration request-SM1436Restoration request-SD1436Restoration inght-to-use acquisition status-SD1439Restoration flaget endote(excution unit settingLower & bits: 2HUpper 8 bits: 3HSD1436Restoration flaget endote(e)11SD1437Restoration flaget endote(e)11SD1438Restoration flaget endote(e)11SD1444Operation setting | M3000 | Restoration execution normal completion display | — | |
| D1000Right-to-use number storage areaD2000.11DPIDN short errorD2000.31Transmission cable voltage drop errorD2000.41DPIDN discontection errorD2001.01Slave module alarm signalD2001.11Parameter access completion flagD2001.12Parameter access completion flagD2001.41Automatic address detection flagD2001.41Automatic address detection flagD2001.41Restoration number of normally completed devicesD5000Restoration number of normally completed devicesD5001Restoration number of devices completed with an errorD5002Restoration error cause in a deviceD503Restoration erquestSM1435Restoration erquestSM1435Restoration cause in a deviceSM1435Restoration cause in a deviceSM1435Restoration cause in a deviceSM1435Restoration requestSM1435Restoration cause in a deviceSM1435Restoration cause in a deviceSD1436Restoration cause in a deviceSD1437Restoration cause in a deviceSD1438 | M3500 | Restoration execution abnormal completion display | — | |
| D2000.1'1DP/DN short errorD2000.3'1Transmission cable voltage drop errorD2000.4'1DP/DN disconnection errorD2001.0'1Slave module alam signalD2001.1'1Parameter access completion flagD2011.2'1Parameter access errorD2011.4'1Automatic address detection flagD2011.4'1Automatic address detection flagD2011.4'1Automatic address detection flagD2011.4'1Automatic address detection flagD2011.4'1Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of devices completed with an errorD5002Restoration error cause in a moduleD5003Restoration error cause in a deviceSM1435Restoration execution enabledSM1435Restoration execution enabledSM1435Restoration fight-to-use acquisition statusSD1436Restoration fight-to-use acquisition statusSD1437Restoration fight-to-use acquisition statusSD1438Restoration fight-to-use acquisition error cause18SD1439Restoration fight-to-use acquisition error cause114SD1439Restoration fight device 2.2S17SD1440Restoration fight device 2.2S17SD1444Operation exting (larget device 2.2)S17SD1445Restoration error cause in a module <td>M3550</td> <td>Restoration right-to-use acquisition failure</td> <td>—</td> | M3550 | Restoration right-to-use acquisition failure | — | |
| D2000.3'1Transmission cable voltage drop errorD2001.4'1DP/DN disconnection errorD2001.1'1Slave module alam signalD2001.1'1Parameter access completion flagD201.2'1Parameter access errorD201.3'1Remote READYD2000.0Restoration number of normally completed devicesD5000Restoration number of advices completed with an errorD5001Restoration number of advices completed with an errorD5002Restoration error cause in a deviceD5003Restoration erequestSM1435Restoration erequestSM1435Restoration erequestSM1435Restoration erequestSD1436Restoration and devices cupileting10AOHSD1437Restoration ancellation requestSD1438Restoration ancellation statusSD1439Restoration target exiting (arget module)11SD1444Operation target setting (arget device 1)1SD1444Operation setting (arget device 2)517SD1444Restoration number of normally completed devicesSD1445Restoration arget setting (arget device 2)517SD1446Restoration target setting (arget device 2)517SD1446Restoration target setting (arget device 2)517SD1448Restoration number of normally completed devicesSD1448Restoration number of normally completed | D1000 | Right-to-use number storage area | — | |
| D2000.4 ¹¹ DPIDN disconnection errorD2001.0 ¹¹ Slave module alarm signalD2001.1 ¹¹ Parameter access completion flagD2001.2 ¹¹ Parameter access errorD2001.4 ¹¹ Automatic address detection flagD201.4 ¹¹ Automatic address detection flagD2001.4 ¹¹ Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of normally completed devicesD5002Restoration error cause in a moduleD5003Restoration error cause in a deviceD5003Restoration requestSM1435Restoration requestSM1442Restoration cancellation requestSD1435Restoration requestSD1436Restoration fight-to-use acquisition statusSD1437Restoration fight evolue/execution unit settingLower 8 bits: 2H upper 8 bits: 3HSD1438Restoration target setting (target device 1)1SD1440Restoration target setting (target device 2)517SD1444Operation target setting (target device 2)517SD1445Restoration marker of devices completed devicesSD1446Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation statusSD1445Restoration marker of devices completed devicesSD1446R | D2000.1 ^{*1} | DP/DN short error | — | |
| D2001.0 ¹¹ Slave module alarm signalD2001.1 ¹¹ Parameter access completion flagD2001.2 ¹² Parameter access errorD2013.8 ¹¹ Automatic address detection flagD2013.8 ¹¹ Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of devices completed with an errorD5002Restoration error cause in a moduleD5003Restoration error cause in a deviceD5003Restoration error cause in a deviceSM1435Restoration ercquestSM1435Restoration exceution enabledSM1435Restoration requestSD1435Restoration inght-to-use acquisition statusSD1436Restoration fight-to-use acquisition statusSD1437Restoration target setting18SD1438Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting (target device 2)517SD1444Restoration number of devices completed devicesSD1445Restoration number of devices completed devicesSD1446Restoration metring (target device 2)517SD1446Restoration setting (target device 2)517SD1447Restoration number of normally completed devicesSD1448Restoration number of devices completed devicesSD1449< | D2000.3 ^{*1} | Transmission cable voltage drop error | — | |
| D2001.1 ⁻¹¹ Parameter access completion flagD2001.2 ⁻¹¹ Parameter access errorD2001.4 ⁻¹¹ Automatic address detection flagD201.3B ⁻¹¹ Remote READYD201.3B ⁻¹¹ Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of devices completed devicesD5002Restoration error cause in a moduleD5003Restoration error cause in a deviceD5004Restoration error cause in a deviceD5005Restoration error cause in a deviceD5006Restoration error cause in a deviceD5007Restoration error cause in a deviceD5008Restoration execution enabledSM1435Restoration cancellation requestSM1442Restoration cancellation requestSD1435Restoration inght-to-use acquisition statusSD1436Restoration folder number setting18SD1437Restoration folder number setting18SD1438Restoration target setting (target device 1)1SD1440Restoration staget setting (target device 2)517SD1441Restoration number of normally completed devicesSD1442Restoration number of normally completed devicesSD1444Operation setting (target device 2)517SD1446Restoration number of normally completed devicesSD1446Restorati | D2000.4 ^{*1} | DP/DN disconnection error | — | |
| D20012'1Parameter access errorD2014'1Automatic address detection flagD2013.B'1Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of normally completed with an errorD5002Restoration error cause in a moduleD5003Restoration execution enabledSM1435Restoration cause in a deviceSM1435Restoration execution enabledSM1435Restoration execution enabledSM1435Restoration cancellation requestSD1435Restoration use request10A0HSD1435Restoration target module/execution unit settingLower 8 bits: 2HUpper 8 bits: 3HSD1436Restoration target module/execution unit settingLower 8 bits: 2HSD1436Restoration target setting (target module)1HSD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration execution stusSD1444Operation execution stusSD1445Restoration execution stusSD1446Restoration execution stusSD1447Restoration execution stusSD1448Restoration execution stusSD1444Operation execution stusSD1445Restoration execution stusSD1446Restoration execution stusS | D2001.0 ^{*1} | Slave module alarm signal | — | |
| D2001.4*1Automatic address detection flagD2013.B*1Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of devices completed devicesD5002Restoration error cause in a moduleD5003Restoration error cause in a moduleD5003Restoration error cause in a deviceSM1435Restoration error cause in a deviceSM1435Restoration execution enabledSM1435Restoration execution enabledSM1435Restoration cancellation requestSM1435Restoration cancellation requestSD1435Restoration right-to-use acquisition statusSD1436Restoration target module/execution unit settingLower 8 bits: 2HUpper 8 bits: 3HSD1438Restoration target setting (target device 1)1SD1439Restoration target setting (target device 1)1SD1440Restoration target setting (target device 2)517SD1441Operation setting when a data restoration error occurs11HSD1445Restoration number of normally completed devicesSD1445Restoration number of devices completed with an error-SD1446Restoration number of normally completed devicesSD1444Operation setting when a data restoration error occurs11HSD1445Restoration number of normally completed devicesSD1446Restoration error cause in a devic | D2001.1 ^{*1} | Parameter access completion flag | — | |
| D2013.B ¹¹ Remote READYD5000Restoration number of normally completed devicesD5001Restoration number of devices completed with an errorD5002Restoration error cause in a moduleD5003Restoration error cause in a moduleD5003Restoration error cause in a deviceSM1435Restoration error cause in a deviceSM1435Restoration error cause in a deviceSM1435Restoration execution enabledSM1435Restoration execution enabledSM1442Restoration cancellation requestSD1435Restoration inght-to-use acquisition statusSD1436Restoration larget module/execution unit settingLower 8 bits: 2HUpper 8 bits: 3HSD1438Restoration target setting (target module)1HSD1438Restoration target setting (target device 1)1SD1440Restoration target setting (target device 2)517SD1441Restoration target setting (target device 2)517SD1445Restoration error cause in a moduleSD1446Restoration error cause in a moduleSD1445Restoration target setting (target device 1)1SD1446Restoration target setting (target device 2)517SD1446Restoration error cause in a moduleSD1447Restoration error cause in a moduleSD1448Restoration error cause in a moduleSD1449Restoration e | D2001.2 ^{*1} | Parameter access error | — | |
| D5000Restoration number of normally completed devicesD5001Restoration number of devices completed with an errorD5002Restoration error cause in a moduleD5003Restoration error cause in a deviceSM1435Restoration error cause in a deviceSM1435Restoration execution enabledSM1439Restoration execution enabledSM1439Restoration requestSM1442Restoration cancellation requestSD1435Restoration use request10A0HSD1435Restoration use request10A0HSD1436Restoration target module/execution unit settingLower 8 bits: 2HUpper 8 bits: 3HSD1438Restoration folder number setting18SD1438Restoration target setting (larget module)11SD1449Restoration target setting (larget device 1)1SD1441Restoration target setting (larget device 2)517SD1444Operation setting when a data restoration error occurs1HSD1445Restoration number of normally completed devices-SD1446Restoration number of devices completed with an error-SD1449Restoration number of normally completed devices-SD1449Restoration number of devices completed with an error-SD1449Restoration number of devices completed with an error-SD1449Restoration error cause in a device-SD1449Restoration error cause in a device- </td <td>D2001.4^{*1}</td> <td>Automatic address detection flag</td> <td>—</td> | D2001.4 ^{*1} | Automatic address detection flag | — | |
| D5001Restoration number of devices completed with an errorD5002Restoration error cause in a moduleD5003Restoration error cause in a deviceSM1435Restoration execution enabledSM1439Restoration requestSM1442Restoration requestSD1435Restoration requestSD1435Restoration requestSD1436Restoration use request10A0HSD1436Restoration right-to-use acquisition statusSD1437Restoration tright-to-use acquisition statusSD1438Restoration tright-to-use acquisition statusSD1439Restoration tright-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration target setting (target module)1SD1439Restoration target setting (target module)1SD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1448Restoration number of normally completed devicesSD1449Restoration number of devices completed with an error-SD1449Restoration number of devices completed with an error-SD1449Restoration error cause in a module-SD1452Restoration error cause in a device-SW160.0Stati | D2013.B ^{*1} | Remote READY | — | |
| D5002Restoration error cause in a moduleD5003Restoration error cause in a deviceSM1435Restoration execution enabledSM1439Restoration requestSM1442Restoration cancellation requestSD1435Restoration cancellation request10A0HSD1436Restoration right-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration execution statusSD1444Operation setting when a data restoration error occurs1HSD1448Restoration number of normally completed devicesSD1448Restoration number of of vices completed with an errorSD1449Restoration number of a deviceSD1452Restoration error cause in a moduleSD1453Restoration error cause in a moduleSD1454Restoration number of normally completed devicesSD1455Restoration error cause in a deviceSD1452Restoration error cause in a deviceSV800.0Station No.1 terrote register use prohibited statusX10Module errorX11Host station data link status | D5000 | Restoration number of normally completed devices | — | |
| D5003Restoration error cause in a deviceSM1435Restoration execution enabledSM1439Restoration requestSM1442Restoration cancellation requestSD1435Restoration use request10A0HSD1436Restoration target module/execution unit settingLower 8 bits: 2HSD1437Restoration fight-to-use acquisition statusSD1438Restoration folder number setting18SD1439Restoration target module/execution unit setting18SD1439Restoration target setting (target module)11SD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs11SD1448Restoration number of normally completed devicesSD1449Restoration number of evices completed devicesSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | D5001 | Restoration number of devices completed with an error | — | |
| SM1435Restoration execution enabledSM1439Restoration requestSM1442Restoration cancellation requestSD1435Restoration cancellation request10A0HSD1436Restoration use request10A0HSD1436Restoration right-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration folder number setting (target module)11SD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs11SD1445Restoration number of normally completed devicesSD1448Restoration number of devices completed devicesSD1449Restoration number of devices completed devicesSD1452Restoration error cause in a moduleSU1453Restoration normal in a deviceSW80.0Station No.1 tare is esting target ruse prohibited statusSW160.0Station No.1 tremote register use prohibited statusX10Module errorX11Host station data link status | D5002 | Restoration error cause in a module | — | |
| SM1439Restoration requestSM1442Restoration cancellation requestSD1435Restoration use request10A0HSD1436Restoration right-to-use acquisition statusSD1437Restoration right-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation steting when a data restoration error occurs1HSD1448Restoration number of normally completed devicesSD1449Restoration number of normally completed devicesSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusX10Module errorX11Host station data link status | D5003 | Restoration error cause in a device | — | |
| SM1442Restoration cancellation requestSD1435Restoration use request10A0HSD1436Restoration right-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration number of normally completed devicesSD1448Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusX10Module errorX11Host station data link status | SM1435 | Restoration execution enabled | — | |
| SD1435Restoration use request10A0HSD1436Restoration right-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration target module/execution unit setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1448Restoration number of normally completed devicesSD1449Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusX10Module errorX11Host station data link status | SM1439 | Restoration request | — | |
| SD1436Restoration right-to-use acquisition statusSD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration number of normally completed devicesSD1448Restoration number of normally completed devicesSD1452Restoration error cause in a moduleSU453Restoration error cause in a deviceSW80.0Station No.1 data link statusSV160.0Station No.1 remote register use prohibited statusX11Host station data link status | SM1442 | Restoration cancellation request | — | |
| SD1437Restoration target module/execution unit settingLower 8 bits: 2H Upper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration execution statusSD1448Restoration number of normally completed devicesSD1449Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1435 | Restoration use request | 10A0H | |
| LineUpper 8 bits: 3HSD1438Restoration folder number setting18SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration number of normally completed devices-SD1448Restoration number of normally completed devices-SD1449Restoration number of devices completed with an error-SD1452Restoration error cause in a module-SD1453Restoration error cause in a device-SW80.0Station No.1 data link status-X10Module error-X11Host station data link status- | SD1436 | Restoration right-to-use acquisition status | — | |
| SD1439Restoration target setting (target module)1HSD1440Restoration target setting (target device 1)1SD1440Restoration target setting (target device 2)517SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration execution status-SD1448Restoration number of normally completed devices-SD1449Restoration number of devices completed with an error-SD1452Restoration error cause in a module-SD1453Restoration error cause in a device-SW80.0Station No.1 data link status-SW160.0Station No.1 remote register use prohibited status-X10Module error-X11Host station data link status- | SD1437 | 5 7 5 | | |
| SD1440Restoration target setting (target device 1)1SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration execution status-SD1448Restoration number of normally completed devices-SD1449Restoration number of devices completed with an error-SD1452Restoration error cause in a module-SD1453Restoration error cause in a device-SW80.0Station No.1 data link status-SW160.0Module error-X10Module error-X11Host station data link status- | SD1438 | Restoration folder number setting | 18 | |
| SD1441Restoration target setting (target device 2)517SD1444Operation setting when a data restoration error occurs1HSD1446Restoration execution status-SD1448Restoration number of normally completed devices-SD1449Restoration number of devices completed with an error-SD1452Restoration error cause in a module-SD1453Restoration error cause in a device-SW80.0Station No.1 data link status-SW160.0Station No.1 remote register use prohibited status-X10Module error-X11Host station data link status- | SD1439 | Restoration target setting (target module) | 1H | |
| SD1444Operation setting when a data restoration error occurs1HSD1446Restoration execution statusSD1446Restoration number of normally completed devicesSD1448Restoration number of devices completed with an errorSD1449Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1440 | Restoration target setting (target device 1) | 1 | |
| SD1446Restoration execution statusSD1446Restoration number of normally completed devicesSD1448Restoration number of devices completed with an errorSD1449Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1441 | Restoration target setting (target device 2) | 517 | |
| SD1448Restoration number of normally completed devicesSD1449Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1444 | Operation setting when a data restoration error occurs | 1H | |
| SD1449Restoration number of devices completed with an errorSD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1446 | Restoration execution status | — | |
| SD1452Restoration error cause in a moduleSD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1448 | Restoration number of normally completed devices | — | |
| SD1453Restoration error cause in a deviceSW80.0Station No.1 data link statusSW160.0Station No.1 remote register use prohibited statusX10Module errorX11Host station data link status | SD1449 | Restoration number of devices completed with an error | — | |
| SW80.0 Station No.1 data link status — SW160.0 Station No.1 remote register use prohibited status — X10 Module error — X11 Host station data link status — | SD1452 | Restoration error cause in a module | — | |
| SW160.0 Station No.1 remote register use prohibited status — X10 Module error — X11 Host station data link status — | SD1453 | Restoration error cause in a device | - | |
| X10 Module error X11 Host station data link status | SW80.0 | Station No.1 data link status | - | |
| X11 Host station data link status | SW160.0 | Station No.1 remote register use prohibited status | _ | |
| | X10 | Module error | - | |
| X1F Module READY - | X11 | Host station data link status | - | |
| | X1F | Module READY | - | |

*1 A device used when the remote input (RX) is set to D2000.

Point *P*

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

Sample program



[Initialization]

(0)

Initialize the execution result. Initialize the normal completion display. Initialize the abnormal completion display. Set the restoration execution trigger.

Get the restoration execution trigget.

[Executing data restoration and checking data link status]

Check that the other station data link status (SW0080 to SW0083) indicates that a data link is in process before making a data restoration request.

- (8) Set the restoration right-to-use request trigger.
- [Requesting restoration right to use]
- (23) Store the right-to-use number
 - Set the restoration right-to-use request trigger.
 - Set the restoration right-to-use confirmation trigger.
- [Checking restoration right to use]
- (32) Set the restoration setting and starting trigger.
 - Display the right-to-use acquisition failure.
- [Setting and starting data restoration]
- (46) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the target device.
 - Set the operation setting when a data restoration error occurs.
 - Set the restoration request.
- [Checking data restoration execution]
- (60) Display the normal completion.
 - Save the number of normally completed devices.
- (66) Display the abnormal completion.
 - Save the number of devices completed with an error. Save the error code (module error). Save the error code (device error).
- [Enabling the next data restoration process]
- (76) Enable the data restoration execution.
 - Clear the initialization trigger.
 - Clear the restoration execution trigger.
 - Clear the restoration right-to-use request trigger.
 - Clear the restoration right-to-use confirmation trigger.
 - Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (84) Set the restoration cancellation request.

5 CC-Link IE Field Network

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC-L series connected to CC-Link IE Field Network.

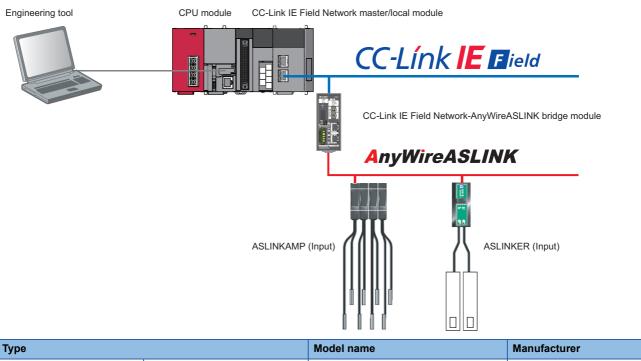
Refer to this chapter for series other than MELSEC-L series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for CC-Link IE Field Network using the following system configuration.



| Туре | | Model name | Manufacturer |
|--|----------------------|---|---------------------------------|
| Engineering tool | GX Works2 | SWnDND-GXW2 and SWnDNC-GXW2 ('n' indicates its version.) | Mitsubishi Electric Corporation |
| CPU module | LCPU | L26CPU-BT | |
| CC-Link IE Field Network master/ | local module | LJ71GF11-T2 | |
| CC-Link IE Field Network-AnyWireASLINK bridge module | | NZ2AW1GFAL | |
| ASLINKAMP (Input) | Photoelectric sensor | B289SB-01AP-CAM20 (ASLINKAMP master) B289SB-01AP-CAS (ASLINKAMP slave) | AnyWire Corporation |
| | Fiber sensor | B289SB-01AF-CAS (ASLINKAMP slave) B289SB-01AF-CAS (ASLINKAMP slave) | |
| ASLINKER (Input) | | B281SB-02U-CC20 | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for CC-Link IE Field Network, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set network parameters and other settings required for communication with a device supporting iQSS.

■Master operating station

When a CC-Link IE Field Network master/local module operates as a master operating station, iQ Sensor Solution functions are available.

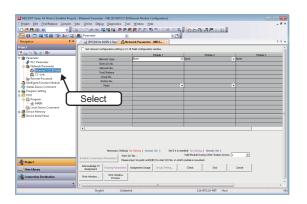
5.1 Detecting Devices Supporting iQSS Automatically

A slave station connected to a CC-Link IE Field Network master/local module can be detected and the information can be displayed in the "CC IE Field Configuration" window.

For the creation method of a new project and the operation methods of the "CC IE Field Configuration" window, refer to the following:

GX Works2 Version 1 Operating Manual (Common)

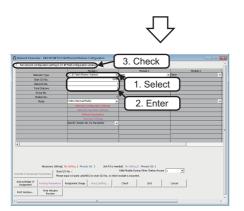
Operating procedure

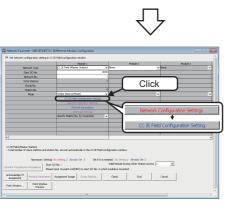


- **1.** Create a new project in an engineering tool.
- Select "Parameter"

 ⇒ "Network Parameter"

 ⇒ "Ethernet/CC IE Field" on the Project view.





- **3.** Select and enter necessary parameters in the "Network Parameter - MELSECNET/CC IE/Ethernet Module Configuration" screen.
- **4.** Select the checkbox of "Set the network configuration setting in the CC IE Field configuration window."
- **5.** Read the message and click the [Yes] button.

The [Network Configuration Settings] button is changed to the [CC IE Field Configuration Setting] button.

6. Click the [CC IE Field Configuration Setting] button.

| 😰 CC IE Field Configuration Module 1 (Start I/O: 0030) | _ D X |
|---|---|
| CC JE Field Configuration Edit View Close with Discarding the Setting Close with Beflecting the Setting | 2. Select |
| Detect Now | × |
| Mode Setting: Online (Standard Mode) v Assignment Method: Start/End v Link Scan Time (Approx. | CC IE Field Selection Find Module M 4 + |
| No. M 3.Click ton Type RX,RY Setting RWW,RWY Setting | |
| No. M 3.CIICK fon Type Points Start End Points Start E | |
| 0 Host Station 0 Master Station | CC IE Field Module (Mitsubishi Ele |
| 1 Gen. Intelligent Device Station 1 Intelligent Device Station 2048 0000 07FF 1024 0000 0 | Master/Local Module |
| < | B Head Module |
| 1 . Ent | vo Amplifier(MELSERVO-J4 |
| | C Digital Input Module |
| Host Station | Basic Digital I/O Combined Mo |
| | Basic Analog Input Module |
| STARD Meder | Basic Analog Output Module |
| Total STA#: 1 Une/Star | Basic Multiple Input (Voltage/ |
| | Basic Temperature Control Mo ✓ |
| Gen. Intellig ent Device S | |
| tation | |
| ¢ | ·) |
| Supplementary Information | × |
| Refresh devices that are assigned to multiple device ranges will appear in light blue. | |
| Please refer to the following supplementary information for the device range contents. | |
| Supplementary | ~ |
| anormation: | |
| | |
| Supplementary Information Output | |
| | |

- 7. Enter the start device and end device to the "RX/RY Setting" and "RWw/RWr Setting" and select [Close with Reflecting the Setting] in the "CC IE Field Configuration" window.
- **8.** Write data to the CPU module and open the "CC IE Field Configuration" window again.
- **9.** Click the [Detect Now] button in the "CC IE Field Configuration" window.
- **10.** Read the message and click the [Yes] button.

The actual system configuration is displayed in the "CC IE Field Configuration" window.

11. Select [Close with Reflecting the Setting] in the "CC IE Field Configuration" window.

The setting in the "CC IE Field Configuration" window is applied to the network parameter and completed.

| | ode Settir | Detect Naw I Online (Standard Mode) | Assignment Hethod: | StartEnd V Units | Scan Time (Approx.)1 | Seleo | | Find Module My Favorites | |
|-------------------------|------------------------|---|--|---|----------------------|-------|---|----------------------------|------|
| | Ni III III III I | Nudel Name Host Station N22RV/10FAL | STAI2 Station Type 0 Pleaser Station 1 Dhieligent Device Station | Roykt Setting Paints Start En 2018 0000 0 | | | E General CC E CE Field G Master/ E Head Mo E Serve Ar E Basic DigCo | List of statio | ns |
| | • | | | | | | El Basic Digital El Basic Analos El Basic Analos El Basic Mu | | |
| 1 81 St | nice in | STARL | | | | - | | Device map a | area |
| sta. Tetsi Line (| 0 Mester STAR1 | | | | | | ⊕ Extension D, ⊕ G012000 Se | /A Conversion Module | |
| | | NESHIYOP A. | | | | • | | Output wind | ow |

Detected devices to be displayed in the CC IE Field Configuration window

Modules detected after performing an automatic detection of connected devices are displayed differently depending on whether a profile has been registered.

■A profile has been registered

- The module model names are displayed in "Model Name."
- "Local Station," "Intelligent Device Station," "Remote Device Station," or "Remote I/O Station" is displayed in the column of "Station Type."

Note that a sub-master station of a CC-Link IE Field Network master/local module or GOT1000/2000 series is displayed as follows:

- For a sub-master station of a CC-Link IE Field Network master/local module, the module model name is displayed in the column of "Model Name" and "Local Station" is displayed in the column of "Station Type."
- For GOT1000/2000 series, "Gen. Intelligent Device Station" is displayed in the column of "Model Name" and "Intelligent Device Station" is displayed in the column of "Station Type."

■A profile has not been registered

- "General Local Station," "General Sub-Master Station," "Gen. Intelligent Device Station," "General Remote Device Station," or "General Remote I/O Station" is displayed in the column of "Model Name."
- "Local Station," "Sub-Master Station," "Intelligent Device Station," "Remote Device Station," or "Remote I/O Station" is displayed in the column of "Station Type."

Restriction (")

When using the master station with a serial number whose first five digits are '17021' or lower, or using the versions of devices supporting iQSS that do not support an automatic detection of connected devices, the information will not be displayed properly in the column of "Model Name" and "Station Type" even though a profile has been registered.

Considerations when detecting devices supporting iQSS

Operation on error

The system configuration cannot be detected if an error occurs on the master station. Take corrective actions and perform an automatic detection of connected devices again.

■An error in settings

Error information is displayed in the "Output" window when an error occurred. Double-click the information and correct the error at the jumped destination.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

When "General Module" is displayed, it can be changed to "General CC IE Field Module" by the following operation: Select a target module, and select [CC IE Field Configuration] \Rightarrow [Change Module] \Rightarrow [Change to General CC IE Field Module].

Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

Detecting devices connected to a bridge module (NZ2AW1GFAL)

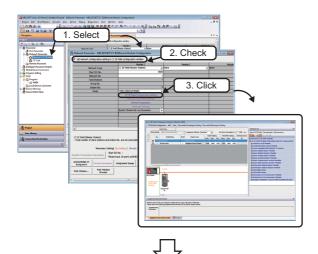
To display devices supporting iQSS, which are connected to a bridge module (NZ2AW1GFAL), on a system configuration diagram, first a bridge module (NZ2AW1GFAL) needs to be detected in the "CC IE Field Configuration" window. Then, perform an automatic detection of connected devices in the "AnyWireASLINK Configuration" window in order to detect and display devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL).

For the considerations when detecting devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL), refer to the following:

Page 113 Considerations when detecting devices connected to a bridge module

Operating procedure

1. Select

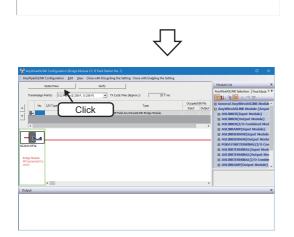


1. Detect and display a bridge module (NZ2AW1GFAL) in the "CC IE Field Configuration" window.

For the method for detecting and displaying a bridge module (NZ2AW1GFAL) automatically in the "CC IE Field Configuration" window, refer to the following:

Page 108 Detecting Devices Supporting iQSS Automatically

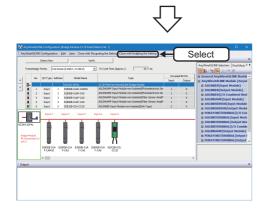
 Select a bridge module (NZ2AW1GFAL) in 'List of stations' or 'Device map area' in the "CC IE Field Configuration" window, then right-click it and select [Open System Configuration] ⇒ [Open AnyWireASLINK Configuration] from the shortcut menu.



2. Select

3. Click the [Detect Now] button in the "AnyWireASLINK Configuration" window.





4. When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

The device supporting iQSS of AnyWireASLINK, which is connected to a bridge module (NZ2AW1GFAL), is displayed in the "AnyWireASLINK Configuration" window.

5. Select [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

The setting of the "AnyWireASLINK Configuration" window is enabled and the window is closed.

Considerations when detecting devices connected to a bridge module

Settings in the "AnyWireASLINK Configuration Setting" screen

The number of transmission points set in the "AnyWireASLINK Configuration Setting" screen is not written to a bridge module (NZ2AW1GFAL).

Set the number of transmission points of a bridge module (NZ2AW1GFAL) using the number of transmission points setting switch. For details on the setting switch, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

Settings required for communication

To detect the devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GFAL).

For details on the address setting, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

Settings in the "AnyWireASLINK Configuration" window

After performing an automatic detection of connected devices, the settings of a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL) are not saved until [Close with Reflecting the Setting] is selected in the "CC IE Field Configuration" window.

Make sure to select [Close with Reflecting the Setting] in the "CC IE Field Configuration" window after selecting [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

Operation on error

A system configuration may not be detected if an error occurs on a bridge module (NZ2AW1GFAL).

If an error code is displayed, take corrective actions by referring to the manual for a bridge module (NZ2AW1GFAL), then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- · Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

5.2 Verifying Devices Supporting iQSS Against System Configuration

The system configuration displayed in the "CC IE Field Configuration" window can be verified against the slave stations connected to a CC-Link IE Field Network master/local module.

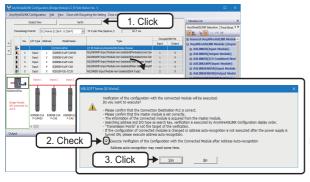
The result is displayed in the "Verification Result of the Configuration with the Connected Module" window. Verify a system configuration when it is manually created or edited.

Restriction (")

This function can be performed to a device supporting iQSS, which is connected to a bridge module (NZ2AW1GFAL).

Operating procedure

■Verification of a device supporting iQSS connected to a bridge module (NZ2AW1GFAL).



- 1. Click the [Verify] button in the "AnyWireASLINK Configuration" window.
- 2. When an automatic address detection is required, select the checkbox of "Execute Verification of the Configuration with the Connected Module after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

MELSEC-Q/L AnyWireASLINK Master Module User's Manual



The verification results are displayed in the "Verification Result of the Configuration with the Connected Module" window.

Point P

- The display is switched by right-clicking on the "Verification Result of the Configuration with the Connected Module" window and selecting "Display All"/"Display Mismatch Only"/"Display other than Match."
- The cursor jumps to the corresponding location in the "CC IE Field Configuration" window by double-clicking the row with "Mismatch" in the "Verification Result of the Configuration with the Connected Module" window.

Considerations

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GFAL).

For details on the address setting, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

5.3 Reading/Writing Parameters from/to Devices Supporting iQSS

Parameters can be read from and written to a slave station.

For the operation methods of the "CC IE Field Configuration" window, refer to the following:

GX Works2 Version 1 Operating Manual (Common)

Window

- **1.** Select a target module in the 'List of stations' or 'Device map area' in the "CC IE Field Configuration" window, and select [CC IE Field Configuration] ⇔ [Online] ⇔ [Parameter Processing of Slave Station].
- 2. Read/write the parameters in the "Parameter Processing of Slave Station" screen.

Point *P*

- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (I Page 121 Backing up/Restoring Data of Devices Supporting iQSS)
- The useful function (linkage with dedicated tools) can also be used in the "CC IE Field Configuration" window. (See Page 370 Linkage with dedicated tools (association with properties))

Display methods of the "Parameter Processing of Slave Station" screen

The "Parameter Processing of Slave Station" screen can also be displayed by any of the following operations:

- Select a target module in 'List of stations' or 'Device map area' in the "CC IE Field Configuration" window, then right-click it and select [Online] ⇔ [Parameter Processing of Slave Station] from the shortcut menu.
- Select a target module in the 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC IE Field" screen, and select [Online] ⇒ [Parameter Processing of Slave Station].
- Select a target module in the 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC IE Field" screen, then right-click it and select [Parameter Processing of Slave Station] from the shortcut menu.

For details on the "Sensor/Device Monitor for CC IE Field" screen, refer to the following:

Page 118 Monitoring Devices Supporting iQSS

Considerations

Operation after writing parameters

When parameters of a slave station are written, the slave station operates according to the parameters; therefore, note that the slave station may change its operation.

For details on parameters, refer to the manual for a slave station used.

■A blank in "Write Value"

"Parameter write" cannot be executed if there is even one blank in "Write Value."

Operation on error

If a module being used has an error, parameters of slave stations may not be read/written properly. Take corrective actions and read/write parameters again.

Reading/writing parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL)

Parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) can be read and written.

Operating procedure

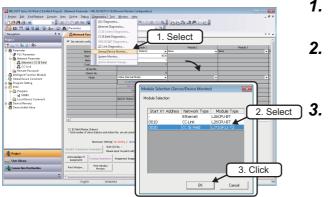
| | dge Module CC IE Field Station No. 1) | etting Close with Enabling the Setting | | | |
|---|---|---|--|------------|--------|
| | - | etting Close with Enabling the Setting | | | |
| Detect Now | Verify | | | | |
| smissign Points: 512 Points (| 1:256 P, O:256 P) TX Cycle Tr | me (Approx.): 10.7 ms | | | |
| | | | | _ | _ |
| No. I/O Type Address | Model Name | Туре | Occupied Bit Pts Input Output | - | |
| | IZZAW LOFAL CC IE Field- | AnyWireASLD& Bridge Module | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| M | | | | | |
| TAL. | | | | | |
| | | | | | |
| lodule | | | | | |
| ected Co | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| < | | | | | |
| | | | | | |
| | | | | | |
| ter Processing of Slave N | /lodule | | | | |
| | | | | | |
| Module Information: I/O | Type: Input | | | | ^ |
| A00 | ress: 2 • Name: ASI INKAMP-Input Modul | e-non-Isolated(Photoelectronic Se | ensor Amplifier) | | |
| | el Name: B289SB-01AP-CAS | | | | |
| 1 | | | | | |
| selection: | | | | | |
| selection: Parameter rei | ad 🖌 Mo | odule parameters of the target mo | odule will be read. | | / |
| | | | | | |
| | nd . | | | | |
| Parameter rea Parameter write | | | | | |
| Parameter wr | | | | | ~ |
| Parameter win | | Initial Value Read Value | Write Value Setting F | Range Unit | Dest A |
| Parameter wir ameter Information Item Module Parameter 1 | ite J | Initial Value Read Value | Write Value Setting F 0 to 100 | | |
| Parameter wr ameter Information | Parameter Name Threshold Hysteresis | | | | |
| Parameter wri ameter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 3 | tte Parameter Name Threshold Hysteresis High Level of Alarm Threshold | 50 5 80 | 0 to 100 0 to 100 0 to 100 | | |
| Parameter viri ameter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 4 | te Parameter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold | 50 5 80 20 | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter wri ameter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 4 Module Parameter 5 | te Parameter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer | 50 5 80 20 50 | 0 to 100 0 to 100 0 to 100 | | |
| Parameter with ameter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 4 Module Parameter 5 | te Parameter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn | 50 5 80 20 50 DarkOnSep | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter with ameter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 5 Module Parameter 6 Module Parameter 6 Module Parameter 7 | te Parameter Name Threshold Hyb terresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn Change Operational Mode | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter vin ameter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 4 Module Parameter 5 Module Parameter 7 Module Parameter 7 Module Parameter 8 | te Parameter Name Threshold Hysteresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn | 50 5 80 20 50 DarkOnSep | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter wit ameter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 5 Module Parameter 7 Module Parameter 7 Module Parameter 9 | te Parameter Name Threshold Hyb terresis High Level of Alarm Threshold Low Level of Alarm Threshold Alarm Setting Timer LightOn DarkOn Change Operational Mode | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter un lem Noclule Parameter 1 Noclule Parameter 2 Noclule Parameter 3 Noclule Parameter 3 Noclule Parameter 5 Noclule Parameter 5 Noclule Parameter 7 Noclule Parameter 7 Noclule Parameter 7 Noclule Parameter 7 Noclule Parameter 7 Noclule Parameter 10 Noclule Parame | te Threshold Hysteresis Hysteresis Hysteresis Hysteresis Hysteresis Hysteresis Hystereshold Alem Threshold Alem Threshold Alem Threshold Alem Threshold Alem Threshold Hystereshold Hys | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter un ameter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 3 Module Parameter 9 Module Parameter 10 Module Parameter 10 | te Parameter Name Threshold Hysteresis Low Level of Aam Threshold Low Level of Aam Threshold Aam Beting Timer LightCh Dackon Change Sensor Type | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter un hormation bem Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 4 Module Parameter 5 Module Parameter 7 Module Parameter 7 Module Parameter 10 Module Parameter 10 Module Parameter 10 Module Parameter 10 Module Parameter 10 | te Pranetor Name Threshold Prasterior Name Threshold Hightersdi Hightersdi Low Level of Alarm Threshold Alarm Setting Timer LightCh Darkfor Change Operational Mode Change Operational Mode Change Sensor Type | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Learameter un metter Information Item Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 6 Module Parameter 6 Module Parameter 1 Module Parameter 1 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 11 | te Parameter Name Threshold Hysteresis Hydreses HydresesHydrese | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Liprameter vir meter Information Item Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 9 Module Parameter 10 Module Parameter 10 Module Parameter 10 Module Parameter 11 Module Parameter 11 Module Parameter 12 Module Parameter 13 Module Parameter 14 | te Pranetor Name Threshold Prasterior Name Threshold Hightersdi Hightersdi Low Level of Alarm Threshold Alarm Setting Timer LightCh Darkfor Change Operational Mode Change Operational Mode Change Sensor Type | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Learanceter un materie Information Item Module Parameter 1 Module Parameter 2 Module Parameter 5 Module Parameter 6 Module Parameter 6 Module Parameter 9 Module Parameter 10 Module Parameter 10 | te Parameter Name Prarameter Name Hysteresia Hysteresia Hysteresia Hysteresia Layhotto Darkon Change Operasional Node Change Sensor Type - - - | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Parameter in Parameter Information Item Module Parameter 2 Module Parameter 2 Module Parameter 3 Module Parameter 5 Module Parameter 10 Module Parameter 10 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 11 Module Parameter 13 Module Parameter 14 Module Parameter 14 | te Parameter Name Threshold Hysteresia Hyst | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Line anneter of Wookale Parameter 1 Wookale Parameter 1 Wookale Parameter 3 Wookale Parameter 3 Wookale Parameter 5 Wookale Parameter 5 Wookale Parameter 5 Wookale Parameter 10 Wookale Parameter 10 Wookale Parameter 10 Wookale Parameter 10 Wookale Parameter 10 Wookale Parameter 10 Wookale Parameter 10 | te Parameter Name Threshold Hysteresia Hyst | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Lear ander in Ander Parameter i Module Parameter 2 Module Parameter 2 Module Parameter 3 Module Parameter 4 Module Parameter 6 Module Parameter 10 Module Parameter 10 Module Parameter 11 Module Parameter 15 Module Parameter 15 M | te Parameter Name Threshold Hysteresia Hyst | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Lina andere un Lina mitere information Studie Parameter 2 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 1 Module Parameter 1 Modul | te Parameter Name Threshold Hysteresia Hyst | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Lina anders un Lina Module Parameter 1 Module Parameter 2 Module Parameter 3 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 10 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 12 Module Parameter 13 Module Parameter 14 Module Parameter 13 Module Parameter 14 Module Parameter 13 Module Parameter 14 Module Parameter | te Parameter Name Parameter Name Hysteresis Hysteresis Hysteresis Hysteresis Hysteresis Low Level of Alarm Threshold Low Level of Alarm Threshold Low Level of Alarm Threshold Change Genetional Mode Change Sension Type | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Lina andere un Lina mitere information Studie Parameter 2 Module Parameter 3 Module Parameter 5 Module Parameter 5 Module Parameter 5 Module Parameter 1 Module Parameter 1 Modul | te Parameter Name Threshold Hysteresia Hyst | 50 5 80 20 50 DarkOnSep non-Detecti | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Clear and/or roll | te Paranter Nane Threshold Hysteresia Loss of Adam Threshold Nane of Adam Threshold Adam Seting Timer Lighton Darkon Ohenge Operational Node Change Sensor Type Change Sensor Type Change Sensor Type Care All "Write Value" | 50 5 60 30 50 50 50 50 50 50 50 50 50 50 50 50 50 | 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | |
| Lear ander in Charander in Module Parameter 1 Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 10 Module Parameter 10 Mod | te Parameter Name Threshold Hysteresis Hyste | 50 5 80 9040/068 5040/068 SensorTypeA | 0 0t 500 0 to 100 0 to 100 0 to 100 0 to 100 3 to 255 | 100ms | Desc A |
| Lear ander in Charander in Module Parameter 1 Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 10 Module Parameter 10 Mod | te Parameter Name Threshold Hysteresis Hyste | 50 5 60 30 50 50 50 50 50 50 50 50 50 50 50 50 50 | 0 0t 500 0 to 100 0 to 100 0 to 100 0 to 100 3 to 255 | 100ms | Desc A |
| Lear ander in Charander in Module Parameter 1 Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 10 Module Parameter 10 Mod | te Parameter Name Threshold Hysteresis Hyste | 50 5 80 9040/068 5040/068 SensorTypeA | 0 0t 500 0 to 100 0 to 100 0 to 100 0 to 100 3 to 255 | 100ms | Desc A |
| Clear ander or Clear ander Clear | te Parameter Name Threshold Hysteresis Hyste | 50 5 80 9040/068 5040/068 SensorTypeA | 0 0t 500 0 to 100 0 to 100 0 to 100 0 to 100 3 to 255 | 100ms | Desc A |
| Lear ander in Charander in Module Parameter 1 Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 10 Module Parameter 10 Mod | te Parameter Name Threshold Hysteresis Hyste | 50 5 80 9040/068 5040/068 SensorTypeA | 0 0t 500 0 to 100 0 to 100 0 to 100 0 to 100 3 to 255 | 100ms | Desc A |
| Lear ander in Charander in Module Parameter 1 Module Parameter 1 Module Parameter 3 Module Parameter 3 Module Parameter 3 Module Parameter 4 Module Parameter 10 Module Parameter 10 Mod | te Parameter Name Threshold Hysteresis Hyste | 50 5 80 9040/068 5040/068 SensorTypeA | 0 0t 500 0 to 100 0 to 100 0 to 100 0 to 100 3 to 255 | 100ms | Desc A |

- Detect devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) in the "AnyWireASLINK Configuration" window. (I Page 111 Detecting devices connected to a bridge module (NZ2AW1GFAL))
- Read or write parameters of the detected devices. (Page 31 Reading/Writing Parameters from/to Devices Supporting iQSS)

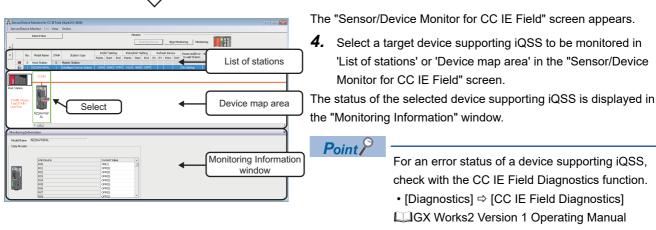
5.4 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Operating procedure



- Select a CC-Link IE Field Network master/local module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.
 - Read the message and click the [Yes] button.



(Common)

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

■Operation on failure

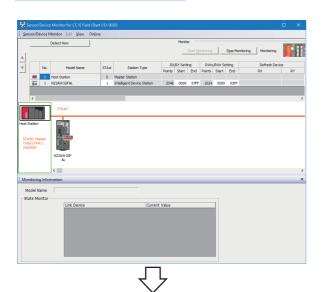
The sensor/device monitor function may not run properly if failure occurs in a master station.

If an error code is displayed, resolve the cause by referring to the manual for the CC-Link IE Field Network master/local module, then perform the sensor/device monitor function again.

Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL)

Devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) can be displayed in the "Sensor/Device Monitor for CC IE Field" screen by the following operation.

Operating procedure



Open the "Sensor/Device Monitor for CC IE Field" screen.
 (Image Page 118 Monitoring Devices Supporting iQSS)

- Status/Scale
 Control
 X

 Second Check Monter
 Use
 Online

 Peter
 Detect Horizon
 Second Check Monter
 Monter

 Peter
 Detect Horizon
 Second Check Monter
 Monter

 Peter
 Second Check Monter
 Second Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Second Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Second Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Second Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Second Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Second Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Check Monter
 Refered Decker

 Peter
 Second Check Monter
 Refered Decker
 X

 Model Name
 FEZ/MUGAL
 Second Check Monter
 X

 Model Name
 FEZ/MUGAL
- 2. Select a bridge module (NZ2AW1GFAL) in 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC IE Field" screen, then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.

- <text>
- **3.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Autorecognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

5

| | | Detect N | | 1 | | | | | Monitor | | |
|------------|--------------------|----------------------------|----------|--------------------------------|---------|---|--------|------------|------------------------|----------|--|
| | | information | | | | | | | | ntoring | |
| | Cnetd II | ls 5 | Err | IDs 0 | Alm ID: | 0 | | | Stop Mo | nitoring | |
| | | | | | | - | Occupi | ed Bit Pts | | | |
| | N | 5. 1/O Typ | e Addres | s Model Name | | Туре | Input | Output | Status | | |
| 8 | | 2 Input | 2 | 828958-01AP-CAS | | ASLINKAMP-Input Module-non-Isolated(Photoelectronic Ser | 1 | 0 | | | |
| 1 | | | 3 | 828958-01AF-CAS | | ASLINKAMP-Input Module-non-Isolated(Piber Sensor Amplif | 1 | 0 | | | |
| | | anpor | 4 | 828958-01AF-CAS | | ASLINKAMP-Input Module-non-Isolated(Piber Sensor Amplif | 1 | 0 | | | |
| Ц | - | i Input | S | 828158-02U-CC20 | | ASLINKER-Input Module-non-Isolated(Sink Type) | 2 | 0 | | | |
| Cor t:5 | Module | Co B28958 P-CAP K | 120 | Picas B28958-01 Picas Picas | | 68-014 CK2 CK2 CK2 CK2 CK2 CK2 CK2 CK2 CK2 CK2 | | | | | |
| _ | | formation | | | | | | | _ | _ | |
| | iel Nam e Monit | | 8-02U-CC | | 0 | Bopby Exemut Bit Image: Control of the second seco | Error | ation | o Error Hexadecimal | 0 | |

The "Sensor/Device Monitor for AnyWireASLINK" screen appears.

4. Select a target device supporting iQSS to be monitored in 'List of modules' or 'Device map area' in the "Sensor/Device Monitor for AnyWireASLINK" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices connected to a bridge module

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GFAL).

For details on the address setting, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

"Module With No Profile Found"

"General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a bridge module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a bridge module (NZ2AW1GFAL).

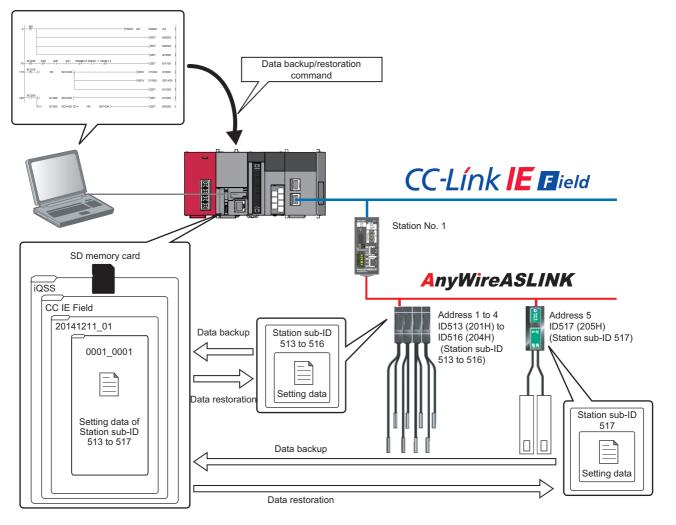
If an error code is displayed, resolve the cause by referring to the manual for a bridge module (NZ2AW1GFAL), then perform the sensor/device monitor function again.

■Replacing a slave module while displaying the sensor/device monitor

If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

5.5 Backing up/Restoring Data of Devices Supporting iQSS

Backing up the information of a device supporting iQSS to an SD memory card and restoring it to a module simplifies the setting change for changeover.



Point P

In such a case as limited production of diversified products, the data backup/restoration function is useful for switching multiple sensor settings from for product A to for product B in a batch.

| Function | Reference |
|------------------|---|
| Data backup | Page 127 Program execution for data backup |
| Data restoration | Page 138 Program execution for data restoration |

Backup folder/file

Backup data is created in the 'iQSS' folder in the root directory when backing up the data.

If no 'iQSS' folder exists when backing up the data, an 'iQSS' folder will be newly created.

Up to 100 backup folders (date_number) can be created in the 'CC IE Field' folder.

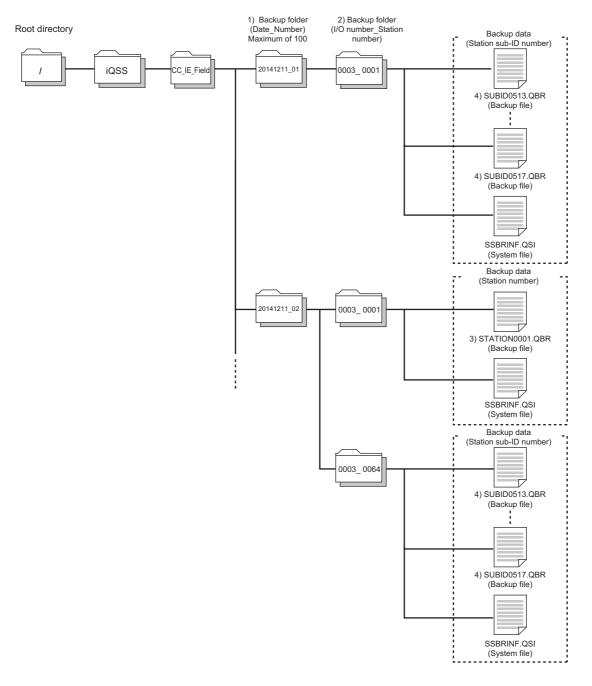
Do not change a backup folder name, configuration or saved file. Otherwise, data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



Backup folder name

1) Date_Number

_

| 2014 | 12 | 11 | <u>01</u> | Arbitrary number (2-digit (00 to 99) decimal) Backup date (2-digit decimal) |
|------|----|----|-----------|---|
| | | | | Backup month (2-digit decimal) Backup year (4-digit decimal) |

2) Start I/O number_Station number

0003 0001

—— Station number (4-digit decimal)
—— CC-Link IE Field Network master/local module start I/O number (4-digit hexadecimal) (A value of start I/O number divided by 16)

■Backup file name

3) Station number

STATON0001.QBR

Station number (4-digit decimal)

4) Station sub-ID number

SUBID0513.QBR

Station sub-ID number (4-digit decimal)

Points to be checked before data backup/restoration

Check the availability of data backup/restoration

The data can be backed up and restored when a CC-Link IE Field Network master/local module and a bridge module (NZ2AW1GFAL) satisfy the following conditions.

Perform the automatic address detection function and the parameter batch read function before data backup/restoration.

The 'n' indicates the address assigned to the master station by the station number setting.

| Module | Condition to be checked | Remote device RX signal | Signal status |
|---------------------------------------|--|-------------------------|-------------------|
| CC-Link IE Field Network master/local | Module error | Xn0 | OFF |
| module | Module READY | XnF | ON |
| | Host station data link status | Xn1 | ON |
| | Other station data link status ^{*1} | SW00B0 to SW00B7 | OFF |
| Bridge module (NZ2AW1GFAL) | Remote READY | RXn0 | ON |
| | DP/DN short error | RXn1 | OFF |
| | Transmission cable voltage drop error | RXn3 | OFF |
| | DP/DN disconnection error | RXn4 | OFF |
| | Slave module alarm signal | RX(n+1)0 | OFF ^{*2} |
| | Parameter access completion flag | RX(n+1)1 | ON |
| | Parameter access error | RX(n+1)2 | OFF |
| | Automatic address detection flag | RX(n+1)4 | OFF |

*1 Set the target station.

*2 Excluding when the error code is 0131H.

Considerations for data backup/restoration

Stations to which data cannot be backed up and restored

The data backup and restoration function cannot be performed on the following stations:

- Local station
- Sub-master station that is monitoring the master station (performing the sub-master operation)
- · Station whose data link has stopped due to a station number duplication error
- · Station whose data link has stopped due to a station number out of range error
- Station whose network number is mismatched

■Use of an SD memory card

- During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card.
 - Otherwise, the data backup or restoration will be interrupted and the data will not be backed up or restored properly.
- Normal backup data cannot be created if the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during a data backup.

■Operations with a display unit during data backup

If any of the following operations are performed with a display unit during data backup, the operation will be completed abnormally and the error is displayed on the display unit.

Operation name

Project data batch save/load function

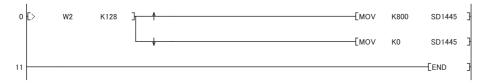
File deletion in the "Memory card operation menu" screen of a display unit

Communication timeout time

To back up or restore the data of a slave station connected to a bridge module (NZ2AW1GFAL), set the communication timeout time as follows:

- · 128 or less slave stations: 60 seconds (recommended)
- 129 or more slave stations: more than 80 seconds

The communication timeout time can be set by using SD1445. An setting example is shown below.



■Unavailable operations and functions at the same time as data backup

If any of the following operations and functions are performed during data backup, the backup will be completed abnormally and the error cause is stored in SD1452 (iQ Sensor Solution backup/restoration error cause in a module). The error is returned to the request source which performs the operation or function.

| Operation/function name ^{*1} | |
|---|---|
| Operation with an engineering tool | Change TC setting |
| | Online change (ladder mode) |
| | Online change (inactive block) for SFC program |
| | Write to PLC (including writing data to the CPU module during RUN) |
| | Write title |
| | Password/keyword New (registration/change) Delete Disable |
| | Format PLC memory |
| | Clear PLC memory (clear all file registers) |
| | Arrange PLC memory |
| | Delete PLC data |
| | Write/delete PLC user data |
| | Program memory batch download |
| | CPU module change function with SD memory card |
| | Sampling trace function Start trace Register trace Write to PLC |
| | Writing protocol setting data to the CPU module (predefined protocol support function) |
| | Project data batch save/load function |
| Operations with CPU Module Logging Configuration Tool | Data logging function Deleting/writing the data logging setting Stopping data logging operation Deleting data logging file(s) |
| Others | Writing or deleting files using FTP or MC protocol |
| | File transfer function (FTP server) of the built-in Ethernet function |
| | File transfer function (FTP client) of the built-in Ethernet function |
| | Register/cancel display unit menu |
| | CPU module data backup/restoration function |

*1 Available operations and functions differ between LCPUs and QCPUs. For details, refer to the user's manual of a CPU module used. When data is backed up or restored during a data logging, the performance of the data logging will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing is temporarily increased. Consequently, a timeout error may occur in other communications.

To avoid a timeout error, review the value set for "Service Processing Setting" on the [PLC System] tab in "PLC parameter."

■Backup folder name

Do not change an underscore and a subsequent number of a backup folder name (date_number). If they are changed, the data may not be restored properly.

20141210_12

Do not change.

When backing up the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL):

Backup data is stored in the 'CC IE Field' backup folder.

The 'station sub-ID number' is equivalent to the 'ID' of a slave module connected to AnyWireASLINK.

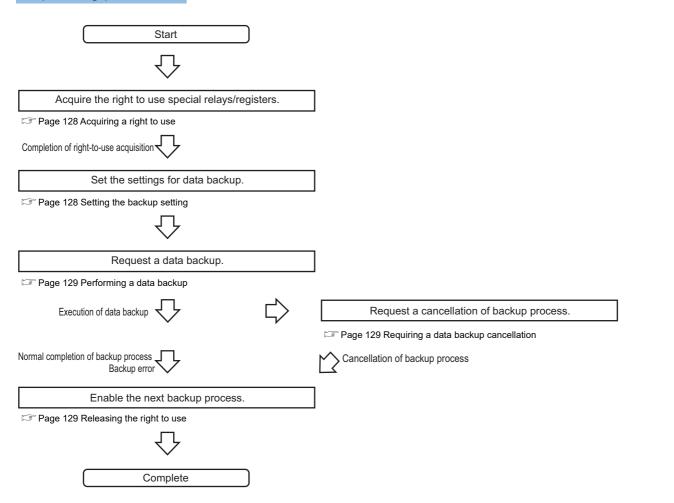
The backup file (STATION0000.QBR) of the bridge module is not created.

Data backup

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card with a program.

Operating procedure



Execution method of data backup

The target device for data backup can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- · Special relays (SM) and special registers (SD) are used for data backup.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirmation of the right-to-use acquisition.

Setting the backup setting

1. Setting a target module type

Set the target module type for data backup to the lower 8 bits of SD1437.

| Target module type | Description |
|------------------------------|-----------------------------|
| 4H: CC-Link IE Field Network | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data backup to the upper 8 bits of SD1437.

| Execution unit | Description |
|-------------------------|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the CC-Link IE Field Network master/local module with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the devices supporting iQSS which are connected to the CC-Link IE Field Network master/ local module with the specified start I/O number: device supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the module with the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the device supporting iQSS with the specified station sub-ID number which is connected to the module with the specified station number among the devices supporting iQSS which are connected to the CC-Link IE Field Network master/local module with the specified start I/O number. |

3. Setting a number for a data backup folder name

Set the number for a backup folder name to SD1438.

| Target folder | Description |
|--|--|
| FFFH: Automatic specification (default) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. The oldest folder is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 00 to 99: Target folder specification | Set the number for a backup folder name. When another folder with the same number exists, the operation will be as follows: For module unit • The backup folder with the same number is deleted, and a new backup folder is created. For station unit or station sub-ID unit • Data in the backup folder with the same number is overwritten. |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Setting the execution unit', set the start I/O number of a target device for data backup to SD1439.

| Target device (Module) | Description |
|----------------------------|---|
| 0 to FFH: Start I/O number | When '1H' (module unit) is set for the execution unit, set the value obtained by dividing the start I/O number of a CC- |
| | Link IE Field Network master/local module, which is connected to a target device supporting iQSS, by 16. |

Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station number of a target device for data backup to SD1440.

| Target device (Station number) | Description |
|--------------------------------|---|
| 1 to 120: Station number | When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set the station number of a target device supporting iQSS or a device supporting iQSS which is connected to the module with the specified station number. |

• Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station sub-ID number of a target device for data backup to SD1441.

| Target device (Station sub-ID number) | Description |
|---------------------------------------|--|
| 0 to 9999: Station sub-ID number | When '3H' (station sub-ID unit) is set for the execution unit, set the station sub-ID number of a target device supporting iQSS. |

Precautions

To backup the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL, set the ID number of AnyWireASLINK to SD1441.

For details on the ID number (SD1440) of AnyWireASLINK, refer to the following:

Page 42 Setting the backup setting

5. Setting the operation setting when a data backup error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to backup data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data backup

Data is backed up if SM1436 is turned ON while SD1446 is '1H' (ready).

Once data is backed up, SD1446 will be '2H' (being executed).

Check that the other station data link status (SW00B0 to SW00B7) indicates that a data link is in process before performing a data backup.

■Requiring a data backup cancellation

The data backup stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data backup is completed (including a cancellation or an error), the right to use is released and the next data backup is ready to be performed.

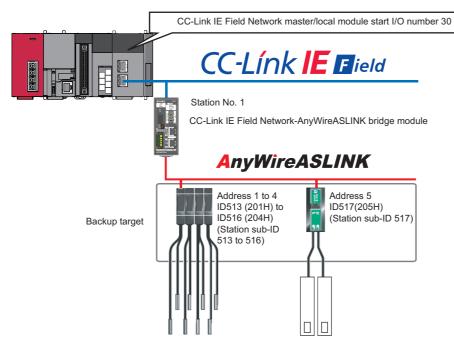
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data backup (bridge module (NZ2AW1GFAL))

■Example of a system configuration

The following shows the example of a system configuration for data backup.



- Target module type: CC-Link IE Field Network
- Execution unit: Module
- Folder number setting: Automatic specification
- Target device (target module): Start I/O No.30
- Operation setting on error: Stop

Devices used in the program

Set the devices used in the program by refresh parameters in advance.

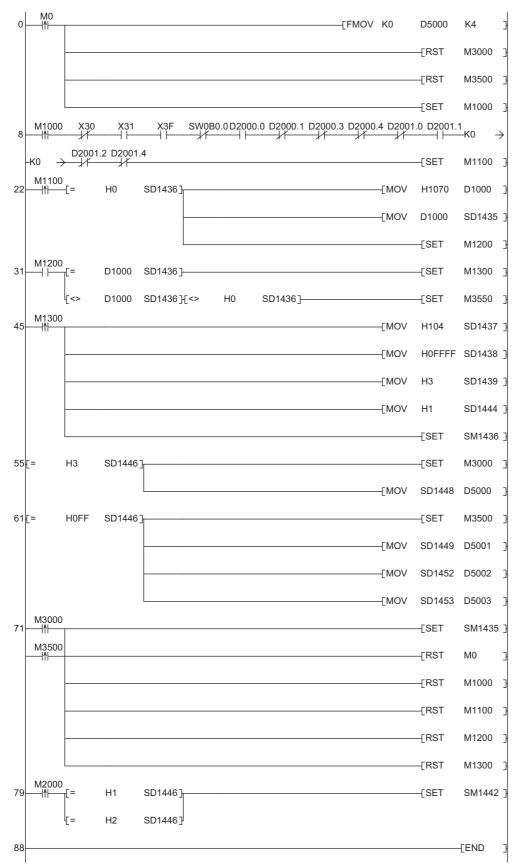
| Device | Description | Value |
|-----------------------|---|------------------|
| M0 | Initialization trigger | — |
| M1000 | Backup execution trigger | _ |
| M1100 | Backup right-to-use request trigger | _ |
| M1200 | Backup right-to-use confirmation trigger | — |
| M1300 | Backup setting and starting trigger | — |
| M2000 | Backup execution cancellation trigger | — |
| M3000 | Backup execution normal completion display | — |
| M3500 | Backup execution abnormal completion display | — |
| M3550 | Backup right-to-use acquisition failure | — |
| D1000 | Right-to-use number storage area | — |
| D2000.0 ^{*1} | Remote READY | — |
| D2000.1 ^{*1} | DP/DN short error | — |
| D2000.3 ^{*1} | Transmission cable voltage drop error | — |
| D2000.4 ^{*1} | DP/DN disconnection error | — |
| D2001.0 ^{*1} | Slave module alarm signal | — |
| D2001.1 ^{*1} | Parameter access completion flag | — |
| D2001.2 ^{*1} | Parameter access error | — |
| D2001.4 ^{*1} | Automatic address detection flag | — |
| D5000 | Backup number of normally completed devices | — |
| D5001 | Backup number of devices completed with an error | — |
| D5002 | Backup error cause in a module | - |
| D5003 | Backup error cause in a device | — |
| SM1435 | Backup execution enabled | — |
| SM1436 | Backup request | — |
| SM1442 | Backup cancellation request | — |
| SD1435 | Backup use request | 1070H |
| SD1436 | Backup right-to-use acquisition status | — |
| SD1437 | Backup target module/execution unit setting | Lower 8 bits: 4H |
| | | Upper 8 bits: 1H |
| SD1438 | Backup folder number setting | FFFFH |
| SD1439 | Backup target setting (target module) | 3H |
| SD1444 | Operation setting when a data backup error occurs | 1H |
| SD1446 | Backup execution status | |
| SD1448 | Backup number of normally completed devices | |
| SD1449 | Backup number of devices completed with an error | |
| SD1452 | Backup error cause in a module | |
| SD1453 | Backup error cause in a device | - |
| SW0B0.0 | Station No.1 data link status | — |
| X30 | Module error | _ |
| X31 | Host station data link status | |
| X3F | Module READY | — |

*1 Devices when the remote input (RX) is set from 'D2000' to 'D2001' by the refresh parameter setting.

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program



[Initialization]

Initialize the execution result.
 Initialize the normal completion display.
 Initialize the abnormal completion display.
 Set the backup execution trigger.

[Executing data backup and checking data link status]

Check that the other station data link status (SW00B0 to SW00B7) indicates that a data link is in process before making a data backup request.

- (8) Set the backup right-to-use request trigger.
- [Requesting backup right to use]
- (22) Store the right-to-use number.
 - Set the backup right-to-use request trigger.
 - Set the backup right-to-use confirmation trigger.
- [Checking backup right to use]
- (31) Set the backup setting and starting trigger. Display the right-to-use acquisition failure.
- [Setting and starting data backup]
- (45) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the operation setting when a data backup error occurs. Set the backup request.
- [Checking data backup execution]
- (55) Display the normal completion.
- Save the number of normally completed devices.
- (61) Display the abnormal completion.
 Save the number of devices completed with an error.
 Save the error code (module error).
 Save the error code (device error).
- [Enabling the next data backup process]
- (71) Enable the data backup execution.
 Clear the initialization trigger.
 Clear the backup execution trigger.
 Clear the backup right-to-use request trigger.
 Clear the backup right-to-use confirmation trigger.
 - Clear the backup setting and starting trigger.

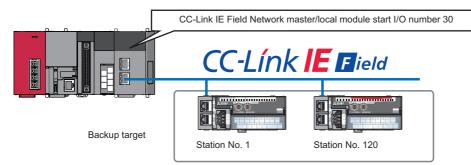
[Setting for cancelling the process]

(79) Set the backup cancellation request.

Example of a data backup (remote I/O module)

■Example of a system configuration

The following shows the example of a system configuration for data backup.



- Target module type: CC-Link IE Field Network
- Execution unit: Module
- Folder number specification: 21
- Target device (target module): Start I/O No.30
- · Operation setting on error: Stop

Devices used in the program

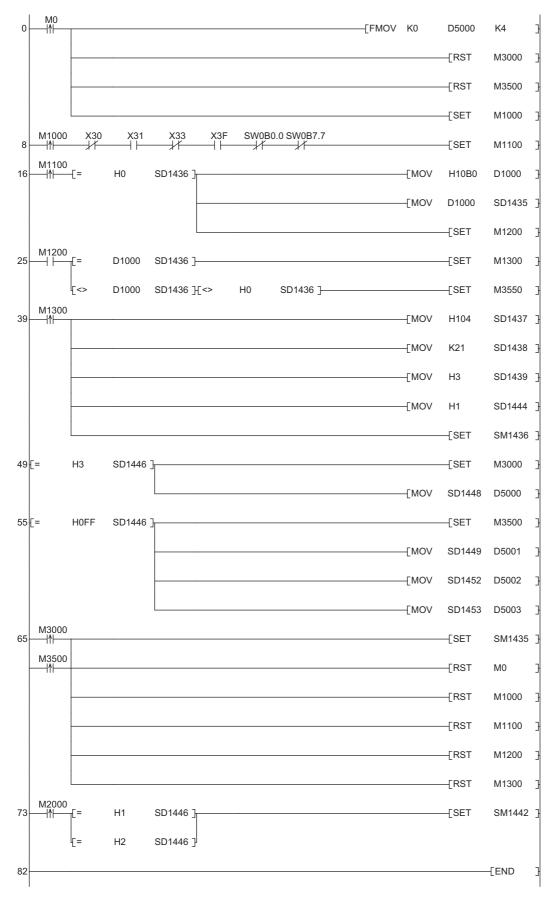
Set the devices used in the program by refresh parameters in advance.

| Device | Description | Value |
|---------|---|------------------|
| M0 | Initialization trigger | — |
| M1000 | Backup execution trigger | — |
| M1100 | Backup right-to-use request trigger | _ |
| M1200 | Backup right-to-use confirmation trigger | — |
| M1300 | Backup setting and starting trigger | — |
| M2000 | Backup execution cancellation trigger | — |
| M3000 | Backup execution normal completion display | - |
| M3500 | Backup execution abnormal completion display | - |
| M3550 | Backup right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | - |
| D5000 | Backup number of normally completed devices | - |
| D5001 | Backup number of devices completed with an error | - |
| D5002 | Backup error cause in a module | - |
| D5003 | Backup error cause in a device | - |
| SM1435 | Backup execution enabled | - |
| SM1436 | Backup request | - |
| SM1442 | Backup cancellation request | - |
| SD1435 | Backup use request | 10B0H |
| SD1436 | Backup right-to-use acquisition status | - |
| SD1437 | Backup target module/execution unit setting | Lower 8 bits: 4H |
| | | Upper 8 bits: 1H |
| SD1438 | Backup folder number setting | 21 |
| SD1439 | Backup target setting (target module) | ЗН |
| SD1444 | Operation setting when a data backup error occurs | 1H |
| SD1446 | Backup execution status | |
| SD1448 | Backup number of normally completed devices | |
| SD1449 | Backup number of devices completed with an error | |
| SD1452 | Backup error cause in a module | |
| SD1453 | Backup error cause in a device | |
| SW0B0.0 | Station No.1 data link status | |
| SW0B7.7 | Station No.120 data link status | |
| X30 | Module error | _ |
| X31 | Host station data link status | - |
| X33 | Other station data link status | - |
| X3F | Module READY | - |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program



[Initialization]

Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Executing data backup and checking data link status] Check that the other station data link status (SW00B0 to SW00B7) indicates that a data link is in process before making a data backup request. Set the backup right-to-use request trigger. (8) [Requesting backup right to use] (16) Store the right-to-use number. Set the backup right-to-use request trigger. Set the backup right-to-use confirmation trigger. [Checking backup right to use] Set the backup setting and starting trigger. (25) Display the right-to-use acquisition failure. [Setting and starting data backup] (39) Set the target module/execution unit. Set the target folder number. Set the target module. Set the operation setting when a data backup error occurs. Set the backup request. [Checking data backup execution] (49) Display the normal completion. Save the number of normally completed devices. (55) Display the abnormal completion. Save the number of devices completed with an error. Save the error code (module error). Save the error code (device error). [Enabling the next data backup process] (65) Enable the data backup execution. Clear the initialization trigger.

Clear the backup execution trigger. Clear the backup right-to-use request trigger. Clear the backup right-to-use confirmation trigger. Clear the backup setting and starting trigger.

Set the backup cancellation request.

[Setting for cancelling the process]

(73)

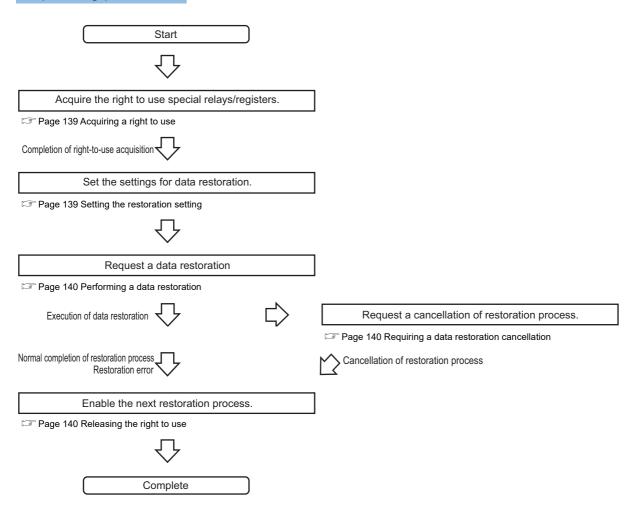
5

Data restoration

Program execution for data restoration

The information saved in an SD memory card can be restored to a device supporting iQSS with a program.

Operating procedure



Execution method of data restoration

The target device for data restoration can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- Special relays (SM) and special registers (SD) are used for data restoration.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

Setting the restoration setting

1. Setting a target module type

Set the target module type for data restoration to the lower 8 bits of SD1437.

| Target module type | Description |
|------------------------------|-----------------------------|
| 4H: CC-Link IE Field Network | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data restoration to the upper 8 bits of SD1437.

| Execution unit | Description |
|-------------------------|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the CC-Link IE Field Network master/local module with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the devices supporting iQSS which are connected to the CC-Link IE Field Network master/ local module with the specified start I/O number: device supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the module with the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the device supporting iQSS with the specified station sub-ID number which is connected to the module with the specified station number among the devices supporting iQSS which are connected to the CC-Link IE Field Network master/local module with the specified start I/O number. |

3. Selecting a folder for data restoration

Set the number for backup folder name, from which data is to be restored, to SD1438.

| Target folder | Description |
|---------------------------------------|--|
| 00 to 99: Target folder specification | Specify the number among the numbers for backup folder name, 00 to 99. |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Setting the execution unit', set the start I/O number of a target device for data restoration to SD1439.

| Target device (Module) | Description |
|----------------------------|---|
| 0 to FFH: Start I/O number | When '1H' (module unit) is set for the execution unit, set the value obtained by dividing the start I/O number of a CC- |
| | Link IE Field Network master/local module, which is connected to a target device supporting iQSS, by 16. |

Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station number of a target device for data restoration to SD1440.

| Target device (Station number) | Description |
|--------------------------------|---|
| 1 to 120: Station number | When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set the station number of a target device supporting iQSS or a device supporting iQSS which is connected to the module with the specified station number. |

• Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit in the step of 'Setting the execution unit', set the station sub-ID number of a target device for data restoration to SD1441.

| Target device (Station sub-ID number) | Description |
|---------------------------------------|--|
| 0 to 9999: Station sub-ID number | When '3H' (station sub-ID unit) is set for the execution unit, set the station sub-ID number of a target device supporting iQSS. |

Precautions

To restore the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), set the ID number of AnyWireASLINK to SD1441.

For details on the ID number (SD1440) of AnyWireASLINK, refer to the following:

 $\ensuremath{\boxtimes}$ Page 50 Setting the restoration setting

5. Setting the operation setting when a data restoration error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to in order to restore data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data restoration

Data is restored if SM1439 is turned ON while SD1446 is '1H' (ready).

Once data is restored, SD1446 will be '2H' (being executed).

Check that the other station data link status (SW00B0 to SW00B73) indicates that a data link is in process before performing a data restoration.

■Requiring a data restoration cancellation

The data restoration stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data restoration is completed (including a cancellation or an error), the right to use is released and the next data restoration is ready to be performed.

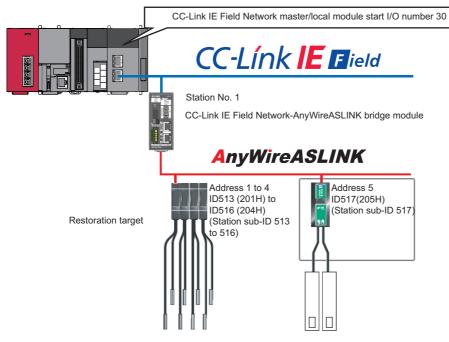
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data restoration (bridge module (NZ2AW1GFAL))

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- Target module type: CC-Link IE Field Network
- Execution unit: Station sub-ID
- Folder number setting: 24
- Target device (target module): Start I/O No.30
- Target device (station number): Station No. 1
- Target device (station sub-ID number): Station sub-ID 517
- · Operation setting on error: Stop

5

Devices used in the program

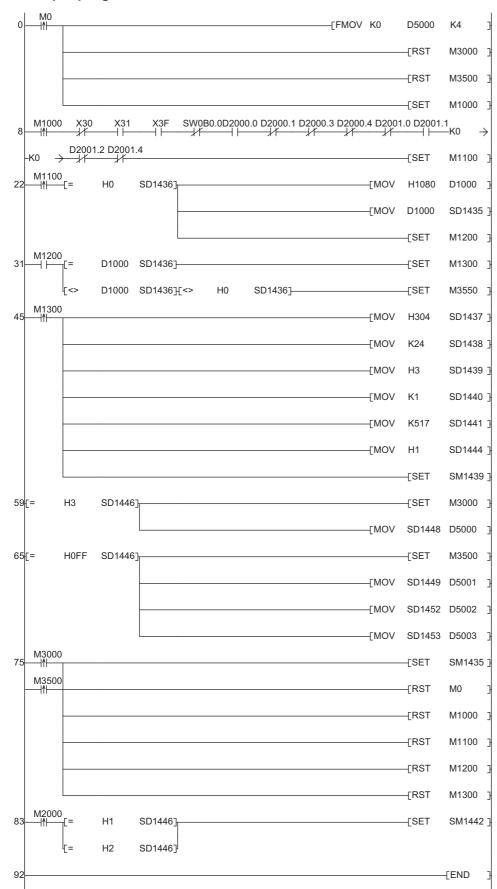
Set the devices used in the program by refresh parameters in advance.

| Device | Description | Value |
|-----------------------|--|--------------------------------------|
| M0 | Initialization trigger | - |
| M1000 | Restoration execution trigger | — |
| M1100 | Restoration right-to-use request trigger | — |
| M1200 | Restoration right-to-use confirmation trigger | — |
| M1300 | Restoration setting and starting trigger | — |
| M2000 | Restoration execution cancellation trigger | - |
| M3000 | Restoration execution normal completion display | — |
| M3500 | Restoration execution abnormal completion display | - |
| M3550 | Restoration right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | - |
| D2000.0 ^{*1} | Remote READY | - |
| D2000.1 ^{*1} | DP/DN short error | — |
| D2000.3 ^{*1} | Transmission cable voltage drop error | — |
| D2000.4 ^{*1} | DP/DN disconnection error | - |
| D2001.0 ^{*1} | Slave module alarm signal | - |
| D2001.1 ^{*1} | Parameter access completion flag | — |
| D2001.2 ^{*1} | Parameter access error | — |
| D2001.4 ^{*1} | Automatic address detection flag | — |
| D5000 | Restoration number of normally completed devices | — |
| D5001 | Restoration number of devices completed with an error | — |
| D5002 | Restoration error cause in a module | — |
| D5003 | Restoration error cause in a device | |
| SM1435 | Restoration execution enabled | — |
| SM1439 | Restoration request | — |
| SM1442 | Restoration cancellation request | — |
| SD1435 | Restoration use request | 1080H |
| SD1436 | Restoration right-to-use acquisition status | - |
| SD1437 | Restoration target module/execution unit setting | Lower 8 bits: 4H Upper 8 bits: 3H |
| SD1438 | Restoration folder number setting | 24 |
| SD1439 | Restoration target setting (target module) | 3Н |
| SD1440 | Restoration target setting (target device 1) | 1 |
| SD1441 | Restoration target setting (target device 2) | 517 |
| SD1444 | Operation setting when a data restoration error occurs | 1H |
| SD1446 | Restoration execution status | — |
| SD1448 | Restoration number of normally completed devices | — |
| SD1449 | Restoration number of devices completed with an error | — |
| SD1452 | Restoration error cause in a module | — |
| SD1453 | Restoration error cause in a device | - |
| SW0B0.0 | Station No.1 data link status | — |
| X30 | Module error | — |
| X31 | Host station data link status | — |
| X3F | Module READY | — |

*1 Devices when the remote input (RX) is set from 'D2000' to 'D2001' by the refresh parameter setting.

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.



Sample program

[Initialization]

(0)

Initialize the execution result. Initialize the normal completion display. Initialize the abnormal completion display. Set the restoration execution trigger.

Set the restoration execution trigger.

[Executing data restoration and checking data link status]

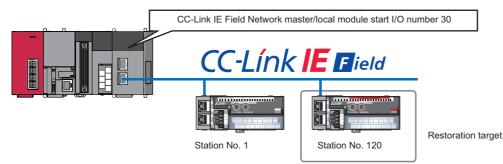
Check that the other station data link status (SW00B0 to SW00B7) indicates that a data link is in process before making a data restoration request.

- (8) Set the restoration right-to-use request trigger.
- [Requesting restoration right to use]
- (22) Store the right-to-use number
 - Set the restoration right-to-use request trigger.
 - Set the restoration right-to-use confirmation trigger.
- [Checking restoration right to use]
- (31) Set the restoration setting and starting trigger.
 - Display the right-to-use acquisition failure.
- [Setting and starting data restoration]
- (45) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the target device.
 - Set the operation setting when a data restoration error occurs.
 - Set the restoration request.
- [Checking data restoration execution]
- (59) Display the normal completion.
 - Save the number of normally completed devices.
- (65) Display the abnormal completion.
 - Save the number of devices completed with an error. Save the error code (module error).
 - Save the error code (device error).
- [Enabling the next data restoration process]
- (75) Enable the data restoration execution.
 - Clear the initialization trigger.
 - Clear the restoration execution trigger.
 - Clear the restoration right-to-use request trigger.
 - Clear the restoration right-to-use confirmation trigger.
 - Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (83) Set the restoration cancellation request.

Example of a data restoration (remote I/O module)

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- Target module type: CC-Link IE Field Network
- Execution unit: Station
- Folder number specification: 21
- Target device (target module): Start I/O No.30
- Target device (station number): Station No. 120
- Operation setting on error: Stop

5

Devices used in the program

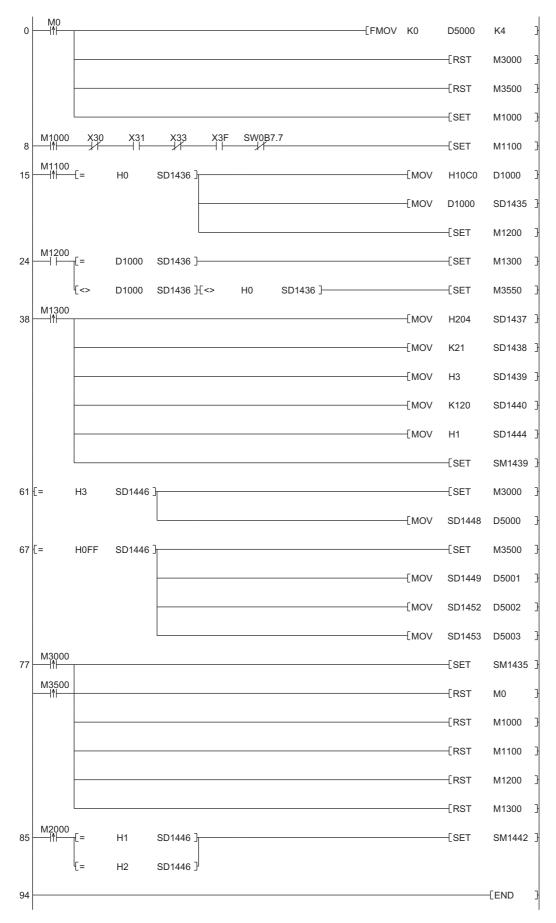
Set the devices used in the program by refresh parameters in advance.

| Device | Description | Value |
|---------|--|------------------|
| MO | Initialization trigger | — |
| M1000 | Restoration execution trigger | — |
| M1100 | Restoration right-to-use request trigger | - |
| M1200 | Restoration right-to-use confirmation trigger | - |
| M1300 | Restoration setting and starting trigger | - |
| M2000 | Restoration execution cancellation trigger | - |
| M3000 | Restoration execution normal completion display | - |
| M3500 | Restoration execution abnormal completion display | - |
| M3550 | Restoration right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | — |
| D5000 | Restoration number of normally completed devices | - |
| D5001 | Restoration number of devices completed with an error | - |
| D5002 | Restoration error cause in a module | - |
| D5003 | Restoration error cause in a device | — |
| SM1435 | Restoration execution enabled | — |
| SM1439 | Restoration request | — |
| SM1442 | Restoration cancellation request | — |
| SD1435 | Restoration use request | 10C0H |
| SD1436 | Restoration right-to-use acquisition status | - |
| SD1437 | Restoration target module/execution unit setting | Lower 8 bits: 4H |
| | | Upper 8 bits: 2H |
| SD1438 | Restoration folder number setting | 21 |
| SD1439 | Restoration target setting (target module) | ЗН |
| SD1440 | Restoration target setting (target device 1) | 120 |
| SD1444 | Operation setting when a data restoration error occurs | 1H |
| SD1446 | Restoration execution status | _ |
| SD1448 | Restoration number of normally completed devices | _ |
| SD1449 | Restoration number of devices completed with an error | — |
| SD1452 | Restoration error cause in a module | — |
| SD1453 | Restoration error cause in a device | - |
| SW0B7.7 | Station No.120 data link status | — |
| X30 | Module error | — |
| X31 | Host station data link status | — |
| X33 | Other station data link status | — |
| X3F | Module READY | — |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

Sample program



[Initialization]

(0)

Initialize the execution result Initialize the normal completion display. Initialize the abnormal completion display. Set the restoration execution trigger.

