

Programmable Controller

MELSEC iQ-R
series

MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application)



- RJ71EN71
- RJ71GP21-SX
- RJ71GP21S-SX
- R04ENCPU
- R08ENCPU
- R16ENCPU
- R32ENCPU
- R120ENCPU



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 of the programmable controller system, refer to the MELSEC iQ-R Module Configuration Manual.

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

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

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

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

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

[Design Precautions]

WARNING

- 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 "General Safety Requirements" in 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 overcurrent caused by a load short-circuit flows for a long time, it may cause smoke and fire. To prevent this, configure an external safety circuit, such as a fuse.
 - 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.
 - For the operating status of each station after a communication failure, refer to manuals relevant to the network. 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.
-

[Design Precautions]

WARNING

- 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.
- 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. Failure to do so may result in an accident due to an incorrect output or malfunction.

[Precautions for using CC-Link IE Controller Network (when optical fiber cables are used)]

- The optical transmitter and receiver of the CC-Link IE Controller Network module use laser diodes (class 1 in accordance with IEC 60825-1: 2014/JIS C 6802: 2014). Do not look directly at a laser beam. Doing so may harm your eyes. Also, do not handle the product in ways other than those described in this manual, or do not disassemble or modify the product.
-

[Design Precautions]

CAUTION

- 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 undefined. The values need to be set in the buffer memory and written to the flash ROM 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 in Program" for "Open Method Setting" of "Module Parameter". If "OPEN in 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.
-

[Security Precautions]

WARNING

- 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.
-

[Installation Precautions]

WARNING

- Shut off the external power supply (all phases) used in the system before mounting or removing the module. Failure to do so may result in electric shock or cause the module to fail or malfunction.
-

[Installation Precautions]

CAUTION

- Use the programmable controller in an environment that meets the general specifications in the Safety Guidelines (IB-0800525). Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
 - To mount a module, place the concave part(s) located at the bottom onto the guide(s) of the base unit, and push in the module until the hook(s) located at the top snaps into place. Incorrect interconnection may cause malfunction, failure, or drop of the module.
 - When using the programmable controller in an environment of frequent vibrations, fix the module with a screw.
 - Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
 - When using an extension cable, connect it to the extension cable connector of the base unit securely. Check the connection for looseness. Poor contact may cause malfunction.
 - When using an SD memory card, fully insert it into the SD memory card slot. Check that it is inserted completely. Poor contact may cause malfunction.
 - Securely insert an extended SRAM cassette or a battery-less option cassette into the cassette connector of the CPU module. After insertion, close the cassette cover and check that the cassette is inserted completely. Poor contact may cause malfunction.
 - Do not directly touch any conductive parts and electronic components of the module, SD memory card, extended SRAM cassette, battery-less option cassette, or connector. Doing so can cause malfunction or failure of the module.
-

[Wiring Precautions]

WARNING

- Shut off the external power supply (all phases) used in the system before installation and wiring. Failure to do so may result in electric shock or cause the module to fail or malfunction.
- After installation and wiring, attach a blank cover module (RG60) to each empty slot before powering on the system for operation. Also, attach an extension connector protective cover^{*1} to each unused extension cable connector as necessary. Directly touching any conductive parts of the connectors while power is on may result in electric shock.

^{*1} For details, please consult your local Mitsubishi Electric representative.

[Wiring Precautions]

CAUTION

- Individually ground the FG and LG terminals of the programmable controller with a ground resistance of 100 ohms or less. Failure to do so may result in electric shock or malfunction.
- Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Check the rated voltage and signal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause fire or failure.
- Connectors for external devices must be crimped or pressed with the tool specified by the manufacturer, or must be correctly soldered. Incomplete connections may cause short circuit, fire, or malfunction.
- Securely connect the connector to the module. Poor contact may cause malfunction.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm or more between them. Failure to do so may result in malfunction due to noise.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact. Do not clamp the extension cables with the jacket stripped. Doing so may change the characteristics of the cables, resulting in malfunction.
- Check the interface type and correctly connect the cable. Incorrect wiring (connecting the cable to an incorrect interface) may cause failure of the module and external device.
- Tighten the terminal screws or connector screws within the specified torque range. Undertightening can cause drop of the screw, short circuit, fire, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, fire, or malfunction.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable. For the cable connected to the terminal block, loosen the terminal screw. Pulling the cable connected to the module may result in malfunction or damage to the module or cable.
- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- When a protective film is attached to the top of the module, remove it before system operation. If not, inadequate heat dissipation of the module may cause a fire, failure, or malfunction.
- Programmable controllers must be installed in control panels. Connect the main power supply to the power supply module in the control panel through a relay terminal block. Wiring and replacement of a power supply module must be performed by qualified maintenance personnel with knowledge of protection against electric shock. For wiring, refer to the MELSEC iQ-R Module Configuration Manual.
- For Ethernet cables to be used in the system, select the ones that meet the specifications in the user's manual for the module used. If not, normal data transmission is not guaranteed.

[Precautions for using CC-Link IE Controller Network (when optical fiber cables are used)]

- For optical fiber cables to be used in the system, select the ones that meet the specifications in the MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup). If not, normal data transmission is not guaranteed.
-

[Startup and Maintenance Precautions]

WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
 - Correctly connect the battery connector. Do not charge, disassemble, heat, short-circuit, solder, or throw the battery into the fire. Also, do not expose it to liquid or strong shock. Doing so will cause the battery to produce heat, explode, ignite, or leak, resulting in injury and fire.
 - Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal screws, connector screws, or module fixing screws. Failure to do so may result in electric shock.
-

[Startup and Maintenance Precautions]

CAUTION

- 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.
 - 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 disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
 - Use any radio communication device such as a cellular phone or PHS (Personal Handy-phone System) 25cm or more away in all directions from the programmable controller. Failure to do so may cause malfunction.
 - Shut off the external power supply (all phases) used in the system before mounting or removing the module. Failure to do so may cause the module to fail or malfunction.
 - Tighten the screws within the specified torque range. Undertightening can cause drop of the component or wire, short circuit, or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
 - After the first use of the product, do not perform each of the following operations more than 50 times (IEC 61131-2/JIS B 3502 compliant).
Exceeding the limit may cause malfunction.
 - Mounting/removing the module to/from the base unit
 - Inserting/removing the extended SRAM cassette or battery-less option cassette to/from the CPU module
 - Mounting/removing the terminal block to/from the module
 - After the first use of the product, do not insert/remove the SD memory card to/from the CPU module more than 500 times. Exceeding the limit may cause malfunction.
 - Do not touch the metal terminals on the back side of the SD memory card. Doing so may cause malfunction or failure of the module.
 - Do not touch the integrated circuits on the circuit board of an extended SRAM cassette or a battery-less option cassette. Doing so may cause malfunction or failure of the module.
 - Do not drop or apply shock to the battery to be installed in the module. Doing so may damage the battery, causing the battery fluid to leak inside the battery. If the battery is dropped or any shock is applied to it, dispose of it without using.
-

[Startup and Maintenance Precautions]

CAUTION

- Startup and maintenance of a control panel must be performed by qualified maintenance personnel with knowledge of protection against electric shock. Lock the control panel so that only qualified maintenance personnel can operate it.
 - Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Wearing a grounded antistatic wrist strap is recommended. Failure to discharge the static electricity may cause the module to fail or malfunction.
-

[Operating Precautions]

CAUTION

- When changing data and operating status, and modifying program of the running programmable controller from an external device such as a personal computer connected to an intelligent function module, read relevant manuals carefully and ensure the safety before operation. Incorrect change or modification may cause system malfunction, damage to the machines, or accidents.
 - Do not power off the programmable controller or reset the CPU module while the setting values in the buffer memory are being written to the flash ROM in the module. Doing so will make the data in the flash ROM undefined. The values need to be set in the buffer memory and written to the flash ROM again. Doing so also can cause malfunction or failure of the module.
-

[Disposal Precautions]

CAUTION

- When disposing of this product, treat it as industrial waste.
 - When disposing of batteries, separate them from other wastes according to the local regulations. For details on battery regulations in EU member states, refer to the MELSEC iQ-R Module Configuration Manual.
-

[Transportation Precautions]

CAUTION

- When transporting lithium batteries, follow the transportation regulations. For details on the regulated models, refer to the MELSEC iQ-R Module Configuration Manual.
 - The halogens (such as fluorine, chlorine, bromine, and iodine), which are contained in a fumigant used for disinfection and pest control of wood packaging materials, may cause failure of the product. Prevent the entry of fumigant residues into the product or consider other methods (such as heat treatment) instead of fumigation. The disinfection and pest control measures must be applied to unprocessed raw wood.
-

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 Mitsubishi Electric MELSEC iQ-R series programmable controllers.

This manual describes the functions and troubleshooting of the relevant product listed below.

Before using this product, please read this manual and the relevant manuals carefully and develop familiarity with the functions and performance of the MELSEC iQ-R series programmable controller 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.

Relevant products

RJ71GP21-SX, RJ71GP21S-SX, RJ71EN71, RnENCPU

Point

Unless otherwise specified, the buffer memory addresses in this manual are for when using the following:

- RJ71GP21(S)-SX
- RJ71EN71 and RnENCPU in which "Port 1 Network Type" is set to "CC-Link IE Control"

For the RJ71EN71 and RnENCPU, add the following value to the buffer memory addresses when setting "Port 1 Network Type" to "Ethernet" and "Port 2 Network Type" to "CC-Link IE Control".

- Address (decimal): 2000000
 - Address (hexadecimal): 1E8480H
-

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RELEVANT MANUALS

The following manuals are relevant to this product.

| Manual name [manual number] | Description |
|---|---|
| MELSEC iQ-R CC-Link IE Controller Network User's Manual (Application) [SH-081258ENG] (this manual) | Functions, parameter settings, troubleshooting, and buffer memory of CC-Link IE Controller Network |
| MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup) [SH-081256ENG] | Specifications, procedures before operation, system configuration, wiring, and communication examples of Ethernet, CC-Link IE Controller Network, and CC-Link IE Field Network |
| MELSEC iQ-R Module Configuration Manual [SH-081262ENG] | The combination of the MELSEC iQ-R series modules, common information on the installation/wiring in the system, and specifications of the power supply module, base unit, SD memory card, and battery |
| MELSEC iQ-R Programming Manual (Module Dedicated Instructions) [SH-081976ENG] | Dedicated instructions for the intelligent function modules |

TERMS

Unless otherwise specified, this manual uses the following terms.

| Term | Description |
|--|---|
| Baton pass | A control mechanism in which transmission right (token) is passed around the network for data transmission. |
| Buffer memory | Memory in an intelligent function module to store data such as setting values and monitor values. For CPU modules, it refers to memory to store data such as setting values and monitor values of the Ethernet function, or data used for data communication of the multiple CPU system function. |
| Control CPU | A CPU module that controls connected I/O modules and intelligent function modules. In a multiple CPU system, a control CPU can be set for each module. |
| Control station | Only one station that controls the network to which it is connected. Each station's send range for cyclic transmission is assigned to the control station. |
| Control system | A system that controls a redundant system and performs network communications in a redundant system |
| CPU module (built-in Ethernet port part) | A built-in Ethernet port part of a CPU module (CPU part for the RnENCPU) (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Cyclic transmission | A function by which data are periodically exchanged among stations on the same network using link devices (RX, RY, RWw, and RWr) |
| Dedicated instruction | An instruction that simplifies programming for using functions of intelligent function modules |
| Device | A memory of a CPU module to store data. Devices such as X, Y, M, D, and others are provided depending on the intended use. |
| Engineering tool | A tool used for setting up programmable controllers, programming, debugging, and maintenance. |
| Global label | A label that is valid for all the program data when multiple program data are created in the project. There are two types of global label: a module specific label (module label), which is generated automatically by GX Works3, and an optional label, which can be created for any specified device. |
| I/O master station | A station that controls communications by the link devices (LX, LY). Up to two I/O master stations can be set for one network (block 1 and block 2), regardless of the status of control or normal station. |
| Intelligent function module | A module that has functions other than an input or output, such as an A/D converter module and D/A converter module |
| Link device | A device (LB, LW, LX, LY, SB, or SW) in a module on CC-Link IE Controller Network. |
| Link refresh | Automatic data transfer between a link device (LB, LW, LX, LY, SB, or SW) of the CC-Link IE Controller Network-equipped module and a device in a CPU module, or a link device (SB or SW) of the CC-Link IE Controller Network-equipped module and a module label in a CPU module. Link refresh is performed in the END processing of the CPU module's sequence scan. |
| Link scan (link scan time) | Time required for all the stations on the network to transmit data. The link scan time depends on data volume and the number of transient transmission requests. |
| Module label | A label that represents one of memory areas (I/O signals and buffer memory areas) specific to each module in a given character string. For the module used, GX Works3 automatically generates this label, which can be used as a global label. |
| New control system | A system that has switched to control system from standby system after system switching |
| Normal station | A station that performs cyclic transmission and transient transmission with the control station and other normal stations |
| Process CPU (redundant mode) | A Process CPU operating in redundant mode. A redundant system is configured with this CPU module. Process control function blocks and the online module change function can be used even in this mode. |
| Redundant function module | A module to configure a redundant system by using it in combination with a process CPU (redundant mode). The redundant function module model name is R6RFM. |
| Redundant system | A system consisting of two systems that have same configuration (CPU module, power supply module, network module, and other modules). Even after an error occurs in one of the two system, the other system takes over the control of the entire system. |
| Relay station | A station that relays data link to other station with mounting more than one network modules on one programmable controller. |
| Reserved station | A station reserved for future use. This station is not actually connected, but counted as a connected station. |
| RnENCPU (CPU part) | A module on the left-hand side of the RnENCPU (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| RnENCPU (network part) | A module on the right-hand side of the RnENCPU (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Seamless communication | Communication that allows users to access a different kind of networks without having to consider the differences as if data were exchanged within one single network |
| Shared group number | Number that is assigned to a station to allow it to share cyclic data with any given stations. Cyclic data can be shared only with stations of the same group. |
| Standby system | A backup system in a redundant system |
| System A | A system that is set as system A to distinguish two systems in a redundant system. It is used to distinguish connected two systems (system A and system B). |

| Term | Description |
|-------------------------------------|--|
| System B | A system that is set as system B to distinguish two systems in a redundant system. It is used to distinguish connected two systems (system A and system B). |
| System switching | A function which switches the systems between the control system and the standby system to continue operation of the redundant system when a failure or an error occurs in the control system |
| Tracking cable | An optical fiber cable used to connect two redundant function modules in a redundant system |
| Transient transmission | A function of communication with another station, which is used when requested by a dedicated instruction or the engineering tool |
| Transient transmission group number | Number that is assigned for transient transmission to any given stations. By specifying a group of stations as transient transmission target, data can be sent to the stations of the same group No. |