[Executing data restoration and checking data link status]

- Check that the other station data link status (SW00B0 to SW00B7) indicates that a data link is in process before making a data restoration request.
- Set the restoration right-to-use request trigger. (8)
- [Requesting restoration right to use]
- (15) Store the right-to-use number
 - Set the restoration right-to-use request trigger.
 - Set the restoration right-to-use confirmation trigger.
- [Checking restoration right to use]
- Set the restoration setting and starting trigger. (24)
 - Display the right-to-use acquisition failure.
- [Setting and starting data restoration]
- (38) Set the target module/execution unit.
 - Set the target folder number.
 - Set the target module.
 - Set the target device.
 - Set the operation setting when a data restoration error occurs.
 - Set the restoration request.
- [Checking data restoration execution]
- Display the normal completion. (61)
 - Save the number of normally completed devices.
- (67) Display the abnormal completion.
 - Save the number of devices completed with an error. Save the error code (module error).
 - Save the error code (device error).
- [Enabling the next data restoration process]
- Enable the data restoration execution. (77)
 - Clear the initialization trigger.
 - Clear the restoration execution trigger.
 - Clear the restoration right-to-use request trigger.
 - Clear the restoration right-to-use confirmation trigger.
 - Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (85) Set the restoration cancellation request.

6 Ethernet

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC-L series connected to Ethernet.

Refer to this chapter for series other than MELSEC-L series as well.

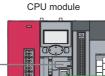
For the series that support iQ Sensor Solution, refer to the following:

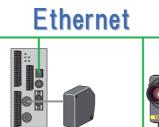
Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for Ethernet using the following system configuration.







Laser displacement sensor COGNEX Vision System

| Туре | | Model name | Manufacturer |
|--------------------------|-----------|--|--|
| Engineering tool | GX Works2 | SWnDND-GXW2 and SWnDNC-GXW2 ('n' indicates its version.) | Mitsubishi Electric Corporation |
| CPU module | LCPU | L26CPU-BT | |
| Laser displacement senso | r | HL-C2 | Panasonic Industrial Devices SUNX Co., Ltd. |
| COGNEX Vision System | | In-Sight EZ-700 | Cognex Corporation |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for Ethernet, refer to the following:

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set PLC parameters and other settings required for communication with a device supporting iQSS.

A device supporting iQSS, which is connected to the tip of a router, does not support.

Executing iQ Sensor Solution functions simultaneously

An error is returned to the request source when multiple iQ Sensor Solution functions are performed at the same time on an Ethernet network.

The following iQ Sensor Solution functions via a built-in Ethernet port cannot be performed at the same time.

- · Automatic detection of connected devices
- · Reflection of the communication setting
- · Sensor/device monitor
- Sensor parameter read/write
- Data backup/restoration

■Performing an iQ Sensor Solution function while a CC-Link IE TSN master/local module is connected

An iQ Sensor Solution function may not be completed normally when performing the function while a CC-Link IE TSN master/ local module is connected on an Ethernet network.

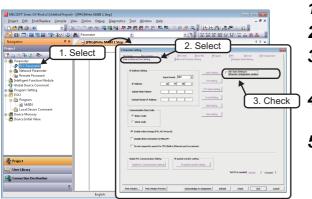
6.1 Detecting Devices Supporting iQSS Automatically

A device supporting iQSS connected to a built-in Ethernet port CPU can be detected and the information can be displayed in the "Ethernet Configuration" window.

For the creation method of a new project and the operation methods of the "Ethernet Configuration" window, refer to the following:

GX Works2 Version 1 Operating Manual (Common)

Operating procedure



Click

- **1.** Create a new project in an engineering tool.
- 2. Select "Parameter" ⇔ "PLC Parameter" on the Project view.
- **3.** Select the [Built-in Ethernet Port Setting] tab in the "L Parameter Setting" screen.
- **4.** Select the checkbox of "Set Open Setting in Ethernet Configuration window."
- **5.** Read the message and click the [Yes] button.

The [Open Settings] button is changed to [Ethernet Conf.] button.

6. Click the [Ethernet Conf.] button.

- Click the [Detect Now] button in the "Ethernet Configuration" window.
- 8. Read the message and click the [Yes] button.

| _ | | Detect Nov | | | | | | | | | | | | | Module Lit Dhemat Selection Fied Madule My Favorites 11 14 76 50 - 10 X |
|---------|-----------------|-----------------------|-------------------------|---------|---|-------------------|-------|----------------|-------|-------------|----------|-------------|--------------------|---------------------------|---|
| | 7K). | Model Name | Communication Method | rotocol | Poed Buffer Sendificceive Setting | PLC IP Address | | MAC Address | Host | P Address | Port No. | Submet Mask | Default Gateway | Existence Confirmation | to Ethernet Device (General) |
| - | 1 | Hist Station HL-C2 | | 107 | | 10.97.95.1 | | 00:C0113P | | 33.57.95.40 | | | 192.165.1.1 | | COGNEX Vision System Ethernet Device (Panasonic Industrial Devices SUNC) |
| | 2 | In-Sight E2-700 | | TOP | | 10.97.95.1 | 23333 | | ur700 | 33.97.95.50 | | 25.25 25.0 | _ | - | 20 Laser Displacement Sensor |
| al Stat | ice. of Cour | No1 | Connection No 2 | | | | | | | | | | | -(| List of devices |
| | | н.с | Include Z | | | | | | | | | | - | | Device map area |
| | | < | 700 | | | | | | | | | | · | | |
| | _ | _ | | _ | | _ | _ | | - | | _ | | | ~ | |
| AN. | | | | | | | | | | | | | | | |

The actual system configuration is displayed in the "Ethernet Configuration" window.

9. Select [Close with Reflecting the Setting] in the "Ethernet Configuration" window.

The setting in the "Ethernet Configuration" window is applied to the PLC parameter and completed.

■All connected devices supporting iQSS are not detected

If all devices supporting iQSS are not detected, remove the following error factors and perform an automatic detection of connected devices again.

- The Ethernet line is overloaded due to another function of a CPU module being performed.
- The communication cannot be established due to a reason such as a disconnection of an Ethernet cable.
- · An error occurred in the following functions:
- Simple PLC communication function
- Socket communication function
- Time setting function (SNTP client)
- Data logging file transfer function
- File transfer function (FTP client)
- Predefined protocol support function
- SP.READ instruction, SP.WRITE instruction

Usable functions differ between LCPUs and QCPUs. For details, refer to the user's manual of a CPU module used.

Considerations when detecting devices supporting iQSS

■Number of devices supporting iQSS displayed in the "Ethernet Configuration" window

Up to 16 devices supporting iQSS can be displayed in the "Ethernet Configuration" window (in ascending order of MAC address) by performing an automatic detection of connected devices.

■Operation on error

The system configuration cannot be detected if an error occurs on a CPU module or device supporting iQSS. Take corrective actions and perform the automatic detection function of connected devices again.

■An error in settings

Error information is displayed in the "Output" window when an error occurred. Double-click the information and correct the error at the jumped destination.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

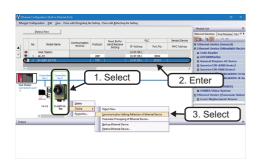
■Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

6.2 Applying the Communication Setting to a Device Supporting iQSS

The communication setting set in the "Ethernet Configuration" window can be applied to a device supporting iQSS. Perform this function after adding, deleting or changing the setting of a device supporting iQSS.

Operating procedure



- **1.** Select a target device supporting iQSS in 'List of devices' or 'Device map area' in the "Ethernet Configuration" window.
- 2. Enter the communication setting.
- 3. Select a target device supporting iQSS in 'List of devices' or 'Device map area' in the "Ethernet Configuration" window, then right-click it and select [Online] ⇔ [Communication Setting Reflection of Ethernet Device] from the shortcut menu.

The communication setting is applied to the target device supporting iQSS.

Considerations when applying the communication setting to a device supporting iQSS

■Specifying a port number

- Do not specify '45237' for a port number in other devices on the same Ethernet network. It may cause an error in other devices on the same Ethernet network.
- Do not specify the number from '61440' to '65534' for the own station port number. The connection establishment instruction (SP.SOCOPEN) of the socket communication function may be completed abnormally.
- Do not specify the IP address of a device supporting iQSS for the IP address of an external device, nor the number from '61440' to '65534' for the destination port number.

The connection establishment instruction (SP.SOCOPEN) of the socket communication function may be completed abnormally when performing a sensor/device monitor or a sensor parameter read/write.

Changing the communication setting in the "Ethernet Configuration" window

When the communication setting written to a CPU module in the "Ethernet Configuration" window does not match with that of a device supporting iQSS, the communication cannot be established normally.

When the communication setting is changed in the "Ethernet Configuration" window, perform a reflection of communication setting to Ethernet devices in order to match the communication setting between a CPU module and a device supporting iQSS.

Selecting devices supporting iQSS in the "Module List" window

The reflection function of communication setting cannot be performed to devices supporting iQSS, which are selected in the "Module List" window, and dragged and dropped onto the 'List of devices' or 'Device map area'.

Perform an automatic detection of connected devices in order to detect the communication setting, then perform a reflection of communication setting to Ethernet devices.

Changing the IP address of a built-in Ethernet port CPU

After changing the IP address of a built-in Ethernet port CPU, open the "Ethernet Configuration" window and edit the changed IP address to match with the IP address of the programmable controller in the "Ethernet Configuration" window.

Perform a reflection of communication setting to Ethernet devices in order to match the communication setting of a device supporting iQSS.

Host name not supported by a device supporting iQSS

When a device supporting iQSS does not support the host name, even if a reflection of communication setting to Ethernet devices is performed with a host name entered, it will not be applied to a device supporting iQSS.

After performing an automatic detection of connected devices, the "Host Name" field will be blank.

For the applicability of the host name of a device supporting iQSS, refer to the manuals of each device supporting iQSS.

■Applying the communication setting of Ethernet devices

The target device supporting iQSS must be restarted after performing a reflection of communication setting to Ethernet devices.

For the operating status of a device supporting iQSS, refer to the manuals of each device supporting iQSS.

6.3 Reading/Writing Parameters from/to Devices Supporting iQSS

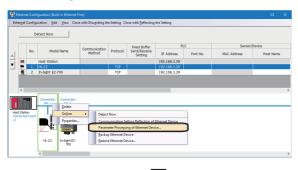
Sensor parameters can be read from and written to a device supporting iQSS. For the operation methods of the "Ethernet Configuration" window, refer to the following:

Point P

- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (Ise Page 159 Backing up/Restoring Data of Devices Supporting iQSS)

Operating procedure

■Reading parameters



 Select a target device supporting iQSS in 'List of devices' or 'Device map area' in the "Ethernet Configuration" window, then right-click it and select [Online] ⇒ [Parameter Processing of Ethernet Device] from the shortcut menu.

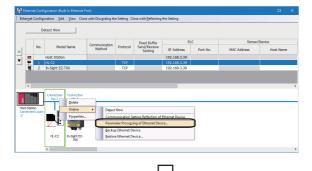
| on: Parameter read | | Read | parameter from | target mo | dule. | | | | |
|---------------------------------|--|--|--|---|---|---|---------------------|---|--|
| Parameter write | | | | | | | | | |
| | | - | | | | | | | |
| | | es. | | | | | | | |
| ect <u>Al</u> Cancel Al Se | lections | | | | | | | | |
| 1 | Initial Value | Unit | Read Value | Unit | Write Value | Unit | Setting Range | Description | , |
| ting | | | | | | | | | |
| adA_Read_Received_Light | | | | | | | 0 to 1023 | Head-A Receiv | e |
| adB_Read_Received_Light | | | | | | | 0 to 1023 | | |
| adA_Installation_Mode | Diffuse_Refl. | | | | | | | | |
| | Auto | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | 1 to 512 | | |
| | No_command | | | | | | | | |
| | 8 | | | | | | 0 to 65535 | | |
| adă Meso rement Mode | Diffuse Sta | | | _ | | _ | | Setting of Hea | ł. |
| | | | | - | | | | , | |
| | | | | | | | | | |
| Clear All "Bead Value" | | | ear All "Write Val | ue'' | | | | | |
| | | | | | | | | | |
| bion | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | There | is no option in th | e selected | process. | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| successful to a such its of The | and March day Tarfa | | | | | | | | - |
| | | madon . | destruction of the | are chec | | roblem wit | h the connection de | rtination | |
| executed to a module of "Tan | get Module Info | rmation". | | | | | | | _ |
| | Presenter red Preventer write andreitikke warters er et te trepte of a sinderskikke ingener state of the second state ingener state of the second state state of the second state of the second state of the second state of the second state of the second state of the second decard state of the second state decard state of the second state decard state of the second state decard state of the second state of the second decard state of the second state of the second decard state of the second state of the second state decard state of the second state of the second state decard state of the second state of the second state decard state of the second state of the second state of the second state decard state of the second state of the second state of the second state decard state of the second state of the second state of the second state decard state of the second state of the s | Prevention and the second seco | Logander and the set of the | Prevender and Prevender and Prevende | And the second sec | Long and the second secon | | Improved reading In the second reading process: Improved reading process: In the second reading process: Improved reading process: | Important from a product for the depresent Unreality Depresent Depresent |

The "Parameter Processing of Ethernet Device" screen appears.

- 2. Select "Parameter read."
- **3.** Select a parameter to be read.
- **4.** Click the [Execute] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

Writing parameters



 Select a target device supporting iQSS in 'List of devices' or 'Device map area' in the "Ethernet Configuration" window, then right-click it and select [Online] ⇒ [Parameter Processing of Ethernet Device] from the shortcut menu.

The "Parameter Processing of Ethernet Device" screen appears.

- 2. Select "Parameter write."
- **3.** Select a parameter to be written.
- 4. Enter a value in the column of "Write Value."
- **5.** Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

Considerations

■Operation after writing parameters

When parameters of a slave station are written, the slave station operates according to the parameters; therefore, note that the slave station may change its operation.

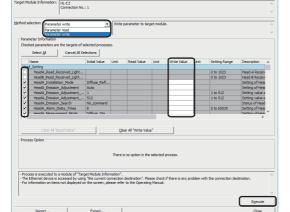
For details on parameters, refer to the manual for a slave station used.

A blank in "Write Value"

"Parameter write" cannot be executed if there is even one blank in "Write Value."

■Operation on error

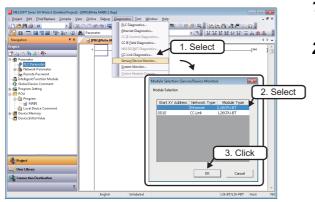
If a module being used has an error, parameters of slave stations may not be read/written properly. Take corrective actions and read/write parameters again.



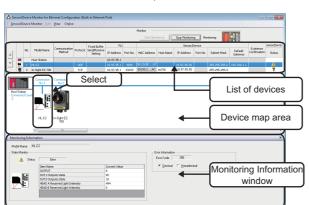
6.4 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Operating procedure



- **1.** Select [Diagnostics] ⇒ [Sensor/Device Monitor] with an engineering tool.
- **2.** Select a built-in Ethernet port LCPU in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.



The "Sensor/Device Monitor for Ethernet Configuration" screen appears.

3. Select a target device supporting iQSS to be monitored in 'List of devices' or 'Device map area' in the "Sensor/Device Monitor for Ethernet Configuration" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Display on "Status" in the 'List of devices'

The status in "Status" is displayed when using GX Works2 Version 1.499V or later.

Icons displayed in the "Monitoring Information" window may differ from the status displayed in "Status."

■Icons displayed on the "Status" in the 'List of devices'

| lcon | Description |
|------|---|
| 1 | This icon is displayed when an error occurred on the connected device supporting iQSS. |
| — | This symbol is displayed when the first five digits of the serial number for a CPU module used are '15072' or lower by which the status display is not supported. |
| ę | This icon is displayed when a CPU module cannot communicate with a device supporting iQSS, or the status display is not supported by the device supporting iQSS being used. |

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a built-in Ethernet port CPU.

If an error code is displayed, resolve the cause by referring to the manual for the built-in Ethernet port CPU, then perform the sensor/device monitor function again.

■"Current Value" in the "Monitoring Information" window

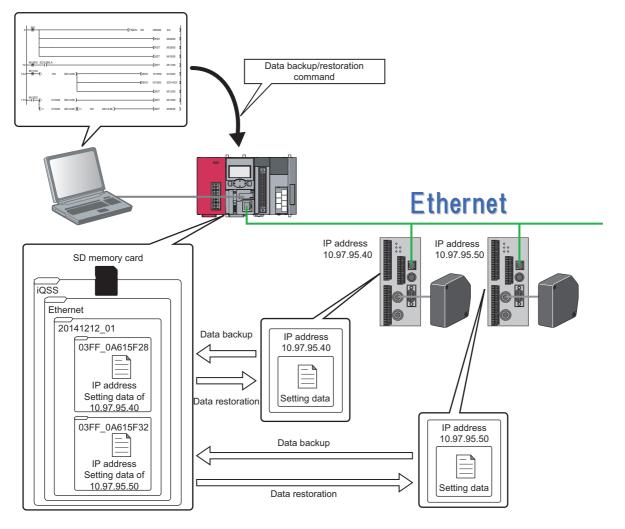
For the "Current Value" in the "Monitoring Information" window, values written to devices in a CPU module from the device supporting iQSS are displayed.

To display the current values accurately, configure the following setting:

• Select the checkbox of "Enable online change (FTP, MC Protocol)" in the [Built-in Ethernet Port Setting] tab of the "L Parameter Setting" screen, and write parameters to a CPU module.

6.5 Backing up/Restoring Data of Devices Supporting iQSS

Backing up the information of a device supporting iQSS to an SD memory card and restoring it to a module simplifies the setting change for changeover.



Point P

In such a case as limited production of diversified products, the data backup/restoration function is useful for switching multiple sensor settings from for product A to for product B in a batch.

| Function | Reference |
|------------------|---|
| Data backup | Page 163 Data backup |
| | Page 164 Program execution for data backup |
| Data restoration | Page 171 Data restoration |
| | Page 172 Program execution for data restoration |

Backup folder/file

Backup data is created in the 'iQSS' folder in the root directory when backing up the data.

If no 'iQSS' folder exists when backing up the data, an 'iQSS' folder will be newly created.

Up to 100 backup folders (date_number) can be created in the 'Ethernet' folder.

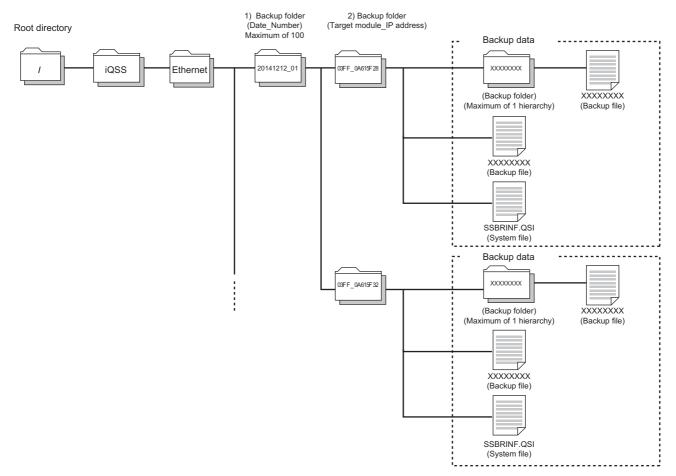
Do not change a backup folder name, configuration or saved file. Otherwise, data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

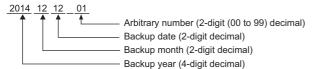
Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



■Backup folder name

1) Date_Number



2) Target module_IP address

03FF 0A615F28

IP address (8-digits hexadecimal) Target module (4-digits hexadecimal) 03FF: Built-in Ethernet

Considerations for data backup/restoration

■Use of an SD memory card

• During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card.

Otherwise, the data backup or restoration will be interrupted and the data will not be backed up or restored properly.

• Normal backup data cannot be created if the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during a data backup.

■Operations with a display unit during data backup

If any of the following operations are performed with a display unit during data backup, the operation will be completed abnormally and the error is displayed on the display unit.

Operation name

Project data batch save/load function

File deletion in the "Memory card operation menu" screen of a display unit

■Unavailable operations and functions at the same time as data backup

If any of the following operations and functions are performed during data backup, the backup will be completed abnormally and the error cause is stored in SD1452 (iQ Sensor Solution backup/restoration error cause in a module).

The error is returned to the request source which performs the operation or function.

| Operation/function name ^{*1} | |
|---|---|
| Operation with an engineering tool | Change TC setting |
| | Online change (ladder mode) |
| | Online change (inactive block) for SFC program |
| | Write to PLC (including writing data to the CPU module during RUN) |
| | Write title |
| | Password/keyword New (registration/change) Delete Disable |
| | Format PLC memory |
| | Clear PLC memory (clear all file registers) |
| | |
| | Arrange PLC memory Delete PLC data |
| | Write/delete PLC user data |
| | |
| | Program memory batch download |
| | CPU module change function with SD memory card |
| | Sampling trace function Start trace Register trace Write to PLC |
| | iQ Sensor Solution functions via a built-in Ethernet port Automatic detection of connected devices Reflection of the communication setting Sensor parameter read/write Sensor/device monitor |
| | Writing protocol setting data to the CPU module (predefined protocol support function) |
| | Project data batch save/load function |
| Operations with CPU Module Logging Configuration Tool | Data logging function Deleting/writing the data logging setting Stopping data logging operation Deleting data logging file(s) |
| Dthers | Writing or deleting files using FTP or MC protocol |
| | File transfer function (FTP server) of the built-in Ethernet function |
| | File transfer function (FTP client) of the built-in Ethernet function |
| | Register/cancel display unit menu |
| | CPU module data backup/restoration function |

*1 Available operations and functions differ between LCPUs and QCPUs. For details, refer to the user's manual of a CPU module used. When data is backed up or restored during a data logging, the performance of the data logging will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing is temporarily increased. Consequently, a timeout error may occur in other communications.

To avoid a timeout error, review the value set for "Service Processing Setting" on the [PLC System] tab in "PLC parameter."

■Backup folder name

Do not change an underscore and a subsequent number of a backup folder name (date_number).

If they are changed, the data may not be restored properly.

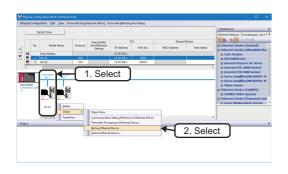
```
20141210_12

    Do not change.
```

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each IP address by using an engineering tool.

Operating procedure



 Select a target device supporting iQSS in 'List of modules' or 'Device map area' in the "Ethernet Configuration" window, then right-click it and select [Online] ⇒ [Backup Ethernet Device] from the shortcut menu.

2. Read the message and click the [Yes] or [OK] button. Data is backed up.

Considerations for a data backup

Setting the backup setting

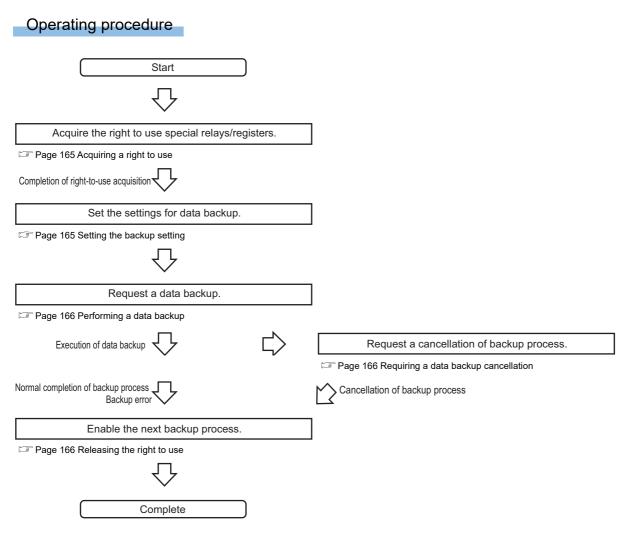
The initial values of the backup setting (SD1438 and SD1444) are as follows:

- SD1438 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1444 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (EP Page 164 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card with a program.



Execution method of data backup

The target device for data backup can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- · Special relays (SM) and special registers (SD) are used for data backup.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

■Setting the backup setting

1. Setting a target module type

Set the target module type for data backup to the lower 8 bits of SD1437.

| Target module type | Description |
|--------------------|-----------------------------|
| 3H: Ethernet | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data backup to the upper 8 bits of SD1437.

| Execution unit | Description |
|---------------------|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which communicate with a backup target module among the devices supporting iQSS which are connected to a built-in Ethernet port CPU. |
| 2H: IP address unit | Set this to specify only the device supporting iQSS with the specified IP address among the devices supporting iQSS which are connected to a built-in Ethernet port CPU. |

3. Setting a number for a data backup folder name

Set the number for a backup folder name to SD1438.

| Target folder | Description |
|--|--|
| FFFH: Automatic specification (default) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Use the smallest number for a new backup folder name among the unused numbers as the backup folder name. The oldest folder is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 00 to 99: Target folder specification | Set the number for a backup folder name. When another folder with the same number exists, the operation will be as follows: For module unit • The backup folder with the same number is deleted, and a new backup folder is created. For IP address unit • Data in the backup folder with the same number is overwritten. |

6

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit in the step of 'Set the execution unit', set the built-in Ethernet port CPU as the target device of data backup for SD1439.

| Target device (Module) | Description |
|--------------------------|---|
| 03FFH: Built-in Ethernet | When '1H' (module unit) is set for the execution unit, set a built-in Ethernet port CPU connected to a target device supporting iQSS. |

· Setting IP addresses

When '2H' (IP address unit) is set for the execution unit in the step of 'Set the execution unit', set the IP addresses of target devices for data backup to SD1440 and SD1441.

| Number | Target device (IP address) | Description |
|----------------------|--|--|
| SD1440 ^{*1} | 0 to 65536 (FFFFH): IP address (lower 16 bits) | When '2H' (IP address unit) is set for the execution unit, set the IP address of a target device |
| SD1441 ^{*1} | 0 to 57343 (DFFFH): IP address (upper 16 bits) | supporting iQSS. |

*1 IP addresses within the range from 0.0.0.1 to 223.255.255.254

5. Setting the operation setting when a data backup error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to backup data for multiple devices supporting iQSS.

| Operation on error | Description | |
|--------------------|--|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. | |
| 1H: Stop | Set this to stop a data backup even if it fails on some devices while being performed to multiple devices supporting iQSS. | |

■Performing a data backup

Data is backed up if SM1436 is turned ON while SD1446 is '1H' (ready).

Once data is backed up, SD1446 will be '2H' (being executed).

■Requiring a data backup cancellation

The data backup stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data backup is completed (including a cancellation or an error), the right to use is released and the next data backup is ready to be performed.

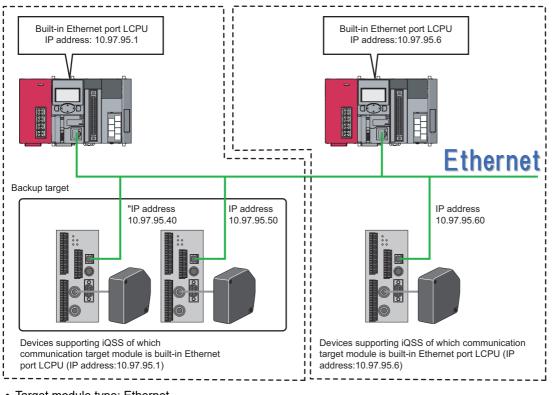
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data backup

Example of a system configuration

The following shows the example of a system configuration for data backup.



- Target module type: Ethernet
- Execution unit: Module
- · Folder number setting: Automatic specification
- · Target device (target module): Built-in Ethernet
- Operation setting on error: Stop

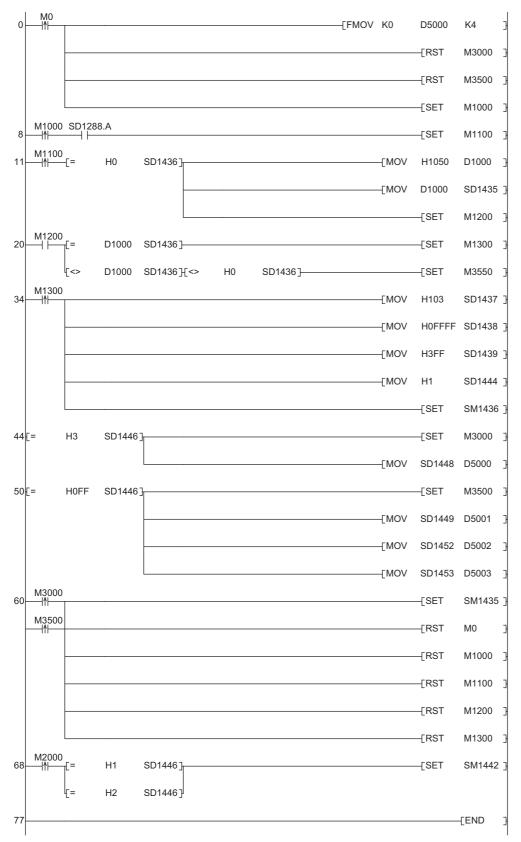
■Devices used in the program

| Device | Description | Value |
|----------|---|--------------------------------------|
| M0 | Initialization trigger | - |
| M1000 | Backup execution trigger | - |
| M1100 | Backup right-to-use request trigger | - |
| M1200 | Backup right-to-use confirmation trigger | - |
| M1300 | Backup setting and starting trigger | - |
| M2000 | Backup execution cancellation trigger | - |
| M3000 | Backup execution normal completion display | - |
| M3500 | Backup execution abnormal completion display | - |
| M3550 | Backup right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | - |
| D5000 | Backup number of normally completed devices | - |
| D5001 | Backup number of devices completed with an error | - |
| D5002 | Backup error cause in a module | — |
| D5003 | Backup error cause in a device | — |
| SM1435 | Backup execution enabled | — |
| SM1436 | Backup request | - |
| SM1442 | Backup cancellation request | - |
| SD1288.A | Connection with hub or target device | - |
| SD1435 | Backup use request | 1050H |
| SD1436 | Backup right-to-use acquisition status | - |
| SD1437 | Backup target module/execution unit setting | Lower 8 bits: 3H Upper 8 bits: 1H |
| SD1438 | Backup folder number setting | FFFH |
| SD1439 | Backup target setting (target module) | 03FFH |
| SD1444 | Operation setting when a data backup error occurs | 1H |
| SD1446 | Backup execution status | — |
| SD1448 | Backup number of normally completed devices | — |
| SD1449 | Backup number of devices completed with an error | — |
| SD1452 | Backup error cause in a module | — |
| SD1453 | Backup error cause in a device | _ |

Point

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

Sample program



[Initialization]

| (0) | Initialize the execution result. |
|----------|--|
| | Initialize the normal completion display. |
| | Initialize the abnormal completion display. |
| | Set the backup execution trigger. |
| [Execu | ting data backup] |
| (8) | Set the backup right-to-use request trigger. |
| [Reque | esting backup right to use] |
| (11) | Store the right-to-use number. |
| | Set the backup right-to-use request trigger. |
| | Set the backup right-to-use confirmation trigger. |
| [Check | ing backup right to use] |
| (20) | Set the backup setting and starting trigger. |
| | Display the right-to-use acquisition failure. |
| [Setting | g and starting data backup] |
| (34) | Set the target module/execution unit. |
| | Set the target folder number. |
| | Set the target module. |
| | Set the operation setting when a data backup error occurs. |
| | Set the backup request. |
| [Check | ing data backup execution] |
| (44) | Display the normal completion. |
| | Save the number of normally completed devices. |
| (50) | Display the abnormal completion. |
| | Save the number of devices completed with an error. |
| | Save the error code (module error). |
| | Save the error code (device error). |
| [Enabli | ng the next data backup process] |
| (60) | Enable the data backup execution. |
| | Clear the initialization trigger. |
| | Clear the backup execution trigger. |
| | Clear the backup right-to-use request trigger. |
| | Clear the backup right-to-use confirmation trigger. |
| | Clear the backup actting and starting trigger |

Clear the backup setting and starting trigger.

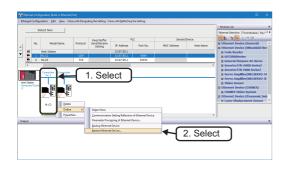
[Setting for cancelling the process]

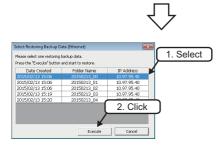
(68) Set the backup cancellation request.

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each IP address by using an engineering tool.

Operating procedure





- **2.** Select backup data to be restored, and click the [Execute] button.

Point P

A list of the backup folder names (date_number) is displayed in the column of "Folder Name."
Backup data is stored in backup folders for each folder name (Target module_IP address) in an SD memory card.
For details on the backup folder configuration, refer to the following:
Page 160 Backup folder configuration

3. Read the message and click the [OK] button. Data is restored.

Considerations for data restoration

Setting the restoration setting

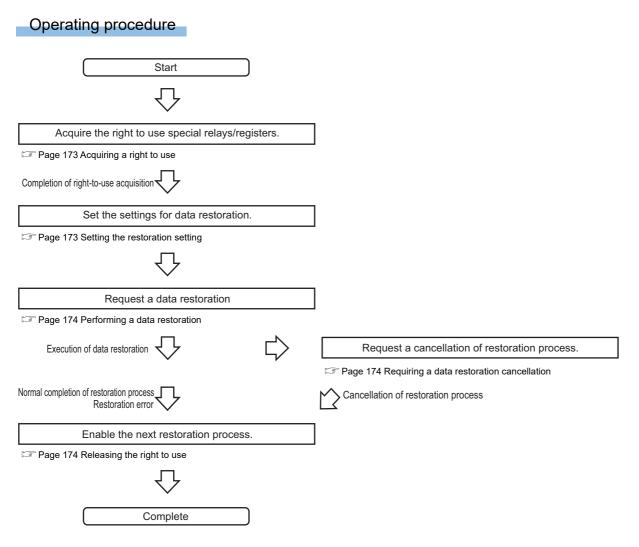
The initial value of the restoration setting (SD1444) is as follows:

• Lower 8 bits of SD1444 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (🖙 Page 172 Program execution for data restoration)

Program execution for data restoration

The information saved in an SD memory card can be restored to a device supporting iQSS with a program.



Execution method of data restoration

The target device for data restoration can be set with a program.

■Acquiring a right to use

Set a value within the range from 1000H to 1FFFH to SD1435.

Precautions

Right to use for data backup

- Special relays (SM) and special registers (SD) are used for data restoration.
- To prevent the same special relay (SM) and special register (SD) from being set at the same time, acquiring a right to use of them for data backup is required.
- To acquire a right to use, specify a value which is not duplicate with values for other request sources to SD1435, and check that the value set to SD1435 is stored to SD1436.
- Normal operation cannot be assured if the data backup function is performed without confirming the acquisition of a right to use.

■Setting the restoration setting

1. Setting a target module type

Set the target module type for data restoration to the lower 8 bits of SD1437.

| Target module type | Description |
|--------------------|-----------------------------|
| 3H: Ethernet | Set the target module type. |

2. Setting an execution unit

Set the unit of execution for data restoration to the upper 8 bits of SD1437.

| Execution unit | Description | |
|---------------------|---|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which communicate with a restoration target module among the devices supporting iQSS which are connected to a built-in Ethernet port CPU. | |
| 2H: IP address unit | Set this to specify only the device supporting iQSS with the specified IP address among the devices supporting iQSS which are connected to a built-in Ethernet port CPU. | |

3. Selecting a folder for data restoration

Set the number for backup folder name, from which data is to be restored, to SD1438.

| Target folder | Description |
|---------------------------------------|--|
| 00 to 99: Target folder specification | Specify the number among the numbers for backup folder name, 00 to 99. |

4. Setting a target device

• Setting the module

When '1H' (module unit) is set for the execution unit in the step of 'Set the execution unit', set the built-in Ethernet port CPU as the target device of data restoration to SD1439.

| Target device (Module) | Description |
|--------------------------|---|
| 03FFH: Built-in Ethernet | When '1H' (module unit) is set for the execution unit, set a built-in Ethernet port CPU connected to a target device supporting iQSS. |

Setting IP addresses

When '2H' (IP address unit) is set for the execution unit in the step of 'Set the execution unit', set the IP addresses of target devices for data restoration to SD1440 and SD1441.

| Number | Target device (IP address) | Description |
|----------------------|--|---|
| SD1440 ^{*1} | 0 to 65536 (FFFFH): IP address (lower 16 bits) | When '2H' (IP address unit) is set for the execution unit, set the IP address of a target |
| SD1441 ^{*1} | 0 to 57343 (DFFFH): IP address (upper 16 bits) | device supporting iQSS. |

*1 IP addresses within the range from 0.0.0.1 to 223.255.255.254

5. Setting the operation setting when a data restoration error occurs

Set the operation on error to the lower 8 bits of SD1444 in order to in order to restore data for multiple devices supporting iQSS.

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |
| 1H: Stop | Set this to stop a data restoration even if it fails on some devices while being performed to multiple devices supporting iQSS. |

■Performing a data restoration

Data is restored if SM1439 is turned ON while SD1446 is '1H' (ready). Once data is restored, SD1446 will be '2H' (being executed).

■Requiring a data restoration cancellation

The data restoration stops if SM1442 is turned ON while SD1446 is '1H' (ready) or '2H' (being executed).

■Releasing the right to use

When SM1435 is turned ON after a data restoration is completed (including a cancellation or an error), the right to use is released and the next data restoration is ready to be performed.

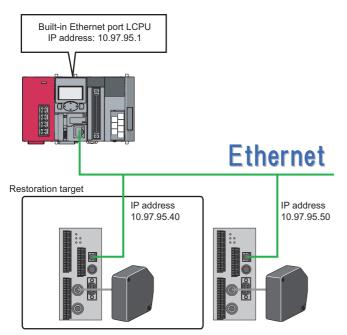
SM1435 turns ON to OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1435 remains ON since no processing is performed. In that case, set SM1435 to OFF.

Example of a data restoration

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- Target module type: Ethernet
- Execution unit: IP address
- Folder number setting: 7
- Target device: Built-in Ethernet
- Target device (IP address): 10.97.95.40
- Operation setting on error: Stop

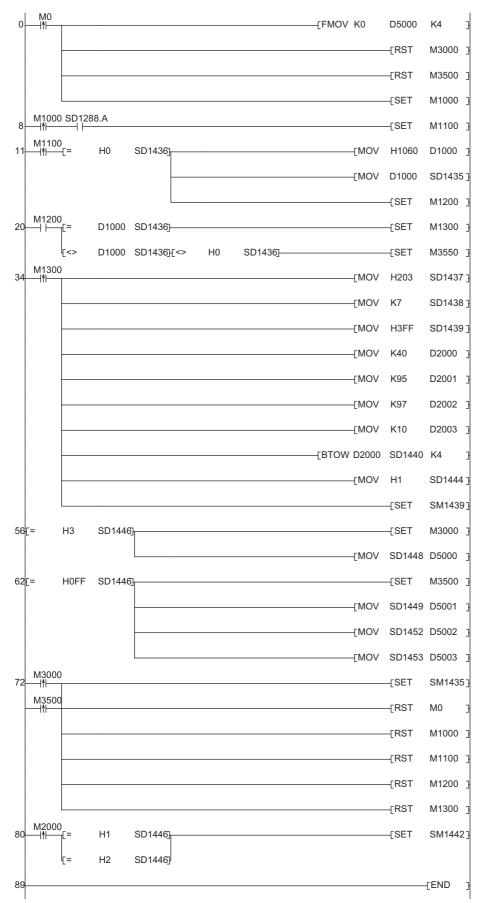
6

■Devices used in the program

| Device | Description | Value |
|----------|--|---|
| M0 | Initialization trigger | — |
| M1000 | Restoration execution trigger | — |
| M1100 | Restoration right-to-use request trigger | — |
| M1200 | Restoration right-to-use confirmation trigger | - |
| M1300 | Restoration setting and starting trigger | — |
| M2000 | Restoration execution cancellation trigger | — |
| M3000 | Restoration execution normal completion display | — |
| M3500 | Restoration execution abnormal completion display | — |
| M3550 | Restoration right-to-use acquisition failure | - |
| D1000 | Right-to-use number storage area | — |
| D2000 | Fourth octet storage area for target device IP address | 40 |
| D2001 | Third octet storage area for target device IP address | 95 |
| D2002 | Second octet storage area for target device IP address | 97 |
| D2003 | First octet storage area for target device IP address | 10 |
| D5000 | Restoration number of normally completed devices | — |
| D5001 | Restoration number of devices completed with an error | — |
| D5002 | Restoration error cause in a module | — |
| D5003 | Restoration error cause in a device | — |
| SM1435 | Restoration execution enabled | — |
| SM1439 | Restoration request | — |
| SM1442 | Restoration cancellation request | — |
| SD1288.A | Connection with hub or target device | — |
| SD1435 | Restoration use request | 1060H |
| SD1436 | Restoration right-to-use acquisition status | — |
| SD1437 | Restoration target module/execution unit setting | Lower 8 bits: 3H Upper 8 bits: 2H |
| SD1438 | Restoration folder number setting | 7 |
| SD1439 | Restoration target setting (target module) | 03FFH |
| SD1440 | Restoration target setting (target device 1) | Lower 16 bits of IP address (10.97.95.40) |
| SD1441 | Restoration target setting (target device 2) | Upper 16 bits of IP address (10.97.95.40) |
| SD1444 | Operation setting when a data restoration error occurs | 1H |
| SD1446 | Restoration execution status | - |
| SD1448 | Restoration number of normally completed devices | - |
| SD1449 | Restoration number of devices completed with an error | - |
| SD1452 | Restoration error cause in a module | - |
| SD1453 | Restoration error cause in a device | — |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.



■Sample program

[Initialization]

| (0) | Initialize the execution result. | | |
|------------|---|--|--|
| | Initialize the normal completion display. | | |
| | Initialize the abnormal completion display. | | |
| | Set the restoration execution trigger. | | |
| [Executir | ng data restoration] | | |
| (8) | Set the restoration right-to-use request trigger. | | |
| [Request | ting restoration right to use] | | |
| (11) | Store the right-to-use number. | | |
| | Set the restoration right-to-use request trigger. | | |
| | Set the restoration right-to-use confirmation trigger. | | |
| [Checkin | g restoration right to use] | | |
| (20) | Set the restoration setting and starting trigger. | | |
| | Display the right-to-use acquisition failure. | | |
| [Setting a | and starting data restoration] | | |
| (34) | Set the target module/execution unit. | | |
| | Set the target folder number. | | |
| | Set the target module. | | |
| | Fourth octet for target device IP address | | |
| | Third octet for target device IP address | | |
| | Second octet for target device IP address | | |
| | First octet for target device IP address | | |
| | Set the target device 1 or 2. | | |
| | Set the operation setting when a data restoration error occurs. | | |
| | Set the restoration request. | | |
| [Checkin | g data restoration execution] | | |
| (56) | Display the normal completion. | | |
| | Save the number of normally completed devices. | | |
| (62) | Display the abnormal completion. | | |
| | Save the number of devices completed with an error. | | |
| | Save the error code (module error). | | |
| | Save the error code (device error). | | |
| [Enabling | the next data restoration process] | | |
| (72) | Enable the data restoration execution. | | |
| | Clear the initialization trigger. | | |
| | Clear the restoration execution trigger. | | |

- Clear the restoration execution trigger.
 - Clear the restoration right-to-use request trigger.
 - Clear the restoration right-to-use confirmation trigger.
- Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (80) Set the restoration cancellation request.

PART 3 GX Works3

This part explains the operation methods when using the iQ Sensor Solution functions in GX Works3/ MELSOFT Navigator.

| 7 | Anv | /Wire | ASI | INK |
|---|-------|------------|-------|-----|
| | / 11/ | y v v ii C | / (OL | |

8 CC-Link

9 CC-Link IE TSN

10 CC-Link IE Field Network

11 Ethernet

7 AnyWireASLINK

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC iQ-R series connected to AnyWireASLINK.

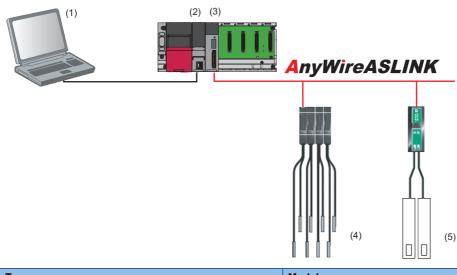
Refer to this chapter for series other than MELSEC iQ-R series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for AnyWireASLINK using the following system configuration.



| Тур | e | | Model name | Manufacturer |
|-----|-----------------------------|----------------------|---|---------------------|
| (1) | Engineering tool | GX Works3 | SWnDND-GXW3 ('n' indicates its version.) | Mitsubishi Electric |
| (2) | CPU module RCPU | | R08CPU | Corporation |
| (3) | AnyWireASLINK master module | | RJ51AW12AL | |
| (4) | ASLINKAMP (Input) | Photoelectric sensor | B289SB-01AP-CAM20 (ASLINKAMP master) B289SB-01AP-CAS (ASLINKAMP slave) | AnyWire Corporation |
| | | Fiber sensor | B289SB-01AF-CAS (ASLINKAMP slave) B289SB-01AF-CAS (ASLINKAMP slave) | |
| (5) | ASLINKER (Input) | | B281SB-02U-CC20 | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for AnyWireASLINK, refer to the following:

IP Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set PLC parameters and other settings required for communication with a device supporting iQSS such as the address setting and the device parameter setting.

■Address settings

Make sure to set the address occupied by a slave module so as not to exceed the number of operating points set in a master module.

For details on the settings, refer to the following:

MELSEC iQ-R Module Configuration Manual

MELSEC iQ-R AnyWireASLINK Master Module User's Manual (Startup)

7.1 Detecting Devices Supporting iQSS Automatically

A slave module connected to an AnyWireASLINK master module can be detected and the information can be displayed in the "AnyWireASLINK Configuration" window.

For the creation method of a new project and the operation methods of the "AnyWireASLINK Configuration" window, refer to the following:

GX Works3 Operating Manual

Operating procedure

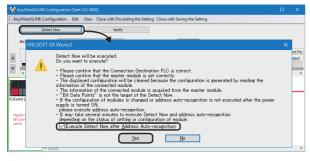


Create a new project for AnyWireASLINK in an engineering tool.

- **2.** Select the following items from "Module Selection" in the "Add New Module" screen.

"Module Type": Network Module
 "Module Name": RJ51AW12AL

3. Double-click "AnyWireASLINK Configuration" in the "Navigation" window.

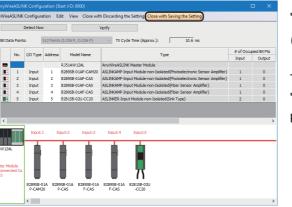


The "AnyWireASLINK Configuration" window appears.

- 4. Click the [Detect Now] button.
- **5.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

MELSEC iQ-R AnyWireASLINK Master Module User's Manual (Application)



The actual system configuration is displayed in the "AnyWireASLINK Configuration" window.

6. Select [Close with Saving the Setting] in the "AnyWireASLINK Configuration" window.

The information, such as parameters, displayed in the "AnyWireASLINK Configuration" window is applied to the network parameter.

Considerations when detecting devices supporting iQSS

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

MELSEC iQ-R AnyWireASLINK Master Module User's Manual (Application)

■Operation on error

A system configuration may not be detected if an error occurs on the AnyWireASLINK master module.

If an error code is displayed, take corrective actions by referring to the manual for the AnyWireASLINK master module, then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Scan time for automatic detection

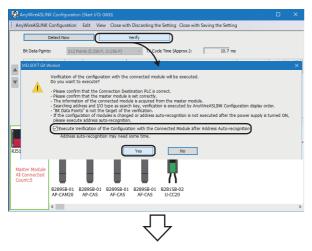
When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

7.2 Verifying Devices Supporting iQSS Against System Configuration

The system configuration displayed in the "AnyWireASLINK Configuration" window can be verified against the slave modules connected to an AnyWireASLINK master module.

The result is displayed in the "Verification Result of the Configuration with the Connected Module" window. Verify a system configuration when it is manually created or edited.

Operating procedure



- **1.** Click the [Verify] button in the "AnyWireASLINK Configuration" window.
- 2. When an automatic address detection is required, select the checkbox of "Execute Verification of the Configuration with the Connected Module after Address Auto-recognition," then click the [Yes] button.

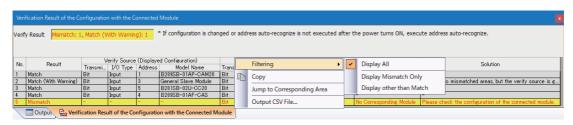
For a case in which an automatic address detection is required, refer to the following:

MELSEC iQ-R AnyWireASLINK Master Module User's Manual (Application)

| | VireASLIN | K Configu | ration | Edit Vie | w Close w | ith Discardin | g the Settir | ng Close w | vith Saving | the Settin | g | | | |
|----------------------|---------------------|--------------------------|-------------------|--------------------|------------------------|------------------------|--------------|----------------|-------------|------------|--------------------|---------|-------------|--------|
| | | Detect N | ow | | | Verify | | | | | | | | |
| Bit | t Data P <u>o</u> i | nts: | 512 Poir | nts (I:256 P | P, O:256 P) | ~ TX | Cycle Time | (Approx.): | | 10.7 m | s | | | |
| | | | | | | | | | | Occupi | ed Bit Pts | Occupie | ed Word Pts | Bit/W |
| | No. | I/O Type | Address | Mode | el Name | | τı | /pe | | | Output | Input | Output | d Mod |
| - 1 | | | | RJ51AW1 | 241 | AnyWireASL | NK Master I | Module | | | | | | |
| | 1 1 | Input | 1 | | 1AP-CAM20 | ASLINKAMP- | | | ted(Photoel | ect 1 | 0 | 0 | 0 | |
| | 2 | Input | 2 | B289SB-0 | | ASLINKAMP- | | | | | 0 | 0 | 0 | |
| | 3 | Input | 3 | B289SB-0 | | ASLINKAMP- | | | | • | 0 | 0 | 0 | |
| | 4 | | 4 | B289SB-0 | | ASLINKAMP- | | | | | 0 | 0 | 0 | |
| 10 | | Input | | | | | | | | | | | | |
| | 5 | Input | 5 | B281SB-0 | 20-0020 | ASLINKER-In | put Module | non-Isolate | d(Sink Type |) 2 | 0 | 0 | 0 | |
| | | B2895 AP-CA | | 289SB-01 AP-CAS | B289SB-0 AF-CAS | | | 5B-02 C20 | | | | | | |
| | | < | | | | | | | | | | | | |
| Verifica erify Re | - | ult of the here is no | | | the Connec | ted Module * If config | uration is o | hanged or | r address a | uto-reco | gnize is n | ot exe | cuted after | the |
| | lesult - | | | | ed Configura | ation) | | | erify Desti | | | | Mismatcher | 1.C |
| lo P | | | VO Type | | | I Name | | I/O Type | | | del Name | | mandtonet | / John |
| | | | put put | 2 | B289SB-01 B289SB-01 | AP-CAM20 | Bit | Input Input | 1 | | 01AP-CA 01AP-CA | | - | _ |
| Ma | | n r | | 2 | B289SB-01 | | Bit | Input | 2 | B2895B- | | | - | |
| Ma Ma | tch B | it 14 | | | | | | | | | | | | |
| Ma Ma Ma | | | put put | | B289SB-01 | AF-CAS | Bit | Input | 4 | B289SR- | 01AF-CA | | - | |
| Ma Ma Ma | itch B itch B | it F | put put put | 4 | | | Bit Bit | Input Input | | | | 6 · | - | |

The verification results are displayed in the "Verification Result of the Configuration with the Connected Module" window.





The display is switched by right-clicking on the "Verification Result of the Configuration with the Connected Module" window and selecting "Display All"/"Display Mismatch Only"/"Display other than Match." The cursor jumps to the corresponding location in the "AnyWireASLINK Configuration" window by doubleclicking the row with "Mismatch" in the "Verification Result of the Configuration with the Connected Module" window. 7.3

Reading/Writing Parameters from/to Devices Supporting iQSS

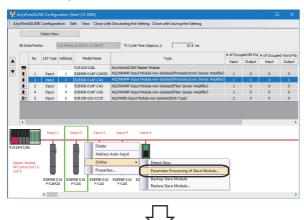
Parameters can be read from and written to a slave module.

Point P

- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (
- The useful function (linkage with dedicated tools) for devices supporting iQSS can also be used in the "AnyWireASLINK Configuration" window. (Page 370 Linkage with dedicated tools (association with properties))

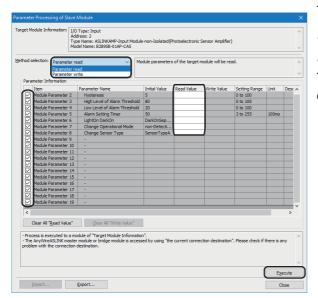
Operating procedure

■Reading parameters



 Select a device supporting iQSS in the "AnyWireASLINK Configuration" window, then right-click it and select [Online]

 ⇒ [Parameter Processing of Slave Module] from the shortcut menu.



The "Parameter Processing of Slave Module" screen appears.

- 2. Select "Parameter read."
- **3.** Click the [Execute] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

■Writing parameters

| Detect Now Inints: 1 Input Input Input Input Input Input Input | Address 1 2 3 4 | (1:256 P, 0:256 P) Model Name R351AW 12AL 828958 01AP-CAM20 828958 01AP-CAS 828958 01AF-CAS 828958 01AF-CAS 828158-02U-CC20 | TX Cycle Time (Approx.): 13.6 me Type Type ADD/MASL2DM Matter Module ADD/MASH-Prox1 Module rom SalabidityPoint devices are an Amplifery ADD/MASH-Prox1 Module rom SalabidityPoint Seriora Amplifery | Input | oled Bit Pts Output 0 0 0 0 0 0 | # of Occupie Input 0 0 0 0 | d Word P Output 0 0 0 0 |
|---|-----------------------------|--|---|--|--|---|--|
| I/O Type Input Input Input Input Input | Address 1 2 3 4 | Model Name RJS1AW12AL B28958-01AP-CAM20 B28958-01AP-CAS B28958-01AF-CAS B28958-01AF-CAS | Type AnyWireASLINK Master Module ASLINKAPP-Input Module-non-baladed@Photoelectrons_Series Ampifery ASLINKAPP-input Module-non-baladed@Pactors.Series Ampifery ASLINKAPP-input Module-non-baladed@Pactors.SeriesAmpifery | Input 1 1 1 1 | Output 0 0 0 0 | Input 0 0 0 | Output 0 0 0 |
| 1 Input 2 Input 3 Input 4 Input | 1 2 3 4 | RJ51AW 12AL 828958-01AP-CAM20 828958-01AP-CAS 828958-01AF-CAS 828958-01AF-CAS | Any Vire ASLINK Master Module ASLINKANP-Input Module-non-Isolated Photoelectronic Sensor Amplifer) ASLINKANP-Input Module-non-Isolated Photoelectronic Sensor Amplifer) ASLINKANP-Input Module-non-Isolated Phot Sensor Amplifer) ASLINKANP-Input Module-non-Isolated Phot Sensor Amplifer) | Input 1 1 1 1 | Output 0 0 0 0 | Input 0 0 0 | Output 0 0 0 |
| 1 Input 2 Input 3 Input 4 Input | 1 2 3 4 | RJ51AW 12AL 828958-01AP-CAM20 828958-01AP-CAS 828958-01AF-CAS 828958-01AF-CAS | Any Vire ASLINK Master Module ASLINKANP-Input Module-non-Isolated Photoelectronic Sensor Amplifer) ASLINKANP-Input Module-non-Isolated Photoelectronic Sensor Amplifer) ASLINKANP-Input Module-non-Isolated Phot Sensor Amplifer) ASLINKANP-Input Module-non-Isolated Phot Sensor Amplifer) | 1 1 1 1 1 1 | 0 | 0 | 0 |
| 2 Input 3 Input 4 Input | 1 2 3 4 | 828958-01AP-CAM20 828958-01AP-CAS 828958-01AF-CAS 828958-01AF-CAS | ASLINKAMP-Input Module-non-Isolated@hotoelectronic Sensor Amplifer) ASLINKAMP-Input Module-non-Isolated@hotoelectronic Sensor Amplifer) ASLINKAMP-Input Module-non-Isolated@hote Sensor Amplifer) ASLINKAMP-Input Module-non-Isolated@hote Sensor Amplifer) | 1 1 1 | 0 | 0 | 0 |
| 2 Input 3 Input 4 Input | 2 3 4 | 828958-01AP-CAS 828958-01AF-CAS 828958-01AF-CAS | ASLIP (KMPP-Input Module-non-Isolated)Photoelectronic Sensor Amplifier) ASLIP (KMPP-Input Module-non-Isolated)Photoelectronic Sensor Amplifier) ASLIP (KMPP-Input Module-non-Isolated)Phot Sensor Amplifier) | 1 1 1 | 0 | 0 | 0 |
| 3 Input 4 Input | 3 4 | B289SB-01AF-CAS B289SB-01AF-CAS | ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplifier) ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplifier) | i | 0 | 0 | 0 |
| 4 Input | 4 | B289SB-01AF-CAS | ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplifier) | i | ō | | |
| | | | | 1 2 | | 0 | 0 |
| 5 Input | 5 | 828158-02U-CC20 | ASLINKER-Input Module-non-Isolated(Sink Type) | 2 | 0 | | |
| | | | | | | 0 | 0 |
| Input: 1 | i In | put:2 Input:3 | Input:4 Input:5 | | | | |
| | | - Dulue | | | | | |
| | | | | | | | |
| | | | | _ | | | |
| | | Online | Detect Now | | | | |
| ~ U | | Propertie | es Parameter Processing of Slave Module | | | | |
| | 1A 8289 | 958-01A 828958-01A | B2895B-01A B2 Backup Slave Module | | | | |
| P-CAM2 | J P | -CAS F-CAS | F-CAS Restore Slave Module | | | | |
| ۲. | | _ | | | | | |
| | | | | | | | |
| | Co B28568-O P-CAM2 | Co B28558-01A P-CAM20 P | Co B2858-01A P-CA20 B2858-01A | Co EXERCISE DI EXERCISE DI EXERCISE DI EXERCISE DI EXERCISIO DI EXERC | Co EXERCICL EXERCICLE EXE | Co Detet Address Auto-Input Detet Now Parameter Processing of Same Module Parameter Processing of Same Module Parameter Sone Module PCM00 P | Co Bases-Du PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO Bases-Can PCANDO PC |

 Select a device supporting iQSS in the "AnyWireASLINK Configuration" window, then right-click it and select [Online]
 ⇒ [Parameter Processing of Slave Module] from the shortcut menu.

- The "Parameter Processing of Slave Module" screen appears.
- 2. Select "Parameter write."
- 3. Enter a value in the column of "Write Value."
- **4.** Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

Percent Processing of Section 2010 V Target Hodak Information [10] Type: Init: Display of Section 2010 Display of Section 2010 Percent Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Percent Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Percent Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Percent Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Percent Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Display of Section 2010 Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Display of Section 2010 Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Display of Section 2010 Processing Of Section 2010 Display of Section 2010 Display of Section 2010 Display of Section 2010 <

| Item | | Description |
|---------------------------|----------------------------------|--|
| Target Module Information | | Information for the selected slave module is displayed. |
| Method selection | | Select processing to be executed for the selected slave module. Parameter read: Parameters are read from the selected slave module. Parameter write: Parameters are written to the selected slave module. |
| Parameter Information | [Clear All "Read Value"] button | Click this to clear all setting details that are read by "Parameter read." |
| | [Clear All "Write Value"] button | Click this to clear all setting details that are written by "Parameter write." |
| [Import] button | · | Click this to read contents of parameter processing created in a CSV file. |
| [Export] button | | Click this to output contents of parameter processing set in this screen to a CSV file. |

"Parameter Processing of Slave Module" screen

Considerations

■Operation after writing parameters

When parameters of a slave module are written, the slave module operates according to the parameters; therefore, note that the slave module may change its operation. Turning the power OFF and ON is not required after the parameter writing. For details on the parameters, refer to the manual for a slave module used.

A blank in "Write Value"

The device parameter of which "Write Value" is blank retains the value written in a slave module. However, if no parameters have values in "Write Value," "Parameter write" cannot be executed.

■Operation on error

If a module being used has an error, parameters of a slave module may not be read/written properly. If an error code is displayed, take corrective actions by referring to the manual for the module used, then read/write parameters again.

7.4 **Monitoring Devices Supporting iQSS**

The connection statuses of devices supporting iQSS can be monitored.

Operating procedure

Det Do ;

Find/Repl Tool Wi n Monito 100 or/Device Monitor dule Diagnostics (CPU Diag ernet Diagnostics CC-Link IE Control Diagnostics (Optical Cable CC-Link IE Control Diagnostics (Twisted Pair Ca ice Monitor of the selected module -CC-Link IE Field Diagno Start the S CC-Link IEF Basic Diagnostic IELSECNET Diagn Start I/C CC-Link Diagnostics.. le CPU C ОК Cancel

- **1.** Select [Diagnostics] ⇒ [Sensor/Device Monitor] with an engineering tool.
- 2. Select an AnyWireASLINK master module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.

3. When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Autorecognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

MELSEC iQ-R AnyWireASLINK Master Module User's Manual (Application)

The "Sensor/Device Monitor for AnyWireASLINK" screen appears. 4. Select a target device supporting iQSS to be monitored in the "Sensor/Device Monitor for AnyWireASLINK" screen.

> The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

R Input Signal OFF(0)

Г No

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

"Module With No Profile Found"

"General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a master module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in an AnyWireASLINK master module.

If an error code is displayed, resolve the cause by referring to the manual for the AnyWireASLINK master module, then perform the sensor/device monitor function again.

MELSEC iQ-R AnyWireASLINK Master Module User's Manual (Application)

■Replacing a slave module while displaying the sensor/device monitor

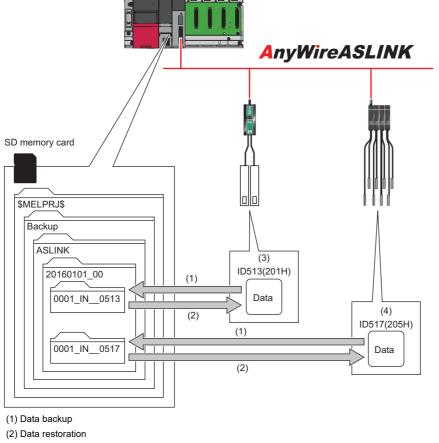
If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

7.5 Backing up/Restoring Data of Devices Supporting iQSS

Information of a device supporting iQSS can be backed up to/restored from an SD memory card by using special relays and special registers.

This will make a data restoration or utilization simplified and the time taken to change the information of multiple devices supporting iQSS, restore data when a failure occurred in a device supporting iQSS, and to perform a changeover will also be shortened.

This section explains data the backup and data restoration methods for a MELSEC iQ-R series AnyWireASLINK.



(3) Address 1

(4) Address 5

(1)/ (dd1000 0

| Function | Reference | | |
|------------------|---|--|--|
| Data backup | Page 195 Data backup | | |
| | Page 196 Program execution for data backup | | |
| Data restoration | Page 204 Data restoration | | |
| | Page 205 Program execution for data restoration | | |

Backup folder/file

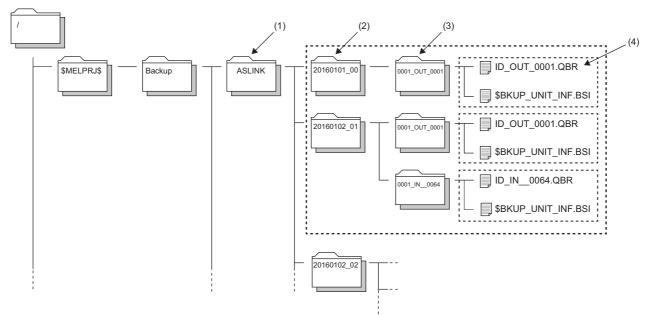
New backup folders are created in the 'ASLINK' folder which exists in the 'Backup' folder under the main folder of '\$MELPRJ\$' in an SD memory card when data is backed up.

If no '\$MELPRJ\$' folder, 'Backup' folder, or 'ASLINK' folder exists, each of the folders are created as well when data is backed up.

Up to 100 backup folders (date number) can be created in the 'ASLINK' folder.

■Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



(1) A folder to save the settings of devices supporting iQSS connected to AnyWireASLINK

(2) Backup folder (date_number)

(3) Backup folder (start I/O No._ID)

(4) Backup data (information of each ID)

■Backup folder name

• Date_Number

YYYYMMDD **

YYYY: Year when the data was backed up (four digits in decimal) MM: Month when the data was backed up (two digits in decimal) DD: Day when the data was backed up (two digits in decimal) **: Number (two digits in decimal (00 to 99))^{*1}

*1 If multiple folders with the same number exist while a target folder (0 to 99) is set to SD1363 (iQ Sensor Solution backup/restoration folder number setting), the date of the backup folder name may not be updated. (🖙 Setting a number for a data backup folder name)

Start I/O No._ID

**** OUT ****

First ****: Start I/O number (four digits in hexadecimal) (A value obtained by dividing the start I/O number by 16) OUT: Output slave module, or IN_: Input slave module/I/O combined slave module Last ****: Start ID number (four digits in decimal)

■Backup file name

ID OUT ****.QBR

OUT: Output slave module, or IN_: Input slave module/I/O combined slave module ****: ID number (four digits in decimal)

Considerations for data backup/restoration

■Use of an SD memory card

- During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card. Otherwise, for the data backup, data that was backed up until the data backup processing was interrupted retains in the SD memory card. As for the data restoration, data that was restored until the data restoration was interrupted retains in the device supporting iQSS.
- If the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during the data backup, only the data that has been properly backed up will be stored in the SD memory card.

■Concurrent use of other functions

While any of the following operations or functions are being performed, backup/restoration cannot be performed. Additionally, the following operations and functions cannot be performed during data backup/restoration.

| Operation/function name | | | | | |
|------------------------------------|---|--|--|--|--|
| Operation with an engineering tool | Initializing the CPU built-in memory/SD memory card | | | | |
| | Clearing values (file register) | | | | |
| | Writing data to a programmable controller (including online change of files) | | | | |
| | Deleting data in the programmable controller | | | | |
| | User data operation | Writing user data | | | |
| | | Deleting user data | | | |
| | | Creating a folder | | | |
| | | Deleting a folder | | | |
| | | Changing a folder name | | | |
| | Online change (ladder block) | | | | |
| | Event history function (clearing event history) | | | | |
| | File password function | | | | |
| | Predefined protocol support function (writing protocol setting data) | | | | |
| | Memory dump function (registering/clearing memory dump) | | | | |
| Operations with CPU Module Logging | Data logging function (writing/deleting a logging setting file, registering/clearing a logging setting) | | | | |
| Configuration Tool | Deleting logging file(s) | | | | |
| Others | • SLMP | Creating a new file (New File) | | | |
| | MC protocol | Writing data to a file (Write File) | | | |
| | | Deleting a file (Delete File) | | | |
| | | Copying a file (Copy File) | | | |
| | | Changing a file attribute (Change File State) | | | |
| | | Changing file creation date (Change File Date) | | | |
| | File transfer from an Ethernet-equipped | Writing a file (put, mput, pm-write) | | | |
| | module (FTP server) | Deleting a file (delete, mdelete) | | | |
| | | Changing a file name (rename) | | | |
| | | Changing a file attribute (change) | | | |
| | File transfer function (FTP server) of the bui | It-in Ethernet function | | | |
| | File transfer function (FTP client) of the built | -in Ethernet function | | | |
| | CPU module data backup/restoration function | n | | | |

When data is backed up or restored during a data logging or the realtime monitor function, the performance of the data logging or the data sampling for the realtime monitor will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing in the CPU module is temporarily increased. Consequently, a communication response will be slow and a timeout error may occur in other communications. To avoid a timeout error, review the value set for "Device/Label Access Service Processing Setting."

℃ [CPU Parameter] ⇔ [Service Processing Setting] ⇔ [Device/Label Access Service Processing Setting]

■Change of backup folders/data

Do not change a backup folder name, configuration, or saved file.

Otherwise, the data may not be restored properly.

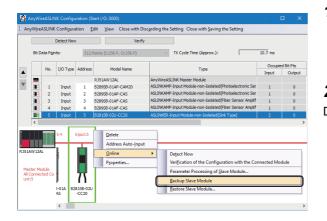
For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each ID by using an engineering tool.

Operating procedure



2. Read the message and click the [Yes] button. Data is backed up.

Considerations for a data backup

Setting the backup setting

The initial values of the backup setting (SD1363 and SD1367) are as follows:

- SD1363 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (EP Page 196 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card.

New folders are created every time when data is backed up, and data of each device supporting iQSS is saved as a file in the folders. A system file (\$BKUP_UNIT_INF.BSI) that contains information required for data restoration is created for each ID when data is backed up.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to back up data with a program.

| Procedu re | Item | Reference |
|---------------|--|-------------------------------------|
| 1 | Acquire a right to use. | Page 196 Acquiring a right to use |
| 2 | Set the backup target setting and the operation setting. | Page 197 Setting the backup setting |
| 3 | Perform a data backup. | Page 198 Performing a data backup |
| 4 | Release the right to use. | Page 198 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Execution method of data backup

Special relays (SM) and special registers (SD) are used for data backup.

Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data backup. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

■Setting the backup setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|--------------------|---|
| 1H: AnyWireASLINK | Set this to specify a device supporting iQSS which is connected to the AnyWireASLINK master module. |

2. Setting an execution unit

Set a unit to specify the range of data to be backed up at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|-----------------|---|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the AnyWireASLINK master module with the specified start I/O number. |
| 2H: ID unit | Set this to specify the device supporting iQSS with the specified ID number among the devices which are connected to the AnyWireASLINK master module with the specified start I/O number. |

3. Setting a number for a data backup folder name

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--|---|
| FFFH: Automatic specification (default) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. The oldest backup folder (date_number) is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name. When another folder with the same number exists, the target data is overwritten in execution unit without changing the folder name. ^{*1} |

*1 When the specified folder number exists, the operation to be performed depends on the specification of the execution unit as follows:

| Execution unit | Operation |
|-----------------|---|
| 1H: Module unit | When the backup data with the same target module exists, the backup folder (start I/O number_ID) is deleted before performing data backup. |
| 2H: ID unit | When the backup data with the same target module and the same target ID exists, the backup folder (start I/O number_ID) is deleted before performing data backup. |

4. Setting a target device

· Setting a module

When '1H' (module unit) is set for the execution unit, set a start I/O number to SD1364 (iQ Sensor Solution data backup/ restoration target setting (target module)).

In a multiple CPU system, only the AnyWireASLINK master module controlled by a host CPU can be backed up. Data backup cannot be performed for non-controlled modules.

| | Target device (Module) | Description |
|----------------------------|------------------------|---|
| 0 to FFH: Start I/O number | | Set the start I/O number (the value obtained by dividing the start I/O number by 16) of the AnyWireASLINK |
| | | master module which is connected to a target device supporting iQSS. |

• Setting an ID number

When '2H' (ID unit) is set for the execution unit, set an ID number to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)).

For details on the setting method of an ID number, refer to the manual of the AnyWireASLINK device used.

| Target device (ID number) | Description |
|---------------------------|---|
| 0 to 9999: ID number \$ | Set the ID number of a target device supporting iQSS based on its address. ID number of a bit slave module: Set the number based on its address (0 to 254). ID number of a word slave module: Set the number based on its address (0 to 510). |

5. Setting the operation setting when a data backup error occurs

Set the operation to be performed when the data backup fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description | | | |
|--------------------|--|--|--|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices. | | | |
| 1H: Stop | Set this to stop a data backup if it fails on some devices. | | | |

■Performing a data backup

Turn ON SM1361 (iQ Sensor Solution backup request) to request a data backup.

Data is backed up after a data backup request.

SM1361 is turned OFF when a data backup is completed.

1. Checking the execution status of a data backup

The execution status of a data backup can be checked with the following special registers.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data backup

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data backup. A cancellation is performed for each device supporting iQSS, so it will be canceled when a data backup which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data backup

When the data backup is completed, the backup completion status can be checked with the following special relays.

- Normally completed: SM1362 (iQ Sensor Solution backup normal completion) is turned ON.
- Abnormally completed: SM1363 (iQ Sensor Solution backup abnormal completion) is turned ON.

The number of the folder where backup data was saved at the completion of data backup is stored to SD1375 (iQ Sensor Solution backup folder number).

| Backup folder number | Description | | | |
|---|---------------------------------|--|--|--|
| 0 to 99: Folder number The number (0 to 99) of the folder in which backup data was saved is stored. | | | | |
| FFFFH: Backup data not saved | Backup data has not been saved. | | | |

4. Checking a data backup error

Even if a data backup of a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a module such as a CPU module or AnyWireASLINK master module can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1381: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON . The right to use is released and the next data backup is ready to be performed.

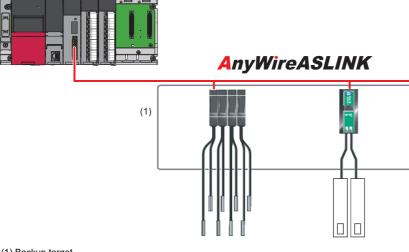
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data backup

■Example of a system configuration

The following shows the example of a system configuration for data backup.



(1) Backup target

- Target module type: AnyWireASLINK
- Execution unit: Module
- Folder number setting: Automatic specification
- Target device (target module): Start I/O No.0
- Target device (ID number): 1
- · Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Categor y | Device | Label name | Description |
|--------------|--------|--|--|
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| abel | SM1361 | RCPU.stSM.biQSS_Backup_Request | Backup request |
| | SM1362 | RCPU.stSM.biQSS_Backup_Normal_Completion | Backup normal completion |
| | SM1363 | RCPU.stSM.biQSS_Backup_Error_Completion | Backup abnormal completion |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_ No | Backup/restoration right-to-use acquisition number |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_ Unit_Setting | Backup/restoration target module, execution unit setting |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Sett ing | Backup/restoration folder number setting |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Mod ule | Backup/restoration target setting (target module) |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_1 | Backup/restoration target setting (target device 1) |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_2 | Backup/restoration target setting (target device 2) |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_N umber_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessi ng_Per_Devices | Backup/restoration execution status (progress per device) |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Caus e | Backup/restoration error cause in a device |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Exec ution_Unit_Information | Backup/restoration error target module, execution unit information |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Numb er_Information | Backup/restoration target folder number information |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_M odule | Backup/restoration error information (target module) |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D evice_1 | Backup/restoration error device information (target device 1) |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D evice_2 | Backup/restoration error device information (target device 2) |

| Categor y | Device | Label na | me | | | Descri | ptio |
|--------------|------------------|---------------|---------------|---------------------|---|---------------------------|------|
| Label to be | Define globa | l labels as f | ollows: | | | · | |
| defined | | | D. T | 0 | | A 1 /D 1 /L | 0 |
| | Labe bInitTrg | l Name | Data Type | Class VAR GLOBAL | _ | Assign (Device/Labe M0 | 90 |
| | bBKUPTre | | Bit | VAR GLOBAL | | M1000 | |
| | bBKUPUseR | eoTre | Bit | VAR GLOBAL | | M1100 | |
| | bBKUPChkT | | Bit | VAR GLOBAL | | M1200 | |
| | bBKUPSetTr | - | Bit | VAR GLOBAL | | M1300 | |
| | bBKUPUseG | | Bit | VAR GLOBAL | - | M1400 | |
| | bBKUPUseR | elTrg | Bit | VAR_GLOBAL | - | M1500 | |
| | bBKUPExeS | topTrg | Bit | VAR_GLOBAL | - | M2000 | |
| | bBKUPExeC | mpTrg | Bit | VAR_GLOBAL | - | M3000 | |
| | bBKUPExeE | | Bit | VAR_GLOBAL | _ | M3500 | |
| | bBKUPUseL | | Bit | VAR_GLOBAL | | M3550 | |
| | bBKUPUseC | - | Bit | VAR_GLOBAL | | M4000 | |
| | bBKUPUseC | | Bit | VAR_GLOBAL | | M4100 | |
| | BKUPUseNo | | Word [Signed] | VAR_GLOBAL | | D1000 | |
| | BKUPExeCn | | Word [Signed] | VAR_GLOBAL | | D5000 | |
| | BKUPExeErr | | Word [Signed] | VAR_GLOBAL | | D5001 | |
| | BKUPUnitEr | | Word [Signed] | VAR_GLOBAL | | D5002 | |
| | BKUPDevErr | | Word [Signed] | VAR_GLOBAL | - | D5003 | |

Point

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | bInitTng M0 ITI | | | | | | F | K0 | BKUPExeCmpCnt D5000 | K4 |
|--------|--|----------------|-------------------------------------|--|-------------|--|---|-----|---|---|
| | | | | | | | | | RST | bBKUPExeCmpTrg M3000 |
| | | | | | | | | | RST | bBKUPExeErrCmpTrg M3500 |
| | | | | - | | | | | SET | bBKUPTrg M1000 |
| (9) | bBKUPTrg M1000 | | | | | | | | SET | bBKUPUseReqTrg M1100 |
| (12) | bBKUPUseReqTrg M1100 | = <u>.</u> U | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_Ne SD1361 | | | | MOV | H1070 | BKUPUseNoSetArea |
| | | | | SD1361 | | | | MOV | BKUPUseNoSetArea | D1000 RCPU.stSD.uiQSS_Backup_Restoration_Use_Autho ity_Request_No SD1360 |
| | | | | | | | | | D1000 | bBKUPUseGetTrg |
| | | | | | | | | | SET | M1400 bBKUPChkTrg |
| | bBKUPChkTrg M1200 | RCP | UstSD.uiQSS_Backup_Restoration_Use_ | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au | | | | | | M1200 bBKUPSetTrg |
| (22) | M1200 | | | RCPU.stSD.uiQSS Backup Restoration Use Au thority Acquisition No SD1361 RCPU.stSD.uiQSS Backup Restoration Use Au | HO | RCPUstSDuiQSS Backup Restoration Use | 1 | | SET | M1300 bBKUPUseLossTrg |
| | bBKUPSetTrg | <u>⇔_u</u> 107 | Authority Request No SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1361 | <u>∿_</u> u | RCPUstSD.uiQSS_Backup_Restoration_Use_ Authority_Acquisition_No SD1361 | | | SET H101 | M3550 |
| (36) | M1300 | | | | | | | MOV | | RCPU stSD uiQSS Backup Restoration Target M ule Execution Unit Setting SD1362 |
| | | | | | | | | MOV | HOFFFF | RCPU.stSD.uiQSS_Backup_Restoration_Terget_Fo er_Number_Setting SD1383 |
| | | | | | | | | MOV | HO | RCPU.stSD.uiQSS_Backup_Restoration_Target_Se ing_Target_Module SD1384 |
| | | | | | | | | MOV | KI | RCPU.stSD.uiQSS_Backup_Restoration_Target_Se ing_Target_Device_1 SD1385 |
| | - | | | | | | | MOV | KO | RCPU.stSD.uiQSS_Backup_Restoration_Target_Se ing_Target_Device_2 SD1386 |
| | - | | | | | | | MOV | H0 | RCPU.stSD.ulQSS_Backup_Restoration_Operation Setting SD1367 |
| | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Request SM1361 |
| (51) R | CPU.stSM.biQSS_Backup_Norm al_Completion SM1362 ITI | | | | | | | | SET | bBKUPExeCmpTrg M3000 |
| | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup, Restoration_Execution_Status.uNu mber_of_Normal_Completed_Devices SD 1372 | BKUPExeCmpCnt D5000 |
| (56) R | CPU.stSM.biQSS_Backup_Error_ Completion SM1363 | | | | | | | | SET | bBKUPExeErrCmpTrg M3500 |
| | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup, Restoration, Execution, Status.JNu mber of Error, Completed_devices SD1373 | BKUPExeErrCmpCnt D5001 |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause SD1376 | BKUPUnitErn D5002 |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_ Gause \$D1377 | BKUPDevErr D5003 |
| (65) | bBKUPExeCmpTrg M3000 | | | | | | | | RST | blnitTrg M0 |
| | bBKUPExeErrCmpTrg M3500 | | | | | | | | RST | bBKUPTrg |
| | Ifl. | | | | | | | | RST | M1000 bBKUPUseReqTrg |
| | | | | | | | | | RST | M1100 bBKUPChkTrg |
| | | | | | | | | | RST | M1200 bBKUPSetTrg |
| | | | | | | | | | | M1300 bBKUPUseCancelTrg |
| | bBKUPExeStopTrg | | | | | | | | SET | M4000 RCPU.stSM.biQSS_Backup_Restoration_CanceLR |
| (75) | M2000 | | | | | | | | SET | uest SM1367 bBKUPUseCancelStpTrg |
| | | | | | | | | | SET | M4100 |
| | bBKUPUseCancelTrg | | | | | | | | RST | bBKUPExeStopTrg M2000 |
| (80) | M4000 | | | | | | | MOV | HO | RCPUstSD uiQSS Backup Restoration Use Auth ity Request No SD1360 |
| | bBKUPUseCancelStpTrg M4100 | | | | | | | | SET | bBKUPUseReITrg M1500 |
| | - | | | | | | | | RST | bBKUPUseCancelTrg M4000 |
| T | | | | | | | | | RST | bBKUPUseCancelStpTrg M4100 |
| (89) | bBKUPUseGetTrg M1400 | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoration_Use_Auth ity_Request SM1380 |
| | bBKUPUseReITrg M1500 | | | | | | | | RST | bBKUPUseGetTrg M1400 |
| | | | | | | | | | RST | bBKUPUseRelTrg M1500 |
| (96) | | | | | | | | | | (END) |

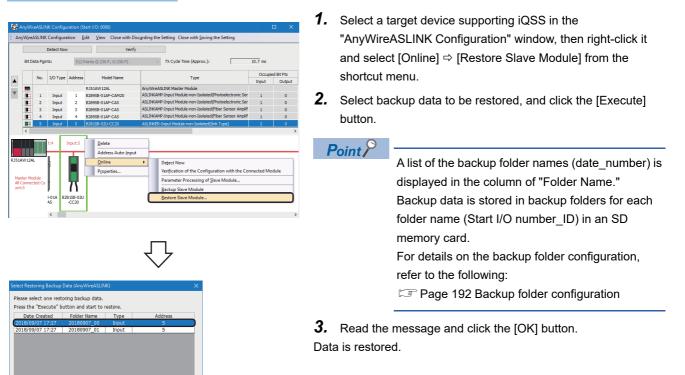
[Initialization]

- Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Requesting backup right to use] (9) Store the right-to-use number. Set a right-to-use request. Set the backup right-to-use confirmation trigger. [Checking backup right to use] Set the backup setting and starting trigger. (22) Display the right-to-use acquisition failure. [Setting and starting data backup] (36) Set the target module/execution unit. Set the target folder number. Set the target module. Set the target device 1. Set the target device 2. Set the data backup operation setting (on error). Set the backup request. [Checking data backup execution] (51) Display the normal completion. Save the number of normally completed devices. (56) Display the abnormal completion.
- Save the number of devices completed with an error. Save the error cause in a module. Save the backup error cause in a device.
- [Enabling the next data backup process](65) Clear the initialization trigger.
 - Clear the backup execution trigger. Clear the backup right-to-use request trigger. Clear the backup right-to-use confirmation trigger. Clear the backup setting and starting trigger.
- [Setting for cancelling the process]
- (75) Set the backup cancellation request.
- [Releasing backup right to use]
- (80) Set the backup right-to-use release trigger.
- [Updating backup right to use]
- (89) Set the backup right-to-use request.

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each ID by using an engineering tool.