GENERIC TERMS AND ABBREVIATIONS

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

| Generic term/abbreviation | Description |
|---|--|
| CC-Link IE Controller Network-equipped module | An abbreviation for the RJ71GP21-SX CC-Link IE Controller Network module, the RJ71GP21S-SX CC-Link IE Controller Network module, and the following modules when the CC-Link IE Controller Network function is used: <ul style="list-style-type: none"> • RJ71EN71 • RnENCPU |
| CC-Link IE Field Network-equipped master/local module | A generic term for the RJ71GF11-T2 CC-Link IE Field Network master/local module and the following modules when the CC-Link IE Field Network function is used: <ul style="list-style-type: none"> • RJ71EN71 • RnENCPU |
| CPU module | A generic term for the MELSEC iQ-R series CPU modules |
| Data link | A generic term for cyclic transmission and transient transmission |
| Ethernet device | A generic term for the devices supporting IP communication (such as personal computers) |
| Ethernet-equipped module | A generic term for the following modules when the Ethernet function is used: <ul style="list-style-type: none"> • RJ71EN71 • CPU module |
| I/O module | A generic term for the input module, output module, I/O combined module, and interrupt module |
| MELSECNET/10 | An abbreviation for the MELSECNET/10 network system |
| MELSECNET/H | An abbreviation for the MELSECNET/H network system |
| Network module | A generic term for the following modules: <ul style="list-style-type: none"> • Ethernet interface module • CC-Link IE Controller Network module • Module on CC-Link IE Field Network • MELSECNET/H network module • MELSECNET/10 network module • RnENCPU (network part) |
| Process CPU | A generic term for the R08PCPU, R16PCPU, R32PCPU, and R120PCPU |
| RAS | An abbreviation for Reliability, Availability, and Serviceability. This term refers to the overall usability of automated equipment. |
| READ | A generic term for the JP.READ and GP.READ |
| RECV | A generic term for the JP.RECV and GP.RECV |
| RECVS | A generic term for the G.RECVS and Z.RECVS |
| REQ | A generic term for the J.REQ, JP.REQ, G.REQ, and GP.REQ |
| RIRD | A generic term for the J.RIRD, JP.RIRD, G.RIRD, and GP.RIRD |
| RIWT | A generic term for the J.RIWT, JP.RIWT, G.RIWT, and GP.RIWT |
| RnENCPU | A generic term for the R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, and R120ENCPU |
| RRUN | A generic term for the J.RRUN, JP.RRUN, G.RRUN, GP.RRUN, Z.RRUN, and ZP.RRUN |
| RSTOP | A generic term for the J.RSTOP, JP.RSTOP, G.RSTOP, GP.RSTOP, Z.RSTOP, and ZP.RSTOP |
| RTMRD | A generic term for the J.RTMRD, JP.RTMRD, G.RTMRD, GP.RTMRD, Z.RTMRD, and ZP.RTMRD |
| RTMWR | A generic term for the J.RTMWR, JP.RTMWR, G.RTMWR, GP.RTMWR, Z.RTMWR, and ZP.RTMWR |
| SEND | A generic term for the JP.SEND and GP.SEND |
| SREAD | A generic term for the JP.SREAD and GP.SREAD |
| SWRITE | A generic term for the JP.SWRITE and GP.SWRITE |
| UINI | A generic term for the G.UINI, GP.UINI, Z.UINI, and ZP.UINI |
| WRITE | A generic term for the JP.WRITE and GP.WRITE |
| ZNRD | A generic term for the J.ZNRD and JP.ZNRD |
| ZNWR | A generic term for the J.ZNWR and JP.ZNWR |

1 FUNCTIONS

1

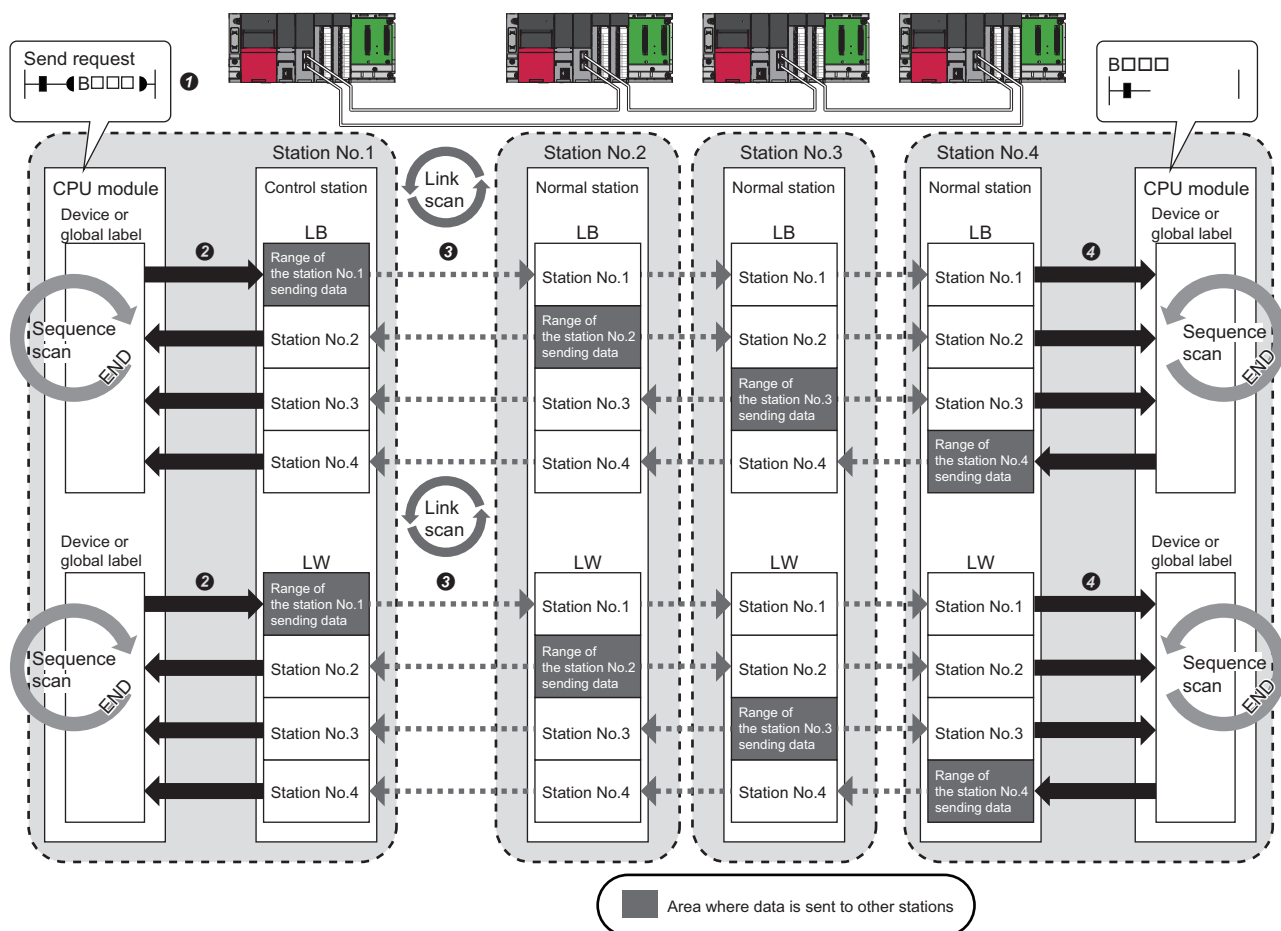
1.1 Cyclic Transmission

This function allows data to be periodically exchanged among stations on the same network using link devices.

Data flow and link device assignment

Communications using LB and LW

This function allows each station to write data to its own send range of a link device (LB, LW) to send them to all other stations on the network. The status data of the link devices (LB, LW) of the control station are stored in the link devices (LB, LW) of each normal station. The status data of the link devices (LB, LW) of normal stations are stored in the link devices (LB, LW) of the control station and the link devices (LB, LW) of other normal stations.



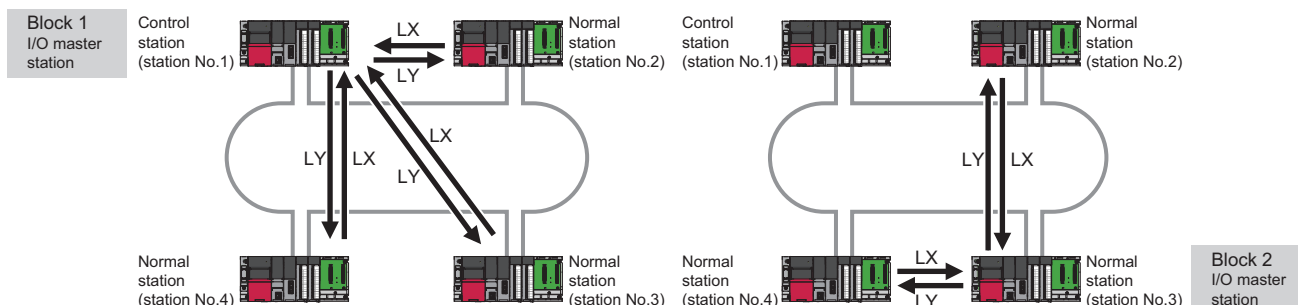
- 1** The device of the CPU module on sending side turns on.
- 2** The status data of the device of the CPU module on sending side are stored in the link devices (LB, LW) of the CC-Link IE Controller Network-equipped module by link refresh.
- 3** The status data of the link devices (LB, LW) are stored in the link devices (LB, LW) of the receiving-side CC-Link IE Controller Network-equipped module by link refresh.
- 4** The status data of the link devices (LB, LW) are stored in the devices of the CPU module on receiving side.

Communications using LX and LY

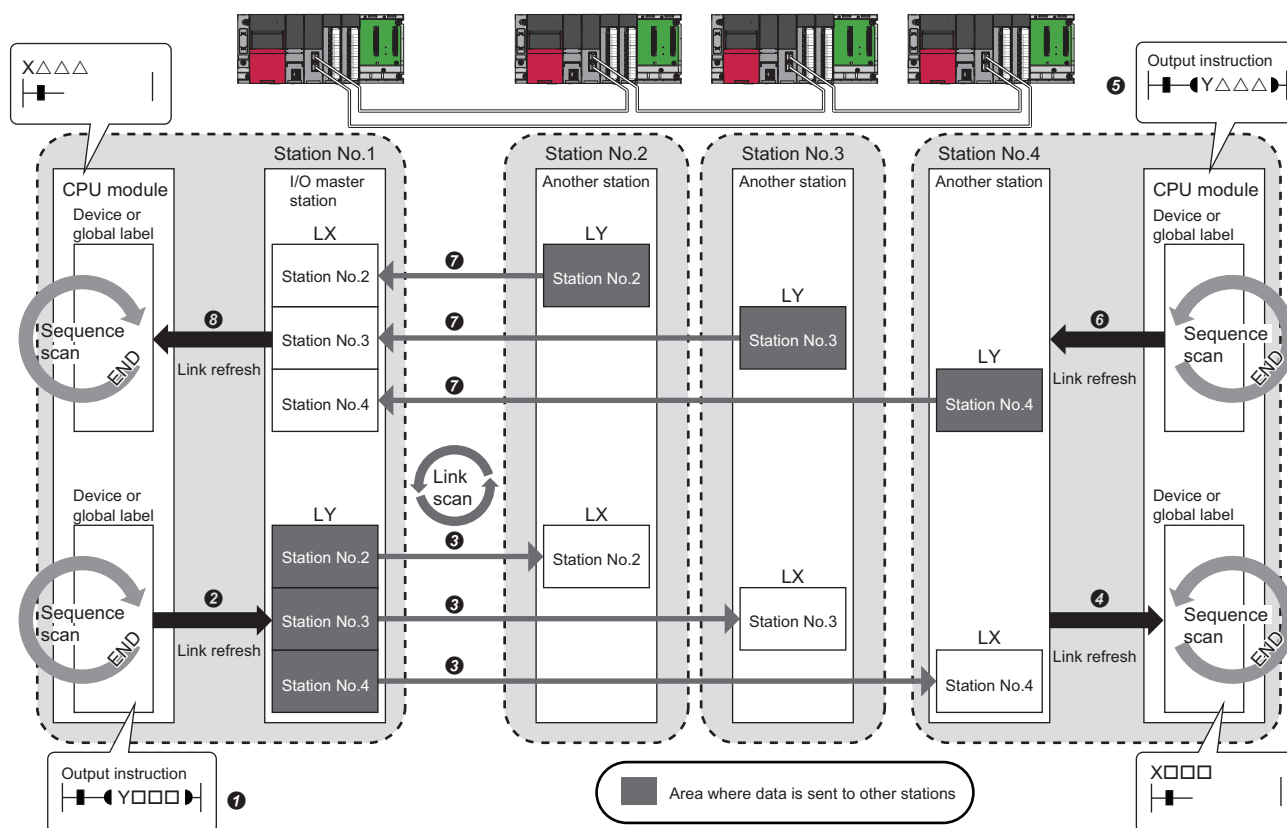
This function is used for communication between the I/O master station that controls LX and LY and another station on a one-to-one (1:1) basis.

Up to two I/O master stations can be set for one network (block 1 and block 2), regardless of the status of control or normal station.

The link input (LX) is used to receive the information input from each station in a block, and the link output (LY) is used to send the output information of the I/O master station.



The status data of the link output (LY) of the I/O master station is output to the link input (LX) of another station, and the status data of the link output (LY) of another station is stored in the link input (LX) of the I/O master station.



• Output from the I/O master station

- ① The device of the CPU module turns on.
- ② The status data of the device of the CPU module are stored in the link output (LY) of the I/O master station by link refresh.
- ③ The status data of the link output (LY) of the I/O master station are stored in the link input (LX) of another station by link scan.
- ④ The status data of the link input (LX) of another station are stored in the device of the CPU module by link refresh.

• Input from another station

- ⑤ The device of the CPU module turns on.
- ⑥ The status data of the device of the CPU module are stored in the link output (LY) of another station by link refresh.
- ⑦ The status data of the link output (LY) of another station are stored in the link input (LX) of the I/O master station by link scan.
- ⑧ The status data of the link input (LX) of the I/O master station are stored in the device of the CPU module by link refresh.

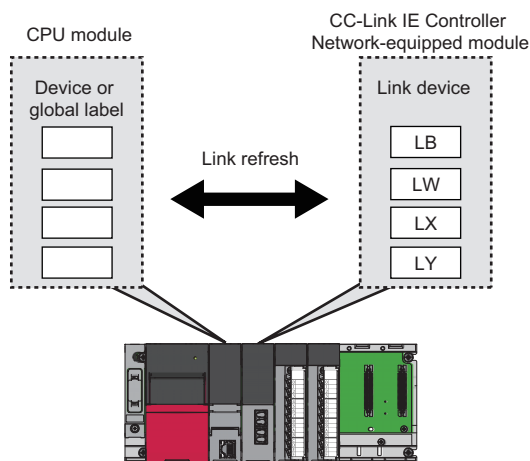
Setting method

Assign the link devices under "Network Range Assignment" in "Required Settings". (☞ Page 76 Network Range Assignment)

The link refresh is assigned under "Refresh Setting" in "Basic Settings". (☞ Page 84 Refresh Setting)

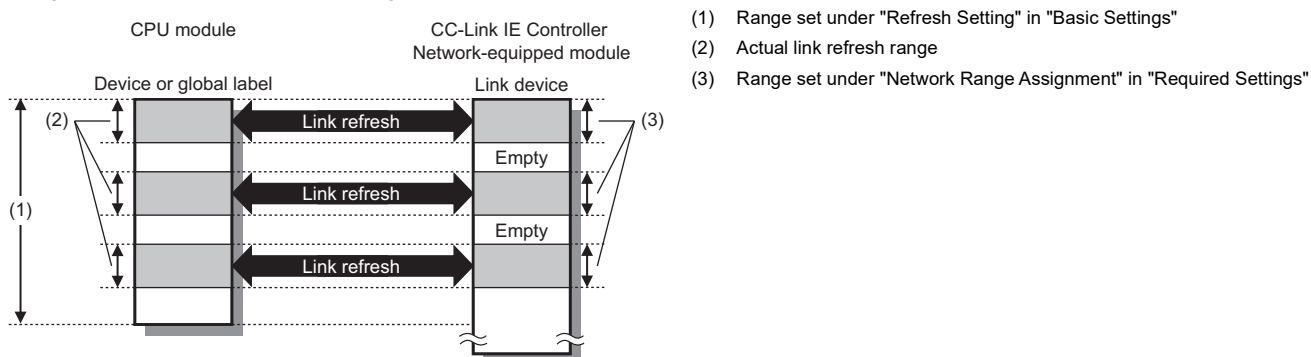
Link refresh

This function automatically transfers data between the link devices of the CC-Link IE Controller Network-equipped module and the devices of the CPU module.



Concept of the link refresh range (number of points)

The link refresh is performed to the area set in "Refresh Setting" under "Basic Settings" and also set in "Network Range Assignment" under "Required Settings".



Shortening the link refresh time and transmission delay time

The link refresh time and transmission delay time can be shortened by reducing the number of link refresh points to the CPU module. The following methods can be used to reduce the number of the link refresh points.

- In "Refresh Setting" under "Basic Settings", set only the link devices used in the CPU module as the link refresh range. (☞ Page 84 Refresh Setting)
- Directly access infrequently used link devices from the program, and remove the corresponding settings from the link refresh range. (☞ Page 23 Direct access to link devices)

Setting method

Assign the link refresh under "Refresh Setting" in "Basic Settings". (☞ Page 84 Refresh Setting)


Precautions

■ Latched devices of the CPU module

If data in latched devices of the CPU module are cleared to zero on a program when the CPU module is turned off and on or reset, the data may be output without being cleared to zero, depending on the timing of the link scan and link refresh. Take the following actions not to output the data in the latched devices of the CPU module.

| CPU module device | How to disable the setting |
|--|--|
| Latch relay (L), file register (R, ZR) | Use the initial device value of the CPU module to clear the device to zero.*1 |
| CPU module device within the latch range | Delete all the latch range settings specified in "Latch Interval Operation Setting" under "Device Latch Interval Setting" in "Memory/Device Setting" of "CPU Parameter". |

*1 For the initial device value setting of the CPU module, refer to the following.

 GX Works3 Operating Manual

Direct access to link devices

This function allows direct access to the link devices of the CC-Link IE Controller Network-equipped module from the program.

Specify a link device (LB, LW, LX, LY, SB, SW) as the link direct device (J□\□) for direct access.

Specification method

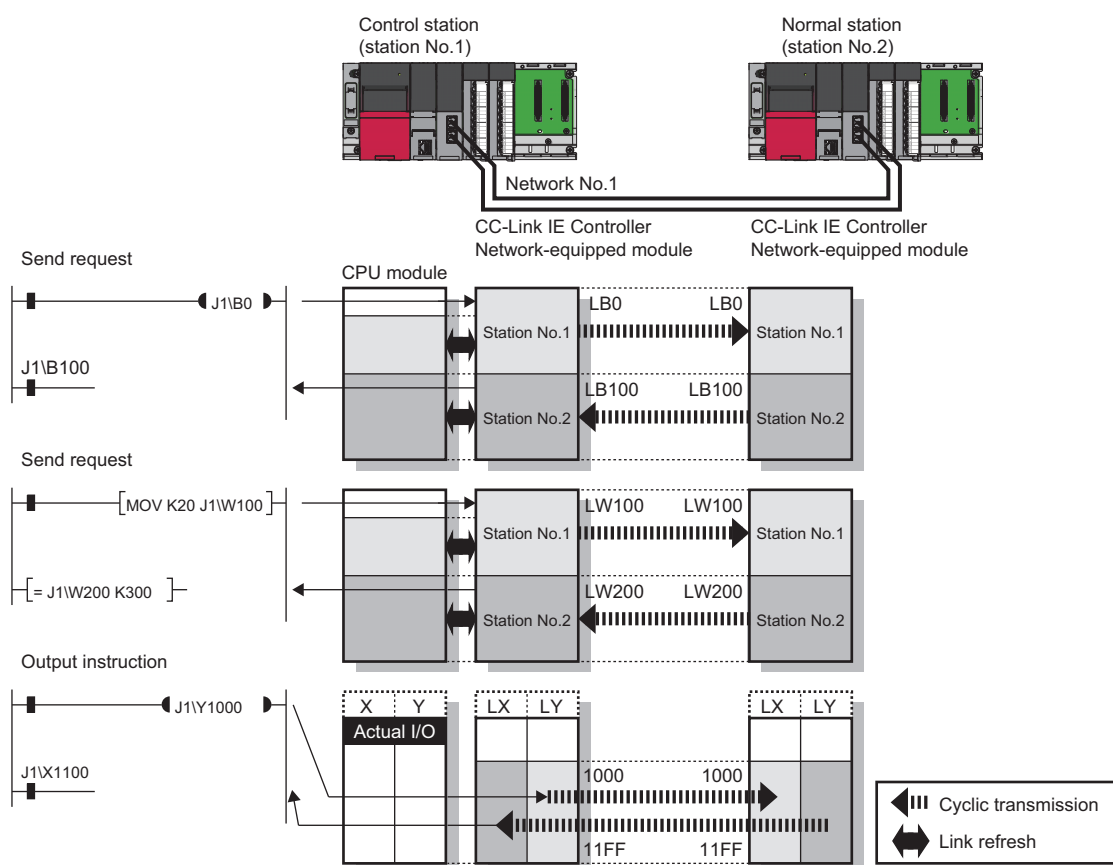
Specify the network number and the link device of the CC-Link IE Controller Network-equipped module for reading or writing.

- J□\□
↑ ↑
(1) (2)
- (1) Network number: 1 to 239
 - (2) Link relay (LB): B0 to BFFFF*¹
Link register (LW): W0 to W3FFFF*¹
Link input (LX): X0 to X1FFF
Link output (LY): Y0 to Y1FFF
Link special relay (SB): SB0 to SB1FF
Link special register (SW): SW0 to SW1FF

*¹ When the link relay (LB) (B8000 to BFFFF) or link register (LW) (W20000 to W3FFFF) is accessed by the link direct device, use the corresponding CC-Link IE Controller Network-equipped module or CPU modules. Firmware versions that support the link points extended setting (extension of points for CC-Link IE Controller Network) are as shown below. In addition, set "Extended Mode (iQ-R Series Mode)" of "Link Direct Device Setting" in "CPU Parameter". Any link relay (LB) (B0 to B7FFF) or link register (LW) (W0 to W1FFFF) can be accessed.

- The RJ71GP21-SX or RJ71GP21S-SX with a firmware version of "36" or later
- The RJ71EN71 or RnENCPU (network part) with a firmware version of "39" or later
- CPU module: User's manual (Application) for the CPU module to be used

Ex.



Readable and writable range

Data can be read or written between the CC-Link IE Controller Network-equipped module and CPU module mounted on the same base unit.

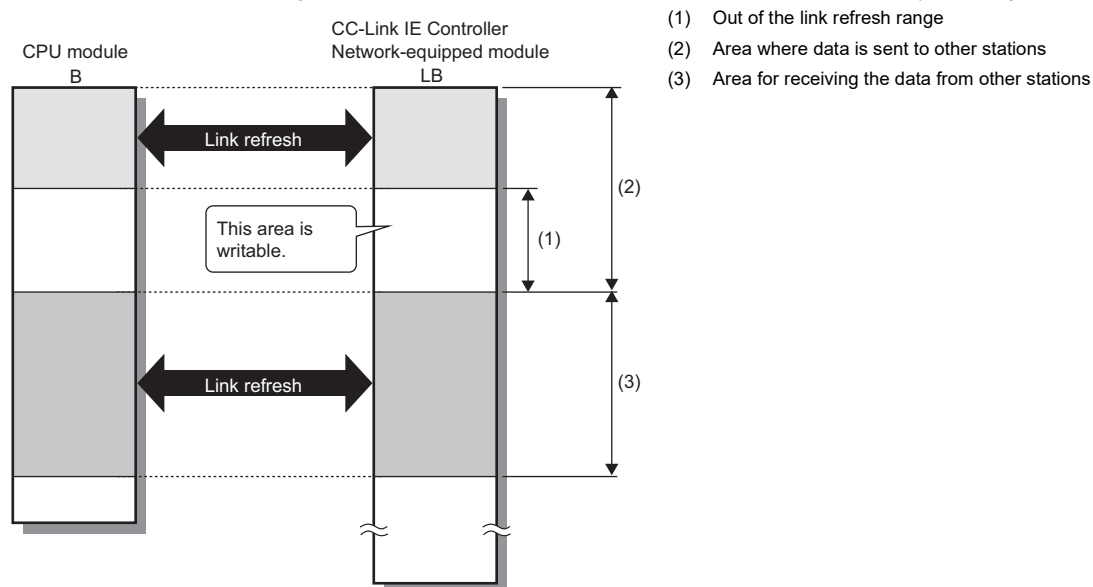
■Read

All the link devices of the CC-Link IE Controller Network-equipped module can be specified. (☞ Page 23 Specification method)

■Write

The range that satisfies all of the following conditions can be specified.

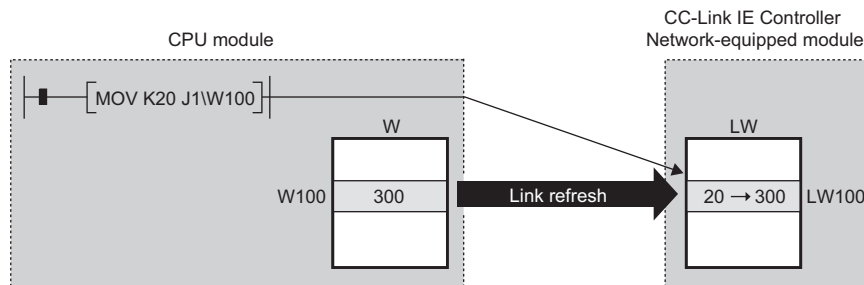
- Area where data is sent to other stations and outside the link refresh range (☞ Page 19 Data flow and link device assignment)
- Within the link device range of the CC-Link IE Controller Network-equipped module (☞ Page 23 Specification method)



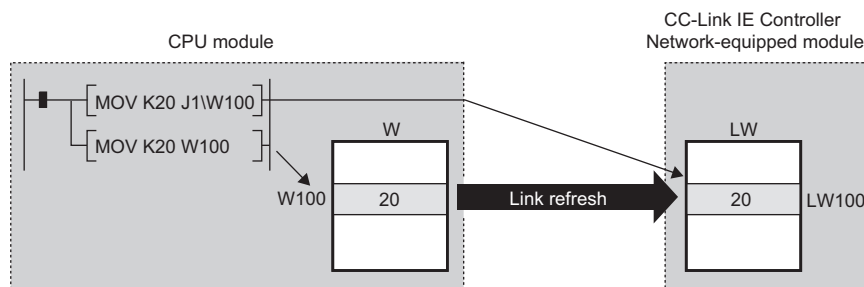
When writing data to the area in the link refresh range, directly access the link device and write the same data in the device of the CPU module.

- Bad example (Only direct access to the link refresh target)

Link refresh overwrites the value.



- Good example (In addition to direct access, writing the same data to the device of the CPU module)
- The value written by direct access is reflected.



Differences from link refresh


| Item | Access method | |
|---------------------------------|---------------|---------------|
| | Link refresh | Direct access |
| Number of steps | 1 step | 2 steps |
| Processing speed ^{*1} | High speed | Low speed |
| Cyclic data integrity assurance | Available | Not available |

^{*1} For actual values, refer to the following.