Operating procedure



Considerations for data restoration

Cancel

Setting the restoration setting

Execute

The initial value of the restoration setting (SD1367) is as follows:

Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (FP Page 205 Program execution for data restoration)

Program execution for data restoration

Information in an SD memory card can be restored to a device supporting iQSS.

Select a backup folder to be restored. In the data restoration, information such as a model name or device version in the system file (\$BKUP_UNIT_INF.BSI) created with backup is compared with that of a device supporting iQSS. If the information is mismatched, a restoration error will occur.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to restore data with a program.

| Procedu re | Item | Reference | | | |
|---------------|---|--|--|--|--|
| 1 | Acquire a right to use. | Page 205 Acquiring a right to use | | | |
| 2 | Set the restoration target setting and the operation setting. | Page 206 Setting the restoration setting | | | |
| 3 | Perform a data restoration. | Page 207 Performing a data restoration | | | |
| 4 | Release the right to use. | Page 207 Releasing the right to use | | | |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (See Page 410 Event List)

Execution method of data restoration

Special relays (SM) and special registers (SD) are used for data restoration.

Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data restoration. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

Setting the restoration setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|--------------------|---|
| 1H: AnyWireASLINK | Set this to specify a device supporting iQSS which is connected to the AnyWireASLINK master module. |

2. Setting an execution unit

Set a unit to specify the range of data to be restored at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | cription | | | |
|-----------------|--|--|--|--|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the AnyWireASLINK master module with the specified start I/O number. | | | |
| 2H: ID unit | Set this to specify the device supporting iQSS with the specified ID number among the devices which are connected to the AnyWireASLINK master module with the specified start I/O number. | | | |

3. Selecting a folder for data restoration

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--------------------------------------|--|
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name to be restored. |

4. Setting a target device

· Setting a module

When '1H' (module unit) is set for the execution unit, set a start I/O number to SD1364 (iQ Sensor Solution data backup/ restoration target setting (target module)).

In a multiple CPU system, only the AnyWireASLINK master module controlled by a host CPU can be backed up. Data backup cannot be performed for non-controlled modules.

| Target device (Module) | Description |
|----------------------------|--|
| 0 to FFH: Start I/O number | Set the start I/O number (the value obtained by dividing the start I/O number by 16) of the AnyWireASLINK master module which is connected to a target device supporting iQSS. |

Setting an ID number

When '2H' (ID unit) is set for the execution unit, set an ID number to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)).

For details on the setting method of an ID number, refer to the manual of the AnyWireASLINK device used.

| Target device (ID number) | Description | | | | | |
|---------------------------|---|--|--|--|--|--|
| 0 to 9999: ID number | Set the ID number of a target device supporting iQSS based on its address. ID number of a bit slave module: Set the number based on its address (0 to 254). ID number of a word slave module: Set the number based on its address (0 to 510). | | | | | |

5. Setting the operation setting when a data restoration error occurs

Set the operation to be performed when the data restoration fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices. |
| 1H: Stop | Set this to stop a data restoration if it fails on some devices. |

■Performing a data restoration

Turn ON SM1364 (iQ Sensor Solution restoration request) to request a data restoration.

Data is restored after a data restoration request.

SM1364 is turned OFF when a data restoration is completed.

1. Checking the execution status of a data restoration

The execution status of a data restoration can be checked with the following special register areas.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data restoration

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data restoration.

A cancellation is performed for each device supporting iQSS, so it will be canceled when a data restoration which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data restoration

When a data restoration is completed, the restoration completion status can be checked with the following special relays.

- Normally completed: SM1365 (iQ Sensor Solution restoration normal completion) is turned ON.
- Abnormally completed: SM1366 (iQ Sensor Solution restoration abnormal completion) is turned ON.

4. Checking a data restoration error

Even if a data restoration to a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a module such as a CPU module or AnyWireASLINK master module can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1381: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

■Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON. The right to use is released and the next data restoration is ready to be performed.

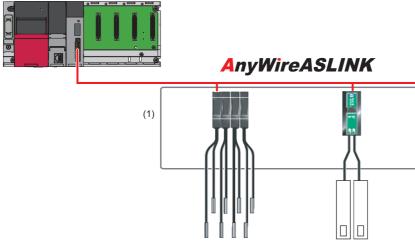
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data restoration

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



(1) Restoration target

- Target module type: AnyWireASLINK
- Execution unit: Module
- Folder number setting: 0
- Target device (target module): Start I/O No.0
- Target device (ID number): 1
- Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following: MELSEC iQ-R Programming Manual (Program Design)

| Description | | |
|--|--|--|
| | | |
| | | |
| | | |
| | | |
| Backup/restoration cancellation request | | |
| Backup/restoration right-to-use request number | | |
| Backup/restoration right-to-use acquisition number | | |
| Backup/restoration target module, execution unit setting | | |
| etting | | |
| rget module) | | |
| Backup/restoration target setting (target device 1) | | |
| Backup/restoration target setting (target device 2) | | |
| | | |
| Backup/restoration execution status (total number of target devices) | | |
| (total number of been completed | | |
| (total number of been completed with | | |
| (progress per | | |
| etting | | |
| module | | |
| device | | |
| Backup/restoration error target module, execution unit information | | |
| Backup/restoration target folder number information | | |
| (target module) | | |
| mation (target | | |
| mation (target | | |
| | | |

| Categor | Device | Label nam | е | | | | Des |
|------------|------------------|------------------|---------------|----------------|---|--------------------|-----|
| у | | | | | | | |
| abel to be | Define globa | l labels as foll | ows: | | | | |
| defined | 2 chille globe | | | | | | |
| denned | Lab | el Name | Data Type | Class | | Assign (Device/Lab | el) |
| | bInitTre | | Bit | VAR_GLOBAL | • | MO | |
| | bRSTRTrg | | Bit | VAR_GLOBAL | - | M1010 | |
| | bRSTRUseR | eqTrg | Bit | VAR_GLOBAL | - | M1110 | |
| | bRSTRChkT | g | Bit | VAR_GLOBAL | • | M1210 | |
| | bRSTRSetTr | ţ. | Bit | VAR_GLOBAL | • | M1310 | |
| | bRSTRUseG | etTrg | Bit | VAR_GLOBAL | | M1410 | |
| | bRSTRUseR | elTrg | Bit | VAR_GLOBAL | | M1510 | |
| | bRSTRExeSt | opTrg | Bit | VAR_GLOBAL | | M2010 | |
| | bRSTRExeC | npTrg | Bit | VAR_GLOBAL | | M3010 | |
| | bRSTRExeEr | | Bit | VAR_GLOBAL | | M3510 | |
| | bRSTRUseLo | ssTrø | Bit | VAR_GLOBAL | | M3555 | |
| | bRSTRUseC | ancelTrg | Bit | VAR_GLOBAL | | M4010 | |
| | bRSTRUseC | ancelStpTrg | Bit | VAR_GLOBAL | | M4110 | |
| | RSTRUseNo | SetArea | Word [Signed] | VAR_GLOBAL | • | D1010 | |
| | RSTRExeCm | pCnt | Word [Signed] | VAR_GLOBAL | • | D5010 | |
| | RSTRExeErr | OmpOnt | Word [Signed] | VAR_GLOBAL | • | D5011 | |
| | RSTRUnitErr | | Word [Signed] | VAR_GLOBAL | | D5012 | |
| | RSTRDevErr | | Word [Signed] | VAR_GLOBAL | - | D5013 | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | blnitTrg M0 | | | | | | FMOV | КО | RSTRExeCmpCnt D5010 | K4 |
|--------|---|------------|---------------------------------------|--|-------|---|------|-----|---|---|
| | | | | | | | | | RST | bRSTRExeCmpTrg M3010 |
| | | | | | | | | | RST | bRSTRExeErrCmpTrg M3510 |
| | | | | | | | | | SET | bRSTRTrg M1010 |
| (9) | bRSTRTrg M1010 | | | | | | | | SET | bRSTRUseReqTrg M1110 |
| (12) | bRSTRUseReqTrg M1110 | = <u>U</u> | HO | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1361 | | | | MOV | H10B0 | RSTRUseNoSetArea |
| | 1 | | | SD1361 | | | | MOV | RSTRUseNoSetArea | D1010 RCPU.stSD.uiQSS.Backup.Restoration_Use_Authority Request_No SD1300 |
| | | | | | | | | | D1010 SET | bRSTRUseGetTrg |
| | | | | | | | | | SET | M1410 bRSTRChkTrg |
| | bRSTRChkTrg M1210 | | RCPU.stSD.uiQSS_Backup_Restoration_Us | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au | | | | | | M1210 |
| (22) | | ÷.U | | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1361 RCPU.stSD.uiQSS_Backup_Restoration_Use_Au | HO | RCPU stSD uiQSS Backup Restoration Use | | | SET | M1310 bRSTRUseLossTrg |
| | bRSTRSetTrg | o_u | e Authority Request No SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1361 | o'n w | RCPU.stSD.uiQSS_Backup_Restoration_Use_ Authority_Acquisition_No SD1361 | | | SET H101 | M3555 |
| (36) | M1310 | | | | | | | MOV | | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module _Execution_Unit_Setting |
| | | | | | | | | MOV | KO | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_ Number_Setting SDT363 |
| | | | | | | | | MOV | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting Target_Module SD1364 |
| | | | | | | | | MOV | KI | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting Target_Device_1 SD1365 |
| | | | | | | | | MOV | КО | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting Target_Device_2 SD1366 |
| | | | | | | | | MOV | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Set ting SD1367 |
| | | | | | | | | | SET | RCPU.stSM.biQSS_Restoration_Request SM1364 |
| (51) R | CPU.stSM.biQSS_Restoration_ Normal_Completion SM1365 | 1 | | | | | | | SET | bRSTRExeCmpTrg M3010 |
| | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber of_Normal_Completed_Devices SD1372 | RSTRExeCmpCnt D5010 |
| (56) | ICPU.stSM.biQSS_Restoration_ Error_Completion SM1386 ITI | | | | | | | | SET | bRSTRExeErrCmpTrg M3510 |
| | | | | | | | | MOV | RCPU.stSD.stiOSS_Backup_Restoration_Execution_Status.uNumber of_Error_Completed_devices SDI373 | RSTRExeErrCmpCnt D5011 |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause SD1376 | RSTRUnitErr D5012 |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Caus | |
| (65) | bRSTRExeCmpTrg M3010 | | | | | | | | RST | binitTrg M0 |
| | bRSTRExeErrCmpTrg M3510 | | | | | | | | R\$T | bRSTRTrg MI010 |
| | m | | | | | | | | RST | bRSTRUseReqTrg |
| | | | | | | | | | RST | M1110 bRSTRChkTrg |
| | | | | | | | | | RST | M1210 bRSTRSetTrg |
| | | | | | | | | | | M1310 |
| | bRSTRExeStopTrg | L | | | | | | | SET | M4010 RCPU.stSM.biOSS_Backup,Restoration_Cancel_Reque |
| (75) | M2010 | | | | | | | | SET | SM1367 |
| | | | | | | | | | SET | M4110 bRSTRExeStopTrg |
| | bRSTRUseCancelTrg | | | | | | | | RST | M2010 |
| (80) | M4010 | | | | | | | MOV | НО | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority Request_No SD1360 |
| | M4110 | | | | | | | | SET | bRSTRUseReiTrg M1510 |
| | | | | | | | | | RŠT | bRSTRUseCancelTrg M4010 |
| | | | | | | | | | RST | bRSTRUseCancelStpTrg M4110 |
| (89) | bRSTRUseGetTrg M1410 | | | | | | | | SET | RCPU.stSMbiQSS_Backup.Restoration_Use_Authority Request SM1360 |
| | bRSTRUseRelTrg M1510 | | | | | | | | RST | bRSTRUseGetTrg M1410 |
| | | | | | | | | | RST | bRSTRUseRelTrg M1510 |
| (96) | | | | | | | | | | (END)- |

[Initialization]

| • | |
|-----------|--|
| (0) | Initialize the execution result. |
| | Initialize the normal completion display. |
| | Initialize the abnormal completion display. |
| | Set the restoration execution trigger. |
| [Reques | ting restoration right to use] |
| (9) | Store the right-to-use number. |
| | Set a right-to-use request. |
| | Set the restoration right-to-use confirmation trigger. |
| [Checkir | g restoration right to use] |
| (22) | Set the restoration setting and starting trigger. |
| | Display the right-to-use acquisition failure. |
| [Setting | and starting data restoration] |
| (36) | Set the target module/execution unit. |
| | Set the target folder number. |
| | Set the target module. |
| | Set the target device 1. |
| | Set the target device 2. |
| | Set the data restoration operation setting (on error). |
| | Set the restoration request. |
| - | g data restoration execution] |
| (51) | Display the normal completion. |
| () | Save the number of normally completed devices. |
| (56) | Display the abnormal completion. |
| | Save the number of devices completed with an error. Save the error cause in a module. |
| | Save the restoration error cause in a device. |
| Enablin | g the next data restoration process] |
| - | |
| (65) | Clear the initialization trigger. Clear the restoration execution trigger. |
| | Clear the restoration right-to-use request trigger. |
| | Clear the restoration right-to-use confirmation trigger. |
| | Clear the restoration setting and starting trigger. |
| [Setting] | for cancelling the process] |
| | Set the restartion concellation request |

- (75) Set the restoration cancellation request.
- [Releasing restoration right to use]
- (80) Set the restoration right-to-use release trigger.
- [Updating restoration right to use]
- (89) Set the restoration right-to-use request.

8 CC-Link

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC iQ-R series connected to CC-Link.

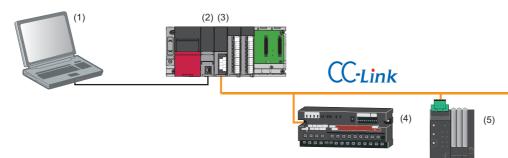
Refer to this chapter for series other than MELSEC iQ-R series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for CC-Link using the following system configuration.



| Тур | e | | Model name | Manufacturer | | |
|-----|------------------------------------|---|--|--|--|--|
| (1) | Engineering tool | GX Works3 | SWnDND-GXW3 ('n' indicates its version.) | Mitsubishi Electric Corporation | | |
| (2) | CPU module | RCPU | R08CPU | | | |
| (3) | CC-Link system master/local module | | RJ61BT11 | | | |
| (4) | Analog input module (voltag | e/current input) | AJ65SBT2B-64AD | | | |
| (5) | CC-Link sensor supporting iQSS | Communication unit for CC-Link | SC-GU3-01 | Panasonic Industrial Devices SUNX Co., Ltd. | | |
| | | Head-separated dual display digital pressure sensor | DPS-401 | | | |
| | | Digital fiber sensor | FX-501 | | | |
| | | Digital laser sensor | LS-403 | | | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for CC-Link, refer to the following:

 $\ensuremath{\boxtimes}$ Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set module parameters and other settings required for communication with a device supporting iQSS.

Before using iQ Sensor Solution functions

Link refresh setting (module parameter)

Some iQ Sensor Solution functions cannot be performed if devices to refresh the data of remote input (RX), remote output (RY), remote register (RWr), and remote register (RWw) are not set.

Set devices used to data refresh in advance.

For setting devices used to data refresh, refer to the following:

MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)

Checking the selection status of "Detect Now Setting" (LHCPUs only)

The model name of a slave station can be read only when "Read the Model Name of the Slave Stations" is selected for the following parameter item of a CC-Link system master/local module.

• "Application Settings" ⇒ "Detect Now Setting"

Check that "Read the Model Name of Slave Stations" is selected, and write the parameters to a CPU module in advance. If it is not selected, change the setting and write the parameters to a CPU module.

Including a device connected to a communication module as a target

Some or all remote registers of a target device are used in a system while performing an iQ Sensor Solution function. Therefore, add "Remote register use prohibited status (SW0160 to SW0163)" to the interlock when creating a program.

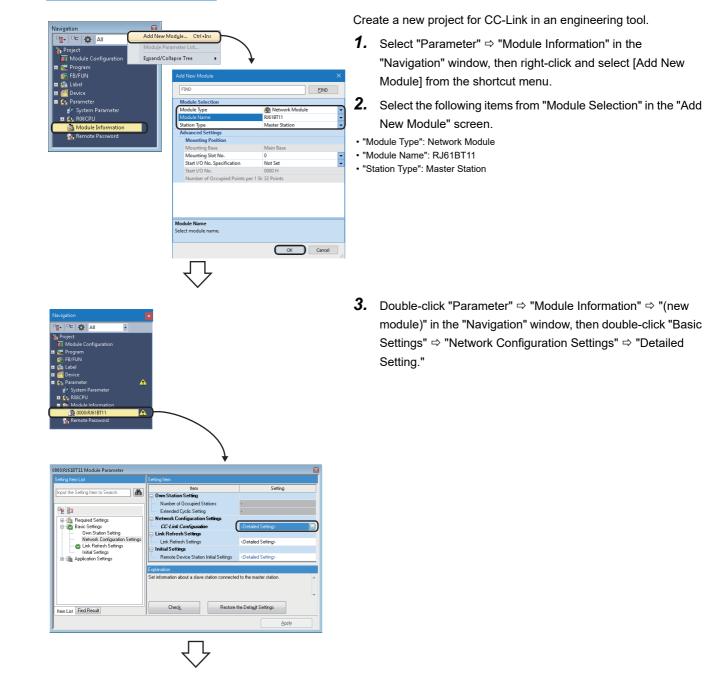
8.1 Detecting Devices Supporting iQSS Automatically

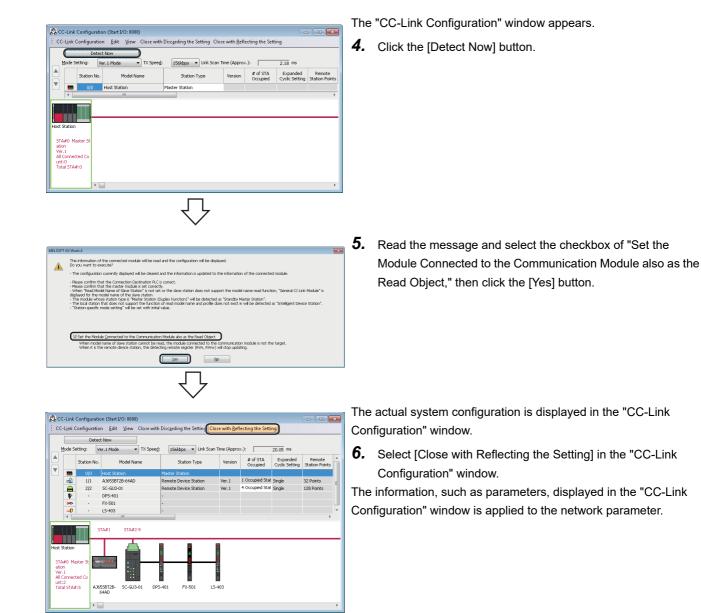
A slave station connected to a CC-Link system master/local module can be detected and the information can be displayed in the "CC-Link Configuration" window.

For the creation method of a new project and the operation methods of the "CC-Link Configuration" window, refer to the following:

GX Works3 Operating Manual

Operating procedure





Considerations when detecting devices supporting iQSS

Mode setting and transmission rate

Once an automatic detection of connected devices is performed, the mode setting and the transmission rate which have been set in a CC-Link system master/local module are also detected.

■Operation on error

The system configuration cannot be detected if an error occurs on the master station.

Take corrective actions and perform an automatic detection of connected devices again.

Error information is displayed in the "Output" window when an error occurred.

Double-click the information and correct the error at the jumped destination.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

Display of "Module With No Profile Found"

When "Module with No Profile Found" is displayed, it can be changed to "General CC-Link Module" by the following operation: Select a target module, and select [CC-Link Configuration] \Rightarrow [Change Module] \Rightarrow [Change to General CC-Link Module].

■Non-sequential station number of slave stations

When an automatic detection of connected devices is performed in a system configuration in which the station numbers of slave stations are not sequential, a general-purpose remote I/O station is automatically set for a station without a station number as a reserved station.

Arrange the stations and change the modules in accordance with the actual module configuration.

Display of "General Module"

After performing an automatic detection of connected devices, a reserved station and a station which is not included in the module parameter are displayed as "General Module."

In that case, turn the power OFF, and ON again in the order from the slave station to the master station. Then, perform an automatic detection of connected devices again.

System configuration change

When a system configuration is changed (stations are added or changed), a slave station may not be detected. In that case, turn the power OFF, and ON again in the order from the slave station to the master station. Then, perform an automatic detection of connected devices again.

Standby master station in a system configuration

When a standby master station is included in a system configuration, the last station number is set for the station. Change the station number in accordance with the actual system configuration.

■Operation switching from the standby master operation to the master operation

When the standby master operation is switched to the master operation, a station whose operation is switched to the master operation will not be detected.

In that case, turn the power OFF, and ON again in the order from the standby master station to the master station. Then, perform an automatic detection of connected devices again.

■Use of the function via Ethernet

To perform an automatic detection of connected devices, connect a built-in Ethernet port CPU with an Ethernet cable. An automatic detection of connected device cannot be performed when connecting to an RJ71EN71 or RnENCPU (network part).

■Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

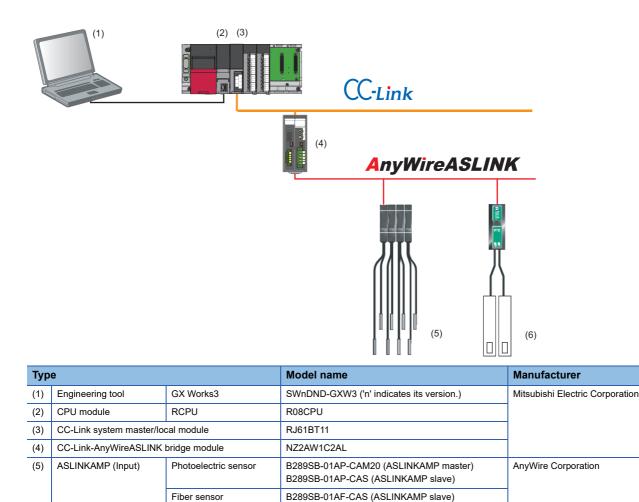
Detecting devices connected to a bridge module (NZ2AW1C2AL)

To display devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL), on a system configuration diagram, first a bridge module (NZ2AW1C2AL) needs to be detected in the "CC-Link Configuration" window. Then, perform an automatic detection of connected devices in the "AnyWireASLINK Configuration" window in order to detect and display devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL).

For the considerations when detecting devices supporting iQSS connected to a bridge module (NZ2AW1C2AL), refer to the following:

IP Page 221 Considerations when detecting devices connected to a bridge module

System configuration



B289SB-01AF-CAS (ASLINKAMP slave)

B281SB-02U-CC20

ASLINKER (Input)

(6)

Setting the operation mode for CC-Link Ver.2-compatible slave station

A bridge module (NZ2AW1C2AL) is a CC-Link Ver.2-compatible slave station.

To detect and display a bridge module (NZ2AW1C2AL) on a system configuration diagram, set the operation mode in which CC-Link Ver.2-compatible slave station works.

The following table shows the combinations of the parameter setting for a CC-Link system master/local module and the CC-Link operation mode for a bridge module (NZ2AW1C2AL).

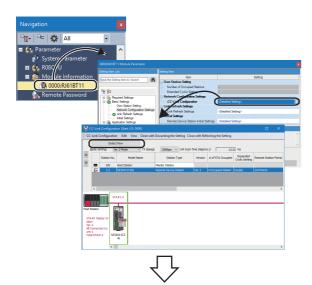
| CC-Link system master/local mode | Bridge module (NZ2AW1C2AL) | |
|----------------------------------|---|----------|
| Parameter setting item | CC-Link operation mode | |
| Mode | Node Station information (station type) | |
| Remote net Ver.2 mode | Ver.2 remote device station | Ver.2.00 |
| Remote device net Ver.2 mode | | |

For the information of the version and mode of CC-Link, refer to the following:

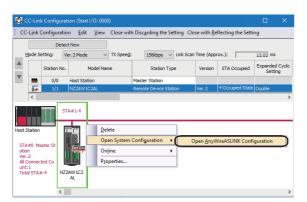
MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)

CC-Link-AnyWireASLINK Bridge Module User's Manual

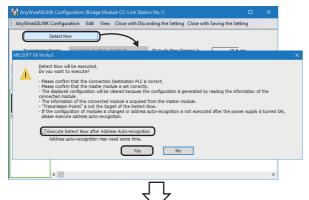
Operating procedure



 Detect and display a bridge module (NZ2AW1C2AL) in the "CC-Link Configuration" window.



2. Select a bridge module (NZ2AW1C2AL), then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.



The "AnyWireASLINK Configuration" window appears.

- **3.** Click the [Detect Now] button.
- **4.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Autorecognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

| | _ | _ | | | | Discarding the Setting | | |
|-------|------|-----------------|------------|------------|--------------------|---|-----------|--------------|
| | _ | | Detect Nov | r . | | | | |
| Tr | ansm | issi <u>o</u> n | Points: | 512 Points | (I:256 P, O:256 P) | V TX Cycle Time (Approx.): 10.6 ms | | |
| . [| | No. | I/O Type | | Model Name | Type | # of Occu | pied Bit Pts |
| | | NO. | 1/O Type | AUGress | Hodel Name | type | Input | Output |
| | 64 | | | | NZ2AW1C2AL | CC-Link-AnyWireASLINK Bridge Module | | |
| 1 | | 1 | Input | 1 | 828958-01AP-CAM20 | ASLINKAMP-Input Module-non-Isolated(Photoelectronic Sensor Amplifier) | 1 | 0 |
| 1 | | 2 | Input | 2 | 828958-01AP-CAS | ASLINKAMP-Input Module-non-Isolated(Photoelectronic Sensor Amplifier) | 1 | 0 |
| 1 | | 3 | Input | 3 | 828958-01AF-CAS | ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplifier) | 1 | 0 |
| 1 | | 4 | Input | 4 | 828958-01AF-CAS | ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplifier) | 1 | 0 |
| 1 | | 5 | Input | 5 | 828158-02U-CC20 | ASLINKER-Input Module-non-Isolated(Sink Type) | 2 | 0 |
| | | | | | | | | |
| | Mod | | Input: | 1 Ir | put:2 Input:3 | trput-1 trput-5 | | |
| ridge | Mod | ule | | 11A 828 | put:2 Input:3 | trput-1 trput-5 E2056-01A E2058-02J F-C4S CC20J | | |

The actual system configuration is displayed in the "AnyWireASLINK Configuration" window.

 Select [Close with Saving the Setting] in the "AnyWireASLINK Configuration" window.

The setting of the "AnyWireASLINK Configuration" window is saved and the window is closed.

Considerations when detecting devices connected to a bridge module

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), configure the settings required for communication (such as an address and device parameters) in advance. Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission

points set for a bridge module (NZ2AW1C2AL).

For details on the address setting, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

Settings in the "AnyWireASLINK Configuration" window

After performing an automatic detection of connected devices, the settings of a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL) are not saved until [Close with Reflecting the Setting] is selected in the "CC-Link Configuration" window.

Make sure to select [Close with Reflecting the Setting] in the "CC-Link Configuration" window after selecting [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

■Operation on error

A system configuration may not be detected if an error occurs on a bridge module (NZ2AW1C2AL).

If an error code is displayed, take corrective actions by referring to the manual for a bridge module (NZ2AW1C2AL), then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- · Input or I/O combined slave module: "Input"
- Output slave module: "Output"

■Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

8.2 Verifying Devices Supporting iQSS Against System Configuration

Devices supporting iQSS can be verified against a system configuration displayed in a configuration window.

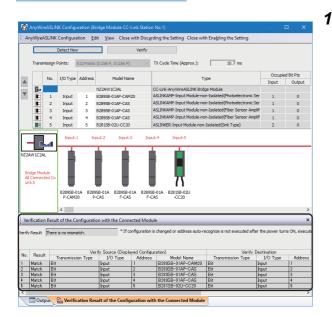
Verifying devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) against a system configuration

Devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) can be verified against a system configuration displayed in the "AnyWireASLINK Configuration" window.

The result is displayed in the "Verification Result of the Configuration with the Connected Module" window.

Verify a system configuration when it is manually created or edited.

Operating procedure



 Verify devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL), against a system configuration in the "AnyWireASLINK Configuration" window. (Is Page 184 Verifying Devices Supporting iQSS Against System Configuration)

Considerations

Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1C2AL).

For details on the address setting, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

8.3

Reading/Writing Parameters from/to Devices Supporting iQSS

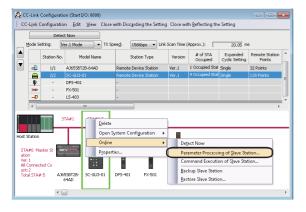
Parameters can be read from and written to a slave station.

Point P

- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (
 Page 230 Backing up/Restoring Data of Devices Supporting iQSS)
- The useful function (command execution to slave stations) can also be used in the "CC-Link Configuration" window. (See Page 370 Useful Functions)

Operating procedure

Reading parameters



 Select a target device supporting iQSS in the "CC-Link Configuration" window, then right-click it and select [Online]

 ⇒ [Parameter Processing of Slave Station] from the shortcut menu.

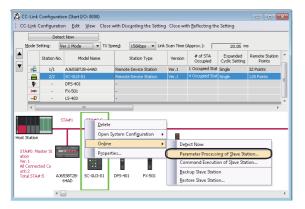
| ameter Processing of Slave Station | | | | | | | |
|--|----------------------------------|--------------------------|-------|-----------------|--------|-----------------|---|
| rget Module Information: SC-GU3-01 Start 1/O M | I,DPS-401,FX-5 No.:0000 - Sta | 501,LS-403 tian No.:2 | | | | | |
| thod selection: Get_Parameter_Uni Set_Parameter_Uni Parameter Infig Get_Parameter_Uni Checked parar Get_Parameter_Uni Selector_Parameter_Uni | 11 12 12 | | | | | | |
| Name | Initial Value | Unit Read Value | Unit | Write Value | Unit | Setting Range | Description |
| Module 1 Display setup | | | 1 | | | | |
| Module 1_Detection_Value Module 1_DisplayMode Module 1_DisplayMode Module 1 Eco | Pressure_l | | | | | -1013 to 1051 | I acquire an indication level displayed by a fib 0:Pressure level, 2:Peak&Bottom hold 0:ECO OFF, 1:ECO ON, 2:Manual, 3:Full |
| Module 1 Hold | CFF | | - | | | | 0:Peak/bottom value in the digital display refi |
| Module 1_DisplayLock | OFF | | | | | | O:Display lock OFF, 1:Display lock ON |
| Module 1_HoldValueClear | 0x0000 | | | | | 0x0000 | I clear the peak value and a bottom value ma |
| Modele 1_Basic_setup | | | | | | | |
| Module 1_Threshould_OU | | | | | | | A set range of the threshold changes by pre- |
| Module 1_Threshould_OU | | | | | | | A set range of the threshold changes by pre- |
| Module 1_Threshould_OU | | | · | | - | -1013 to 1051 | A set range of the threshold changes by pre- |
| Clear All "Bead Value" | | Glear | AL "W | rite Value" | | | |
| Process Option | | | | | | | |
| | | There is no | optio | n in the select | ed pro | cess. | |
| -The refreshed device values of rem | | | | | | | |
| Accesses the PLC CPU by using the -Process is executed according to th -For information on items not display | e parameters | written in the PLC C | PU. | | | roblem with the | connection destination. |
| | | | | | | | |
| | | | | | | | Egecute |

The "Parameter Processing of Slave Station" screen appears.

- 2. Select a target to be read.
- **3.** Select a parameter to be read.
- **4.** Click the [Execute] button.

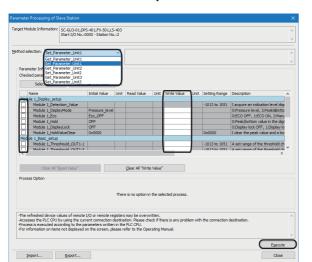
The selected parameter is read and the value is displayed in the column of "Read Value."

Writing parameters



 Select a target device supporting iQSS in the "CC-Link Configuration" window, then right-click it and select [Online]

 ⇒ [Parameter Processing of Slave Station] from the shortcut menu.



The "Parameter Processing of Slave Station" screen appears.

- **2.** Select a target to be written.
- **3.** Select a parameter to be written.
- 4. Enter a value in the column of "Write Value."
- **5.** Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

Considerations

Refresh setting

When the refresh setting differs from that of an actual module, the parameter processing of a slave station cannot be performed.

■Operation after writing parameters

When parameters of a slave station are written, the slave station operates according to the parameters; therefore, note that the slave station may change its operation.

For details on parameters, refer to the manual for a slave station used.

A blank in "Write Value"

"Parameter write" cannot be executed if there is even one blank in "Write Value."

■Operation on error

If a module being used has an error, parameters of slave stations may not be read/written properly. Take corrective actions and read/write parameters again.

Reading/writing parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL)

Parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) can be read and written.

Operating procedure

| Detect Now | » | 'erify | | | | | | | |
|--|---|---|---|-------------------|-------------------|---|---------------|---------------------------------------|---|
| mission Points: 512 | Points (I:256 P, O:256 P) | TX Cycle Tin | e (Approx.): | 10.7 ms | | | | | |
| No. I/O Type Ad | tress Model Name | | Type | | | ied Bit Pts | | | |
| | NZ2AW 1C2AL | CC-Link-Any | WireASLINK Bridge I | Module | Input | Output | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| ٠ | | | | | | | | | |
| sule | | | | | | | | | |
| ted Co | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| < | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| r Processing of S | lave Module | | | | | | | | > |
| in roccissing or s | iore module | | | | | | | | |
| odule Information: | I/O Type: Input | | | | | | | | ~ |
| | Address: 2 | | | | | | | | |
| | Type Name: ASLINKAN Model Name: B289SB-I | | -non-Isolated(F | hotoelectronic | Sensor Amplifier |) | | | |
| | Producting D200000 | on cho | | | | | | | |
| | | | | | | | | | |
| alastian. | | | | | | | | | |
| election: Parame | ter read | ~ Mo | dule parameter: | s of the target r | nodule will be re | ad. | | | ^ |
| Folding | ter read | ~ Mo | dule parameter: | s of the target r | nodule will be re | ad. | | | |
| Parame | | ∼ Mo | dule parameters | s of the target r | nodule will be re | ad. | | | |
| Parame | ter read | | dule parameter: | | nodule will be re | ad. | | | |
| Parame Parame Parame Parame Item | ter read ter write Parameter Name | | Initial Value | Read Value | nodule will be re | Setting Range | Unit | Desc | |
| Parame Pa | Parameter Name Parameter Name 1 Threshold | | Initial Value | | | Setting Range 0 to 100 | Unit | Desc | |
| Parame Parame Parame Parame Paramete Module Paramete Module Paramete | Parameter Name Parameter Name 1 Threshold 2 Hysteresis | | Initial Value 50 5 | | | Setting Range 0 to 100 0 to 100 | Unit | Desc | ~ |
| Parame Parame Parame Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Threshold Hysteresis High Level of Al | Jarm Threshold | Initial Value 50 5 80 | | | Setting Range 0 to 100 0 to 100 0 to 100 | Unit | Desc | |
| meter Information Item Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Threshold High Level of Al Low Level of Al | Jarm Threshold | Initial Value 50 5 80 20 | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | |
| Parame Parame meter Information Item Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Threshold Hysteresis High Level of Al Low Level of Al Al Arm Setting T | Jarm Threshold larm Threshold limer | Initial Value 50 5 80 20 50 | | | Setting Range 0 to 100 0 to 100 0 to 100 | Unit 100ms | Desc | |
| Parame Parame Parame Parame Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Threshold Threshold Threshold They are the the the the the the the the the th | larm Threshold larm Threshold limer n | Initial Value 50 5 80 20 50 DarkOnSep | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | |
| Recomposition Recomp | Parameter Name Parameter Name 1 Threshold 2 Hysteresis 3 High Level of Al 5 Alarm Setting T 6 LightOn DarkOr 7 Change Operat | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Parame Parame Parame Parame Paramete Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Threshold Threshold Terresis High Level of Al Low Level of Al Low Setting T G LightOn DarkOr Change Operat Change Operat Change Sensor | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | |
| Parame Parame Parame Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Thrreshold Thrreshold Threshold Add Low Level of Al Adam Setting T Adam Setting T Change Operat Change Sensor 9 - 9 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | |
| Parame Parame Parame Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name Threshold Parameter Name High Level of Al High Level of Al Alarm Setting T Alarm Setting T Change Operat Change Sensor 9 - 10 - 11 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Paramite Parame Parame Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name 1 Threshold 2 Hysteresis 3 High Level of Al 4 Lov Level of Al 4 Lov Level of Al 5 Alarm Setting T 6 LightCh DarkO 7 Change Operat 8 Change Sensor 9 - 10 - 11 - 12 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | |
| Paramete Paramete Paramete Module Paramete Module Paramete | los read Parameter Name 1 Threshold 2 Hysteresis 3 High Level of Al 4 Low Level of Al 5 Alarm Setting 6 Lightho DarkO 7 Change Operat 8 Change Sensor 9 - 10 - 11 - 12 - 13 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Paramete Paramete Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete Module Paramete | Parameter Name Parameter Name 1 Threshold 2 Hypteresis 3 High Level of A Low Level of A Low Level of A 5 Alarm Section 3 7 Change Operation 3 8 Change Operation 3 10 - 11 - 12 - 13 - 14 - 13 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Item Module Paramete Module Paramete | Iter read Parameter Name 1 Threshold 2 Hyptereids 3 High Level of Al Low Level of Al Low Level of Al 5 Alarm Sector of Al 7 Change Operat 8 Change Operat 70 - 10 - 11 - 12 - 13 - 14 - 15 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Module Paramete Module Paramete | Parameter Name Parameter Name 1 Threshold 2 Hypteresis 3 High Level of A Low Level of A Low Level of A Low Level of A Low Level of A 10 - 11 - 12 - 13 - 14 - 15 - 16 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Paramete Paramete Module Paramete Module Paramete | Iter read Parameter Name 1 Threshold 2 Hyptereids High Level of Al Low Level of Al 5 Alsm Schwick Status 7 Change Operat 8 Change Operat 9 11 12 13 14 15 15 16 17 | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Module Paramete Module Paramete | Immersion Parameter Name. 1 Threshold 2 Hysteresis 3 High Level of All 3 High Level of All 5 Alarm Settory 6 Laythor DarkOr 7 Change Operat 8 Change Operat 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | ~ |
| Parameter Per ante Per ante Pe | Immersion Parameter Name. 1 Threshold 2 Hysteresis 3 High Level of All 3 High Level of All 5 Alarm Settory 6 Laythor DarkOr 7 Change Operat 8 Change Operat 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | Desc | |
| Working and the second | Important Parameter Name 1 Threshold 2 Hysteresis 3 High Level of A 4 Lon Level of AI 5 Alarm Settorg T 6 Light Level of AI 7 Change Operat 8 Change Operat 13 - 14 - 15 - 16 - 17 - 18 - 10 - | Jarm Threshold Jarm Threshold Jarm Threshold Dional Mode Type | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | | ~ |
| Parameter Per ante Per ante Pe | Important Parameter Name 1 Threshold 2 Hysteresis 3 High Level of A 4 Lon Level of AI 5 Alarm Settorg T 6 Light Level of AI 7 Change Operat 8 Change Operat 13 - 14 - 15 - 16 - 17 - 18 - 10 - | Jarm Threshold Jarm Threshold Jarm Threshold Jimer n tional Mode | Initial Value 50 5 80 20 50 DarkOnSep non-Detecti | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | | |
| Working and a second se | Parameter Name 1 Threshold 2 Hysteresis 3 High Level of A 4 Low Level of A 5 Alam Setting T 7 Charge Sensor 9 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 18 - 18 - 10 - | Jarm Threshold Jarm Threshold Imer In bonal Mode Type | Initial Value 50 50 50 DarkOnSep SensorTypeA | | | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 0 to 100 | | | |
| Warms and the second se | Parameter Name 1 Threehold 2 Hysteresis A 3 High Levid A 3 High Levid A 4 High Levid A 5 Alam Section 3 6 Lighth Dexid A 7 Change Operat 8 Change Sensor 9 - 11 - 12 - 13 - 14 - 17 - 18 - 19 - 11 - 12 - 13 - 14 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 10 - 11 - <td>Aarm Threshold arm Threshold imer n tional Mode Type Write Value"</td> <td>Initial Value 50 5 20 50 DarkOršep BarkOršep SensorTypeA</td> <td>Read Value</td> <td>Write Value</td> <td>Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235</td> <td>100ms</td> <td>· · · · · · · · · · · · · · · · · · ·</td> <td></td> | Aarm Threshold arm Threshold imer n tional Mode Type Write Value" | Initial Value 50 5 20 50 DarkOršep BarkOršep SensorTypeA | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | · · · · · · · · · · · · · · · · · · · | |
| Warms and the second se | Parameter Name 1 Parameter Name 1 Threehold 2 Hystereiss 3 High Level of A 4 Low Level of A 5 Alarm Setting To 6 Laghto Level of A 7 Charge Gents 9 Ohange Setting To 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 2 - 10 - 2 - 16 - 17 - 2 | Aarm Threshold arm Threshold imer n tional Mode Type Write Value" | Initial Value 50 5 20 50 DarkOršep BarkOršep SensorTypeA | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | · · · · · · · · · · · · · · · · · · · | |
| website Information Item Wooduk Paramete Wooduk Paramete | Parameter Name 1 Parameter Name 1 Threehold 2 Hystereiss 3 High Level of A 4 Low Level of A 5 Alarm Setting To 6 Laghto Level of A 7 Charge Gents 9 Ohange Setting To 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 2 - 10 - 2 - 16 - 17 - 2 | Aarm Threshold arm Threshold imer n tional Mode Type Write Value" | Initial Value 50 5 20 50 DarkOršep BarkOršep SensorTypeA | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | · · · · · · · · · · · · · · · · · · · | |
| website Information Item Wooduk Paramete Wooduk Paramete | Parameter Name 1 Parameter Name 1 Threehold 2 Hystereiss 3 High Level of A 4 Low Level of A 5 Alarm Setting To 6 Laghto Level of A 7 Charge Gents 9 Ohange Setting To 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 18 - 19 - 10 - 11 - 12 - 13 - 14 - 15 - 16 - 17 - 2 - 10 - 2 - 16 - 17 - 2 | Aarm Threshold arm Threshold imer n tional Mode Type Write Value" | Initial Value 50 5 20 50 DarkOršep BarkOršep SensorTypeA | Read Value | Write Value | Setting Range 0 to 100 0 to 100 0 to 100 0 to 100 3 to 235 | 100ms | · · · · · · · · · · · · · · · · · · · | |

- Detect devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL) in the "AnyWireASLINK Configuration" window. (I Page 218 Detecting devices connected to a bridge module (NZ2AW1C2AL))
- 2. Read or write parameters of the detected devices. (▷☞ Page 186 Reading/Writing Parameters from/to Devices Supporting iQSS)

8.4 Monitoring Devices Supporting iQSS

X

Module Name

Cancel

The connection statuses of devices supporting iQSS can be monitored.

燃燃燃

Module Se

Start I/O

al Label : 4 ▶ 🗟

Start the Sensor/Device Monitor of the selected module

Network Type

OK

Operating procedure

MELSOFT GX Works3 (Untitled Project) - [ProgPou [PRG] [L... Project Edit Eind/Replace Convert Yiew Online Diagnostics Iool Window Help

> CC-Link IE Control Diagnostics (Optical Cable)... CC-Link IE Control Diagnostics @wisted Pair Cab

ystem Monitor...

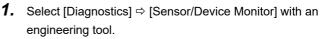
Ethernet Diagnostics.

CC-Link Diagnostics.

Sensor/<u>D</u>evice Monitor... Module Diagnostics (C<u>P</u>U Diag

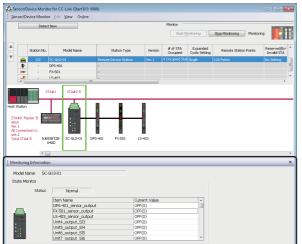
CC-Link IE Field Diagnostics.

CC-Link IEF Basic Diagnostics MELSECNET Diagnostics...



2. Select a CC-Link system master/local module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.

- **3.** Read the message and select the checkbox of "Set the Module Connected to the Communication Module also as the Read Object," then click the [Yes] button.



The "Sensor/Device Monitor for CC-Link" screen appears.

4. Select a target device supporting iQSS to be monitored in the "Sensor/Device Monitor for CC-Link" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

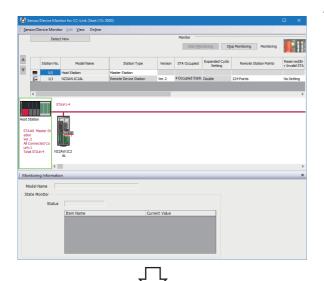
■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a master station.

If an error code is displayed, resolve the cause by referring to the manual for the CC-Link system master/local module, then perform the sensor/device monitor function again.

Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1C2AL)

Operating procedure



Open the "Sensor/Device Monitor for CC-Link" screen.
 (Image 226 Monitoring Devices Supporting iQSS)

- 2. Select a bridge module (NZ2AW1C2AL) in 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC-Link" screen, then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.
- Provide the transformation of the transform
- **3.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

The "Sensor/Device Monitor for AnyWireASLINK" screen appears.

- A.
 - Select a target device supporting iQSS to be monitored in 'List of modules' or 'Device map area' in the "Sensor/Device Monitor for AnyWireASLINK" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices connected to a bridge module

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1C2AL).

For details on the address setting, refer to the following:

CC-Link-AnyWireASLINK Bridge Module User's Manual

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a bridge module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a bridge module (NZ2AW1C2AL). If an error code is displayed, resolve the cause by referring to the manual for the bridge module (NZ2AW1C2AL), then perform the sensor/device monitor function again.

■Replacing a slave module while displaying the sensor/device monitor

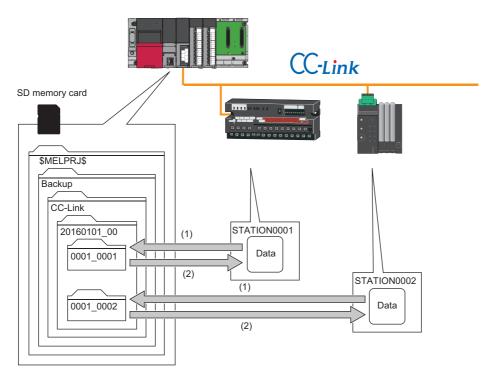
If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

8.5 Backing up/Restoring Data of Devices Supporting iQSS

Information of a device supporting iQSS can be backed up to/restored from an SD memory card by using special relays and special registers.

This will make a data restoration or utilization simplified and the time taken to change the information of multiple devices supporting iQSS, restore data when a failure occurred in a device supporting iQSS, and to perform a changeover will also be shortened.

This section explains the data backup and data restoration methods of iQ Sensor Solution for a MELSEC iQ-R series CC-Link.



(1) Data backup

(2) Data restoration

| Function | Reference |
|------------------|---|
| Data backup | Page 235 Data backup |
| | Page 236 Program execution for data backup |
| Data restoration | Page 250 Data restoration |
| | Page 251 Program execution for data restoration |

Backup folder/file

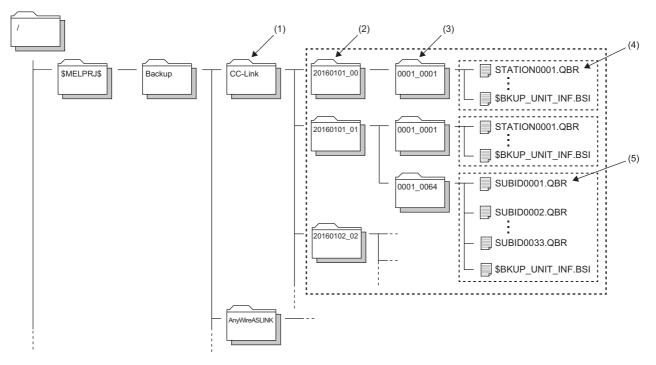
Backup data is created in the 'CC-Link' folder which exists in the 'Backup' folder under the main folder of '\$MELPRJ\$' in the root directory when data is backed up.

If no '\$MELPRJ\$' folder, 'Backup' folder, or 'CC-Link' folder exists, each of the folders are created as well when data is backed up.

Up to 100 backup folders (date_number) can be created in the 'CC-Link' folder.

■Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



(1) A folder to save the settings of devices supporting iQSS connected to CC-Link

- (2) Backup folder (date_number)
- (3) Backup folder (start I/O number_station number)
- (4) Backup data (information of each station)
- (5) Backup data (information of each station sub-ID number)

■Backup folder name

Date_Number

YYYYMMDD_**

YYYY: Year when the data was backed up (four digits in decimal) MM: Month when the data was backed up (two digits in decimal) DD: Day when the data was backed up (two digits in decimal) **: Number (two digits in decimal (00 to 99))^{*1}

- *1 If multiple folders with the same number exist while a target folder (0 to 99) is set to SD1363 (iQ Sensor Solution backup/restoration folder number setting), the date of the backup folder name may not be updated. (IPS Setting a number for a data backup folder name)
- Start I/O number_Station number

**** ****

First ****: Start I/O number (four digits in hexadecimal) (A value obtained by dividing the start I/O number by 16) Last ****: Station number (four digits in decimal)

■Backup file name

Station number

STATION****.QBR

****: Station number (four digits in decimal)

Station sub-ID number

SUBID****.QBR

****: Station sub-ID number (four digits in decimal)

Points to be checked before data backup/restoration

Check the availability of data backup/restoration

The data can be backed up and restored when a CC-Link system master/local module and a bridge module (NZ2AW1C2AL) satisfy the following conditions.

Perform the automatic address detection function and the parameter batch read function before data backup/restoration.

The 'n' indicates the address assigned to the master station by the station number setting.

| Module | Condition to be checked | Remote device RX signal | Signal status |
|------------------------------------|---|-------------------------|-------------------|
| CC-Link system master/local module | Module failure | Xn0 | OFF |
| | Module READY | XnF | ON |
| | Own station data link status | Xn1 | ON |
| | Data link status of other stations ^{*1} | SW0080 to SW0083 | OFF |
| | Remote register use prohibited status ^{*1} | SW0160 to SW0163 | OFF |
| Bridge module (NZ2AW1C2AL) | Remote READY | RX(n+D)B | ON |
| (CC-Link operation mode Ver.2.00) | DP/DN short error | RXn1 | OFF |
| | Transmission cable voltage drop error | RXn3 | OFF |
| | DP/DN disconnection error | RXn4 | OFF |
| | Slave module alarm signal | RX(n+1)0 | OFF ^{*2} |
| | Parameter access completion flag | RX(n+1)1 | ON |
| | Parameter access error | RX(n+1)2 | OFF |
| | Automatic address detection flag | RX(n+1)4 | OFF |

*1 Set the target station.

*2 Excluding when the error code is 0131H.

Interlock setting

Some or all remote registers of a target device are used in the system during a data backup/restoration.

Therefore, add "Remote register use prohibited status (SW0160 to SW0163)" to the interlock when creating a program.

The station whose operating status is switched from the standby master station to master station

The data backup/restoration function cannot be performed to a station in which the operation was switched from the standby master operation to the master operation.

In that case, turn the power OFF, and ON again in the order from the standby master station to the master station. Then, perform a data backup/restoration.

Considerations for data backup/restoration

■Use of an SD memory card

• During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card.

Otherwise, the data backup or restoration will be interrupted and the data will not be backed up or restored properly.

• Normal backup data cannot be created if the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during a data backup.

■Concurrent use of other functions

While any of the following operations or functions are being performed, backup/restoration cannot be performed. Additionally, the following operations and functions cannot be performed during data backup/restoration.

| | Initializing the CDU built in memory (CD memory card | | | | |
|------------------------------------|---|--|--|--|--|
| Operation with an engineering tool | Initializing the CPU built-in memory/SD memory card | | | | |
| | Clearing values (file register) | | | | |
| | Writing data to a programmable controller (including online change of files) | | | | |
| | Deleting data in the programmable controller | | | | |
| | User data operation | Writing user data | | | |
| | | Deleting user data | | | |
| | | Creating a folder | | | |
| | | Deleting a folder | | | |
| | | Changing a folder name | | | |
| | Online change (ladder block) | | | | |
| | Event history function (clearing event history) | | | | |
| | File password function | | | | |
| | Predefined protocol support function (writing protocol setting data) | | | | |
| | Memory dump function (registering/clearing memory du | imp) | | | |
| Operations with CPU Module Logging | Data logging function (writing/deleting a logging setting file, registering/clearing a logging setting) | | | | |
| Configuration Tool | Deleting logging file(s) | | | | |
| Others | • SLMP | Creating a new file (New File) | | | |
| | MC protocol | Writing data to a file (Write File) | | | |
| | | Deleting a file (Delete File) | | | |
| | | Copying a file (Copy File) | | | |
| | | Changing a file attribute (Change File State) | | | |
| | | Changing file creation date (Change File Date) | | | |
| | File transfer from an Ethernet-equipped module (FTP | Writing a file (put, mput, pm-write) | | | |
| | server) | Deleting a file (delete, mdelete) | | | |
| | | Changing a file name (rename) | | | |
| | | Changing a file attribute (change) | | | |
| | File transfer function (FTP server) of the built-in Etherno | et function | | | |
| | File transfer function (FTP client) of the built-in Etherne | t function | | | |
| | CPU module data backup/restoration function | | | | |

When data is backed up or restored during a data logging or the realtime monitor function, the performance of the data logging or the data sampling for the realtime monitor will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing in the CPU module is temporarily increased. Consequently, a communication response will be slow and a timeout error may occur in other communications. To avoid a timeout error, review the value set for "Device/Label Access Service Processing Setting."

CPU Parameter] ⇒ [Service Processing Setting] ⇒ [Device/Label Access Service Processing Setting]

Change of backup folders/data

Do not change a backup folder name, configuration, or saved file.

Otherwise, the data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

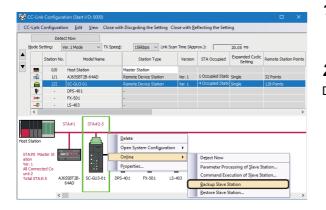
When backing up the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1C2AL):

- · Backup data is stored in the 'CC-Link' backup folder.
- The 'station sub-ID number' is equivalent to the 'ID' of a slave module connected to AnyWireASLINK.
- The backup file (STATION0000.QBR) of the bridge module is not created.

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each station by using an engineering tool.

Operating procedure



 Select a target device supporting iQSS in the "CC-Link Configuration" window, then right-click it and select [Online]
 ⇒ [Backup Slave Station] from the shortcut menu.

2. Read the message and click the [Yes] button. Data is backed up.

Considerations for a data backup

Setting the backup setting

The initial values of the backup setting (SD1363 and SD1367) are as follows:

- SD1363 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (EP Page 236 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card.

New folders are created every time when data is backed up, and data of each device supporting iQSS is saved in a file format in the folders. A system file (\$BKUP_UNIT_INF.BSI) that contains information required for data restoration is created for each station when data is backed up.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to back up data with a program.

| Procedu | Item | Reference |
|---------|--|-------------------------------------|
| re | | |
| 1 | Acquire a right to use. | Page 236 Acquiring a right to use |
| 2 | Set the backup target setting and the operation setting. | Page 237 Setting the backup setting |
| 3 | Perform a data backup. | Page 239 Performing a data backup |
| 4 | Release the right to use. | Page 239 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Execution method of data backup

Special relays (SM) and special registers (SD) are used for data backup.

Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data backup. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

■Setting the backup setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|--------------------|--|
| 2H: CC-Link | Set this to specify a device supporting iQSS which is connected to the CC-Link master station. |

2. Setting an execution unit

Set a unit to specify the range of data to be backed up at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|-------------------------|---|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the CC-Link master station with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the following devices supporting iQSS which are connected to the CC-Link master station with the specified start I/O number: device supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the module with the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the following devices supporting iQSS which are connected to a CC-Link master station with the specified start I/O number: the devices which are connected to the specified station number with the specified station sub-ID number. |

3. Setting a number for a data backup folder name

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--|---|
| FFFH: Automatic specification (default) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. The oldest backup folder (date_number) is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name. When another folder with the same number exists, the target data is overwritten in execution unit without changing the folder name. ^{*1} |

*1 When the specified folder number exists, the operation to be performed depends on the specification of the execution unit as follows:

| Execution unit | Operation |
|-------------------------|---|
| 1H: Module unit | When the backup data with the same target module exists, the backup folder (start I/O number_station number) is deleted before performing data backup. |
| 2H: Station unit | When the backup data with the same target module and the same target station number exists, data backup is performed after the backup folder (start I/O number_station number) is deleted. |
| 3H: Station sub-ID unit | When the backup data with the same target module and the same target station number exists, the information of the backed up station sub-ID is added to the system file for iQ Sensor Solution backup/restoration. When the backup data with the same target module, the same target station number, and the same target station sub-ID number exists, the backup data (information of each station sub-ID) is deleted before performing data backup. |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit, set a start I/O number to SD1364 (iQ Sensor Solution data backup/ restoration target setting (target module)).

| Target device (Module) | Description |
|----------------------------|--|
| 0 to FFH: Start I/O number | Set the start I/O number (the value obtained by dividing the start I/O number by 16) of the CC-Link master station |
| | which is connected to a target device supporting iQSS. |

Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set a station number to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)).

| Target device (Station number) | Description |
|--------------------------------|---|
| 1 to 64: Station number | Set the station number of a target device supporting iQSS or the station number of the module which is connected to a device supporting iQSS. |

Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit, set a station sub-ID number to SD1366 (iQ Sensor Solution backup/restoration target setting (target device 2)).

| Target device (Station sub-ID number) | Description |
|---------------------------------------|---|
| 0 to 9999: Station sub-ID number | Set the station sub-ID number of a target device supporting iQSS. |

Precautions

When backup/restore the data in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), set the ID number of AnyWireASLINK to SD1366.

For details on the ID number (SD1366) of AnyWireASLINK, refer to the following:

Page 197 Setting the backup setting

5. Setting the operation setting when a data backup error occurs

Set the operation to be performed when the data backup fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description |
|--------------------|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices. |
| 1H: Stop | Set this to stop a data backup if it fails on some devices. |

■Performing a data backup

Turn ON SM1361 (iQ Sensor Solution backup request) to request a data backup.

Data is backed up after a data backup request.

SM1361 is turned OFF when a data backup is completed.

1. Checking the execution status of a data backup

The execution status of a data backup can be checked with the following special registers.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit.*1 (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data backup

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data backup.

A cancellation is performed for each device supporting iQSS, so it will be canceled when a data backup which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data backup

When the data backup is completed, the backup completion status can be checked with the following special relays.

· Normally completed: SM1362 (iQ Sensor Solution backup normal completion) is turned ON.

• Abnormally completed: SM1363 (iQ Sensor Solution backup abnormal completion) is turned ON.

The number of the folder where backup data was saved at the completion of data backup is stored to SD1375 (iQ Sensor Solution backup folder number).

| Backup folder number | Description |
|------------------------------|--|
| 0 to 99: Folder number | The number (0 to 99) of the folder in which backup data was saved is stored. |
| FFFFH: Backup data not saved | Backup data has not been saved. |

4. Checking a data backup error

Even if a data backup of a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a module such as a CPU module or CC-Link master station can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1382: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

■Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON . The right to use is released and the next data backup is ready to be performed.

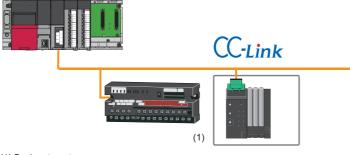
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data backup

■Example of a system configuration

The following shows the example of a system configuration for data backup.



(1) Backup target

- Target module type: CC-Link
- Execution unit: Station
- Folder number setting: 18
- Target device (target module): Start I/O No.0
- Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Categor y | Device | Label name | Description | | | |
|--------------|--------|--|---|--|--|--|
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request | | | |
| abel | SM1361 | RCPU.stSM.biQSS_Backup_Request | Backup request | | | |
| | SM1362 | RCPU.stSM.biQSS_Backup_Normal_Completion | Backup normal completion | | | |
| | SM1363 | RCPU.stSM.biQSS_Backup_Error_Completion | Backup abnormal completion | | | |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request | | | |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number | | | |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number | | | |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit _Setting | Backup/restoration target module, execution unit setting | | | |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting | | | |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) | | | |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 1 | Backup/restoration target setting (target device 1) | | | |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 | Backup/restoration target setting (target device 2) | | | |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting | | | |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Numb er_of_Target_Devices | Backup/restoration execution status (total number of target devices) | | | |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) | | | |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been complete with an error) | | | |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_ Per_Devices | Backup/restoration execution status (progress per device) | | | |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting | | | |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module | | | |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device | | | |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution _Unit_Information | Backup/restoration error target module, execution unit information | | | |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_I nformation | Backup/restoration target folder number information | | | |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Modu le | Backup/restoration error information (target module) | | | |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_1 | Backup/restoration error device information (target device 1) | | | |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e 2 | Backup/restoration error device information (target device 2) | | | |

| Categor y | Device | Label nam | ie | | | | | Description | | | | | | |
|--------------|--------------|----------------------------------|---------------|--|------------|---|---------------------|-------------|--|--|--|--|--|--|
| Label to be | Define globa | Define global labels as follows: | | | | | | | | | | | | |
| defined | J J | | | | | | | | | | | | | |
| uenneu | | el Name | Data Type | | Class | | Assign (Device/Labe | 0 | | | | | | |
| | bInitTrg | | Bit | | VAR_GLOBAL | | MO | | | | | | | |
| | bBKUPTrg | | Bit | | VAR_GLOBAL | | M1000 | | | | | | | |
| | bBKUPUseRe | | Bit | | VAR_GLOBAL | | M1100 | | | | | | | |
| | bBKUPChkTr | | Bit | | VAR_GLOBAL | | M1200 | | | | | | | |
| | bBKUPSetTre | | Bit | | VAR_GLOBAL | | M1300 | | | | | | | |
| | bBKUPUseGe | | Bit | | VAR_GLOBAL | | M1400 | | | | | | | |
| | bBKUPUseRe | | Bit | | VAR_GLOBAL | | M1500 | | | | | | | |
| | bBKUPExeSto | pTrg | Bit | | VAR_GLOBAL | | M2000 | | | | | | | |
| | bBKUPExeCn | | Bit | | VAR_GLOBAL | | M3000 | | | | | | | |
| | bBKUPExeEn | CmpTrg | Bit | | VAR_GLOBAL | | M3500 | | | | | | | |
| | bBKUPUseLo | ssTrg | Bit | | VAR_GLOBAL | - | M3550 | | | | | | | |
| | bBKUPUseCa | | Bit | | VAR_GLOBAL | - | M4000 | | | | | | | |
| | bBKUPUseCa | ncelStpTrg | Bit | | VAR_GLOBAL | - | M4100 | | | | | | | |
| | bDPDNShortB | rr | Bit | | VAR_GLOBAL | - | D2000.1 | | | | | | | |
| | bTransCable\ | /oltageDropErr | Bit | | VAR_GLOBAL | - | D2000.3 | | | | | | | |
| | bDPDNDiscor | nnectionErr | Bit | | VAR_GLOBAL | - | D2000.4 | | | | | | | |
| | bSlaveAlarmB | rr | Bit | | VAR_GLOBAL | - | D2001.0 | | | | | | | |
| | bParaAcssCo | mpFlag | Bit | | VAR_GLOBAL | - | D2001.1 | | | | | | | |
| | bParaAcssErr | | Bit | | VAR_GLOBAL | - | D2001.2 | | | | | | | |
| | bAutoAddDet | ectionFlag | Bit | | VAR_GLOBAL | - | D2000.4 | | | | | | | |
| | bRemoteREA | DY | Bit | | VAR_GLOBAL | - | D2013.B | | | | | | | |
| | BKUPUseNoS | ietArea | Word [Signed] | | VAR GLOBAL | • | D1000 | | | | | | | |
| | BKUPExeCmp | Ont | Word [Signed] | | VAR_GLOBAL | - | D5000 | | | | | | | |
| | BKUPExeErrC | mpCnt | Word [Signed] | | VAR GLOBAL | - | D5001 | | | | | | | |
| | BKUPUnitErr | • | Word [Signed] | | VAR GLOBAL | - | D5002 | | | | | | | |
| | BKUPDevErr | | Word [Signed] | | VAR GLOBAL | • | D5003 | | | | | | | |
| | bDataLinkSta | tus 1 | Bit | | VAR_GLOBAL | - | SW80.0 | | | | | | | |
| | bRmtRegUse | ProhiditedState1 | Bit | | VAR GLOBAL | - | SW160.0 | | | | | | | |
| | bUnitFault | | Bit | | VAR GLOBAL | | X0 | | | | | | | |
| | bLocalStaDat | aLinkState | Bit | | VAR GLOBAL | | X1 | | | | | | | |
| | bUnitREADY | | Bit | | VAR GLOBAL | | X0F | | | | | | | |

Point

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | binitTrg M0 | | | | | | | | FMOV | ко | BKUPExeCmpCnt D5000 | K4 |
|-----------|--|-------------------|--|---|--------------------------------|---|--|-------------------|---|---|--|---|
| | | | | | | | | | | | RST | bBKUPExeCmpTrg M3000 |
| | | | | | | | | | | | RST | bBKUPExeErrCmpTrg |
| | | | | | | | | | | | SET | M3500 bBKUPTrg |
| (9) | bBKUPTrg M1000 | bUnitFault | bLocalStaDataLinkState | bUnitREADY | bDataLinkStatu s1 swan n | bRmtRegUseProhid itedState1 SW160.0 | bRemoteREADY | bDPDNSho rtErr | bTransCableVolta geDropErr D2000-3 | bDPDNDisconnect ionErr D2000.4 | bSlaveAlarmErr | M1000 |
| | m | bParaAossCompFlag | bParaAossErr | bAutoAddDetectionFlag | —и— | <u> </u> | D2013.B | <u>—и</u> — | —и— | —и— | 02001.0 X SET | |
| | −K0 → | D2001.1 | H0 | RCPU.atSD.uiGSS_Backup_Restoration_Use_ | | | | | | | 36.1 H1070 | M1100 BKUPUseNoSetArea |
| (25) | M1100 | =JI | | RCPUatSDaiQSS Backup Restoration Use Authority Acquisition No SD1361 | | | | | | MOV | BKUPUseNoSetArea | D1000 RCPLIstSD uIQSS Backup Restoration Lise Authority Re |
| | | | | | | | | | | MOV | D1000 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Re quest_No SD1360 bBKUPUseGetTrg |
| | | | | | | | | | | | SET | M1400 |
| | bBKUPChkTrg | | | | | | | | - | | SET | bBKUPChkTrg M1200 |
| (35) | M1200 | | | RCPU.atSD.ulQSS Backup, Restoration Use Authority Acquisition No SD1361 | | | | | - | - | SET | bBKUPSetTrg M1300 |
| | | u_o | RCPU.stSD.uiQSS Backup Restoration Use Authority Request No SD1360 | RCPU.atSD.uiQSS.Backup Restoration Use Authority Acquisition No SD1361 | 0'n | HO | RCPULtSDuiQSS Backup Restoration Use Authority Acquisition No SD1361 | | - | - | SET | bBKUPUseLossTrg M3550 |
| (49) | bBKUPSetTrg M1300 | | | | | | | | | MOV | H102 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Ex ecution_Unit_Setting SD1362 |
| | | | | | | | | | - | MOV | K20 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Nu mber_Setting SD1363 |
| | | | | | | | | | | MOV | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Ta rget_Module SD1364 |
| | | | | | | | | | | MDV | К1 | RCPU.stSD.uiQSS_Backup, Restoration_Target_Setting_Ta rgst_Device_1 SD1365 |
| | | | | | | | | | | MOV | КО | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Ta rget_Device_2 SD1366 |
| | | | | | | | | | | MDV | H0 | ROPU.stSD.uiQSS_Backup_Restoration_Operation_Setting SD1367 |
| | | | | | | | | | | | SET | RCPU.stSMbiOSS_Backup_Request SM1381 |
| (64) R | ICPU.stSM.biQSS_Backup_N ormal_Completion SM1362 | | | | | | | | | | SET | bBKUPExeCmpTrg |
| | | | | | | | | | | MOV | RCPU.stSD.stUGSS_Backup_Restoration_Execution_Status.uNum ber_of_Normal_Completed_Devices SD1372 | M3000 BKUPExeCmpCnt |
| (69) R | CPU.stSM.biQSS_Backup_Er ror_Completion SM1363 | | | | | | | | | | SD1372 SET | D5000 bBKUPExeErrCmpTrg |
| | Iti | | | | | | | | | MOV | RCPU.stSD.stiOSS_Backus_Restoration_Execution_Status.uNum ber.of_Error_Completed_devices SD1373 | M3500 BKUPExeErrCmpCnt |
| | | | | | | | | | | MOV | SD1373 RCPU.stSD.uQSS.Backup.Restoration_Module_Error_Cause | D5001 BKUPUnitErr |
| | | | | | | | | | | MOV | SD1376 RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Ca | D5002 BKUPDevErr |
| | bBKUPExeCmpTrg | | | | | | | | | MUV | RCPUstSD_uiQSS_Backup_Restoration_Target_Devices_Error_Ca US9 \$01377 | D5003 bleitTrg |
| (78) | M3000 | | | | | | | | | | RST | M0 bBKUPTrg |
| ┢ | M3500 | | | | | | | | | | RST | M1000 bBKUPUseReqTrg |
| | | | | | | | | | - | | RST | M1100 |
| | | | | | | | | | | | RST | bBKUPChkTrg M1200 |
| | | | | | | | | | - | | RST | bBKUPSetTrg M1300 |
| | | | | | | | | | | | RST | bBKUPUseCanod Trg M4000 |
| (88) | bBKUPExeStopTrg M2000 | | | | | | | | - | - | SET | RCPU.stSMbiQSS_Backup_Restoration_Cancel_Request SM1387 |
| | | | | | | | | | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | SET | bBKUPUseCancelStpTrg M4100 |
| | | | | | | | | | - | | RST | bBKUPExeStopTrg M2000 |
| (93) | bBKUPUseCancelTrg M4000 | | | | | | | | - | MOV | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Re quest_No SD1360 |
| | bBKUPUseCancelStpTrg M4100 | | | | | | | | | | SET | bBKUPUseRefTrg M1500 |
| | | | | | | | | | | | RST | bBKUPUseCanod Trg M4000 |
| | | | | | | | | | | | RST | bBKUPUseCancelStpTrg M4100 |
| (102) | bBKUPUseGetTrg M1400 | | | | | | | | | | SET | M4100 RCPU.stSM.blQSS.Backup_Restoration_Use_Authority_Re quest SM1380 |
| ſ | bBKUPUseRelTrg M1500 | | | | | | | | | | RST | bBKUPUseGetTrg |
| F | | | | | | | | | | | RST | M1400 bBKUPUseRelTrg |
| (100) | | | | | | | | | | | | M1500 |
| (109) | | | | | | | | | | | | (END) |

[Initialization]

Initialize the execution result.
 Initialize the normal completion display.
 Initialize the abnormal completion display.
 Set the backup execution trigger.

[Executing data backup and checking data link status]

Check that the data link status of other stations (SW0080 to SW0083) indicates that a data link is in process before making a data backup request.

- (9) Set the backup right-to-use request trigger.
- [Requesting backup right to use]
- (25) Store the right-to-use number.
 - Set a right-to-use request.

Set the backup right-to-use confirmation trigger.

- [Checking backup right to use]
- (35) Set the backup setting and starting trigger.
 - Display the right-to-use acquisition failure.
- [Setting and starting data backup]
- (49) Set the target module/execution unit.
 Set the target folder number.
 Set the target module.
 Set the target device 1.
 Set the target device 2.
 Set the data backup operation setting (on error).
 Set the backup request.

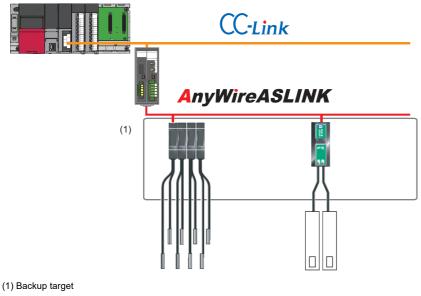
[Checking data backup execution]

- (64) Display the normal completion. Save the number of normally completed devices.
- (69) Display the abnormal completion.
 Save the number of devices completed with an error.
 Save the error cause in a module.
 Save the backup error cause in a device.
- [Enabling the next data backup process]
- (78) Clear the initialization trigger.
 Clear the backup execution trigger.
 Clear the backup right-to-use request trigger.
 Clear the backup right-to-use confirmation trigger.
 Clear the backup setting and starting trigger.
- [Setting for cancelling the process]
- (88) Set the backup cancellation request.
- [Releasing backup right to use]
- (93) Set the backup right-to-use release trigger.
- [Updating backup right to use]
- (102) Set the backup right-to-use request.

Example of a data backup (bridge module (NZ2AW1C2AL))

■Example of a system configuration

The following shows the example of a system configuration for data backup.



- Target module type: CC-Link
- · Execution unit: Station
- Folder number setting: 18
- Target device (target module): Start I/O No.0
- Operation setting on error: Continue

8

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Catego ry | Device | Label name | Description | | |
|--------------|--------|--|--|--|--|
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request | | |
| label | SM1361 | RCPU.stSM.biQSS_Backup_Request | Backup request | | |
| | SM1362 | RCPU.stSM.biQSS_Backup_Normal_Completion | Backup normal completion | | |
| | SM1363 | RCPU.stSM.biQSS_Backup_Error_Completion | Backup abnormal completion | | |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request | | |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number | | |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number | | |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit_S etting | Backup/restoration target module, execution unit setting | | |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting | | |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) | | |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_1 | Backup/restoration target setting (target device 1) | | |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_2 | Backup/restoration target setting (target device 2) | | |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting | | |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Number_ of_Target_Devices | Backup/restoration execution status (total number of target devices) | | |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_No rmal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) | | |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_Er ror_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) | | |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_Pe r_Devices | Backup/restoration execution status (progress per device) | | |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting | | |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module | | |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device | | |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution_ Unit_Information | Backup/restoration error target module, execution unit information | | |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_Info rmation | Backup/restoration target folder number information | | |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Module | Backup/restoration error information (target module) | | |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Device_ 1 | Backup/restoration error device information (target device 1) | | |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Device_ 2 | Backup/restoration error device information (target device 2) | | |

| Catego | Device | Label name | e | | | | | Description |
|----------|--------------|--------------------|--------------|---|------------|---|-----------------------|-------------|
| ry | | | | | | | | |
| Label to | Define globa | al labels as follo |)W/S. | | | | | |
| be | Bonno giobe | | | | | | | |
| | Lat | bel Name | Data Type | | Class | | Assign (Device/Label) | |
| defined | bInitTrg | | Bit | | VAR_GLOBAL | - | MO | |
| | bBKUPTrg | | Bit | | VAR_GLOBAL | | M1000 | |
| | bBKUPUseF | ReqTrg | Bit | | VAR_GLOBAL | | M1100 | |
| | bBKUPChkT | | Bit | | VAR_GLOBAL | | M1200 | |
| | bBKUPSetTr | | Bit | | VAR_GLOBAL | | M1300 | |
| | bBKUPUseG | | Bit | | VAR_GLOBAL | | M1400 | |
| | bBKUPUseF | | Bit | | VAR_GLOBAL | | M1500 | |
| | bBKUPExeS | topTrg | Bit | | VAR_GLOBAL | | M2000 | |
| | bBKUPExeC | | Bit | | VAR_GLOBAL | | M3000 | |
| | bBKUPExeE | | Bit | | VAR_GLOBAL | | M3500 | |
| | bBKUPUseL | | Bit | | VAR_GLOBAL | | M3550 | |
| | bBKUPUseC | ancelTrg | Bit | | VAR_GLOBAL | • | M4000 | |
| | bBKUPUseC | CancelStpTrg | Bit | | VAR_GLOBAL | - | M4100 | |
| | bDPDNShort | | Bit | | VAR_GLOBAL | | D2000.1 | |
| | | VoltageDropErr | Bit | | VAR_GLOBAL | | D2000.3 | |
| | bDPDNDisco | onnectionErr | Bit | | VAR_GLOBAL | • | D2000.4 | |
| | bSlaveAlarm | nErr | Bit | | VAR_GLOBAL | - | D2001.0 | |
| | bParaAcssC | ompFlag | Bit | | VAR_GLOBAL | | D2001.1 | |
| | bParaAcssE | | Bit | | VAR_GLOBAL | | D2001.2 | |
| | bAutoAddDe | | Bit | | VAR_GLOBAL | | D2000.4 | |
| | bRemoteRE | | Bit | | VAR_GLOBAL | | D2013.B | |
| | BKUPUseNo | SetArea | Word [Signed | | VAR_GLOBAL | | D1000 | |
| | BKUPExeCn | | Word [Signed |] | VAR_GLOBAL | | D5000 | |
| | BKUPExeEn | | Word [Signed | | VAR_GLOBAL | | D5001 | |
| | BKUPUnitEr | | Word [Signed | | VAR_GLOBAL | | D5002 | |
| | BKUPDevEn | r | Word [Signed |] | VAR_GLOBAL | | D5003 | |
| | bDataLinkSt | | Bit | | VAR_GLOBAL | | SW80.0 | |
| | | eProhiditedState1 | Bit | | VAR_GLOBAL | | SW160.0 | |
| | bUnitFault | | Bit | | VAR_GLOBAL | | X0 | |
| | bLocalStaDa | | Bit | | VAR_GLOBAL | | X1 | |
| | bUnitREAD) | (| Bit | | VAR_GLOBAL | - | XOF | |
| | | | | | | | | |

Point

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| binitTrg M0 If1 | | | | | | | | FMOV | ко | BKUPExeCmpCnt D5000 | |
|--|----------------------------------|---|---|--------------------------------|---|---|------------------------------|--|--------------------------------------|--|---|
| | | | | | - | | | | | RST | bBKUPExeCmpTrg M3000 |
| | | | | | | | | | | RST | bBKUPExeErrCmpTrg M3500 |
| | | | | | | | | | | SET | bBKUPTrg |
| bBKUPTrg M1000 | bUnitFault X0 | bLocalStaDataLinkState X1 | bUnitREADY X0F | bDataLinkS tatus1 SW80.0 | bRmtRegUsePro hiditedState1 SW160.0 | bRemoteREADY D2013 B | bDPDNSh ortErr D2000.1 | bTransCableVol tageDropErr D2000.3 | bDPDNDisco nnectionErr D2000.4 | bSjøveAjarmErr D2001.0 | M1000 |
| | bParaAcssComp Flag D2001.1 | bParaAcssErr | bAutoAddDetectionFlag | 11 | —V— | D2013.B | 1/ | | <u> </u> | D2001.0 | bBKUPUseReqTrg |
| bBKUPUseRegTrg | | D2001.2 | D2000.4 | | | | | | | SET H1070 | M1100 BKUPUseNoSetArea |
| M1100 | =_U | | RCPU.stSD.uiQSS_Backup_Restoratio n_Use_Authority_Acquisition_No SD1361 | | | | | | MOV | | D1000 |
| | | | | | | | | | MOV | BKUPUseNcSetArea D1000 | RCPU.stSD.u/QSS_Backup_Restoration Authority_Request_No SD1360 |
| | | | | | | | | | | SET | bBKUPUseGetTrg M1400 |
| | | | | | | | | | | SET | bBKUPChkTrg M1200 |
| bBKUPChkTrg M1200 | =_U | RCPU.stSD.uiQSS_Backup_Resto ration_Use_Authority_Request_No SD1380 | RCPU.stSD.uiQSS_Backup_Restoratio n_Use_Authority_Acquisition_No SD1361 | | | | | | | SET | bBKUPSetTrg M1300 |
| | nr⇔ | | RCPU.stSD.uiQSS_Backup_Restoratio n_Use_Authority_Acquisition_No SD1361 | o_U | H0 | RCPU.stSD.uiQSS_Backup_Restoration_ Use_Authority_Acquisition_No SD1361 | | | | SET | bBKUPUseLossTrg M3550 |
| bBKUPSetTrg M1300 | | 301360 | 501361 | | | 501361 | | | MOV | H202 | M3390 RCPU.stSD.uiQSS_Backup_Restoration et_Module_Execution_Unit_Setting SD1362 |
| | | | | | | | | | | K18 | |
| | | | | | | | | | MOV | H0 | RCPU stSD.uiQSS_Backup_Restoration et_Folder_Number_Setting SD1363 |
| | | | | | | | | | MOV | | RCPU.stSD.uiQSS_Backup_Restoration et_Setting_Target_Module SD1364 |
| | | | | | | | | | MOV | K1 | RCPU.stSD.uiQSS_Backup_Restoration et_Setting_Target_Device_1 SD1365 |
| | | | | | | | | | MOV | KO | RCPU.stSD.uiQSS_Backup_Restoratio et_Setting_Target_Device_2 SD1366 |
| | | | | | | | | | MOV | H0 | RCPU.stSD.uiQSS_Backup_Restoratio ration_Setting SD1367 |
| | | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Reque SM1361 |
| RCPU.stSM.biQSS_Bac kup_Normal_Completion SM1362 | | | | | | | | | | SET | bBKUPExeCmpTrg M3000 |
| | | | | | | | | | MOV | RCPU atSD atiQSS_Backup_Restoration_Execution_Stat us.uNumber_of_Normal_Completed_Devices SD1372 | |
| RCPU.stSM.biQSS_Bac kup_Error_Completion SM1363 | | | | | | | | | | SD1372 SET | D5000 bBKUPExeErrCmpTrg |
| | | | | | | | | | | | M3500 BKUPExeErrCmpCnt |
| | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Stat us.uNumber of Error_Completed devices SD1373 | |
| | | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_C ause SD1376 | D5002 |
| | | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_ Error_Cause SD1377 | BKUPDevErr D5003 |
| bBKUPExeCmpTrg M3000 I↑ | | | | | - | | | | | RST | binitTrg M0 |
| bBKUPExeErrCmpTrg M3500 | | | | | | | | | | RST | bBKUPTrg M1000 |
| | | | | | | | | | | RST | bBKUPUseReqTrg M1100 |
| | | | | | | | | | | RST | bBKUPChkTrg |
| | | | | | | | | | | RST | M1200 bBKUPSetTrg |
| | | | | | | | | | | | M1300 bBKUPUseCanceITrg |
| bBKUPExeStopTrg | | | | | | | | | | RST | M4000 |
| M2000 | | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoratio cel_Request SM1367 |
| | | | | | - | | | | | SET | bBKUPUseCancelStpTrg M4100 |
| | | | | | | | | | | RST | bBKUPExeStopTrg M2000 |
| bBKUPUseCancelTrg M4000 | | | | | | | | | MOV | H0 | RCPU.stSD.u/QSS_Backup_Restoratio _Authority_Request_No |
| bBKUPUseCancelStpT M4100 | | | | | | | | | | SET | bBKUPUseRefTrg M1500 |
| | | | | | | | | | | RST | bBKUPUseCanceITrg |
| | | | | | | | | | | RST | M4000 bBKUPUseCancelStpTrg |
| bBKUPUseGetTrg | | | | | | | | | | | M4100 RCPU.stSMbiQSS_Backup_Restoratio |
| M1400 | | | | | | | | | | SET | RCPUIstSMbiQSS_Backup_Restoratio _Authority_Request |
| M1500 | | | | | | | | | | RST | bBKUPUseGetTrg M1400 |
| | | | | | | | | | | RST | bBKUPUseRelTrg M1500 |
| | | | | | | | | | | | |

[Initialization]

Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Executing data backup and checking data link status] Check that the data link status of other stations (SW0080 to SW0083) indicates that a data link is in process before making a data backup request. Set the backup right-to-use request trigger. (9) [Requesting backup right to use] (25) Store the right-to-use number. Set a right-to-use request. Set the backup right-to-use confirmation trigger. [Checking backup right to use] (35) Set the backup setting and starting trigger. Display the right-to-use acquisition failure. [Setting and starting data backup] (49) Set the target module/execution unit. Set the target folder number. Set the target module. Set the target device 1. Set the target device 2. Set the data backup operation setting (on error). Set the backup request. [Checking data backup execution] (64) Display the normal completion. Save the number of normally completed devices. (69) Display the abnormal completion. Save the number of devices completed with an error. Save the error cause in a module. Save the backup error cause in a device. [Enabling the next data backup process] (78) Clear the initialization trigger. Clear the backup execution trigger.

Clear the backup execution trigger. Clear the backup right-to-use request trigger. Clear the backup right-to-use confirmation trigger. Clear the backup setting and starting trigger.

[Setting for cancelling the process]

(88) Set the backup cancellation request.