 MELSEC iQ-R Programming Manual (Module Dedicated Instructions)

Shortening the link refresh time and transmission delay time

■Shortening the link refresh time

Remove infrequently used link devices from the link refresh range, and directly read or write the corresponding data using link direct devices. This function reduces the number of the link refresh points to the CPU module, resulting in a shorter link refresh time. ( Page 21 Link refresh)

■Shortening the transmission delay time


Because the link direct device allows direct reading or writing of data to the link devices of the CC-Link IE Controller Network-equipped module at the time of the instruction execution, the transmission delay time can be shortened.

Point

Link refresh is executed in END processing of the sequence scan of the CPU module.


Precautions

■Cyclic data integrity assurance

Direct access to link devices does not provide station-based block data assurance. Use 32-bit data assurance, or if cyclic data of more than 32 bits needs to be assured, use interlock programs. ( Page 27 Cyclic data integrity assurance)

■Mounting multiple modules of the same network number

For the precautions on mounting multiple CC-Link IE Controller Network-equipped modules of the same network number, refer to the following.

 Page 38 Precautions

Cyclic data integrity assurance

This function assures the cyclic data integrity in units of 32 bits or station-based units.

The following three methods are available for cyclic data integrity assurance.

○: Assured, ×: Not assured

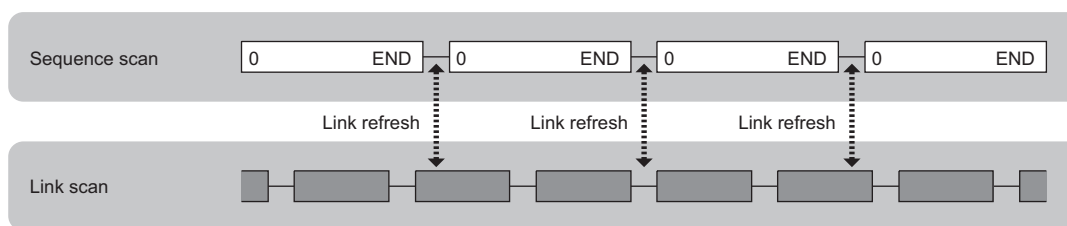
| Method | | Description | Availability | |
|--|------------------------------------|---|--------------|-------------------------------|
| | | | Link refresh | Direct access to link devices |
| 32-bit data assurance | | Assures data in units of 32 bits. Data is automatically assured by satisfying the assignment conditions of link devices. | ○ | ○ |
| Assurance of data of more than 32 bits | Station-based block data assurance | Assures data in station-based units. Data is assured by enabling the station-based block data assurance in the parameter setting. | ○ | × |
| | Interlock program | Assures data of more than 32 bits. Data is assured by performing interlocks on programs. | ○ | ○ |

Point

Link scans are performed asynchronously with link refresh.

Therefore, when the following cyclic data of 32 bits or more are handled, new and old data may be mixed in units of 16 bits depending on the link refresh timing.

- Floating-point data
- Present value or command speed value of a positioning module




32-bit data assurance

The link relay (LB) and link register (LW) data can be assured in units of 32 bits.

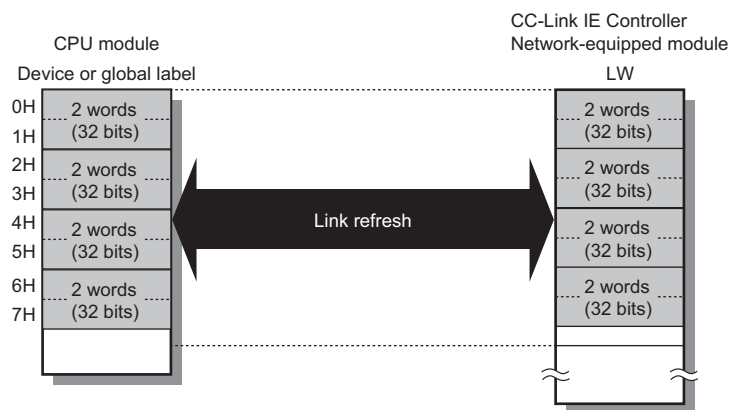
When LB and LW are set with the following four conditions met, 32-bit data assurance is automatically assured.

- The start device number of LB is a multiple of 20H.
- The number of points assigned per station in LB is a multiple of 20H.
- The start device number of LW is a multiple of 2.
- The number of points assigned per station in LW is a multiple of 2.

LB and LW are specified under "Network Range Assignment" in "Required Settings" of the control station. ( Page 76 Network Range Assignment)

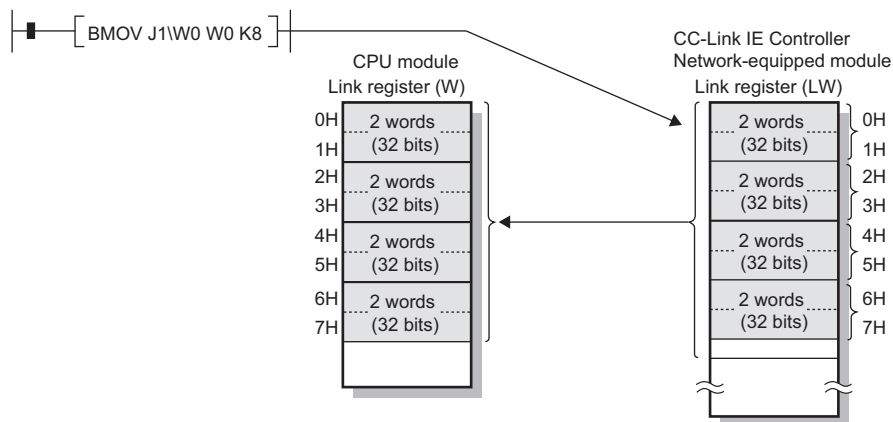
■Data assurance at the time of link refresh

Link-refreshing the link devices that satisfy the conditions for 32-bit data assurance will ensure the integrity of 32-bit data.



■Data integrity assurance at the time of direct access to link devices

Directly accessing link devices that satisfy the conditions for 32-bit data assurance will ensure the integrity of 32-bit data.




Station-based block data assurance

Integrity of the cyclic data is assured for each station by handshake between the CPU module and CC-Link IE Controller Network-equipped module for a link refresh.

■Setting

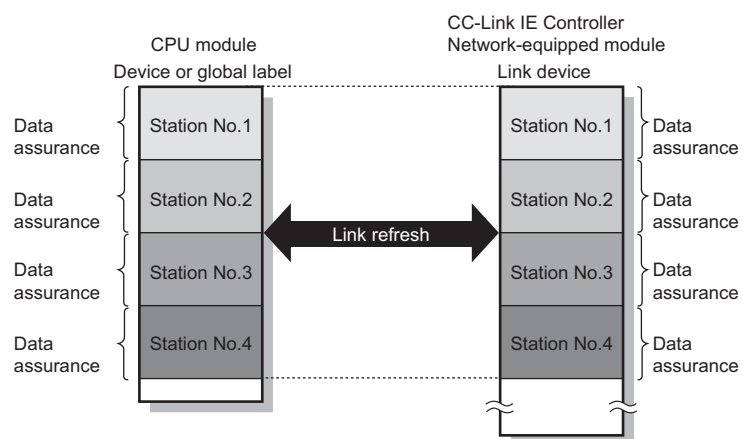
Set station-based block data assurance under "Supplementary Cyclic Settings" in "Application Settings" of the control station.

( Page 90 Supplementary Cyclic Settings)

Once this setting is enabled on the control station, integrity of the data for all stations is assured for each station.

■Access to link devices

During a link refresh, data are assured for each station as shown below.

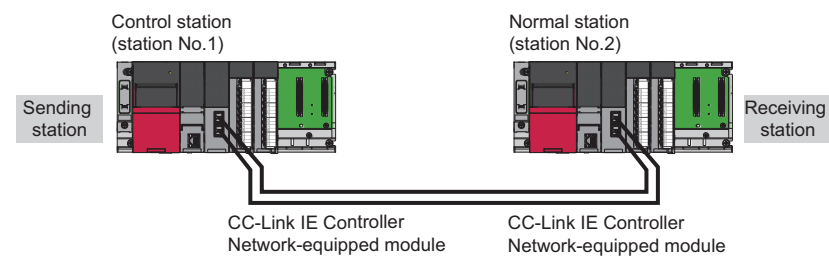


Interlock program

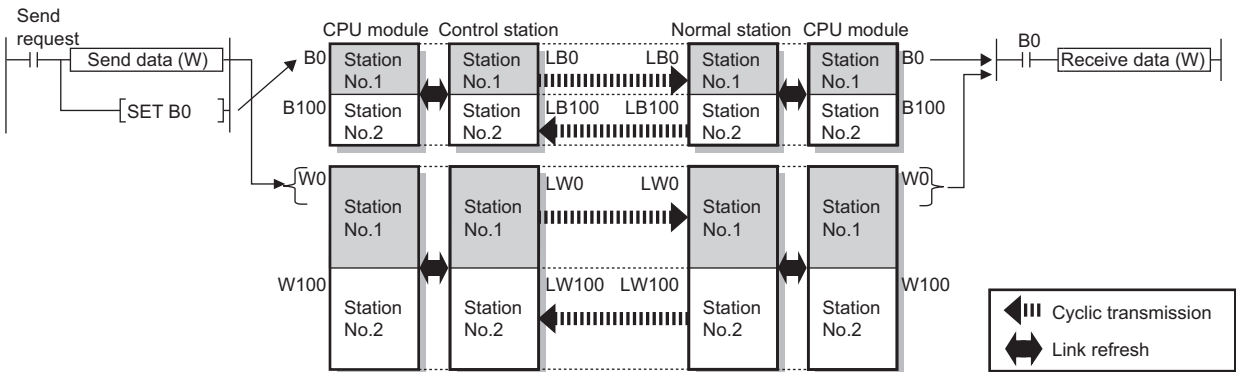
Data of more than 32 bits can be assured with the station-based block data assurance setting disabled.
Handshake using link relay (LB) data can prevent data inconsistency of the link register (LW) because link relay (LB) is sent after link register (LW).

Ex.

The following shows a program example of when 'uData' (W0 to W2) of the control station is sent to 'uData' (W0 to W2) of the normal station.
Handshake is performed by turning on 'bHandShake1' (B0) in the control station and 'bHandShake2' (B100) upon completion of storing send data.



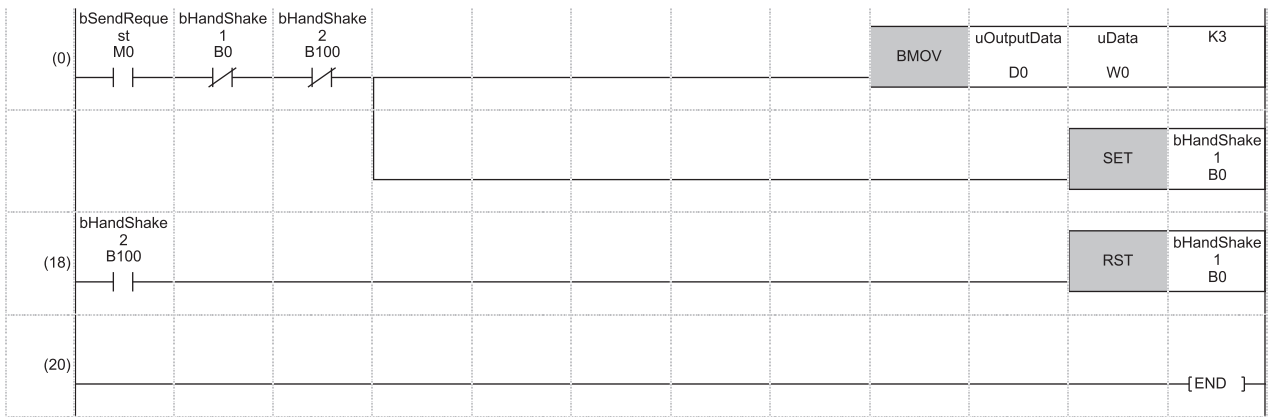
Data flow



Program

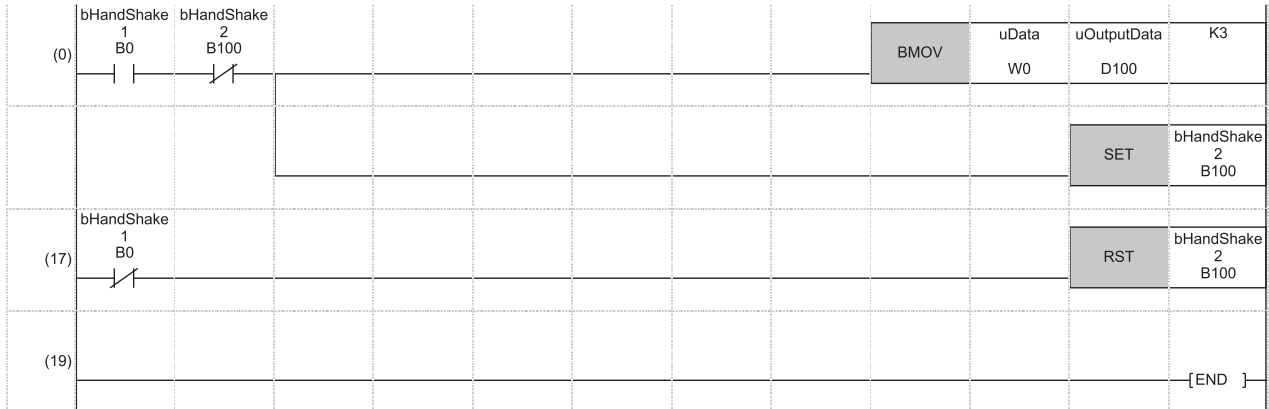
- Sending station: Control station (station No.1)

| Classification | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|------------|------------|---|-----------------------|--|-----------------------|---|--------------|-----|-----|------------|---|----|---|-------------|-----|-----|------------|---|----|---|-------------|-----|-----|------------|---|------|---|-------------|---|-----|------------|---|----|---|-------|---|-----|------------|---|----|
| Label to be defined | Define global labels as shown below: <table><tr><th></th><th>Label Name</th><th>Data Type</th><th></th><th>Class</th><th></th><th>Assign (Device/Label)</th></tr><tr><td>1</td><td>bSendRequest</td><td>Bit</td><td>...</td><td>VAR_GLOBAL</td><td>▼</td><td>M0</td></tr><tr><td>2</td><td>bHandShake1</td><td>Bit</td><td>...</td><td>VAR_GLOBAL</td><td>▼</td><td>B0</td></tr><tr><td>3</td><td>bHandShake2</td><td>Bit</td><td>...</td><td>VAR_GLOBAL</td><td>▼</td><td>B100</td></tr><tr><td>4</td><td>uOutputData</td><td>Word [Unsigned]/Bit String [16-bit](0..2)</td><td>...</td><td>VAR_GLOBAL</td><td>▼</td><td>D0</td></tr><tr><td>5</td><td>uData</td><td>Word [Unsigned]/Bit String [16-bit](0..2)</td><td>...</td><td>VAR_GLOBAL</td><td>▼</td><td>W0</td></tr></table> | | Label Name | Data Type | | Class | | Assign (Device/Label) | 1 | bSendRequest | Bit | ... | VAR_GLOBAL | ▼ | M0 | 2 | bHandShake1 | Bit | ... | VAR_GLOBAL | ▼ | B0 | 3 | bHandShake2 | Bit | ... | VAR_GLOBAL | ▼ | B100 | 4 | uOutputData | Word [Unsigned]/Bit String [16-bit](0..2) | ... | VAR_GLOBAL | ▼ | D0 | 5 | uData | Word [Unsigned]/Bit String [16-bit](0..2) | ... | VAR_GLOBAL | ▼ | W0 |
| | Label Name | Data Type | | Class | | Assign (Device/Label) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | bSendRequest | Bit | ... | VAR_GLOBAL | ▼ | M0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | bHandShake1 | Bit | ... | VAR_GLOBAL | ▼ | B0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | bHandShake2 | Bit | ... | VAR_GLOBAL | ▼ | B100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | uOutputData | Word [Unsigned]/Bit String [16-bit](0..2) | ... | VAR_GLOBAL | ▼ | D0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | uData | Word [Unsigned]/Bit String [16-bit](0..2) | ... | VAR_GLOBAL | ▼ | W0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



- Receiving station: Normal station (station No.2)

| Classification | Description | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|------------|-----------------------|-------|-----------------------|---|-------------|-----|------------|----|---|-------------|-----|------------|------|---|-------|---|------------|----|---|-------------|---|------------|------|
| Label to be defined | Define global labels as shown below: <table><tr><th></th><th>Label Name</th><th>Data Type</th><th>Class</th><th>Assign (Device/Label)</th></tr><tr><td>1</td><td>bHandShake1</td><td>Bit</td><td>VAR_GLOBAL</td><td>B0</td></tr><tr><td>2</td><td>bHandShake2</td><td>Bit</td><td>VAR_GLOBAL</td><td>B100</td></tr><tr><td>3</td><td>uData</td><td>Word [Unsigned]/Bit String [16-bit](0..2)</td><td>VAR_GLOBAL</td><td>W0</td></tr><tr><td>4</td><td>uOutputData</td><td>Word [Unsigned]/Bit String [16-bit](0..2)</td><td>VAR_GLOBAL</td><td>D100</td></tr></table> | | Label Name | Data Type | Class | Assign (Device/Label) | 1 | bHandShake1 | Bit | VAR_GLOBAL | B0 | 2 | bHandShake2 | Bit | VAR_GLOBAL | B100 | 3 | uData | Word [Unsigned]/Bit String [16-bit](0..2) | VAR_GLOBAL | W0 | 4 | uOutputData | Word [Unsigned]/Bit String [16-bit](0..2) | VAR_GLOBAL | D100 |
| | Label Name | Data Type | Class | Assign (Device/Label) | | | | | | | | | | | | | | | | | | | | | | |
| 1 | bHandShake1 | Bit | VAR_GLOBAL | B0 | | | | | | | | | | | | | | | | | | | | | | |
| 2 | bHandShake2 | Bit | VAR_GLOBAL | B100 | | | | | | | | | | | | | | | | | | | | | | |
| 3 | uData | Word [Unsigned]/Bit String [16-bit](0..2) | VAR_GLOBAL | W0 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | uOutputData | Word [Unsigned]/Bit String [16-bit](0..2) | VAR_GLOBAL | D100 | | | | | | | | | | | | | | | | | | | | | | |

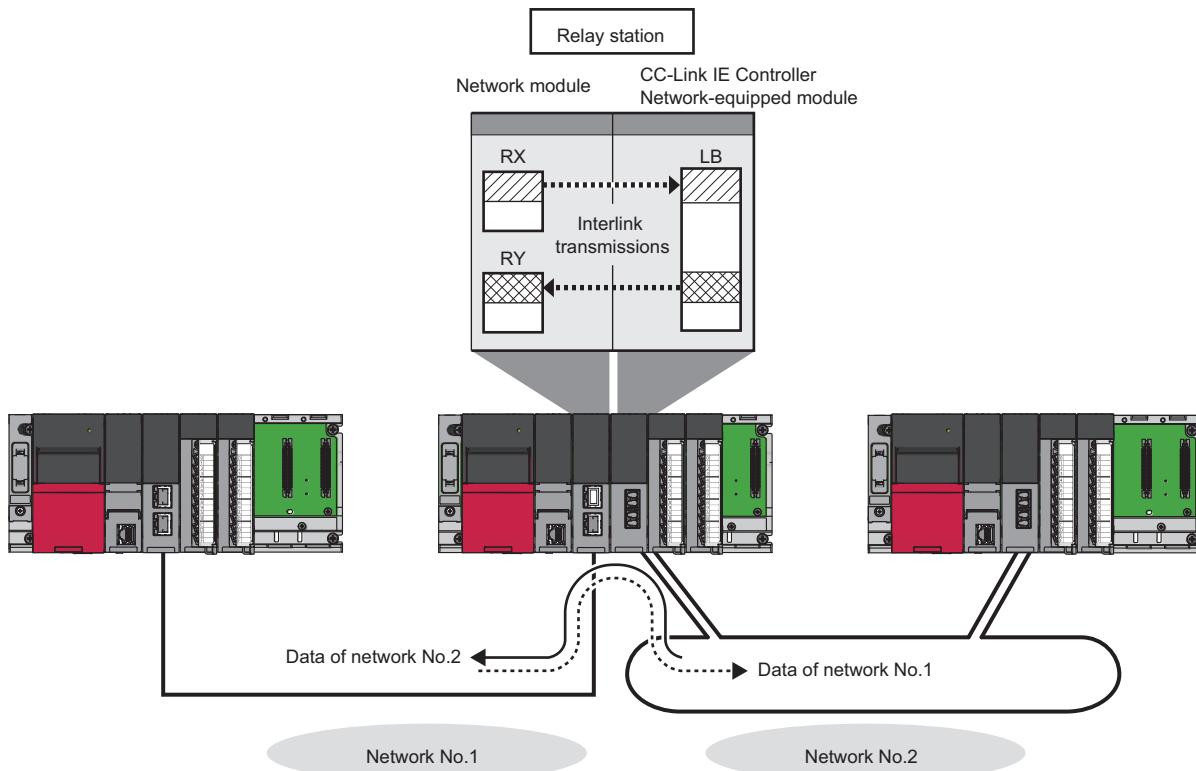


• Program flow

- ① Sending station (0) The 'bSendRequest' (M0) is turned on.
- ② Sending station (0) The contents of 'uOutputData' (D0 to D2) is stored in 'uData' (W0 to W2).
- ③ Sending station (0) Upon completion of storage in 'uData' (W0 to W2), 'bHandShake1' (B0) is turned on.
- ④ Receiving station (0) Link relay (LB) is sent through cyclic transmission and 'bHandShake1' (B0) is turned on.
- ⑤ Receiving station (0) The contents of 'uData' (W0 to W2) is stored in 'uOutputData' (D100 to D102).
- ⑥ Receiving station (0) Upon completion of storage in 'uOutputData' (D100 to D102), 'bHandShake2' (B100) is turned on.
- ⑦ Sending station (18) When 'bHandShake2' (B100) in the receiving station is turned on, 'bHandShake1' (B0) is turned off.

Interlink transmission

This function transfers data in the link devices (LB, LW) of the CC-Link IE Controller Network-equipped module to another network module on a relay station.



Setting method

Set interlink transmission in "Interlink Transmission Settings" in "Application Settings". (Page 97 Interlink Transmission Settings)

Precautions

For the precautions, refer to the following.

Page 97 Interlink Transmission Settings

Cyclic transmission punctuality assurance

The link scan time is constant using the following methods.

| Method | Description | Advantage | Disadvantage |
|--|---|--|--|
| Specification of the number of transient transmissions | Specify the number of transient transmissions within one link scan. | The link scan time can be minimized while it is kept constant. | If the network status is unstable, the link scan time may not be kept constant. |
| Constant link scan | Specify the link scan time. | Even If the network status is unstable or the number of transient transmissions varies, the link scan time can be kept constant. | If the actual link scan time is longer than the link scan time specified, the operation is performed based on the actual link scan time. |

Point

While this function is used to keep the link scan time constant, the transmission delay time is not kept constant by this function. The transmission delay time is affected by a factor such as a prolonged sequence scan time.

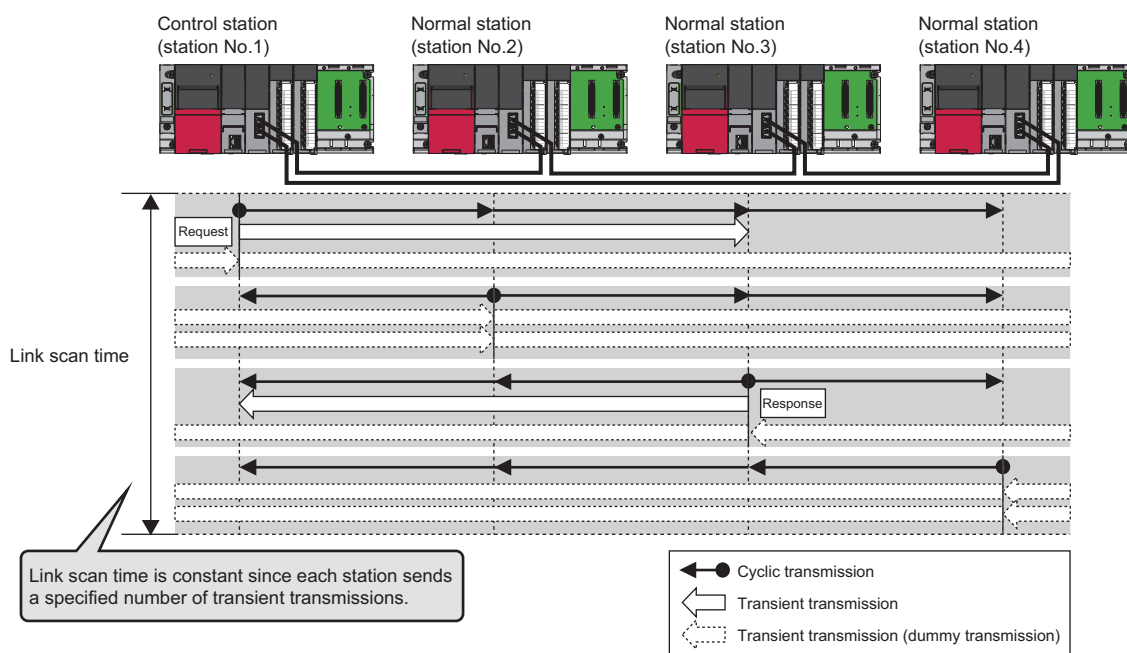
Specification of the number of transient transmissions

When the fluctuation in link scan time needs to be eliminated, the link scan time can be kept constant by performing a specified number of transient transmissions during one link scan at each station.

- When the actual number of transient transmissions is less than the specified one: Dummy data is sent to cover the shortfall.
- When the actual number of transient transmissions exceeds the specified one: They are divided and transmitted in several link scans.

Ex.


When the specified number is 2



Constant link scan

If the network status is unstable, the link scan time can be kept constant by specifying the link scan time at the control station to allow for possible fluctuations in the link scan time.

Setting method

Set cyclic transmission punctuality assurance under "Supplementary Cyclic Settings" in "Application Settings" of the control station. ( Page 90 Supplementary Cyclic Settings)

Group cyclic transmission

This function is used to divide the stations within the network into groups and specify the stations that share cyclic data (shared group).

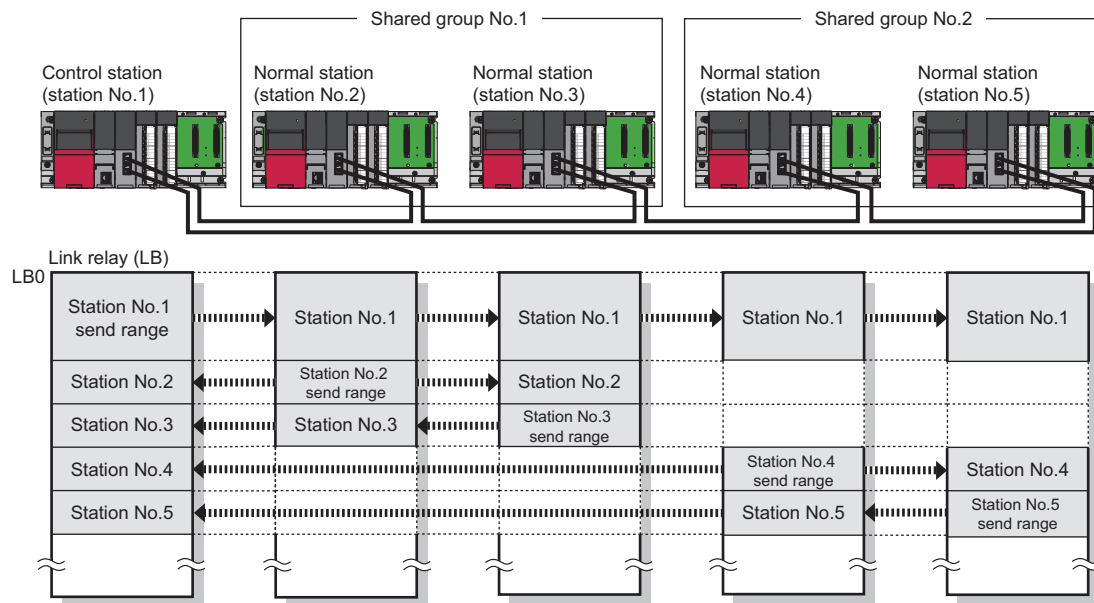
This setting allows cyclic data to be shared among the stations having the same shared group number and not to be received from those having a different shared group number.