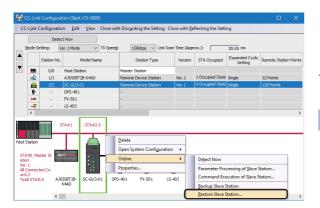
- [Releasing backup right to use]
- (93) Set the backup right-to-use release trigger.
- [Updating backup right to use]
- (102) Set the backup right-to-use request.

8 CC-Link 8.5 Backing up/Restoring Data of Devices Supporting iQSS **249**

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each station by using an engineering tool.

Operating procedure



- Select a target device supporting iQSS in the "CC-Link Configuration" window, then right-click it and select [Online]
 ⇒ [Restore Slave Station] from the shortcut menu.
- **2.** Select backup data to be restored, and click the [Execute] button.

Point P

A list of the backup folder names (date_number) is displayed in the column of "Folder Name." Backup data is stored in backup folders for each folder name (Start I/O number_Station number) in an SD memory card. For details on the backup folder configuration, refer to the following:

Page 231 Backup folder configuration

3. Read the message and click the [OK] button. Data is restored.



Please select one restoring backup data.

Considerations for data restoration

Setting the restoration setting

The initial value of the restoration setting (SD1367) is as follows:

• Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (EP Page 251 Program execution for data restoration)

Program execution for data restoration

Information in an SD memory card can be restored to a device supporting iQSS.

Select a backup folder to be restored. In the data restoration, information such as a model name or device version in the system file (\$BKUP_UNIT_INF.BSI) created with backup is compared with that of the CC-Link master station or a device supporting iQSS. If the information is mismatched, a restoration error will occur.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to restore data with a program.

| Procedu | Item | Reference |
|---------|---|--|
| re | | |
| 1 | Acquire a right to use. | Page 251 Acquiring a right to use |
| 2 | Set the restoration target setting and the operation setting. | Page 252 Setting the restoration setting |
| 3 | Perform a data restoration. | Page 253 Performing a data restoration |
| 4 | Release the right to use. | Page 253 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (See Page 410 Event List)

Execution method of data restoration

Special relays (SM) and special registers (SD) are used for data restoration.

■Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data restoration. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

Setting the restoration setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|--------------------|--|
| 2H: CC-Link | Set this to specify a device supporting iQSS which is connected to the CC-Link master station. |

2. Setting an execution unit

Set a unit to specify the range of data to be restored at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|-------------------------|---|
| 1H: Module unit | Set this to specify all devices supporting iQSS which are connected to the CC-Link master station with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the following devices supporting iQSS which are connected to the CC-Link master station with the specified start I/O number: device supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the module with the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the following devices supporting iQSS which are connected to a CC-Link master station with the specified start I/O number: the devices which are connected to the specified station number with the specified station sub-ID number. |

3. Selecting a folder for data restoration

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--------------------------------------|--|
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name to be restored. |
| | |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit, set a start I/O number to SD1364 (iQ Sensor Solution data backup/ restoration target setting (target module)).

| Target device (Module) | Description |
|----------------------------|--|
| 0 to FFH: Start I/O number | Set the start I/O number (the value obtained by dividing the start I/O number by 16) of the CC-Link master station |
| | which is connected to a target device supporting iQSS. |

Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set a station number to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)).

| Target device (Station number) | Description |
|--------------------------------|--|
| 1 to 64: Station number | Set the station number of a target device supporting iQSS or the station number of the module which is |
| | connected to a device supporting iQSS. |

· Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit, set a station sub-ID number to SD1366 (iQ Sensor Solution backup/restoration target setting (target device 2)).

| Target device (Station sub-ID number) | Description |
|---------------------------------------|---|
| 0 to 9999: Station sub-ID number | Set the station sub-ID number of a target device supporting iQSS. |

Precautions

When backup/restore the data in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), set the ID number of AnyWireASLINK to SD1366.

For details on the ID number (SD1440) of AnyWireASLINK, refer to the following:

 $\ensuremath{\boxtimes}$ Page 206 Setting the restoration setting

5. Setting the operation setting when a data restoration error occurs

Set the operation to be performed when the data restoration fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices. |
| 1H: Stop | Set this to stop a data restoration if it fails on some devices. |

■Performing a data restoration

Turn ON SM1364 (iQ Sensor Solution restoration request) to request a data restoration.

Data is restored after a data restoration request.

SM1364 is turned OFF when a data restoration is completed.

1. Checking the execution status of a data restoration

The execution status of a data restoration can be checked with the following special register areas.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data restoration

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data restoration. A cancellation is performed for each device supporting iQSS, so it will be canceled when a data restoration which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data restoration

When a data restoration is completed, the restoration completion status can be checked with the following special relays.

- Normally completed: SM1365 (iQ Sensor Solution restoration normal completion) is turned ON.
- Abnormally completed: SM1366 (iQ Sensor Solution restoration abnormal completion) is turned ON.
- 4. Checking a data restoration error

Even if a data restoration to a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a module such as a CPU module or CC-Link master station can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1382: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

■Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON. The right to use is released and the next data restoration is ready to be performed.

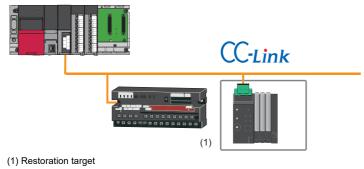
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data restoration

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- Target module type: CC-Link
- Execution unit: Station
- Folder number setting: 18
- Target device (target module): Start I/O No.0
- Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Catego | Device | Label name | Description | | | |
|---------------------|--------|--|---|--|--|--|
| ry Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request | | | |
| label | SM1364 | RCPU.stSM.biQSS_Restoration_Request | Restoration request | | | |
| | SM1365 | RCPU.stSM.biQSS_Restoration_Normal_Completion | Restoration normal completion | | | |
| | SM1366 | RCPU.stSM.biQSS_Restoration_Error_Completion | Restoration abnormal completion | | | |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request | | | |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number | | | |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number | | | |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit_S etting | Backup/restoration target module, execution unit setting | | | |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting | | | |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) | | | |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_1 | Backup/restoration target setting (target device 1) | | | |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_2 | Backup/restoration target setting (target device 2) | | | |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting | | | |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Number_ of_Target_Devices | Backup/restoration execution status (total number of target devices) | | | |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_No rmal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) | | | |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_Er ror_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been complete with an error) | | | |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_Pe r_Devices | Backup/restoration execution status (progress per device) | | | |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting | | | |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module | | | |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device | | | |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution_ Unit_Information | Backup/restoration error target module, execution unit information | | | |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_Info rmation | Backup/restoration target folder number information | | | |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Module | Backup/restoration error information (target module) | | | |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Device_ 1 | Backup/restoration error device information (target device 1) | | | |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Device_ 2 | Backup/restoration error device information (target device 2) | | | |

| Catego | Device | Label nam | e | | | | Description |
|----------|-------------------------------------|--------------------|---------------|----------------|---|-----------------------|-------------|
| ry | | | | | | | |
| Label to | Define globa | al labels as follo | ows: | | | | |
| be | Ū | | | | | | |
| | | el Name | Data Type | Class | _ | Assign (Device/Label) | |
| defined | bInitTrg | | Bit | VAR_GLOBAL | | MO | |
| | bRSTRTrg | | Bit | VAR_GLOBAL | | M1010 | |
| | bRSTRUseRe | | Bit | VAR_GLOBAL | | M1110 | |
| | bRSTRChkTr | | Bit | VAR_GLOBAL | | M1210 | |
| | bRSTRSetTr | | Bit | VAR_GLOBAL | | M1310 | |
| | bRSTRUseGe | | Bit | VAR_GLOBAL | | M1410 | |
| | bRSTRUseRe | | Bit | VAR_GLOBAL | | M1510 | |
| | bRSTRExeSt | | Bit | VAR_GLOBAL | | M2010 | |
| | bRSTRExeCr | | Bit | VAR_GLOBAL | | M3010 | |
| | bRSTRExeEr | | Bit | VAR_GLOBAL | | M3510 | |
| | bRSTRUseLo | | Bit | VAR_GLOBAL | | M3555 | |
| | bRSTRUseCa | | Bit | VAR_GLOBAL | | M4010 | |
| | bRSTRUseCa | | Bit | VAR_GLOBAL | | M4110 | |
| | bDPDNShort | | Bit | VAR_GLOBAL | | D2000.1 | |
| | bTransCableVoltageDropErr | | Bit | VAR_GLOBAL | | D2000.3 | |
| | bDPDNDisconnectionErr | | Bit | VAR_GLOBAL | | D2000.4 | |
| | bSlaveAlarmErr bParaAcssCompFlag | | Bit | VAR_GLOBAL | | D2001.0 | |
| | | | Bit | VAR_GLOBAL | | D2001.1 | |
| | bParaAcssEr | | Bit | VAR_GLOBAL | | D2001.2 | |
| | bAutoAddDet | | Bit | VAR_GLOBAL | | D2000.4 | |
| | bRemoteREA | | Bit | VAR_GLOBAL | | D2013.B | |
| | RSTRUseNoS | | Word [Signed] | VAR_GLOBAL | | D1010 | |
| | RSTRExeCm | | Word [Signed] | VAR_GLOBAL | | D5010 | |
| | RSTRExeErr | | Word [Signed] | VAR_GLOBAL | | D5011 | |
| | RSTRUnitErr | | Word [Signed] | VAR_GLOBAL | | D5012 | |
| | RSTRDevErr | | Word [Signed] | VAR_GLOBAL | | D5013 | |
| | bDataLinkSta | | Bit Bit | VAR_GLOBAL | | SW80.0 | |
| | | ProhiditedState1 | | VAR_GLOBAL | | SW160.0 | |
| | <u>bUnitFault</u> | | Bit | VAR_GLOBAL | | XO | |
| | bLocalStaDat | taLinkState | Bit | VAR_GLOBAL | | X1 | |
| | bUnitREADY | | Bit | VAR_GLOBAL | • | XOF | |
| | | | | | | | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| binitTrg | | | | | | | | FMOV | ко | RSTRExeCmpCnt | K4 |
|--|-----------------------------|---|---|----------------------------|---------------------------------------|---|--------------------------|------------------------------------|----------------------------------|--|---|
| (0) M0 | | | | | | | | Pinov | | D5010 | bRSTRExeCmpTrg |
| | | | | | | | | | | RST | M3010 |
| | | | | | | | | | | RST | bRSTRExeErrCmpTrg M3510 |
| | | | | | | | | | | SET | bRSTRTrg M1010 |
| (9) M1010 | 5UnitFault X0 | bLocalStaDataLinkState X1 | bUnitREADY XOF | bDataLinkStatus1 SW80.0 | bRmtRegUzeProhiditedState1 SWI60.0 | bRemoteREADY D2013.8 | bDPDNShortErr D2000.1 | bTransCableVoltageDropEr D200.3 | bDPDNDisconnectionErr D2000.4 | bSlaveAlarmErr D2001.0 | <u>ко</u> |
| K0 | bParaAcssCompRag D2001.1 | bParaAccoErr D2001.2 | bAutoAddDetectionRag D2000.4 | | | | | | | SET | bRSTRUseReqTrg |
| bRSTRUseReqTrg | =_U | HO | RCPU.stSD.uiOSS_Backup_Restoratio n_Use_Authority_Acquisition_No SD1381 | | | | | | MOV | H1070 | M1110 RSTRUseNoSetArea |
| (25) M1110 | | | SD1361 | | | | | | | RSTRUseNoSetArea | D1010 RCPULtSDuiQSS_Backup_Restoration_ |
| | | | | | | | | | MOV | D1010 | RCPUitSDuiQSS Backup Restoration Use Authority Request No SD1360 |
| | | | | | | | | | | SET | bRSTRUesGetTrg M1410 |
| | | | | | | | | | | SET | bRSTRChkTrg M1210 |
| (35) M1210 | -10 | RCPU.stSD.uiQSS_Backup_Restoratio n_Uos_Authority_Request_No SD1360 | RCPU.stSD.uiQSS_Backup_Restoratio n_Una_Authority_Acquisition_No SD1381 | | | | | | | SET | bRSTRSetTrg M1310 |
| | 0ju | RCPU.stSD.uiQSS_Backup_Restoratio n_Use_Authority_Request_No SD1380 | RCPU.stSD.uiQSS_Backup_Restoratio n_Use_Authority_Acquisition_No SD1381 | 0 <u>1</u> 0 | HO | RCPU stSD uiQSS Backup Restoration Use Authority Acquisition No SD 1361 | | | | SET | bRSTRUseLossTrg M3655 |
| (49) M1310 | | | | | | | | | MOV | H102 | RCPU.stSD.uiQSS_Backup_Restoration_ Target Module Execution Unit_Setting SD1342 |
| m | | | | | | | | | MOV | K20 | SD1382 ROPUstSDuiQSS Backup Restoration Target Folder Number Setting SD1383 |
| | | | | | | | | | | НО | |
| | | | | | | | | | MOV | | RCPU.stSD.u/QSS_Backup_Restoration_ Target_Setting_Target_Module SD1384 |
| | | | | | | | | | MOV | nl | ROPU.stSD.viQSS_Backup_Restoration_ Target_Setting_Target_Device_1 \$D1385 |
| | | | | | | | | | MOV | ко | RCPULstSDuiQSS Backup Restoration Target Setting Target Device 2 SD1386 |
| | | | | | | | | | MOV | HŰ | RCPU atSDuiQSS_Backup Restoration Operation_Setting SD1387 |
| | | | | | | | | | | SET | RCPU.stSMbiQSS_Restoration_Request SM1384 |
| (64) RCPU.stSM.biQSS_Restoration_ Normal_Completion SM 1365 | | | | | | | | | | SET | bRSTREseCmpTrg |
| | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_St atus.uNumber_of_Normal_Completed_Devices SD1372 | M3010 RSTRExeCmpCnt |
| RCPU.stSMbHOSS_Restoration_ Error_Completion SM 186 | | | | | | | | | | | DS010 bRSTRExxEmCmpTrg |
| (89) SM1366 | | | | | | | | | | SET | M3510 |
| | | | | | | | | | MOV | RCPU-stSD.atiOSS_Backup_Restoration_Execution_St atus=Number_sEError_Completed_devices SD1373 | RSTRExeErrCrepCet DS011 |
| | | | | | | | | | MOV | RCPU.stSD.u/GSS_Backup_Restoration_Module_Error_ Cause SD1376 | RSTRUnitErr D5012 |
| | | | | | | | | | MOV | RCPUstSDuiQSS_Backup_Restoration_Target_Device s_Error_Cause SD1377 | RSTRDevEn D5013 |
| 0RSTRExeGmpTrg (780 M3010 | | | | | | | | | | RST | blnit.Trg M0 |
| bRSTRExeErrCmpTrg M3S10 | | | | | | | | | | RST | bRSTRTrg M1010 |
| | | | | | | | | | | RST | bRSTRUseReqTrg |
| | | | | | | | | | | | M1110 bRSTROktrg |
| | | | | | | | | | | RST | M1210 bRSTRSetTrg |
| | | | | | | | | | | RST | M1310 |
| | | | | | | | | | | RST | bRSTRUseCancelTrg M4010 |
| (88) M2010 | | | | | | | | | | SET | RCPU.atSMbiQSS_Backup_Restoration_ Cancel_Request SM1367 |
| | | | | | | | | | | SET | bRSTRUseCancelStpTrg M4110 |
| | | | | | | | | | | RST | bRSTRExeStopTrg M2010 |
| (93) bRSTRUseCancelTrg (93) M4010 | | | | | | | | | MOV | HO | RCPUstSD.uiQSS_Backup_Restoration Use_Authority_Request_No SD1380 |
| bRSTRUseCancelStpTrg | | | | | | | | | | SET | bRSTRUseRelTrg |
| M4110 | | | | | | | | | | | M1510 BRSTRUseCancelTrg |
| | | | | | | | | | | RST | M4010 bRSTRUssCancelStpTrg |
| | | | | | | | | | | RST | M4110 |
| (102) bRSTRUseGetTrg M1410 | | | | | | | | | | SET | RCPU.stSMbiQSS_Backup_Restoration_ Use_Authority_Request SM1360 |
| bRSTRUseRelTrg M1510 | | | | | | | | | | RST | bRSTRUseGetTrg M1410 |
| | | | | | ļ | | | | | RST | bRSTRUseReiTrg M1510 |
| (109) | | | | | | | | | | | |
| | | | | | | | | | | | END |

[Initialization]

(0) Initialize the execution result. Initialize the normal completion display. Initialize the abnormal completion display. Set the restoration execution trigger.

[Executing data restoration and checking data link status]

Check that the data link status of other stations (SW0080 to SW0083) indicates that a data link is in process before making a data restoration request.

(9) Set the restoration right-to-use request trigger.

[Requesting restoration right to use]

- (25) Store the right-to-use number.
 - Set a right-to-use request.

Set the restoration right-to-use confirmation trigger.

[Checking restoration right to use]

- (35) Set the restoration setting and starting trigger.
 - Display the right-to-use acquisition failure.

[Setting and starting data restoration]

(49) Set the target module/execution unit.
 Set the target folder number.
 Set the target module.
 Set the target device 1.
 Set the target device 2.
 Set the data restoration operation setting (on error).
 Set the restoration request.

[Checking data restoration execution]

- (64) Display the normal completion.
- Save the number of normally completed devices.(69) Display the abnormal completion.
 - Save the number of devices completed with an error.
 - Save the error cause in a module.
 - Save the restoration error cause in a device.
- [Enabling the next data restoration process]

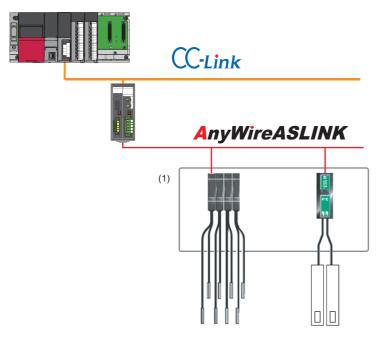
(78) Clear the initialization trigger.

- Clear the restoration execution trigger. Clear the restoration right-to-use request trigger. Clear the restoration right-to-use confirmation trigger. Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (88) Set the restoration cancellation request.
- [Releasing restoration right to use]
- (93) Set the restoration right-to-use release trigger.
- [Updating restoration right to use]
- (102) Set the restoration right-to-use request.

Example of a data restoration (bridge module (NZ2AW1C2AL))

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- Target module type: CC-Link
- · Execution unit: Station
- Folder number setting: 18
- Target device (target module): Start I/O No.0
- Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Catego ry | Device | Label name | Description |
|--------------|--------|--|--|
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| label | SM1364 | RCPU.stSM.biQSS_Restoration_Request | Restoration request |
| | SM1365 | RCPU.stSM.biQSS_Restoration_Normal_Completion | Restoration normal completion |
| | SM1366 | RCPU.stSM.biQSS_Restoration_Error_Completion | Restoration abnormal completion |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit_S etting | Backup/restoration target module, execution unit setting |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_1 | Backup/restoration target setting (target device 1) |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_2 | Backup/restoration target setting (target device 2) |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Number_ of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_No rmal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_Er ror_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_Pe r_Devices | Backup/restoration execution status (progress per device) |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution_ Unit_Information | Backup/restoration error target module, execution unit information |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_Info rmation | Backup/restoration target folder number information |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Module | Backup/restoration error information (target module) |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Device_ 1 | Backup/restoration error device information (target device 1) |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Device_ 2 | Backup/restoration error device information (target device 2) |

| Catego | Device | Label name | e | | | | Description |
|----------|--------------------|--------------------|---------------|----------------|---|-----------------------|-------------|
| ry | | | | | | | |
| Label to | Define globa | al labels as follo | ows: | | | | 1 |
| be | Lab | el Name | Data Type | Class | | Assign (Device/Label) | |
| defined | <u>bInitTrg</u> | | Bit | VAR_GLOBAL | | MO | |
| | bRSTRTrg | _ | Bit | VAR_GLOBAL | | M1010 | |
| | bRSTRUseRe | | Bit | VAR_GLOBAL | | M1110 | |
| | bRSTRChkTr | | Bit | VAR_GLOBAL | | M1210 | |
| | bRSTRSetTr | | Bit | VAR_GLOBAL | | M1310 | |
| | bRSTRUseGe | | Bit | VAR_GLOBAL | | M1410 | |
| | bRSTRUseRe | | Bit | VAR_GLOBAL | _ | M1510 | |
| | bRSTRExeSt | | Bit | VAR_GLOBAL | • | M2010 | |
| | bRSTRExeCr | | Bit | VAR_GLOBAL | • | M3010 | |
| | bRSTRExeEr | | Bit | VAR_GLOBAL | | M3510 | |
| | <u>bRSTRUseLc</u> | | Bit | VAR_GLOBAL | | M3555 | |
| | bRSTRUseCa | | Bit | VAR_GLOBAL | | M4010 | |
| | <u>bRSTRUseCa</u> | | Bit | VAR_GLOBAL | | M4110 | |
| | bDPDNShort | | Bit | VAR_GLOBAL | | D2000.1 | |
| | | VoltageDropErr | Bit | VAR_GLOBAL | | D2000.3 | |
| | <u>bDPDNDiscor</u> | | Bit | VAR_GLOBAL | | D2000.4 | |
| | bSlaveAlarm | | Bit | VAR_GLOBAL | | D2001.0 | |
| | <u>bParaAcssCo</u> | | Bit | VAR_GLOBAL | | D2001.1 | |
| | <u>bParaAcssEr</u> | | Bit | VAR_GLOBAL | | D2001.2 | |
| | bAutoAddDet | | Bit | VAR_GLOBAL | | D2000.4 | |
| | bRemoteREA | | Bit | VAR_GLOBAL | | D2013.B | |
| | RSTRUseNo3 | | Word [Signed] | VAR_GLOBAL | | D1010 | |
| | RSTRExeCm | | Word [Signed] | VAR_GLOBAL | | D5010 | |
| | RSTRExeErr | | Word [Signed] | VAR_GLOBAL | - | D5011 | |
| | RSTRUnitErr | | Word [Signed] | VAR_GLOBAL | - | D5012 | |
| | RSTRDevErr | | Word [Signed] | VAR_GLOBAL | | D5013 | |
| | bDataLinkSta | | Bit | VAR_GLOBAL | | SW80.0 | |
| | | ProhiditedState1 | Bit | VAR_GLOBAL | | SW160.0 | |
| | bUnitFault | | Bit | VAR_GLOBAL | | X0 | |
| | bLocalStaDat | taLinkState | Bit | VAR_GLOBAL | | X1 | |
| | bUnitREADY | | Bit | VAR_GLOBAL | • | XOF | |



For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| blnitTrg (0) M0 | | | | | | | | FMOV | ко | RSTRExeCmpOnt | K4 |
|---|---------------------------------|---|---|---------------------------|---|---|--------------------------|--|--------------------------------------|---|---|
| (0) M0 | | | | | | | | | | D5010 | bRSTRExeCmpTrg |
| | | | | | | | | | | RST | M3010 |
| | | | | | | | | | | RST | bRSTRExeErrCmpTrg M3510 |
| | | | | | | | | | | SET | bRSTRTrg M1010 |
| (9) M1010 | bUnitFault X0 | bLocalStaDataLinkState X1 | bUnitREADY X0F | bDataLinkStatus SW80.0 | bRmtRegUseProh iditedState1 SW160.0 | bRemoteREADY D2013.8 | bDPDNShortErr D2000.1 | bTransCableVolta geDropErr D2000.3 | bDPDNDisconnec tionErr D2000.4 | bSlaveAlarmErr D2001.0 | —ко —; |
| | bParaAcssCompF Hg D2001.1 | bParaAcssErr D2001.2 | bAutoAddDetectionFlag D2000.4 | | | | | | | SET | bRSTRUseReqTrg M1110 |
| bRSTRUseReqTrg | =_U | HO | RCPU.stSD.uiQSS_Backup_Restoration_ Use_Authority_Acquisition_No SD1361 | | | | | | MOV | H1070 | RSTRUseNoSetArea |
| (25) M1110 | | | SD1361 | | | | | | | RSTRUseNoSetArea | D1010 RCPU.stSD.uiQSS_Backup_Restoration_Us |
| | | | | | | | | | MOV | D1010 | RCPUstSDaiQSS_Backup_Restoration_Us e_Authority_Request_No SD1360 bRSTRUseGetTrg |
| | | | | | | | | | | SET | M1410 |
| | | | | | | | | | | SET | bRSTRChkTrg M1210 |
| (35) M1210 | =_U | RCPU.stSD.uiQSS_Backup_Restoration_ Use_Authonity_Request_No SD1360 | RCPU.stSD.uiQSS Backup, Restoration Use Authority Acquisition No SD1361 | | | | | | | SET | bRSTRSetTrg M1310 |
| | o"n | RCPU.stSD.uiQSS_Backup_Restoration_ Use_Authority_Request_No SD1360 | RCPU.stSD.u/QSS_Backup_Restoration_ Use_Authority_Acquisition_No SD1361 | ¢ <u>⊥</u> U | HO | RCPU.stSD.uiQSS_Backup_Restoration_U se_Authority_Acquisition_No SD1361 | | | | SET | bRSTRUseLossTrg M3555 |
| (49) M1310 | | | | | | | | | MOV | H202 | RCPU atSD uiQSS Backup Restoration Tar get Module Execution Unit Setting SD1362 |
| m | | | | | | | | | MOV | K18 | SD1362 RCPU.stSD.uQSS_Backup_Restoration_Tar get_Folder_Number_Setting SD1363 |
| | | | | | | | | | | HO | |
| | | | | | | | | | MOV | | RCPU.stSD.uQSS_Backup_Restoration_Tar get_Setting_Target_Module SD1384 |
| | | | | | | | | | MOV | K1 | RCPU.stSD.uiQSS_Backup_Restoration_Tar get_Setting_Target_Device_1 SD1365 |
| | | | | | | | | | MOV | ко | RCPU.stSD.uiQSS_Backup_Restoration_Tar get_Setting_Target_Device_2 SD1366 |
| | | | | | | | | | MOV | HO | RCPU.stSD.uiQSS_Backup_Restoration_Op eration_Setting SD1367 |
| | | | | | | | | | | SET | RCPU.stSMbiQSS_Restoration_Request SM1354 |
| (64) RCPU.stSM.biOSS_Restoration Normal_Completion SM1365 11 | | | | | | | | | | SET | bRSTRExeCmpTrg |
| | | | | | | | | | MOV | | M3010 RSTRExeCmpCnt |
| RCPU.stSMbiQSS_Restoration Error Completion | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup, Restoration_Execution_ Status.uNumber_of_Normal_Completed_Devices SD1372 | D5010 bRSTRExeErrCmpTrg |
| (69) RCPU.stSM.biQSS_Restoration _Error_Completion SM1366 111 | | | | | | | | | | SET | M3510 |
| | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_ Status.uNumber_of_Error_Completed_devices SD1373 | RSTRExeErrCmpCnt D5011 |
| | | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Err or_Cause SD1376 | RSTRUnitErr D5012 |
| | | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Target_Dev ices_Error_Cause SD1377 | RSTRDevErr D5013 |
| (78) bRSTRExeCmpTrg (78) M3010 | | | | | | | | | | RST | blnitTrg M0 |
| bRSTRExeErrCmpTrg M3510 | | | | | | | | | | RST | bRSTRTrg |
| m | | | | | | | | | | RST | M1010 bRSTRUseReqTrg |
| | | | | | | | | | | | M1110 bRSTRChkTrg |
| | | | | | | | | | | RST | M1210 |
| | | | | | | | | | | RST | bRSTRSetTrg M1310 |
| | | | | | | | | | | RST | bRSTRUseCanoelTrg M4010 |
| (88) M2010 | | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoration_Ca ncel_Request SM1367 |
| | | | | | | | | | | SET | bRSTRUseCancelStpTrg M4110 |
| | | | | | | | | | | RST | bRSTRExeStopTrg |
| bRSTRUseCancelTrg (93) M4010 | | | | | | | | | MOV | но | M2010 RCPU.stSD.uiQSS_Backup_Restoration_Us e_Authority_Bequest No. |
| bRSTRUseCancelStnTrr | | | | | | | | | | | RCPUstSDaiQSS_Backup_Restoration_Us e_Authority_Request_No SD1360 bRSTRUseReITrg |
| M4110 | | | | | | | | | | SET | M1510 |
| | | | | | | | | | | RST | bRSTRUseCanoelTrg M4010 |
| | | | | | | | | | | RST | bRSTRUseCancelStpTrg M4110 |
| (102) bRSTRUseGetTrg (102) M1410 | | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoration_Us e_Authonity_Request SM1360 |
| bRSTRUseRelTrg M1510 | | | | | | | | | | RST | bRSTRUseGetTrg M1410 |
| | | | | | | | - | | | RST | bRSTRUseRefTrg |
| | L | | | | | | | | | | M1510 |
| (109) | | | | | | | | | | | END |

[Initialization]

(0) Initialize the execution result. Initialize the normal completion display. Initialize the abnormal completion display. Set the restoration execution trigger.

[Executing data restoration and checking data link status]

Check that the data link status of other stations (SW0080 to SW0083) indicates that a data link is in process before making a data restoration request.

(9) Set the restoration right-to-use request trigger.

- [Requesting restoration right to use]
- (25) Store the right-to-use number.
 - Set a right-to-use request.

Set the restoration right-to-use confirmation trigger.

- [Checking restoration right to use]
- (35) Set the restoration setting and starting trigger.
 - Display the right-to-use acquisition failure.
- [Setting and starting data restoration]
- (49) Set the target module/execution unit.
 Set the target folder number.
 Set the target module.
 Set the target device 1.
 Set the target device 2.
 Set the data restoration operation setting (on error).
 Set the restoration request.

[Checking data restoration execution]

- (64) Display the normal completion.
- Save the number of normally completed devices.(69) Display the abnormal completion.
 - Save the number of devices completed with an error.
 - Save the error cause in a module.
 - Save the restoration error cause in a device.
- [Enabling the next data restoration process]
- (78) Clear the initialization trigger.
 - Clear the restoration execution trigger. Clear the restoration right-to-use request trigger. Clear the restoration right-to-use confirmation trigger. Clear the restoration setting and starting trigger.
- [Setting for cancelling the process]
- (88) Set the restoration cancellation request.
- [Releasing restoration right to use]
- (93) Set the restoration right-to-use release trigger.
- [Updating restoration right to use]
- (102) Set the restoration right-to-use request.

8

9 CC-Link IE TSN

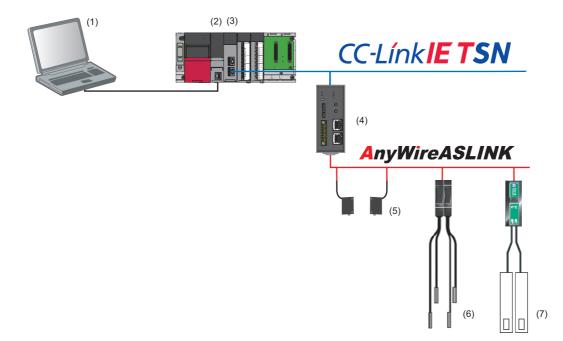
This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC iQ-R series connected to CC-Link IE TSN.

Refer to this chapter for series other than MELSEC iQ-R series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration



| Тур | e | | Model name | Manufacturer |
|-----|-----------------------------------|----------------------|---|---------------------|
| (1) | Engineering tool | GX Works3 | SWnDND-GXW3 ('n' indicates its version.) | Mitsubishi Electric |
| (2) | CPU module | RCPU | R08CPU | Corporation |
| (3) | CC-Link IE TSN master/local modul | e | RJ71GN11-T2 | |
| (4) | CC-Link IE TSN-AnyWireASLINK b | ridge module | NZ2AW1GNAL | |
| (5) | ASLINKSENSOR | Photoelectric sensor | BS-H0117-1KP (Emitting) BS-H0117-1KC (Receiving) | AnyWire Corporation |
| (6) | ASLINKAMP (Input) | Fiber sensor | LA-F1011 (Base) LB-F1011 (Extension) | |
| (7) | ASLINKER (Input) | | B281SB-02U-CC20 | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for CC-Link TSN, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set network parameters and other settings required for communication.

9.1 Detecting Devices Supporting iQSS Automatically

A slave station connected to a CC-Link IE TSN master/local module can be detected and the information can be displayed in the "CC-Link IE TSN Configuration" window.

CC-Link IE TSN refers to this function as 'connected/disconnected module detection.'

For the operation method and considerations for the connected/disconnected module detection, refer to the following:

Detecting devices connected to a bridge module (NZ2AW1GNAL)

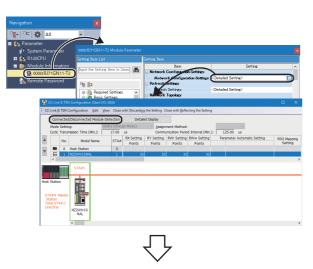
To display devices supporting iQSS, which are connected to a bridge module (NZ2AW1GNAL), on a system configuration diagram, first a bridge module (NZ2AW1GNAL) needs to be detected in the "CC-Link IE TSN Configuration" window. Then, perform an automatic detection of connected devices in the "AnyWireASLINK Configuration" window in order to detect and display devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL).

For the considerations when detecting devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL), refer to the following:

 $\ensuremath{\mathbb{I}}$ Page 267 Considerations when detecting devices connected to a bridge module

The following shows the operating procedure to open the "AnyWireASLINK Configuration" window and perform an automatic detection of connected devices.

Operating procedure



 Detect and display a bridge module (NZ2AW1GNAL) in the "CC-Link IE TSN Configuration" window.

- CCLink II TWI Configuration (Stat IV:0 cod)
 IX

 CCLink II TWI Configuration (Stat IV:0 cod)
 Cose with Discarding the Stating Close with Bellecting the Stating

 Connected Disconnected Module Detection
 Detailed Disconnected Module Detection

 Note Setting:
 Date Close with Discarding the Stating Close with Bellecting the Stating

 Cycle Transmission Time (Mrx):
 120:00 us

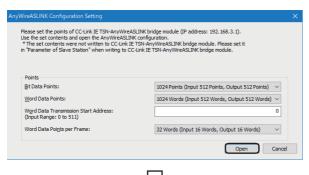
 Stating Time (Mrx):
 120:00 us

 Cycle Transmission Time (Mrx):
 120:00 us

 Stating Time (Mrx):
 120:00 us

 Cycle Transmission Time (Mrx):
 120:00 us

 Cycle
- 2. Select a bridge module (NZ2AW1GNAL) on the network configuration in the "CC-Link IE TSN Configuration" window, then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.



10.7 m

nfirm that the Connection Destination PLC is correct. nfirm that the master module is set correctly. syed configuration will be cleared because the configuration is of the corrected module.

e several minutes to execute Detect Now and address auto on the status of setting or configuration of module.

ecute Detect Now after <u>A</u>ddress Auto-recognition

odule is acquired from the

No

will be executed

The "AnyWireASLINK Configuration Setting" screen appears.

3. Set the number of points of the bridge module (NZ2AW1GNAL), and click the [Open] button.

For details on the point settings, refer to the following:

The "AnyWireASLINK Configuration" window appears.

- 4. Click the [Detect Now] button.
- **5.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link IE TSN—AnyWireASLINK Bridge Module User's Manual

 Open Windowski. Nr. Configuration (Index Module CC-Luck (1 15) 4 Address: 100 Intal.)
 ✓

 AnyWindowski. Nr. Configuration
 Eds
 View
 Cocee with Enabling the Setting

 Enter How
 Eds
 View
 Cocee with Enabling the Setting

 Enter How
 Eds
 View
 Cocee with Enabling the Setting

 Enter How
 Eds
 View
 Cocee with Enabling the Setting

 Enter How
 Eds
 View
 Cocee with Enabling the Setting

 Enter How
 Eds
 View
 Cocee with Enabling the Setting

 Enter How
 Eds
 Table
 Eds
 Cocee with Enabling the Setting

 Enter How
 Eds
 Table
 Table
 Eds
 Cocee with Enabling the Setting

 Enter How
 Eds
 Eds
 Eds
 Eds
 Eds
 Cocee with Enabling the Setting

 Eds
 1
 Cocee with Enabling the Setting
 Eds
 Eds
 Eds
 Eds
 Eds

 Eds
 1
 Cocee with Enabling the Setting
 Eds
 Eds
 Eds
 Eds
 Eds
 Eds
 Eds
 Eds
 Eds
 <

The actual system configuration is displayed in the "AnyWireASLINK Configuration" window.

6. Select [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

The setting of the "AnyWireASLINK Configuration" window is enabled and the window is closed.

Considerations when detecting devices connected to a bridge module

Settings in the "AnyWireASLINK Configuration Setting" screen

Parameters set in the "AnyWireASLINK Configuration Setting" screen are not written to a bridge module (NZ2AW1GNAL). To write the parameters to the bridge module, perform the parameter processing of a slave station.

For details on the parameters of a slave station, refer to the following:

CC-Link IE TSN—AnyWireASLINK Bridge Module User's Manual

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

CC-Link IE TSN—AnyWireASLINK Bridge Module User's Manual

Settings required for communication

To detect the devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GNAL).

For details on the address setting, refer to the following:

CC-Link IE TSN—AnyWireASLINK Bridge Module User's Manual

Settings in the "AnyWireASLINK Configuration" window

After performing an automatic detection of connected devices, the settings of a device supporting iQSS which is connected to a bridge module (NZ2AW1GNAL) are not saved until [Close with Reflecting the Setting] is selected in the "CC-Link IE TSN Configuration" window.

Make sure to select [Close with Reflecting the Setting] in the "CC-Link IE TSN Configuration" window after selecting [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

Operation on error

A system configuration may not be detected if an error occurs on a bridge module (NZ2AW1GNAL).

If an error code is displayed, take corrective actions by referring to the manual for a bridge module (NZ2AW1GNAL), then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- · Output slave module: "Output"

Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

9.2 Reading/Writing Parameters from/to Devices Supporting iQSS

Parameters can be read from and written to a slave station.

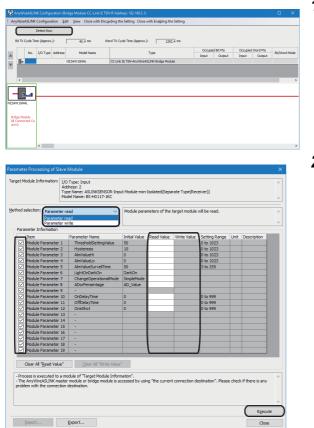
For the operation method and considerations for the parameters of a slave station, refer to the following:

MELSEC iQ-R CC-Link IE TSN User's Manual (Application)

Reading/writing parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL)

Parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL) can be read and written.

Operating procedure



- Detect devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL) in the "AnyWireASLINK Configuration" window. (Page 265 Detecting devices connected to a bridge module (NZ2AW1GNAL))
- Read or write parameters of the detected devices. (EP Page 186 Reading/Writing Parameters from/to Devices Supporting iQSS)

9.3 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Note that monitoring is not supported for devices supporting iQSS which are connected to CC-Link IE TSN. It is supported only for devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL).

Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL)

Operating procedure



- Select a slave station in the "CC-Link IE TSN/CC-Link IE Field Diagnostics" screen, then right-click and select [AnyWireASLINK Sensor/Device Monitor] from the shortcut menu.

 3. When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Auto-recognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link IE TSN—AnyWireASLINK Bridge Module User's Manual

| | | Detect Nov | | | | | | | TX Cyde Time | | | | Monitor | | |
|--|--|----------------------------------|-------------------|----------------|--------------|---------|-------------------------------------|----------------|-----------------------|-----|---------------------|-----------------------------|----------|------------|----------------|
| Conne | ection inf | | | | | | | | Dit | | 13.2 | πs | Start | Monitoring | 1 1 1 1 |
| Cno | ctd IDs | 4 | Err IC | 8 0 | | Ain IDs | 0 | | Word | Ē | 13.2 | ms | | Monitoring | |
| | | | | | | _ | | | | | Occupie | ed Bit Pts | Occupied | | Bit/Word |
| | No. | I/O Type | Address | м | lodel Name | | | Typ | e | | Input | Output | Input | Output | Mode |
| | 2 | Input | 2 | 81,28758-0 | 25-0030 | 1 | SLINKER-Input | Module-Isolat | ed(Sink Type) | | 2 | 0 | 0 | 0 | |
| | 3 | Output | 3 | LA-DA IAW | | | SLINKAMP-Out | put Module-Is | olated(Analog Output) |) | 0 | 0 | 0 | 1 | bit(0)/word(|
| | 4 | Input | 4 | LA-A1AW | | 1 | SLINKAMP-Inp | ut Module-Isol | sted(Analog input) | | 0 | 0 | 1 | 0 | bit(0)/word(|
| zAW1G hidge M d Conn Jount:4 | 4odule rected | BL287PE | | | | LA-A1 | AW | | | | | | | | |
| idge M I Conn punt:4 | fodule rected | 2F-CC2 | 0 2F- | 8758-0 CC20 | LA-DA1A W | LA-A1 | aw | | | | | | | | |
| idge M I Conn punt:4 | fodule rected | 2F-CC2 < mation | 0 2F- | CC20 | | LA-A1 | AW | _ | | | _ | | | | |
| idge M I Conn punt:4 punt:4 punt:4 | Aodule lected ng Infor Name | 2F-CC2 < mation | 0 2F- | CC20 | | LA-A1 | AW | | | | Error Ir | formation | | | |
| idge M I Conn punt:4 punt:4 punt:4 | Adule rected ng Infor Name Konitor | 2F-CC2 < mation BL287SI | 0 2F- B-02F-CC | 20 | | | AW abay <u>F</u> ormat | Word Dec | mal Number Signer | d v | Error Ir Error f | | o Error | | |
| ridge M I Conn ount:4 onitorii Model I | Adule rected ng Infor Name Konitor | 2F-CC2 < mation | 0 2F- | 20 | | | | Word Dec | mal Number Signer | d v | Error (| Code N | | | |
| ridge M I Conn ount:4 | Adule rected ng Infor Name Konitor | 2F-CC2 < mation BL287SI | 0 2F- B-02F-CC | 20 | | Disj | olay <u>F</u> ormat No. Output ! | Signal In | inal Number Signer | d v | Error (| code N ecimal C | o Error | əl | |
| ridge M I Conn ount:4 onitorii Model I | Adule rected ng Infor Name Konitor | 2F-CC2 < mation BL287SI | 0 2F- B-02F-CC | 20 | | Disj | olay <u>F</u> ormat | | | d v | Error (| code N ecimal C | | al | |
| ridge M I Conn ount:4 onitorii Model I | Adule rected ng Infor Name Konitor | 2F-CC2 < mation BL287SI | 0 2F- B-02F-CC | 20 | | Disj | olay <u>F</u> ormat No. Output ! | Signal In | | 4 ~ | Error (| code N ecimal C ation | | al | |

The "Sensor/Device Monitor for AnyWireASLINK" screen appears.

4. Select a target device supporting iQSS to be monitored in 'List of modules' or 'Device map area' in the "Sensor/Device Monitor for AnyWireASLINK" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices connected to a bridge module

■Settings required for communication

To detect the devices supporting iQSS which are connected to a bridge module (NZ2AW1GNAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GNAL).

For details on the address setting, refer to the following:

CC-Link IE TSN—AnyWireASLINK Bridge Module User's Manual

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- · Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a bridge module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a bridge module (NZ2AW1GNAL).

If an error code is displayed, resolve the cause by referring to the manual for the bridge module (NZ2AW1GNAL), then perform the sensor/device monitor function again.

■Replacing a slave module while displaying the sensor/device monitor

If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

10 CC-Link IE Field Network

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC iQ-R series connected to CC-Link IE Field Network.

Refer to this chapter for series other than MELSEC iQ-R series as well.

For the series that support iQ Sensor Solution, refer to the following:

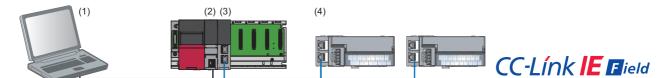
Page 372 Devices that Support iQ Sensor Solution

For the operation methods when using a CC-Link IE TSN-CC-Link IE Field Network bridge module (NZ2GN-GFB), refer to the following:

CC-Link IE TSN—CC-Link IE Field Network Bridge Module User's Manual

System configuration

This section explains the iQ Sensor Solution functions for CC-Link IE Field Network using the following system configuration.



| Тур | e | | Model name | Manufacturer |
|-----|-------------------------------------|---------------------------|--|---------------------|
| (1) | Engineering tool | GX Works3 | SWnDND-GXW3 ('n' indicates its version.) | Mitsubishi Electric |
| (2) | CPU module | RCPU | R08CPU | Corporation |
| (3) | CC-Link IE Field Network-equipped m | naster/local module | RJ71GF11-T2 | |
| (4) | Basic digital output module | Screw terminal block type | NZ2GF2B1-16T NZ2GF2B1-16TE | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for CC-Link IE Field Network, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

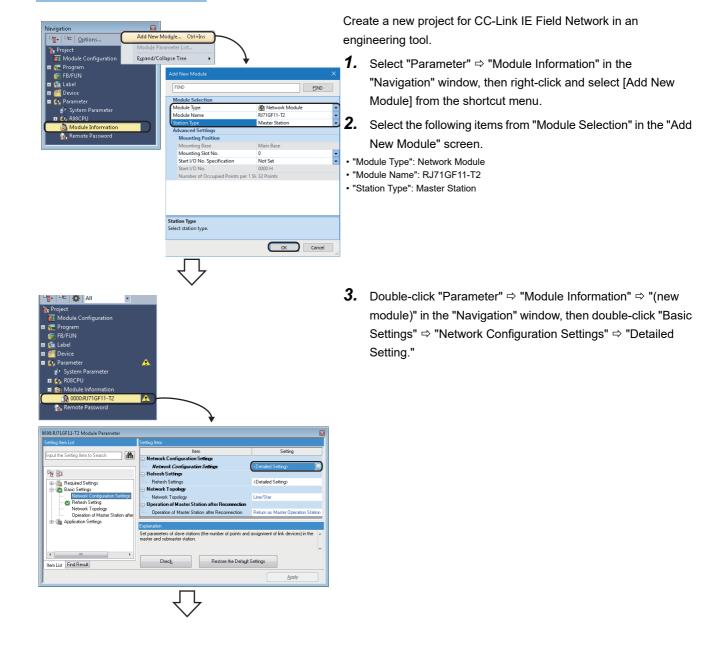
10.1 Detecting Devices Supporting iQSS Automatically

A slave station connected to a CC-Link IE Field Network-equipped master/local module can be detected and the information can be displayed in the "CC IE Field Configuration" window.

For the creation method of a new project and the operation methods of the "CC-Link IE Field Network Configuration" window, refer to the following:

GX Works3 Operating Manual

Operating procedure



C CLE Field Configuration (Start L/O: 000)
C CLE Field Configuration (Edit View Close with Discarding the Setting Close with Beflecting the Setting
C CLE Field Configuration
Edit View Close with Discarding the Setting Close with Beflecting the Setting
C close with Beflecting the Setting
C close with Beflecting the Setting
W close Setting
O close S

The "CC IE Field Configuration" window appears.

4. Click the [Detect Now] button.

🖧 CC IE Field Configuration (Start I/O: 0000) × CC IE Field Configuration Edit ⊻iew Close Detect Now Link Scan Time (Approx.): 0.71 -RX/RY Setting Points Start E Model Name STA# Reserved/Error m Switching Mon No. Station Type Wr Setting End Points Start ▼ 🖦 <u>1</u> 2 NZ2GF2B1-16TE 2 Remote Device Station 16 0100 010F 4 0100 0103 No Se -STA#2 STA#0 Master Total STA#:2 Line/Star NZ2GF2B1 16T NZ2GF2B1 16TE

The actual system configuration is displayed in the "CC IE Field Configuration" window.

5. Select [Close with Reflecting the Setting] in the "CC IE Field Configuration" window.

Information such as parameters displayed in the "CC IE Field Configuration" window is applied to the network parameter.

Considerations when detecting devices supporting iQSS

The following shows the considerations when performing an automatic detection of connected devices for MELSEC iQ-R series CC-Link IE Field Network.

The actual system configuration is not connected/configured properly

An automatic detection of connected devices cannot be performed when the actual system configuration is not connected/ configured properly (duplication of stations, etc.).

In that case, correct the actual system configuration and perform an automatic detection of connected devices again.

Information of slave stations is not detected correctly

Information may not be read correctly when performing an automatic detection of connected devices right after a slave station is connected.

In that case, perform an automatic detection of connected devices again.

An extension module is connected

An automatic detection of connected device is available for a basic module. If the function is performed for an extension module, the total number of points of the basic module and the extension module is read and the setting of the extension module will be empty.

■Settings required for communication

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set network parameters and other settings required for communication.

For details on the settings, refer to the following:

MELSEC iQ-R Module Configuration Manual

MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)

Operation on error

The system configuration cannot be detected if an error occurs on the master station. Resolve the error cause, then perform an automatic detection of connected devices again.

■An error in settings

Error information is displayed in the "Output" window when an error occurred. Double-click the information and correct the error at the jumped destination.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

"Module With No Profile Found"

• "General Slave Module"

Display of "General Module"

When "General Module" is displayed, it can be changed to "General CC IE Field Module" by the following operation: Select a target module, and select [CC IE Field Configuration] \Rightarrow [Change Module] \Rightarrow [Change to General CC IE Field Module].

Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

Detected devices to be displayed in the CC IE Field Configuration window

Modules detected after performing an automatic detection of connected devices are displayed differently depending on whether a profile has been registered.

■A profile has been registered

- The module model names are displayed in "Model Name."
- "Local Station," "Intelligent Device Station," "Remote Device Station," or "Remote I/O Station" is displayed in the column of "Station Type."

Note that a sub-master station of a CC-Link IE Field Network-equipped master/local module or GOT1000/2000 series is displayed as follows:

- For a sub-master station of a CC-Link IE Field Network-equipped master/local module, the module model name is displayed in the column of "Model Name" and "Local Station" is displayed in the column of "Station Type."
- For GOT1000/2000 series, "Gen. Intelligent Device Station" is displayed in the column of "Model Name" and "Intelligent Device Station" is displayed in the column of "Station Type."

■A profile has not been registered

- The module model names, "General Local Station," "Gen. Intelligent Device Station," "General Remote Device Station," or "General Remote I/O Station" is displayed in the column of "Model Name."
- "Local Station," "Sub-Master Station," "Intelligent Device Station," "Remote Device Station," or "Remote I/O Station" is displayed in the column of "Station Type."

Restriction (")

When using the master station whose firmware version is 02 or earlier, or using the versions of modules that do not support an automatic detection of connected devices, the information will not be displayed properly in the column of "Model Name" and "Station Type," even though a profile has been registered.

Detecting devices connected to a bridge module (NZ2AW1GFAL)

To display devices supporting iQSS, which are connected to a bridge module (NZ2AW1GFAL), on a system configuration diagram, first a bridge module (NZ2AW1GFAL) needs to be detected in the "CC IE Field Configuration" window. Then, perform an automatic detection of connected devices in the "AnyWireASLINK Configuration" window in order to detect and display devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL).

For the considerations when detecting devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL), refer to the following:

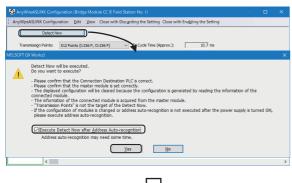
Page 278 Considerations when detecting devices connected to a bridge module

Operating procedure

| Number Numer Numer Numer |
|---|
| Edit Setting Detect Now gasgment Method: Start/End Unk Son Time (Reprox.): L05 ms Model Name STA# Station Type Points Start Edit Name Station No Hold Name STA# Station Points Start Edit Name No Hold Name STA# Station Points Start Edit Name Station 1 Vendeget Device Station 246 0000 9## Station 1 Vendeget Device Station 246 0000 9## Stating Stating 1 Vendeget Device Station 246 0000 9## Stating Stating 1 Vendeget Device Station 246 0000 9## Stating Stating 1 Vendeget Device Station 246 0000 9## |
| CC (E Field Configuration (Start VC: 000) X Detect Norr Assignment Method: Start/End VC: 10.5 ms Model Name STA # Status Train RAXY Setting No. Model Name STA # Station Type Pains Start End Pains Is start End Pains |
| Image: Station 0 Mester Station 0 Mester Station 204 CM |
| |

 Detect and display a bridge module (NZ2AW1GFAL) in the "CC IE Field Configuration" window.

2. Select a bridge module (NZ2AW1GFAL), then right-click it and select [Open System Configuration] ⇔ [Open AnyWireASLINK Configuration] from the shortcut menu.



The "AnyWireASLINK Configuration" window appears.

- **3.** Click the [Detect Now] button.
- **4.** When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Autorecognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

| | | Detect Nov | (| | | | |
|-------|---------|------------|------------|--------------------------|---|---------|------------|
| Trans | missign | Points: | 512 Points | s (I:256 P, O:256 P) 🗸 🗸 | TX Cycle Time (Approx.): 10.7 ms | | |
| | No. | 107.00 | | Model Name | | Occupie | ed Bit Pts |
| | NO. | I/O Type | Address | Piodel Name | Туре | Input | Output |
| 60 | | | | NZ2AW 1GFAL | CC IE Field-AnyWireASLINK Bridge Module | | |
| | 1 | Input | 1 | B289SB-01AP-CAM20 | ASLINKAMP-Input Module-non-Isolated(Photoelectronic Ser | 1 | 0 |
| | 2 | Input | 2 | B289SB-01AP-CAS | ASLINKAMP-Input Module-non-Isolated(Photoelectronic Ser | 1 | 0 |
| | 3 | Input | 3 | B289SB-01AF-CAS | ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplif | 1 | 0 |
| | 4 | Input | 4 | B289SB-01AF-CAS | ASLINKAMP-Input Module-non-Isolated(Fiber Sensor Amplif | 1 | 0 |
| | 5 | Input | 5 | 8281SB-02U-CC20 | ASLINKER -Input Module -non -Isolated (Sink Type) | 2 | 0 |
| 2AW10 | iFAL | Input: | 1 In | put:2 Input:3 Inp | Input:S | | |

The actual system configuration is displayed in the "AnyWireASLINK Configuration" window.

5. Select [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

The setting of the "AnyWireASLINK Configuration" window is enabled and the window is closed.

Considerations when detecting devices connected to a bridge module

Settings in the "AnyWireASLINK Configuration Setting" screen

Parameters set in the "AnyWireASLINK Configuration Setting" screen are not written to a bridge module (NZ2AW1GFAL). Set the number of transmission points of a bridge module (NZ2AW1GFAL) using the number of transmission points setting switch.

For details on the setting switch, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

■Automatic address detection

When the actual system configuration was changed, perform the automatic address detection before using an iQ Sensor Solution function.

For details on the automatic address detection, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GFAL).

For details on the address setting, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

Settings in the "AnyWireASLINK Configuration" window

After performing an automatic detection of connected devices, the settings of a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL) are not saved until [Close with Reflecting the Setting] is selected in the "CC IE Field Configuration" window.

Make sure to select [Close with Reflecting the Setting] in the "CC IE Field Configuration" window after selecting [Close with Enabling the Setting] in the "AnyWireASLINK Configuration" window.

■Operation on error

A system configuration may not be detected if an error occurs on a bridge module (NZ2AW1GFAL).

If an error code is displayed, take corrective actions by referring to the manual for a bridge module (NZ2AW1GFAL), then perform an automatic detection of connected devices again.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

■Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

10.2 Verifying Devices Supporting iQSS Against System Configuration

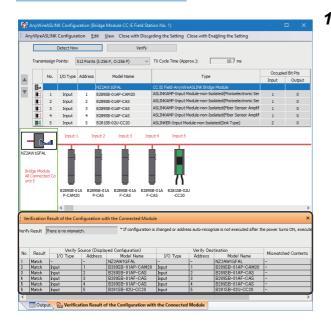
Devices supporting iQSS can be verified against a system configuration displayed in a configuration window.

Verifying devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) against a system configuration

Devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) can be verified against a system configuration displayed in the "AnyWireASLINK Configuration" window.

The result is displayed in the "Verification Result of the Configuration with the Connected Module" window. Verify a system configuration when it is manually created or edited.

Operating procedure



 Verify devices supporting iQSS, which are connected to a bridge module (NZ2AW1GFAL), against a system configuration in the "AnyWireASLINK Configuration" window. (Image Page 184 Verifying Devices Supporting iQSS Against System Configuration)

Considerations

Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GFAL).

For details on the address setting, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

10.3 Reading/Writing Parameters from/to Devices Supporting iQSS

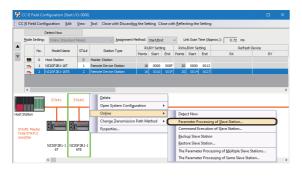
Parameters can be read from and written to a slave station.

Point P

- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (See Page 291 Backing up/Restoring Data of Devices Supporting iQSS)
- The useful function (linkage with dedicated tools) for devices supporting iQSS can also be used in the "CC IE Field Configuration" window. (Figure 370 Linkage with dedicated tools (association with properties))

Operating procedure

Reading parameters



 Select a device supporting iQSS in the "CC IE Field Configuration" window, then right-click and select [Online] ⇒ [Parameter Processing of Slave Station] from the shortcut menu.

| amet | ter Processing of Sla | ive Station | | | | | | | | - 🗆 | × |
|--------------------------|--|--|---|--|-------------------------|----------------------|-----------------|-------------|--|---------------------|-----|
| get M | lodule Information: | NZ2GF2B1-16T Start I/O No.:0 | TE 0000 - Station N | 0.:2 | | | | | | | ć |
| | selection: | Parameter read Parameter read Parameter write | ł | | The para | meters are | read from the | target modu | ie. | | < > |
| Para | meter Information | | | | Clea | r All " <u>R</u> ead | Value" | | <u>C</u> lear All | "Write Value" | |
| | Select <u>A</u> ll | Cancel All | Selections | | Copy "Ini <u>ti</u> a | al Value" to | "Write Value" | | Copy "Rea <u>d</u> Val | ue" to "Write Value | • |
| | Name | | Initial Value | Unit | Read Value | Unit | Write Value | Unit | Setting Range | Description | ^ |
| Stat | tion parameter | | | | TOOL | 1 | | | and a second sec | | 1î |
| M | Input response ti | me setting | 5: 10ms | | | | | | | The input module | t |
| 岗 | Output HOLD/CLE | | 0: CLEAR | | | | | | | Set whether to b | |
| N | Cyclic data updat | | | x100ms | | x100ms | | x100ms | 0 to 20 | Set the cyclic dat | |
| Ħ | Mode switch | | 9: Automati | | | | | 1.100110 | 0 10 20 | Set the operation | |
| R | Initial operation s | etting | 0: with initia | | | | | | | Set whether the | |
| | ic module parameter | cury | 0. 11011100 | | | | | | | act the dist dist | |
| | | | | 1 | | | 1 | 1 | | Set the number of | 4 |
| | Number of ON | | | | | | | | | The total number | |
| - | | | | | | | | _ | | The total number | |
| | Number of ON | | | | | | | _ | | | |
| - | Number of ON | | | | L | | | _ | | The total number | |
| L., | Number of ON | times integra | 0: Disable | | | | | | | The total number | |
| < | | | | | | - | | | | ; | ۲. |
| Proc | ess Option | | | There is n | o option in the s | elected pro | ocess. | | | | |
| -Acce -Proc -For I | refreshed device val esses the PLC CPU by cess is executed acco information on items i vable safety module w | using the curre rding to the para not displayed on | nt connection d ameters written h the screen, ple | estination. In the PLC ase refer | Please check if CPU. | there is an | ry problem with | the connec | | ameter Processing | |
| | Import | | Export | | | | | | OK | Cancel | |

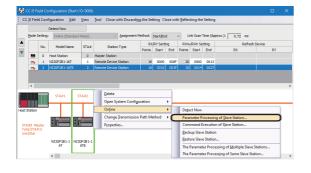
The "Parameter Processing of Slave Station" screen appears.

- 2. Select "Parameter read."
- 3. Click the [Execute Parameter Processing] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

Writing parameters

NZ2GF2B1-16TE Start I/O No.:0000 - St



 Select a device supporting iQSS in the "CC IE Field Configuration" window, then right-click and select [Online] ⇒ [Parameter Processing of Slave Station] from the shortcut menu.

The "Parameter Processing of Slave Station" screen appears.

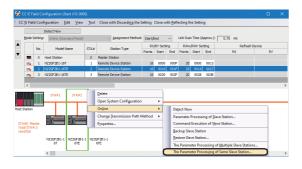
- 2. Select "Parameter write."
- 3. Enter a value in the column of "Write Value."
- 4. Click the [Execute Parameter Processing] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

| | Parameter writ Parameter read Parameter writ | - | | | ameters are | written to the | target modu | de. | | Û |
|---|---|--|--|-------------------------|----------------------|----------------|-------------|-------------------|-----------------------|-----|
| arameter Information | | | | Clea | ar Al " <u>R</u> ead | Value" | | <u>C</u> lear All | "Write Value" | |
| Select <u>A</u> ll | Cancel All | Selections | | Copy "Iniți | al Value" to | "Write Value" | | Copy "Read Val | ue" to "Write Value" | |
| Name | | Initial Value | Unit | Read Value | Unit | Write Value | Unit | Setting Range | Description | ^ |
| Station parameter | | | | | | | | | | |
| Input respons | e time setting | 5: 10ms | | | | | | | The input module | t |
| Output HOLD Cydic data up | CLEAR setting | 0: CLEAR | | | | | | | Set whether to ho | 6 |
| Cyclic data up | date watch time | 0 | x100ms | | x100ms | | x100ms | 0 to 20 | Set the cyclic data | |
| Mode switch | | 9: Automati | | | | | | | Set the operation | |
| Initial operation | in setting | 0: with initia | | | | | | | Set whether the is | |
| Basic module paramet | ter | | | | | | | | | |
| Number of ON | times integratio | | | | | | | | Set the number of | F |
| Number of | ON times integra | 0: Disable | | | | | | | The total number | |
| < htmlmr of | MI times interes | 0. Disable | | | | | | | Then initial or other | - × |
| rocess Option | | | There is n | o option in the : | selected pro | ocess. | | | | |
| he refreshed device ccesses the PLC CPU rocess is executed a or information on iter Enable safety modul | by using the curre coording to the par ins not displayed or | nt connection de ameters written n the screen, ple | estination. In the PLC ase refer t | Please check if CPU. | f there is an | y problem with | the connec | | rameter Processing | ĺ |

■Reading/writing parameters of the same slave station

The following shows the procedure for the system configuration that includes two of NZ2GF2B1-16TE as slave stations.



- 1. Select a device supporting iQSS in the "CC IE Field
 - Configuration" window, then right-click and select [Online] ⇒ [The Parameter Processing of Same Slave Station] from the shortcut menu.

| cedure 1 it the parame e result of "Ec | ter of specified module and select "Method selection". diting Parameter" is hold in the "Parameter Processing of Slave Station" function | of "Specified Module". | |
|---|--|---|------|
| pecified Modu | le: NZ2GF2B1-16TE | | |
| tation No.: | 2 | Editing Parameter | |
| 7 cedure2 | e module, version is same to the module, to the specified module, Parameter Pro granget module. | cessing by the same parameter is execut | sble |
| Select A | Cancel All Selections | | |
| Stati | Model Name | Module Version | 100 |
| | | | -88 |
|] 2 N | 220F81-16TE | 1 | |
|] 2 N 3 N | 2007/81-1491E | 1 | |
|] 2 N] 3 N | 226F201-167E | 1 | |
| Enabi Before Enabi | 2007/81-1491E | 1 | |
| Comparison | 2007/81-1491E is safety module when aucceed to write parameter. or switching to safety modo, please always check-whether the parameter is w | 1 | |
| 2 N 3 N Brab Tenab "Befn redure3 Execute the Execute Para | is safety module when nacreed to write parameter. ore safetying of a safety mode, plasse shorty check of other the parameter is or parameter processing and diplicate ameter Duplicate Only | 1 | |
| 2 N 3 N Enab "Bef- Execute the | is safety module when nacreed to write parameter. ore safetying of a safety mode, plasse shorty check of other the parameter is or parameter processing and diplicate ameter Duplicate Only | titien correctly. | |
| 2 N 3 N Brab Tenab "Befn redure3 Execute the Execute Para | is safety module when nacreed to write parameter. ore safetying of a safety mode, plasse shorty check of other the parameter is or parameter processing and diplicate ameter Duplicate Only | titien correctly. | |
| 2 N 3 N Brab Tenab "Befn redure3 Execute the Execute Para | is safety module when nacreed to write parameter. ore safetying of a safety mode, plasse shorty check of other the parameter is or parameter processing and diplicate ameter Duplicate Only | titien correctly. | |
| 2 N 3 N Bab redure3 Execute the Execute Para recution Resu | is safety module when nacreed to write parameter. ore safetying of a safety mode, plasse shorty check of other the parameter is or parameter processing and diplicate ameter Duplicate Only | titien correctly. | |

 Planeter Processing of Slave Station
 Image: Node Station
 <td

| Parameter Processing | | ield configuration (Start I/O : 0000) | | |
|---|---|--|--------------------------|-------------------|
| rocedure 1 Edit the parameter of sp The result of "Editing Pa | ecified module and select "Method rameter" is hold in the "Parameter F | selection". 'rocessing of Slave Station" function of "Specified Mod | de". | |
| Specified Module: | NZ2GF281-16TE | | | |
| Station No.: | 2 | | | Editing Parameter |
| | | | | |
| Only the mode | le version is same to the module, t | the specified module, Parameter Processing by the s | ame parameter is executa | sble. |
| ×. I | | | | |
| rocedure2 Select executing target | modula | | | |
| Method selection: | Parameter read | | | |
| Select <u>A</u> I | Cancel All Selections | | | |
| Stati | | todel Name | Module Version | |
| 2 NZ2GF28 | 1-16TE | | 1 | |
| 3 NZ2GF28 | 1-16TE | | 1 | |
| | | | | |
| | ty module when succeed to write p | | | |
| | itching to safety mode, please akv | sys check whether the parameter is written correctly. | | |
| ocedure3 | ter processing and duplicate | | | |
| Execute Parameter I | | | | |
| | | | | |
| Execution Result: | | | | Execute |
| | | | | ^ |
| | | | | |
| | | | | ~ |
| < | | | | > |
| Evenert Even | cution Result | | | |
| Export Exe | | | | |
| | | | | Close |
| | | | | 2006 |

The "The Parameter Processing of Same Slave Station" screen appears.

2. Click the [Editing Parameter] button.

The "Parameter Processing of Slave Station" screen appears.

3. Set the parameter information, and click the [Close with setting] button.

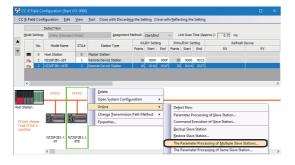
4. Select a target device.

Note that the devices with the same model name and the same device version can be the target.

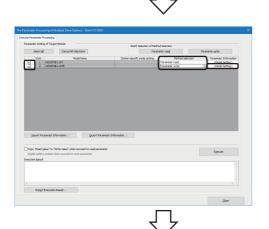
5. Click the [Execute] button.

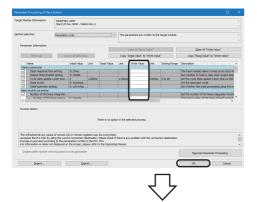
The execution result is output by clicking the [Export Execution Result] button.

■Reading/writing parameters of multiple slave stations



 Select a device supporting iQSS in the "CC IE Field Configuration" window, then right-click and select [Online] ⇒ [The Parameter Processing of Multiple Slave Stations] from the shortcut menu.





| rameter Setting of Target Module | Batch Selection of Net | hod Selection | | | |
|--|-------------------------------|-----------------|-----------|------------------------------|--|
| Select & Cancel All Selections | Pari | Parameter reag | | Parameter grite | |
| Stati Model Name | Station-specific mode setting | Method : | selection | Parameter Information | |
| 1 NZ2GF281-16T | | Parameter read | | <detail setting=""></detail> | |
| 2 N225F281-35TE | | Parameter write | v | «Detail Setting» | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| (nour Parameter Information | ter Information | | | | |
| | | | | | |
| Copy 'Read yake" to "Write Vake" when succeed to read paramete | | | | | |
| jeport feaseter information | | | | Egecute | |
| Copy 'Read yake" to "Write Vake" when succeed to read paramete | | | | Egecute | |
| Copy 'Read Yake" to 'Write Vake" when succeed to read parameter Epiblic sofety module when succeed to write parameter | | | C | Egeoste | |
| Copy 'Read Yake" to 'Write Vake" when succeed to read parameter Epiblic sofety module when succeed to write parameter | | | C | Egecute | |
| Copy 'Read Yake" to 'Write Vake" when succeed to read parameter Epiblic sofety module when succeed to write parameter | | | C | Ejjeoste | |
| Copy 'Read Yake" to 'Write Vake" when succeed to read parameter Epiblic sofety module when succeed to write parameter | | | C | Egecute | |
| Copy 'Read Yake" to 'Write Vake" when succeed to read parameter Epiblic sofety module when succeed to write parameter | | | | Egecite | |
| Copy 'Read Yake" to 'Write Vake" when succeed to read parameter Epiblic sofety module when succeed to write parameter | | | C | Egeoste | |

The "The Parameter Processing of Multiple Slave Stations" screen appears.

- **2.** Select the checkboxes of target modules the parameters of which are read from or written to.
- **3.** Select processing to be executed in the column of "Method selection" for each target module.
- **4.** Click the column of "Parameter Information" for a target module the parameters of which are written to.

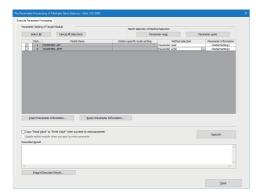
The "Parameter Processing of Slave Station" screen appears.

- 5. Enter a value in the column of "Write Value."
- 6. Click the [OK] button.

7. Click the [Execute] button.

The execution result is output by clicking the [Export Execution Result] button.

"The Parameter Processing of Multiple Slave Stations" screen



| Item | | Description | | |
|--|--------------------------|---|--|--|
| [Select All] button | | Click this to select all slave modules as target modules the parameters of which are read from/written to. | | |
| [Cancel All Selections] button | | Click this to cancel all selections of slave modules as target modules the parameters of which are read from/written to. | | |
| Batch Selection of Method Selection | [Parameter read] button | Click this to set "Method selection" for the selected multiple slave modules to "Parameter read" in a batch. | | |
| | [Parameter write] button | Click this to set "Method selection" for the selected multiple slave modules to "Parameter write" in a batch. | | |
| Method selection | | Select processing to be executed for the selected multiple slave modules. Parameter read: Parameters are read from the selected multiple slave modules in a batch. Parameter write: Parameters are written to the selected multiple slave modules in a batch. | | |
| Parameter Information | | The settings of a slave module can be checked in the "Parameter Processing of Slave Station" screen opened by clicking the cell of the module. | | |
| [Import Parameter Information] button | | Click this to read contents of parameter processing created in a CSV file. (A CSV file output in the "Parameter Processing of Slave Station" screen and this screen is read.) | | |
| [Export Parameter Information] button | | Click this to output contents of parameter processing set for multiple slave modules in this screen to a CSV file. | | |
| "Copy "Read Value" to "Write Value" when succeed to read parameter" checkbox | | Select this to set the read value from an actual module to the written value when "Method selection" for the selected multiple slave modules is "Parameter read." | | |
| "Enable safety module when succeed to write parameter" checkbox | | Select this to enable a safety module when "Method selection" for the selected multiple slave modules is "Parameter write." | | |

Option setting

The "Option Setting" screen will appear by selecting [Tool] \Rightarrow [Options] in the "CC IE Field Configuration" window. In the option setting, parameter information can be saved in a project.

Parameter information is saved in a project by selecting the checkbox.

| Option Setting | × |
|---|---|
| Save the parameter set by "Parameter Processing of Slave Station" to project. | |
| Clear the option and turn OFF in the operation of reading from PLC. Also, clear the parameter information of "Parameter Processing of Slave Station" in the operation of Detect Now. For the clear condition details of the option or parameter information, please refer to "IQ Sensor Solution Reference Manual". | |
| OK Cancel | |

Conditions under which saved parameter information is cleared

Saved parameter information will be deleted under the following condition.

Read the parameters of a slave station by selecting [Parameter Processing of Slave Station]/[The Parameter Processing of Slave Station]/[The Parameter Processing of Multiple Slave Stations] from the shortcut menu.

| Item | Operation | Content | |
|--|--|---|--|
| "CC IE Field Configuration" window | Open the "CC IE Field Configuration" window. | Parameter information will be skipped and not read when the module with the station number that match with the saved parameter information is not placed in the "CC IE Field Configuration" window. In addition, parameter information which was skipped and not read will be deleted from the storage file. | |
| | Close with the setting applied. | Parameter information will be deleted from the storage file when the target module is not included in the system configuration. | |
| | Perform an automatic detection of connected devices. | All parameter information will be deleted once. | |
| | Change the function version, and close the property screen. | Parameter information will be deleted from the storage file by closing the property screen after changing the function version. | |
| | Unselect the checkbox in the option setting. | Parameter information will be deleted from the storage file by saving the setting after unselecting the checkbox. | |
| "Parameter Processing of Slave Station" screen | Open the "Parameter Processing of Slave Station" screen. | Parameter information that does not match with the target module will be skipped and not read. In addition, after the [OK] button is clicked and the "Parameter Processing of Slave Station" is closed, the parameter information which was skipped and not read will be deleted from the storage file. | |
| Parameter application | Apply parameters in MELSOFT Navigator. | Parameter information will be deleted from the storage file by applying the parameter in MELSOFT Navigator. In addition, the checkbox in the option setting will be OFF (unselected). | |
| Deletion of a master station from the system configuration | Delete the module parameter. | Parameter information will be deleted from the storage file | |
| | Performing an operation that clears the network configuration setting. | by performing any of the following operations. ☞ Page 286 Operations that delete the parameters of a slave station in GX Works3 | |
| | Read data from a programmable controller. | In addition, the checkbox in the option setting will be OFF (unselected). | |

■Operations that delete the parameters of a slave station in GX Works3

Parameter information will be deleted from the storage file when performing any of the following operations in GX Works3. Read the parameters of a slave station by selecting [Parameter Processing of Slave Station]/[The Parameter Processing of Slave Station]/[The Parameter Processing of Multiple Slave Stations] from the shortcut menu.

| Group | Station type | Location | Operation |
|---|---|---|---|
| Operation that returns the parameters of the network configuration diagram to the default | Master station/sub- master station Module para | Module parameter | Delete and apply a network configuration diagram manually. |
| | | | Change the parameter setting method from "Parameter Editor" to "Program." |
| | | | Change the station type, and set the parameter for which the network configuration diagram is default or not existed. |
| | | | Change the sub-master setting from "Operate with Parameter of Host Station" to "Read Parameters of the Master Station." |
| Operation that deletes a module | Master station/sub- master station | System parameter | Import the system parameters. The parameters of a slave station are not included from the source project. |
| | | | Change the control CPU from the host CPU to another CPU. |
| | | Module configuration diagram | Remove a module and determine the setting. |
| | | "Navigation" window | Delete a module. |
| Operation that overwrites parameters | Master station/sub- master station | Data reading from a programmable controller | Read data of a module for which the network configuration is different and the start I/O is the same. |
| | | "Navigation" window | Import the data of a simple motion module and the network setting. |

Considerations

■Operation after writing parameters

When parameters of a slave station are written, the slave station operates according to the parameters; therefore, note that the slave station may change its operation.

For details on parameters, refer to the manual for a slave station used.

■A blank in "Write Value"

"Parameter write" cannot be executed if there is even one blank in "Write Value."

■Operation on error

If a module being used has an error, parameters of slave stations may not be read/written properly. Take corrective actions and read/write parameters again.

Reading/writing parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL)

Parameters of devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) can be read and written.