Stations having no shared group number assigned will share cyclic data with all stations.

Ex.

The station (station No.1) having no shared group number assigned will share cyclic data with all stations.

The stations (station No.2 to 5) having a shared group number assigned will share cyclic data with the stations of the same shared group number and the station without a shared group number (station No.1).



Point

Use this function for the following purposes.

- All stations need to share the data of the station controlling production lines.
- Data sharing is not desired between the stations that control different machines.

Since each station receives only the cyclic data from any given stations, the number of link refresh points can be reduced, resulting in a shorter link refresh time.

Setting method

Set the group cyclic transmission under "Network Range Assignment" in "Required Settings" of the control station. (Page 76 Network Range Assignment)

Number of send points extension

The number of send points for CC-Link IE Controller Network-equipped modules can be extended by the following methods.

☞ Page 35 Number of send points extension by using extended mode

☞ Page 36 Number of send points extension by using the link points extended setting

☞ Page 37 Number of send points extension by using multiple modules

The number of link device points on parameter setting details are the following.

| Parameter setting details | | Number of link device points | | |
|---|------------------------------|------------------------------|---|---|
| Station type | Link points extended setting | LB/LW | Maximum number of link points per network | Number of send points per station |
| Control station Normal station | Not to Extend | LB | 32K points (32768 points, 4K bytes) | 16K points (16384 points, 2K bytes) |
| | | LW | 128K points (131072 points, 256K bytes) | 16K points (16384 points, 32K bytes) |
| | Extend | LB | 64K points (65536 points, 8K bytes) | 16K points (16384 points, 2K bytes) |
| | | LW | 256K points (262144 points, 512K bytes) | 16K points (16384 points, 32K bytes) |
| Ext. Mode Control Station Ext. Mode Normal Station | Not to Extend | LB | 32K points (32768 points, 4K bytes) | 32K points (32768 points, 4K bytes) |
| | | LW | 128K points (131072 points, 256K bytes) | 128K points (131072 points, 256K bytes) |
| | Extend | LB | 64K points (65536 points, 8K bytes) | 64K points (65536 points, 8K bytes) |
| | | LW | 256K points (262144 points, 512K bytes) | 256K points (262144 points, 512K bytes) |

Point

The number of send points extension by using extended mode or the link points extended setting allows more send points to be set than the number of send points extension by using multiple modules. Therefore, when extended the number of send points, to use extended mode or the link points extended setting is recommended. However, use the number of send points extension by using multiple modules for the following purposes.

- To add a station that requires more than the number of 16K send points in a network comprising CC-Link IE Controller Network modules that do not support extended mode or the link points extended setting.
- To replace an existing CC-Link IE Controller Network module that is configured with the number of send points extension by using multiple modules with a MELSEC iQ-R series CC-Link IE Controller Network-equipped module without changing programs

Number of send points extension by using extended mode

This function allows a CC-Link IE Controller Network-equipped module to be set to the extended mode using an engineering tool so that the number of send points per station will be extended to a maximum of 32K points for the link relay (LB) and 128K points for the link register (LW) in one module. In addition, when "Link points extended setting" is set to "Extend" in extended mode, the number of send points per station will be extended to a maximum of 64K points for the link relay (LB) and 256K points for the link register (LW) in one module.

For details, refer to the following.

☞ Page 35 Number of send points extension

■Setting method

Select "Ext. Mode Control Station" or "Ext. Mode Normal Station" in "Station Type" of "Required Settings" to extend the number of send points.


■Precautions

Set both the control station and normal stations within the same network to the extended mode. Do not mix network of stations having the extended mode enabled and having it disabled.

Number of send points extension by using the link points extended setting

This function allows a CC-Link IE Controller Network-equipped module to be set to "Extend" of "Link points extended setting" using an engineering tool so that the maximum number of link points per network will be extended to 64K points for the link relay (LB) and 256K points for the link register (LW) in one network.

For details, refer to the following.

 Page 35 Number of send points extension

■Setting method

Set "Extend" of "Link points extended setting" on "Application Settings" to extend the maximum number of link points per network.

■Precautions

- When the link points extended setting is used, set "Extend" of "Link points extended setting" on both the control station and normal stations within the same network. Do not mix network of stations setting both "Extend" and "Not to Extend".
- Do not mix network of stations that is unavailable for the link points extended setting.
- When "Link points extended setting" is set to "Extend" and the extended link device is specified by the link direct access, set "Extended Mode (iQ-R Series Mode)" of "Link Direct Device Setting" in "CPU Parameter".


■Combination with other functions

The following function can also be extended the setting range.

- Link refresh
- Interlink transmission
- Interrupt request to CPU module

■Supported CPU modules

For CPU modules that support the link points extended setting (extension of points for CC-Link IE Controller Network), refer to the following.

 User's manual (Application) for the CPU module to be used

Number of send points extension by using multiple modules

This function increases the number of send points by mounting multiple CC-Link IE Controller Network-equipped modules of the same network number with one CPU module.

Mounting one additional module can increase the number of send points per station by 16K points for both the link relay (LB) and the link register (LW).

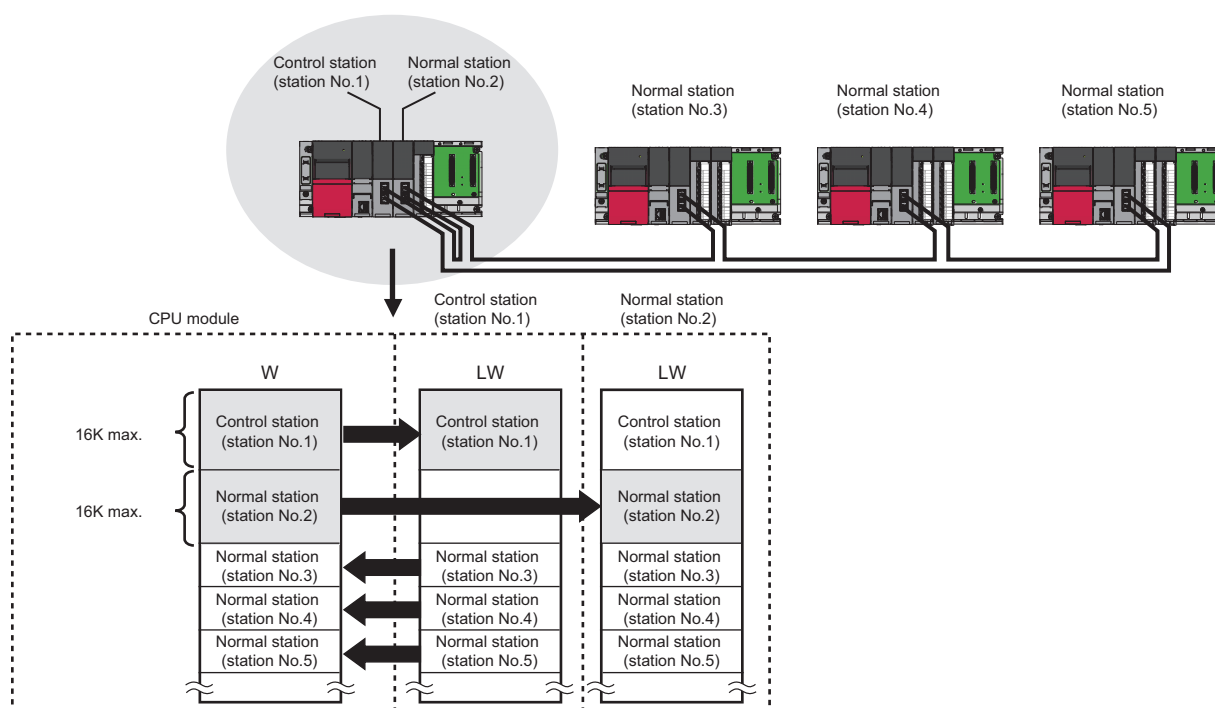
Up to eight modules can be mounted on one CPU module, allowing the number of send points per station to be extended up to 32K points for the link relay (LB) and 128K points for the link register (LW).^{*1}

^{*1} Number of send points cannot exceed the maximum number of link points per network. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup))

Ex.

When increasing the number of send points by mounting two CC-Link IE Controller Network-equipped modules (LW)

- Link relay (LB): Up to 32K points
- Link register (LW): Up to 32K points



■Network number and station number setting

Set the same network number to the modules (1st to 8th module) for which to extend the number of send points. Set a different station number to each station. (Page 74 Required Settings)

■Network range assignment

Set the send range of each station in LB and LW under "Network Range Assignment" of "Required Settings" of the control station. (Page 76 Network Range Assignment)

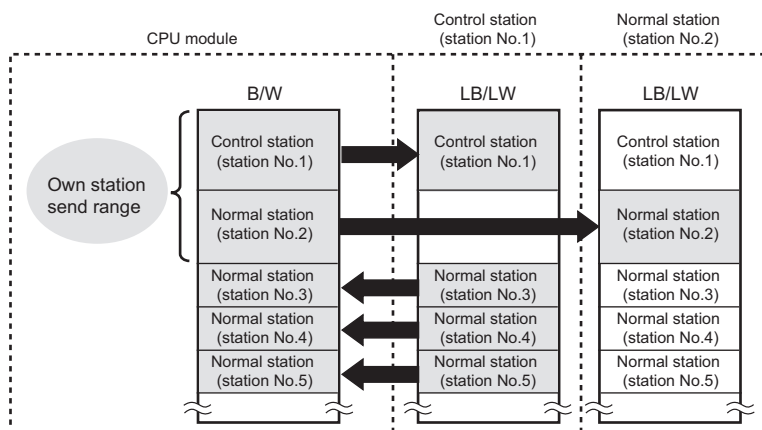
Refresh settings

Configure the refresh settings so that within the own station send range of the CPU module, the range of up to 16K points can be link-refreshed to the first CC-Link IE Controller Network-equipped module and the range to be extended can be link-refreshed to the second and subsequent CC-Link IE Controller Network-equipped modules.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter] ⇒ [Basic Settings] ⇒ [Refresh Setting]

Ex.

When the own station send range is link-refreshed to the station No.1 and 2



• Network range assignment

| Station No. | Station Type | LB/Lw Setting (1) | | | | | | Reserved Station | Pairing | Shared Group |
|-------------|-----------------|-------------------|-------|------|--------|-------|-------|------------------|---------|--------------|
| | | LB | | | LW | | | | | |
| | | Points | Start | End | Points | Start | End | | | |
| 1 | Control Station | 16 | 0000 | 000F | 16 | 00000 | 0000F | No Setting | Disable | |
| 2 | Normal Station | 16 | 0010 | 001F | 16 | 00010 | 0001F | No Setting | Disable | |
| 3 | Normal Station | 16 | 0020 | 002F | 16 | 00020 | 0002F | No Setting | Disable | |
| 4 | Normal Station | 16 | 0030 | 003F | 16 | 00030 | 0003F | No Setting | Disable | |
| 5 | Normal Station | 16 | 0040 | 004F | 16 | 00040 | 0004F | No Setting | Disable | |

• Refresh settings of the control station (station No.1)

| No. | Link Side | | | | | CPU Side | | | | |
|-----|-------------|--------|-------|-------|---|--------------|-------------|--------|-------|-------|
| | Device Name | Points | Start | End | | Target | Device Name | Points | Start | End |
| - | SB | 512 | 00000 | 001FF | ↔ | Module Label | | | | |
| - | SW | 512 | 00000 | 001FF | ↔ | Module Label | | | | |
| 1 | LB | 16 | 00000 | 0000F | ↔ | Device | B | 16 | 00000 | 0000F |
| 2 | LW | 16 | 00000 | 0000F | ↔ | Device | W | 16 | 00000 | 0000F |
| 3 | LB | 48 | 00020 | 0004F | ↔ | Device | B | 48 | 00020 | 0004F |
| 4 | LW | 48 | 00020 | 0004F | ↔ | Device | W | 48 | 00020 | 0004F |

• Refresh settings of the normal station (station No.2)

| No. | Link Side | | | | | CPU Side | | | | |
|-----|-------------|--------|-------|-------|---|------------|-------------|--------|-------|-------|
| | Device Name | Points | Start | End | | Target | Device Name | Points | Start | End |
| - | SB | 512 | 00000 | 001FF | ↔ | Module Lab | | | | |
| - | SW | 512 | 00000 | 001FF | ↔ | Module Lab | | | | |
| 1 | LB | 16 | 00010 | 0001F | ↔ | Device | B | 16 | 00010 | 0001F |
| 2 | LW | 16 | 00010 | 0001F | ↔ | Device | W | 16 | 00010 | 0001F |

Precautions

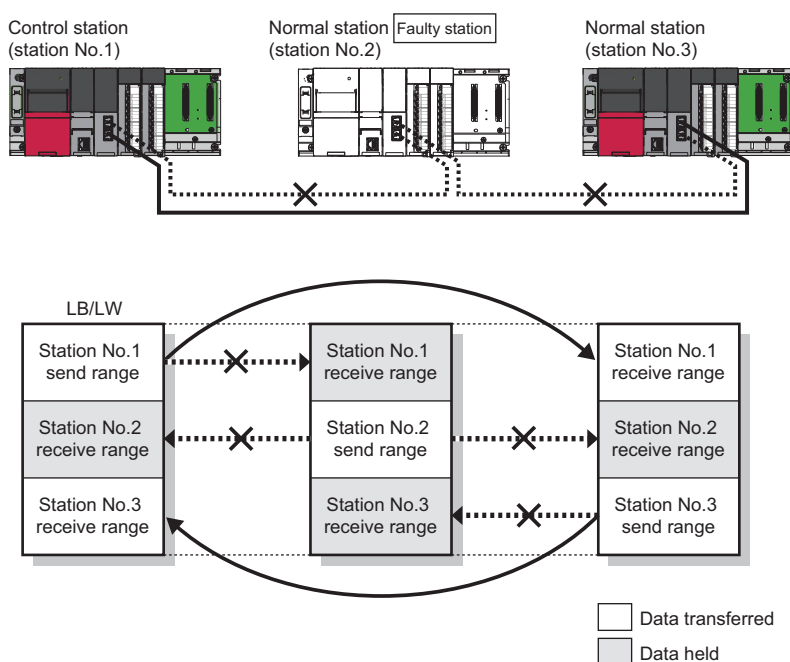
When mounting multiple modules with the same network number and using a function, such as the link direct device, that specifies a CC-Link IE Controller Network-equipped module by the network number, the execution target will be as listed below.

| Item | Description |
|-----------------------|---|
| Link direct devices | The module mounted on the slot with the smallest slot number in the base unit is targeted. |
| Dedicated instruction | The module mounted on the slot with the smallest slot number in the base unit executes the dedicated instruction. |

Reception status when an error occurs

When there is a data link faulty station on the CC-Link IE Controller Network, the link device statuses are as follows.

- Normally operating station: The data received from the faulty station holds immediately before the error.
- Faulty station: The data received from the other stations holds immediately before the error.



Cyclic transmission stop and restart

This function is used to stop the cyclic transmission during debugging and other operations. (Data reception from other stations and data sending from the own station are stopped.) Also, the stopped cyclic transmission is restarted. Transient transmission does not stop.

Cyclic transmission is stopped and restarted using the link start/stop of the CC-Link IE Controller Network diagnostics.

(Page 135 Procedure when optical fiber cables are used, Page 136 Procedure when Ethernet cables are used)

1.2 Transient Transmission

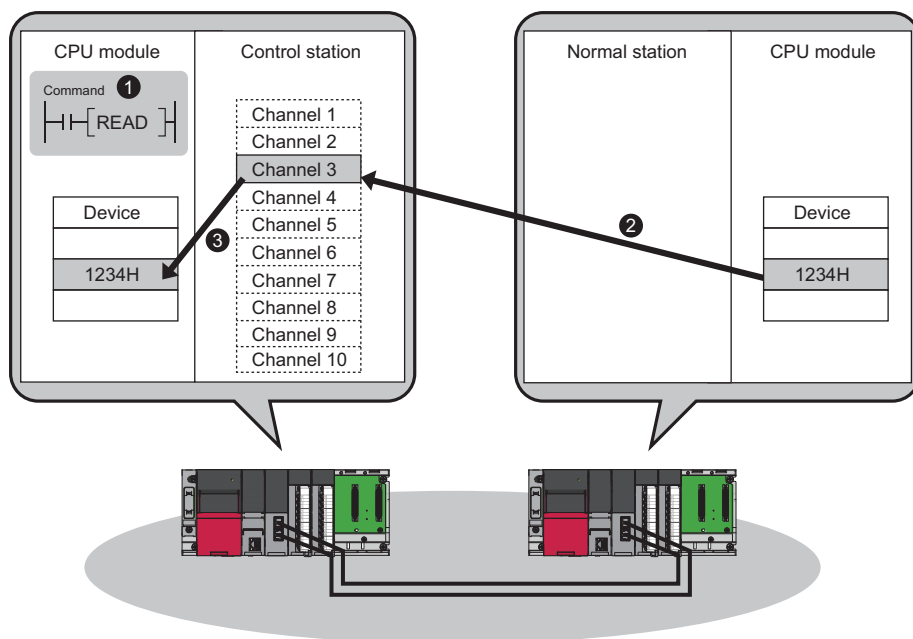
This function allows communications with other stations when a request is made by a method such as a dedicated instruction and engineering tool. Communications with different networks is also possible.

Communications within the same network

This function performs the transient transmission to other stations using dedicated instructions and the engineering tool. (📖 MELSEC iQ-R Programming Manual (Module Dedicated Instructions))

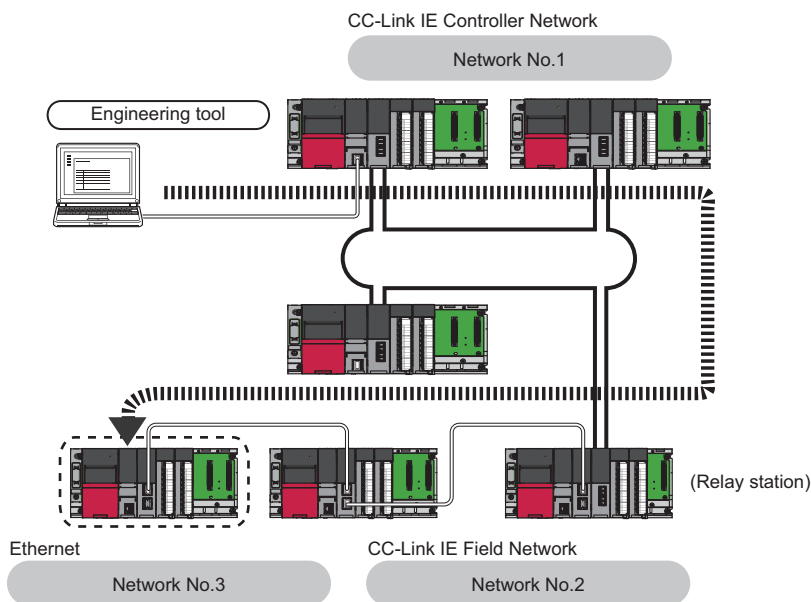
Ex.

Accessing a programmable controller of another station using the dedicated instruction (READ instruction)



Communications with different networks

This function performs the transient transmission seamlessly to stations on different networks using dedicated instructions and the engineering tool.



Point

Communications can be made with stations up to eight networks apart (number of relay stations: 7).

When the networks consist of only MELSEC iQ-R series

Communication paths are automatically set for communication with the following networks of MELSEC iQ-R series.

- Ethernet
- CC-Link IE Controller Network
- CC-Link IE Field Network

■Setting method

Check that "Dynamic Routing" in "Application Settings" is set to "Enable".

Point

- Communication paths are automatically set, but they can also be manually set. (☞ Page 41 When the networks consist of MELSEC iQ-R series and other series)
- Communication paths cannot be automatically set to Ethernet-equipped modules connected via a router. Set communication paths manually for such modules. (☞ Page 41 When the networks consist of MELSEC iQ-R series and other series)

When the networks consist of MELSEC iQ-R series and other series

Setting communication paths allows communication with the following networks configured with modules other than MELSEC iQ-R series.

- Ethernet
- CC-Link IE Controller Network
- CC-Link IE Field Network
- MELSECNET/H
- MELSECNET/10

■Setting method

Set communication paths in "Routing Setting" of "CPU Parameter". (📖 MELSEC iQ-R CPU Module User's Manual (Application))

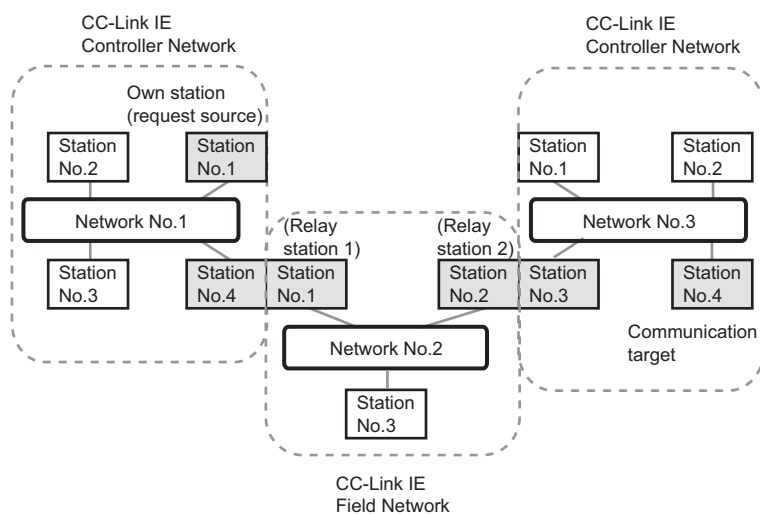
When the networks contain a redundant system

- When the communication paths are automatically set, the paths are updated if system switching occurs in a redundant system on the paths. During update of the communication paths, communications may be interrupted or data may be lost because the paths are temporarily undetermined. If an error occurs in communications, resend data from the request source.
- When the request source is a redundant system and the communication paths are automatically set, perform the transient transmission from the control system. When performing the transient transmission from the standby system, set "Routing Setting" of "CPU Parameter".
- When the request destination is a redundant system and the communication paths are automatically set, specify the control system station as the destination. When specifying the standby system as the request destination, set "Routing Setting" of "CPU Parameter".
- When relaying a redundant system and setting the communication paths manually, set the control system station as a relay station in "Routing Setting" of "CPU Parameter". If system switching occurs, the relay station needs to be changed to a station in the new control system using the RTWRITE instruction.

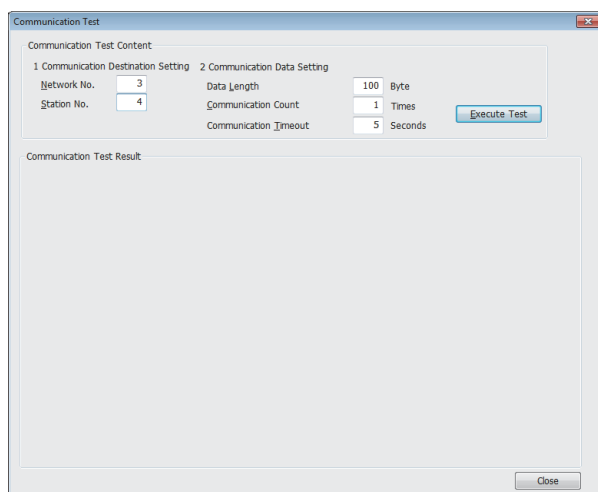
Communication test

Communication test checks if transient transmission data can be properly routed from the own station to the communication target.

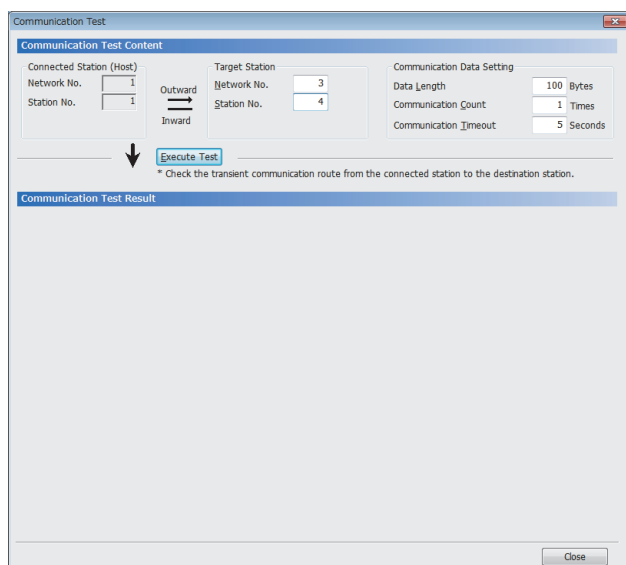
Take the following system configuration as an example of communication test procedure.



- Window when optical fiber cables are used



- Window when Ethernet cables are used



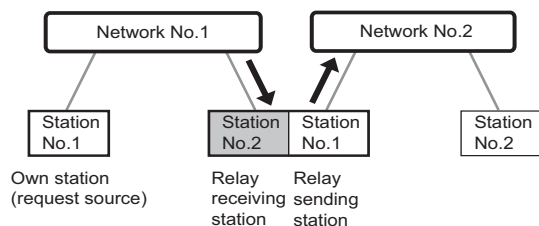
1. Open the "Communication Test" window and enter values for "Target Station" and "Communication Data Setting".

[Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Optical Cable)] or [CC-Link IE Control Diagnostics (Twisted Pair Cable)] ⇒ [Communication Test] button

2. Click the [Execute Test] button to execute the communication test. If an error occurs, take actions according to the error message.

Precautions

- When a relay sending station is set to "Target Station", only an error code appears without an error message. Set a relay receiving station to "Target Station".



- When a station mounted on the same base unit (main base unit and extension base unit) as the own station is set to "Target Station", only an error code appears without an error message. Set a station mounted on the different base unit to "Target Station".
- When the request source is a redundant system and the communication path has automatically been set, execute a communication test from the control system. If a communication test is executed from the standby system, it may complete with an error.
- When the request destination is a redundant system and the communication path has automatically been set, specify the control system station for "Target Station". If the standby system is set for the access destination station, a communication test may complete with an error.

1.3 IP Packet Transfer Function

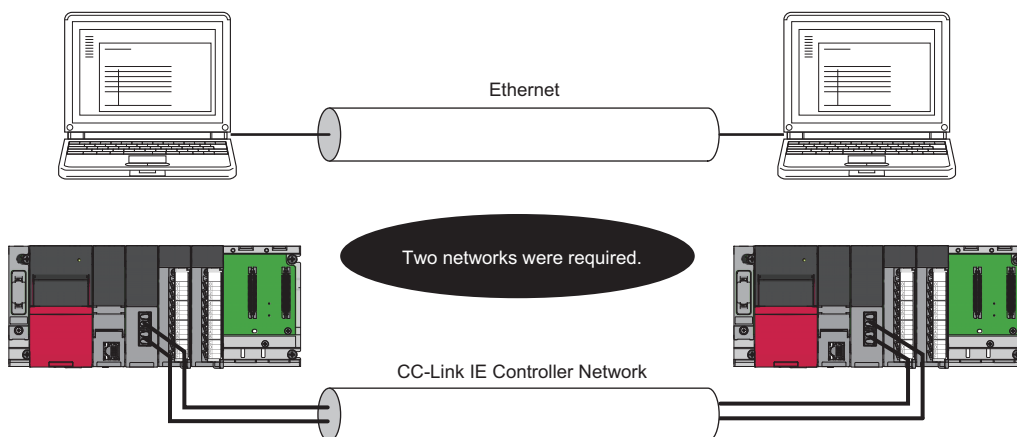
1

This function enables communications using the specified IP address over CC-Link IE Controller Network.