Operating procedure

| Presenter read Protects Protocology Proto | Processing of Slave Module P | energy Netlin 13 Effects (1547) 0347 (1547) energy Netlin 13 Effects (1547) 0347 (1547) to 10 Type Addee Model lates Type Type Outgased Bit Pin Account of the Addee Model lates Type C Effects Addee Model lates C Effects C Effects Addee Model lates C Effects C Effects Addee Model lates C Effects C Effect C Effect C Effect C Effect C Effect C Effe | Processing of Stare Model Processing of Stare | Processing of Stare Model Processing of Stare | Period Part 1: SERvis (2:547) 0:547) Processing of Slave Module Processing of Slave | smissign Points: 512 Points (| t ⊻iew Close with Disc <u>a</u> rding the Se | tting Close with Er | aging the seton | 9 | | | | |
|--|---|---|--|--|--|--|--|--------------------------|----------------------|----------------------|--------------------|------------|------|----------|
| No Tory Address Model have: Tory Document Bit Name No. 2001 JSTA CC.E. Freid-AnywordS.S.R.K. Rodge Houlds Document Bit Name Document Bit Name No. 2001 JSTA CC.E. Freid-AnywordS.S.R.K. Rodge Houlds Document Bit Name Document Bit Name No. 2001 JSTA CC.E. Freid-AnywordS.S.R.K. Rodge Houlds Document Bit Name Document Bit Name No. 2001 JSTA CC.E. Freid-AnywordS.S.R.K. Rodge Houlds Document Bit Name Document Bit Name No. 2001 JSTA CC.E. Freid-AnywordS.S.R.K. Rodge Houlds Document Bit Name Document Bit Name No. 2004 Distance State S | No Tory Address Notal Have Tory Document Ref Document Ref No Tory Notal Have C.E. Freid-AnyworkSLSIK Kindge Houlds Document Ref | ID DD Type Model Nume Type Document Bit Pie 100 DOCUMENTIAL CCE IF Red-AnytimesKER Broke Induke Document Bit Pie Document Bit Pie 44 Addel State CCE IF Red-AnytimesKER Broke Induke Document Bit Pie Document Bit Pie 44 Addel State CCE IF Red-AnytimesKER Broke Induke Document Bit Pie Document Bit Pie 44 Addel State Addel State Addel State Document Bit Pie Document Bit Pie 44 Addel State Addel State Addel State Document Bit Pie Document Bit Pie 44 Addel State Addel State Addel State Document Bit Pie Document Bit Pie 44 Addel State Addel State Addel State Document Bit Pie Docume | No DO Tope Addem Model Intere Type Dot Market No Dot Market No Dot Market Dot Market Dot Market No Dot Market Dot Market Dot Market No Dot Market Dot Market Dot Market | No. 100 Top: Address: Model Inter: Type: Double 100 Top: Address: CCIE Pred-AnyworkEDRK Indge Model Double 100 Top: Address: CCIE Pred-AnyworkEDRK Indge Model Double 100 Top: Address: CCIE Pred-AnyworkEDRK Indge Model Double 100 Top: Top: Formation Double 100 Top: Top: Top: Top: | In Diright Address Nodel Res 10 Type Address CEIT Ped-AnymerkIDPE Stoke Mode 14 CEIT Ped-AnymerkIDPE Stoke Mode Double 14 14 14 14 15 16 17 16 17 16 17 16 17 16 17 17 18 19 19 19 19 10 | | Verify | | | | | | | |
| No. (b) Type (Address Note have Type Type NC2WN 1974. C.I. El Pried-AnyWeskE3NE Bioge Notate No. Notation < | Interview Part Inst Outer Introduction Introduction CE Einst-AnytwackINE Biogrammake Outer Introduction CE Einst-AnytwackINE Biogrammake Introduction Outer Introduction CE Einst-AnytwackINE Biogrammake Introduction Introduction Introduction CE Einst-AnytwackINE Biogrammake Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction | Inc. UP Type Model here Type Type Dots VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. Model AnymerkLIME these heads VICUAL UP X. Model AnymerkLIME these heads VICUAL UP X. Model AnymerkLIME these heads | No. (b) type (Address Note have Type Type Type Type Double N 2001 1074k CC III Pred-dryWradDIN Bridge Nodale Count Output Output N Address CC III Pred-dryWradDIN Bridge Nodale Output N Address CO III Pred-dryWradDIN Bridge Nodale Output N Address CO III Pred-dryWradDIN Bridge Nodale Output Nodale Branneter Dry Nodale Province III Pred-dryWradDIN Bridge Nodale (Provincelectronic Sensor Amptifier) Output Nodale Reameter II Prevince Province III Prevince III Prevince III Prevince III Prevince III Prevince III Prevince IIII Prevince IIII Prevince IIII Prevince IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | No. (6) Type (Address Note Have Type Type Type Dust Outbol VICUNITION C.I.I. Pred-anythexADIX Bioge Notate Intel Outbol Intel Outbol V Intel Outbol C.I.I. Pred-anythexADIX Bioge Notate Intel Outbol V Intel Outbol Intel Outbol Intel Outbo | Inc. Up Type Notes Type Type Type Type Notable Processing of Slave Module Notable Processing Of Notable Processing Of Slave Module< | | I:256 P, O:256 P) V TX Cycle Tir | me (Approx.): | 10.7 ms | | | | | |
| No. (b) Type (Address Note have Type Type NC2WN 1974. C.I. El Pried-AnyWeskE3NE Bioge Notate No. Notation < | Interview Part Inst Outer Introduction Introduction CE Einst-AnytwackINE Biogrammake Outer Introduction CE Einst-AnytwackINE Biogrammake Introduction Outer Introduction CE Einst-AnytwackINE Biogrammake Introduction Introduction Introduction CE Einst-AnytwackINE Biogrammake Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction Introduction | Inc. UP Type Model here Type Type Dots VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. CCI III net AnymerkLIME these heads VICUAL UP X. Model AnymerkLIME these heads VICUAL UP X. Model AnymerkLIME these heads VICUAL UP X. Model AnymerkLIME these heads | No. (b) type (Address Note have Type Type Type Type Double N 2001 1074k CC III Pred-dryWradDIN Bridge Nodale Count Output Output N Address CC III Pred-dryWradDIN Bridge Nodale Output N Address CO III Pred-dryWradDIN Bridge Nodale Output N Address CO III Pred-dryWradDIN Bridge Nodale Output Nodale Branneter Dry Nodale Province III Pred-dryWradDIN Bridge Nodale (Provincelectronic Sensor Amptifier) Output Nodale Reameter II Prevince Province III Prevince III Prevince III Prevince III Prevince III Prevince III Prevince IIII Prevince IIII Prevince IIII Prevince IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | No. (6) Type (Address Note Have Type Type Type Dust Outbol VICUNITION C.I.I. Pred-anythexADIX Bioge Notate Intel Outbol Intel Outbol V Intel Outbol C.I.I. Pred-anythexADIX Bioge Notate Intel Outbol V Intel Outbol Intel Outbol Intel Outbo | Inc. Up Type Notes Type Type Type Type Notable Processing of Slave Module Notable Processing Of Notable Processing Of Slave Module< | | | | | Occup | ied Bit Pts | | | |
| A A | A A | A | Processing of Sine Module Address: 2 Processing of Sine Module Processing of Sin | | A A | | | Туре | | | | | | |
| A | A A A A A A | A | Add Parameter 1 Adde | Add Parameter Vanne Vander Vander von Hodder von Hodder Vander Vand | Add Protects of Parameter Vanam Threadod B0 Kodele Parameter Vanam Threadod B0 Kode | N | ZZAW IGFAL CC IE Field- | AnyWireASLINK Bridg | e Module | | | | | |
| A | A A A A A A | A sector of the sector of | Add Parameter 1 Adde | Add Parameter Vanne Vander Vander von Hodder von Hodder Vander Vand | A | | | | | | | | | |
| A | A A A A A A | A | Add Parameter 1 Adde | Add Parameter Vanne Vander Vander von Hodder von Hodder Vander Vand | Add Protects of Parameter Vanam Threadod B0 Kodele Parameter Vanam Threadod B0 Kode | | | | | | | | | |
| A | A A A A A A | A sector of the sector of | Add Parameter 1 Adde | Add Parameter Vanne Vander Vander von Hodder von Hodder Vander Vand | A | | | | | | | | | |
| Processing of Stave Module Processing of P | Processing of Stave Module Proprint Adde Branneter Proprint Adde Branneter Proprint Adde Branneter Description S | A | A A | Processing of Size Module Social Enformation If D Types: Proxt: America: America: America: The Size Size Size Size Size Size Size Siz | A | FAL. | | | | | | | | |
| Processing of Stave Module Processing of P | Processing of Stave Module Proprint Adde Branneter Proprint Adde Branneter Proprint Adde Branneter Description S | A | A A | Processing of Size Module Social Enformation If D Types: Proxt: America: America: America: The Size Size Size Size Size Size Size Siz | A | | | | | | | | | |
| Processing of Stave Module Processing of P | Processing of Stave Module Proprint Adde Branneter Proprint Adde Branneter Proprint Adde Branneter Description S | A | A A | Processing of Size Module Social Enformation If D Types: Proxt: America: America: America: The Size Size Size Size Size Size Size Siz | A | lodule | | | | | | | | |
| Interesting of Save Module X bodde Information: 2D Types Inout: Address: 2 Type Norm: ALD NAVP-Types Module non-Isolated/Photoelectronic Sensor Amplifer) Image: Comparison of the sense of the target module will be read. order to safe Comparison of the sense of the target module will be read. Image: Comparison of the sense of the target module will be read. metric information Parameter read Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. metric information Parameter (norm Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. wild be parameter 2 Heph Level of Alam Threshold 20 Module Parameter 3 Status of the target module will be read. Status of the target module will be read. wild be Parameter 4 Low Low of Alam Threshold 20 Module Parameter 5 Alam Setting Threshold 20 Module Parameter 6 Device Foreston 1 Wide Parameter 8 Charge Gensent Type DeviceExclus. Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 On the setter 1 Envice 1 Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 | School Street School Street School | er Processing of Silve Module. Adule Informator: | | Processing of Sine Module State codule Information [20 Types Incut.] double Information [20 Types Incut.] double Name: E2 States 2: 2 Types Incut.] Types Incut.] Module Parameter 5: 0 Module Parameter Information Include parameters of the target module will be read. Module Parameter Information Include parameters of the target module will be read. Module Parameter 1 Threnhold Module Parameter 1 Hypercenter for Amm Threnhold Module Parameter 6 Hypercenter of Amm Threnhold Module Parameter 8 Hypercenter of Amm Threnhold Module Parameter 9 - Adm Threnhold Module Parameter 9 - Adm Threnhold Module Parameter 9 - Change Capeentonin Mode Module Parameter 9 - Change Capeentonin Mode Module Parameter 9 - Change Capeentonin Mode Module Parameter 10 - Nodule Parameter 11 Module Parameter 12 - Nodule Parameter 13 Module Parameter 13 - Nodule Parameter 14 Module Parameter 14 - Nodule Parameter 15 Module Parameter 15 - Nodule Parameter 16 | er Processing of Silve Module Adde Informator ID3 Type: Next AD INAMP-input Module -non-Isolated/Protoelectrons: Sensor Amplifer) Adde Informator ID4 Type: Next AD INAMP-input Module -non-Isolated/Protoelectrons: Sensor Amplifer) Module Informator ID4 Informato | acted Co | | | | | | | | |
| Interesting of Save Module X bodde Information: 2D Types Inout: Address: 2 Type Norm: ALD NAVP-Types Module non-Isolated/Photoelectronic Sensor Amplifer) Image: Comparison of the sense of the target module will be read. order to safe Comparison of the sense of the target module will be read. Image: Comparison of the sense of the target module will be read. metric information Parameter read Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. metric information Parameter (norm Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. wild be parameter 2 Heph Level of Alam Threshold 20 Module Parameter 3 Status of the target module will be read. Status of the target module will be read. wild be Parameter 4 Low Low of Alam Threshold 20 Module Parameter 5 Alam Setting Threshold 20 Module Parameter 6 Device Foreston 1 Wide Parameter 8 Charge Gensent Type DeviceExclus. Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 On the setter 1 Envice 1 Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 | School Street School Street School | er Processing of Silve Module. Adule Informator: | | Processing of Sine Module State codule Information [20 Types Incut.] double Information [20 Types Incut.] double Name: E2 States 2: 2 Types Incut.] Types Incut.] Module Parameter 5: 0 Module Parameter read Incut Parameter not information Module Parameter 1 Threnhold Module Parameter 2: - Change Capestional Mode Module Parameter 3: - DarkOnfeas Module Parameter 1: - Threnhold Module Parameter 1: - | er Processing of Silve Module Adde Informator ID3 Type: Point Adde Informator ID3 Type: Point AD404P-input Module-non-Isolated(Photoelectron: Sensor Amplifer) Adde Name: E32582-014P-CAS Selector: Parameter read Parameter read Parameter read Parameter information Immedia | | | | | | | | | |
| Interesting of Save Module X bodde Information: 2D Types Inout: Address: 2 Type Norm: ALD NAVP-Types Module non-Isolated/Photoelectronic Sensor Amplifer) Image: Comparison of the sense of the target module will be read. order to safe Comparison of the sense of the target module will be read. Image: Comparison of the sense of the target module will be read. metric information Parameter read Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. metric information Parameter (norm Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. wild be parameter 2 Heph Level of Alam Threshold 20 Module Parameter 3 Status of the target module will be read. Status of the target module will be read. wild be Parameter 4 Low Low of Alam Threshold 20 Module Parameter 5 Alam Setting Threshold 20 Module Parameter 6 Device Foreston 1 Wide Parameter 8 Charge Gensent Type DeviceExclus. Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 On the setter 1 Envice 1 Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 | School Street School Street School | er Processing of Silve Module. Adule Informator: | | Processing of Sine Module State codule Information [20 Types Incut.] double Information [20 Types Incut.] double Name: E2 States 2: 2 Types Incut.] Types Incut.] Module Parameter 5: 0 Module Parameter read Incut Parameter not information Module Parameter 1 Threnhold Module Parameter 2: - Change Capestional Mode Module Parameter 3: - DarkOnfeas Module Parameter 1: - Threnhold Module Parameter 1: - | er Processing of Silve Module Adde Informator ID3 Type: Point Adde Informator ID3 Type: Point AD404P-input Module-non-Isolated(Photoelectron: Sensor Amplifer) Adde Name: E32582-014P-CAS Selector: Parameter read Parameter read Parameter read Parameter information Immedia | | | | | | | | | |
| Interesting of Save Module X bodde Information: 2D Types Inout: Address: 2 Type Norm: ALD NAVP-Types Module non-Isolated/Photoelectronic Sensor Amplifer) Image: Comparison of the sense of the target module will be read. order to safe Comparison of the sense of the target module will be read. Image: Comparison of the sense of the target module will be read. metric information Parameter read Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. metric information Parameter (norm Image: Comparison of the target module will be read. Image: Comparison of the target module will be read. wild be parameter 2 Heph Level of Alam Threshold 20 Module Parameter 3 Status of the target module will be read. Status of the target module will be read. wild be Parameter 4 Low Low of Alam Threshold 20 Module Parameter 5 Alam Setting Threshold 20 Module Parameter 6 Device Foreston 1 Wide Parameter 8 Charge Gensent Type DeviceExclus. Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 On the setter 1 Envice 1 Image: Comparison 1 Image: Comparison 1 Wide Parameter 13 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 Image: Comparison 1 | School Street School Street School | er Processing of Silve Module. Adule Informator: | | Processing of Sine Module State codule Information [20 Types Incut.] double Information [20 Types Incut.] double Name: E2 States 2: 2 Types Incut.] Types Incut.] Module Parameter 5: 0 Module Parameter read Incut Parameter not information Module Parameter 1 Threnhold Module Parameter 2: - Change Capestional Mode Module Parameter 3: - DarkOnfeas Module Parameter 1: - Threnhold Module Parameter 1: - | er Processing of Silve Module Adde Informator ID3 Type: Point Adde Informator ID3 Type: Point AD404P-input Module-non-Isolated(Photoelectron: Sensor Amplifer) Adde Name: E32582-014P-CAS Selector: Parameter read Parameter read Parameter read Parameter information Immedia | | | | | | | | | |
| edde Informator: I (D Type: Input Address: 2 D Type: Input Address: 2 D Type: Input Mode Parameter rank Parameter rank Parameter rank Parameter rank Parameter rank Parameter rank Parameter I Therefold Parameter Alam Treabul S Node Parameter S Hysterss: Node Parameter S Hysterss: Parameter Alam Treabul S Node Parameter S Hysterss: Node Parameter S D Type: Show Node Parameter S D Type: Show D Type | dolle Information: LID Type: Input Address: 2 Address: 2 Model Parameter isse Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter Rame Parameter Alam Treahold 3 Nodule Parameter 3 Hotole Parameter 3 Hotole Parameter 3 Hotole Parameter 4 Hystersse Parameter Alam Treahold 3 Nodule Parameter 4 Hystersse Parameter 6 Hystersse Parameter 6 Hystersse | bodde Information: Di Type: Input Address: Di Type: Input Address: Di Type: Input Address: selector: Discrete read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter I: Module parameters of the target module will be read. Read Value Discrete read Parameter read Parameter I: Threahold Internet: Threahold So Nodal: Parameter I: Threahold Nodal: Parameter I: Deklofregu Nodal: Parameter I: Deklofregu Nodal: Parameter I: Threahold | odde Informatori Lij D'Type: Erput Address: 2 DDXUP Front Moder-non-Isolated/Photoelectron: Sensor Anglifer) The Information Sensor JuP-CAS weld Name: 823089-13P-CAS Model parameter and <u>Parameter and the Information Sensor Anglifer</u>) Model parameters of the target model will be read. <u>Parameter and the Information Sensor Anglifer</u>) Model Parameter 1 <u>Parameter Information Sensor Type</u> Model Parameter 9 - Charge Openitierel Mode Model Parameter 9 - Charge Openitierel Mode <u>Parameter 10</u> Model Parameter 9 - Charge Openitierel Mode <u>Parameter 10</u> - Charge Openitierel Mode <u>Parameter 10</u> - Charge Openitierel Mode <u>Parameter 11</u> - Charge Openitierel Mode <u>Parameter 12</u> - Charge Openitierel Mode <u>Parameter 13</u> - Charge Openitierel Mode <u>Parameter 14</u> - Charge Open | odde Informatori Lij D'Type: Enput Address: 2 DRUAP Front Nodde non-Isolated/Photoelectron: Sensor Amplifer) Wolde Name: ESISSE 918-92-026 Wolde Parameter and Parameter and Parameter in the sense Nodde Parameter 1 Nodde Parameter 9 Nodde Parameter 1 Nodde Parameter 1 | Nodels Information: DT Types: Input Address: Bit SUP - Road Models non-Isolated (Photoelectrunic Sensor Amplifer) Selector:: Draneter cad Product Presenter: Draneter information Intermeter:: Draneter loss Model presenter: of the target models will be read. Intermeter:: Draneter loss Sectors: Nodel: Presenter:: Draneter loss Node: Presenter:: Dr | | | | | | | | | |
| edde Informator: I (D Type: Input Address: 2 D Type: Input Address: 2 D Type: Input Mode Parameter rank Parameter rank Parameter rank Parameter rank Parameter rank Parameter rank Parameter I Therefold Parameter Alam Treabul S Node Parameter S Hysterss: Node Parameter S Hysterss: Parameter Alam Treabul S Node Parameter S Hysterss: Node Parameter S D Type: Show Node Parameter S D Type: Show D Type | dolle Information: LID Type: Input Address: 2 Address: 2 Model Parameter isse Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter Rame Parameter Alam Treahold 3 Nodule Parameter 3 Hotole Parameter 3 Hotole Parameter 3 Hotole Parameter 4 Hystersse Parameter Alam Treahold 3 Nodule Parameter 4 Hystersse Parameter 6 Hystersse Parameter 6 Hystersse | bodde Information: Di Type: Input Address: Di Type: Input Address: Di Type: Input Address: selector: Discrete read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter I: Module parameters of the target module will be read. Read Value Discrete read Parameter read Parameter I: Threahold Internet: Threahold So Nodal: Parameter I: Threahold Nodal: Parameter I: Deklofregu Nodal: Parameter I: Deklofregu Nodal: Parameter I: Threahold | odde Informatori Lij D'Type: Erput Address: 2 DDXUP Front Moder-non-Isolated/Photoelectron: Sensor Anglifer) The Information Sensor JuP-CAS weld Name: 823089-13P-CAS Model parameter and <u>Parameter and the Information Sensor Anglifer</u>) Model parameters of the target model will be read. <u>Parameter and the Information Sensor Anglifer</u>) Model Parameter 1 <u>Parameter Information Sensor Type</u> Model Parameter 9 - Charge Openitierel Mode Model Parameter 9 - Charge Openitierel Mode <u>Parameter 10</u> Model Parameter 9 - Charge Openitierel Mode <u>Parameter 10</u> - Charge Openitierel Mode <u>Parameter 10</u> - Charge Openitierel Mode <u>Parameter 11</u> - Charge Openitierel Mode <u>Parameter 12</u> - Charge Openitierel Mode <u>Parameter 13</u> - Charge Openitierel Mode <u>Parameter 14</u> - Charge Open | odde Informatori Lij D'Type: Enput Address: 2 DRUAP Front Nodde non-Isolated/Photoelectron: Sensor Amplifer) Wolde Name: ESISSE 918-92-026 Wolde Parameter and Parameter and Parameter in the sense Nodde Parameter 1 Nodde Parameter 9 Nodde Parameter 1 Nodde Parameter 1 | Nodels Information: DT Types: Input Address: Bit SUP - Road Models non-Isolated (Photoelectrunic Sensor Amplifer) Selector:: Draneter cad Product Presenter: Draneter information Intermeter:: Draneter loss Model presenter: of the target models will be read. Intermeter:: Draneter loss Sectors: Nodel: Presenter:: Draneter loss Node: Presenter:: Dr | | | | | | | | | |
| edde Informator: I (D Type: Input Address: 2 D Type: Input Address: 2 D Type: Input Mode Parameter rank Parameter rank Parameter rank Parameter rank Parameter rank Parameter rank Parameter I Therefold Parameter Alam Treabul S Node Parameter S Hysterss: Node Parameter S Hysterss: Parameter Alam Treabul S Node Parameter S Hysterss: Node Parameter S D Type: Show Node Parameter S D Type: Show D Type | dolle Information: LID Type: Input Address: 2 Address: 2 Model Parameter isse Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter route Parameter Rame Parameter Alam Treahold 3 Nodule Parameter 3 Hotole Parameter 3 Hotole Parameter 3 Hotole Parameter 4 Hystersse Parameter Alam Treahold 3 Nodule Parameter 4 Hystersse Parameter 6 Hystersse Parameter 6 Hystersse | bodde Information: Di Type: Input Address: Di Type: Input Address: Di Type: Input Address: selector: Discrete read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter read Parameter I: Module parameters of the target module will be read. Read Value Discrete read Parameter read Parameter I: Threahold Internet: Threahold So Nodal: Parameter I: Threahold Nodal: Parameter I: Deklofregu Nodal: Parameter I: Deklofregu Nodal: Parameter I: Threahold | odde Informatori Lij D'Type: Erput Address: 2 DDXUP Front Moder-non-Isolated/Photoelectron: Sensor Anglifer) The Information Sensor JuP-CAS weld Name: 823089-13P-CAS Model parameter and <u>Parameter and the Information Sensor Anglifer</u>) Model parameters of the target model will be read. <u>Parameter and the Information Sensor Anglifer</u>) Model Parameter 1 <u>Parameter Information Sensor Type</u> Model Parameter 9 - Charge Openitierel Mode Model Parameter 9 - Charge Openitierel Mode <u>Parameter 10</u> Model Parameter 9 - Charge Openitierel Mode <u>Parameter 10</u> - Charge Openitierel Mode <u>Parameter 10</u> - Charge Openitierel Mode <u>Parameter 11</u> - Charge Openitierel Mode <u>Parameter 12</u> - Charge Openitierel Mode <u>Parameter 13</u> - Charge Openitierel Mode <u>Parameter 14</u> - Charge Open | odde Informatori Lij D'Type: Enput Address: 2 DRUAP Front Nodde non-Isolated/Photoelectron: Sensor Amplifer) Wolde Name: ESISSE 918-92-026 Wolde Parameter and Parameter and Parameter in the sense Nodde Parameter 1 Nodde Parameter 9 Nodde Parameter 1 Nodde Parameter 1 | Nodels Information: DT Types: Input Address: Bit SUP - Road Models non-Isolated (Photoelectrunic Sensor Amplifer) Selector:: Draneter cad Product Presenter: Draneter information Intermeter:: Draneter loss Model Presenter: Intermeter:: Presenter:: Draneter Information Model: Presenter:: Draneter:: Model: Presenter:: | | | | | | | | | |
| Address: 20************************************ | Address: 20************************************ | Add ess: 2 ************************************ | Add ess: 2 Model Reameter 10 Model Reameter 11 Model Reameter 12 Model Reameter 13 Model Reameter 14 Model Reameter 14 Model Reameter 15 Model Reameter 14 Model Reameter 15 Model Reamet | Add ess: 2 Add ess: 4 Model New: 62.0000 UHP-CI. Model New: 62.00000 UHP-CI. Model New: 62.00000 UHP-CI. Model New: 62.000000000 UHP-CI. Model New: 62.000000000000000000000000000000000000 | Product Processor Parameter Value Product Processor Bit Add Status Parameter Value Model Parameter Value Model Parameter Value Bit Add Parameter Value Donal Value Donal Value Donal Value Donal Value Bit Add Parameter Value Donal Value Donal Value Donal Value Donal Value Donal Value Bit Add Parameter Value Donal Value Donal Value Donal Value Donal Value Donal Value Donal Value Bit Add Parameter Value Donal Value Dona Value Donal Value | er Processing of Slave N | | | | | | | | |
| Address: 20************************************ | Address: 20************************************ | Add ess: 2 ************************************ | Add ess: 2 Model Reameter 10 Model Reameter 11 Model Reameter 12 Model Reameter 13 Model Reameter 14 Model Reameter 14 Model Reameter 15 Model Reameter 14 Model Reameter 15 Model Reamet | Add ess: 2 Add ess: 4 Model New: 62.0000 UHP-CI. Model New: 62.00000 UHP-CI. Model New: 62.00000 UHP-CI. Model New: 62.000000000 UHP-CI. Model New: 62.000000000000000000000000000000000000 | Product Processor Parameter Value Product Processor Bit Add Status Parameter Value Model Parameter Value Model Parameter Value Bit Add Parameter Value Donal Value Donal Value Donal Value Donal Value Bit Add Parameter Value Donal Value Donal Value Donal Value Donal Value Donal Value Bit Add Parameter Value Donal Value Donal Value Donal Value Donal Value Donal Value Donal Value Bit Add Parameter Value Donal Value Dona Value Donal Value | | | | | | | | | |
| Type Nome: ASJ, DKAVF-Input Mode anon-Indeeted/Photoelections: Censor Amplifier) Type Nome: ASJ, DKAVF-Input Mode anon-Indeeted/Photoelections: Censor Amplifier) dectors: Parameter read Parameter Name Doted Value Read of the target module will be read. Doted Value Read of target mode Notice Parameter Name Doted Value Read of target mode Mode Parameter 3 Colspan="2">Doted Value Read of Alem Threahold 30 Mode Parameter 4 Level of Alem Threahold 30 Mode Parameter 5 Doted Name Doted Name Mode Parameter 6 Doted Name Doted Name Mode Parameter 8 Doted Name Doted Name | Type Norm: ASJ, DKAVF-Input Mode anon-Indeted/Photoelectronic Series Amplifier) Type Norm: ASJ, DKAVF-Input Mode anon-Indeted/Photoelectronic Series Amplifier) dector: Type Norm: ASJ, DKAVF-Input Mode anon-Indeted/Photoelectronic Series Amplifier) dector: Dector: Type Norm: ASJ, DKAVF-Input Mode anon-Indeted/Photoelectronic Series Amplifier) dector: Parameter Name Inded Value Seting Range Unit Mode Parameter 3 The Inded Size Mode Parameter 4 Destinal Mode Mode Parameter 4 Levice of Alam Threnhold 30 Mode Parameter 4 Destinal Mode Destinal Mode Mode Parameter 5 Charge Sensor Type Destinal Mode Mode Parameter 5 Charge Sensor Type Mode Parameter 3 Mode Parameter 3 Charge Sensor Type Sensor Type A Mode Parameter 3 Mode Parameter 3 Mode Parameter 3 Destinal Mode | Type None: ALBXAVE-input Needler non-isolated(Photoelectron: Sensor Angeller) Selector: Parameter read Parameter read Parameter in the sense of the target model will be read. Parameter read Parameter in the sense of the target model will be read. Parameter read Parameter in the sense of the target model will be read. Parameter read Parameter in the sense of the target model will be read. Parameter read Parameter in the sense of the target model will be read. Parameter in the sense of the sense of the target model will be read. Dis 100 Parameter in the sense of the sense of the sense of the target model will be read. Dis 100 Parameter in the sense of the sens | Type Nome: ASJ, NKAVE-Input Mode on on Isolated(Photoelectron Clerkor Amplifier) dector: Transfer read Warneter read Todale parameters of the target module will be read. Model Parameter Name Initial Value Rettor: Parameter Name Model Parameter 1 Threnhold Model Parameter 1 Threnhold Model Parameter 6 Units of Amm Threnhold Model Parameter 1 Threnhold Model Parameter 6 Units of Amm Threnhold Model Parameter 6 Units of Amm Threnhold Model Parameter 7 Threnhold Model Parameter 9 - Name Threnhold Model Parameter 9 - Change Copestional Mode non-Instal Mode Model Parameter 9 - Change Copestional Mode non-Instal Mode Model Parameter 9 - Change Copestional Mode non-Instal Mode Model Parameter 1 - Change Copestional Mode non-Instal Mode Model Parameter 1 - Change Copestional Mode non-Instal Mode Model Parameter 1 - Change Copestional Mode non-Instal Mode Model Parameter 1 - Change Copestional Mode non-Instal Model Parameter 1 - Change Copestional Mode non-Instal Mode Model Parameter 1 - Change Copestional Mode non-Instal Mode Model Parameter 1 - Change Copestional Mode non-Instal Mode Model | Type Nome: ASJ, NKAM-Pinget Models non-Indeted/Photoelections: Series Amplifier dector: Transfer read With New: ESSERS 0.1A-C.S. Model Parameter read With New: ESSERS 0.1A-C.S. New: Environment Nodel: Parameter 1 Node: Parameter 3 Node: Parameter 4 Node: Parameter 5 Node: Parameter 6 Unit Node: Parameter 7 Node: Parameter 8 Change: Coperational Mode non-Indetection. Node: Parameter 8 Change: Coperational Mode non-Indetection. Node: Parameter 9 Node: Parameter 10 Node: Parameter 11 Node: Parameter 12 Node: Parameter 13 N | Type Nome: A2 DIAVAP - Input Node: A DiavaP - A3 selector: Parameter read Parameter R Parameter B | | | | | | | | | \wedge |
| Model Nume: 538589-014P-CAS Model Nume: 538589-014P-CAS Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Nume Parameter Name Parameter Name Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Nucle Parameter 1 Threshold S0 0 to 100 Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will be read. Description: Comparison of the sarget module will | Model Nume: 538589-014P-CAS Model Nume: 538589-014P-CAS Parameter read Parameter read Parameter read Parameter read Parameter Nume Nume: 538589-014P-CAS Parameter read Model Parameter 1 Parameter Nume Parameter Nume Parameter Nume Parameter Nume Model Parameter 2 Hysteretsis S 0 0 to 100 Model Parameter 3 Hybit Level of Alam Threshold 0 0 to 100 Image: Nume Parameter 2 Hybit Level of Alam Threshold 0 0 to 100 Image: Nume Parameter 2 Hybit Level of Alam Threshold 0 0 to 100 Image: Nume Parameter 2 Nume Parameter 2 Nume Nume Parameter 3 Image: Nume Nume Parameter 3 Image: Nume Num Nume Nume Num | Model Name: B29585-01AP-CAS Parameter read Parameter 15 Parameter 15 Parameter 18 Parameter 18 Parameter 18 Parameter 18 Parameter 18 Parameter 18 Parameter 28 Parameter 28 Parameter 28 Parameter 28 </td <td>Model Name: E39589-01AP-CAS Model Name: E39589-01AP-CAS Marcher read Marcher read</td> <td>Model Name: E39589-01AP-CAS Marines: read Introduction Marines: read Introduction Read Value Marines: read Introduction Read Value Read Value Read Value Marines: Read Value Introduction Read Value Read Value</td> <td>Model Name: B23555-01AP-CAS Mediate read Reamber read Reamber read Reamber write how the following Parameter read Read Value Write Value Status Description The Mediate Formeter 3 Parameter Name Find Value Status Status Status Name Status Description Status Status Status Name Status Description Status Des</td> <td></td> <td></td> <td> Tealated/01</td> <td>ha ba al a shaaria (</td> <td>Courses Annalifiers)</td> <td></td> <td></td> <td></td> <td></td> | Model Name: E39589-01AP-CAS Model Name: E39589-01AP-CAS Marcher read | Model Name: E39589-01AP-CAS Marines: read Introduction Marines: read Introduction Read Value Marines: read Introduction Read Value Read Value Read Value Marines: Read Value Introduction Read Value | Model Name: B23555-01AP-CAS Mediate read Reamber read Reamber read Reamber write how the following Parameter read Read Value Write Value Status Description The Mediate Formeter 3 Parameter Name Find Value Status Status Status Name Status Description Status Status Status Name Status Description Status Des | | | Tealated/01 | ha ba al a shaaria (| Courses Annalifiers) | | | | |
| sector: Parameter read Parameter re | sector: Parameter read Parameter read Parameter rout Parameter ro | selector: Parameter read Module parameters of the target module will be read. Parameter read Parameter read Parameter read Module parameters of the target module will be read. Parameter read Parameter read Parameter read | elector: | elector: | selector: Parameter rand Module parameters of the target module will be read. Parameter rand Parameter rand Parameter rand Module parameters of the target module will be read. Parameter rand Parameter rand Parameter rand Heyteredis Parameter rand Locu ceri of Anim Threnhold Solde Parameter rand Charge Cape and Mode one Obsteta. Parameter rand Charge Sensor Type Parameter rand Charge Sensor Type Parameter rand Parameter rand Parameter rand Parameter rand Parameter rand Parameter rand Parameter rand Parameter rand Parameter rander rand Parameter rand | Mod | el Name: B289SB-01AP-CAS | enon-solateo(ei | notoelectronic : | sensor Ampiner) | | | | |
| Provemente and Provemente and Provemente in the Instal Value Array of the Instal Value Array o | Presenter and Presenter Name Initial Value Read Value Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Presided B0 De Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Value Do Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Value Do Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Value Do Vitre Value Do Vitre Value Do Vitre Value Do Vitre Value Presenter S Adm Streing Timer Value Presenter S Change Destatoria Node Presenter S Change Sensor Type A Node Presen | Parameter and Parameter inte temperature of the parameter interview of th | Parameter state Description Processes state Initial Value Sead Value Virte Value Sead Value S | Provente radie Description Proventer radie Interview Section 2000 Proventer radie Threnhold So | Praventer and Produce Praventer 13 Produce Praventer 13 Produce Praventer 13 Produce Praventer 14 Produce Praventer 14 Produce Praventer 15 Produce | | | | | | | | | |
| Provemente and Provemente and Provemente in the Instal Value Array of the Instal Value Array o | Presenter and Presenter Name Initial Value Read Value Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Presided B0 De Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Value Do Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Value Do Vitre Value Do to 100 million Value Presenter S Adm Streing Timer Value Do Vitre Value Do Vitre Value Do Vitre Value Do Vitre Value Presenter S Adm Streing Timer Value Presenter S Change Destatoria Node Presenter S Change Sensor Type A Node Presen | Parameter and Parameter inte temperature of the parameter interview of th | Parameter state Description Processes state Initial Value Sead Value Virte Value Sead Value S | Provente radie Description Proventer radie Interview Section 2000 Proventer radie Threnhold So | Praventer and Produce Praventer 13 Produce Praventer 13 Produce Praventer 13 Produce Praventer 14 Produce Praventer 14 Produce Praventer 15 Produce | selection: | | d la parametera | of the target of | ned de uil he rei | | | | |
| Reamber write Parameter Name Initial Value Read Value Setting Rampe Unit Des x Num Parameter Name Initial Value Read Value De to 100 Initial Value De to 100 | Reameter write Parameter Name Initial Value Read Value Setting Range Unit Unit Desc. Descing Range Unit Descing Range Descin | Degeneter write Image: Control of the second s | Parameter write Parameter Name Initial Value Read Value Setting Range Unit Unit Setting Range Unit Des A Module Parameter 1 Hybitereisi 5 0 | Reameter write Parameter Name Initial Value Read Value Write Value Detting Range Unit Dets: A Module Parameter 1 Parameter Name Initial Value Read Value Write Value Detting Range Unit Dets: A Module Parameter 2 Hysteresis 5 0 D | Brancter write Status tem Parameter Name Initial Value Read Value Write Value Setting Range Unit Des /s Mode Parameter Threehold 50 0 to 100 Initial Value Mode Parameter Setting Range Unit Des /s Mode Parameter High Level of Alorn Threshold 80 0 to 100 Initial Value Mode Parameter Do to 100 Initial Value Mode Parameter Aam Setting Tareer 30 0 to 100 Initial Value Mode Parameter Do to 100 Initial Value Initial Value Initial Value Mode Parameter Initial Value | T di di licite del T el | | dule parameters | of the target in | noule will be rea | au. | | | |
| Alter Forameter Name Instal Value Read Value Write Value Desc no Module Parameter 1 Threshold 50 10 100 Desc no Module Parameter 2 Hysheresis 5 0 10 100 Desc no Module Parameter 3 High Level of Alarm Threshold 80 0 10 100 Desc no Module Parameter 5 Alarm Setting Timer 50 0 10 100 Desc no < | Instruction Forameter Name Instal Value Read Value Write Value Setting Range Unit Des n Module Parameter 1 Threshold 50 0 100 0 100 Module Parameter 3 High Level of Alarm Threshold 80 0 10 100 <th>Description Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<></th> <th>Instel Desameter Threehold Sead Value Until Value Sead Value Until Value Sead Value Until Value Sead Value Des / <t< th=""><th>Intel Information Threshold Sol Data Detrog Range Unit Detrog Range Unit</th><th>Internation The Annual Parameter Name Intel Value Status Value Other V</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>~</th></t<></th> | Description Description <thdescription< th=""> <thdescription< th=""></thdescription<></thdescription<> | Instel Desameter Threehold Sead Value Until Value Sead Value Until Value Sead Value Until Value Sead Value Des / Des / <t< th=""><th>Intel Information Threshold Sol Data Detrog Range Unit Detrog Range Unit</th><th>Internation The Annual Parameter Name Intel Value Status Value Other V</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>~</th></t<> | Intel Information Threshold Sol Data Detrog Range Unit | Internation The Annual Parameter Name Intel Value Status Value Other V | | | | | | | | | ~ |
| Item Parameter Vance Initial Value, Read Parameter Vance Otto // Sec // | Item Parameter Vance Instal Value Sead Value Write Value Setting Range Unit Det Ro Module Parameter 2 Hysteresis 5 0 0 1000 1 | Intern Parameter Name Intellight Status Wither Value Status | Uhm Parameter Name Initial Value Sead Value Write Value Setting Range Unit Det x Module Parameter 2 Hysteresis S 0 to 100 0 to 100 0 to 100 Module Parameter 4 Low Level of Alam Threshold 20 0 to 100 0 to 100 0 to 100 0 to 100 Module Parameter 4 Low Level of Alam Threshold 20 0 to 100 0 to 100 0 to 100 Module Parameter 4 Low Level of Alam Threshold 20 0 to 100 0 to 100 100 Module Parameter 5 Change Questinol Mode DarkOrdeparameter 4. 0 to 100 10 to 255 100ms Module Parameter 6 Change Generation Stote DerkOrdeparameter 4. 1 1 1 Module Parameter 10 - - - 1 < | Uhm Parameter Name Initial Value Sead Value Write Value Setting Range Unit Det no Module Parameter 2 Hysteresis 5 0 0 to 100 1 <th>Intern Parameter fame Intel Value Status Withe Value Status Status</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> | Intern Parameter fame Intel Value Status Withe Value Status | | | | | | | | | |
| Module Parameter 1 Threnklid 50 b to 100 Module Parameter 3 Heyt cerel of Alam Threnklid 80 0 to 100 Module Parameter 3 Heyt cerel of Alam Threnklid 80 0 to 100 Module Parameter 5 Alam Threnklid 80 0 to 100 Module Parameter 5 Alam Threnklid 20 0 to 100 Module Parameter 5 Alam Threnklid 20 0 to 255 100ms Module Parameter 7 Change Operational Mode non-Otetch V V V V Module Parameter 7 Change Operational Mode non-Otetch V V V V Module Parameter 7 Change Operational Mode non-Otetch V V V V Module Parameter 10 - N V | Module Parameter 1 Threnhold 50 0 to 100 Module Parameter 3 Heyt cerel of Alam Threnhold 80 0 to 100 Module Parameter 3 Heyt cerel of Alam Threnhold 80 0 to 100 Module Parameter 5 Alam Threnhold 20 0 to 100 Module Parameter 5 Alam Threnhold 20 0 to 100 Module Parameter 5 Alam Threnhold 20 0 to 100 Module Parameter 7 Change Operational Mode non-Otettch 9 to 255 10ms Module Parameter 7 Change Operational Mode non-Otettch 10 10 Module Parameter 7 Change Operational Mode non-Otettch 10 10 Module Parameter 8 Change Sensor TypeA 10 10 Module Parameter 10 - 10 10 10 Module Parameter 11 - 10 <t< th=""><th>Voide Parameter 1 Threnhold 50 0 to 100 Voide Parameter 3 Heyteress 5 0 to 100 Voide Parameter 3 Heyteress 5 0 to 100 Voide Parameter 3 Heyteress 5 0 to 100 Voide Parameter 4 Low Level of Alarm Threshold 20 0 to 100 Voide Parameter 5 Alam Setting Timer 50 0 to 100 Voide Parameter 5 LiphtOn Dark/On De/kO/CRp 0 to 255 10ms Voide Parameter 7 Ohange Operational Node non-Oeteds 1</th><th>Module Parameter 1 Threehold 50 0 to 100 Module Parameter 3 Heyb (even) of Alarm Threehold 80 0 to 100 100 Module Parameter 3 Heyb (even) of Alarm Threehold 80 0 to 100 100 Module Parameter 3 Alam Stering Timer 300 0 to 100 100 Module Parameter 5 Alam Stering Timer 300 2 to 235 100me Module Parameter 8 Charge Stering Timer 300 2 to 235 100me Module Parameter 8 Charge Stering Timer 300 2 to 235 100me Module Parameter 8 Charge Stering Tiges Sensor Tiges 100 100 100 Module Parameter 10 - - - 100 100 100 100 100 100 100 1000 100</th><th>Module Pranetter 1 Threehold 50 0 to 100 Module Pranetter 3 Heyl Level of Alarm Threehold 80 0 to 100 1 Module Pranetter 3 Heyl Level of Alarm Threehold 80 0 to 100 1 Module Pranetter 3 Alam Stering Timer 30 0 to 100 1 Module Pranetter 8 Alam Stering Timer 30 3 to 235 100me Module Pranetter 8 Charge Stering Timer 30 3 to 235 100me Module Pranetter 8 Charge Stering Timer 30 3 to 235 100me Module Pranetter 8 Charge Stering Tiges Sensor Tiges 1 1 1 Module Pranetter 10 - - - 1 <</th><th>Soduk Prameter 1 Threnhold 50 Moduk Prameter 3 Heystersis 5 0 to 100 Moduk Prameter 3 Heystersis 5 0 to 100 Moduk Prameter 3 Heystersis 5 0 to 100 Moduk Prameter 3 Heystersis 50 0 to 100 Moduk Prameter 5 Alam Stering Timer 50 0 to 100 Moduk Prameter 5 Alam Stering Timer 50 0 to 100 Moduk Prameter 5 Alam Stering Timer 50 0 to 100 Moduk Prameter 6 O targe Sensor Type SensorTypeA Moduk Prameter 10 - - - Moduk Prameter 11 - - - - - Moduk Prameter 12 -</th><th></th><th>Darameter Name</th><th>Tottal Value</th><th>Road Value</th><th>Write Value</th><th>Catting Dance</th><th>Lieit</th><th>Deer</th><th>-</th></t<> | Voide Parameter 1 Threnhold 50 0 to 100 Voide Parameter 3 Heyteress 5 0 to 100 Voide Parameter 3 Heyteress 5 0 to 100 Voide Parameter 3 Heyteress 5 0 to 100 Voide Parameter 4 Low Level of Alarm Threshold 20 0 to 100 Voide Parameter 5 Alam Setting Timer 50 0 to 100 Voide Parameter 5 LiphtOn Dark/On De/kO/CRp 0 to 255 10ms Voide Parameter 7 Ohange Operational Node non-Oeteds 1 | Module Parameter 1 Threehold 50 0 to 100 Module Parameter 3 Heyb (even) of Alarm Threehold 80 0 to 100 100 Module Parameter 3 Heyb (even) of Alarm Threehold 80 0 to 100 100 Module Parameter 3 Alam Stering Timer 300 0 to 100 100 Module Parameter 5 Alam Stering Timer 300 2 to 235 100me Module Parameter 8 Charge Stering Timer 300 2 to 235 100me Module Parameter 8 Charge Stering Timer 300 2 to 235 100me Module Parameter 8 Charge Stering Tiges Sensor Tiges 100 100 100 Module Parameter 10 - - - 100 100 100 100 100 100 100 1000 100 | Module Pranetter 1 Threehold 50 0 to 100 Module Pranetter 3 Heyl Level of Alarm Threehold 80 0 to 100 1 Module Pranetter 3 Heyl Level of Alarm Threehold 80 0 to 100 1 Module Pranetter 3 Alam Stering Timer 30 0 to 100 1 Module Pranetter 8 Alam Stering Timer 30 3 to 235 100me Module Pranetter 8 Charge Stering Timer 30 3 to 235 100me Module Pranetter 8 Charge Stering Timer 30 3 to 235 100me Module Pranetter 8 Charge Stering Tiges Sensor Tiges 1 1 1 Module Pranetter 10 - - - 1 < | Soduk Prameter 1 Threnhold 50 Moduk Prameter 3 Heystersis 5 0 to 100 Moduk Prameter 3 Heystersis 5 0 to 100 Moduk Prameter 3 Heystersis 5 0 to 100 Moduk Prameter 3 Heystersis 50 0 to 100 Moduk Prameter 5 Alam Stering Timer 50 0 to 100 Moduk Prameter 5 Alam Stering Timer 50 0 to 100 Moduk Prameter 5 Alam Stering Timer 50 0 to 100 Moduk Prameter 6 O targe Sensor Type SensorTypeA Moduk Prameter 10 - - - Moduk Prameter 11 - - - - - Moduk Prameter 12 - | | Darameter Name | Tottal Value | Road Value | Write Value | Catting Dance | Lieit | Deer | - |
| Module Prameter 2 Hydraceter 64 Alam Threshold 5 0 to 100 Module Prameter 4 Low Level of Alam Threshold 20 0 to 100 Module Prameter 4 Low Level of Alam Threshold 20 0 to 100 Module Prameter 6 Low Level of Alam Threshold 20 0 to 100 Module Prameter 6 Low Level of Alam Threshold 20 3 to 255 100ms Module Prameter 6 Low Level of Alam Threshold Detrichteps 2 2 100ms Module Prameter 6 Low Level of Alam Threshold Detrichteps 2 2 100ms Module Prameter 10 - Detrichteps 2 | Module Prameter 2 Hydraceteria 5 0 0 100 Module Prameter 4 Low Level of Alam Threnhold 30 0 10 100 Module Prameter 4 Low Level of Alam Threnhold 30 0 10 100 Module Prameter 6 Low Level of Alam Threnhold 30 0 10 100 Module Prameter 6 Log Not Dex/Gn Dex/Dridge 0 10 100 Module Prameter 6 Log Not Dex/Gn Dex/Dridge 0 10 10 Module Prameter 10 Change Destroal Trige Bereor TrigeA 0 10 10 Module Prameter 11 - Bereor TrigeA 0 10 10 10 Module Prameter 13 - 0 0 10 | Module Parameter 2 High Level of Alarm Threnhold S D D 100 Module Parameter 4 Low Level of Alarm Threnhold S0 D D 10 D Module Parameter 4 Low Level of Alarm Threnhold S0 D D 10 D Module Parameter 6 Low Level of Alarm Threnhold S0 D D 10 D Module Parameter 6 Low Level of Alarm Threnhold D | Module Parameter 2 Hydresets 5 0 to 100 Module Parameter 4 Low Lovel of Alam Threshold 20 0 to 100 Module Parameter 4 Low Lovel of Alam Threshold 20 0 to 100 Module Parameter 4 Low Lovel of Alam Threshold 20 0 to 100 Module Parameter 6 Lupitto Davion 0 to 255 100ms Module Parameter 6 Lupitto Davion 0 to 255 100ms Module Parameter 8 Charge Geneticel Mode 0 to 20 to 20 10 to 255 Module Parameter 8 Charge Geneticel Mode 0 to 20 to 20 10 to 25 Module Parameter 9 - EnsorTypeA 10 to 25 Module Parameter 10 - - 10 to 20 Module Parameter 13 - 10 to 20 10 to 20 Module Parameter 13 - - 10 to 20 Module Parameter 15 - - - 10 to 20 Module Parameter 15 - - - - - 10 to 20 Module Parameter 13 - - - - - | Module Parameter 2 Hydresets 5 0 to 100 Module Parameter 4 Low Lovel of Alam Threshold 20 0 to 100 Module Parameter 4 Low Lovel of Alam Threshold 20 0 to 100 Module Parameter 4 Low Lovel of Alam Threshold 20 0 to 100 Module Parameter 6 Lupitto Davion 3 to 255 100ms Module Parameter 6 Lupitto Davion Davioneter. 1 Module Parameter 8 Change Geneticel 3 EnsorTypeA 1 Module Parameter 9 - 1 1 1 Module Parameter 8 - Change Geneticel 3 1 1 1 Module Parameter 10 - - 1 <td>Voldue Parameter 2 Hysteresis 5 0 to 100 Voldue Parameter 4 Help Level of Alam Threnhold 20 0 to 100 Voldue Parameter 4 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 4 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 6 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 6 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 6 Level Level of Alam Threnhold 20 0 to 100 Voldue Parameter 7 Change Operational Mode 10 10 10 Voldue Parameter 8 O nange Operational Mode Interventer 10 10 Voldue Parameter 10 - - 10 10 10 Voldue Parameter 10 - - 10 10 10 10 Voldue Parameter 13 - - 10 10 10 10 Voldue Parameter 15 - - 10 10 10 10 10 10 <</td> <td></td> <td></td> <td></td> <td>Read value</td> <td>write value</td> <td></td> <td>Onic</td> <td>Dept</td> <td>^</td> | Voldue Parameter 2 Hysteresis 5 0 to 100 Voldue Parameter 4 Help Level of Alam Threnhold 20 0 to 100 Voldue Parameter 4 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 4 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 6 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 6 Lew Level of Alam Threnhold 20 0 to 100 Voldue Parameter 6 Level Level of Alam Threnhold 20 0 to 100 Voldue Parameter 7 Change Operational Mode 10 10 10 Voldue Parameter 8 O nange Operational Mode Interventer 10 10 Voldue Parameter 10 - - 10 10 10 Voldue Parameter 10 - - 10 10 10 10 Voldue Parameter 13 - - 10 10 10 10 Voldue Parameter 15 - - 10 10 10 10 10 10 < | | | | Read value | write value | | Onic | Dept | ^ |
| Module Parameter 3 High Level of Alam Threshold 30 0 to 100 Module Parameter 5 Alam Stefrag Timer 50 0 to 100 Module Parameter 5 Alam Stefrag Timer 50 3 to 255 100ms Module Parameter 5 Alam Stefrag Timer 50 3 to 255 100ms Module Parameter 7 Change Operational Mode non-Detect 4 4 Module Parameter 70 Change Sensor Type A 4 4 4 Module Parameter 70 Change Genestronal Mode 4 4 4 Module Parameter 10 - 4 4 4 4 Module Parameter 10 - 4 <td< td=""><td>Module Parameter 3 High Level of Alam Threshold 30 0 to 100 Module Parameter 5 Alam Stefung Timer 50 0 to 100 Module Parameter 5 Alam Stefung Timer 50 3 to 255 100ms Module Parameter 5 Alam Stefung Timer 50 3 to 255 100ms Module Parameter 7 Change Operational Mode non-Obsteful Module Parameter 7 1 Module Parameter 9 Change Sensor Type A Module Parameter 9 1 Module Parameter 10 - 1 1 1 Module Parameter 11 - 1 1 1 1 Module Parameter 12 - 1<!--</td--><td>Module Parameter 3 High Level of Alam Threshold 80 0 to 100 Module Parameter 4 Low Level of Alam Threshold 20 0 to 100 Module Parameter 5 Alam Setting Timer 50 3 to 255 100ms Module Parameter 5 Alam Setting Timer 50 3 to 255 100ms Module Parameter 7 Change Operational Mode non-Oeters 4 4 Module Parameter 70 Change Operational Mode non-Oeters 4 4 Module Parameter 10 - 6 4 4 4 Module Parameter 10 - 6 4 4 4 Module Parameter 11 - 6 4 4 4 Module Parameter 12 - 6 4 4 4 Module Parameter 13 - 6 4 <</td><td>Module Parameter 3 Hejt ucevil of Alam Threshold 80 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 O carpo Deve stored Holde on CetterLin Image Setting Timer Module Parameter 10 O carpo Deve stored Holde on CetterLin Image Setting Timer Module Parameter 10 - Module Parameter 10 - Module Parameter 11 - - - Module Parameter 13 - - - - Module Parameter 13 - - - - - Module Parameter 14 - - - - - - - - - - - - -</td><td>Module Parameter 3 Hejt unveil of Alam Threshold 80 0 to 100 Module Parameter 5 Alam Seting Timer 50 0 to 100 Module Parameter 5 Alam Seting Timer 50 3 to 255 100ms Module Parameter 5 Alam Seting Timer 50 3 to 255 100ms Module Parameter 7 Orange Dependend Holde non CetterLin 4 4 Module Parameter 10 - Module Parameter 10 - Module Parameter 10 - Module Parameter 11 - Module Parameter 11 - Module Parameter 11 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 14 - Module Parameter 14</td><td>Module Parameter 3 Help Level of Alarm Threshold 80 0 0 to 100 Module Parameter 5 Alarm Esting Timer 50 0 to 100 0 to 100 Module Parameter 5 Alarm Esting Timer 50 0 to 100 0 to 255 100ms Module Parameter 5 Alarm Esting Timer 50 0 to 255 100ms Module Parameter 7 Chargo Qines Juni 4 Modu non-Cetact 1 1 1 Module Parameter 10 - Module Parameter 10 - Module Parameter 10 - Module Parameter 11 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<></td></td></td<> | Module Parameter 3 High Level of Alam Threshold 30 0 to 100 Module Parameter 5 Alam Stefung Timer 50 0 to 100 Module Parameter 5 Alam Stefung Timer 50 3 to 255 100ms Module Parameter 5 Alam Stefung Timer 50 3 to 255 100ms Module Parameter 7 Change Operational Mode non-Obsteful Module Parameter 7 1 Module Parameter 9 Change Sensor Type A Module Parameter 9 1 Module Parameter 10 - 1 1 1 Module Parameter 11 - 1 1 1 1 Module Parameter 12 - 1 </td <td>Module Parameter 3 High Level of Alam Threshold 80 0 to 100 Module Parameter 4 Low Level of Alam Threshold 20 0 to 100 Module Parameter 5 Alam Setting Timer 50 3 to 255 100ms Module Parameter 5 Alam Setting Timer 50 3 to 255 100ms Module Parameter 7 Change Operational Mode non-Oeters 4 4 Module Parameter 70 Change Operational Mode non-Oeters 4 4 Module Parameter 10 - 6 4 4 4 Module Parameter 10 - 6 4 4 4 Module Parameter 11 - 6 4 4 4 Module Parameter 12 - 6 4 4 4 Module Parameter 13 - 6 4 <</td> <td>Module Parameter 3 Hejt ucevil of Alam Threshold 80 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 O carpo Deve stored Holde on CetterLin Image Setting Timer Module Parameter 10 O carpo Deve stored Holde on CetterLin Image Setting Timer Module Parameter 10 - Module Parameter 10 - Module Parameter 11 - - - Module Parameter 13 - - - - Module Parameter 13 - - - - - Module Parameter 14 - - - - - - - - - - - - -</td> <td>Module Parameter 3 Hejt unveil of Alam Threshold 80 0 to 100 Module Parameter 5 Alam Seting Timer 50 0 to 100 Module Parameter 5 Alam Seting Timer 50 3 to 255 100ms Module Parameter 5 Alam Seting Timer 50 3 to 255 100ms Module Parameter 7 Orange Dependend Holde non CetterLin 4 4 Module Parameter 10 - Module Parameter 10 - Module Parameter 10 - Module Parameter 11 - Module Parameter 11 - Module Parameter 11 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 14 - Module Parameter 14</td> <td>Module Parameter 3 Help Level of Alarm Threshold 80 0 0 to 100 Module Parameter 5 Alarm Esting Timer 50 0 to 100 0 to 100 Module Parameter 5 Alarm Esting Timer 50 0 to 100 0 to 255 100ms Module Parameter 5 Alarm Esting Timer 50 0 to 255 100ms Module Parameter 7 Chargo Qines Juni 4 Modu non-Cetact 1 1 1 Module Parameter 10 - Module Parameter 10 - Module Parameter 10 - Module Parameter 11 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<></td> | Module Parameter 3 High Level of Alam Threshold 80 0 to 100 Module Parameter 4 Low Level of Alam Threshold 20 0 to 100 Module Parameter 5 Alam Setting Timer 50 3 to 255 100ms Module Parameter 5 Alam Setting Timer 50 3 to 255 100ms Module Parameter 7 Change Operational Mode non-Oeters 4 4 Module Parameter 70 Change Operational Mode non-Oeters 4 4 Module Parameter 10 - 6 4 4 4 Module Parameter 10 - 6 4 4 4 Module Parameter 11 - 6 4 4 4 Module Parameter 12 - 6 4 4 4 Module Parameter 13 - 6 4 < | Module Parameter 3 Hejt ucevil of Alam Threshold 80 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 Alam Setting Timer 50 O to 100 Module Parameter 5 O carpo Deve stored Holde on CetterLin Image Setting Timer Module Parameter 10 O carpo Deve stored Holde on CetterLin Image Setting Timer Module Parameter 10 - Module Parameter 10 - Module Parameter 11 - - - Module Parameter 13 - - - - Module Parameter 13 - - - - - Module Parameter 14 - - - - - - - - - - - - - | Module Parameter 3 Hejt unveil of Alam Threshold 80 0 to 100 Module Parameter 5 Alam Seting Timer 50 0 to 100 Module Parameter 5 Alam Seting Timer 50 3 to 255 100ms Module Parameter 5 Alam Seting Timer 50 3 to 255 100ms Module Parameter 7 Orange Dependend Holde non CetterLin 4 4 Module Parameter 10 - Module Parameter 10 - Module Parameter 10 - Module Parameter 11 - Module Parameter 11 - Module Parameter 11 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 14 | Module Parameter 3 Help Level of Alarm Threshold 80 0 0 to 100 Module Parameter 5 Alarm Esting Timer 50 0 to 100 0 to 100 Module Parameter 5 Alarm Esting Timer 50 0 to 100 0 to 255 100ms Module Parameter 5 Alarm Esting Timer 50 0 to 255 100ms Module Parameter 7 Chargo Qines Juni 4 Modu non-Cetact 1 1 1 Module Parameter 10 - Module Parameter 10 - Module Parameter 10 - Module Parameter 11 1 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<> | | | | | | | | - | |
| Module Parameter 4 Low Level of Alam Threadoul 20 0 to 100 Module Parameter 6 LupitOn DarkOn 3 to 255 300ms Module Parameter 6 LupitOn DarkOn 0 to 255 300ms Module Parameter 6 Charge Celestroal Mode 0 to 255 300ms Module Parameter 8 Charge Celestroal Mode 0 to 255 400ms Module Parameter 10 - - - - Module Parameter 11 - - - - - Module Parameter 12 - | Module Parameter 4 Low Level of Alam Threadol 20 D to 100 Module Parameter 6 LupitOn DarkOn 3 to 255 100m Module Parameter 6 LupitOn DarkOn 0 to 255 100m Module Parameter 6 Durkon Celescond 0 to 255 100m Module Parameter 8 Change Genetaries 1 0 to 255 100m Module Parameter 11 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 0 to 255 Module Parameter 14 - 0 to 255 0 to 255 Module Parameter 13 - 0 to 255 | Module Parameter 4 Low Level of Alarm Threshold 20 0 to 100 Module Parameter 6 Layting Statem Threshold 20 3 to 255 100ms Module Parameter 6 Layting Statem Threshold 20 3 to 255 100ms Module Parameter 6 Layting Statem Threshold 20 3 to 255 100ms Module Parameter 8 Change Genetical Mode 100meterstatem 100ms 100ms Module Parameter 10 - SensorTypeA 100ms 100ms 100ms Module Parameter 11 - - 100ms | Module Prameter 4 Low Level of Alam Threadboll 20 0 to 100 Module Prameter 6 Lupitto Davion 3 to 255 100ms Module Prameter 6 Lupitto Davion 3 to 255 100ms Module Prameter 6 Charge Cenetors 4 4 Module Prameter 8 Charge Sensor Type Bensor TypeA 4 Module Prameter 10 - - - - Module Prameter 11 - - - - - Module Prameter 13 - - - - - - Module Prameter 13 - | Module Prameter 4 Low Level of Marm Threshold 20 0 to 100 Module Prameter 6 Lupitto Davion 3 to 255 100ms Module Prameter 6 Lupitto Davion 0 to 100 3 to 255 100ms Module Prameter 8 Change Genetical Mode Oncentration 1 1 Module Prameter 8 Change Genetical Mode Forestructure 1 1 Module Prameter 10 - - 1 1 1 Module Prameter 13 - - 1 | Module Parameter 4 Low Level of Alarm Threnholl 20 0 to 100 Module Parameter 6 Lupitton DarkOn DarkOnGepun. Module Parameter 6 Lupitton DarkOn Comput. 1 to 235 100ms Module Parameter 6 Lupitton DarkOn Comput. 1 to 235 100ms Module Parameter 8 Ohmang Eseron Type SensorTypeA 1 Module Parameter 80 Ohmang Eseron Type SensorTypeA 1 Module Parameter 10 - 1 1 1 Module Parameter 13 - 1 | | | | | | | | - | |
| Module Parameter 6 Liphtitic Dushich DarkChildege Module Parameter 8 Charge Destinoial Mode DoneExct Module Parameter 80 - Sensor Types Module Parameter 80 - Sensor Types Module Parameter 80 - - Module Parameter 81 - - Module Parameter 13 - - Module Parameter 13 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - | Module Parameter 6 Liphtition Davidon DavLiOrdep Module Parameter 8 Charge Dependent Mode DorDetectu Module Parameter 8 Charge Dependent Mode DorDetectu Module Parameter 80 - Sensor TypeA Module Parameter 80 - - Module Parameter 10 - - Module Parameter 11 - - Module Parameter 12 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - | Madue Parameter 6 Uption DarkOm DeukOrdep Madue Parameter 7 Orange Operational Mode monotection. Madue Parameter 8 Orange Sensor Type Madue Parameter 9 - Madue Parameter 9 - Madue Parameter 10 - Madue Parameter 11 - Madue Parameter 12 - Madue Parameter 13 - Madue Parameter 14 | Module Parameter 6 LiphtOn DankOn DarkOnGep | Module Parameter 6 LiphtCh Davidon DarkChildeen | Module Parameter 6 Uptiton DarkOm DarkOndep Module Parameter 9 - Charage Operational Mode Inno-Interfaction | | | 20 | | | | | | |
| Module Parameter 7 Charge Operational Mode concretexth Module Parameter 9 - Charge Sensor TypeA Module Parameter 10 - - Module Parameter 11 - - Module Parameter 12 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - | Module Parameter 7 Charge Operational Mode non-Detech Module Parameter 9 - Charge Sensor Type A Module Parameter 10 - - Module Parameter 11 - - Module Parameter 12 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 13 - - Module Parameter 14 - - | Module Parameter 7 Charge Operational Mode non-Cletch | Module Paraneter 7 Change Operational Node non-Detect Module Paraneter 9 - Module Paraneter 9 - Module Paraneter 10 - Module Paraneter 10 - Module Paraneter 11 - Module Paraneter 12 - Module Paraneter 13 - Module Paraneter 14 - Module Paraneter 15 - Module Paraneter 15 - Module Paraneter 18 - | Module Paraneter 7 Orange Operational Node non-Detecti Module Paraneter 9 - Module Paraneter 9 - Module Paraneter 10 - Module Paraneter 10 - Module Paraneter 11 - Module Paraneter 12 - Module Paraneter 13 - Module Paraneter 14 - Module Paraneter 15 - Module Paraneter 15 - Module Paraneter 18 - | Module Parameter 7 Change Operational Mode non-Detection. Module Parameter 9 Change Sensor Type Sensor Type A Module Parameter 9 - Module Parameter 10 - Module Parameter 11 - Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - M | Module Parameter 5 | Alarm Setting Timer | 50 | | | 3 to 255 | 100ms | | |
| Module Parameter 8 Charge Service Type Service TypeA Module Parameter 10 - - Module Parameter 11 - - Module Parameter 12 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 15 - - Module Parameter 16 - - Module Parameter 17 - - Module Parameter 18 - - Module Parameter 19 - - Module Parameter 19 - - - | Module Parameter 8 Charge Sensor Type Sensor TypeA Module Parameter 10 - - Module Parameter 11 - - Module Parameter 12 - - Module Parameter 13 - - Module Parameter 14 - - Module Parameter 15 - - Module Parameter 16 - - Module Parameter 17 - - Module Parameter 18 - - Module Parameter 19 - - Module Parameter 19 - - - | Module Parameter B Charge Serius Type Serius TypeA Module Parameter D - | Module Parameter B Change Sensor Type Sensor TypeA Module Parameter 10 - - Module Parameter 11 - - Module Parameter 12 - - Module Parameter 13 - - | Module Parameter B Change Sensor Type Sensor TypeA Module Parameter 10 - - Module Parameter 11 - - Module Parameter 11 - - Module Parameter 13 - - | Module Parameter B Charge Sensor Type Sensor TypeA Module Parameter D | | | | | | | | | |
| Module Parameter 9 | Module Parameter 9 - Module Parameter 10 - Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 14 - Module Parameter 13 - Module Parameter 14 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 14 - | Module Parameter 9 | Module Parameter 0 | Module Parameter 0 Module Parameter 10 Module Parameter 11 Module Parameter 12 Module Parameter 12 Module Parameter 13 Module Parameter 14 Module Parameter 14 Module Parameter 15 Module Parameter 15 Module Parameter 15 Module Parameter 18 Module Par | Module Parameter 10 | | | | | | | | | |
| Module Parameter 10 - Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - | Module Parameter 10 - Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 10 - | Module Parameter 10 - Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 17 - | Module Parameter 10 | Module Parameter 10 - Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 16 - Module Parameter 17 - Module Parameter 18 - | Maduk Parameter 10 | | | SensorTypeA | | | - | | _ | |
| Module Parameter 11 | Module Parameter 11 | Module Parameter 11 | Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 11 - Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 11 | | | | | | | | - | |
| Module Parameter 12 - Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 12 - Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 17 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 12 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 13 - Module Parameter 14 - | Module Parameter 12 - Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 12 | | | | - | | - | | - | |
| Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - | Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - | Module Parameter 13 | Module Paraneter 13 - Module Paraneter 14 - Module Paraneter 15 - Module Paraneter 15 - Module Paraneter 15 - Module Paraneter 16 - Module Paraneter 17 - Module Paraneter 18 - Module Paraneter 18 - Module Paraneter 18 - Module Paraneter 19 - | Module Paraneter 13 - Module Paraneter 14 - Module Paraneter 15 - Module Paraneter 15 - Module Paraneter 15 - Module Paraneter 16 - Module Paraneter 17 - Module Paraneter 18 - Module Paraneter 18 - Module Paraneter 18 - Module Paraneter 19 - | Module Parameter 13 - Module Parameter 14 - Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 16 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | | | | | | | | - | |
| Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - | Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - | Module Parameter 14 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 10 - | Module Parameter 13 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 10 - | Module Parameter 13 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 10 - | Module Parameter 13 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 18 - | | | | | | | | - | |
| Module Parameter 15 - Module Parameter 16 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - | Module Parameter 15 - Module Parameter 16 - Module Parameter 17 - Module Parameter 13 - Module Parameter 13 - | Module Parameter 15 - Module Parameter 16 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - | Module Parameter 15 - Module Parameter 15 - Module Parameter 15 - Module Parameter 17 - Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | Module Paraneter 15 | Module Parameter 15 | | | | | | | | - | |
| Nodule Parameter 17 | Nodule Parameter 17 | Nodule Parameter 17 | Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - | Module Parameter 13 | Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | | | | | | | | - | |
| Nodule Parameter 17 | Nodule Parameter 17 | Nodule Parameter 17 | Module Parameter 13 - Module Parameter 13 - Module Parameter 13 - Module Parameter 14 - | Module Parameter 13 | Module Parameter 17 - Module Parameter 18 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 15 | | | | | | | | |
| Module Parameter 19 . | Module Parameter 19 . | Module Parameter 19 . | Nord de Darameter 10 . | Nodele Darameter 10 . | Work de Darameter 10 | | | | | | | | | |
| Module Parameter 19 - | Module Parameter 19 . | Module Parameter 19 | , , | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | Module Parameter 16 | | | | | | | | |
| | | | | | | Module Parameter 16 Module Parameter 17 Module Parameter 18 | | | \square | | / | | | ~ |
| | | | Clear All "Read Value" Clear All "Write Value" | Clear All "Read Value" Qlear All "Write Value" | Clear All "Read Value" Glear All "Write Value" | Module Parameter 16 Module Parameter 17 Module Parameter 18 | | | | | | | > | |
| | Clear All "Read Value" Clear All "Write Value" | Class All "Dand Value" Class All "With the Value" | | | | Module Parameter 16 Module Parameter 17 Module Parameter 18 | | | | | | | | |
| Nodule Parameter 17 | Nodule Parameter 17 | Module Parameter 17 - Module Parameter 18 - Module Parameter 10 - | Module Parameter 12 - Module Parameter 18 - Module Parameter 19 - | Module Parameter 12 - Module Parameter 18 - Module Parameter 19 - | Module Prometer 17 | Module Parameter 14 | | | | | <u> </u> | | _ | |
| Module Parameter 18 - | Module Parameter 18 - | Module Parameter 18 - | Nodule Parameter 18 - Nodule Parameter 19 - Nodule | Vodule Parameter 18 - Vodule Parameter 19 - | Nodelle Parameter 18 - Vandelle Parameter 18 - Vandelle Parameter 19 - Vandelle Pa | | | | | | | | | |
| Module Parameter 19 - * | Mod de Parameter 10 | Mindule Darameter 10 | , , | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | Module Parameter 16 | | | | | | | | |
| | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | | | | Module Parameter 16 Module Parameter 17 | | | | | | | | ~ |
| | | | cess is executed to a module of "Taroet Module Information". | cess is executed to a module of "Larget Module Information". | | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All " <u>R</u> ead Value" | | n". | | | | | | ~ |
| cess is executed to a module of "Target Module Information". | cess is executed to a module of "Target Module Information". | cess is executed to a module of "Target Module Information". | cess is executed to a module of "Target Module Information". AnyWireASI INK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module or "Larget Module Information". AnyWireASI INK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASTINK master module or hidrogeneousle in the automation "the automation destination". Please check if there is any | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All "Read Value" cess is executed to a more | dule of "Target Module Informatio | n". ed by using "the | ourrent corner | ction destination | ". Please check if | there is a | nv | ^ |
| ces is executed to a module of "Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All "Bead Value" cess is executed to a more AnyWireASLINK master | dule of "Target Module Informatio module or bridge module is access | n". ied by using "the | current conner | ction destination | ". Please check if | there is a | ny | ^ |
| ces is executed to a module of "Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All "Bead Value" cess is executed to a more AnyWireASLINK master | dule of "Target Module Informatio module or bridge module is access | n". ed by using "the | current connec | ction destination | ". Please check if | there is a | ny | ^ |
| ces is executed to a module of "Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | Case in grant case a mode of Target Mode Information". AnyWorkSLIK there mode or Target Mode Information". AnyWorkSLIK there mode or brodge module is accessed by using "the current connection destination". Please check if there is any em with the connection destination. | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | e AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All "Read Value" iccess is executed to a more a AnyWireASLINK master | dule of "Target Module Informatio module or bridge module is access | n". ed by using "the | current conner | ction destination | ". Please check if | there is a | ny | ^ |
| ces is executed to a module of "Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All "Bead Value" cess is executed to a more AnyWireASLINK master | dule of "Target Module Informatio module or bridge module is access | n". ed by using "the | current conner | ction destination | ". Please check if | there is a | ny | ^ |
| ces is executed to a module of "Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | cess is executed to a module of Target Module Information". AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | AnyWireASLINK master module or bridge module is accessed by using "the current connection destination". Please check if there is any | Module Parameter 16 Module Parameter 17 Module Parameter 18 Module Parameter 19 Clear All "Read Value" cess is executed to a mor AnyWireASLINK master | dule of "Target Module Informatio module or bridge module is access | n". sed by using "the | current conner | ction destination | ". Please check if | there is a | ny | ~ ~ |

- Detect devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL) in the "AnyWireASLINK Configuration" window. (IP Page 276 Detecting devices connected to a bridge module (NZ2AW1GFAL))
- Read or write parameters of the detected devices. (FBP Page 186 Reading/Writing Parameters from/to Devices Supporting iQSS)

10.4 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Window

- 1. Select [Diagnostics] ⇒ [Sensor/Device Monitor] with an engineering tool.
- Select a CC-Link IE Field Network-equipped master/local module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.
- **3.** Read the message and click the [Yes] button.

The "Sensor/Device Monitor for CC IE Field" screen appears.

4. Select a target device supporting iQSS to be monitored in the "Sensor/Device Monitor for CC IE Field" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a master station.

If an error code is displayed, resolve the cause by referring to the manual for the CC-Link system master/local module, then perform the sensor/device monitor function again.

Monitoring devices supporting iQSS which are connected to a bridge module (NZ2AW1GFAL)

9

Operating procedure

1. Open the "Sensor/Device Monitor for CC IE Field" screen. (Page 288 Monitoring Devices Supporting iQSS)

- Model Nan State Moni \bigcirc
- 2. Select a bridge module (NZ2AW1GFAL) in 'List of stations' or 'Device map area' in the "Sensor/Device Monitor for CC IE Field" screen, then right-click it and select [Open System Configuration] ⇒ [Open AnyWireASLINK Configuration] from the shortcut menu.

No

ON(1) OFF(0) OFF(0) OFF(0) OFF(0) OFF(0) OFF(0) OFF(0)

Link RX0 RX1 RX2 RX3 RX4 RX5 RX6 RX6 RX7

3. When an automatic address detection is required, select the checkbox of "Execute Detect Now after Address Autorecognition," then click the [Yes] button.

For a case in which an automatic address detection is required, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

The "Sensor/Device Monitor for AnyWireASLINK" screen appears.

 Select a target device supporting iQSS to be monitored in 'List of modules' or 'Device map area' in the "Sensor/Device Monitor for AnyWireASLINK" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices connected to a bridge module

■Settings required for communication

To use an iQ Sensor Solution function in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), configure the settings required for communication (such as an address and device parameters) in advance.

Make sure that the address occupied by a device supporting iQSS is set so as not to exceed the number of transmission points set for a bridge module (NZ2AW1GFAL).

For details on the address setting, refer to the following:

CC-Link IE Field Network-AnyWireASLINK Bridge Module User's Manual

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Slave Module"

■I/O type of general slave modules

"I/O Type" for "General Slave Module" is displayed as follows:

- Input or I/O combined slave module: "Input"
- Output slave module: "Output"

Time taken to display the "Sensor/Device Monitor for AnyWireASLINK" screen

When displaying the "Sensor/Device Monitor for AnyWireASLINK" screen, a bridge module reads information from a slave module.

Therefore, it may take time to display the screen depending on the number of slave modules.

■Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a bridge module (NZ2AW1GFAL).

If an error code is displayed, resolve the cause by referring to the manual for the bridge module (NZ2AW1GFAL), then perform the sensor/device monitor function again.

■Replacing a slave module while displaying the sensor/device monitor

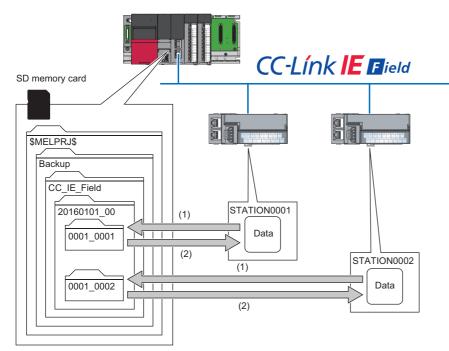
If replacing a slave module while displaying the sensor/device monitor, perform an automatic detection of connected devices in the monitor.

10.5 Backing up/Restoring Data of Devices Supporting iQSS

Information of a device supporting iQSS can be backed up to/restored from an SD memory card by using special relays and special registers.

This will make a data restoration or utilization simplified and the time taken to change the information of multiple devices supporting iQSS, restore data when a failure occurred in a device supporting iQSS, and to perform a changeover will also be shortened.

This section explains data the backup and data restoration methods for a MELSEC iQ-R series CC-Link IE Field Network.



(1) Data backup

(2) Data restoration

| Function | Reference |
|------------------|---|
| Data backup | Page 296 Data backup |
| | Page 297 Program execution for data backup |
| Data restoration | Page 311 Data restoration |
| | Page 312 Program execution for data restoration |

Backup folder/file

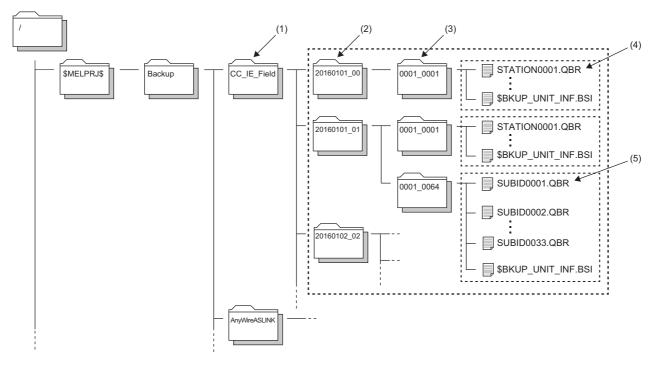
New backup folders are created in the 'CC_IE_Field' folder which exists in the 'Backup' folder under the main folder of '\$MELPRJ\$' in an SD memory card when data is backed up.

If no '\$MELPRJ\$' folder, 'Backup' folder, or 'CC_IE_Field' folder exists, each of the folders are created as well when data is backed up.

Up to 100 backup folders (date_number) can be created in the 'CC_IE_Field' folder.

■Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



(1) A folder to save the settings of devices supporting iQSS connected to CC-Link IE Field Network

(2) Backup folder (date_number)

(3) Backup folder (start I/O number_station number)

(4) Backup data (information of each station)

(5) Backup data (information of each station sub-ID number)

■Backup folder name

Date_Number

YYYYMMDD_**

YYYY: Year when the data was backed up (four digits in decimal) MM: Month when the data was backed up (two digits in decimal) DD: Day when the data was backed up (two digits in decimal) **: Number (two digits in decimal (00 to 99))^{*1}

- *1 If multiple folders with the same number exist while a target folder (0 to 99) is set to SD1363 (iQ Sensor Solution backup/restoration folder number setting), the date of the backup folder name may not be updated. (S Setting a number for a data backup folder name)
- Start I/O number_Station number

**** ****

First ****: Start I/O number (four digits in hexadecimal) (A value obtained by dividing the start I/O number by 16) Last ****: Station number (four digits in decimal)

■Backup file name

· Station number

STATION****.QBR

****: Station number (four digits in decimal)

Station sub-ID number

SUBID****.QBR

****: Station sub-ID number (four digits in decimal)

Considerations for data backup/restoration

Stations to which data cannot be backed up and restored

- Local station
- · Sub-master station that is monitoring the master station (performing the sub-master operation)
- · Station whose data link has stopped due to a station number duplication error
- · Station whose data link has stopped due to a station number out of range error
- Station whose network number is mismatched

■Use of an SD memory card

- During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card. Otherwise, for the data backup, data that was backed up until the data backup processing was interrupted retains in the SD memory card. As for the data restoration, data that was restored until the data restoration was interrupted retains in the device supporting iQSS.
- If the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during the data backup, only the data that has been properly backed up will be stored in the SD memory card.

■Concurrent use of other functions

While any of the following operations or functions are being performed, backup/restoration cannot be performed. Additionally, the following operations and functions cannot be performed during data backup/restoration.

| Operation/function name | | | | |
|------------------------------------|---|--|--|--|
| Operation with an engineering tool | Initializing the CPU built-in memory/SD memory card | | | |
| | Clearing values (file register) | | | |
| | Writing data to a programmable controller (in | cluding online change of files) | | |
| | Deleting data in the programmable controller | | | |
| | User data operation | Writing user data | | |
| | | Deleting user data | | |
| | | Creating a folder | | |
| | | Deleting a folder | | |
| | | Changing a folder name | | |
| | Online change (ladder block) | | | |
| | Event history function (clearing event history) | | | |
| | File password function | | | |
| | Predefined protocol support function (writing protocol setting data) | | | |
| | Memory dump function (registering/clearing memory dump) | | | |
| | Switching the safety operation mode | | | |
| | User authentication function (changing a pase programmable controller, initializing all inform | sword of a programmable controller, writing user information to a ation of a programmable controller) | | |
| Operations with CPU Module Logging | Data logging function (writing/deleting a logging setting file, registering/clearing a logging setting) | | | |
| Configuration Tool | Deleting logging file(s) | | | |
| Others | • SLMP | Creating a new file (New File) | | |
| | MC protocol | Writing data to a file (Write File) | | |
| | | Deleting a file (Delete File) | | |
| | | Copying a file (Copy File) | | |
| | | Changing a file attribute (Change File State) | | |
| | | Changing file creation date (Change File Date) | | |
| | File transfer from an Ethernet-equipped | Writing a file (put, mput, pm-write) | | |
| | module (FTP server) | Deleting a file (delete, mdelete) | | |
| | | Changing a file name (rename) | | |
| | | Changing a file attribute (change) | | |
| | File transfer function (FTP server) of the built | -in Ethernet function | | |
| | File transfer function (FTP client) of the built-i | n Ethernet function | | |
| | CPU module data backup/restoration function | ١ | | |

When data is backed up or restored during a data logging or the realtime monitor function, the performance of the data logging or the data sampling for the realtime monitor will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication timeout time

To back up or restore the data of a slave station connected to a bridge module (NZ2AW1GFAL), set the communication timeout time as follows:

- · 128 or less slave stations: 60 seconds (recommended)
- 129 or more slave stations: more than 80 seconds

The communication timeout time can be set by using SD1368. An setting example is shown below.

| | MOV | ко | SD1368 |
|-----|---------|----|----------|
| | MOV | | |
| (1) | | | -{END }- |

■Communication load

When data is backed up or restored, the load of the service processing in the CPU module is temporarily increased. Consequently, a communication response will be slow and a timeout error may occur in other communications. To avoid a timeout error, review the value set for "Device/Label Access Service Processing Setting."

Data backup/restoration for CC-Link IE Field Network master station

- Data backup in station sub-ID unit: When a folder storing backup data of a station (the I/O numbers and station numbers are the same) is specified and the data is backed up again, use a module of the same model as that of the CC-Link IE Field Network master station which has been used for data backup.
- Data restoration: Use a module of the same model as that of the CC-Link IE Field Network master station which has been used for data backup.

■Multiple CC-Link IE Field Network master stations are mounted on a single base unit

Do not perform data backup/restoration when multiple CC-Link IE Field Network master stations having an identical network number are mounted on a base unit. Data cannot be backed up/restored properly.

Change of backup folders/data

Do not change a backup folder name, configuration, or saved file.

Otherwise, the data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

■Request source of data backup/restoration

Data backup/restoration can be performed when the request source is a CC-Link IE Field Network master station.

When backing up the data of a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL):

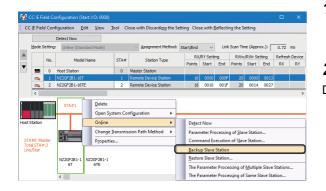
Backup data is stored in the 'CC_IE_Field' backup folder.

The 'station sub-ID number' is equivalent to the 'ID' of a slave module connected to AnyWireASLINK. The backup file of the bridge module is not created.

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each station by using an engineering tool.

Operating procedure



 Select a target device supporting iQSS in the "CC IE Field Configuration" window, then right-click it and select [Online]
 ⇒ [Backup Slave Station] from the shortcut menu.

2. Read the message and click the [Yes] button. Data is backed up.

Considerations for a data backup

Setting the backup setting

The initial values of the backup setting (SD1363 and SD1367) are as follows:

- SD1363 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (EP Page 297 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card.

New folders are created every time when data is backed up, and data of each device supporting iQSS is saved in a file format in the folders. A system file (\$BKUP_UNIT_INF.BSI) that contains information required for data restoration is created for each station when data is backed up.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to back up data with a program.

| Procedu | Item | Reference |
|---------|--|-------------------------------------|
| re | | |
| 1 | Acquire a right to use. | Page 297 Acquiring a right to use |
| 2 | Set the backup target setting and the operation setting. | Page 298 Setting the backup setting |
| 3 | Perform a data backup. | Page 300 Performing a data backup |
| 4 | Release the right to use. | Page 300 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Execution method of data backup

Special relays (SM) and special registers (SD) are used for data backup.

■Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data backup. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

■Setting the backup setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|------------------------------|---|
| 4H: CC-Link IE Field Network | Set this to specify a device supporting iQSS which is connected to the CC-Link IE Field Network master station. |

2. Setting an execution unit

Set a unit to specify the range of data to be backed up at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|-------------------------|--|
| 1H: Module unit | Set this to specify the device supporting iQSS which is connected to the own network among the devices which are connected to a CC-Link IE Field Network master station with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the following iQSS supported devices which are connected to a CC-Link IE Field Network master station with the specified start I/O number: the devices supporting iQSS with the specified station number or all devices supporting iQSS which are connected to the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the following devices supporting iQSS which are connected to a CC-Link IE Field Network master station with the specified start I/O number: the devices which are connected to the specified station number with the specified station sub-ID number. |

3. Setting a number for a data backup folder name

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--|---|
| FFFH: Automatic specification (default) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. The oldest backup folder (date_number) is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name. When another folder with the same number exists, the target data is overwritten in execution unit without changing the folder name. ^{*1} |

*1 When the specified folder number exists, the operation to be performed depends on the specification of the execution unit as follows:

| Execution unit | Operation |
|-------------------------|---|
| 1H: Module unit | When the backup data with the same target module exists, the backup folder (start I/O number_station number) is deleted before performing data backup. |
| 2H: Station unit | When the backup data with the same target module and the same target station number exists, data backup is performed after the backup folder (start I/O number_station number) is deleted. |
| 3H: Station sub-ID unit | When the backup data with the same target module and the same target station number exists, the information of the backed up station sub-ID is added to the system file for iQ Sensor Solution backup/restoration. When the backup data with the same target module, the same target station number, and the same target station sub-ID number exists, the backup data (information of each station sub-ID) is deleted before performing data backup. |

4. Setting a target device

Setting a module

When '1H' (module unit) is set for the execution unit, set a start I/O number to SD1364 (iQ Sensor Solution data backup/ restoration target setting (target module)).

In a multiple CPU system, only the CC-Link IE Field Network master station controlled by a host CPU can be backed up. Data backup cannot be performed for non-controlled modules.

| Target device (Module) | Description |
|----------------------------|--|
| 0 to FFH: Start I/O number | Set the start I/O number (the value obtained by dividing the start I/O number by 16) of the CC-Link IE Field |
| | Network master station which is connected to a target device supporting iQSS. |

Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set a station number to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)).

| Target device (Station number) | Description |
|--------------------------------|--|
| 1 to 120: Station number | Set the station number of a target device supporting iQSS or the station number of the module which is connected to a device supporting iQSS. |

· Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit, set a station sub-ID number to SD1366 (iQ Sensor Solution backup/restoration target setting (target device 2)).

| Target device (Station sub-ID number) | Description |
|---------------------------------------|---|
| 0 to 9999: Station sub-ID number | Set the station sub-ID number of a target device supporting iQSS. |

Precautions

When backup/restore the data in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), set the ID number of AnyWireASLINK to SD1366.

For details on the ID number (SD1366) of AnyWireASLINK, refer to the following:

Page 197 Setting the backup setting

5. Setting the operation setting when a data backup error occurs

Set the operation to be performed when the data backup fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description |
|--------------------|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices. |
| 1H: Stop | Set this to stop a data backup if it fails on some devices. |

■Performing a data backup

Turn ON SM1361 (iQ Sensor Solution backup request) to request a data backup.

Data is backed up after a data backup request.

SM1361 is turned OFF when a data backup is completed.

1. Checking the execution status of a data backup

The execution status of a data backup can be checked with the following special registers.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data backup

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data backup.

A cancellation is performed for each device supporting iQSS, so it will be canceled when a data backup which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data backup

When the data backup is completed, the backup completion status can be checked with the following special relays.

· Normally completed: SM1362 (iQ Sensor Solution backup normal completion) is turned ON.

• Abnormally completed: SM1363 (iQ Sensor Solution backup abnormal completion) is turned ON.

The number of the folder where backup data was saved at the completion of data backup is stored to SD1375 (iQ Sensor Solution backup folder number).

| Backup folder number | Description |
|------------------------------|--|
| 0 to 99: Folder number | The number (0 to 99) of the folder in which backup data was saved is stored. |
| FFFFH: Backup data not saved | Backup data has not been saved. |

4. Checking a data backup error

Even if a data backup of a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a module such as a CPU module or CC-Link IE Field Network master station can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1382: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

■Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON . The right to use is released and the next data backup is ready to be performed.

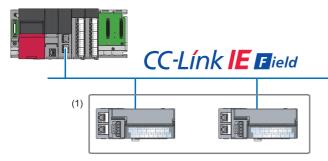
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data backup

■Example of a system configuration

The following shows the example of a system configuration for data backup.



(1) Backup target

- Target module type: CC-Link IE Field Network
- Execution unit: Module
- · Folder number setting: Automatic specification
- Target device (target module): Start I/O No.0
- Target device (station number): 1
- · Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| | | Description |
|--------|--|--|
| SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| SM1361 | RCPU.stSM.biQSS_Backup_Request | Backup request |
| SM1362 | RCPU.stSM.biQSS_Backup_Normal_Completion | Backup normal completion |
| SM1363 | RCPU.stSM.biQSS_Backup_Error_Completion | Backup abnormal completion |
| SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number |
| SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit _Setting | Backup/restoration target module, execution unit setting |
| SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting |
| SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) |
| SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 1 | Backup/restoration target setting (target device 1) |
| SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 | Backup/restoration target setting (target device 2) |
| SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Numb er_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_ Per_Devices | Backup/restoration execution status (progress per device) |
| SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device |
| SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution _Unit_Information | Backup/restoration error target module, execution unit information |
| SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_I nformation | Backup/restoration target folder number information |
| SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Modu le | Backup/restoration error information (target module) |
| SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_1 | Backup/restoration error device information (target device 1) |
| SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_2 | Backup/restoration error device information (target device 2) |
| | SM1361 SM1362 SM1363 SM1367 SD1360 SD1361 SD1363 SD1364 SD1365 SD1366 SD1367 SD1367 SD1367 SD1371 SD1372 SD1373 SD1374 SD1375 SD1376 SD1377 SD1378 SD1380 SD1381 | SM1361 RCPU.stSM.biQSS_Backup_Request SM1362 RCPU.stSM.biQSS_Backup_Normal_Completion SM1363 RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request SD1360 RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No SD1361 RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No SD1362 RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit _Setting SD1363 RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting SD1364 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module SD1365 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 1 SD1366 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 SD1367 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 SD1371 RCPU.stSD.uiQSS_Backup_Restoration_Execution_Status.uTotal_Numb er_of_Target_Devices SD1372 RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_Devices SD1373 RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_devices SD1375 RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_devices SD1376 RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_ ESD1376 SD13 |

| Catego | Device | Label nan | ne | | | Description |
|--------|--------------|----------------|---------------|--------------------|----------------|-------------|
| у | | | | | | |
| bel to | Define globa | l labels as fo | llows: | | | |
| 9 | _ | | | | (| |
| | | l Name | Data Type | Class | Assign (Device | e/Label) |
| efined | bInitTrg | | Bit | | MO | |
| | bBKUPTre | | Bit | | M1000 | |
| | bBKUPUseR | | Bit | | M1100 | |
| | bBKUPChkTr | | Bit | VAR_GLOBAL 🗸 🗸 | M1200 | |
| | bBKUPSetTr | g 🛛 | Bit | VAR_GLOBAL 🗸 | M1300 | |
| | bBKUPUseG | etTrg | Bit | VAR_GLOBAL 🗸 | M1400 | |
| | bBKUPUseR | elTrg | Bit | VAR_GLOBAL 🗸 | M1500 | |
| | bBKUPExeSt | opTrg | Bit | VAR GLOBAL 🗸 | M2000 | |
| | bBKUPExeC | mpTrg | Bit | VAR GLOBAL 🗸 | M3000 | |
| | bBKUPExeEr | rCmpTrg | Bit | VAR GLOBAL 🗸 | M3500 | |
| | bBKUPUseLo | ossTre | Bit | VAR GLOBAL 🗸 | M3550 | |
| | bBKUPUseC. | ancelTrg | Bit | | M4000 | |
| | bBKUPUseC. | | Bit | | M4100 | |
| | BKUPUseNo | | Word [Signed] | | D1000 | |
| | BKUPExeCm | | Word [Signed] | | D5000 | |
| | BKUPExeErr | | Word [Signed] | | D5001 | |
| | BKUPUnitErr | | Word [Signed] | | D5002 | |
| | BKUPDevErr | | Word [Signed] | | D5002 | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | blnitTrg M0 | | | | | | F | MOV | к0 | BKUPExeCmpCnt D5000 | К4 |
|------|--|-------------|---|--|--------|---|---|-----|-----|--|---|
| | | | | | | | | | | RST | bBKUPExeCmpTrg |
| | | | | | | | | | | RST | M3000 bBKUPExeErrCmpTrg |
| | | | | | | | | | | | M3500 bBKUPTrg |
| | bBKUPTrg | | | | | | | | | SET | M1000 bBKUPUseReqTrg |
| (9) | M1000 Iffi bBKUPUseReqTrg | | 110 | | | | | | | SET H1070 | M1100 |
| 12) | M1100 | = <u>_U</u> | HO F | CPU.stSD.uiQSS_Backup_Restoration_Use_Auth ority_Acquisition_No SD1361 | | | | | MOV | | BKUPUseNoSetArea D1000 |
| | | | | | | | | | MOV | BKUPUseNoSetArea D1000 | RCPUstSDuiQSS_Backup_Restoration_Use_Auth y_Request_No SD1360 |
| | | | | | | | | | | SET | bBKUPUseGetTng M1400 |
| | | | | | | | | |] | SET | bBKUPChkTrg M1200 |
| 22) | bBKUPChkTrg M1200 | =_U | RCPU.stSD.uiQSS.Backup Restoration Use A uthority Request No SD1380 | CPU.stSD.uiQSS_Backup_Restoration_Use_Auth ority_Acquisition_No SD1361 | | | | | | SET | bBKUPSetTrg M1300 |
| | | o_u | RCPU.atSD.uiQSS_Backup_Restoration_Use_A uthority_Request_No SD1360 | CPU.stSD.uiQSS_Backup_Restoration_Use_Auth ority_Acquisition_No SD1361 | o_u H0 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Aut hority_Acquisition_No SD1361 | | | | SET | bBKUPUseLossTrg M3550 |
| 36) | bBKUPSetTrg M1300 | | | | | | | | MOV | H104 | RCPU.stSD.uiQSS_Backup_Restoration_Target_M le_Execution_Unit_Setting SD1362 |
| | | | | | | | | | MOV | HOFFFF | RCPU.stSD.uiQSS_Backup_Restoration_Target_F r_Number_Setting SD1363 |
| | | | | | | | | | MOV | НО | RCPU.stSD.u/QSS_Backup_Restoration_Target_S ng_Target_Module SD1384 |
| | | | | | | | | | MOV | К1 | SD1384 RCPU.atSD.u/QSS_Backup_Restoration_Target_S ng_Target_Device_1 SD1385 |
| | | | | | | | | | MOV | КО | SD1365 RCPU.stSD.uiQSS_Backup_Restoration_Target_5 ng_Target_Device_2 SD1366 |
| | | | | | | | | | MOV | но | RCPU.stSD.uiQSS Backup Restoration Operatio |
| | | | | | | | | | | | etting SD1367 RCPU.stSM.biQSS_Backup_Request |
| RCF | PU.stSM.biQSS_Backup_Norm al_Completion SM1362 | | | | | | | | | SET | SM1361 bBKUPExeCmpTrg |
| 51) | SM1362 | | | | | | | | | SET | M3000 |
| BC | 211 et SM biOSS Backup From | | | | | | | | MOV | RCPU.stSD.st/QSS_Backup_Restoration_Execution_Status.uNum ber_of_Normal_Completed_Devices SD1372 | BKUPExeCmpCnt D5000 |
| (56) | PU.stSM.biQSS_Backup_Error Completion SM1363 | | | | | | | | | SET | bBKUPExeErrCmpTrg M3500 |
| | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNum ber_of_Error_Completed_devices SD1373 | BKUPExeErrCmpCnt D5001 |
| | | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause SD1376 | BKUPUnitErr D5002 |
| | | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_C ause SD1377 | BKUPDevErr D5003 |
| 85) | bBKUPExeCmpTrg M3000 | | | | | | | | | RST | blnitTrg M0 |
| | bBKUPExeErrCmpTrg M3500 | | | | | | | | | RST | bBKUPTrg M1000 |
| | | | | | | | | | | RST | bBKUPUseReqTrg M1100 |
| | | | | | | | | | | RST | bBKUPChkTrg M1200 |
| | | | | | | | | | | RST | bBKUPSetTrg |
| | | | | | | | | | | ŜET | M1300 bBKUPUseCancelTrg |
| | bBKUPExeStopTrg M2000 | | | | | | | | | | M4000 RCPU.stSM.biQSS_Backup_Restoration_Cancel_ |
| 15) | | | | | | | | | | SET | est SM1367 bBKUPUseCancelStpTrg |
| | | | | | | | | | | SET | M4100 bBKUPExeStopTrg |
| | bBKUPUseCanceITrg | | | | | | | | | RST | M2000 |
| 80) | M4000 | | | | | | | | MOV | HO | RCPU.stSD.uiQSS_Backup_Restoration_Use_Aut y_Request_No SD1380 |
| _ | bBKUPUseCancelStpTrg M4100 | | | | | | | | | SET | bBKUPUseRe[Trg M1500 |
| | | | | | | | | | | RST | bBKUPUseCancelTrg M4000 |
| | | | | | | | | | | RST | bBKUPUseCancelStpTrg M4100 |
| 89) | bBKUPUseGetTrg M1400 | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoration_Use_Au ty_Request SMI360 |
| | bBKUPUseReffrg M1500 | | | | | | | | | RST | bBKUPUseGetTng M1400 |
| | | | | | | | | | | RST | bBKUPUseRelTrg M1500 |
| (96) | | | | | | | | | | | (END) |

[Initialization]

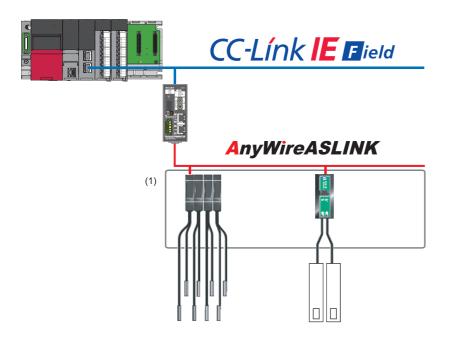
- Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Requesting backup right to use] (9) Store the right-to-use number. Set a right-to-use request. Set the backup right-to-use confirmation trigger. [Checking backup right to use] Set the backup setting and starting trigger. (22) Display the right-to-use acquisition failure. [Setting and starting data backup] (36) Set the target module/execution unit. Set the target folder number. Set the target module. Set the target device 1. Set the target device 2. Set the data backup operation setting (on error). Set the backup request. [Checking data backup execution] (51) Display the normal completion. Save the number of normally completed devices. (56) Display the abnormal completion.
- Save the number of devices completed with an error. Save the error cause in a module. Save the backup error cause in a device.
- [Enabling the next data backup process]
- (65) Clear the initialization trigger.
 Clear the backup execution trigger.
 Clear the backup right-to-use request trigger.
 Clear the backup right-to-use confirmation trigger.
 Clear the backup setting and starting trigger.
- [Setting for cancelling the process]
- (75) Set the backup cancellation request.
- [Releasing backup right to use]
- (80) Set the backup right-to-use release trigger.
- [Updating backup right to use]
- (89) Set the backup right-to-use request.

10

Example of a data backup (bridge module (NZ2AW1GFAL))

■Example of a system configuration

The following shows the example of a system configuration for data backup.



(1) Backup target

- Target module type: CC-Link IE Field Network
- · Execution unit: Station
- Folder number setting: Automatic specification
- Target device (target module): Start I/O No.0
- Target device (station number): 1
- Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Catego | Device | Label name | Content |
|---------------------|--------|--|--|
| ry Module | SM1360 | PCDL atSM biOSS, Reakup, Restaration, Line, Authority, Request | Packup/restarction right to use request |
| label | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| | | RCPU.stSM.biQSS_Backup_Request | Backup request |
| | SM1362 | RCPU.stSM.biQSS_Backup_Normal_Completion | Backup normal completion |
| | SM1363 | RCPU.stSM.biQSS_Backup_Error_Completion | Backup abnormal completion |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit _Setting | Backup/restoration target module, execution unit setting |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 1 | Backup/restoration target setting (target device 1) |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 | Backup/restoration target setting (target device 2) |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Numb er_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_ Per_Devices | Backup/restoration execution status (progress per device) |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution _Unit_Information | Backup/restoration error target module, execution unit information |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_I nformation | Backup/restoration target folder number information |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Modu le | Backup/restoration error information (target module) |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_1 | Backup/restoration error device information (target device 1) |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_2 | Backup/restoration error device information (target device 2) |
| | | | |

| Catego | Device | Label na | me | | | | | Content |
|---------|---------------|----------------|---------------|---|------------|---|-----------------------|---------|
| У | | | | | | | | |
| abel to | Define globa | l labels as fo | ollows: | | | | | |
| be | | | | | | | | |
| defined | | l Name | Data Type | _ | Class | | Assign (Device/Label) | |
| lenneu | blnitTrg | | Bit | | VAR_GLOBAL | | | |
| | bBKUPTrg | _ | Bit | | VAR_GLOBAL | | M1 000 | |
| | bBKUPUseRe | | Bit | | VAR_GLOBAL | | M1100 | |
| | bBKUPChkTr | | Bit | | VAR_GLOBAL | | M1200 | |
| | bBKUPSetTr | | Bit | | VAR_GLOBAL | | M1 300 | |
| | bBKUPUseGe | - | Bit | | VAR_GLOBAL | | M1 400 | |
| | bBKUPUseRe | | Bit | | VAR_GLOBAL | | M1 500 | |
| | bBKUPExeSt | 1 2 | Bit | | VAR_GLOBAL | | M2000 | |
| | bBKUPExeCm | | Bit | | VAR_GLOBAL | | M3000 | |
| | bBKUPExeErr | 1 2 | Bit | | VAR_GLOBAL | | M3500 | |
| | bBKUPUseLo | | Bit | | VAR_GLOBAL | | M3550 | |
| | bBKUPUseCa | | Bit | | VAR_GLOBAL | | M4000 | |
| | bBKUPUseCa | | Bit | | VAR_GLOBAL | | M41 00 | |
| | bRemoteREA | | Bit | | VAR_GLOBAL | | D2000.0 | |
| | bDPDNShort | | Bit | | VAR_GLOBAL | | D2000.1 | |
| | bTransCable V | | Bit | | VAR_GLOBAL | | D2000.3 | |
| | bDPDNDiscon | nectionErr | Bit | | VAR_GLOBAL | ٠ | D2000.4 | |
| | bSlave AlarmE | r | Bit | | VAR_GLOBAL | - | D2001.0 | |
| | bParaAcssCo | mpFlag | Bit | | VAR_GLOBAL | + | D2001.1 | |
| | bParaAcssErr | | Bit | | VAR_GLOBAL | - | D2001.2 | |
| | bAutoAddDet | ection Flag | Bit | | VAR_GLOBAL | - | D2001.4 | |
| | BKUPUseNoS | ietArea | Word [Signed] | | VAR_GLOBAL | - | D1 000 | |
| | BKUPExeCmp | Cnt | Word [Signed] | | VAR_GLOBAL | - | D5000 | |
| | BKUPExeErrO | OmpOnit | Word [Signed] | | VAR_GLOBAL | - | D5001 | |
| | BKUPUnitErr | | Word [Signed] | | VAR_GLOBAL | - | D5002 | |
| | BKUPDevErr | | Word [Signed] | | VAR_GLOBAL | - | D5003 | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | blnitTrg M0 | | | | | | | | FMOV | ко | BKUPExeCmpGrit D5000 | K4 |
|------|--|-------------------------|--|---|-------------------------------------|---------------------------------|--|-------------------------|--------------------------------------|-----|---|---|
| | | | | | | | | | | | RST | b8KUPExeCmpTrg M3000 |
| | | | | | | | | | | | RST | bBKUPEssErrCmpTrg M3500 |
| | | | | | | | | | | | SET | bBKUPTrg |
| (9) | ывкиртту M1000 | bRemoteREADY D2000.0 | EDPDNShortErr 02000.1 | bTransCableVoltageDropErr 02200;3 | bDPDNDisconnecti nErr D2000.4 | o bSlaveAlarmE rr D2001.0 | bParaAcssCompFlag 02001.1 | bParaAcssErr D2001,2 | bAutoAddDetectic nflag D2001.4 | | SET | M1000 bBKUPUaeReqTrg |
| (20) | hBKUPI heBeaTre | =_U | HO | ROPLIstSD.uiQSS_Backup_Restoration_Use_Auth ty_Arquinkion_No SD1381 | | | | <u> и </u> | <u>и</u> | MOV | H1070 | M1100 BKUPUseNcSetArea |
| (200 | M1100 | 0 | | SD1361 | | | | | | | BKUPUseNsSetArea | D 1000 RCPU.stSD.uiGSS_Backup_Restoration_Use_Autho |
| | | | | | | | | | | MOV | D1000 | RCPU.stSD.u/QSS_Backup_Restoration_Use_Autho rRy_Request_No \$01360 bBKUPUseGetTrg |
| | | | | | | | | | | | SET | M1400 bBKUPChKTrg |
| | bBKUPChkTrg | | | | | | | | | | SET | M1200 |
| (30) | M1200 | = <u>U</u> | | ROPU stSD u/QSS Backup, Restoration_Use_Auth ty_Acquisition_No SD1381 | ori | | | | | | SET | bBKUPSetTrg M1300 |
| | | 0 <u>.</u> U | RCPU.stSD.uIQSS Baokup Restoration Use Authority Request No SD1340 | ROPUstSD.uIGSS.Backup.Restoration_Use_Auth ty_AcquistIon_No SD1361 | ori o_U | HO | RCPU stSD.uiQSS_Backup_Restoration_Use_Aur ority_Acquisition_No SD1361 | th | | | SET | bBKUPUseLossTrg M3550 |
| (44) | 68KUPSetTrg M1300 | | | | | | | | | MOV | H204 | RCPU.stSD.uiQSS Backup, Restoration_Target_M dule_Execution_Unit_Setting SD 1362 |
| | | | | | | | | | | MOV | HOFFFF | RCPU.stSD.uiQSS_Backup_Restoration_Target_Fo decNumber_Setting SD 1363 |
| | | | | | | | | | | MOV | HO | RCPLLetSD.uiQSS_Backup_Restoration_Target_Se ting_Target_Module SD 1364 |
| | | | | | | | | | | MOV | κı | RCPU.etSD.uiQSS_Backup_Restoration_Target_Se ting_Target_Device_1 SD 1365 |
| | | | | | | | | | | MOV | ко | RCPU et SD.uQSS_Backup_Restoration_Target_Se ting_Target_Davion_2 SD 1366 |
| | | | | | | | | | | MOV | HØ | RCPU.stSD.uiQSS_Backup_Restoration_Operation Setting SD1367 |
| | | | | | | | | | | | SET | RCPU.atSMb/QSS_Backup_Request |
| (59) | RCPU stSMbiQSS_Backup_Norm aLCompletion SM1382 | | | | | | | | | | SET | SM1301 bBKUPExeCmpTrg |
| | lti- | | | | | | | | | MOV | RCPU,stSD.stiQES_Beckup_Restoration_Execution_Status.uNumber of Normal_Completion_Devices \$01372 | M3000 r BKUPExeCrepOnt |
| | RCPU.stSMbiOSS_Backup_Error_ Completion SM1583 | | | | | | | | | | | D5000 bBKUPExeErrCmpTrg |
| (64) | | | | | | | | | | | SET RCPUutSD.stiQSS Backup Restoration Execution Status.vNumber | M3500 r BKUPExeErrOmpCnt |
| | | | | - | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status_uNumber _of Error_Completed_devices _SD1373 RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | D5001 BKUPUnitErr |
| | | | | | | | | | | MOV | SD1376 | D5002 |
| | b8KUPExeCmpTrg | | | | | | | | | MOV | RCPU.stSD.viQSS_Backup_Restoration_Target_Devices_Error_Caus SD1377 | D5003 |
| 73) | M3000 | | | | | | | | | | RST | blnitTrg MD |
| _ | bBKUPExeErrCmpTrg M3500 | | | | | | | | | | RST | bBKUPTrg M1000 |
| | | | | | | | | | | | RST | bBKUPUseReqTrg M1100 |
| | | | | | | | | | | | RST | bBKUPCHkTrg M1200 |
| | | | | | | | | | | | RST | bBKUPSetTrg M1300 |
| | | | | | | | | | | | SET | bBKUPUseCancelTrg M4000 |
| (83) | bBKUPExeStopTrg M2000 | | | | | | | | | | SET | RCPU.atSM.biQSS_Backup_Restoration_Cance_R quast SM1367 |
| | | | | | | | | | | | SET | bBKUPUseCancelStpTrg M4100 |
| | | | | | | | | | | | RST | bBKUPExeStopTrg M2000 |
| (88) | bBKUPUseCancelTrg M4000 | | | | | | | | | MOV | HÜ | RCPU.stSD.uIQSS_Backup_Restoration_Use_Auth rity_Request_No \$01360 |
| | bBKUPUseCancelStpTrg M4100 | | | | | | | | | | SET | bBKUPUseReITrg |
| ł | | | | | | | | | | | RST | M1500 bBKUPUseCancelTrg |
| | | | | | | | | | | | | M4000 bBKUPUseCancelStpTrg |
| | bBKUPUseGetTrg | | | | | | | | | | RST | M4100 |
| (97) | M1400 ITI b8KUPUseRelTrg | | | | | | | | | | SET | ROPU stSMMOSS_Backup_Restoration_Use_Auth rity_Request SM1980 |
| - | M1500 | | | | | | | | | | RST | bBKUPUseGetTrg M1400 |
| | | | | | | | | | | | RST | 58KUPUseRelTrg M1500 |
| 104) | | | | | | | | | | | | (END) |

309

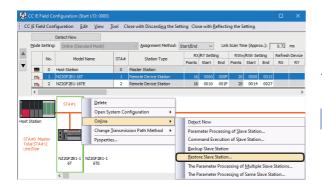
[Initialization]

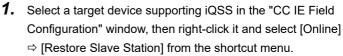
- Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Requesting backup right to use] (9) Store the right-to-use number. Set a right-to-use request. Set the backup right-to-use confirmation trigger. [Checking backup right to use] Set the backup setting and starting trigger. (30) Display the right-to-use acquisition failure. [Setting and starting data backup] (44) Set the target module/execution unit. Set the target folder number. Set the target module. Set the target device 1. Set the target device 2. Set the data backup operation setting (on error). Set the backup request. [Checking data backup execution] Display the normal completion. (59) Save the number of normally completed devices. (64) Display the abnormal completion. Save the number of devices completed with an error. Save the error cause in a module.
- Save the backup error cause in a device. [Enabling the next data backup process]
- (73) Clear the initialization trigger.
 Clear the backup execution trigger.
 Clear the backup right-to-use request trigger.
 Clear the backup right-to-use confirmation trigger.
 Clear the backup setting and starting trigger.
- [Setting for cancelling the process]
- (83) Set the backup cancellation request.
- [Releasing backup right to use]
- (88) Set the backup right-to-use release trigger.
- [Updating backup right to use]
- (97) Set the backup right-to-use request.

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each station by using an engineering tool.

Operating procedure





2. Select backup data to be restored, and click the [Execute] button.

Point

| • // | |
|------|--|
| | A list of the backup folder names (date_number) is |
| | displayed in the column of "Folder Name." |
| | Backup data is stored in backup folders for each |
| | folder name (Start I/O number_Station number) in |
| | an SD memory card. |
| | For details on the backup folder configuration, |
| | refer to the following: |
| | Page 292 Backup folder configuration |
| | |

3. Read the message and click the [OK] button. Data is restored.

Considerations for data restoration

<u>C</u>ancel

■Setting the restoration setting

Ð

one restoring backup data. acute" button and start to re

9/07 17:58 20180907_01 9/07 17:59 20180907_02

The initial value of the restoration setting (SD1367) is as follows:

Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (EP Page 312 Program execution for data restoration)

Program execution for data restoration

Information in an SD memory card can be restored to a device supporting iQSS.

Select a backup folder to be restored. In the data restoration, information such as a model name or device version in the system file (\$BKUP_UNIT_INF.BSI) created with backup is compared with that of the CC-Link IE Field Network master station or a device supporting iQSS. If the information is mismatched, a restoration error will occur.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to restore data with a program.

| Procedu | Item | Reference |
|---------|---|--|
| re | | |
| 1 | Acquire a right to use. | Page 312 Acquiring a right to use |
| 2 | Set the restoration target setting and the operation setting. | Page 298 Setting the backup setting |
| 3 | Perform a data restoration. | Page 314 Performing a data restoration |
| 4 | Release the right to use. | Page 314 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Execution method of data restoration

Special relays (SM) and special registers (SD) are used for data restoration.

■Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data restoration. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

Setting the restoration setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|------------------------------|---|
| 4H: CC-Link IE Field Network | Set this to specify a device supporting iQSS which is connected to the CC-Link IE Field Network master station. |

2. Setting an execution unit

Set a unit to specify the range of data to be restored at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|-------------------------|--|
| 1H: Module unit | Set this to specify the device supporting iQSS which is connected to the own network among the devices which are connected to a CC-Link IE Field Network master station with the specified start I/O number. |
| 2H: Station unit | Set this to specify either of the following iQSS supported devices which are connected to a CC-Link IE Field Network master station with the specified start I/O number: the devices supporting iQSS with the specified station number or all the devices supporting iQSS which are connected to the specified station number. |
| 3H: Station sub-ID unit | Set this to specify the following devices supporting iQSS which are connected to a CC-Link IE Field Network master station with the specified start I/O number: the devices which are connected to the specified station number with the specified station sub-ID number. |

3. Selecting a folder for data restoration

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--------------------------------------|--|
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name to be restored. |
| | |

4. Setting a target device

· Setting a module

When '1H' (module unit) is set for the execution unit, set a start I/O number to SD1364 (iQ Sensor Solution data backup/ restoration target setting (target module)).

In a multiple CPU system, only the CC-Link IE Field Network master station controlled by a host CPU can be restored. Data restoration cannot be performed for non-controlled modules.

| Target device (Module) | Description |
|----------------------------|--|
| 0 to FFH: Start I/O number | Set the start I/O number (the value obtained by dividing the start I/O number by 16) of the CC-Link IE Field |
| | Network master station which is connected to a target device supporting iQSS. |

· Setting a station number

When '2H' (station unit) or '3H' (station sub-ID unit) is set for the execution unit, set a station number to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)).

| Target device (Station number) | Description |
|--------------------------------|--|
| 1 to 120: Station number | Set the station number of a target device supporting iQSS or the station number of the module which is |
| | connected to a device supporting iQSS. |

• Setting a station sub-ID number

When '3H' (station sub-ID unit) is set for the execution unit, set a station sub-ID number to SD1366 (iQ Sensor Solution backup/restoration target setting (target device 2)).

| Target device (Station sub-ID number) | Description |
|---------------------------------------|---|
| 0 to 9999: Station sub-ID number | Set the station sub-ID number of a target device supporting iQSS. |

Precautions

When backup/restore the data in a device supporting iQSS which is connected to a bridge module (NZ2AW1GFAL), set the ID number of AnyWireASLINK to SD1366.

For details on the ID number (SD1440) of AnyWireASLINK, refer to the following:

Page 206 Setting the restoration setting

5. Setting the operation setting when a data restoration error occurs

Set the operation to be performed when the data restoration fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description |
|--------------------|---|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices. |
| 1H: Stop | Set this to stop a data restoration if it fails on some devices. |

■Performing a data restoration

Turn ON SM1364 (iQ Sensor Solution restoration request) to request a data restoration.

Data is restored after a data restoration request.

SM1364 is turned OFF when a data restoration is completed.

1. Checking the execution status of a data restoration

The execution status of a data restoration can be checked with the following special register areas.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data restoration

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data restoration. A cancellation is performed for each device supporting iQSS, so it will be canceled when a data restoration which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data restoration

When a data restoration is completed, the restoration completion status can be checked with the following special relays.

- Normally completed: SM1365 (iQ Sensor Solution restoration normal completion) is turned ON.
- Abnormally completed: SM1366 (iQ Sensor Solution restoration abnormal completion) is turned ON.
- 4. Checking a data restoration error

Even if a data restoration to a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a module such as a CPU module or CC-Link IE Field Network master station can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1382: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

■Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON. The right to use is released and the next data restoration is ready to be performed.

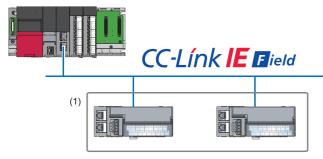
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data restoration

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



(1) Restoration target

- Target module type: CC-Link IE Field Network
- Execution unit: Module
- Folder number setting: 0
- Target device (target module): Start I/O No.0
- Target device (station number): Station No. 1
- Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Device | Label name | Description |
|--------|--|--|
| SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| SM1364 | RCPU.stSM.biQSS_Restoration_Request | Restoration request |
| SM1365 | RCPU.stSM.biQSS_Restoration_Normal_Completion | Restoration normal completion |
| SM1366 | RCPU.stSM.biQSS_Restoration_Error_Completion | Restoration abnormal completion |
| SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_No | Backup/restoration right-to-use acquisition number |
| SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit _Setting | Backup/restoration target module, execution unit setting |
| SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting | Backup/restoration folder number setting |
| SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module | Backup/restoration target setting (target module) |
| SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 1 | Backup/restoration target setting (target device 1) |
| SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 | Backup/restoration target setting (target device 2) |
| SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Numb er_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessing_ Per_Devices | Backup/restoration execution status (progress per device) |
| SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause | Backup/restoration error cause in a device |
| SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution _Unit_Information | Backup/restoration error target module, execution unit information |
| SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Number_I nformation | Backup/restoration target folder number information |
| SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Modu le | Backup/restoration error information (target module) |
| SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_1 | Backup/restoration error device information (target device 1) |
| SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_Devic e_2 | Backup/restoration error device information (target device 2) |
| | SM1360 SM1364 SM1365 SM1366 SM1367 SD1360 SD1361 SD1363 SD1363 SD1364 SD1365 SD1365 SD1366 SD1377 SD1377 SD1377 SD1377 SD1377 SD1377 SD1377 SD1377 SD1377 SD1377 SD1377 | SM1360 RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request SM1364 RCPU.stSM.biQSS_Restoration_Request SM1365 RCPU.stSM.biQSS_Restoration_Normal_Completion SM1366 RCPU.stSM.biQSS_Restoration_Error_Completion SM1367 RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request SD1360 RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No SD1361 RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_Unit Setting SD1362 RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Setting SD1363 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Module SD1364 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 1 SD1365 RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Device_ 2 SD1366 RCPU.stSD.uiQSS_Backup_Restoration_Setting SD1371 RCPU.stSD.uiQSS_Backup_Restoration_Execution_Status.uTotal_Numb er_of_Target_Devices SD1372 RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Roro_LstD.stiQSS_Backup_Restoration_Execution_Status.uNumber_of_ Error_Completed_Devices SD1375 RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause SD1376 RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cause SD1378 RCPU.st |

| Catego | Device | Label nan | ne | | | | Description |
|----------|----------------|-----------------|---------------|----------------|---|-----------------------|-------------|
| ry | | | | | | | |
| Label to | Define globa | l labels as fol | llows: | | | | |
| be | 5 | | | | | | |
| | Lab | el Name | Data Type | Class | | Assign (Device/Label) | |
| defined | bInitTrg | | Bit | VAR_GLOBAL | - | MO | |
| | bRSTRTrg | | Bit | VAR_GLOBAL | • | M1010 | |
| | bRSTRUseRe | eqTrg | Bit | VAR_GLOBAL | • | M1110 | |
| | bRSTRChkTr | e | Bit | VAR_GLOBAL | • | M1210 | |
| | bRSTRSetTre | 5 | Bit | VAR_GLOBAL | • | M1310 | |
| | bRSTRUseGe | etTrg | Bit | VAR_GLOBAL | • | M1410 | |
| | bRSTRUseReITrg | | Bit | VAR_GLOBAL | • | M1510 | |
| | bRSTRExeSt | opTrg | Bit | VAR_GLOBAL | • | M2010 | |
| | bRSTRExeCr | npTrg | Bit | VAR_GLOBAL | ٠ | M3010 | |
| | bRSTRExeEr | rCmpTre | Bit | VAR_GLOBAL | • | M3510 | |
| | bRSTRUseLo | issTrg | Bit | VAR_GLOBAL | • | M3555 | |
| | bRSTRUseCa | ancelTrg | Bit | VAR_GLOBAL | - | M4010 | |
| | bRSTRUseCa | ancelStpTrg | Bit | VAR_GLOBAL | - | M4110 | |
| | RSTRUseNo | SetArea | Word [Signed] | VAR_GLOBAL | - | D1010 | |
| | RSTRExeCm | pCnt | Word [Signed] | VAR_GLOBAL | - | D5010 | |
| | RSTRExeErr(| OmpOnt | Word [Signed] | VAR_GLOBAL | - | D5011 | |
| | RSTRUnitErr | | Word [Signed] | VAR_GLOBAL | - | D5012 | |
| | RSTRDevErr | | Word [Signed] | VAR GLOBAL | - | D5013 | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | binitTrg M0 | | | | | | | | FMOV | КО | RSTRExeCmpCnt D5010 | К4 |
|----------|--|--------------|---|---|-----|----|---|--|------|-----|--|---|
| | | | | | | | | | | | RST | bRSTRExeCmpTrg M3010 |
| | | | | | | | | | | | RST | bRSTRExeErrCmpTrg |
| | | | | | | | | | | | SET | M3510 bRSTRTrg |
| (9) | bRSTRTrg M1010 | | | | | | | | | | SET | M1010 bRSTRUseReqTrg |
| | bRSTRUseReqTrg M1110 | | HO | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1381 | | | | | | MOV | H10B0 | M1110 RSTRUseNoSetArea |
| (12) | | =_U | | thority_Acquisition_No SD1381 | | | | | | | RSTRUseNoSetArea | D1010 RCPU.stSD.uiQSS_Backup_Restoration_Use_Auth |
| | | | | | | | | | | MOV | D1010 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Autho rity_Request_No SD1360 bRSTRUseGetTrg |
| | | | | | | | | | | | SET | M1410 |
| | bRSTRChkTrg | | | | | | | | | | SET | bRSTRChkTrg M1210 |
| (22) | M1210 | = <u>.</u> U | | RCPU.stSD.uiOSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1361 | | | | | | | SET | bRSTRSetTrg M1310 |
| | | ⇔_U | RCPU.stSD.uiQSS_Backup_Restoration_Use_ Authority_Request_No SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au thority_Acquisition_No SD1381 | ⇔_u | HO | RCPU stSD uiQSS_Backup_Restoration_Use_A uthority_Acquisition_No SD1361 | | | | SET | bRSTRUseLossTrg M3555 |
| (36) | bRSTRSetTrg M1310 | | | | | | | | | MOV | H104 | RCPU.stSD.ulQSS_Backup_Restoration_Target_M dule_Execution_Unit_Setting SD 1362 |
| | | | | | | | | | | MOV | KÖ | RCPU.stSD.uiQSS_Backup_Restoration_Target_F der_Number_Setting SD1363 |
| | | | | | | | | | | MOV | НО | RCPU.stSD.uiQSS_Backup_Restoration_Target_Se ting_Target_Module SD1384 |
| | | | | | | | | | | MOV | KI | RCPU.stSD.uiQSS_Backup_Restoration_Target_Se ting_Target_Device_1 SD1365 |
| | | | | | | | | | | MOV | КО | RCPU.stSD.uiQSS_Backup_Restoration_Target_So ting_Target_Device_2 SD1366 |
| | | | | | | | | | | MOV | НО | RCPU.stSD.uiQSS_Backup_Restoration_Operation Setting SD1367 |
| | | | | | | | | | | | SET | RCPU.stSMbiQSS_Restoration_Request SM1364 |
| (51) R(| PU.stSMbiQSS_Restoration_No rmal_Completion SM1365 | | | | | | | | | | SET | bRSTRExeCmpTrg |
| | | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumb er of Normal_Completed_Devices SD 1372 | M3010 RSTRExeCmpCnt |
| (56) | PU.stSM.biQSS_Restoration_Err or_Completion SM1366 | | | | | | | | | | SET | D5010 |
| (30) | | | | | | | | | | | | M3510 RSTRExeErrCmpCnt |
| | | | | | | | | | | MOV | RCPU.stSD.stiOSS_Backup_Restoration_Execution_Status.uNumb er_of_Error_Completed_devices SD1373 RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | D5011 RSTRUnitErr |
| | | | | | | | | | | MOV | SD1376 RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Ca | D5012 |
| | bRSTRExeCmpTrg | | | | | | | | | MOV | NOFOSISIKUOSS_BACKUPRESOFUCIOF_LARGE_DEVICES_EPOF_CA URI SD1377 | D5013 |
| 65) | M3010 M3010 bRSTRExeErrCmpTrg | | | | | | | | | | RST | binitTrg M0 |
| \vdash | M3510 | | | | | | | | | | RST | bRSTRTrg M1010 |
| | | | | | | | | | | | RST | bRSTRUseRegTrg M1110 |
| | | | | | | | | | | | RST | bRSTRChkTrg M1210 |
| | | | | | | | | | | | RST | bRSTRSetTrg M1310 |
| | | | | | | | | | | | SET | bRSTRUseCancelTrg M4010 |
| (75) | bRSTRExeStopTrg M2010 | | | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoration_CanceLF guest SM1367 |
| | | | | | | | | | | | SET | bRSTRUseCancelStpTrg M4110 |
| | | | | | | | | | | | RST | bRSTRExeStopTrg M2010 |
| (80) | bRSTRUseCancelTrg M4010 | | | | | | | | | MOV | НО | RCPU.stSD.uiQSS_Backup_Restoration_Use_Auth rity_Request_No SD1380 |
| | bRSTRUseCancelStpTrg M4110 | | | | | | | | | | SET | bRSTRUseRelTrg |
| | m | | | | | | | | | | RST | M1510 bRSTRUseCancelTrg |
| | | | | | | | | | | | RST | M4010 bRSTRUseCancelStpTrg |
| | bRSTRUseGetTrg | <u> </u> | | | | | | | | | | M4110 |
| (89) | M1410 ITI bRSTRUseRelTrg | | | | | | | | | | SET | RCPU.stSMJxiQSS_Backup_Restoration_Use_Auth rity_Request SM1360 bRSTRUseGetTrg |
| + | M1510 | | | | | | | | | | RST | M1410 |
| | | L | | | | | | | | | RST | bRSTRUseReITrg M1510 |
| (96) | | | | | | | | | | | | (END)- |

[Initialization]

| - | • |
|------------|--|
| (0) | Initialize the execution result. |
| | Initialize the normal completion display. |
| | Initialize the abnormal completion display. |
| | Set the restoration execution trigger. |
| [Request | ing restoration right to use] |
| (9) | Store the right-to-use number. |
| | Set a right-to-use request. |
| | Set the restoration right-to-use confirmation trigger. |
| [Checking | g restoration right to use] |
| (22) | Set the restoration setting and starting trigger. |
| | Display the right-to-use acquisition failure. |
| [Setting a | and starting data restoration] |
| (36) | Set the target module/execution unit. |
| | Set the target folder number. |
| | Set the target module. |
| | Set the target device 1. |
| | Set the target device 2. |
| | Set the data restoration operation setting (on error). |
| | Set the restoration request. |
| [Checking | g data restoration execution] |
| (51) | Display the normal completion. |
| | Save the number of normally completed devices. |
| (56) | Display the abnormal completion. |
| | Save the number of devices completed with an error. |
| | Save the error cause in a module. |
| | Save the restoration error cause in a device. |
| [Enabling | the next data restoration process] |
| (65) | Clear the initialization trigger. |
| | Clear the restoration execution trigger. |
| | Clear the restoration right-to-use request trigger. |
| | Clear the restoration right-to-use confirmation trigger. |
| | Clear the restoration setting and starting trigger. |
| | |

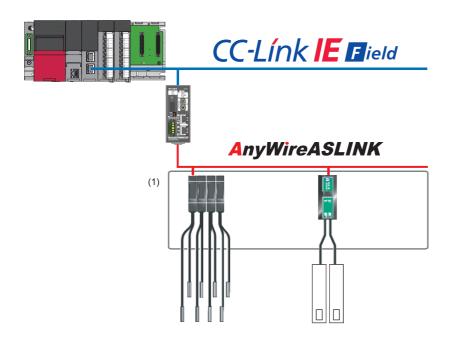
- [Setting for cancelling the process]
- (75) Set the restoration cancellation request.
- [Releasing restoration right to use]
- (80) Set the restoration right-to-use release trigger.
- [Updating restoration right to use]
- (89) Set the restoration right-to-use request.

10

Example of a data restoration (bridge module (NZ2AW1GFAL))

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



- (1) Restoration target
- Target module type: CC-Link IE Field Network
- Execution unit: Module
- Folder number setting: 0
- Target device (target module): Start I/O No.0
- Target device (station number): Station No. 1
- · Operation setting on error: Continue

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Categor | Device | Label name | Content |
|---------|--------|--|--|
| У | | | |
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| label | SM1364 | RCPU.stSM.biQSS_Restoration_Request | Restoration request |
| | SM1365 | RCPU.stSM.biQSS_Restoration_Normal_Completion | Restoration normal completion |
| | SM1366 | RCPU.stSM.biQSS_Restoration_Error_Completion | Restoration abnormal completion |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_ No | Backup/restoration right-to-use acquisition number |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_ Unit_Setting | Backup/restoration target module, execution unit setting |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Sett ing | Backup/restoration folder number setting |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Mod ule | Backup/restoration target setting (target module) |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_1 | Backup/restoration target setting (target device 1) |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_2 | Backup/restoration target setting (target device 2) |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Nu mber_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessi ng_Per_Devices | Backup/restoration execution status (progress per device) |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Caus e | Backup/restoration error cause in a device |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution_Unit_Information | Backup/restoration error target module, execution unit information |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Numbe r_Information | Backup/restoration target folder number information |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_M odule | Backup/restoration error information (target module) |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D evice_1 | Backup/restoration error device information (target device 1) |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D evice_2 | Backup/restoration error device information (target device 2) |

| Categor | Device | Label name | | | | | | Content |
|-------------|----------------------------------|---------------|---------------|---|------------|---|-----------------------|---------|
| у | | | | | | | | |
| | | | | | | | | |
| Label to be | Define global labels as follows: | | | | | | | |
| defined | 1.46 | el Name | Data Type | | Class | | Assign (Device/Label) | |
| | blnitTrg | eriname | Bit | - | VAR_GLOBAL | ~ | MO | |
| | bRSTRTrg | | Bit | | VAR.GLOBAL | | M1010 | |
| | bRSTRUseRegTrg | | Bit | | VAR_GLOBAL | | M1110 | |
| | bRSTRChkTrg | | Bit | | VAR_GLOBAL | | M1210 | |
| | bRSTRSetTrg | | Bit | | VAR.GLOBAL | | M1310 | |
| | bRSTRUseGetTrg | | Bit | | VAR_GLOBAL | | M1410 | |
| | bRSTRUseReiTrg | | Bit | | VAR_GLOBAL | | M1510 | |
| | bRSTRExeStopTrg | | Bit | | VAR_GLOBAL | | M2010 | |
| | bRSTRExeOmpTrg | | Bit | | VAR GLOBAL | | M3010 | |
| | bRSTRExeErrOmpTrg | | Bit | | VAR_GLOBAL | | M3510 | |
| | bRSTRUseLo | | Bit | | VAR_GLOBAL | | M3555 | |
| | bRSTRUseCa | | Bit | | VAR_GLOBAL | | M401 0 | |
| | bRSTRUseCa | | Bit | | VAR_GLOBAL | | M4110 | |
| | bRemoteREA | 1 | Bit | | VAR_GLOBAL | | D2000.0 | |
| | bDPDNShort | | Bit | | VAR_GLOBAL | | D2000.1 | |
| | | oltageDropErr | Bit | | VAR_GLOBAL | | D2000.3 | |
| | bDPDNDiscor | | Bit | | VAR_GLOBAL | | D2000.4 | |
| | bSlave AlarmE | | Bit | | VAR_GLOBAL | | D2001.0 | |
| | bParaAcssCo | | Bit | | VAR_GLOBAL | | D2001.1 | |
| | bParaAcssErr | | Bit | | VAR_GLOBAL | | D2001.2 | |
| | bAutoAddDet | | Bit | | VAR_GLOBAL | | D2001.4 | |
| | RSTRUseNoS | | Word [Signed] | | VAR_GLOBAL | | D1010 | |
| | RSTRExeOmp | | Word [Signed] | | VAR_GLOBAL | | D5010 | |
| | RSTRExeErrO | | Word [Signed] | | VAR_GLOBAL | | D5011 | |
| | RSTRUnitErr | | Word [Signed] | | VAR_GLOBAL | | D5012 | |
| | RSTRDevErr | | Word [Signed] | | VAR_GLOBAL | | D5013 | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | blnitTrg M0 [1] | | | | | | | | FMOV | ко | RSTRExeOmpOnt D5010 | 54 |
|-----|--|-----------------------------|--|--|--------------------------------------|---------------------------|---|----------------------------|--------------------------------------|-----|---|--|
| | | | | | | | | | | | RST | bRSTRExeCmpTrg M3010 |
| | | | | | | | | | | | RST | bRSTRExeErrCmpTrg M3510 |
| | | | | | | | | | | | SET | bRSTRTrg |
| (9) | bRSTRTrg M1010 | bRemoteREA DY D2000.0 | bDPDNShortErr D2000.1 | bTransCableVoltageDropErr D2000.3 | bDPDNDisconnec tionErr D2000.4 | bSlaveAlarmErr D2001.0 | bParaAcssCompFlag D2001:1 | bParaAossErr D2001.2 | bAutoAddDetecti onFlag D2001.4 | i | SET | M1010 bRSTRUseReqTrg |
| | bRSTRUseReqTrg | | но | RCPU.etSD.uiQSS_Backup_Restoration_Like_Auth ky_Acquisition_No \$D1361 | V | <u>и</u> | | <u>и</u> | | MOV | HI0B0 | M1110 RSTRUseNoSetArea |
| | M110 | =_U | | \$D1361 | | | | | | | RSTRUseNoSetArea | D1010 RCPU.stSD.siQSS_Backup_Restoration_Use_Autho |
| | | | | | | | | | | MOV | D1010 | RCPU.stSD.siQSS_Backup_Restoration_Use_Autho Request_No SD1300 bRSTRUseQetTrg |
| | | | | | | | | | | | SET | M1410 bRSTRChkTrg |
| _ | bRSTRChkTrg | | | | | | | | | | SET | M1210 |
| 0 | M1210 | | | RCPU stSD u/QSS_Backup_Restoration_Use_Aut ity_Acquisition_No SD1361 | 107 | | | | | | SET | bRSTRSetTrg M1310 |
| | | o_u ^R | CPU.stSD.uiQSS_Backup_Restoration_Use_ Authority_Request_No SD1380 | RCPUstSDuiQSS_Backup_Restoration_Use_Aut ity_Acquisition_No SD1361 | 107 O_U | HO | RCPUetSDuiQSS_Backup_Restoration_Use_Auth ority_Acquisition_No SD1361 | ļ | | | SET | bRSTRUseLossTrg M3555 |
| 14) | bRSTRSetTrg M1310 | | | | | | | 8 8 8 9 9 9 | | моу | H104 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Me _Execution_Unit_Setting SD1362 |
| | | | | | | | | | | моу | KÚ | RCPU.stSD.u/GSS_Backup_Restoration_Target_Fo Number_Setting SD1363 |
| | | | | | | | | | | моу | H0 | RCPU.stSD.uQSS_Backup_Personation_Target_Se Target_Module SD1364 |
| | | | | | | | | | | моу | кı | RCPU.stSD.uiQSS_Backup_Restoration_Target_Set Target_Device_1 |
| | | | | | | | | | | MOV | K0 | RCPU.atSD.uiQSS_Backup_Restoration_Target_Se Target_Device_2 SD1366 |
| | | | | | | | | | | моу | но | RCPU.stSD.uiQSS.Backup.Restoration.Operation ting SD1367 |
| | | | | | | | | | | | SET | SD1367 RCPU.stSMbiQSS.Restoration.Request |
| RC | PU.stSM.biQSS_Restoration_Norma LCompletion SM1365 | | | | | | | | | | | SM1384 bRSTRExeCmpTrg |
| 59) | SM1365 | | | | | | | | | | SET | M3010 |
| RC | PUstSM biQSS_Restoration_Error | | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status uNumber_ UNormalCompleted_Devices SD1572 | |
| 14) | CPU.stSMbiQSS_Reatoration_Error_ Completion SM1366 | | | | | | | | | | SET | bRSTRExxEmCmpTng M3510 |
| | | | | | | | | | | моу | RCPU.stSD.st/QSS_Backup_Restoration_Execution_Status_uNumber_ [Error_Completed_devices SD1373 | o RSTRExeErrCmpCnt D\$011 |
| | | | | | | | | | | моу | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause SD1378 | RSTRUnkErr D\$012 |
| | | | | | | | | - | | моу | RCPU etSD uiQSS_Backup_Restoration_Target_Devices_Error_Cause SD1377 | RSTRDøvErr D5013 |
| 3) | bRSTRExeCmpTrg M3010 | - | | | | | | | | | RST | būnitTrg Mū |
| L | bRSTRExeErrCmpTrg M3510 | | | | | | | | | | RST | bRSTRTrg M1010 |
| | | | | | | | | | | | RST | bRSTRUseReqTrg M1110 |
| | | | | | | | | | | | RST | bRSTRONkTrg |
| | | | | | | | | | | | RST | M1210 bRSTRSetTrg |
| - | | | | | | | | | | | SET | M1310 bRSTRUseCanodTrg |
| - | bRSTRExeStopTrg M2010 | | | | | | | | | | | M4010 RCPU.stSMbiOSS_Backup_Restoration_CanceLRd |
| 130 | M2010 | | | | | | | | | | SET | st SM1387 bRSTRUseCancelStpTrg |
| | | | | | | | | | | | SET | M4110 bRSTRExeStopTrg |
| | | | | | | | | | | | RST | M2010 |
| 38) | bRSTRUseCancelTrg M4010 | | | | | | | | | моу | H0 | RCPU atSD.urQSS_Backup_Restoration_Use_Autho Request_No SD 1360 |
| | bRSTRUseCancelStpTrg M4110 | | | | | | | | | | SET | bRSTRUseRelTrg M1510 |
| | | | | | | | | | | | RST | bRSTRUseCancelTrg M4010 |
| | | | | | | | | | | | RST | bRSTRUseCancelStpTrg M4110 |
| m | bRSTRUseGetTrg M1410 | | | | | | | | | | SET | RCPUstSMbiQSS_Backup_Restoration_Use_Auth Request SM1380 |
| | bRSTRUseRelTrg M1510 | | | | | | | | | | RST | bRSTRUseGetTrg M1410 |
| | | | | | | | | | | | RST | bRSTRUseRelTing |
| | | | | | | | | | | | | M1510 |

[Initialization]

| • | - |
|------------|--|
| (0) | Initialize the execution result. |
| | Initialize the normal completion display. |
| | Initialize the abnormal completion display. |
| | Set the restoration execution trigger. |
| [Request | ing restoration right to use] |
| (20) | Store the right-to-use number. |
| | Set a right-to-use request. |
| | Set the restoration right-to-use confirmation trigger. |
| [Checking | g restoration right to use] |
| (30) | Set the restoration setting and starting trigger. |
| | Display the right-to-use acquisition failure. |
| [Setting a | nd starting data restoration] |
| (44) | Set the target module/execution unit. |
| | Set the target folder number. |
| | Set the target module. |
| | Set the target device 1. |
| | Set the target device 2. |
| | Set the data restoration operation setting (on error). |
| | Set the restoration request. |
| • | g data restoration execution] |
| (59) | Display the normal completion. |
| | Save the number of normally completed devices. |
| (64) | Display the abnormal completion. |
| | Save the number of devices completed with an error. |
| | Save the error cause in a module. |
| | Save the restoration error cause in a device. |
| [Enabling | the next data restoration process] |
| (73) | Clear the initialization trigger. |
| | Clear the restoration execution trigger. |
| | Clear the restoration right-to-use request trigger. |
| | Clear the restoration right-to-use confirmation trigger. |
| 10 III 1 | Clear the restoration setting and starting trigger. |
| | or cancelling the process] |
| (00) | |

- (83) Set the restoration cancellation request.
- [Releasing restoration right to use]
- (88) Set the restoration right-to-use release trigger.
- [Updating restoration right to use]
- (97) Set the restoration right-to-use request.

11 Ethernet

This chapter explains the operation methods when using iQ Sensor Solution functions for MELSEC iQ-R series connected to Ethernet.

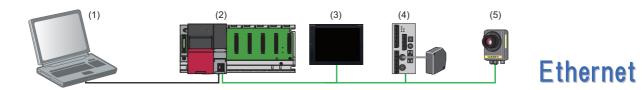
Refer to this chapter for series other than MELSEC iQ-R series as well.

For the series that support iQ Sensor Solution, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

System configuration

This section explains the iQ Sensor Solution functions for Ethernet using the following system configuration.



| Тур | 9 | | Model name | Manufacturer |
|-----|---|------------------------------|--|--|
| (1) | Engineering tool | GX Works3 | SWnDND-GXW3 ('n' indicates its version.) | Mitsubishi Electric |
| (2) | CPU module | RCPU | R08CPU | Corporation |
| (3) | Graphic operation terminal | GOT2000 series ^{*1} | GT27-VGA | |
| | Screen design software for graphic operation terminal | GT Works3 | SW1DND-GTWK3 | |
| (4) | Device supporting iQSS | Laser displacement sensor | HL-C2 | Panasonic Industrial Devices SUNX Co., Ltd. |
| (5) |] | COGNEX Vision System | In-Sight EZ-700 | Cognex Corporation |

*1 Only the automatic detection function of connected devices supports GOT.

For the information to obtain profiles, please consult your local Mitsubishi representative.

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for Ethernet, refer to the following:

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Considerations for a system configuration

■Before using each iQ Sensor Solution function

Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set PLC parameters and other settings required for communication with a device supporting iQSS.

A device supporting iQSS, which is connected to the tip of a router, does not support.

For details on the settings, refer to the following:

MELSEC iQ-R Module Configuration Manual

MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)

Executing iQ Sensor Solution functions simultaneously

An error is returned to the request source when multiple iQ Sensor Solution functions are performed at the same time on an Ethernet network.

The following iQ Sensor Solution functions via a built-in Ethernet port cannot be performed at the same time.

- Automatic detection of connected devices
- Reflection of the communication setting
- Sensor/device monitor
- Sensor parameter read/write
- Data backup/restoration

■Performing an iQ Sensor Solution function while a CC-Link IE TSN master/local module is connected

An iQ Sensor Solution function may not be completed normally when performing the function while a CC-Link IE TSN master/ local module is connected on an Ethernet network.

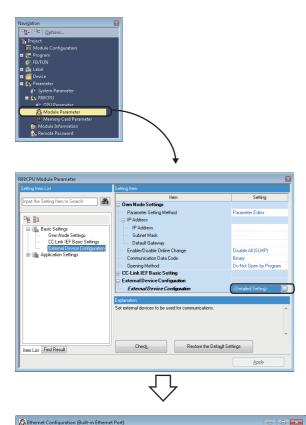
11.1 Detecting Devices Supporting iQSS Automatically

A device supporting iQSS connected to an Ethernet-equipped module can be detected and the information can be displayed in the "Ethernet Configuration" window.

For the creation method of a new project and the operation methods of the "Ethernet Configuration" window, refer to the following:

GX Works3 Operating Manual

Operating procedure



Create a new project for Ethernet in an engineering tool.

 Select "Parameter"
 "(CPU model name of the project)," and double-click "Module Parameter" in the "Navigation" window, select "Basic Settings"
 "External Device Configuration," then double-click "Detailed Setting."

- Ethernet Configuration
 Edit View
 Close with Discarding the Setting
 Close with Beflecting the Setting
 2

 Detect Now
 Image: Communication Protocol
 Freed Buffer
 PLC
 Sensor/Device
 Sensor/Device

 No.
 Model Name
 Communication
 Protocol
 Sensor/Device
 Freed Buffer
 PLC
 Sensor/Device

 No.
 Model Name
 Communication
 Protocol
 Sensor/Device
 Freed Buffer
 PLC
 Sensor/Device

 No.
 Model Name
 Communication
 Protocol
 Sensor/Device
 Image: Name
 P Address
 Potocol

 No.
 Model Name
 Communication
 Protocol
 Sensor/Device
 Image: Name
 P Address
 Potocol

 No.
 Model Name
 Communication
 Protocol
 Sensor/Device
 Image: Name
 P Address
 Potocol

 No.
 Model Name
 Protocol
 Sensor/Device
 Image: Name
 P Address
 Potocol

 Model Station
 Image: Name
 Image: Name
 Image: Name
 Image: Name
 Potocol
 Image: Name
- The "Ethernet Configuration" window appears.
 - **2.** Click the [Detect Now] button.

| | | Detect Now | | | | | | | | |
|---------------------------|-----|-----------------|--------------------------|------------|-------------------------|------------|----------|-------------|-------------|-------------|
| | | | | | Fixed Buffer | PLO | - | Se | nsor/Device | |
| | No. | Model Name | Communicat ion Method | Protocol | Send/Receive Setting | IP Address | Port No. | MAC Address | Host Name | IP Addre |
| | | Host Station | | | | 10.97.95.1 | | | | |
| | 1 | GT27-VGA | SLMP | TCP | | 10.97.95.1 | 1234 | | | 0.97.9 |
| ₽. | 2 | HL-C2 | SLMP | UDP | | 10.97.95.1 | 9094 | | | 0.97.9 |
| | 3 | In-Sight EZ-700 | SLMP | TCP | | 10.97.95.1 | 33333 | | ez700 | 3.97.9 |
| lost Stal onnecto 3 | | GT27-VGA | HL-C2 | In-Sight E | | | | | | |

The actual system configuration is displayed in the "Ethernet Configuration" window.

3. Select [Close with Reflecting the Setting] in the "Ethernet Configuration" window.

The setting in the "Ethernet Configuration" window is applied to the network parameter and completed.

■All connected devices supporting iQSS are not detected

If all devices supporting iQSS are not detected, remove the following error factors and perform an automatic detection of connected devices again.

- The Ethernet line is overloaded due to another function of a CPU module being performed.
- The communication cannot be established due to a reason such as a disconnection of an Ethernet cable.
- · An error occurred in the following functions:
- Simple PLC communication function
- Socket communication function
- Time setting function (SNTP client)
- Data logging file transfer function
- File transfer function (FTP client)
- Predefined protocol support function
- SP.READ instruction, SP.WRITE instruction

Available functions differ depending on the CPU module used. For details, refer to the user's manual of a CPU module used.

Considerations when detecting devices supporting iQSS

■Number of devices supporting iQSS displayed in the "Ethernet Configuration" window

Up to 16 devices supporting iQSS can be displayed in the "Ethernet Configuration" window (in ascending order of MAC address) by performing an automatic detection of connected devices.

■Operation on error

The system configuration cannot be detected if an error occurs on a CPU module or device supporting iQSS.

Take corrective actions and perform the automatic detection function of connected devices again.

Error information is displayed in the "Output" window when an error occurred.

Double-click the information and correct the error at the jumped destination.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave module correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

■Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

11.2 Applying the Communication Setting to a Device Supporting iQSS

The communication setting set in the "Ethernet Configuration" window can be applied to a device supporting iQSS. Perform this function after adding, deleting or changing the setting of a device supporting iQSS.

Operating procedure

| | | Detect Now | | | | | | | | |
|----------------------------|-----|--------------------|--------------------------|-----------------|-------------------------|------------|----------|-----------------|---------------|-------------|
| | | | . | | Fixed Buffer | PL | c . | | Sensor/Device | 9 |
| 1 | No. | Model Name | Communicat ion Method | Protocol | Send/Receive Setting | IP Address | Port No. | MAC Address | Host Name | IP Address |
| 1 | | Host Station | | | | 10.97.95.1 | | | | |
| | 1 | GT27-VGA | SLMP | TCP | | 10.97.95.1 | 1234 | | | 10.97.95.3 |
| (₽ | 2 | HL-C2 | SLMP | UDP | | 10.97.95.1 | 9094 | | | 10.97.95.40 |
| 9 | 3 | In-Sight EZ-700 | SLMP | TCP | | 10.97.95.1 | 33333 | | ez700 | 10.97.95.70 |
| | | Connection No.1 | Connection | Connect No.3 | ion | | | | | |
| Host Stal Connects 3 | | t | | Deli Onl | | Detect | | Setting Reflect | ion of Ethen | est Device |

- **1.** Enter the communication setting.
- Select a target device supporting iQSS in the "Ethernet Configuration" window, then right-click and select [Online] ⇒ [Communication Setting Reflection of Ethernet Device] from the shortcut menu.

The communication setting is applied to the target device supporting iQSS.

Considerations when applying the communication setting to a device supporting iQSS

■Specifying a port number

- Do not specify '45237' for a port number in other devices on the same Ethernet network. It may cause an error in other devices on the same Ethernet network.
- Do not specify the number from '61440' to '65534' for the own station port number. The connection establishment instruction (SP.SOCOPEN) of the socket communication function may be completed abnormally.
- Do not specify the IP address of a device supporting iQSS for the IP address of an external device, nor the number from '61440' to '65534' for the destination port number.

The connection establishment instruction (SP.SOCOPEN) of the socket communication function may be completed abnormally when performing a sensor/device monitor or a sensor parameter read/write.

Changing the communication setting in the "Ethernet Configuration" window

When the communication setting written to a CPU module in the "Ethernet Configuration" window does not match with that of a device supporting iQSS, the communication cannot be established normally.

When the communication setting is changed in the "Ethernet Configuration" window, perform a reflection of communication setting to Ethernet devices in order to match the communication setting between a CPU module and a device supporting iQSS.

Selecting devices supporting iQSS in the "Module List" window

A reflection of communication setting to Ethernet devices cannot be performed to a device supporting iQSS, which is selected in the "Module List" window and dragged and dropped onto the 'List of devices' or 'Device map area'.

Perform an automatic detection of connected devices in order to detect the communication setting, then perform a reflection of communication setting to Ethernet devices.

Changing the IP address of an Ethernet-equipped module

After changing the IP address of an Ethernet-equipped module, open the "Ethernet Configuration" window and edit the changed IP address to match with the IP address of the programmable controller in the "Ethernet Configuration" window. Perform a reflection of communication setting to Ethernet devices in order to match the communication setting of a device supporting iQSS.

Host name not supported by a device supporting iQSS

When using a device supporting iQSS that does not support the host name, even if the reflection function of the communication setting is performed with a host name entered, it will not be applied to the device.

After performing the automatic detection function of connected devices, the "Host Name" field will be blank.

For the applicability of the host name of a device supporting iQSS, refer to the manuals of each device supporting iQSS.

■Applying the communication setting of Ethernet devices

The target device supporting iQSS must be restarted after performing a reflection of communication setting to Ethernet devices.

For the operating status of a device supporting iQSS, refer to the manuals of each device supporting iQSS.

11.3 Reading/Writing Parameters from/to Devices Supporting iQSS

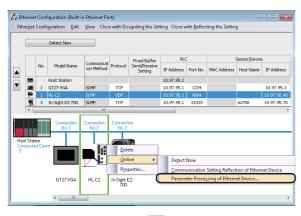
Sensor parameters can be read from and written to a device supporting iQSS.

Point P

- The data backup/restoration function is useful to read/write the parameters of multiple devices supporting iQSS in a batch. (Image 334 Backing up/Restoring Data of Devices Supporting iQSS)
- The useful function (linkage with dedicated tools) for devices supporting iQSS can also be used in the "Ethernet Configuration" window. (

Operating procedure

Reading parameters



 Select a device supporting iQSS in the "Ethernet Configuration" window, then right-click and select [Online] ⇒ [Parameter Processing of Ethernet Device] from the shortcut menu.

| | : 2 | | | | | | | |
|--|-----------------|-----------|---------------------|----------|-------------|-----------|----------------------|----------------|
| hod selection: Parameter read Parameter read Parameter write | | Read | parameter from t | arget mo | jule. | | | |
| Parameter Information | | J | | | | | | |
| Checked parameters are the targets of s | elected process | es. | | | | | | |
| Select <u>Al</u> Cancel Al S | | | | | | | | |
| Name | Initial Value | Unit | Read Value | Unit | Write Value | Unit | Setting Range | Description |
| Heal_Setting | | | | | | | | |
| HeadA_Read_Received_Light_L | | | | | | | 0 to 1023 | Head-A Rece |
| HeadB_Read_Received_Light_L | | | | | | | 0 to 1023 | Head-B Rece |
| HeadA_Installation_Mode | Diffuse_Refl. | | | | | | | Setting of Hea |
| HeadA_Emission_Adjustment | Auto | | | | | | | Setting of Hea |
| HeadA_Emission_Adjustment | | | | | | | 1 to 512 | Setting value |
| HeadA_Emission_Adjustment | | | | | | | 1 to 512 | Setting value |
| HeadA_Emission_Search | No_command | | | | | | | Status of Hea |
| HeadA_Alarm_Delay_Times | 8 | | | | | | 0 to 65535 | Setting of He |
| HeadA_Measurement_Mode | Diffuse_Stan | | | | | | | Setting of Hea |
| HeadA_Meas_Surf_Ref | Near | | | | | | 050 000000000 | Setting of He |
| 1 | | 1.00.00 | <u> </u> | | | | | Postine color |
| | | | | _ | | | | |
| (| | | | | | | | |
| Clear All "Read Value" | | ⊆le | sar All "Write Valu | e" | | | | |
| | | | | | | | | |
| Process Option | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | There i | s no option in the | selected | process. | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| Process is executed to a module of "Tar | | | | | | | | |
| The Ethernet device is accessed by usin For information on items not displayed or | | | | | | oblem wit | h the connection des | tination. |
| For information on items not displayed to | n the screen, p | ease rere | r to the Operatin | g Manuai | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | Execute |
| | | | | | | | | - |

The "Parameter Processing of Ethernet Device" screen appears.

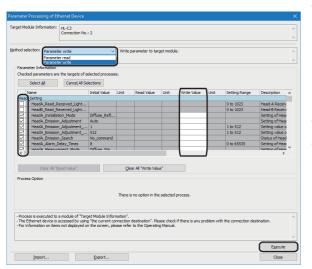
- 2. Select "Parameter read."
- **3.** Select the checkbox of the parameter to be read.
- 4. Click the [Execute] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

■Writing parameters

| Ethernet | Confi | iguration <u>E</u> dit | ¥iew Clos | e with Dis | carding the Set | ting Close v | vith <u>R</u> eflec | ting the Settin | 9 | |
|-----------------------------|-------|------------------------|--------------------------|-------------------|-------------------------|--------------|---------------------|-----------------|-----------|-------------|
| | | Detect Now | | | | | | | | |
| | | | | | Fixed Buffer | PLC | | Sensor/Device | | |
| ▲ | No. | Model Name | Communicat ion Method | Protocol | Send/Receive Setting | IP Address | Port No. | MAC Address | Host Name | IP Address |
| - | | Host Station | | | | 10.97.95.1 | | | | |
| • | 1 | GT27-YGA | SLMP | TCP | | 10.97.95.1 | 1234 | | | 10.97.95.3 |
| ₽ | 2 | HL-C2 | SLMP | UDP | | 10.97.95.1 | 9094 | | | 10.97.95.40 |
| | 3 | In-Sight EZ-700 | SLMP | TCP | | 10.97.95.1 | 33333 | | ez700 | 10.97.95.70 |
| Host Stat Connecte :3 | | Connection No.1 | Connection No.2 | Connecti No.3 | i n ite | | | | | |
| | | GT27-VGA | | | perties | | unication | Setting Reflect | | net Device |
| | | GT27-VGA | HL-C2 | In-Sight E 700 | z. y | Parami | eter Proce | ssing or Ethern | et Device | |

 Select a device supporting iQSS in the "Ethernet Configuration" window, then right-click and select [Online] ⇒ [Parameter Processing of Ethernet Device] from the shortcut menu.



The "Parameter Processing of Ethernet Device" screen appears.

- 2. Select "Parameter write."
- **3.** Select a parameter to be written.
- **4.** Enter a value in the column of "Write Value."
- **5.** Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

Considerations

■Operation after writing parameters

When parameters of a slave station are written, the slave station operates according to the parameters; therefore, note that the slave station may change its operation.

For details on parameters, refer to the manual for a slave station used.

A blank in "Write Value"

"Parameter write" cannot be executed if there is even one blank in "Write Value."

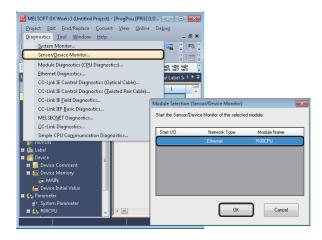
■Operation on error

If a module being used has an error, parameters of slave stations may not be read/written properly. Take corrective actions and read/write parameters again.

11.4 Monitoring Devices Supporting iQSS

The connection statuses of devices supporting iQSS can be monitored.

Operating procedure



- Select [Diagnostics]
 ⇒ [Sensor/Device Monitor] with an engineering tool.
- **2.** Select an Ethernet-equipped module in the "Module Selection (Sensor/Device Monitor)" screen, and click the [OK] button.

| | | | | | | Mor | nitor | | | |
|----------------------|---------|--------------|--------------|---------------|----------|-------------------------|------------------|----------|-----------------|-------|
| | | | | | | | Start Monitoring | Stop M | onitoring Monit | oring |
| | | | | Communication | | Fixed Buffer | PLC | | Sensor/Device | |
| | No. | Mode | I Name | Method | Protocol | Send/Receive Setting | IP Address | Port No. | MAC Address | h |
| - | 1 | HL-C2 | | SLMP | UDP | | 192.168.3.39 | 5020 | 00:CD:8F:68:00: | |
| | 2 | In-Sight EZ- | 700 | SLMP | TCP | | 192.168.3.39 | 12288 | 00:D0:24:1B:9C: | |
| | 3 | GT27-VGA | | SLMP | UDP | | 192.168.3.39 | 45237 | 58:52:8A:83:2F: | 58 |
| | | | | | | | | | | |
| fonitori | a Infor | HL-C2 | In-Sight EZ- | GT27-VGA | | | | | | _ |
| 1onitorii Model I | - | • | 700 | GT27-VGA | | | | _ | | 3 |

The "Sensor/Device Monitor for Ethernet Configuration" screen appears.

3. Select a target device supporting iQSS to be monitored in the "Sensor/Device Monitor for Ethernet Configuration" screen.

The status of the selected device supporting iQSS is displayed in the "Monitoring Information" window.

Considerations when monitoring devices supporting iQSS

■Processing speed of the sensor/device monitor function

The sensor/device monitor function reads a large volume of information from a CPU module at once.

Therefore, the processing speed of the function may decrease depending on the set communication route.

Display when a module not supporting iQSS is detected

When a module not supporting iQSS is detected or when information cannot be acquired from a slave station correctly, the module is displayed as shown below:

- "Module With No Profile Found"
- "General Module"

Operation on failure

The sensor/device monitor function may not run properly if failure occurs in a built-in Ethernet port CPU.

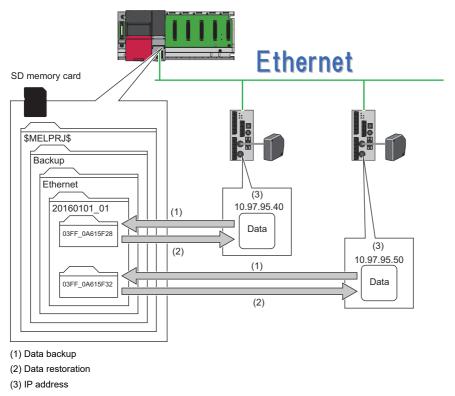
If an error code is displayed, resolve the cause by referring to the manual for the built-in Ethernet port CPU, then perform the sensor/device monitor function again.

11.5 Backing up/Restoring Data of Devices Supporting iQSS

Information of a device supporting iQSS can be backed up to/restored from an SD memory card by using special relays and special registers.

This will make a data restoration or utilization simplified and the time taken to change the information of multiple devices supporting iQSS, restore data when a failure occurred in a device supporting iQSS, and to perform a changeover will also be shortened.

This section explains the data backup and data restoration methods of iQ Sensor Solution for a MELSEC iQ-R series Ethernet.



| Function | Reference | | | | | |
|------------------|---|--|--|--|--|--|
| Data backup | Page 338 Data backup | | | | | |
| | Page 339 Program execution for data backup | | | | | |
| Data restoration | Page 347 Data restoration | | | | | |
| | Page 348 Program execution for data restoration | | | | | |

Backup folder/file

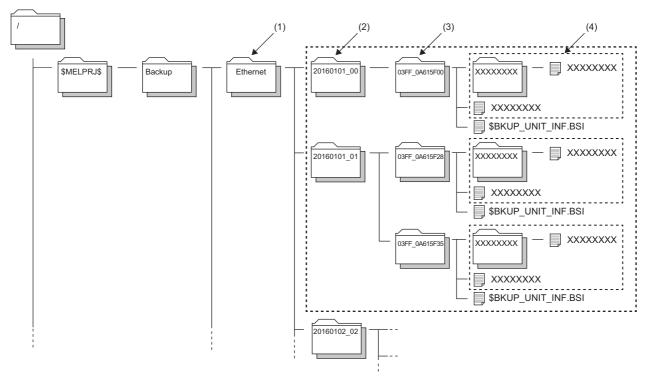
New backup folders are created in the 'Ethernet' folder which exists in the 'Backup' folder under the main folder of '\$MELPRJ\$' in an SD memory card when data is backed up.

If no '\$MELPRJ\$' folder, 'Backup' folder, or 'Ethernet' folder exists, each of the folders are created as well when data is backed up.

Up to 100 backup folders (date_number) can be created in the 'Ethernet' folder.

■Backup folder configuration

The following figure shows the backup folder configuration in an SD memory card.



(1) A folder to save the settings of devices supporting iQSS connected to Ethernet

(2) Backup folder (date_number)

(3) Backup folder (target module_IP address)

(4) Backup folder (information of devices supporting iQSS for each IP address)

■Backup folder name

Date_Number

YYYYMMDD **

YYYY: Year when the data was backed up (four digits in decimal)^{*1} MM: Month when the data was backed up (two digits in decimal)^{*1} DD: Day when the data was backed up (two digits in decimal)^{*1} **: Number (two digits in decimal (00 to 99))^{*2}

- *1 The date of a backup folder name can be changed arbitrary. However, the folder name should be set within 64 characters.
- *2 If multiple folders with the same number exist while a target folder (0 to 99) is set to SD1363 (iQ Sensor Solution backup/restoration
- folder number setting), the date of the backup folder name may not be updated. (Setting a number for a data backup folder name) • Target module_IP address

03FF ****

03FF: Target module (four digits in hexadecimal) (03FF: Built-in Ethernet)

****: IP address (eight digits in hexadecimal)

Ex.

When IP address of the device supporting iQSS is 192.168.3.40, '03FF_C0A80328' will be the backup folder name (target module IP address).

<u>192</u>.<u>168</u>.<u>3</u>.<u>40</u> 03FF_C0A80328 C0h A8h 03h 28h

11

Considerations for data backup/restoration

■Use of an SD memory card

- During a data backup or restoration, do not perform the following actions: turning OFF the power, resetting a module, and inserting or removing an SD memory card. Otherwise, for the data backup, data that was backed up until the data backup processing was interrupted retains in the SD memory card. As for the data restoration, data that was restored until the data restoration was interrupted retains in the device supporting iQSS.
- If the memory size or the number of files exceeds the maximum storage capacity of an SD memory card during the data backup, only the data that has been properly backed up will be stored in the SD memory card.

■Concurrent use of other functions

While any of the following operations or functions are being performed, backup/restoration cannot be performed. Additionally, the following operations and functions cannot be performed during data backup/restoration.

| Operation/function name | | | | | | | |
|------------------------------------|---|--|--|--|--|--|--|
| Operation with an engineering tool | Initializing the CPU built-in memory/SD men | nory card | | | | | |
| | Clearing values (file register) | | | | | | |
| | Writing data to a programmable controller (i | ncluding online change of files) | | | | | |
| | Deleting data in the programmable controlle | ır | | | | | |
| | User data operation | Writing user data | | | | | |
| | | Deleting user data | | | | | |
| | | Creating a folder | | | | | |
| | | Deleting a folder | | | | | |
| | | Changing a folder name | | | | | |
| | Online change (ladder block) | | | | | | |
| | Event history function (clearing event history) | | | | | | |
| | File password function | | | | | | |
| | iQ Sensor Solution functions via a built-in | Automatic detection of connected devices | | | | | |
| | Ethernet port | Reflection of the communication setting | | | | | |
| | | Sensor/device monitor | | | | | |
| | | Sensor parameter read/write | | | | | |
| | Predefined protocol support function (writing protocol setting data) | | | | | | |
| | Memory dump function (registering/clearing memory dump) | | | | | | |
| Operations with CPU Module Logging | Data logging function (writing/deleting a logging setting file, registering/clearing a logging setting) | | | | | | |
| Configuration Tool | Deleting logging file(s) | | | | | | |
| Others | • SLMP | Creating a new file (New File) | | | | | |
| | MC protocol | Writing data to a file (Write File) | | | | | |
| | | Deleting a file (Delete File) | | | | | |
| | | Copying a file (Copy File) | | | | | |
| | | Changing a file attribute (Change File State) | | | | | |
| | | Changing file creation date (Change File Date) | | | | | |
| | File transfer from an Ethernet-equipped | Writing a file (put, mput, pm-write) | | | | | |
| | module (FTP server) | Deleting a file (delete, mdelete) | | | | | |
| | | Changing a file name (rename) | | | | | |
| | | Changing a file attribute (change) | | | | | |
| | File transfer function (FTP server) of the bui | It-in Ethernet function | | | | | |
| | File transfer function (FTP client) of the built | t-in Ethernet function | | | | | |
| | CPU module data backup/restoration function | on | | | | | |

When data is backed up or restored during a data logging or the realtime monitor function, the performance of the data logging or the data sampling for the realtime monitor will be reduced.

Therefore, sampled data may be partially missed and the data missing frequency may be increased.

■Communication load

When data is backed up or restored, the load of the service processing in the CPU module is temporarily increased. Consequently, a communication response will be slow and a timeout error may occur in other communications. To avoid a timeout error, review the value set for "Device/Label Access Service Processing Setting."

CPU Parameter] ⇒ [Service Processing Setting] ⇒ [Device/Label Access Service Processing Setting]

Change of backup folders/data

Do not change a backup folder name, configuration, or saved file.

Otherwise, the data may not be restored properly.

For the backup file capacity, refer to the following:

Page 412 Backup File Capacity

When backing up/restoring data in the state where access load to the SD memory card is high due to the access from another function of the CPU module

Data backup/restoration may fail if it is performed in the state where access load to the SD memory card is high due to the access from another function of the CPU module. This is because the processing time of the backup/restoration is extended, and a system error or a timeout error occurs in the device supporting iQSS in the process of data backup/restoration. In that case, reduce the access load from another function of the CPU module to the SD memory card, then backup/restore the data again.

The IP address of devices supporting iQSS is duplicated

When the IP addresses of devices supporting iQSS on the same network with the CPU module are duplicated, the data backup/restoration cannot be performed properly.

Set the IP addresses of devices supporting iQSS, so as not to duplicate their IP addresses.

■IP address setting when performing data backup in units of module

When performing data backup in units of module, the devices supporting iQSS which have the same IP address as the CPU module can be backed up.

Set the IP address of the CPU module for the target device supporting iQSS in advance.

The setting procedures are as follows.

- **1.** Enter the same IP address as the communication target CPU module to the column of "IP Address" in "PLC" in the "Ethernet Configuration" window.
- 2. Perform a reflection of communication setting to Ethernet devices

Restriction (")

For some devices supporting iQSS, the IP address of a communication target module cannot be set. For the devices supporting iQSS to which the IP address of a communication target module cannot be set, the IP address of the CPU module is set as the IP address of a target module.

When backing up/restoring data in module unit to/from the device supporting iQSS which is not supported by data backup/restoration

The device supporting iQSS which does not support data backup/restoration is counted as the number of devices completed with an error, and an error (C059H) occurs.

- The backup file of the device supporting iQSS whose data backup processing has been completed normally can be used for data restoration.
- The device supporting iQSS whose data restoration has been completed successfully operates normally.

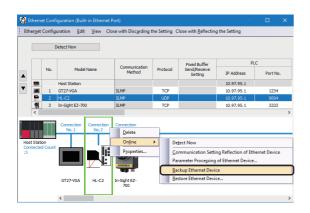
Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Data backup

Information of a device supporting iQSS can be saved in an SD memory card for each IP address by using an engineering tool.

Operating procedure



 Select a target device supporting iQSS in the "Ethernet Configuration" window, then right-click it and select [Online]
 ⇒ [Backup Ethernet Device] from the shortcut menu.

2. Read the message and click the [Yes] button. Data is backed up.

Considerations for a data backup

■Setting the backup setting

The initial values of the backup setting (SD1363 and SD1367) are as follows:

- SD1363 (folder number setting): FFFFH (automatic specification)
- Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when backing up data with the settings other than the one above. (Frage 339 Program execution for data backup)

Program execution for data backup

Information of a device supporting iQSS can be backed up in an SD memory card.

New folders are created every time when data is backed up, and data of each device supporting iQSS is saved in a file format in the folders. A system file (\$BKUP_UNIT_INF.BSI) that contains information required for data restoration is created for each station when data is backed up.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to back up data with a program.

| Procedu | Item | Reference |
|---------|--|-------------------------------------|
| re | | |
| 1 | Acquire a right to use. | Page 339 Acquiring a right to use |
| 2 | Set the backup target setting and the operation setting. | Page 340 Setting the backup setting |
| 3 | Perform a data backup. | Page 341 Performing a data backup |
| 4 | Release the right to use. | Page 341 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Execution method of data backup

Special relays (SM) and special registers (SD) are used for data backup.

Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data backup. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

■Setting the backup setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description |
|--------------------|--|
| 3H: Ethernet | Set this to specify a device supporting iQSS which is connected to Ethernet. |

2. Setting an execution unit

Set a unit to specify the range of data to be backed up at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|---------------------|---|
| 1H: Module unit | Set this to collect the information of the device supporting iQSS connected to an Ethernet and to perform data backup. Device supporting iQSS which communicate with a backup target module are backed up. |
| 2H: IP address unit | Set this to specify the device supporting iQSS with the specified IP address among the devices supporting iQSS which are connected to Ethernet. |

3. Setting a number for a data backup folder name

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--|---|
| FFFH: Automatic specification (default) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. An error occurs when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| FFFEH: Automatic specification (folder deletion supported) | Among the numbers (0 to 99) that are not used for backup folder names, the smallest number is used for a new backup folder name. The oldest backup folder (date_number) is deleted and the number of the deleted folder is used for a new backup folder name when unused number is no longer available due to such cases as the number of folders reached the upper limit. |
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name. When another folder with the same number exists, the target data is overwritten in execution unit without changing the folder name. ^{*1} |

*1 When the specified folder number exists, the operation to be performed depends on the specification of the execution unit as follows:

| Execution unit | Operation |
|---------------------|--|
| 1H: Module unit | When the backup data with the same target module exists, the backup folder (target module_IP address) is deleted before performing data backup. |
| 2H: IP address unit | When the backup data with the same target module and the same target IP address exists, the backup folder (target module_IP address) is deleted before performing data backup. |

4. Setting a target device

· Setting a module

When '1H' (module unit) is set for the execution unit, set a module to SD1364 (iQ Sensor Solution data backup/restoration target setting (target module)).

| Target device (Module) | Description | |
|--------------------------|---|--|
| 03FFH: Built-in Ethernet | Set this to specify a device supporting iQSS which is connected to a built-in Ethernet. | |

· Setting IP addresses

When '2H' (IP address unit) is set for the execution unit, set target devices (IP address) to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)) and SD1366 (iQ Sensor Solution data backup/restoration target setting (target device 2)).

| Number | Target device (IP address) | Description |
|--------|--|--|
| SD1365 | 0 to 65536 (FFFFH): IP address (lower 16 bits) ^{*1} | Set the IP address of a target device supporting iQSS. |
| SD1366 | 0 to 57343 (DFFFH): IP address (upper 16 bits) ^{*1} | |

*1 IP addresses within the range from 0.0.0.1 to 223.255.255.254

5. Setting the operation setting when a data backup error occurs

Set the operation to be performed when the data backup fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description | | | |
|--|--|--|--|--|
| 0H: Continue | Set this to continue a data backup even if it fails on some devices. | | | |
| 1H: Stop Set this to stop a data backup if it fails on some devices. | | | | |

■Performing a data backup

Turn ON SM1361 (iQ Sensor Solution backup request) to request a data backup.

Data is backed up after a data backup request.

SM1361 is turned OFF when a data backup is completed.

1. Checking the execution status of a data backup

The execution status of a data backup can be checked with the following special registers.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data backup

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data backup. A cancellation is performed for each device supporting iQSS, so it will be canceled when a data backup which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data backup

When the data backup is completed, the backup completion status can be checked with the following special relays.

- Normally completed: SM1362 (iQ Sensor Solution backup normal completion) is turned ON.
- Abnormally completed: SM1363 (iQ Sensor Solution backup abnormal completion) is turned ON.

The number of the folder where backup data was saved at the completion of data backup is stored to SD1375 (iQ Sensor Solution backup folder number).

| Backup folder number Description | |
|---|---------------------------------|
| 0 to 99: Folder number The number (0 to 99) of the folder in which backup data was saved is stored. | |
| FFFFH: Backup data not saved | Backup data has not been saved. |

4. Checking a data backup error

Even if a data backup of a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a MELSEC iQ-R CPU module can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1382: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON . The right to use is released and the next data backup is ready to be performed.

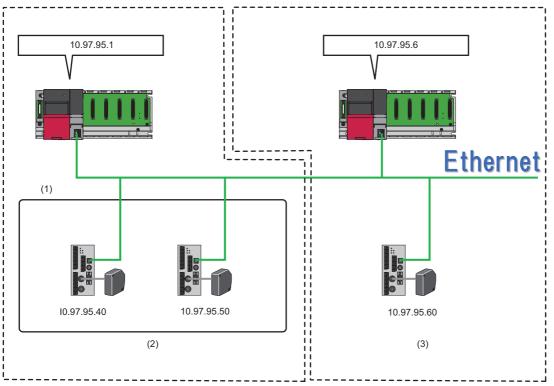
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data backup

Example of a system configuration

The following shows the example of a system configuration for data backup.



(1) Backup target

(2) Devices supporting iQSS which communicate with the Ethernet-equipped module (IP address: 10.97.95.1)

(3) Devices supporting iQSS which communicate with the Ethernet-equipped module (IP address: 10.97.95.6)

- Target module type: Ethernet
- Execution unit: Module
- · Folder number setting: Automatic specification
- Target device (target module): Built-in Ethernet
- · Operation setting on error: Continue

■Label setting

SD1379

SD1380

SD1381

SD1382

r_Information

odule

evice_1

evice_2

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| | | | 1 |
|--------------|--------|--|--|
| Categor y | Device | Label name | Description |
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| label | SM1361 | RCPU.stSM.biQSS_Backup_Request | Backup request |
| | SM1362 | RCPU.stSM.biQSS_Backup_Normal_Completion | Backup normal completion |
| | SM1363 | RCPU.stSM.biQSS_Backup_Error_Completion | Backup abnormal completion |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_ No | Backup/restoration right-to-use acquisition number |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_ Unit_Setting | Backup/restoration target module, execution unit setting |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Sett ing | Backup/restoration folder number setting |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Mod ule | Backup/restoration target setting (target module) |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_1 | Backup/restoration target setting (target device 1) |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_2 | Backup/restoration target setting (target device 2) |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Nu mber_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessi ng_Per_Devices | Backup/restoration execution status (progress per device) |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Caus e | Backup/restoration error cause in a device |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution_Unit_Information | Backup/restoration error target module, execution unit information |

 $RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Numbe$

RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_M

RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D

RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D

Backup/restoration target folder number information

Backup/restoration error information (target module)

Backup/restoration error device information (target

Backup/restoration error device information (target

device 1)

device 2)

| Categor | Device | Label na | me | | | | Descript |
|-------------|-------------------|----------------|---------------|--|------------|---|-----------------------|
| у | | | | | | | |
| Label to be | Define globa | l labels as fo | ollows: | | | | |
| defined | - | | | | | | |
| | | Name | Data Type | | Class | | Assign (Device/Label) |
| | bInitTrg | | Bit | | VAR_GLOBAL | | MO |
| | bBKUPTrg | | Bit | | VAR_GLOBAL | | M1000 |
| | bBKUPUseR | | Bit | | VAR_GLOBAL | | M1100 |
| | bBKUPChk T | - | Bit | | VAR_GLOBAL | | M1200 |
| | bBKUPSetTr | | Bit | | VAR_GLOBAL | | M1300 |
| | bBKUPUseG | etTrg | Bit | | VAR_GLOBAL | | M1400 |
| | bBKUPUseR | elTrg | Bit | | VAR_GLOBAL | - | M1500 |
| | bBKUPExeSt | opTrg | Bit | | VAR_GLOBAL | - | M2000 |
| | bBKUPExeC | npTrg | Bit | | VAR_GLOBAL | - | M3000 |
| | bBKUPExeE | rCmpTrg | Bit | | VAR_GLOBAL | - | M3500 |
| | bBKUPUseL(| ossTre | Bit | | VAR_GLOBAL | - | M3550 |
| | bBKUPUseC | ancelTrg | Bit | | VAR_GLOBAL | • | M4000 |
| | bBKUPUseC | ancelStpTrg | Bit | | VAR GLOBAL | - | M4100 |
| | BKUPUseNo | SetArea | Word [Signed] | | VAR GLOBAL | - | D1000 |
| | BKUPExeCm | | Word [Signed] | | VAR GLOBAL | | D5000 |
| | BKUPExeErr | | Word [Signed] | | VAR GLOBAL | | D5001 |
| | BKUPUnitEr | | Word [Signed] | | VAR GLOBAL | | D5002 |
| | BKUPDevErr | | Word [Signed] | | VAR GLOBAL | | D5003 |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | blnitTrg M0 I∏ | | | | | | FMOV | ко | BKUPExeCmpCnt D5000 | К4 |
|------|---|----------|---------------------------------------|---|----|--|------|-----|--|---|
| | | | | | | | | | RST | bBKUPExeCmpTrg M3000 |
| | | | | | | | | | RST | bBKUPExeErrCmpTrg M3500 |
| | | | | | | | | | SET | bBKUPTrg M1000 |
| (9) | bBKUPTrg M1000 | | | | | | | | SET | bBKUPUseReqTrg M1100 |
| (12) | bBKUPUseReqTrg M1100 | =JU | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Use_A uthority_Acquisition_No SD1361 | | | | MOV | H1070 | BKUPUseNoSetArea |
| | | | | SD1361 | | | | MOV | BKUPUseNoSetArea | D1000 RCPUstSD.uQSS.Backup, Restoration_Use_Au y.Request_No SD1300 |
| | | | | | | | | | D1000 SET | bBKUPUseGetTrg |
| | | | | | | | | | SET | M1400 bBKUPChkTrg |
| (22) | bBKUPChkTrg M1200 | U_= | RCPU.stSD.uiQSS_Backup_Restoration_Us | RCPU.stSD.uiQSS_Backup_Restoration_Use_A uthority_Acquisition_No SD1361 | | | | | SET | M1200 bBKUPSetTrg |
| | | | | RCPU.stSD.uiQSS_Backup_Restoration_Use_A uthority_Acquisition_No SD1381 | НО | RCPU.stSD.u/QSS.Backup.Restoration_Use_ Authority_Acculation_No SD1381 | | | SET | M1300 b8KUPUseLossTrg |
| | bBKUPSetTrg | ų. | e_wutnonty_request_ino SD1380 | SD1381 | | Autonny, Acquisition, vo SD1361 | | | HI03 | M3550 RCPU.stSD.uiQSS_Backup_Restoration_Target |
| (36) | M1300 | | | | | | | MOV | HOFFFF | RCPU.stSD.aiQSS Backup Restoration_Target le Execution_Unit_Setting SD1382 RCPU.stSD.aiQSS Backup Restoration Target |
| | | | | | | | | MOV | H3FF | RCPUstSD_siQSS_Backup_Restoration_Target r_Number_Setting SD1363 |
| | | | | | | | | MOV | H0F29 | RCPUstSD.uiQSS_Backup_Restoration_Target ng_Target_Module SD1364 |
| | | | | | | | | MOV | H0A61 | RCPU.stSD.uiQSS_Backup_Restoration_Target ng_Target_Device_1 SD1385 |
| | | | | | | | | MOV | | RCPU.stSD.uiQSS_Backup_Restoration_Target ng_Target_Device_2 SD1386 |
| | | <u> </u> | | | | | | MOV | HO | RCPU.stSD.uiQSS_Backup_Restoration_Operat etting SD1367 |
| B | CPU stSM biQSS Backup No | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Request SM1381 |
| (51) | CPU.stSM.biQSS_Backup_No rmal_Completion SM1362 | | | | | | | | SET | bBKUPExeCmpTrg M3000 |
| | | | | | | | | MOV | RCPLIstSD.stiQSS_Backup_Restoration_Execution_Status.uNumb er_of_Normal_Completed_Devices SD1372 | BKUPExeCmpCnt D5000 |
| (56) | ICPU stSM.biQSS_Backup_Er ror_Completion SM1363 | | | | | | | | SET | bBKUPExeErrCmpTrg M3500 |
| | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumb er_of_Error_Completed_devices SD1373 | BKUPExeErrCmpCnt D5001 |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause SD1376 | BKUPUnitErr D5002 |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Cau Se SD1377 | BKUPDevErr D5003 |
| (65) | bBKUPExeCmpTrg M3000 | | | | | | | | RST | blnitTrg M0 |
| | bBKUPExeErrCmpTrg M3500 | | | | | | | | RST | bBKUPTrg M1000 |
| | | | | | | | | | RST | bBKUPUseReqTrg M1100 |
| | | | | | | | | | RST | bBKUPChkTrg M1200 |
| | | | | | | | | | RST | bBKUPSetTrg M1300 |
| | | | | | | | | | SET | bBKUPUseCancelTrg M4000 |
| (75) | bBKUPExeStopTrg M2000 | | | | | | | | SET | RCPU.stSM.biQSS_Backup_Restoration_Cancel est SM1367 |
| | | | | | | | | | SET | bBKUPUseCancelStpTrg M4100 |
| | | | | | | | | | RST | bBKUPExeStopTrg M2000 |
| (80) | bBKUPUseCancelTrg M4000 | | | | | | | MOV | HO | RCPU.stSD.uiQSS_Backup_Restoration_Use_Au y_Requisit_No SD1360 |
| | bBKUPUseCancelStpTrg M4100 | | | | | | | | SET | bBKUPUseRelTrg M1500 |
| | | | | | | | | | RST | bBKUPUseCancelTrg M4000 |
| | | | | | | | | | RST | bBKUPUseCancelStpTrg |
| (89) | bBKUPUseGetTrg M1400 | | | | | | | | SET | M4100 RCPU.atSMbiQSS_Beckup_Restoration_Use_A ty_Request SM1360 |
| | bBKUPUseRelTrg M1500 | | | | | | | | RST | bBKUPUseGetTrg |
| | | | | | | | | | RST | M1400 bBKUPUseRelTrg |
| - I | | | | | | | | | | M1500 |

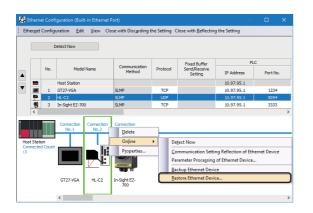
[Initialization]

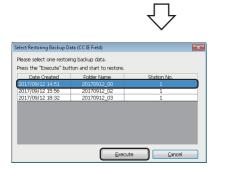
- Initialize the execution result. (0) Initialize the normal completion display. Initialize the abnormal completion display. Set the backup execution trigger. [Requesting backup right to use] (9) Store the right-to-use number. Set a right-to-use request. Set the backup right-to-use confirmation trigger. [Checking backup right to use] Set the backup setting and starting trigger. (22) Display the right-to-use acquisition failure. [Setting and starting data backup] (36) Set the target module/execution unit. Set the target folder number. Set the target module. Set the target device 1. Set the target device 2. Set the data backup operation setting (on error). Set the backup request. [Checking data backup execution] Display the normal completion. (51) Save the number of normally completed devices. (56) Display the abnormal completion. Save the number of devices completed with an error. Save the error cause in a module. Save the backup error cause in a device.
- [Enabling the next data backup process]
- (65) Clear the initialization trigger.
 Clear the backup execution trigger.
 Clear the backup right-to-use request trigger.
 Clear the backup right-to-use confirmation trigger.
 Clear the backup setting and starting trigger.
- [Setting for cancelling the process]
- (75) Set the backup cancellation request.
- [Releasing backup right to use]
- (80) Set the backup right-to-use release trigger.
- [Updating backup right to use]
- (89) Set the backup right-to-use request.

Data restoration

Information saved in an SD memory card can be restored to a device supporting iQSS for each IP address by using an engineering tool.

Operating procedure





- Select a target device supporting iQSS in the "Ethernet Configuration" window, then right-click it and select [Online]
 ⇒ [Restore Ethernet Device] from the shortcut menu.
- 2. Read the message and click the [Yes] button.
- **3.** Select backup data to be restored, and click the [Execute] button.

Data is restored.

Point

A list of the backup folder names (date_number) is displayed in the column of "Folder Name." Backup data is stored in backup folders for each folder name (Start I/O number_Station number) in an SD memory card.

For details on the backup folder configuration, refer to the following:

Page 335 Backup folder configuration

Considerations for data restoration

Setting the restoration setting

The initial value of the restoration setting (SD1367) is as follows:

Lower 8 bits of SD1367 (operation setting on error): 0H (continue)

Use a program when restoring data with the settings other than above. (FP Page 348 Program execution for data restoration)

Program execution for data restoration

Information in an SD memory card can be restored to a device supporting iQSS.

Select a backup folder to be restored. In the data restoration, information such as a model name or device version in the system file (\$BKUP_UNIT_INF.BSI) created with backup is compared with that of a device supporting iQSS. If the information is mismatched, a restoration error will occur.

Data backup and restoration can be performed regardless of the operating status of a CPU module.

The following shows the procedure to restore data with a program.

| Procedu re | Item | Reference |
|---------------|---|--|
| 1 | Acquire a right to use. | Page 348 Acquiring a right to use |
| 2 | Set the restoration target setting and the operation setting. | Page 349 Setting the restoration setting |
| 3 | Perform a data restoration. | Page 350 Performing a data restoration |
| 4 | Release the right to use. | Page 350 Releasing the right to use |

Point P

Results of the data backup and restoration functions can be checked in the event history of an engineering tool. (EP Page 410 Event List)

Execution method of data restoration

Special relays (SM) and special registers (SD) are used for data restoration.

■Acquiring a right to use

To prevent the same special relay (SM) and special register (SD) from being set at the same time by other request sources, acquiring a right to use of them is required.

A right to use can be acquired when other request sources do not have the right to use them (when SD1361 is '0000H').

1. Setting a right-to-use request number

Set a request number (a value that has not been used by multiple request sources within the range of '1000H' to '1FFFH') to SD1360 (iQ Sensor Solution data backup/restoration right-to-use request number).

2. Requesting a right to use

Turn ON SM1360 (iQ Sensor Solution data backup/restoration right-to-use request) to acquire a right to use for data restoration. SM1360 turns ON to OFF when the right to use is acquired.

3. Checking the acquisition of the right to use

Check that the value of SD1361 (iQ Sensor Solution backup/restoration right-to-use acquisition number) is the same as the value set to SD1360. If backup/restoration is performed without checking the acquisition of the right to use, the normal operation is not guaranteed.

Precautions

The values of the special relays (SM) and special registers (SD) for iQ Sensor Solution backup/restoration are cleared when a right to use is acquired. (However, SD1375 is set to 'FFFFH'.)

Save the values of the special relays (SM) and special registers (SD) as required.

Setting the restoration setting

1. Setting a target module type

Set a target module with the lower 8 bits of SD1362 (iQ Sensor Solution data backup/restoration target module, execution unit setting).

| Target module type | Description | | | | |
|--------------------|--|--|--|--|--|
| 3H: Ethernet | Set this to specify a device supporting iQSS which is connected to Ethernet. | | | | |

2. Setting an execution unit

Set a unit to specify the range of data to be restored at once.

Specify the execution unit to the upper 8 bits of SD1362.

| Execution unit | Description |
|---------------------|--|
| 1H: Module unit | Set this to collect the information of the device supporting iQSS connected to an Ethernet and to perform data restoration. Devices supporting iQSS which communicate with a restoration target module are restored. |
| 2H: IP address unit | Set this to specify the device supporting iQSS with the specified IP address among the devices supporting iQSS which are connected to Ethernet. |

3. Selecting a folder for data restoration

Set a folder number to SD1363 (iQ Sensor Solution backup/restoration folder number setting).

| Target folder | Description |
|--------------------------------------|--|
| 0 to 99: Target folder specification | Specify a number (0 to 99) of the backup folder name to be restored. |
| | |

4. Setting a target device

· Setting a module

When '1H' (module unit) is set for the execution unit, set a module to SD1364 (iQ Sensor Solution data backup/restoration target setting (target module)).

| Target device (Module) | Description |
|--------------------------|---|
| 03FFH: Built-in Ethernet | Set this to specify a device supporting iQSS which is connected to a built-in Ethernet. |

Setting IP addresses

When '2H' (IP address unit) is set for the execution unit, set target devices (IP address) to SD1365 (iQ Sensor Solution data backup/restoration target setting (target device 1)) and SD1366 (iQ Sensor Solution data backup/restoration target setting (target device 2)).

| Number | Target device (IP address) | Description |
|--------|--|--|
| SD1365 | 0 to 65536 (FFFFH): IP address (lower 16 bits) ^{*1} | Set the IP address of a target device supporting iQSS. |
| SD1366 | 0 to 57343 (DFFFH): IP address (upper 16 bits) ^{*1} | |

*1 IP addresses within the range from 0.0.0.1 to 223.255.255.254

5. Setting the operation setting when a data restoration error occurs

Set the operation to be performed when the data restoration fails on some devices while being processed to multiple devices supporting iQSS to the lower 8 bits of SD1367 (iQ Sensor Solution data backup/restoration operation setting).

| Operation on error | Description | | | | |
|--------------------|---|--|--|--|--|
| 0H: Continue | Set this to continue a data restoration even if it fails on some devices. | | | | |
| 1H: Stop | Set this to stop a data restoration if it fails on some devices. | | | | |

■Performing a data restoration

Turn ON SM1364 (iQ Sensor Solution restoration request) to request a data restoration.

Data is restored after a data restoration request.

SM1364 is turned OFF when a data restoration is completed.

1. Checking the execution status of a data restoration

The execution status of a data restoration can be checked with the following special register areas.

| Special register | Description |
|------------------|--|
| SD1371 | This register stores the number of target devices for each execution unit when starting a data backup or restoration. |
| SD1372 | This register stores the number of devices in which the processing has normally be completed for each execution unit. (The number is incremented every time the processing of one device is completed normally.) |
| SD1373 | This register stores the number of devices in which the processing has abnormally be completed for each execution unit. ^{*1} (The number is incremented every time the processing of one device is completed abnormally.) |
| SD1374 | This register stores the progress of processing being executed for a device in percent, from 0 to 100. |

*1 For an iQ Sensor Solution related error (error code: 4805H), the number of devices in which the processing has been abnormally completed is not counted.

2. Canceling a data restoration

Turn ON SM1367 (iQ Sensor Solution backup/restoration cancellation request) to cancel a data restoration.

A cancellation is performed for each device supporting iQSS, so it will be canceled when a data restoration which is being performed to a device supporting iQSS at the time a cancellation request is made is completed.

3. Checking the completion of a data restoration

When a data restoration is completed, the restoration completion status can be checked with the following special relays.

- Normally completed: SM1365 (iQ Sensor Solution restoration normal completion) is turned ON.
- Abnormally completed: SM1366 (iQ Sensor Solution restoration abnormal completion) is turned ON.

4. Checking a data restoration error

Even if a data restoration to a target device supporting iQSS is completed with an error, a diagnostic error will not be detected. Check the errors with the following special registers.

- SD1376 (iQ Sensor Solution backup/restoration error cause in a module): The error code of an error occurred in a CPU module can be checked.
- SD1377 (iQ Sensor Solution backup/restoration error cause in a device): The error code of an error occurred in a device supporting iQSS can be checked.
- SD1378 to SD1382: An error occurrence source can be checked.

For details on special registers, refer to the user's manual of each CPU module and device supporting iQSS used.

■Releasing the right to use

Set SD1360 to '0000H' in order to turn SM1360 ON. The right to use is released and the next data restoration is ready to be performed.

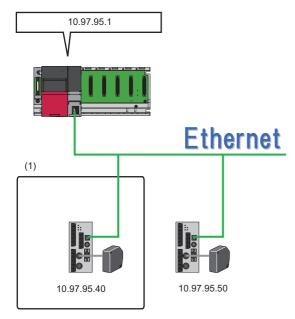
SM1360 is turned OFF when the right to use is released.

If the right to use is released even though it has already been done, SM1360 remains ON because no processing is performed. In that case, turn OFF SM1360.

Example of a data restoration

■Example of a system configuration

The following shows the example of a system configuration for data restoration.



(1) Restoration target

- Target module type: Ethernet
- Execution unit: IP address
- Folder number setting: 7
- Target device (target module): Built-in Ethernet
- Target device (IP address): 10.97.95.40
- · Operation setting on error: Continue

11

■Label setting

GX Works3 provides functions that support the creation of a program.

The following table shows the module labels and the global labels used in the sample program.

There is no need to change the settings of the module labels. For details on the global labels, refer to the following:

| Categor y | Device | Label name | Description |
|--------------|--------|--|--|
| Module | SM1360 | RCPU.stSM.biQSS_Backup_Restoration_Use_Authority_Request | Backup/restoration right-to-use request |
| abel | SM1364 | RCPU.stSM.biQSS_Restoration_Request | Restoration request |
| | SM1365 | RCPU.stSM.biQSS_Restoration_Normal_Completion | Restoration normal completion |
| | SM1366 | RCPU.stSM.biQSS_Restoration_Error_Completion | Restoration abnormal completion |
| | SM1367 | RCPU.stSM.biQSS_Backup_Restoration_Cancel_Request | Backup/restoration cancellation request |
| | SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Request_No | Backup/restoration right-to-use request number |
| | SD1361 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authority_Acquisition_ No | Backup/restoration right-to-use acquisition number |
| | SD1362 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Module_Execution_ Unit_Setting | Backup/restoration target module, execution unit setting |
| | SD1363 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Folder_Number_Sett ing | Backup/restoration folder number setting |
| | SD1364 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Mod ule | Backup/restoration target setting (target module) |
| | SD1365 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_1 | Backup/restoration target setting (target device 1) |
| | SD1366 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Setting_Target_Devi ce_2 | Backup/restoration target setting (target device 2) |
| | SD1367 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_Setting | Backup/restoration operation setting |
| | SD1371 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uTotal_Nu mber_of_Target_Devices | Backup/restoration execution status (total number of target devices) |
| | SD1372 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Normal_Completed_Devices | Backup/restoration execution status (total number of devices in which the processing has been completed successfully) |
| | SD1373 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumber _of_Error_Completed_devices | Backup/restoration execution status (total number of devices in which the processing has been completed with an error) |
| | SD1374 | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uProcessi ng_Per_Devices | Backup/restoration execution status (progress per device) |
| | SD1375 | RCPU.stSD.uiQSS_Backup_Target_Folder_Number | Backup/restoration folder number setting |
| | SD1376 | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | Backup/restoration error cause in a module |
| | SD1377 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Devices_Error_Caus e | Backup/restoration error cause in a device |
| | SD1378 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Module_Execution_Unit_Information | Backup/restoration error target module, execution unit information |
| | SD1379 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Target_Folder_Numbe r_Information | Backup/restoration target folder number information |
| | SD1380 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_M odule | Backup/restoration error information (target module) |
| | SD1381 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D evice_1 | Backup/restoration error device information (target device 1) |
| | SD1382 | RCPU.stSD.uiQSS_Backup_Restoration_Error_Information_Target_D evice_2 | Backup/restoration error device information (target device 2) |

| Categor | Device | ce Label name | | | | 1 | Description | |
|------------|--------------|----------------|---------------|--|------------|---|---------------------|------|
| у | | | | | | | | |
| abel to be | Define globa | l labels as fo | llows: | | | | | |
| defined | , s | | | | | | | |
| acilitea | Lab | el Name | Data Type | | Class | | Assign (Device/Labe | oel) |
| | bInitTre | | Bit | | VAR_GLOBAL | | MO | |
| | bRSTRTrg | | Bit | | VAR_GLOBAL | | M1010 | |
| | bRSTRUseR | eqTrg | Bit | | VAR_GLOBAL | | M1110 | |
| | bRSTRChkTr | e | Bit | | VAR_GLOBAL | | M1210 | |
| | bRSTRSetTr | 5 | Bit | | VAR_GLOBAL | | M1310 | |
| | bRSTRUseG | etTrg | Bit | | VAR_GLOBAL | - | M1410 | |
| | bRSTRUseR | elTrg | Bit | | VAR_GLOBAL | • | M1510 | |
| | bRSTRExeSt | opTrg | Bit | | VAR_GLOBAL | • | M2010 | |
| | bRSTRExeC | npTrg | Bit | | VAR_GLOBAL | • | M3010 | |
| | bRSTRExeEr | rCmpTrg | Bit | | VAR_GLOBAL | - | M3510 | |
| | bRSTRUseLo |)ssTrg | Bit | | VAR_GLOBAL | - | M3555 | |
| | bRSTRUseC- | ancelTrg | Bit | | VAR_GLOBAL | - | M4010 | |
| | bRSTRUseC- | ancelStpTrg | Bit | | VAR_GLOBAL | - | M4110 | |
| | RSTRUseNo | SetArea | Word [Signed] | | VAR_GLOBAL | - | D1010 | |
| | RSTRExeCm | pCnt | Word [Signed] | | VAR_GLOBAL | - | D5010 | |
| | RSTRExeErr | OmpCnt | Word [Signed] | | VAR_GLOBAL | - | D5011 | |
| | RSTRUnitErr | | Word [Signed] | | VAR_GLOBAL | - | D5012 | |
| | RSTRDevErr | | Word [Signed] | | VAR GLOBAL | - | D5013 | |

Point P

For details on special relays (SM) and special registers (SD), refer to the user's manual of a CPU module used.

■Sample program

| (0) | binitTrg M0 | | | | | | FMOV | ко | RSTRExeCmpGnt D5010 | K4 |
|--------|--|-------------------|---|--|-------------|---|------|-----|--|---|
| | | | | | | | | | RST | bRSTRExeCmpTrg |
| | | | | | | | | | RST | M3010 bRSTRExeErrCmpTrg |
| | | | | - | | | | | SET | M3510 bRSTRTrg |
| (9) | bRSTRTrg M1010 | | | | | | | | SET | M1010 bRSTRUseReqTrg |
| | bRSTRUseReqTrg M1110 | | H0 | RCPU.stSD.uiQSS_Beckup_Restoration_Ut | e_Au | | | MOV | H10B0 | M1110 RSTRUseNoSetArea |
| (12) | | <u>_U</u> | | RCPU.stSD.uiQSS_Backup_Restoration_Us thority_Acquisition_No SD1361 | | | | | RSTRUseNoSetArea | D1010 RCPU.stSD.uiQSS Backup Restoration Use Authori |
| | | | | | | | | MOV | D1010 | RCPU.stSD.uiQSS_Backup_Restoration_Use_Authori y_Request_No SD1360 bRSTRUseGetTrg |
| | | | | | | | | | SET | M1410 bRSTRChkTrg |
| | bRSTRChkTrg | | | | | | | | SET | M1210 |
| (22) | M1210 | | | RCPU.stSD.uiQSS_Backup_Restoration_Us thority_Acquisition_No SD 1361 | | | | | SET | bRSTRSetTrg M1310 |
| | | o_u ^{RC} | PU.stSD.uiQSS_Backup_Restoration_Use_ Authority_Request_No SD1360 | RCPU.stSD.uiQSS_Backup_Restoration_Us thority_Acquisition_No SD 1361 | e_Au ⊖_U H0 | RCPU.stSD.uiQSS_Backup_Restoration_Use_ Authority_Acquisition_No SD1361 | | | SET | bRSTRUseLossTrg M3555 |
| (36) | bRSTRSetTrg M1310 | | | | | | | MOV | H103 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Mod e_Execution_Unit_Setting SDT362 |
| | | | | | | | | моу | KŬ | RCPU.stSD.uiQSS_Backug_Restoration_Target_Fold |
| | | | | | | | | MOV | H3FF | RCPU.stSD.uiQSS_Backup_Restoration_Target_Sett g_Target_Module SD1364 |
| | | | | | | | | моу | H0F28 | RCPU.stSD.uiQSS_Backup_Restoration_Target_Sett g_Target_Device_1 SD1365 |
| | | | | | | | | MOV | HÜABI | RCPU.stSD.uiQSS_Backup_Restoration_Target_Set g_Target_Device_2 SD1368 |
| | | | | | | | | MOV | H0 | RCPU.stSD.uiQSS_Backup_Restoration_Operation_1 tting SD1387 |
| | | | | | | | | | SET | RCPU.stSM.biQSS_Restoration_Request SM1364 |
| (51) R | RCPU.stSM.biQSS_Restoration_N ormal Completion SM1365 | | | | | | | | SET | bRSTRExeCmpTrg M3010 |
| | | | | | | | | MOV | RCPU.stSD.stiQSS_Backup_Restoration_Execution_Status.uNumbe r_of_Normal_Completed_Devices SD1372 | RSTRExeCmpCnt D5010 |
| (56) | RCPU.stSMbiQSS_Restoration_E rror_Completion SM1366 | | | | | | | | SET | bRSTRExeErrCmpTrg M3510 |
| | | | | | | | | моу | RCPU stSD.stiQSS_Backup_Restoration_Execution_Status.uNumbe r_of_Error_Completed_devices \$20173 | RSTRExeErrCmpCnt |
| | | | | | | | | MOV | RCPU.stSD.uiQSS_Backup_Restoration_Module_Error_Cause | D5011 RSTRUnitErr |
| | | | | | | | | MOV | SD1376 RCPU.stSD.uiQSS_Backup,Restoration_Target_Devices_Error_Caus | D5012 RSTRDevErr |
| (65) | bRSTRExeCmpTrg M3010 | | | | | | | | 50 1377 RST | D5013 blnitTrg |
| | bRSTRExeErrCmpTrg M3510 | | | - | | | | | | M0 bRSTRTrg |
| | | | | | | | | | RST | M1010 |
| | iti- | | | | | | | | | |
| | | | | - | | | | | RST | bRSTRUseReqTrg M1110 |
| | [] | | | | | | | | rst rst | bRSTRUseRegTrg M1110 bRSTROMTrg M1210 |
| | | | | | | | | | | BRSTRUSARecTrg M1110 BRSTROSATrg M1210 BRSTRSetTrg M1310 |
| | | | | | | | | | RST | BRSTRUseResTrg M1110 MRSTROWTrg M7210 BRSTRSetTrg M1310 BRSTRUseCanceTrg M4010 |
| (75) | 10 b85764x80xpTrg W000 10 | | | | | | | | rst rst | BRSTRUseResTrg M1110 MRSTROWTrg M7210 BRSTRSetTrg M1310 BRSTRUseCanceTrg M4010 |
| (75) | HI BRSTREssStopTrg M2010 | | | | | | | | RET RET SET | bHSTRUseRecTrg M1110 bHSTROATrg M1210 bHSTRSatTrg M1310 bHSTRUseCanceTrg M4010 |
| (75) | HI BRSTREssStopTrg M2010 | | | | | | | | RST RST SET SET | bHSTRUseReafrag M1110 bHSTROWFrag M1210 M1210 bHSTROWFrag M1310 bHSTRUseCancelFrag M4010 RCPUJASMJ0388 Backup Restoration; Cancel Jiles M407 BHSTRUseCancelFrag HSTRUseCancelFrag |
| | HI BRSTREssStopTrg M2010 | | | | | | | | RST RST SET SET SET | bHSTRUseReafty M1110 bHSTRUseReafty M1210 bHSTRUseCancelFrg M4910 RCPU.stSM.b435,Backer, Prestoration, Concel, Flar SM1397 bHSTRUseCancelFrg bHSTRUseCancelFightrg bHSTRUseCancelFightrg bHSTRUseCancelFightrg M4110 |
| | 11- MSTREschaptic MSTREschaptic MSTRUMCaveIty MSTRUMCaveIty MSTRUMCaveIty | | | | | | | | RST RST SET SET SET RST | bHSTRUseReafty M1110 bHSTRUseReafty M1210 bHSTRUseCancelFrg M4910 RCPU.stSM.b435,Backer, Prestoration, Concel, Flar SM1397 bHSTRUseCancelFrg bHSTRUseCancelFightrg bHSTRUseCancelFightrg bHSTRUseCancelFightrg M4110 |
| | 11- SASTREASEspTrg MR00 11- BSSTRUAGanedTrg MR00 HSTRUAGanedStaTrg MR10 | | | | | | | | RST RST SET SET SET RST | bHSTRUseRecTrg M1110 bHSTRONTrg M1210 M5TRSetTrg M1210 bHSTRUseCancelTrg M410 RCPU.atSMJ055, Backag, Pastconien, Cancel, Re- 807/87 M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg M5TRUseCancelTrg |
| | 11- SASTREASEspTrg MR00 11- BSSTRUAGanedTrg MR00 HSTRUAGanedStaTrg MR10 | | | | | | | MOV | 861 851 561 561 561 861 861 160 | BHSTRUSERNOTING M1110 M1210 M1210 M1210 M1210 M1210 M1217 M1 |
| (80) | 11- bitstreeuseupfre M000 11- 11- bitstreuseuseufre M010 11- Utstreuseuseure M010 11- 11- 11- 11- 11- 11- 11- | | | | | | | MOV | RET RET SET SET SET HO SET | BRSTRUSERecTrg M1110 BRSTRON Trg M1210 M1310 MRSTRON Trg M1310 BRSTRUSECancel Trg M610 MRSTRUSECancel Trg M130 MRSTRUSECancel Starts MRSTRUSECancel STARTS |
| (80) | 11- МСТРЕ-ибнорта МСТРЕ-ибнорта МСТРЕ-ибнорта 11- 11- МСТРЕ-ибнорта МСТР МСТРЕ-ибнорта | | | | | | | | RET RET SET SET RET RET RET RET RET RET | bPSTRUseRearry M1110 bFSTRUseCarceIFrg M1210 bFSTRUseCarceIFrg M4010 FRCPU.stSM.M055_Backag-Prestoration_Carcel_Pre SM130 FRCPU.stSM.M055_Backag-Prestoration_Carcel_Pre SM130 BFSTRUseCarceIFrg M4010 FRCPU.stSM.M055_Backag-Prestoration_Line_Author %755625 bFSTRUseCarceIFrg M6010 FRCPU.stSM.M055_Backag-Prestoration_Use_Author %755780 bFSTRUseCarceIFrg M6010 FRCPU.stSM.M055_Backag-Prestoration_Use_Author %80100 FRCPU.stSM.M055_Backag-Prestoration_Use_Author %80100 BFSTRUseCarceIFrg M6010 FRCPU.stSM.M055_Backag-Prestoration_Use_Author %80100 BFSTRUseCarceIFrg M610 FRCPU.stSM.M055_Backag-Prestoration_Use_Author %80100 BFSTRUseCarceIFrg M610 BFSTRUseCarceIFrg M610 BFSTRUseCarceIFrg |
| (80) | 11- SISTREWSGOTA MOID -111- SISTREWSGORDIA SISTREWSGORDIA MID MISTREWSGORDIA MID MISTREWSGORTAG | | | | | | | MOV | 887 R51 587 587 587 787 785 785 785 785 | billTRUseReafrag M1110 billSTRUseReafrag M1210 billSTRUseCancelTrag M1210 billSTRUseCancelTrag M1210 billSTRUseCancelTrag M1210 billSTRUseCancelTrag M1210 billSTRUseCancelStopTrag M210 billSTRUseCancelStopTrag billST |

[Initialization]

| • | - |
|-------------|--|
| (0) | Initialize the execution result. |
| | Initialize the normal completion display. |
| | Initialize the abnormal completion display. |
| | Set the restoration execution trigger. |
| [Request | ing restoration right to use] |
| (9) | Store the right-to-use number. |
| | Set a right-to-use request. |
| | Set the restoration right-to-use confirmation trigger. |
| [Checking | g restoration right to use] |
| (22) | Set the restoration setting and starting trigger. |
| | Display the right-to-use acquisition failure. |
| [Setting a | and starting data restoration] |
| (36) | Set the target module/execution unit. |
| | Set the target folder number. |
| | Set the target module. |
| | Set the target device 1. |
| | Set the target device 2. |
| | Set the data restoration operation setting (on error). |
| | Set the restoration request. |
| [Checking | g data restoration execution] |
| (51) | Display the normal completion. |
| | Save the number of normally completed devices. |
| (56) | Display the abnormal completion. |
| | Save the number of devices completed with an error. |
| | Save the error cause in a module. |
| | Save the restoration error cause in a device. |
| [Enabling | the next data restoration process] |
| (65) | Clear the initialization trigger. |
| | Clear the restoration execution trigger. |
| | Clear the restoration right-to-use request trigger. |
| | Clear the restoration right-to-use confirmation trigger. |
| | Clear the restoration setting and starting trigger. |
| IC attime f | ar concelling the pressed |

- [Setting for cancelling the process]
- (75) Set the restoration cancellation request.
- [Releasing restoration right to use]
- (80) Set the restoration right-to-use release trigger.
- [Updating restoration right to use]
- (89) Set the restoration right-to-use request.

11

PART 4 MI Configurator

This part explains the operation methods when using the iQ Sensor Solution functions in MI Configurator.

12 CC-Link IE Field Network

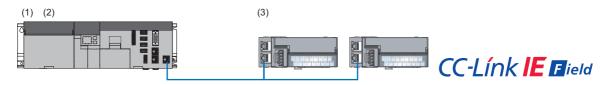
13 Ethernet

12 CC-Link IE Field Network

This chapter explains the operation methods when using iQ Sensor Solution functions for a MELIPC connected to CC-Link IE Field Network.

System configuration

This section explains the iQ Sensor Solution functions for CC-Link IE Field Network using the following system configuration.



| Тур | e | | Model name | Manufacturer | |
|-----|-----------------------------|---------------------------|-------------------------------|---------------------|--|
| (1) | Engineering tool | MI Configurator | SW1DNN-MICONF-M | Mitsubishi Electric | |
| (2) | Module | MELIPC | MI5122-VW | Corporation | |
| (3) | Basic digital output module | Screw terminal block type | NZ2GF2B1-16T NZ2GF2B1-16TE | | |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for CC-Link IE Field Network, refer to the following:

Page 372 Devices that Support iQ Sensor Solution

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Point P

• Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set parameters and other settings required for communication.

For details on the settings, refer to the following:

MELIPC MI5000 Series User's Manual (Startup)

MELIPC MI5000 Series User's Manual (Application)

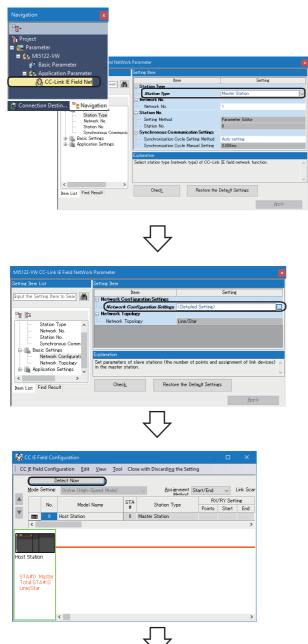
12.1 Detecting Devices Supporting iQSS Automatically

A slave station connected to a MELIPC can be detected and the information can be displayed in the "CC IE Field Configuration" window.

For the creation method of a new project and the operation methods of the "CC-Link IE Field Network Configuration" window, refer to the following:

MI Configurator Operating Manual

Operating procedure



Create a new project in an engineering tool.

- Select "Required Settings" ⇔ "Station Type," and specify "Master Station" for "Station Type" in the "CC-Link IE Field NetWork Parameter" screen.

 Select "Basic Settings"

 → "Network Configuration Settings" and double-click "Detail Setting" in the "CC-Link IE Field NetWork Parameter" screen.

The "CC IE Field Configuration" window appears.

4. Click the [Detect Now] button.

| | | D | etect Now | | | | | | | | | |
|----|---------------------------------------|---------|--------------------------------|------|-----|-----------------------|-----------|----------|----------|----------|----------|------|
| | Mode S | Setting | Online (High-Speed M | ode) | | Assignment Method | Start/End |] v L | ink Scan | Time (Ap | prox): | 0.20 |
| | | No. | Model Name | | STA | Station Type | | RY Setti | ne | RWw/ | RWr Sett | ine |
| | | | | | 2 | | Points | Start | End | Points | Start | End |
| | | 0 | Host Station | | 0 | Master Station | | | | | | |
| | E | 1 | NZ2GF2B1-16T | | 1 | Remote Device Station | 16 | 0000 | 000F | 20 | 0000 | 001 |
| | - ==+ < | 2 | NZ2GF2B1-16TE | | 2 | Remote Device Station | 16 | 0010 | 001F | 20 | 0014 | 002 |
| т. | Station A#O N tal STA e/Star | laster | | | | | | | | | | |
| | | | NZ2GF2B1 NZ2GF2E -16T -16TE | 1 | | | | | | | | |

The actual system configuration is displayed in the "CC IE Field Configuration" window.

5. Select [Close with Reflecting the Setting] in the "CC IE Field Configuration" window.

Information such as parameters displayed in the "CC IE Field Configuration" window is applied to the network parameter.

Point

Information may not be read correctly when performing an automatic detection of connected devices right after a slave station is connected. In that case, perform an automatic detection of connected devices again. When the "User Authentication" screen appears, enter the user name and the password of a MELIPC.

Detected devices to be displayed in the CC IE Field Configuration window

Modules detected after performing an automatic detection of connected devices are displayed differently depending on whether a profile has been registered.

■A profile has been registered

- · The module model names are displayed in "Model Name."
- "Local Station," "Intelligent Device Station," "Remote Device Station," or "Remote I/O Station" is displayed in the column of "Station Type."

A profile has not been registered

- The module model names, "General Local Station," "Gen. Intelligent Device Station," "General Remote Device Station," or "General Remote I/O Station" is displayed in the column of "Model Name."
- "Local Station," "Sub-Master Station," "Intelligent Device Station," "Remote Device Station," or "Remote I/O Station" is displayed in the column of "Station Type."

Restriction ("

When using the versions of modules that do not support an automatic detection of connected devices, the information will not be displayed properly in the column of "Model Name" and "Station Type," even though a profile has been registered.

A reserved station and a data link faulty station cannot be detected by the automatic detection function of connected devices.

Considerations when detecting devices supporting iQSS

The following shows the considerations when performing an automatic detection of connected devices for MELIPC CC-Link IE Field Network.

The actual system configuration is not connected/configured properly

An automatic detection of connected devices cannot be performed when the actual system configuration is not connected/ configured properly (duplication of stations, etc.).

In that case, correct the actual system configuration and perform an automatic detection of connected devices again.

Information of slave stations is not detected correctly

Information may not be read correctly when performing an automatic detection of connected devices right after a slave station is connected.

In that case, perform an automatic detection of connected devices again.

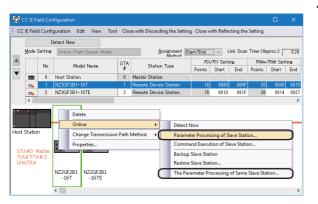
Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

12.2 Reading/Writing Parameters from/to Devices Supporting iQSS

Parameters can be read from and written to a slave station.

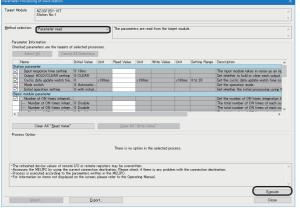
Window



- Select a device supporting iQSS in the "CC IE Field Configuration" window, then right-click and select [Online] ⇒ [Parameter Processing of Slave Station]/[The Parameter Processing of Same Slave Station] from the shortcut menu.
- The "Parameter Processing of Slave Station" screen appears by selecting [The Parameter Processing of Same Slave Station].
- The "The Parameter Processing of Same Slave Station" screen appears by selecting [The Parameter Processing of Same Slave Station].

Operating procedure

Parameter Processing of Slave Station" screen Read Read



· Reading parameters

- 1. Select "Parameter read."
- 2. Click the [Execute] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

- Writing parameters
- 1. Select "Parameter write."
- 2. Enter a value in the column of "Write Value."
- 3. Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

■"The Parameter Processing of Same Slave Station" screen

| | ne Slave Station - CC IE Field configuration | | |
|---|---|--|-------------------|
| ocedure 1 | | | |
| | d module and select "Method selection". ster" is hold in the "Parameter Processing of Slave Station | | |
| | | " function of "Specified | |
| Specified NZ2GF2B1- | -16TE | | |
| Station 2 | | | Editing Parameter |
| Only the module ver | sion is same to the module, to the specified module, Paran | eter Processing by the same parameter is | s executable. |
| | | | |
| rocedure2 | | | |
| Select executing target modu | le. | | |
| Method | | | |
| Select All | Cancel All Selections | | |
| Parala | | Module Version | |
| | Model Name | | |
| Enable satety mp | 2 | 1 | |
| Enable safety may Enable safety may Before switchin coedure3 Execute the garameter pro | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | |
| 2 NZ20F2B1-16T Enable safety mo *Before switchin rocedure3 | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | |
| 2 NZZGF2B1-16T Control of the safety mon Control of the safety Control of the safety mon Control of the safety Control of the safety | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | Egeoute |
| Enable safety may Enable safety may Before switchin coedure3 Execute the garameter pro | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | Ezecute |
| 2 NZZGF2B1-16T Control of the safety mon Control of the safety Control of the safety mon Control of the safety Control of the safety | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | Egecute |
| 2 NZZGF2B1-16T Control of the safety mon Control of the safety Control of the safety mon Control of the safety Control of the safety | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | Egecute |
| 2 NZZGF2B1-16T Control of the safety mon Control of the safety Control of the safety mon Control of the safety Control of the safety | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | Egocute |
| 2 NZZGF2B1-16T Control of the safety mon Control of the safety Control of the safety mon Control of the safety Control of the safety | E dule when succeed to write parameter, to obtain due, please always check whitter the parame scessing and du | 1 | Egecute |
| Canable safety mo Harbo safety mo Harbo safety mo Harbo safety mo Harbo safety Harbo safety mo Harbo safety Harbo s | E dule when aucceed to write parameter to batty molt, place always check whether the parame consists and du alle Only | 1 | Egecute |
| Databaseter Databaset | E dule when aucceed to write parameter to batty molt, place always check whether the parame consists and du alle Only | 1 | Egecute |

- **1.** Click the [Editing Parameter] button.
- The "Parameter Processing of Slave Station" screen appears.

- NZ2GF2B1-16TE Station No:2 Parameter read ✓ The pa Initial Value 5 10ms -Aci -Aci
- 2. Set the parameter information, and click the [Close with setting] button.

| | me slave station - CC IE Fi | | | |
|---|--|--|----------------------|---------------------|
| ocedure 1 dit the parameter of specif he result of "Editing Param | ed module and select "Me eter" is hold in the "Paran | thod selection". neter Processing of Slave Station" function of | "Specified | |
| Specified NZ2GF2B | I-16TE | | | |
| Station 2 | | | | Editing Parameter |
| Only the module ve | rsion is same to the modul | le, to the specified module, Parameter Process | ng by the same param | eter is executable. |
| ocedure2 | | | | |
| elect executing target mod | ule. | | | |
| Method Paramet | er read | | | |
| Select <u>A</u> II | Cance] All Selections | | | |
| Statio | N | Adel Name | Module Versio | |
| 2 NZ2GF2B1-18 | | 10001110 | 1 | |
| <u>v</u> <u>z kczorzo Piu</u> | 12 | | | |
| 3 | | tang ta | | |
| Enable safety m *Before switchi | dule when succeed to writ | te parameter. Skrays check whather the parameter is written | correctly. | |
| Enable safety m *Before switchis ocedure 3 | adule when succeed to verify and to preserve the safety mode, please a | | correctly. | |
| Enable safety m *Before switchi ocedure3 Exocute the garameter p | odule when succeed to writ or safety mode, please o occessing and du | | correctly. | |
| Enable safety m *Before switchis ocedure 3 | odule when succeed to writ or safety mode, please o occessing and du | | correctly. | |
| Enable safety m *Before switchi ocedure3 Exocute the garameter p | odule when succeed to writ or safety mode, please o occessing and du | | correctly. | Egecute |
| Enable safety m *Before switchi condure3 Execute the garameter p Execute Parameter pupi | odule when succeed to writ or safety mode, please o occessing and du | | correctly. | Epronts |

3. Select a target device.

Note that the devices with the same model name and the same device version can be the target.

4. Click the [Execute] button.

The execution result is output by clicking the [Export Execution Result] button.

Option setting

The "Option Setting" screen will appear by selecting [Tool] ⇔ [Options] in the "CC IE Field Configuration" window.

In the option setting, parameter information can be saved in a project.

Parameter information is saved in a project by selecting the checkbox.

| Option Setting X |
|--|
| Save the parameter set by "Parameter Processing of Slave Station" to project Clear the option and turn OFF in the operation of reading from MELIPC. Also, clear the parameter information of "Parameter Processing of Slave Station" in the operation of Detect Now. For the clear condition details of the option or parameter information, please refer to "iQ Sensor Solution Reference Manual". |
| OK Cancel |

Conditions under which saved parameter information is cleared

Saved parameter information will be deleted under the following condition.

Read the parameters of a slave station by selecting [Parameter Processing of Slave Station]/[The Parameter Processing of Same Slave Station] from the shortcut menu.

| Item | Operation | Description |
|---|---|---|
| "CC IE Field Configuration" window | Open the "CC IE Field Configuration" window. | Parameter information will be skipped and not read when the module with the station number that match with the saved parameter information is not placed in the "CC IE Field Configuration" window. In addition, parameter information which was skipped and not read will be deleted from the storage file. |
| | Close with the setting applied. | Parameter information will be deleted from the storage file when the target module is not included in the system configuration. |
| | Perform an automatic detection of connected devices. | All parameter information will be deleted once. |
| | Change the function version, and close the property screen. | Parameter information will be deleted from the storage file by closing the property screen after changing the function version. |
| | Unselect the checkbox in the option setting. | Parameter information will be deleted from the storage file by saving the setting after unselecting the checkbox. |
| "Parameter Processing of Slave Station" screen | Open the "Parameter Processing of Slave Station" screen. | Parameter information that does not match with the target module will be skipped and not read. In addition, parameter information which was skipped and not read will be deleted from the storage file. |
| | Close the "Parameter Processing of Slave Station" screen. | Parameter information will be deleted from the storage file by closing the "Parameter Processing of Slave Station" screen under the following condition. Blank all values entered in the column of "Read Value"/ "Write Value." Unselect all checkboxes. |

■Operations that delete the parameters of a slave station in MI Configurator

Parameter information will be deleted from the storage file when performing any of the following operations in MI Configurator. Read the parameters of a slave station by selecting [Parameter Processing of Slave Station]/[The Parameter Processing of Same Slave Station] from the shortcut menu.

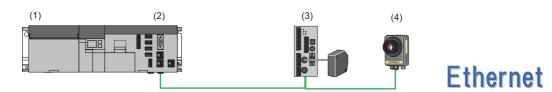
| Group | Station type | Location | Operation |
|---|----------------|---------------------------------------|---|
| Operation that returns the parameters of the network | Master station | CC-Link IE Field Network parameter | Delete and apply a network configuration diagram manually. |
| configuration diagram to the default | | | Change the station type, and set the parameter for which the network configuration diagram is default or not existed. |
| Operation that overwrites parameters | Master station | Data reading from a MELIPC | Read CC-Link IE Field Network parameters from a MELIPC in a different network configuration. |

13 Ethernet

This chapter explains the operation methods when using iQ Sensor Solution functions for a MELIPC connected to Ethernet.

System configuration

This section explains the iQ Sensor Solution functions for Ethernet using the following system configuration.



| Туре |) | | Model name | Manufacturer |
|------|------------------------|---------------------------|-----------------|--|
| (1) | Engineering tool | MI Configurator | SW1DNN-MICONF-M | Mitsubishi Electric |
| (2) | Module | MELIPC | MI5122-VW | Corporation |
| (3) | Device supporting iQSS | Laser displacement sensor | HL-C2 | Panasonic Industrial Devices SUNX Co., Ltd. |
| (4) | | COGNEX Vision System | In-Sight EZ-700 | Cognex Corporation |

For details on the devices supporting iQSS and the iQ Sensor Solution functions available for Ethernet, refer to the following:

For information on the engineering tools available for iQ Sensor Solution and the versions of engineering tools supporting each iQ Sensor Solution function, refer to the following:

Page 385 Engineering Tool and Version List

Point P

- Before using each iQ Sensor Solution function, complete the installation and wiring of the actual system configuration, and set parameters and other settings required for communication with a device supporting iQSS.
- A device supporting iQSS, which is connected to the tip of a router, does not support.

For details on the settings, refer to the following:

MELIPC MI5000 Series User's Manual (Startup)

MELIPC MI5000 Series User's Manual (Application)

Precautions

An error is returned to the request source when multiple iQ Sensor Solution functions are performed at the same time on an Ethernet network.

The following iQ Sensor Solution functions via a built-in Ethernet port cannot be performed at the same time.

- Automatic detection of connected devices
- Reflection of the communication setting
- · Sensor parameter read/write function

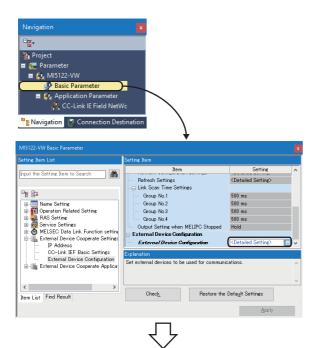
13.1 Detecting Devices Supporting iQSS Automatically

A device supporting iQSS connected to a MELIPC can be detected and the information can be displayed in the "Ethernet Configuration" window.

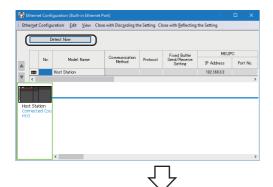
For the creation method of a new project and the operation methods of the "Ethernet Configuration" window, refer to the following:

MI Configurator Operating Manual

Operating procedure

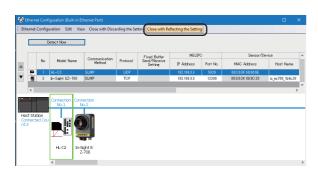


Create a new project in an engineering tool.



The "Ethernet Configuration" window appears.

2. Click the [Detect Now] button.



The actual system configuration is displayed in the "Ethernet Configuration" window.

3. Select [Close with Reflecting the Setting] in the "Ethernet Configuration" window.

The setting in the "Ethernet Configuration" window is applied to the network parameter and completed.



- Up to 16 devices supporting iQSS can be displayed in the "Ethernet Configuration" window (in ascending order of MAC address) by performing an automatic detection of connected devices.
- The system configuration cannot be detected if an error occurs on a MELIPC and a device supporting iQSS. Take corrective actions and perform the automatic detection function of connected devices again.
- Error information is displayed in the "Output" window when an error occurred. Double-click the information and correct the error at the jumped destination.
- When a module not supporting iQSS is detected, it is displayed as shown below:
- "Module with No Profile Found"
- "General Module"
- When the "User Authentication" screen appears, enter the user name and the password of a MELIPC.

■All connected devices supporting iQSS are not detected

If all devices supporting iQSS are not detected, remove the following error factors and perform an automatic detection of connected devices again.

- The Ethernet line is overloaded due to another function of a MELIPC being performed.
- The communication cannot be established due to a reason such as a disconnection of an Ethernet cable.

Consideration when detecting devices supporting iQSS

Scan time for automatic detection

When performing an automatic detection while a CPU module is in the RUN state, the scan time of a programmable controller may be extended in some system configurations.

13.2 Applying the Communication Setting to a Device Supporting iQSS

The communication setting set in the "Ethernet Configuration" window can be applied to a device supporting iQSS. Perform this function after adding, deleting or changing the setting of a device supporting iQSS.

Operating procedure

| | (| Netect Now | 3 | | | | | | | |
|-----------------------------|-----|------------------------------|-------------------------|-------------|-------------------------|--------------------|----------|-------------------|-----------------|---|
| | | | | | Fixed Buffer | MELIP | 0 | Sensor/De | evice | |
| | No. | Model Name | Gommunication Method | Protocol | Send/Receive Setting | IP Address | Port No. | MAC Address | Host Name | |
| 6 | 1 | HL-C2 | SLMP | UDP | | 192.168.3.3 | 5020 | 00C08F:68000E | |) |
| • 🗑 | 2 | In-Sight EZ-700 | SLMP | TOP | | 192.168.3.3 | 12288 | 00:D0:24:1B:9C:20 | is_ez700_1b9c20 |) |
| 5 | | | | | | | | | | |
| | _ | | | | | | | | | > |
| | | Connection Conn | ection | | | | | | | , |
| Host Sta | | No Delete | | Detect Now | | _ | | | | , |
| Host Sta Connect nt:2 | | No Delete | • | | on Setting Reflection | n of Ethernet Devi | ce) | | | , |
| Connect | | No Delete Online Prope | ties | Communicati | on Setting Reflection | | | | | , |

- 1. Enter the communication setting.
- 2. Select a target device supporting iQSS in the "Ethernet Configuration" window, then right-click and select [Online] ⇒ [Communication Setting Reflection of Ethernet Device] from the shortcut menu.

The communication setting is applied to the target device supporting iQSS.

Restriction (")

When using a device supporting iQSS that does not support the host name, even if the reflection function of the communication setting is performed with a host name entered, it will not be applied to the device.

After performing the automatic detection function of connected devices, the "Host Name" field will be blank.

For the applicability of the host name of a device supporting iQSS, refer to the manuals of each device supporting iQSS.

Point

The target device supporting iQSS must be restarted after performing a reflection of communication setting to Ethernet devices.

For the operating status of a device supporting iQSS, refer to the manuals of each device supporting iQSS.

Considerations when applying the communication setting to a device supporting iQSS

■Specifying a port number

- Do not specify '45237' for a port number in other devices on the same Ethernet network. It may cause an error in other devices on the same Ethernet network.
- Do not specify the number from '61440' to '65534' for the own station port number.
- Do not specify the IP address of a device supporting iQSS for the IP address of an external device, nor the number from '61440' to '65534' for the destination port number.

Doing so may cause an abnormal completion when performing a sensor parameter read/write.

Changing the communication setting in the "Ethernet Configuration" window

When the communication setting written to a MELIPC in the "Ethernet Configuration" window does not match with that of a device supporting iQSS, the communication cannot be established normally.

When the communication setting is changed in the "Ethernet Configuration" window, perform a reflection of communication setting to Ethernet devices in order to match the communication setting between a MELIPC and a device supporting iQSS.

Selecting devices supporting iQSS in the "Module List" window

A reflection of communication setting to Ethernet devices cannot be performed to a device supporting iQSS, which is selected in the "Module List" window and dragged and dropped onto the 'List of devices' or 'Device map area'.

Perform an automatic detection of connected devices in order to detect the communication setting, then perform a reflection of communication setting to Ethernet devices.

Changing the IP address of an Ethernet port

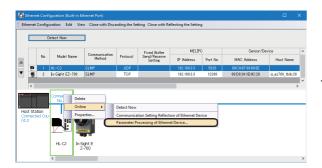
When the IP address of the Ethernet port CH1 is changed, open the "Ethernet Configuration" window in order to match the IP address on a MELIPC side in the "Ethernet Configuration" window.

Perform a reflection of communication setting to Ethernet devices in order to match the communication setting of a device supporting iQSS.

13.3 Reading/Writing Parameters from/to Devices Supporting iQSS

Sensor parameters can be read from and written to a device supporting iQSS.

Window



 Select a device supporting iQSS in the "Ethernet Configuration" window, then right-click and select [Online] ⇒ [Parameter Processing of Ethernet Device] from the shortcut menu.

The "Parameter Processing of Ethernet Device" screen appears.

Operating procedure

| 00.96 | lection: Parameter read | | ~ | Read parame | eter from | target module. | | | |
|----------|--|-----------------|-----------------------------|----------------------------|------------|------------------|----------|---------------------|--|
| | | | | | | | | | |
| | veter Information ked parameters are the targets of | ophotod prop | | | | | | | |
| 11004 | | All Selections | | | | | | | |
| | | | | | | | | | |
| | Name | Initial Value | Unit | Read Value | Unit | Write Value | Unit | Setting Range | Description |
| daar | Setting | | | | | | | | |
| M | HeadA Read Received Light L | | | | | | | 0 to 1023 | Head-A Received Light Intensity is loa |
| 41 | HeadB Read Received Light L | | | | | | | 0 to 1023 | Head-B Received Light Intensity is loa |
| 4 | HeadA_Installation_Mode | Diffuse_Refl | | | | | | | Setting of Head-A Installation Mode is |
| 3 | HeadA_Emission_Adjustment | Auto | | | | | | | Setting of Head-A Emission Adjustmen |
| 41 | HeadA_Emission_Adjustment | 1 | | | | | | 1 to 512 | Setting value of Head-A Emission Adju |
| 41 | HeadA Emission Adjustment | | | | | | | 1 to 512 | Setting value of Head-A Emission Adju |
| 4 | HeadA_Emission_Search | No_command | | | | | | | Status of Head-A Emitted Light Intensi |
| <u> </u> | HeadA_Alarm_Delay_Times | 8 | | | _ | | | 0 to 65535 | Setting of Head-A Alarm Delay Times |
| 델 | HeadA_Measurement_Mode | Diffuse_Stan_ | | _ | _ | | | | Setting of Head-A Measurement Mode |
| | Clear All "Bead Value" | | | <u>O</u> lear Al | l "Write \ | /alue" | | | |
| roce | ss Option | | | | | | | | |
| | | | | | | | | | |
| | | | | These is an | antina in | the selected pro | | | |
| | | | | There is no | option in | the selected pro | cess. | | |
| | | | | | | | | | |
| | ess is executed to a module of " | | | | | | | | |
| The | Ethernet device is accessed by u | tanget module | information and cooperation | ion . Iotico dectinatic | o" Plano | a chack if these | in any o | schlam with the cos | mention destination |
| For | information on items not displaye | d on the screen |) please | refer to the Op | erating M | anual. | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | - |
| | | | | | | | | | |
| | | | | | | | | | Europete |
| | | | | | | | | | Egecute |

- Reading parameters
- 1. Select "Parameter read."
- **2.** Select the checkbox of the parameter to be read.
- 3. Click the [Execute] button.

The selected parameter is read and the value is displayed in the column of "Read Value."

· Writing parameters

- 1. Select "Parameter write."
- 2. Select the checkbox of the parameter to be written.
- 3. Enter a value in the column of "Write Value."
- 4. Click the [Execute] button.

The value entered in the column of "Write Value" is written to the device supporting iQSS.

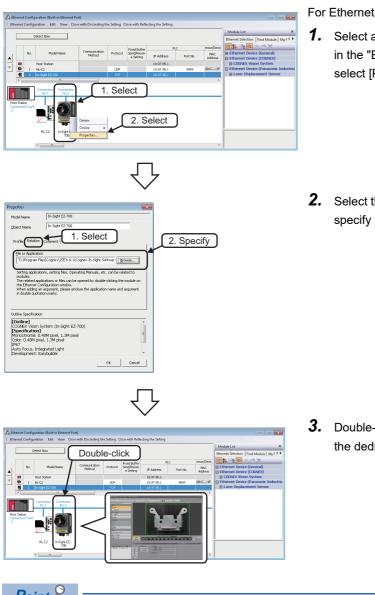
APPENDIX

Appendix 1 Useful Functions

Linkage with dedicated tools (association with properties)

A dedicated tool and manual can be activated from a device supporting iQSS on 'Device map area' by linking the properties.

Operating procedure



- Select a target device supporting iQSS in 'Device map area' in the "Ethernet Configuration" window, then right-click and select [Property] from the shortcut menu.

2. Select the [Attachment] tab in the "Properties" screen, and specify the dedicated tool to be linked to "File or Application."

3. Double-click the device supporting iQSS, which is linked with the dedicated tool, to start the dedicated tool.

Point P

- The setting applications, setting files, and manuals can be linked with devices supporting iQSS on the "Properties" screen.
- Laser displacement sensors manufactured by OPTEX FA CO., LTD. can also be linked with dedicated tools. Mount the laser displacement sensors on the I/O slot of a MELSEC-Q series base unit. For details, refer to the website of the manufacturer.

Command execution to slave station

Commands can be executed to slave stations connected to CC-Link master/local module or CC-Link IE Field Network master/ local module.

Before executing commands to a slave station, complete the settings so that the communication with a device supporting iQSS can be established successfully.

• CC-Link(Page 57 Before using iQ Sensor Solution functions)

Operating procedure



For CC-Link

| od selection: <u>GetData</u> Command Setting | There is no comman | | g in the selected process. |
|---|--------------------|-----------|--|
| , | There is no comman | id settin | g in the selected process. |
| , | There is no comman | id settin | g in the selected process. |
| command Setting | There is no comman | id settin | g in the selected process. |
| command Setting | There is no comman | id settin | g in the selected process. |
| | There is no comman | ıd settin | g in the selected process. |
| | There is no comman | id settin | g in the selected process. |
| | There is no comman | id settin | g in the selected process. |
| | There is no comman | id settin | g in the selected process. |
| | | | |
| | | | |
| | | | |
| | | | |
| Xecution Result | | | |
| Name | Read Value | Unit | Description |
| Unit1 Data(Decimal) | | - | Data acquired from the sensor amplifier of Unit-1 (Ch.1) |
| Unit2 Data(Decimal) | - | - | Data acquired from the sensor amplifier of Unit-2 (Ch.2) |
| Unit3 Data(Decimal) | | - | Data acquired from the sensor amplifier of Unit-3 (Ch.3) |
| Unit4 Data(Decimal) | | + | Data acquired from the sensor amplifier of Unit-4 (Ch.4) |
| Unit5 Data(Decimal) | | - | Data acquired from the sensor amplifier of Unit-5 (Ch.5) |
| Unit6 Data(Decimal) | | + | Data acquired from the sensor amplifier of Unit-6 (Ch.6) |
| | | | |
| | | - | |
| Unit7_Data(Decimal) | | | Data acquired from the sensor amplifier of Unit-7 (Ch.7) |
| Unit7_Data(Decimal) Unit8_Data(Decimal) | | | Data acquired from the sensor amplifier of Unit-7 (Ch.7) Data acquired from the sensor amplifier of Unit-8 (Ch.8) |
| Unit7_Data(Decimal) Unit8_Data(Decimal) Unit9_Data(Decimal) | | - | Data acquired from the sensor amplifier of Unit-7 (Ch.7) Data acquired from the sensor amplifier of Unit-8 (Ch.8) Data acquired from the sensor amplifier of Unit-9 (Ch.9) |
| Unit7_Data(Decimal) Unit8_Data(Decimal) | | | Data acquired from the sensor amplifier of Unit-7 (Ch.7) Data acquired from the sensor amplifier of Unit-8 (Ch.8) |

2. Select a command from "Method selection," and click the [Execute] button.

The command is executed and the result is displayed on "Execution Result."

Specify values in "Command Setting" as necessary.



The commands that can be executed differ depending on the target slave station.

Appendix 2 Devices that Support iQ Sensor Solution

This section shows the list of the available devices for iQ Sensor Solution.

CPU module

The following shows the CPU modules available for each connection method for iQ Sensor Solution.

AnyWireASLINK

CPU modules available for AnyWireASLINK are as follows.

○: Supported, —: Not supported

| Model name | AnyWireASLINK | Υ. | | |
|---|--|--|--|--|
| | Master module | Bridge me | odule | |
| | | CC-Link | CC-Link IE TSN | CC-Link IE Field Network |
| R00CPU*1, R01CPU, R02CPU | O*2 | O*3 | O ^{*4} | 0 |
| R04CPU, R08CPU, R16CPU, R32CPU, R120CPU | O ^{*5*6} | O*7 | O ^{*4} | O ^{*5*8} |
| R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU | O ^{*5*6} | O*7 | O ^{*4} | ⊖ ^{*5} |
| R08PCPU, R16PCPU, R32PCPU, R120PCPU | O ^{*4*9} | - | — | — |
| R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU | — | - | — | — |
| R08SFCPU, R16SFCPU, R32SFCPU, R120SFCPU | O ^{*4} | - | O ^{*4} | — |
| L04HCPU, L08HCPU, L16HCPU, L32HCPU | O ^{*10} | 0 | — | O ^{*11} |
| FX5U-32MR/DS, FX5U-32MR/ES, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/ES, FX5U-32MT/ESS, FX5U-64MR/DS, FX5U-64MR/ES, FX5U-64MT/DS, FX5U-64MT/DSS, FX5U-64MT/ES, FX5U-64MT/ESS, FX5U-80MR/DS, FX5U-80MR/ES, FX5U-80MT/DS, FX5U-80MT/DSS, FX5U-80MT/ES, FX5U-80MT/ESS, FX5UC-32MT/D, FX5UC-32MT/DSS, FX5UC-64MT/D, FX5UC-64MT/DSS, FX5UC-96MT/D, FX5UC-96MT/ DSS, FX5UC-32MT/DS-TS, FX5UC-32MT/DS-TS | O*4 | _ | - | _ |
| FX5UJ-24MR/DS, FX5UJ-24MR/ES, FX5UJ-24MT/DS, FX5UJ-24MT/ DSS, FX5UJ-24MT/ES, FX5UJ-24MT/ESS, FX5UJ-40MR/DS, FX5UJ- 40MR/ES, FX5UJ-40MT/DS, FX5UJ-40MT/DS, FX5UJ-40MT/ES, FX5UJ-40MT/ESS, FX5UJ-60MR/DS, FX5UJ-60MR/ES, FX5UJ-60MT/ DS, FX5UJ-60MT/DSS, FX5UJ-60MT/ES, FX5UJ-60MT/ESS | O*4 | - | - | _ |
| L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU- BT, L26CPU-PBT | ○*12 | O ^{*13} | - | O ^{*14} |
| Q03UDVCPU, Q04UDVCPU, Q04UDPVCPU, Q06UDVCPU, Q06UDPVCPU, Q13UDVCPU, Q13UDPVCPU, Q26UDVCPU, Q26UDPVCPU | ⊖ ^{*15} | O ^{*15} | - | ⊖ ^{*16} |
| FX3G, FX3GC ^{*17} , FX3U ^{*18} , FX3UC ^{*18} | O ^{*4} | - | - | — |
| | R00CPU ^{*1} , R01CPU, R02CPU R04CPU, R08CPU, R16CPU, R32CPU, R120CPU R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU R08PSFCPU, R16PCPU, R32PCPU, R120PCPU R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU R08SFCPU, R16SFCPU, R32SFCPU, R120SFCPU L04HCPU, L08HCPU, L16HCPU, L32HCPU FX5U-32MR/DS, FX5U-32MR/ES, FX5U-64MR/DS, FX5U-64MR/ES, FX5U-64MT/DS, FX5U-64MT/DS, FX5U-64MT/DS, FX5U-64MT/DS, FX5U-64MT/DS, FX5U-64MT/DS, FX5U-64MT/DS, FX5U-80MT/DS, FX5U-80MT/DS, FX5U-80MT/DS, FX5U-80MT/DS, FX5U-32MT/DS, FX5U-32MT/D, FX5UC-32MT/DSS, FX5UC-32MT/D, FX5UC-32MT/DSS, FX5UC-32MT/D, FX5UC-32MT/DS, FX5U-80MT/D, FX5UC-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5UJ-24MT/DS, FX5UJ-24MT/DS, FX5UJ-24MT/DS, FX5UJ-24MT/DS, FX5UJ-24MT/DS, FX5UJ-24MT/DS, FX5UJ-24MT/DS, FX5UJ-40MT/DS, FX | Master module R00CPU ¹¹ , R01CPU, R02CPU O*2 R04CPU, R08CPU, R16CPU, R32CPU, R120CPU O*5*6 R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU O*5*6 R08PCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU O*4*9 R08PSFCPU, R16PCPU, R32PCPU, R120PCPU O*4*9 R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU - R08PSFCPU, R16PSFCPU, R32PSFCPU, R120SFCPU O*4 L04HCPU, L08HCPU, L16HCPU, L32HCPU O*4 FX5U-32MR/DS, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-64MR/ES, FX5U-32MT/DS, FX5U-64MT/ESS, FX5U-64MT/ESS, FX5U-64MT/DSS, FX5U-64MT/DSS, FX5U-64MT/DSS, FX5U-64MT/DSS, FX5U-64MT/DSS, FX5U-64MT/DSS, FX5U-30MT/DSS, FX5U-30MT/DSS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-40MT/DSS, FX5U-40MT/DSS, FX5U-40MT/DSS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-32MT/DS, FX5U-30MT/DSS, FX5U-40MT/DSS, FX5U-40MT/DSS M0MR/PS, FX5U-40MT/DS, F | Master module Bridge module R00CPU ¹¹ , R01CPU, R02CPU 0*2 0*3 R04CPU, R08CPU, R16CPU, R32CPU, R120CPU 0*5*6 0*7 R04ENCPU, R08CPU, R16CPU, R32CPU, R120CPU 0*5*6 0*7 R04ENCPU, R08CPU, R16ENCPU, R32ENCPU, R120ENCPU 0*4*9 0*1 R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU 0*4*9 0*1 R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU 0*10 0*10 R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU 0*10 0 FX5U-32MT/ES, FX5U-32MT/ES, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/DS, | R00CPU ^{*1} , R01CPU, R02CPU O*2 O*3 O*4 R00CPU ^{*1} , R01CPU, R02CPU O*2 O*3 O*4 R04CPU, R08CPU, R16CPU, R32CPU, R120CPU O*5*6 O*7 O*4 R04CPU, R08CPU, R16CPU, R32CPU, R120CPU O*5*6 O*7 O*4 R08PCPU, R16PCPU, R32PCPU, R120PCPU O*5*6 O*7 O*4 R08PCPU, R16PCPU, R32PCPU, R120PCPU O*4*9 - - R08PSFCPU, R16PCPU, R32PSFCPU, R120PCPU O*4 - O*4 R04HCPU, L08HCPU, L32PCPU, R120PCPU - - - R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU - - - R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU - - - R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU - - - R04HCPU, L08HCPU, L08HCPU, L32HCPU O*4 - - - FX5U-32MR/DS, FX5U-34MR/DS, FX5U-34MT/DS, F |

*1 The data backup/restoration function cannot be used on these modules with no SD memory card slot.

*2 Modules a firmware version of which is 11 or later support word slave modules.

*3 Modules a firmware version of which is 05 or later support the data backup/restoration function.

*4 The data backup/restoration function is not supported.

*5 Modules a firmware version of which is 22 or later support the data backup/restoration function.

*6 Modules a firmware version of which is 43 or later support the data backup/restoration function for word slave modules.

*7 Modules a firmware version of which is 35 or later support the data backup/restoration function.

*8 Modules a firmware version of which is 03 or later support it.

*9 Only modules in the process mode support it.

*10 Modules a firmware version of which is 07 or later support the data backup/restoration function.

*11 Modules a firmware version of which is 06 or later support it.

*12 Modules with a serial number whose first five digits are '14112' or higher support the data backup/restoration function.

*13 Modules with a serial number whose first five digits are '16042' or higher support the data backup/restoration function.

*14 Modules with a serial number whose first five digits are '16072' or higher support the data backup/restoration function.

*15 Modules with a serial number whose first five digits are '17012' or higher support the data backup/restoration function.

*16 Modules with a serial number whose first five digits are '17052' or higher support the data backup/restoration function.

*17 Modules with the version 1.40 or later support it.

*18 Modules with the version 2.20 or later support it.

Other connection methods

CPU modules available for CC-Link, CC-Link IE TSN, CC-Link IE Field Network, CC-Link IE Field Network Basic, and Ethernet are as follows.

○: Supported, —: Not supported

| Туре | Model name | Connection method | | | | | |
|--------|--|---------------------|-------------------|--------------------------------|---|----------------------|--|
| | | CC-Link | CC-Link IE TSN | CC-Link IE Field Network | CC-Link IE Field Network Basic | Ethernet | |
| RCPU | R00CPU ^{*1} , R01CPU, R02CPU | O*2 | 0 | 0 | 0 | O*3 | |
| | R04CPU, R08CPU, R16CPU, R32CPU, R120CPU | O ^{*4} | 0 | ○*5*6 | O*7 | O ^{*3*8*9} | |
| | R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU | O ^{*4} | 0 | O ^{*6} | O*7 | O ^{*3*8*10} | |
| | R08PCPU, R16PCPU, R32PCPU, R120PCPU | — | - | O ^{*11*12} | — | - | |
| | R08PSFCPU, R16PSFCPU, R32PSFCPU, R120PSFCPU | — | - | O ^{*11*12} | — | - | |
| | R08SFCPU, R16SFCPU, R32SFCPU, R120SFCPU | — | 0 | O ^{*13} | — | - | |
| LHCPU | L04HCPU, L08HCPU, L16HCPU, L32HCPU | 0 | O ^{*14} | O ^{*27} | 0 | O*3 | |
| FX5CPU | FX5U-32MR/DS, FX5U-32MR/ES, FX5U-32MT/DS, FX5U- 32MT/DSS, FX5U-32MT/ES, FX5U-32MT/ESS, FX5U- 64MR/DS, FX5U-64MR/ES, FX5U-64MT/DS, FX5U-64MT/ DSS, FX5U-64MT/ES, FX5U-64MT/ESS, FX5U-80MR/DS, FX5U-80MR/ES, FX5U-80MT/DS, FX5U-80MT/DSS, FX5U- 80MT/ES, FX5U-80MT/ESS, FX5UC-32MT/DSS, FX5UC- 32MT/DSS, FX5UC-64MT/D, FX5UC-64MT/DSS, FX5UC- 96MT/D, FX5UC-96MT/DS, FX5UC-32MT/DS-TS, FX5UC-32MR/DS-TS, FX5UC-32MT/DSS-TS | _ | O ^{*11} | _ | 0*11 | O*11*15 | |
| | FX5UJ-24MR/DS, FX5UJ-24MR/ES, FX5UJ-24MT/DS, FX5UJ-24MT/DSS, FX5UJ-24MT/ES, FX5UJ-24MT/ESS, FX5UJ-40MR/DS, FX5UJ-40MR/ES, FX5UJ-40MT/DS, FX5UJ-40MT/DSS, FX5UJ-40MT/ES, FX5UJ-40MT/ESS, FX5UJ-60MR/DS, FX5UJ-60MR/ES, FX5UJ-60MT/DS, FX5UJ-60MT/DSS, FX5UJ-60MT/ES, FX5UJ-60MT/ESS | _ | O*11*15 | - | 0*11 | 0*11 | |
| | FX5S-30MR/ES, FX5S-30MT/ES, FX5S-30MT/ESS, FX5S- 40MR/ES, FX5S-40MT/ES, FX5S-40MT/ESS, FX5S-60MR/ ES, FX5S-60MT/ES, FX5S-60MT/ESS | - | — | _ | O ^{*11} | O ^{*11} | |
| LCPU | L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU-PBT | O ^{*16*17} | - | O ^{*18} | O ^{*19} | O*3*20*21 | |
| QCPU | Q03UDVCPU, Q04UDVCPU, Q04UDPVCPU, Q06UDVCPU, Q06UDPVCPU, Q13UDVCPU, Q13UDPVCPU, Q26UDVCPU, Q26UDPVCPU | O ^{*22} | - | O ^{*23} | O ^{*19} | ⊖ ^{*3*24} | |
| FXCPU | FX3G, FX3GC ^{*25} , FX3U ^{*26} , FX3UC ^{*26} | — | - | — | _ | _ | |

*1 The data backup/restoration function cannot be used on these modules with no SD memory card slot.

*2 Modules a firmware version of which is 05 or later support the data backup/restoration function.

*3 Only built-in Ethernet port CPUs support it. (Connection via an Ethernet port of an Ethernet module is not supported.)

*4 Modules a firmware version of which is 35 or later support the data backup/restoration function.

- *5 Modules a firmware version of which is 03 or later support it.
- *6 Modules a firmware version of which is 22 or later support the data backup/restoration function.
- *7 Modules a firmware version of which is 25 or later support it.
- *8 Modules a firmware version of which is 12 or later support it.
- *9 Modules a firmware version of which is 25 or later support a data backup and restoration with a program.

*10 Only the Ethernet port of the CPU part (CPU P1) can be used for iQ Sensor Solution functions.

- The Ethernet ports of the network part (P1/P2) are not available. For the part names of RnENCPUs, refer to the following:
- MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)
- *11 The data backup/restoration function is not supported.
- *12 It is not available in a redundant line configuration. For a redundant line configuration, refer to the following manual.
 - MELSEC iQ-R CC-Link IE Field Network User's Manual (Application)
- *13 Modules a firmware version of which is 18 or later support the data backup/restoration function.
- *14 Modules a firmware version of which is 05 or later support it.
- *15 Modules a firmware version of which is 1.040 or later support it.

- *16 Modules with a serial number whose first five digits are '15052' or higher support the devices connected to communication unit for CC-Link.
- *17 Modules with a serial number whose first five digits are '14112' or higher support the data backup/restoration function.
- *18 Modules with a serial number whose first five digits are '16072' or higher support the data backup/restoration function.
- *19 Modules with a serial number whose first five digits are '18112' or higher support it.
- *20 Modules with a serial number whose first five digits are '15043' or higher support it.
- *21 Modules with a serial number whose first five digits are '15072' or higher support the data backup/restoration function.
- *22 Modules with a serial number whose first five digits are '17012' or higher support the data backup/restoration function.
- *23 Modules with a serial number whose first five digits are '17052' or higher support the data backup/restoration function.
- *24 Modules with a serial number whose first five digits are '18072' or higher support it.
- *25 Modules with the version 1.40 or later support it.
- *26 Modules with the version 2.20 or later support it.
- *27 Modules a firmware version of which is 06 or later support it.

MELIPC

○: Supported, —: Not supported

| Туре | Model name | Connection method | | | | | | | | |
|--------|------------|-------------------|---------|--------------------------------|---|----------|--|--|--|--|
| | | AnyWireASLIN K | CC-Link | CC-Link IE Field Network | CC-Link IE Field Network Basic | Ethernet | | | | |
| MELIPC | MI5122-VW | - | — | 0 | 0 | 0 | | | | |

Devices supporting iQSS (CPU module)

The devices supporting iQSS available for the system configuration of a CPU module are listed for each connection method of iQ Sensor Solution.

- 🖙 Page 375 AnyWireASLINK
- 🖙 Page 376 CC-Link
- 🖙 Page 377 CC-Link IE TSN
- 🖙 Page 378 CC-Link IE Field Network
- 🖙 Page 380 CC-Link IE Field Network Basic
- 🖙 Page 381 Ethernet

Each iQ Sensor Solution function name is shown as the following symbols in the table.

iQ Sensor Solution function

| 0 | Automatic detection of connected devices |
|---|--|
| 0 | Verification of connected devices and configurations |
| 0 | Reflection of the communication setting |
| Ø | Sensor parameter read/write |
| 6 | Sensor/device monitor |
| 6 | Data backup/restoration |
| 0 | Data backup/restoration |

Point P

For considerations for using each device supporting iQSS, refer to the following:

Page 396 Considerations for Using Device Supporting iQSS

For details on the devices supporting iQSS, refer to the website of each manufacturer.

Restriction (??

iQ Sensor Solution functions cannot be used for a module controlled by another CPU in a multiple CPU system.

AnyWireASLINK

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for AnyWireASLINK.

Mitsubishi Electric Corporation

○: Supported, —: Not supported

| Туре | | Model name | iQ Sei | nsor Sol | ution fu | nction | | | |
|-------------------|---|--------------------------|--------|----------|----------|--------|---|-----------------|--|
| | | | 0 | 0 | 0 | 4 | 6 | 6 | |
| AnyWireASLINK mas | ster module ^{*1} | RJ51AW12AL ^{*2} | 0 | 0 | - | 0 | 0 | 0 | |
| | | FX5-ASL-M | 0 | - | - | 0 | 0 | — | |
| | | LJ51AW12AL ^{*3} | 0 | 0 | — | 0 | 0 | 0 | |
| | | | 0 | 0 | — | 0 | 0 | O ^{*5} | |
| | | FX3U-128ASL-M | 0 | 0 | — | 0 | 0 | — | |
| Bridge module | CC-Link-AnyWireASLINK bridge module ^{*6*7} | NZ2AW1C2AL | 0 | 0 | - | 0 | 0 | O ^{*8} | |
| | CC-Link IE TSN-AnyWireASLINK bridge module ^{*9} | NZ2AW1GNAL | 0 | - | — | 0 | 0 | - | |
| | CC-Link IE Field Network-AnyWireASLINK bridge module*7*10*11 | NZ2AW1GFAL | 0 | 0 | — | 0 | 0 | 0 | |

- *1 When connecting word slave modules, use RJ51AW12AL.
- *2 Modules with a serial number whose first two digits are '03' or higher support word slave modules.
- *3 When using in an LCPU, modules with a serial number whose first five digits are '14102' or higher, and when using in an LHCPU, modules with a serial number whose first five digits are '18072' or higher support the functions.
- *4 Modules with a serial number whose first five digits are '14102' or higher support the functions.
- *5 Modules with a serial number whose first five digits are '17022' or higher support the function.
- *6 Modules with a serial number whose first five digits are '16042' or higher (device version: 2) support the functions. Modules with a serial number whose first five digits are '16041' or earlier (device version: 1) do not support the functions.
- *7 Word slave modules are not supported.
- *8 When connecting a CC-Link master/local module (QJ61BT11N), use the module with a serial number whose first five digits are '17012' or higher.
- *9 The module supports the functions only when connecting a CC-Link IE TSN master/local module (RJ71GN11-T2 or RJ71GN11-EIP).
- *10 When connecting a CC-Link IE Field Network-equipped master/local module (RJ71GF11-T2 or RJ71EN71), use the module with a serial number whose first five digits are '16072' or higher.
- *11 When connecting a CC-Link IE Field Network master/local module (LJ71GF11-T2), use the module with a serial number whose first four digits are '1611' or higher (device version: 2).

■AnyWire Corporation

O: Supported, -: Not supported

| Туре | Model name | iQ Sensor Solution function | | | | | |
|----------------|---|-----------------------------|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 6 |
| ASLINKER | For the supported model names, please contact | 0 | 0 | - | 0 | 0 | 0 |
| ASLINKAMP | AnyWire Corporation. | | | | | | |
| ASLINKSENSOR | | | | | | | |
| ASLINKTERMINAL | | | | | | | |

CC-Link

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for CC-Link.

Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | | Model name | iQ Se | ensor So | lution f | unction | | |
|---|--------------------------------|--|-------|----------|----------|---------|---|---|
| | | | 0 | 0 | 0 | 4 | 6 | 6 |
| CC-Link master/local m | odule ^{*1*2} | L26CPU-BT ^{*3} , L26CPU-PBT ^{*3} | 0 | 0 | — | 0 | 0 | 0 |
| | | LJ61BT11 ^{*4} | 0 | 0 | - | 0 | 0 | 0 |
| | | QJ61BT11N ^{*5} | 0 | 0 | - | 0 | 0 | 0 |
| CC-Link system master | r/local module ^{*1*2} | RJ61BT11 ^{*6} | 0 | 0 | - | 0 | 0 | 0 |
| Analog input module (V | /oltage/Current input) | AJ65SBT2B-64AD ^{*7} | 0 | 0 | - | - | 0 | 0 |
| Analog input module | RTD | AJ65SBT2B-64RD3 ^{*8} | | | | | | |
| (Temperature input) | Thermocouple | AJ65SBT2B-64TD ^{*9} | | | | | | |
| Analog output module (Voltage/Current output) | | AJ65SBT2B-64DA ^{*10} | | | | | | |

*1 Modules with a serial number whose first five digits are '14112' or higher support the data backup/restoration function.

*2 Modules with a serial number whose first five digits are '15052' or higher support the devices connected to communication unit for CC-Link.

*3 Modules with a serial number whose first five digits are '16042' or higher support the devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL).

- *4 Modules with a serial number whose first five digits are '15052' or higher support the devices supporting iQSS, which are connected to a bridge module (NZ2AW1C2AL).
- *5 Modules with a serial number whose first five digits are '17012' or higher support the functions.
- *6 Modules a firmware version of which is 06 or later support the functions.

*7 Modules with a serial number '1211DB' or higher support the functions.

- *8 Modules with a serial number '1211DC' or higher support the functions.
- *9 Modules with a serial number '1211BC' or higher support the functions.
- *10 Modules with a serial number '1211GC' or higher support the functions.

■Panasonic Industrial Devices SUNX Co., Ltd.

○: Supported, —: Not supported

| Туре | Model name | iQ Sensor Solution function | | | | | | | |
|---|---|-----------------------------|---|---|---|---|---|--|--|
| | | 0 | 0 | 0 | 4 | 0 | 0 | | |
| Communication unit for CC-Link | SC-GU3-01 ^{*1} | 0 | 0 | - | 0 | 0 | 0 | | |
| Analog input unit ^{*2} | SC-T1JA, SC-A01, SC-A02 | 1 | | | | | | | |
| Digital fiber sensor ^{*2} | FX-301 ^{*3} , FX-305, FX-501, FX-502 | 1 | | | | | | | |
| Digital laser sensor ^{*2} | LS-403 | 1 | | | | | | | |
| Head-separated dual display digital pressure sensor ^{*2} | DPS-401, DPS-402 | | | | | | | | |

 *1 Products manufactured from December, 2012 onward support the functions. A cascading connector unit (SC-71) is required separately. An end unit (SC-GU3-EU) is required separately. Use the dedicated software (SC-PC1) to configure the required settings.

- *2 The unit/sensor supports each function by being connected to a communication unit for CC-Link (SC-GU3-01). A sensor head is required separately.
- *3 Products manufactured from June, 2004 onward support the functions.

CC-Link IE TSN

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for CC-Link IE TSN.

■Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | Model name | iQ Se | iQ Sensor Solution function | | | | | | | |
|------------------------------------|--|-------|-----------------------------|---|---|---|---|--|--|--|
| | | 0 | 0 | 0 | 4 | 6 | 6 | | | |
| CC-Link IE TSN master/local module | RJ71GN11-T2 | 0 | - | — | 0 | - | — | | | |
| | RJ71GN11-EIP | | | | | | | | | |
| | FX5-CCLGN-MS | | | | | | | | | |
| Motion module | RD78G4, RD78G8, RD78G16, RD78G32, RD78G64, RD78GHV, RD78GHW | 0 | - | - | 0 | - | - | | | |
| | FX5-40SSC-G, FX5-80SSC-G | 0 | - | — | 0 | - | — | | | |
| | LD78G4, LD78G16 | 0 | — | - | 0 | — | — | | | |

CC-Link IE Field Network

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for CC-Link IE Field Network.

■Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | | Model name | iQ Se | ensor So | lution f | unction | | |
|-------------------------------------|-------------------------------------|---|-------|----------|----------|-----------------|---|-----|
| | | | 0 | 0 | 0 | 4 | 6 | 6 |
| CC-Link IE Field Ne local module | etwork-equipped master/ | RJ71GF11-T2 ^{*1} , RJ71EN71 ^{*1} | 0 | - | - | 0 | 0 | 0*2 |
| CC-Link IE Field Ne | etwork master/local | LJ71GF11-T2 ^{*3} | 0 | - | - | 0 | 0 | 0 |
| module | | QJ71GF11-T2 ^{*4} | 0 | — | - | 0 | 0 | 0 |
| CC-Link IE TSN-CC bridge module | C-Link IE Field Network | NZ2GN-GFB | 0 | - | - | 0 | - | — |
| Basic digital input module | Screw terminal block type | NZ2GF2B1-16D ^{*5*6} , NZ2GF2B1N-16D ^{*5*6} , NZ2GF2B1N1-16D ^{*6} , NZ2GF2B2-16A ^{*6} , NZ2GF2B1-32D | 0 | - | - | 0 | - | 0 |
| | | NZ2GN2B1-16D, NZ2GN2B1-32D | 0 | — | - | O*7 | — | 0*7 |
| | e-CON type | NZ2GFCE3-16D ^{*5*6} , NZ2GFCE3-16DE ^{*5*6} , NZ2GFCE3N-32D ^{*6} | 0 | - | - | 0 | - | 0 |
| | Sensor connector type (e-CON) | NZ2GNCE3-32D | 0 | - | - | O*7 | - | 0*7 |
| | MIL connector type ^{*5} | NZ2GFCM1-16D*6, NZ2GFCM1-16DE*6 | 0 | — | — | 0 | — | 0 |
| | FCN connector type | NZ2GFCF1-32D ^{*6} | 0 | - | — | 0 | — | 0 |
| | 40-pin connector type | NZ2GNCF1-32D | 0 | - | — | O*7 | — | 0* |
| | Spring clamp terminal | NZ2GF2S2-16A ^{*6} | 0 | - | - | 0 | — | 0 |
| | block type | NZ2GN2S1-16D, NZ2GN2S1-32D | 0 | - | — | O*7 | — | 0* |
| | Waterproof/dustproof type | NZ2GN12A4-16D, NZ2GN12A4-16DE | 0 | - | - | O*7 | - | 0*7 |
| Basic digital output module | Screw terminal block type | NZ2GF2B1-16T ^{*5*6} , NZ2GF2B1-16TE ^{*5*6} , NZ2GF2B1N-16T ^{*5*6} , NZ2GF2B1N-16TE ^{*5*6} , NZ2GF2B1N1-16T ^{*6} , NZ2GF2B1N1-16TE ^{*6} , NZ2GF2B2-16R ^{*6} , NZ2GF2B2-16S ^{*6} , NZ2GF2B1- 32T, NZ2GF2B1-32TE | 0 | - | - | 0 | — | 0 |
| | | NZ2GN2B1-16T, NZ2GN2B1-16TE, NZ2GN2B1- 32T, NZ2GN2B1-32TE | 0 | - | - | 0*7 | — | 0* |
| | e-CON type | NZ2GFCE3-16T ^{*5*6} , NZ2GFCE3-16TE ^{*5*6} , NZ2GFCE3N-32T ^{*6} | 0 | - | - | 0 | - | 0 |
| | MIL connector type ^{*5} | NZ2GFCM1-16T ^{*6} , NZ2GFCM1-16TE ^{*6} | 0 | — | — | 0 | — | 0 |
| | FCN connector type | NZ2GFCF1-32T ^{*6} | 0 | — | — | 0 | — | 0 |
| | 40-pin connector type | NZ2GNCF1-32T | 0 | — | - | O*7 | - | 0* |
| | Spring clamp terminal | NZ2GF2S2-16R ^{*6} , NZ2GF2S2-16S ^{*6} | 0 | — | — | 0 | — | 0 |
| | block type | NZ2GN2S1-16T, NZ2GN2S1-16TE, NZ2GN2S1- 32T, NZ2GN2S1-32TE | 0 | - | — | O ^{*7} | - | 0* |
| | Waterproof/dustproof type | NZ2GN12A2-16T, NZ2GN12A2-16TE | 0 | - | - | O*7 | - | 0* |
| Basic digital I/O | Screw terminal block | NZ2GF2B1-32DT, NZ2GF2B1-32DTE | 0 | — | — | 0 | — | 0 |
| combined module | type | NZ2GN2B1-32DT, NZ2GN2B1-32DTE | 0 | — | — | O*7 | — | 0* |
| | e-CON type | NZ2GFCE3N-32DT ^{*6} | 0 | — | — | 0 | — | 0 |
| | Sensor connector type (e-CON) | NZ2GNCE3-32DT | 0 | - | - | O*7 | - | 0* |
| | FCN connector type | NZ2GFCF1-32DT ^{*6} | 0 | - | — | 0 | — | 0 |
| | Spring clamp terminal block type | NZ2GN2S1-32DT, NZ2GN2S1-32DTE | 0 | - | - | O*7 | - | 0* |
| | Waterproof/dustproof type | NZ2GN12A42-16DT, NZ2GN12A42-16DTE | 0 | - | - | O*7 | - | 0* |

| Туре | | Model name | iQ Se | ensor Sc | olution f | unction | | |
|--|-------------------------------------|----------------------------------|-------|----------|-----------|---------|---|-----------------|
| | | | 0 | 0 | 8 | 4 | 6 | 6 |
| Basic analog | Screw terminal block | NZ2GF2BN-60AD4 ^{*6} | 0 | — | — | 0 | - | O ^{*8} |
| input module | type | NZ2GN2B-60AD4 | 0 | — | — | 0 | - | 0 |
| | e-CON type | NZ2GFCE-60ADV8, NZ2GFCE-60ADI8 | 0 | — | — | 0 | - | 0 |
| | Spring clamp terminal block type | NZ2GN2S-60AD4 | | | | | | |
| Basic analog | Screw terminal block | NZ2GF2BN-60DA4 ^{*6} | 0 | — | — | 0 | - | O*8 |
| output module | type | NZ2GN2B-60DA4 | 0 | — | — | 0 | - | 0 |
| | e-CON type | NZ2GFCE-60DAV8, NZ2GFCE-60DAI8 | 0 | — | — | 0 | - | 0 |
| | Spring clamp terminal block type | NZ2GN2S-60DA4 | | | | | | |
| Basic multiple inp temperature) mod | ut (voltage/current/ dule | NZ2GF2S-60MD4 | 0 | — | — | 0 | - | 0 |
| Basic temperature | e control module | NZ2GF2B-60TCTT4, NZ2GF2B-60TCRT4 | 0 | — | — | 0 | — | — |
| Basic high-speed | counter module | NZ2GFCF-D62PD2 ^{*6} | 0 | — | — | 0 | — | O ^{*9} |

*1 Modules a firmware version of which is 03 or later support the functions.

*2 Modules a firmware version of which is 09 or later support the function.

*3 Modules with a serial number whose first five digits are '17022' or higher support the functions.

*4 Modules with a serial number whose first five digits are '17062' or higher support the functions.

*5 Modules with a serial number whose first five digits are 17042' or higher support the functions.

*6 An automatic detection of connected device is available for a basic module. If the function is performed for an extension module, the total number of points of the basic module and the extension module is read and the setting of the extension module will be empty.

*7 Modules a firmware version of which is 06 or later support it.

*8 Modules with a serial number whose first five digits are '19092' or higher support it.

*9 Modules with a serial number whose first five digits are '17122' or higher support it.

CC-Link IE Field Network Basic

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for CC-Link IE Field Network Basic.

■Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | | Model name | iQ Se | nsor Sol | lution f | unction | | |
|---------------------------------------|-------------------------------------|---|-------|----------|----------|---------|---|---|
| | | | 0 | 0 | 0 | 4 | 0 | 0 |
| RCPU | | R00CPU, R01CPU, R02CPU | 0 | - | 0 | 0 | - | - |
| | | R04CPU, R08CPU, R16CPU, R32CPU, R120CPU | 0 | — | 0 | 0 | - | - |
| | | R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU | 0 | - | 0 | 0 | - | - |
| LHCPU | | L04HCPU, L08HCPU, L16HCPU, L32HCPU | 0 | — | 0 | 0 | - | - |
| FX5CPU | | FX5U-32MR/DS, FX5U-32MR/ES, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/ES, FX5U-32MT/ ESS, FX5U-64MR/DS, FX5U-64MR/ES, FX5U- 64MT/DS, FX5U-64MT/DSS, FX5U-64MT/ES, FX5U-64MT/ESS, FX5U-80MR/DS, FX5U-80MR/ ES, FX5U-80MT/DS, FX5U-80MT/DSS, FX5U- 80MT/ES, FX5U-80MT/ES, FX5U-32MT/D, FX5UC-32MT/DSS, FX5UC-64MT/D, FX5UC-64MT/ DSS, FX5UC-96MT/D, FX5UC-64MT/DSS, FX5UC- 32MT/DS-TS, FX5UC-32MR/DS-TS, FX5UC-32MT/ DSS-TS, FX5UJ-24MR/DS, FX5UJ-24MR/ES, FX5UJ-24MT/DS, FX5UJ-24MT/DSS, FX5UJ-24MT/ ES, FX5UJ-24MT/DS, FX5UJ-40MR/DS, FX5UJ- 40MR/ES, FX5UJ-40MT/DS, FX5UJ-40MT/DSS, FX5UJ-40MT/ES, FX5UJ-40MT/DSS, FX5UJ- 60MT/DSS, FX5UJ-60MT/ES, FX5UJ-60MT/ S, FX5UJ-60MR/ES, FX5UJ-60MT/ESS, FX5S-30MR/ES, FX5S-30MT/ESS, FX5S-40MR/ES, FX5S-40MT/ESS, FX5S-60MR/ES, FX5S-60MT/ESS | 0 | - | 0 | 0 | - | - |
| Built-in Ethernet p | port LCPU | L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU-PBT | 0 | - | 0 | 0 | - | - |
| High-speed unive universal model p | rsal model QCPU, process CPU | Q03UDVCPU, Q04UDVCPU, Q04UDPVCPU, Q06UDVCPU, Q06UDPVCPU, Q13UDVCPU, Q13UDPVCPU, Q26UDVCPU, Q26UDPVCPU | | | | | | |
| Input module | Screw terminal block type | NZ2MFB1-32D, NZ2MFB2-16A | 0 | - | 0 | - | - | - |
| | Spring clamp terminal block type | NZ2MF2S1-32D | | | | | | |
| Output module | Screw terminal block type | NZ2MFB1-32T, NZ2MFB1-32TE1, NZ2MFB2-16R | 1 | | | | | |
| | Spring clamp terminal block type | NZ2MF2S1-32T, NZ2MF2S1-32TE1 | 1 | | | | | |
| I/O combined module | Screw terminal block type | NZ2MFB1-32DT, NZ2MFB1-32DTE1 | 1 | | | | | |
| | Spring clamp terminal block type | NZ2MF2S1-32DT, NZ2MF2S1-32DTE1 | 1 | | | | | |

Ethernet

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for Ethernet.

Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | Model name | iQ Se | nsor So | lution fu | Inction | | |
|--|--|-------------|---------|-----------|---------|-----------------|-----|
| | | 0 | 0 | 8 | 4 | 6 | 0 |
| RCPU ^{*1} | R00CPU ^{*2} , R01CPU, R02CPU | 0 | — | 0 | 0 | O*3 | 0 |
| | R04CPU, R08CPU, R16CPU, R32CPU, R120CPU | 0 | - | 0 | 0 | O ^{*4} | O*5 |
| | R04ENCPU ^{*6} , R08ENCPU ^{*6} , R16ENCPU ^{*6} , R32ENCPU ^{*6} , R120ENCPU ^{*6} | 0 | - | 0 | 0 | O*7 | 0*5 |
| LHCPU | L04HCPU, L08HCPU, L16HCPU, L32HCPU | 0 | - | 0 | 0 | 0 | 0 |
| FX5CPU | FX5U-32MR/DS, FX5U-32MR/ES, FX5U-32MT/DS, FX5U-32MT/DSS, FX5U-32MT/ES, FX5U-32MT/ESS, FX5U-64MR/DS, FX5U-64MR/ES, FX5U-64MT/DS, FX5U-64MT/DSS, FX5U-64MT/ES, FX5U-64MT/DS, FX5U-80MR/DS, FX5U-80MR/ES, FX5U-80MT/DS, FX5U-80MT/DSS, FX5U-80MT/ES, FX5U-80MT/ESS, FX5UC-32MT/D, FX5UC-32MT/DSS, FX5UC-64MT/D, FX5UC-64MT/DSS, FX5UC-96MT/D, FX5UC-96MT/ DSS, FX5UC-32MT/DS-TS, FX5UC-32MR/DS-TS, FX5UC-32MT/DSS-TS | ○ *8 | | O*8 | O*8 | | - |
| | FX5UJ-24MR/DS, FX5UJ-24MR/ES, FX5UJ-24MT/DS, FX5UJ-24MT/DSS, FX5UJ-24MT/ES, FX5UJ-24MT/ ESS, FX5UJ-40MR/DS, FX5UJ-40MR/ES, FX5UJ- 40MT/DS, FX5UJ-40MT/DSS, FX5UJ-40MT/ES, FX5UJ- 40MT/ESS, FX5UJ-60MR/DS, FX5UJ-60MR/ES, FX5UJ-60MT/DS, FX5UJ-60MT/DSS, FX5UJ-60MT/ES, FX5UJ-60MT/ESS | 0 | _ | 0 | 0 | _ | _ |
| | FX5S-30MR/ES, FX5S-30MT/ES, FX5S-30MT/ESS, FX5S-40MR/ES, FX5S-40MT/ES, FX5S-40MT/ESS, FX5S-60MR/ES, FX5S-60MT/ES, FX5S-60MT/ESS | 0 | - | 0 | 0 | - | - |
| Built-in Ethernet port LCPU ^{*9*10} | L02CPU, L02CPU-P, L06CPU, L06CPU-P, L26CPU, L26CPU-P, L26CPU-BT, L26CPU-PBT | 0 | - | 0 | 0 | 0 | 0 |
| High-speed universal model QCPU ^{*11} , universal model process CPU ^{*11} | Q03UDVCPU, Q04UDVCPU, Q04UDPVCPU, Q06UDVCPU, Q06UDPVCPU, Q13UDVCPU, Q13UDPVCPU, Q26UDVCPU, Q26UDPVCPU | 0 | - | 0 | 0 | 0 | 0 |
| GOT2000 series ^{*12} | GT27, GT25, GT23, GT21 ^{*13} | 0 | — | — | — | — | — |

*1 Modules a firmware version of which is 12 or later support the functions.

*2 The data backup/restoration function cannot be used on these modules with no SD memory card slot.

- *3 Modules a firmware version of which is 05 or later support it.
- *4 Modules a firmware version of which is 35 or later support it.
- *5 Modules a firmware version of which is 25 or later support it.
- *6 Only the Ethernet port of the CPU part (CPU P1) can be used for iQ Sensor Solution functions. The Ethernet ports of the network part (P1/P2) are not available. For the part names of RnENCPUs, refer to the following:
 Image: Im
- *7 Modules a firmware version of which is 24 or later support it.
- *8 Modules a firmware version of which is 1.040 or later support it.
- *9 Modules with a serial number whose first five digits are '15043' or higher support the functions.
- *10 Modules with a serial number whose first five digits are '15072' or higher support the data backup/restoration function.
- *11 Modules with a serial number whose first five digits are '18072' or higher support the functions.
- *12 The Screen Design Software for Graphic Operation Terminal for GOT, GT Works3 (SW1DND-GTWK3) with a version 1.136S or later supports the function.

For the information to obtain profiles, please consult your local Mitsubishi representative.

*13 Only the models with built-in Ethernet ports support the function.

Panasonic Industrial Devices SUNX Co., Ltd.

O: Supported, -: Not supported

| Туре | Model name | iQ Sen | sor Solu | ition fur | oction | | |
|---|------------|--------|----------|-----------|--------|---|---|
| | | 0 | 0 | 0 | 4 | 6 | 0 |
| Laser displacement sensor ^{*1} | HL-C2 | 0 | — | 0 | 0 | 0 | 0 |

*1 For the information to obtain profiles, please contact the manufacturer of the devices supporting iQSS.

■Cognex Corporation

O: Supported, —: Not supported

| Туре | Model name | iQ Sensor Solution function | | | iQ Sensor Solution function | | |
|--------------------------------------|--|-----------------------------|---|---|-----------------------------|---|---|
| | | 0 | 0 | 0 | 4 | 0 | 6 |
| COGNEX Vision System ^{*1*2} | In-Sight 5000, In-Sight 7000, In-Sight Micro, In-Sight EZ-100, In-Sight EZ-700 | 0 | — | 0 | 0 | 0 | — |

*1 LCPUs with a serial number whose first five digits are '15043' or higher support the functions.

*2 GX Works2 Version 1.499V or later supports the functions.

Device supporting iQSS (MELIPC)

The devices supporting iQSS available for the system configuration of a MELIPC are listed for each connection method of iQ Sensor Solution.

- 🖙 Page 383 CC-Link IE Field Network
- 🖙 Page 384 CC-Link IE Field Network Basic
- 🖙 Page 384 Ethernet

Each iQ Sensor Solution function name is shown as the following symbols in the table.

| iQ S | iQ Sensor Solution function | | | | | | |
|------|--|--|--|--|--|--|--|
| 0 | Automatic detection of connected devices | | | | | | |
| 0 | Verification of connected devices and configurations | | | | | | |
| 0 | Reflection of the communication setting | | | | | | |
| Ø | Sensor parameter read/write | | | | | | |
| 0 | Sensor/device monitor | | | | | | |
| 6 | Data backup/restoration | | | | | | |
| | · | | | | | | |

Point *P*

For considerations for using each device supporting iQSS, refer to the following:

Page 396 Considerations for Using Device Supporting iQSS

For details on the devices supporting iQSS, refer to the website of each manufacturer.

Restriction (")

iQ Sensor Solution functions cannot be used for a module controlled by another CPU in a multiple CPU system.

CC-Link IE Field Network

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for CC-Link IE Field Network.

■Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | | Model name | iQ Se | nsor So | ution fu | inction | | |
|---|-------------------------------------|---|-------|---------|----------|---------|---|---|
| | | | 0 | 0 | 0 | 0 | 6 | 6 |
| CC-Link IE Field Network-equipped master/ local module | | RJ71GF11-T2 ^{*1} , RJ71EN71 ^{*1} | 0 | - | - | 0 | - | - |
| | etwork master/local | LJ71GF11-T2 ^{*2} | 0 | - | — | 0 | - | — |
| module | | QJ71GF11-T2 ^{*3} | — | - | — | 0 | - | — |
| MELIPC MI5000 se | eries | MI5122-VW | 0 | — | — | - | - | — |
| Basic digital input module | Screw terminal block type | NZ2GF2B1-16D ^{*4*5} , NZ2GF2B1N-16D ^{*4*5} , NZ2GF2B1N1-16D ^{*5} , NZ2GF2B2-16A ^{*5} , NZ2GF2B1-32D | 0 | - | - | 0 | - | - |
| | e-CON type | NZ2GFCE3-16D ^{*4*5} , NZ2GFCE3-16DE ^{*4*5} , NZ2GFCE3N-32D ^{*5} | | | | | | |
| | MIL connector type ^{*4} | NZ2GFCM1-16D ^{*5} , NZ2GFCM1-16DE ^{*5} | 1 | | | | | |
| | FCN connector type | NZ2GFCF1-32D ^{*5} | | | | | | |
| | Spring clamp terminal block type | NZ2GF2S2-16A ^{*5} | | | | | | |
| Basic digital output module | Screw terminal block type | NZ2GF2B1-16T ^{*4*5} , NZ2GF2B1-16TE ^{*4*5} , NZ2GF2B1N-16T ^{*4*5} , NZ2GF2B1N-16TE ^{*4*5} , NZ2GF2B1N1-16T ^{*5} , NZ2GF2B1N1-16TE ^{*5} , NZ2GF2B2-16R ^{*5} , NZ2GF2B2-16S ^{*5} , NZ2GF2B1- 32T, NZ2GF2B1-32TE | | | | | | |
| | e-CON type | NZ2GFCE3-16T ^{*4*5} , NZ2GFCE3-16TE ^{*4*5} , NZ2GFCE3N-32T ^{*5} | | | | | | |
| | MIL connector type ^{*4} | NZ2GFCM1-16T ^{*5} , NZ2GFCM1-16TE ^{*5} | | | | | | |
| | FCN connector type | NZ2GFCF1-32T ^{*5} | | | | | | |
| | Spring clamp terminal block type | NZ2GF2S2-16R ^{*5} , NZ2GF2S2-16S ^{*5} | | | | | | |
| Basic digital I/O combined module | Screw terminal block type | NZ2GF2B1-32DT, NZ2GF2B1-32DTE | | | | | | |
| | e-CON type | NZ2GFCE3N-32DT*5 | 1 | | | | | |
| | FCN connector type | NZ2GFCF1-32DT ^{*5} | | | | | | |
| Basic analog input module | Screw terminal block type | NZ2GF2BN-60AD4 ^{*5} | 0 | — | - | 0 | - | - |
| Basic analog output module | Screw terminal block type | NZ2GF2BN-60DA4 ^{*5} |] | | | | | |
| Basic high-speed c | ounter module ^{*6} | NZ2GFCF-D62PD2 ^{*5} | 0 | — | — | 0 | — | — |

*1 Modules a firmware version of which is 03 or later support the functions.

*2 Modules with a serial number whose first five digits are '17022' or higher support the functions.

*3 Modules with a serial number whose first five digits are '17062' or higher support the function.

*4 Modules with a serial number whose first five digits are 17042' or higher support the functions.

*5 An automatic detection of connected device is available for a basic module. If the function is performed for an extension module, the total number of points of the basic module and the extension module is read and the setting of the extension module will be empty.
 *0 Matching with a particular provide the function of the function.

*6 Modules with a serial number whose first five digits are '17122' or higher support the functions.

CC-Link IE Field Network Basic

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for CC-Link IE Field Network Basic.

Mitsubishi Electric Corporation

 \bigcirc : Supported, —: Not supported

| Туре | | Model name | iQ Sensor Solution function | | | | | | |
|---------------------|------------------------------|---|-----------------------------|---|---|---|---|---|--|
| | | | 0 | 0 | 0 | 0 | 0 | 6 | |
| Input module | Screw terminal block type | NZ2MFB1-32D, NZ2MFB2-16A | 0 | — | 0 | - | - | - | |
| Output module | Screw terminal block type | NZ2MFB1-32T, NZ2MFB1-32TE1, NZ2MFB2-16R | | | | | | | |
| I/O combined module | Screw terminal block type | NZ2MFB1-32DT, NZ2MFB1-32DTE1 | | | | | | | |

Ethernet

The following shows the devices supporting iQSS and iQ Sensor Solution functions available for Ethernet.

Mitsubishi Electric Corporation

○: Supported, —: Not supported

| Туре | Model name iQ Sensor Solution function | | iQ Sensor Solution function | | | | |
|------------------------------|--|---|-----------------------------|---|---|---|---|
| | | 0 | 0 | 0 | 4 | 0 | 6 |
| GOT2000 series ^{*1} | GT23, GT25, GT27 | 0 | — | — | — | — | — |

*1 The Screen Design Software for Graphic Operation Terminal for GOT, GT Works3 (SW1DND-GTWK3) with a version 1.136S or later supports the function.

For the information to obtain profiles, please consult your local Mitsubishi representative.

■Panasonic Industrial Devices SUNX Co., Ltd.

○: Supported, —: Not supported

| Туре | Model name | | iQ Sensor Solution function | | | | |
|---|------------|---|-----------------------------|---|---|---|---|
| | | 0 | 0 | 0 | 4 | 6 | 0 |
| Laser displacement sensor ^{*1} | HL-C2 | 0 | — | 0 | 0 | — | _ |

*1 For the information to obtain profiles, please contact the manufacturer of the devices supporting iQSS.

■Cognex Corporation

○: Supported, —: Not supported

| Туре | Model name | iQ Sensor Solution function | | | | | |
|----------------------|--|-----------------------------|---|---|---|---|---|
| | | 0 | 0 | 0 | 0 | 0 | 0 |
| COGNEX Vision System | In-Sight 5000, In-Sight 7000, In-Sight Micro, In-Sight EZ-100, In-Sight EZ-700 | 0 | — | 0 | 0 | — | — |

Appendix 3 Engineering Tool and Version List

The following tables show the usable engineering tools and their versions for each connection method.

GX Works2/MELSOFT Navigator

AnyWireASLINK

■LCPU

| iQ Sensor Solution function | Engineering tool | | | | |
|--|------------------|-------------------|--|--|--|
| | GX Works2 | MELSOFT Navigator | | | |
| Automatic detection of connected devices | 1.98C or later | 1.62Q or later | | | |
| Sensor parameter read/write | | | | | |
| Sensor/device monitor | | Not supported | | | |
| Verification of connected devices and configurations | 1.492N or later | 1.62Q or later | | | |
| Data backup/restoration | | | | | |

■QCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.98C or later | 1.62Q or later |
| Sensor parameter read/write | | |
| Sensor/device monitor | | Not supported |
| Verification of connected devices and configurations | 1.492N or later | 1.62Q or later |
| Data backup/restoration | 1.530C or later | 2.07H or later |

■FXCPU

| iQ Sensor Solution function | Engineering tool | | | | |
|--|------------------|-------------------|--|--|--|
| | GX Works2 | MELSOFT Navigator | | | |
| Automatic detection of connected devices | 1.501X or later | Not supported | | | |
| Sensor parameter read/write | | | | | |
| Sensor/device monitor | | | | | |
| Verification of connected devices and configurations | | | | | |
| Data backup/restoration | Not supported | | | | |

CC-Link

■LCPU

| iQ Sensor Solution function | Engineering tool | | | |
|--|------------------|-------------------|--|--|
| | GX Works2 | MELSOFT Navigator | | |
| Automatic detection of connected devices | 1.98C or later | 1.62Q or later | | |
| Sensor parameter read/write | 1.68W or later | 1.25B or later | | |
| Sensor/device monitor | 1.98C or later | Not supported | | |
| Verification of connected devices and configurations | 1.492N or later | 1.62Q or later | | |
| Data backup/restoration | | | | |

• For a CC-Link-AnyWireASLINK bridge module (NZ2AW1C2AL)

| iQ Sensor Solution function | Engineering tool | | | |
|--|------------------|-------------------|--|--|
| | GX Works2 | MELSOFT Navigator | | |
| Automatic detection of connected devices | 1.513K or later | 2.01B or later | | |
| Sensor parameter read/write |] | | | |
| Sensor/device monitor |] | Not supported | | |
| Verification of connected devices and configurations |] | 2.01B or later | | |
| Data backup/restoration |] | | | |

■QCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.530C or later | 2.07H or later |
| Sensor parameter read/write | 1.68W or later | 1.25B or later |
| Sensor/device monitor | 1.530C or later | Not supported |
| Verification of connected devices and configurations | | 2.07H or later |
| Data backup/restoration |] | |

For a CC-Link-AnyWireASLINK bridge module (NZ2AW1C2AL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.530C or later | 2.07H or later |
| Sensor parameter read/write | | |
| Sensor/device monitor | | Not supported |
| Verification of connected devices and configurations | | 2.07H or later |
| Data backup/restoration |] | |

CC-Link IE Field Network

■LCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices ^{*1} | 1.530C or later | 2.07H or later |
| Sensor parameter read/write | 1.501X or later | 1.74C or later |
| Sensor/device monitor | 1.530C or later | Not supported |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration | | |

*1 GX Works2 Version 1.545T or later support displaying two or more extension modules which are connected to a remote I/O module.
• For a CC-Link IE Field Network-AnyWireASLINK bridge module (NZ2AW1GFAL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.530C or later | 2.07H or later |
| Sensor parameter read/write | | |
| Sensor/device monitor | | Not supported |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration | | |

■QCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices*1 | 1.575Z or later | 2.50C or later |
| Sensor parameter read/write | 1.501X or later | 1.74C or later |
| Sensor/device monitor | 1.575Z or later | Not supported |
| Verification of connected devices and configurations | 1 | 2.50C or later |
| Data backup/restoration | 1 | |

*1 GX Works2 Version 1.575Z or later support displaying two or more extension modules which are connected to a remote I/O module.

• For a CC-Link IE Field Network-AnyWireASLINK bridge module (NZ2AW1GFAL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.575Z or later | 2.50C or later |
| Sensor parameter read/write | | |
| Sensor/device monitor | | Not supported |
| Verification of connected devices and configurations | | 2.50C or later |
| Data backup/restoration | | |

CC-Link IE Field Network Basic

■LCPU

| iQ Sensor Solution function | Engineering tool | Engineering tool | |
|--|------------------|-------------------|--|
| | GX Works2 | MELSOFT Navigator | |
| Automatic detection of connected devices | 1.565P or later | 2.42U or later | |
| Reflection of the communication setting | | | |
| Sensor parameter read/write | | | |
| Sensor/device monitor | Not supported | Not supported | |
| Data backup/restoration | | | |

■QCPU

| iQ Sensor Solution function | Engineering tool | Engineering tool | |
|--|------------------|-------------------|--|
| | GX Works2 | MELSOFT Navigator | |
| Automatic detection of connected devices | 1.565P or later | 2.42U or later | |
| Reflection of the communication setting | | | |
| Sensor parameter read/write | | | |
| Sensor/device monitor | Not supported | Not supported | |
| Data backup/restoration | | | |

Ethernet

■LCPU

| iQ Sensor Solution function | Engineering tool | Engineering tool | |
|--|------------------|-------------------|--|
| | GX Works2 | MELSOFT Navigator | |
| Automatic detection of connected devices | 1.492N or later | 1.74C or later | |
| Reflection of the communication setting | | | |
| Sensor parameter read/write | | | |
| Sensor/device monitor | | Not supported | |
| Data backup/restoration | 1.497T or later | 1.74C or later | |

■QCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|------------------------------|
| | GX Works2 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.550Y or later | 2.42U or later ^{*1} |
| Reflection of the communication setting | | |
| Sensor parameter read/write | | |
| Sensor/device monitor | | Not supported |
| Data backup/restoration | | 2.42U or later ^{*1} |

*1 Only high-speed universal model QCPUs and universal model process CPUs (Q03UDVCPU, Q04UDVCPU, Q04UDPVCPU, Q06UDVCPU, Q06UDPVCPU, Q13UDVCPU, Q13UDPVCPU, Q26UDPVCPU) support it.

GX Works3/MELSOFT Navigator

AnyWireASLINK

∎RCPU

| iQ Sensor Solution function | Engineering tool | |
|--|-------------------------|-------------------|
| | GX Works3 ^{*1} | MELSOFT Navigator |
| Automatic detection of connected devices | 1.030G or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | 1.040S or later | |
| Verification of connected devices and configurations | 1.070Y or later | |
| Data backup/restoration | 1.040S or later | |

*1 GX Works3 Version 1.055H or later supports word slave modules.

■LHCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.082L or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | | |
| Data backup/restoration | 1.105K or later | |

■FX5CPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.035M or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | 1.050C or later | |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration |] | |

CC-Link

■RCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.045X or later | 2.50C or later |
| Sensor parameter read/write | 1.000A or later | 2.00A or later |
| Sensor/device monitor | 1.045X or later | Not supported |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration | 1.045X or later | 2.50C or later |

• For a CC-Link-AnyWireASLINK bridge module (NZ2AW1C2AL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.045X or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | 1.080J or later | |
| Data backup/restoration | 1.045X or later | |

■LHCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.060N or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | Not supported |] |
| Data backup/restoration | 1.060N or later | |

CC-Link IE TSN

■RCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.055H or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | Not supported | |
| Verification of connected devices and configurations | | |
| Data backup/restoration | | |

• For a CC-Link IE TSN-AnyWireASLINK bridge module (NZ2AW1GNAL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.075D or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration | | |

• For a CC-Link IE TSN-CC-Link IE Field Network bridge module (NZ2GN-GFB)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.095Z or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | Not supported | |
| Verification of connected devices and configurations | | |
| Data backup/restoration | | |

■LHCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.090U or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | Not supported | |
| Verification of connected devices and configurations | | |
| Data backup/restoration |] | |

■FX5CPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.065T or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | Not supported | |
| Verification of connected devices and configurations | | |
| Data backup/restoration | | |

CC-Link IE Field Network

∎RCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices ^{*1} | 1.007H or later | 2.03D or later |
| Sensor parameter read/write | 1.000A or later | 2.00A or later |
| Sensor/device monitor | 1.032J or later | Not supported |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration | 1.040S or later | 2.46Y or later |

*1 To display two or more extension modules connected to a remote I/O module, use GX Works3 version 1.025B or later.

• For a CC-Link IE Field Network-AnyWireASLINK bridge module (NZ2AW1GFAL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.060N or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | 1.080J or later | |
| Data backup/restoration | 1.060N or later | |

■LHCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.095Z or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | Not supported | |
| Data backup/restoration | | |

• For a CC-Link IE Field Network-AnyWireASLINK bridge module (NZ2AW1GFAL)

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.095Z or later | Not supported |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Verification of connected devices and configurations | | |
| Data backup/restoration | | |

CC-Link IE Field Network Basic

■RCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.035M or later | 2.42U or later |
| Reflection of the communication setting | | |
| Sensor parameter read/write | | |
| Sensor/device monitor | Not supported | Not supported |
| Data backup/restoration | | |

■LHCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.060N or later | Not supported |
| Reflection of the communication setting | | |
| Sensor parameter read/write | | |
| Sensor/device monitor | Not supported | |
| Data backup/restoration |] | |

■FX5CPU

| iQ Sensor Solution function | Engineering tool | Engineering tool | |
|--|------------------|-------------------|--|
| | GX Works3 | MELSOFT Navigator | |
| Automatic detection of connected devices | 1.035M or later | 2.42U or later | |
| Reflection of the communication setting | | | |
| Sensor parameter read/write | | | |
| Sensor/device monitor | Not supported | Not supported | |
| Data backup/restoration | | | |

Ethernet

■RCPU

| iQ Sensor Solution function | Engineering tool | Engineering tool | |
|--|------------------|-------------------|--|
| | GX Works3 | MELSOFT Navigator | |
| Automatic detection of connected devices | 1.015R or later | 2.11M or later | |
| Reflection of the communication setting | | | |
| Sensor parameter read/write | | | |
| Sensor/device monitor | 1.045X or later | Not supported | |
| Data backup/restoration | | | |

■LHCPU

| iQ Sensor Solution function | Engineering tool | |
|--|------------------|-------------------|
| | GX Works3 | MELSOFT Navigator |
| Automatic detection of connected devices | 1.060N or later | Not supported |
| Reflection of the communication setting | | |
| Sensor parameter read/write | | |
| Sensor/device monitor | | |
| Data backup/restoration | | |

■FX5CPU

| iQ Sensor Solution function | Engineering tool | Engineering tool | |
|--|------------------|-------------------|--|
| | GX Works3 | MELSOFT Navigator | |
| Automatic detection of connected devices | 1.030G or later | 2.38Q or later | |
| Reflection of the communication setting | | | |
| Sensor parameter read/write | | | |
| Sensor/device monitor | Not supported | Not supported | |
| Data backup/restoration | | | |

MI Configurator

CC-Link IE Field Network

■MELIPC

| iQ Sensor Solution function | MI Configurator |
|--|-----------------|
| Automatic detection of connected devices | 1.001B or later |
| Sensor parameter read/write | |
| Sensor/device monitor | Not supported |
| Verification of connected devices and configurations | |
| Data backup/restoration | |

CC-Link IE Field Network Basic

■MELIPC

| iQ Sensor Solution function | MI Configurator |
|--|-----------------|
| Automatic detection of connected devices | 1.001B or later |
| Reflection of the communication setting | |
| Sensor parameter read/write | |
| Sensor/device monitor | Not supported |
| Data backup/restoration | |

Ethernet

■MELIPC

| iQ Sensor Solution function | MI Configurator |
|--|-----------------|
| Automatic detection of connected devices | 1.001B or later |
| Reflection of the communication setting | |
| Sensor parameter read/write | |
| Sensor/device monitor | Not supported |
| Data backup/restoration | |

Appendix 4 Considerations for Using Device Supporting iQSS

This section shows considerations for using each device supporting iQSS.

AnyWireASLINK

AnyWire Corporation

| Type/model name | Function | Consideration |
|--|-----------------------|--|
| ■Device supporting iQSS • 🖙 Page 375 AnyWire Corporation | Sensor/device monitor | For details on the status display of AnyWireASLINK devices, refer to the contact the manufacturer of the devices used. |

CC-Link

Mitsubishi Electric Corporation

| Type/model name | Function | Consideration |
|---|-------------------------|--|
| Analog input module (Voltage/ Current Input) AJ65SBT2B-64AD | Data backup/restoration | Data to be backed up/restored is offset/gain values. After completing data restoration normally, target modules are operated with the offset/gain values which are restored automatically. |
| RTD analog input module (Temperature input) AJ65SBT2B-64RD3 Thermequale analog input | | When data backup/restoration failed, an error code is stored to SD1453. Check the error code and take corrective actions. (CF Page 401 Error Code List, or CLUser's manual for data backup/restoration target modules) |
| Thermocouple analog input module (Temperature input) AJ65SBT2B-64TD Analog output module (Voltage/ Current output) | | Even if a stop error occurs in a CPU module, data can be backed up and restored by setting "PLC Down Select" in the "Network Parameter - CC-Link Module Configuration" screen of an engineering tool. However, they may not be performed depending on the error description. |
| • AJ65SBT2B-64DA | | When using AJ65SBT2B-64AD, AJ65SBT2B-64RD3, or AJ65SBT2B-64TD, the conversion process is stopped and the conversion completion flag (RXn0 to RXn3) is turned OFF by the module while the data such as setting data is sent/received by the data backup/restoration function. |
| | | When using AJ65SBT2B-64DA, the value specified by the analog output HOLD/CLEAR function (analog output status when the CPU module is in STOP status) is output while the data such as setting data is sent/received by the data backup/restoration function. |

| Type/model name | Function | Consideration | |
|---|---|---|--|
| Communication unit for CC-Link • SC-GU3-01 | Sensor parameter read/write Sensor/device monitor | Communication unit for CC-Link is required to be interconnected with respective sensor amplifiers supporting optical communication, and to whic an end unit (SC-GU3-EU) is attached at the end. Neither the sensor parameter read/write function nor the sensor/device monitor function can be performed on the station without an end unit. | |
| | Data backup/restoration | Communication unit for CC-Link is required to be interconnected with respective sensor amplifiers supporting optical communication, to which an end unit (SC-GU3-EU) is attached at the end. The station to which no end unit is attached, the data may not be backed up properly. | |
| | | When one communication unit for CC-Link is connected to the CC-Link master/local module, the error code 4805H is stored to SD1452 during the data backup process. | |
| | | When two or more communication unit for CC-Link are connected to CC-Link master/local module, and if a station without an end unit is included, data backup is performed only on the station with an end unit, not on the station without an end unit. Note that error code is not stored. | |
| Analog input unit • SC-T1JA • SC-A01 • SC-A02 | Sensor/device monitor | When performing the Sensor/Device Monitor function, connecting an analoc voltage output signal of other device to an analog voltage input terminal is required. If no signal is connected, '0' is obtained as a current value. | |
| Digital fiber sensor • FX-301 • FX-305 • FX-501 | Sensor/device monitor | When performing the sensor/device monitor function, connecting a fiber head to a digital fiber sensor is required. Data can be obtained even if a fiber head is not connected, but a detected value differs from a value detected when a fiber head is connected. | |
| • FX-502 | Data backup/restoration | When data backup/restoration failed, an error code is stored to SD1453. Check the error code and take corrective actions. (SP Page 401 Error Code List, or CDUser's manual for data backup/restoration target modules) | |
| ■Digital laser sensor • LS-403 | Sensor/device monitor | When performing the sensor/device monitor function, connecting a laser sensor head to a digital laser sensor is required. Data can be obtained even if a laser sensor head is not connected, but a detected value differs from a value detected when a laser sensor head is connected. | |
| | Data backup/restoration | When data backup/restoration failed, an error code is stored to SD1453. Check the error code and take corrective actions. (SP Page 401 Error Co List, or CDUser's manual for data backup/restoration target modules) | |
| Head-separated dual display digital pressure sensor DPS-401 DPS-402 | Sensor/device monitor | When performing the sensor/device monitor function, connecting a pressure sensor head to a head-separated dual display digital pressure sensor is required. When a pressure sensor head is not connected, '0' is acquired for a detected value and 'Er42' is displayed on a sensor amplifier. | |
| | Data backup/restoration | When data backup/restoration failed, an error code is stored to SD1453. Check the error code and take corrective actions. (CP Page 401 Error Code List, or CUUser's manual for data backup/restoration target modules) | |

Panasonic Industrial Devices SUNX Co., Ltd.

CC-Link IE Field Network

Mitsubishi Electric Corporation

| Type/model name | Function | Consideration |
|--|-------------------------|--|
| Basic digital input module | Data backup/restoration | When data backup/restoration failed, an error code is stored to SD1453. |
| • NZ2GF2B1-16D, NZ2GF2B1N- | · | Check the error code and take corrective actions. (I Page 401 Error Code |
| 16D, NZ2GF2B1N1-16D, | | List, or LUSer's manual for data backup/restoration target modules) |
| NZ2GF2B2-16A, NZ2GF2B1-32D, | | Check that the restoration terrat module energies normally after performing |
| NZ2GN2B1-16D, NZ2GN2B1-32D | | Check that the restoration target module operates normally after performing |
| • NZ2GFCE3-16D, NZ2GFCE3- | | the data restoration. |
| 16DE, NZ2GFCE3N-32D, | | When an error occurs on the restoration target module, check the error code |
| NZ2GNCE3-32D | | and take corrective actions. (LuUser's manual for data backup/restoration |
| • NZ2GFCM1-16D, NZ2GFCM1- | | target modules) |
| 16DE | | Backup data (parameter) cannot be restored to a module whose model name |
| • NZ2GFCF1-32D, NZ2GNCF1-32D | | is different from the one used for data backup. |
| • NZ2GF2S2-16A, NZ2GN2S1-16D, | | However, it can be restored to a module having a compatibility of functions |
| | | even if its model name is different from the one used for data backup. |
| NZ2GN2S1-32D | | For details, check the following table 'List of combinations of modules for data |
| • NZ2GN12A4-16D, NZ2GN12A4- | | backup and for data restoration'. |
| 16DE | | • |
| Basic digital output module | | |
| • NZ2GF2B1-16T, NZ2GF2B1-16TE, | | |
| NZ2GF2B1N-16T, NZ2GF2B1N- | | |
| 16TE, NZ2GF2B1N1-16T, | | |
| NZ2GF2B1N1-16TE, NZ2GF2B2- | | |
| 16R, NZ2GF2B2-16S, NZ2GF2B1- | | |
| 32T, NZ2GF2B1-32TE, | | |
| NZ2GN2B1-16T, NZ2GN2B1- | | |
| 16TE, NZ2GN2B1-32T, | | |
| NZ2GN2B1-32TE | | |
| NZ2GFCE3-16T, NZ2GFCE3- | | |
| 16TE, NZ2GFCE3N-32T | | |
| NZ2GFCM1-16T, NZ2GFCM1- | | |
| 16TE | | |
| NZ2GFCF1-32T, NZ2GNCF1-32T | | |
| • NZ2GF2S2-16R, NZ2GF2S2-16S, | | |
| NZ2GN2S1-16T, NZ2GN2S1- | | |
| 16TE, NZ2GN2S1-32T, | | |
| NZ2GN2S1-32TE | | |
| • NZ2GN12A2-16T, NZ2GN12A2- | | |
| 16TE | | |
| ■Basic digital I/O combined module | | |
| • NZ2GF2B1-32DT, NZ2GF2B1- | | |
| 32DTE, NZ2GN2B1-32DT, | | |
| NZ2GN2B1-32DTE | | |
| • NZ2GFCE3N-32DT, NZ2GNCE3- | | |
| 32DT | | |
| NZ2GFCF1-32DT | | |
| • NZ2GN2S1-32DT, NZ2GN2S1- | | |
| 32DTE | | |
| • NZ2GN12A42-16DT, | | |
| NZ2GN12A42-16DTE | | |
| ■Basic analog input module | | |
| NZ2GF2BN-60AD4 | | |
| NZ2GFCE-60ADV8 | | |
| • NZ2GFCE-60ADI8 | | |
| • NZ2GN2B-60AD4, NZ2GN2S- | | |
| 60AD4 | | |
| | | |
| Basic analog output module | | |
| NZ2GF2BN-60DA4 | | |
| NZ2GFCE-60DAV8 | | |
| NZ2GFCE-60DAI8 | | |
| • NZ2GN2B-60DA4, NZ2GN2S- | | |
| 60DA4 | | |
| ■Basic multiple input (voltage/ | | |
| current/temperature) module | | |
| • NZ2GF2S-60MD4 | | |
| ■Basic high-speed counter module | | |
| • NZ2GFCF-D62PD2 | | |

398

■List of combinations of modules for data backup and for data restoration

| Module for data backup | Module for data restoration |
|--|--|
| NZ2GF2B1-16D | NZ2GF2B1-16D, NZ2GF2B1N-16D, NZ2GF2B1N1-16D |
| NZ2GF2B1-16T | NZ2GF2B1-16T, NZ2GF2B1N-16T, NZ2GF2B1N1-16T |
| NZ2GF2B1-16TE | NZ2GF2B1-16TE, NZ2GF2B1N-16TE, NZ2GF2B1N1-16TE |
| NZ2GF2B1N-16D | NZ2GF2B1N-16D, NZ2GF2B1N1-16D |
| NZ2GF2B1N-16T | NZ2GF2B1N-16T, NZ2GF2B1N1-16T |
| NZ2GF2B1N-16TE | NZ2GF2B1N-16TE, NZ2GF2B1N1-16TE |
| NZ2GF2B1-32D, NZ2GF2B1-32DT, NZ2GF2B1-32DTE | Only a module with the same model name as one used for data backup can |
| NZ2GF2B1-32T, NZ2GF2B1-32TE | be used for data restoration. |
| NZ2GF2B1N1-16D, NZ2GF2B1N1-16T, NZ2GF2B1N1-16TE | |
| NZ2GF2B2-16A, NZ2GF2B2-16R, NZ2GF2B2-16S | |
| NZ2GFCE3-16D, NZ2GFCE3-16DE, NZ2GFCE3-16T, NZ2GFCE3-16TE | |
| NZ2GFCE3N-32D, NZ2GFCE3N-32DT, NZ2GFCE3N-32T | |
| NZ2GFCM1-16D, NZ2GFCM1-16DE, NZ2GFCM1-16T, NZ2GFCM1-16TE | |
| NZ2GFCF1-32D, NZ2GFCF1-32T, NZ2GFCF1-32DT | |
| NZ2GF2S2-16A, NZ2GF2S2-16R, NZ2GF2S2-16S | |
| NZ2GN2B1-32D, NZ2GN2B1-32T, NZ2GN2B1-32TE, NZ2GN2B1-32DT, NZ2GN2B1-32DTE | |
| NZ2GN2S1-32D, NZ2GN2S1-32T, NZ2GN2S1-32TE, NZ2GN2S1-32DT, NZ2GN2S1-32DTE | |
| NZ2GNCE3-32D, NZ2GNCE3-32DT | - |
| NZ2GNCF1-32D, NZ2GNCF1-32T | 1 |
| NZ2GN12A4-16D, NZ2GN12A4-16DE | |
| NZ2GN12A2-16T, NZ2GN12A2-16TE | |
| NZ2GN12A42-16DT, NZ2GN12A42-16DTE | |
| NZ2GN2B1-16D, NZ2GN2B1-16T, NZ2GN2B1-16TE | |
| NZ2GN2S1-16D, NZ2GN2S1-16T, NZ2GN2S1-16TE | |
| NZ2GF2S-60MD4 | |
| NZ2GF2BN-60AD4, NZ2GF2BN-60DA4 | |
| NZ2GFCE-60ADV8, NZ2GFCE-60DAV8 | 1 |
| NZ2GFCE-60ADI8, NZ2GFCE-60DAI8 |] |
| NZ2GN2B-60AD4, NZ2GN2B-60DA4 |] |
| NZ2GN2S-60AD4, NZ2GN2S-60DA4 | 7 |
| NZ2GFCF-D62PD2 | 1 |

| Panasonic Industrial Devices SUNX Co., Ltd. | | |
|--|--|--|
| Type/model name | Function | Consideration |
| Laser displacement sensorHL-C2 | Automatic detection of connected devices | Make sure whether the iQ Sensor Solution function is enabled on a target device of the automatic detection function using the setting tool of HL-C2. |
| ■Device supporting iQSS • C Page 382 Panasonic Industrial Devices SUNX Co., Ltd. | Reflection of the communication setting | Setting a subnet mask and default gateway is required. If the cells for subnet mask and default gateway setting are blank, the communication settings can not be reflected. The protocol is fixed to 'UDP'. |
| | | Do not configure the following IP addresses in the IP address settings. An HL-C2 may not operate properly. • 0.0.0.0 • *.*.*.0 • *.*.*.255 • 255.*.*.* |
| | Status | When the head unit is not connected to the controller, the unconnected flag is set to the status. |
| | Sensor/device monitor | To change the items to be monitored, use the application software "Configurator WD" manufactured by Panasonic Industrial Devices SUNX Co., Ltd. |
| | Data backup/restoration | When a timeout occurs, perform a data backup or restoration again. If the problem persists, contact the manufacturer. |

Cognex Corporation

| Type/model name | Function | Consideration |
|--|--|---|
| In-Sight 5000 In-Sight 7000 In-Sight EZ-100 In-Sight EZ-700 In-Sight Micro Device supporting iQSS I⊃ Page 382 Cognex Corporation | Automatic detection of connected devices | Make sure whether the iQ Sensor Solution function is enabled on a target device of the automatic detection function using the setting tool of COGNEX Vision System. |
| | Reflection of the communication setting | Select 'TCP' for the protocol. Set the IP address within the range from 1.0.0.1 to 223.255.255.254. |
| | | Do not make the host name a blank. For usable characters to the host name, refer to the manuals of COGNEX Vision System. |
| | Sensor/device monitor | After completing the In-Sight job loading , perform the sensor/device monito function. |

Appendix 5 Error Code List

The following shows the list of error codes.

iQ Sensor Solution-related errors

For details on the error codes, error information, error causes, and corrective actions, refer to the manual of the CPU module used.

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

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

MELSEC iQ-R CPU Module User's Manual (Application)

AnyWireASLINK

AnyWire Corporation

| Error code | Error and cause | Corrective action | Type/model name |
|------------|---|---|---|
| C061H | An error occurred in the iQ Sensor Solution function. | Please contact your local Mitsubishi Electric sales office or representative. | ■CC-Link IE Field Network- AnyWireASLINK bridge module |
| C05CH | An error occurred in the iQ Sensor Solution function. | Please contact your local Mitsubishi Electric sales office or representative. | • NZ2AW1GFAL |

For details on the error codes, error information, error causes, and corrective actions other than above, check the following:

Manual of the AnyWireASLINK device used

• "Monitoring Information" window in the "Sensor/Device Monitor for AnyWireASLINK" screen of an engineering tool

CC-Link

| Mitsubishi Electric Corporation | | | |
|---------------------------------|-----------------------------|---|--|
| Error code | Error and cause | Corrective action | Type/model name |
| BAD1H | Data backup failed. | Perform data backup again. If RXnB turns ON when turning the power ON, the error is on the hardware. | Analog input module (Voltage/ Current input) AJ65SBT2B-64AD |
| BAD2H | Data restoration failed. | The restored data may be corrupted. If RXnC turns ON when turning the power ON, the error is on the hardware. | RTD analog input module (Temperature input) AJ65SBT2B-64RD3 Thermocouple analog input module (Temperature input) AJ65SBT2B-64TD Analog output module (Voltage/ Current output) AJ65SBT2B-64DA |
| BC55H | CC-Link communication error | A communication error occurred. Perform the data backup/restoration function again. | |

Panasonic Industrial Devices SUNX Co., Ltd.

| Error code | Error and cause | Corrective action | Type/model name | |
|------------|--|--|---|--|
| 4805H | D5H The data backup/restoration The data backup/restoration function is not supported by SC- function was performed for the T1JA, SC-A01, and SC-A02. device which is not supported by Perform the data backup/restoration function for the device which the data backup/restoration is supported by the data backup/restoration function of iQ Sensor Solution. Solution. | | Analog input unit SC-T1JA SC-A01 SC-A02 | |
| 4805H | The end unit is not recognized Check that the end unit unconnected flag (for one-station occupied operation: 15th bit of RWr0, for four-station occupied operation: RX1F) is not set. properly. Check that the end unit is attached to the sensor amplifier properly. | | Digital fiber sensor FX-301 FX-305 FX-501 FX-502 | |
| E0C4H | Data backup/restoration function was performed for the station sub-ID to which the sensor amplifier is not connected. | Check that the sensor amplifier is connected properly, and perform data backup/restoration function to the connected station sub-ID. | | |
| E0C5H | Data backup failed because the end unit is not attached to the sensor amplifier properly. | Check that the end unit is attached to the sensor amplifier properly, and perform data backup again. | | |
| E0C6H | Data restoration failed because the end unit is not attached to the sensor amplifier properly or the specified backup data is not correct. | Check that the end unit is attached to the sensor amplifier properly or the specified backup data is correct. Then perform the data restoration again. | | |
| 4805H | The end unit is not recognized because the end unit is not attached to the sensor amplifier properly. | Check that the end unit unconnected flag (for one-station occupied operation: 15th bit of RWr0, for four-station occupied operation: RX1F) is not set. Check that the end unit is attached to the sensor amplifier properly. | Digital laser sensor LS-403 | |
| E0C4H | Data backup/restoration function was performed for the station sub-ID to which the sensor amplifier is not connected. | Check that the sensor amplifier is connected properly, and perform data backup/restoration function to the connected station sub-ID. | | |
| E0C5H | Data backup failed because the end unit is not attached to the sensor amplifier properly. | Check that the end unit is attached to the sensor amplifier properly, and perform data backup again. | | |
| E0C6H | Data restoration failed because the end unit is not attached to the sensor amplifier properly or the specified backup data is not correct. | Check that the end unit is attached to the sensor amplifier properly or the specified backup data is correct. Then perform the data restoration again. | | |
| 4805H | The end unit is not recognized because the end unit is not attached to the sensor amplifier properly. | Check that the end unit unconnected flag (for one-station occupied operation: 15th bit of RWr0, for four-station occupied operation: RX1F) is not set. Check that the end unit is attached to the sensor amplifier properly. | Head-separated dual display digital pressure sensor DPS-401 DPS-402 | |
| E0C4H | Data backup/restoration function was performed for the station sub-ID to which the sensor amplifier is not connected. | Check that the sensor amplifier is connected properly, and perform data backup/restoration function to the connected station sub-ID. | | |
| E0C5H | Data backup failed because the end unit is not attached to the sensor amplifier properly. | Check that the end unit is attached to the sensor amplifier properly, and perform data backup again. | | |
| E0C6H | Data restoration failed because the end unit is not attached to the sensor amplifier properly or the specified backup data is not correct. | Check that the end unit is attached to the sensor amplifier properly or the specified backup data is correct. Then perform the data restoration again. | | |

CC-Link IE Field Network

| Error code | Error and cause | Corrective action | Type/model name |
|------------|--|---|---|
| BAD1H | Data restoration was performed using backup data of module that is different from module for data restoration target. | Use the data that was backed up by using a module with the same model name as one used for data restoration. | Basic digital input module NZ2GF2B1-16D, NZ2GF2B1N- 16D, NZ2GF2B1N1-16D^{*1}, NZ2GF2B2-16A, NZ2GF2B1-32D, |
| BAD2H | Data restoration was performed using backup data of newer module than module for data restoration target. | Perform the data restoration function by using the data that was backed up from a module with the same version or earlier than one used for data restoration. | NZ2GN2B1-16D, NZ2GN2B1-32D NZ2GFCE3-16D, NZ2GFCE3- 16DE, NZ2GFCE3N-32D, NZ2GNCE3-32D NZ2GNCE3-32D |
| BAD3H | Corrupted backup data was restored. | Use another backup data and retry. | NZ2GFCM1-16D, NZ2GFCM1- 16DE NZ2GFCF1-32D, NZ2GNCF1- 32D NZ2GF2S2-16A, NZ2GN2S1- 16D, NZ2GN2S1-32D NZ2GN12A4-16D, NZ2GN12A4- 16DE Basic digital output module NZ2GE2B1 16T, NZ2GE2B1 |
| | | | NZ2GF2B1-16T, NZ2GF2B1- 16TE, NZ2GF2B1N-16TE, NZ2GF2B1N-16TE, NZ2GF2B1N1-16T^{*1}, NZ2GF2B1N1-16TE^{*1}, NZ2GF2B2-16R, NZ2GF2B2-16S, NZ2GF2B1-32T, NZ2GF2B1- 32TE, NZ2GN2B1-16T, NZ2GN2B1-16TE, NZ2GP2B1- 32T, NZ2GN2B1-32TE NZ2GFCE3-16T, NZ2GFCE3- 16TE, NZ2GFCE3N-32T NZ2GFCM1-16T, NZ2GFCM1- 16TE |
| | | | NZ2GFCF1-32T, NZ2GNCF1-32T NZ2GF2S2-16R, NZ2GF2S2-16S, NZ2GN2S1-16T, NZ2GN2S1- 16TE, NZ2GN2S1-32T, NZ2GN2S1-32TE NZ2GN12A2-16T, NZ2GN12A2- 16TE |
| | | | Basic digital I/O combined module NZ2GF2B1-32DT, NZ2GF2B1- 32DTE, NZ2GN2B1-32DT, NZ2GN2B1-32DTE NZ2GFCE3N-32DT, NZ2GNCE3- 32DT NZ2GFCF1-32DT |
| | | | NZ2GN2S1-32DT, NZ2GN2S1- 32DTE NZ2GN12A42-16DT, NZ2GN12A42-16DTE Basic analog input module NZ2GF2BN-60AD4 NZ2GFCE-60ADV8 |
| | | | NZ2GFCE-60ADI8 NZ2GN2B-60AD4, NZ2GN2S- 60AD4 Basic analog output module NZ2GF2BN-60DA4 |
| | | | NZ2GFCE-60DAV8 NZ2GFCE-60DAl8 NZ2GN2B-60DA4, NZ2GN2S-60DA4 Basic multiple input (voltage/ |
| | | | NZ2GFCF-D62PD2 |

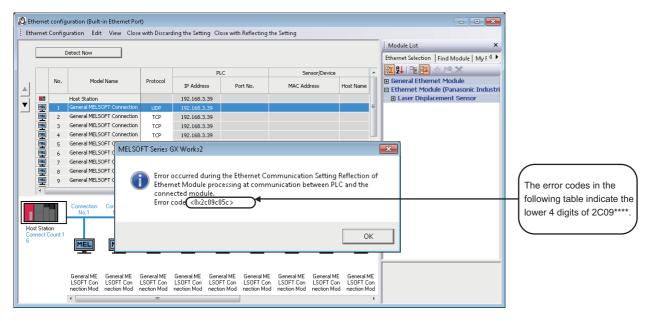
403

| Error code | Error and cause | Corrective action | Type/model name |
|------------|---|--|--|
| BAD4H | Data backup was performed in the state of being unable to create backup data of module. | Non-volatile memory data (parameter) error occurred. Retry data backup after removing the error. | Basic digital input module NZ2GF2B1-16D, NZ2GF2B1N-16D, NZ2GF2B1N-16D, NZ2GF2B2-16A, NZ2GFCE3-16D, NZ2GFCE3-16DE, NZ2GFCE3-16DE, NZ2GFCE3-16DE, NZ2GFCE3-16DE, NZ2GFCE1-32D NZ2GFCM1-16D, NZ2GFCM1-16DE NZ2GFCB1-32D NZ2GFCB1-32D NZ2GF2B1-16T, NZ2GF2B1-16T, NZ2GF2B1N-16TE, NZ2GF2B1N-16TE, NZ2GF2B1N1-16T^{*1}, NZ2GF2B1N1-16TE^{*1}, NZ2GF2B1N1-16TE^{*1}, NZ2GF2B1-32TE NZ2GFCE3-16T, NZ2GF2B2-16S, NZ2GF2B1-32TE NZ2GFCE3-16T, NZ2GF2B1-32TE NZ2GFCE3-16T, NZ2GFCE3-16TE, NZ2GFCE3-16TE, NZ2GFCE3N-32T NZ2GFCM1-16T, NZ2GF2S2-16S Basic digital I/O combined module NZ2GF2B1-32DT, NZ2GF2B1-32DTE NZ2GFCE1-32DT NZ2GFCE3N-32DT NZ2GFCE1-32DT Basic analog input module NZ2GF2BN-60AD4 NZ2GFCE-60AD18 NZ2GFCE-60DAV8 NZ2GFCE-60DAV8 NZ2GFCE-60DA4 |
| BAD5H | An attempt was made to restore data to a remote I/O module when the automatic I/O parameter setting is enabled. | Data cannot be restored to a remote I/O module when the automatic I/O parameter setting is enabled. Disable the automatic I/O parameter setting for the restoration target remote I/O module. | NZ2GFCH + 5021 B2 Basic digital input module NZ2GF2B1N1-16D, NZ2GFCF1- 32D Basic digital output module NZ2GF2B1N1-16T, NZ2GF2B1N1-16TE, NZ2GFCF1- 32T Basic digital I/O combined module NZ2GFCF1-32DT |
| BAD6H | Data backup or restoration was performed to a remote analog module when the input range switch enable/disable setting or the output range switch enable/ disable setting is enabled. | Data of the remote analog module cannot be backed up or restored when the setting is enabled. Disable the setting for the backup or restoration target remote analog module. | Basic analog input module NZ2GN2B-60AD4, NZ2GN2S- 60AD4 Basic analog output module NZ2GN2B-60DA4, NZ2GN2S- 60DA4 |

*1 The error code '4807H' is stored to SD1452 if data is backed up and restored with any of the following combinations of modules. •Data backup for NZ2GF2B1N1-16D, and data restoration for NZ2GF2B1-16D or NZ2GF2B1N-16D •Data backup for NZ2GF2B1N1-16T, and data restoration for NZ2GF2B1-16T or NZ2GF2B1N-16T •Data backup for NZ2GF2B1N1-16TE, and data restoration for NZ2GF2B1-16TE or NZ2GF2B1N-16TE

Ethernet (Error codes that occur on communication)

The following table shows the error codes displayed in the "Ethernet Configuration" window of an engineering tool. Error code is displayed when the communication error or iQ Sensor Solution related error occurred. (SP Page 401 iQ Sensor Solution-related errors)



| Error code Error and cause | | Corrective action | | |
|----------------------------|--|--|--|--|
| C055H to C056H | System error | Check the considerations for the performed function. Check the operating status and connection status of the devices supporting iQSS. Check the connection of Ethernet cable and a hub. Check the Ethernet line status. Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| C059H | The function which is not supported by the device supporting iQSS was performed. | Check if the function is supported by the connected device supporting iQSS. | | |
| C05CH | The setting value of the communication setting is out of the range. The items of communication setting which cannot be set on the target device supporting iQSS were set. The required setting items have not been set to the target device supporting iQSS. | Review the settings and retry. | | |
| C061H | System error | Check the considerations for the performed function. Check the operating status and connection status of the devices supporting iQSS. Check the connection of Ethernet cable and a hub. Check the Ethernet line status. Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CEE0H | The devices supporting iQSS, which were detected by the other peripheral device or other iQ Sensor Solution function was performed while the automatic detection function of connected devices is processing. | After the automatic detection function of connected devices is completed, perform the other function. | | |

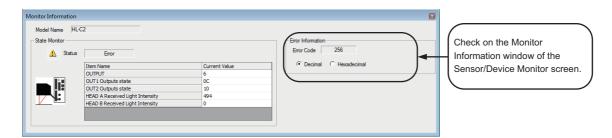
405

| Fror code Error and cause | | Corrective action | | |
|---------------------------|--|---|--|--|
| CEE1H to CEE2H | System error | Check the considerations for the performed function. Check the operating status and connection status of the devices | | |
| CF10H | System error | supporting iQSS. Check the connection of Ethernet cable and a hub. Check the Ethernet line status. Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting | | |
| | | iQSS. | | |
| CF20H | The setting value of the communication setting is out of the range. The items of communication setting which cannot be set on the target device supporting iQSS were set. The required setting items have not been set to the target device supporting iQSS. | Review the settings and retry. | | |
| CF30H | The parameter which is not supported by devices supporting iQSS was specified. | Check the version of devices supporting iQSS. | | |
| CF31H | System error | Check the considerations for the performed function. Check the operating status and connection status of the devices supporting iQSS. Check the connection of Ethernet cable and a hub. Check the Ethernet line status. Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CF41H | The required information for monitoring could not be obtained from the devices supporting iQSS. | Check the operating status and connection status of the devices supporting iQSS. Reset the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CF50H | System error | Check the considerations for the performed function. Check the operating status and connection status of the devices supporting iQSS. Check the connection of Ethernet cable and a hub. Check the Ethernet line status. Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CF51H | The function could not be performed because the other peripheral devices are in process. | Retry after a while. | | |
| CF52H | The required information for monitoring could not be obtained from the devices supporting iQSS. | Check the operating status and connection status of the devices supporting iQSS. Reset the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CF53H to CF56H | System error | Check the considerations for the performed function. Check the operating status and connection status of the devices supporting iQSS. Check the connection of Ethernet cable and a hub. Check the Ethernet line status. Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CF60H to CF61H | At the data backup for the iQ Sensor Solution function (data backup/restoration), the process cannot be started. | Check the operating status and connection status of the devices supporting iQSS. | | |
| CF62H | At the data backup/restoration), the process cannot be started. At the data backup for the iQ Sensor Solution function (data backup/restoration), the process cannot be terminated. | Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |
| CF63H | At the data restoration for the iQ Sensor Solution function (data backup/restoration), the device supporting iQSS of the specified backup data and the one as data restoration target are not consistent. | Check the devices supporting iQSS (manufacturer, model name, version) of the specified backup data and the restoration target. | | |
| CF64H | At the data restoration for the iQ Sensor Solution function (data backup/restoration), the process cannot be started. | Check the operating status and connection status of the devices supporting iQSS. | | |
| CF65H | At the data restoration for the iQ Sensor Solution function (data backup/restoration), the process cannot be terminated. | • Reset the CPU module and the devices supporting iQSS and retry. If the problem persists, contact the manufacturer of the devices supporting iQSS. | | |

| Error code | Error and cause | Corrective action |
|------------|--|--|
| CF70H | An error occurred on the Ethernet communication route. | Check the operation of the devices supporting iQSS.Check that the cable is connected. |
| CF71H | Timeout error | Check the considerations for the performed function. Check the operation of the devices supporting iQSS. The line may be busy due to too many packets. Perform the function after a while. |

Ethernet (Error codes of devices supporting iQSS)

An error code of a device supporting iQSS is displayed in the "Monitor Information" window of an engineering tool. For details on the error, refer to the manuals of each device supporting iQSS.



Cognex Corporation

| Error code | Error and cause | Corrective action | Type/model name | |
|------------|--|--|--|--|
| 0001H | SLMP scanner is connecting. | Check the status of the SLMP scanner after wait several seconds and the connection is established. | COGNEX Vision SystemIn-Sight 5000 | |
| 0002H | SLMP scanner connection was rejected. | Check that the In-Sight camera is connected over the same port number that the CPU module is accepting connections. | In-Sight 7000 In-Sight EZ-100 In-Sight EZ-200 | |
| 0003H | SLMP scanning failed. | Check that the network setting and configuration are correct.Check that the connection between devices is not disconnected. | In-Sight EZ-700 In-Sight Micro | |
| 0004H | The setting time of polling interval is too short. | Set the available time to the polling interval of the In-Sight camera. | | |

Appendix 6 Special Relay (SM)/Special Register (SD)

For special relays (SM)/special registers (SD) used for the data backup/restoration function, refer to the manual of the CPU module used.

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

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

MELSEC iQ-R CPU Module User's Manual (Application)

409

Appendix 7 Event List

A CPU module collects information, such as errors detected by the module; operations performed for the module; and errors occurred on the network, from modules, and stores the collected data into the data memory or an SD memory card. For details and settings on the event function, refer to the following manual.

MELSEC iQ-R CPU Module User's Manual (Application)

When an event occurs, its event code and details of the event can be read by using an engineering tool.

Point P

For details on the events occurred in each module, refer to the manuals for the respective modules.

Viewing an event history

The event history can be viewed by the menu operation of an engineering tool. For details on the operation procedures, refer to the following manual.

GX Works3 Operating Manual

Window

- 1. Select [Diagnostics] ⇒ [Module Diagnostics (CPU Diagnostics)].
- 2. Click the [Event History] button in the "Module Diagnostics" screen or "System Monitor" screen.

How to read the event list

The event list contains the following information.

| Item | Description |
|-----------------------------|--|
| Event code | Indicates an ID number assigned to an event. |
| Event type | Indicates the type of an event. |
| Event category | Indicates the category of an event. |
| Detected event | Indicates the description of a detected event. |
| Detailed information 1 to 2 | Indicates the detail of the detected event. |

Detailed information

The following shows the description of the information in the detailed information 1 to 2.

| Detailed information | Item | Description |
|------------------------|---|---|
| Detailed information 1 | Operation source information | The following information related to the operation source is displayed. Connection port (connection information such as Ethernet and USB) Start I/O number CPU number (PLC number in a multiple CPU system) Network number Station number IP address User name (when the user authentication function is enabled) |
| | Event history file information | Displays information related to the event history file. |
| | Data backup/restoration information of iQ Sensor Solution | Displays the information on iQ Sensor Solution backup/restoration (operation, target device, execution unit, target module, folder number setting, total number of executions, number of successful executions, number of executions completed with an error, target folder number). |
| | Information on the execution status of the data backup/restoration function of iQ Sensor Solution | Displays the information on the execution status (result, error category, error code) of iQ Sensor Solution backup/restoration. |
| | Information on the right to use the data backup/ restoration function of iQ Sensor Solution | Displays the information on the right to use (right-to-use number, operation) for iQ Sensor Solution backup/restoration. |
| Detailed information 2 | Target device information of the data backup/ restoration function of iQ Sensor Solution | Displays the information on the target device (station number, station sub-ID number, ID number) for iQ Sensor Solution backup/restoration. |

Event list

| Event | Event | Event | Detected event | Description | Detailed information | |
|-----------|-----------|----------|---|--|--|--|
| code type | type | category | | | Detailed information 1 | Detailed information 2 |
| 20600 | Operation | Info | iQ Sensor Solution data backup succeeded | iQ Sensor Solution data backup succeeded. | Information on the execution status of | Target device information of the |
| 20601 | | | iQ Sensor Solution data backup failed | iQ Sensor Solution data backup failed. | the data backup/ restoration function of iQ Sensor | data backup/ restoration function of iQ Sensor |
| 20602 | | | iQ Sensor Solution data restoration succeeded | iQ Sensor Solution data restoration succeeded. | Solution | Solution |
| 20603 | | | iQ Sensor Solution data restoration failed | iQ Sensor Solution data restoration failed. | | |
| 20610 | | | iQ Sensor Solution data backup start/cancel/end | iQ Sensor Solution data backup was started/ canceled/ended. | Data backup/ restoration | — |
| 20611 | | | iQ Sensor Solution data restoration start/cancel/ end | iQ Sensor Solution data restoration was started/canceled/ended. | information of iQ Sensor Solution | |
| 20620 | | | Right-to-use acquisition/release | The right to use for iQ Sensor Solution backup/restoration was acquired or released. | Information on the right to use the data backup/restoration function of iQ Sensor Solution | |

The following shows the lists of events related to a CPU module.

A

Appendix 8 Backup File Capacity

The approximate file size for one file created by the data backup function can be calculated using the formula shown in the following table.

The capacity of a file created at data backup differs depending on the devices supporting iQSS connected.

Backup data file (.QBR)

The file capacity of a backup data file (.QBR) differs depending on the devices supporting iQSS connected. For details on the file capacity of a backup data file (.QBR), consult the manufacturer of devices supporting iQSS.

System file for a data backup or restoration (.QSI, .BSI)

The length of the file name that can be named on a backup data file differs depending on the devices supporting iQSS connected.

For details on the length of the backup data file name, consult the manufacturer of devices supporting iQSS.

MELSEC-L series/MELSEC-Q series

| Connection method | Capacity | |
|--|---|--|
| AnyWireASLINK/CC-Link/CC-Link IE Field Network | 72 + 20 \times N bytes (N: Number of devices supporting iQSS whose data backup process has been completed normally) | |
| Ethernet | 88 + M bytes (M: Length of the file name of backup data) | |

MELSEC iQ-R series

| Connection method | Capacity |
|--|---|
| AnyWireASLINK/CC-Link/CC-Link IE Field Network | 36 + 20 \times N bytes (N: Number of devices supporting iQSS whose data backup process has been completed normally) |
| Ethernet | 52 + M bytes (M: Length of the file name of backup data)*1 |

*1 The total size is adjusted to be a multiple of 4 bytes.

MELSEC iQ-L series

| Connection method | Capacity |
|-------------------|---|
| CC-Link | 36 + 20 \times N bytes (N: Number of devices supporting iQSS whose data backup process has been completed normally) |
| Ethernet | 52 + M bytes (M: Length of the file name of backup data)*1 |

*1 The total size is adjusted to be a multiple of 4 bytes.

INDEX

| Α |
|--|
| Automatic detection of connected devices 15 |
| В |
| Backup file capacity 412 Backup folder/file 412 |
| C |
| Command execution to slave stations |
| E |
| Easy startup |
| L |
| Link refresh setting |
| P |
| Profile registration |
| R |
| Read Model Name of Slave Station.57Reflection of the communication setting.16Requiring a data backup cancellation43,85,129,166Requiring a data restoration cancellation51,97,140,174 |
| S |
| Sensor parameter read/write |
| V |

| Verification of connected devices and | |
|---------------------------------------|----|
| configurations | 15 |

REVISIONS

| Revision date | *Manual number | Description |
|----------------|--------------------|--|
| March 2013 | SH(NA)-081133ENG-A | Due to the transition to the e-Manual, the details of revision have been deleted. |
| to | to | |
| April 2014 | SH(NA)-081133ENG-E | |
| March 2015 | SH(NA)-081133ENG-F | Complete revision (layout change) |
| June 2015 | SH(NA)-081133ENG-G | Added or modified parts TERMS, Section 5.5, Appendix 2, Appendix 3, Appendix 4, Appendix 5 |
| August 2015 | SH(NA)-081133ENG-H | Added or modified parts Section 6.2, Appendix 2, Appendix 4, Appendix 5 |
| December 2015 | SH(NA)-081133ENG-I | ■Added or modified parts Appendix 2, Appendix 4, Appendix 5 |
| September 2016 | SH(NA)-081133ENG-J | Added or modified parts TERMS, Section 2.1, Section 3.5, Section 4.5, Section 5.5, Section 6.2, Section 6.5, Appendix 2, Appendix 3, Appendix 4, Appendix 5, Appendix 6 |
| November 2016 | SH(NA)-081133ENG-K | Added or modified parts TERMS, Section 1.2, Section 2.1, Section 2.2, Section 3.1, Section 3.2, Section 3.4, Section 4.1, Section 5.1, Section 5.2, Chapter 7, Chapter 8, Chapter 9, Appendix 1, Appendix 2, Appendix 3, Appendix 5, Appendix 6, Appendix 7, Appendix 8 |
| January 2017 | SH(NA)-081133ENG-L | ■Added or modified parts Section 9.4, Appendix 2, Appendix 5 |
| May 2017 | SH(NA)-081133ENG-M | Added or modified parts Section 2.2, Section 8.2, Section 8.3, Section 9.1, Appendix 2, Appendix 3 |
| July 2017 | SH(NA)-081133ENG-N | ■Added or modified parts Section 7.3, Section 8.4, Section 9.4 |
| October 2017 | SH(NA)-081133ENG-O | Added or modified parts Section 2.2, Section 7.3, Section 7.4, Section 8.4, Appendix 2, Appendix 3, Appendix 4, Appendix 5 Appendix 6 |
| April 2018 | SH(NA)-081133ENG-P | Added or modified parts TERMS, Section 2.1, Section 2.2, Chapter 8, Section 10.4, Section 10.5, Chapter 11, Chapter 12, Appendix 2, Appendix 3, Appendix 4, Appendix 6, Appendix 8 |
| June 2018 | SH(NA)-081133ENG-Q | Added or modified parts Section 2.2, Section 5.5, Appendix 2, Appendix 3 |
| December 2018 | SH(NA)-081133ENG-R | Added or modified parts SAFETY PRECAUTIONS, TERMS, Section 7.3, Section 7.4, Chapter 9, Appendix 2, Appendix 3, Appendix 4, Appendix 5 |
| April 2019 | SH(NA)-081133ENG-S | Added or modified parts Section 7.1, Section 7.3, Section 7.4, Appendix 2, Appendix 3 |
| August 2019 | SH(NA)-081133ENG-T | ■Added or modified parts Section 9.4, Appendix 2, Appendix 5 |
| October 2019 | SH(NA)-081133ENG-U | Added or modified parts TERMS, Section 2.2, Chapter 8, Section 9.1, Section 9.4, Chapter 10, Appendix 2, Appendix 3, Appendix 4, Appendix 5, Appendix 6, Appendix 8 |
| October 2020 | SH(NA)-081133ENG-V | Added or modified parts SAFETY PRECAUTIONS, CONDITIONS OF USE FOR THE PRODUCT, Section 2.2, Section 7.1, Section 7.2, Section 7.3, Section 7.4, Section 7.5, Section 8.1, Section 8.2, Section 8.3, Section 9.1 Section 9.2, Section 9.3, Appendix 2, Appendix 3, Appendix 4, Appendix 5 |
| May 2021 | SH(NA)-081133ENG-W | Added or modified parts TERMS, Chapter 1, Section 2.2, Chapter 3, Section 4.1, Section 5.1, Chapter 7, Section 8.1, Section 8.3, Chapter 9, Section 9.1, Section 9.2, Section 9.3, Section 10.1, Section 10.3, Appendix 2, Appendix 3 |
| October 2021 | SH(NA)-081133ENG-X | Added or modified parts Section 3.1, Section 3.3, Section 3.4, Section 4.1, Section 4.4, Section 5.1, Section 5.4, Section 7.1 Section 7.3, Section 7.4, Section 8.1, Section 8.2, Section 8.4, Section 9.1, Section 9.3, Section 10.1, Section 10.2, Section 10.4, Appendix 2, Appendix 3, Appendix 4, Appendix 5 |
| January 2022 | SH(NA)-081133ENG-Y | ■Added or modified parts Chapter 7, Appendix 2, Appendix 3 |
| May 2022 | SH(NA)-081133ENG-Z | Added or modified parts Section 3.1, Section 3.4, Section 4.1, Section 4.4, Section 5.1, Section 5.4, Section 7.1, Section 7.4 Section 8.1, Section 8.4, Section 9.1, Section 9.3, Section 10.1, Section 10.3, Section 10.4 |

| Revision date | *Manual number | Description |
|---------------|---------------------|---|
| October 2022 | SH(NA)-081133ENG-AA | Added or modified parts SAFETY PRECAUTIONS, Section 3.1, Section 3.3, Section 3.4, Section 4.1, Section 4.2, Section 4.3, Section 4.4, Section 5.1, Section 5.2, Section 5.3, Section 5.4, Section 6.3, Section 6.4, Section 7.1, Section 8.1, Section 8.2, Section 8.3, Section 8.4, Section 9.1, Section 9.3, Section 10.1, Section 10.3, Section 10.4, Section 11.3, Section 11.4, Appendix 2, Appendix 3 |
| April 2023 | SH(NA)-081133ENG-AB | Added or modified parts Section 3.1, Section 4.1, Section 5.1, Section 6.1, Section 7.1, Section 8.1, Section 9.1, Chapter 10, Section 10.1, Section 11.1, Section 12.1, Section 13.1, Appendix 2, Appendix 3 |
| November 2023 | SH(NA)-081133ENG-AC | Added or modified parts Chapter 3, Chapter 4, Section 4.1, Chapter 5, Chapter 6, Chapter 7, Chapter 8, Chapter 9, Section 9.1, Section 9.2, Chapter 10, Chapter 11, Appendix 2, Appendix 3, Appendix 5, Appendix 8 |
| April 2024 | SH(NA)-081133ENG-AD | ■Added or modified parts Appendix 3 |

Japanese manual number: SH-081132-AE

This manual confers no industrial property rights or any rights of any other kind, nor does it confer any patent licenses. Mitsubishi Electric Corporation cannot be held responsible for any problems involving industrial property rights which may occur as a result of using the contents noted in this manual.

© 2013 MITSUBISHI ELECTRIC CORPORATION

INFORMATION AND SERVICES

For further information and services, please contact your local Mitsubishi Electric sales office or representative. Visit our website to find our locations worldwide.

MITSUBISHI ELECTRIC Factory Automation Global Website Locations Worldwide www.MitsubishiElectric.com/fa/about-us/overseas/

TRADEMARKS

Anywire and AnyWireASLINK are either registered trademarks or trademarks of Anywire Corporation.

The company names, system names and product names mentioned in this manual are either registered trademarks or trademarks of their respective companies.

In some cases, trademark symbols such as '[™]' or '[®]' are not specified in this manual.

SH(NA)-081133ENG-AD(2404)KWIX MODEL: IQSS-R-E MODEL CODE: 13JV28

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN NAGOYA WORKS: 1-14, YADA-MINAMI 5-CHOME, HIGASHI-KU, NAGOYA 461-8670, JAPAN

When exported from Japan, this manual does not require application to the Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.