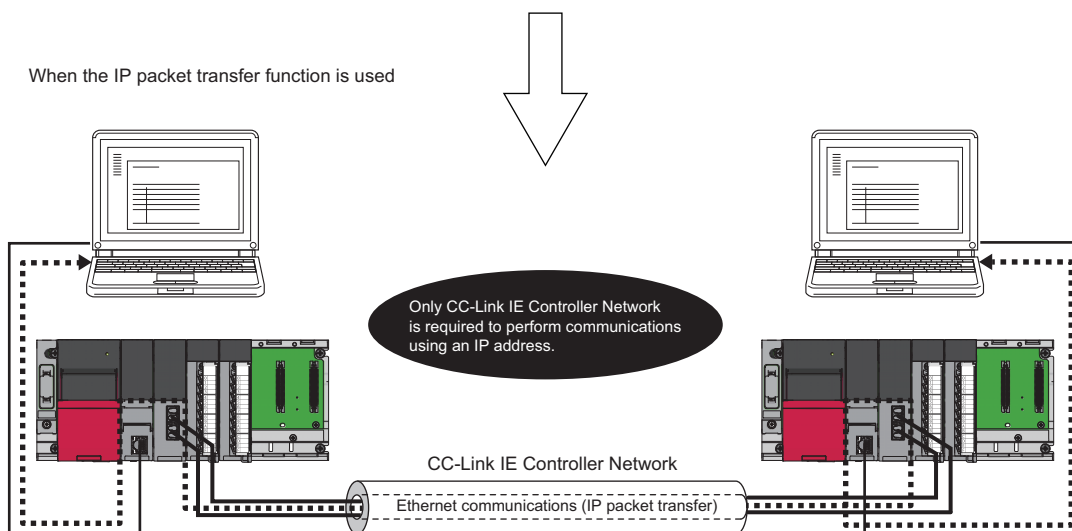
For example, a personal computer can communicate with the FTP server.

With this function, two networks of CC-Link IE Controller Network and Ethernet are not required, resulting in reduced wiring cost.

Conventional way



When the IP packet transfer function is used



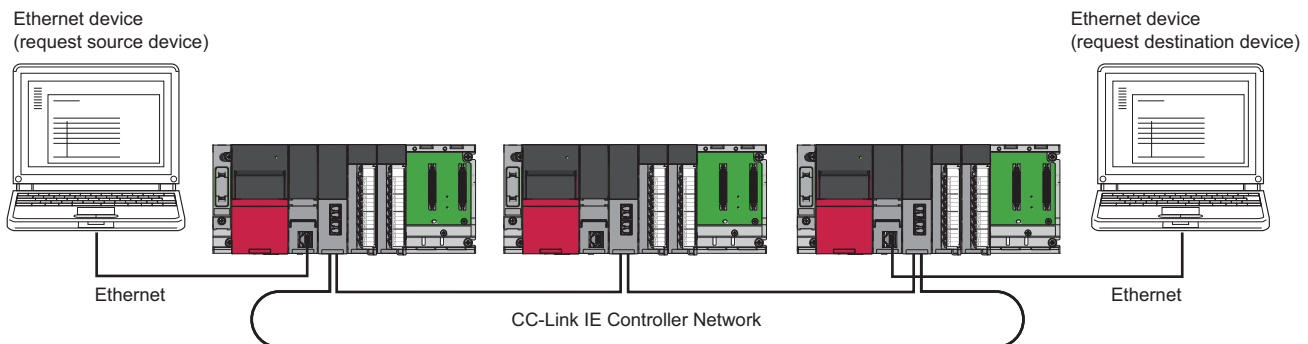
Point

The data that are communicated using the IP packet transfer function are communicated separately by the link scan of the CC-Link IE Controller Network.

Because of this, the speed of communications using the IP packet transfer function is slower than the speed of communications with the Ethernet line. (☞ Page 56 Communication speed)

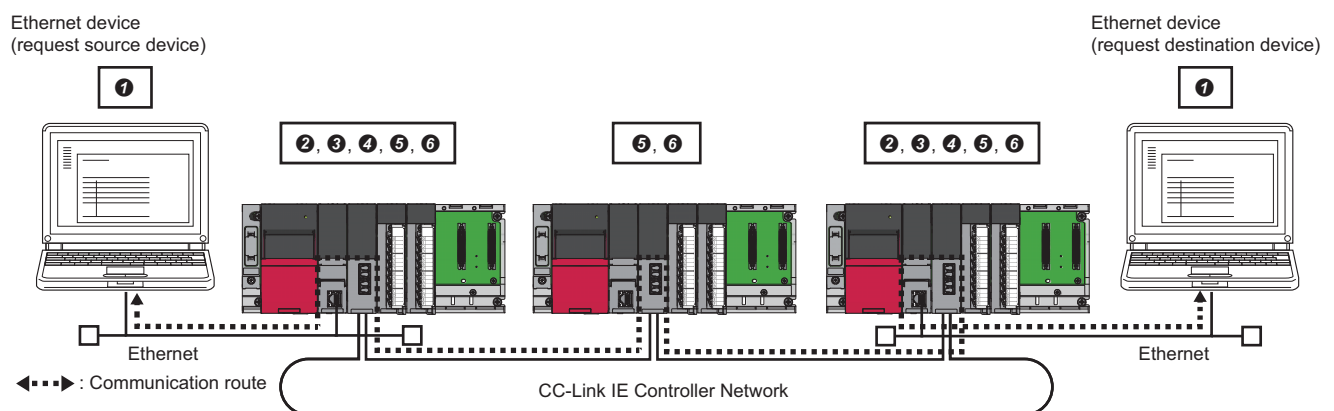
System configuration

Connect an Ethernet device to an Ethernet-equipped module.



Setting

To use the IP packet transfer function, the following items need to be set.



- ① Ethernet device gateway address setting
Set the IP address of the Ethernet-equipped module connected to an Ethernet device in the gateway address of the Ethernet device used.
- ② IP address setting of the Ethernet-equipped module (☞ Page 48 Setting in the Ethernet-equipped module)
- ③ Setting of the network number and station number of the RJ71EN71 or the RnENCPU (network part) connected to the Ethernet device
When the RJ71EN71 or the RnENCPU (network part) is set for the Ethernet-equipped module connected to the Ethernet device, set "Communications by Network No./Station No." in the module parameter of the Ethernet to "Enable".
- ④ IP packet transfer setting (☞ Page 48 Setting in the Ethernet-equipped module)
This setting is required for the IP packet to be passed between an Ethernet-equipped module and a CC-Link IE Controller Network-equipped module.
- ⑤ IP address setting of the CC-Link IE Controller Network-equipped module (☞ Page 48 Setting in the control station)
- ⑥ Routing parameter setting
When modules other than MELSEC iQ-R series exist in the communication route, communication route setting is required.
(☞ MELSEC iQ-R CPU Module User's Manual (Application))

Point

- When the Ethernet device is a personal computer (only Ethernet devices having the route command, such as Microsoft® Windows®), it is recommended to set the gateway address using the route command. If the gateway address is set in the default gateway, packets not related to the IP packet transfer are also transmitted through the CPU module. Consequently, the service processing of the CPU module drops under heavy load, causing other service processing to be slow or other problems.
- After the setting is completed, execute the IP communication test to check for an error in the communication path. (☞ Page 49 IP communication test)

Rules for the IP address setting

IP addresses specified for the IP packet transfer function need to satisfy the following rules.

| Device to be set | Setting range of the IP address | | |
|--|--|--|---|
| | First and second octets | Third octet | Fourth octet |
| Ethernet device | ① 0.0 to 223.255* ¹ (Same numbers for the request source device, request destination device, and modules between them) | ②, ③, ④ 1 to 239* ¹ (Same number for the Ethernet device and the Ethernet-equipped module) | ② 1 to 120* ¹ |
| Ethernet-equipped module connected to the Ethernet device | | | |
| CC-Link IE Controller Network-equipped module | | ②, ④ Automatically set (network number of the own station) 1 to 239 | ② Automatically set (Own station's station No.) 1 to 120 |
| Ethernet-equipped module on the communication path (not connected to an Ethernet device) | IP address setting not required | | |

*1 Set the numbers according to the range applicable to the Ethernet device used. The range may not apply depending on the Ethernet device. Check the specifications of the Ethernet device used.

① Use the same numbers for the first and second octets of the IP addresses of the request source device, request destination device, and modules between them.

192 . 168 . 10 . 36

The first and second octets (network addresses)

② For the IP addresses of the Ethernet-equipped modules, set a number between 1 and 239 for the third octet and a number between 1 and 120 for the fourth octet. The network number of the own station is automatically assigned to the third octet of the IP address of the CC-Link IE Controller Network-equipped module. The station number of the own station is automatically assigned to the fourth octet of the IP address of the master/local module.

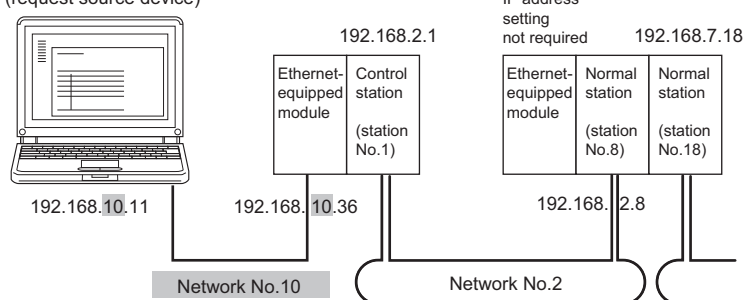
The third octet

192 . 168 . 10 . 36

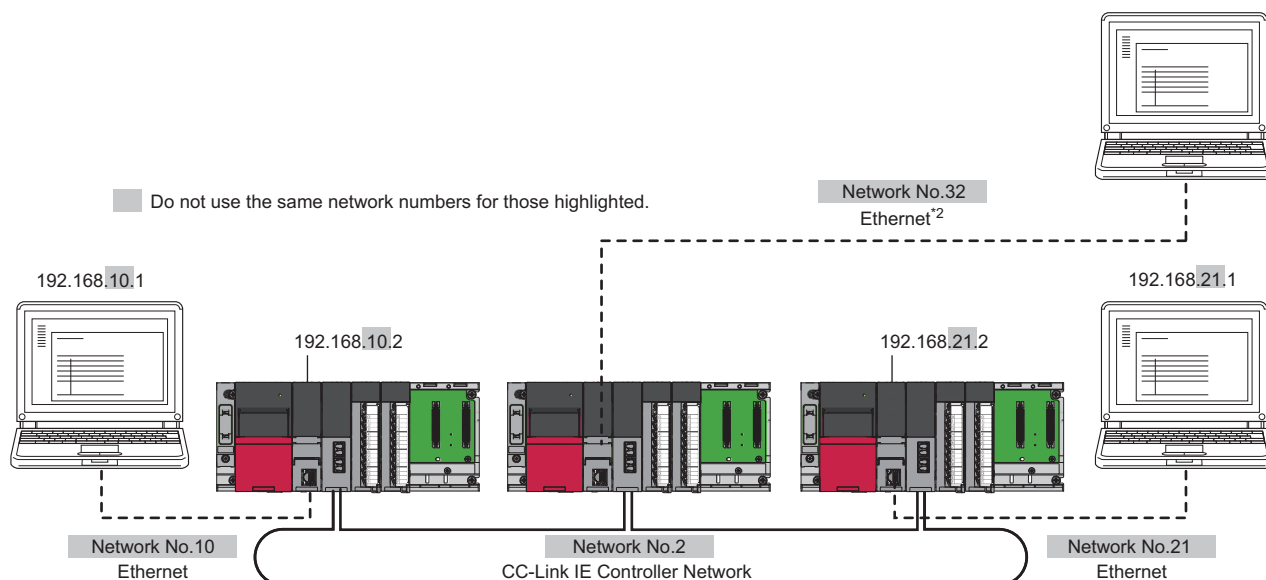
The fourth octet

③ Use the same number for the third octet (network number) of the IP addresses of an Ethernet device and an Ethernet-equipped module connected to the Ethernet device.

Ethernet device
(request source device)



④ Do not use the third octet (network number) of the IP address same as that of other network modules and other CPU modules using the IP packet transfer function.



*2 Do not use the same network numbers for those of network modules other than the CC-Link IE Controller Network-equipped module.



When setting the IP address in each device, do not use the IP addresses already used for other devices.

Setting method

For a communication example, refer to the following.

Page 54 Example of communications using the IP packet transfer function

■Setting in the Ethernet-equipped module

1. Set the IP address of the Ethernet-equipped module in the following item.

[Navigation window] ⇒ [Parameter] ⇒ Target module ⇒ [Module Parameter] ⇒ [Basic Settings] ⇒ [Own Node Settings] ⇒ [IP Address]

Follow the rules to set the IP address. (Page 47 Rules for the IP address setting)

2. Change the following setting to "Use".

[Navigation window] ⇒ [Parameter] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [IP Packet Transfer Setting]

■Setting in the control station

1. Set the IP address of the control station in the following item.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [IP Address]

Follow the rules to set the IP address. (Page 47 Rules for the IP address setting)

■Setting in the normal stations

The IP address setting is not required for the normal stations. The same network address as the control station is automatically assigned to the first and second octets. The network number of the own station is assigned to the third octet, and the station number of the own station is assigned to the fourth octet.

Routing parameter setting

When modules other than MELSEC iQ-R series exist in the communication route, set routing parameters.

To set routing parameters, refer to the following.

MELSEC iQ-R CPU Module User's Manual (Application)

IP communication test

This function checks whether no error occurs in the communication path within CC-Link IE Controller Network when the IP packet transfer function is used. The following can be checked using the IP communication test:

- Cables are properly connected on the communication path.
- Parameters related to the IP packet transfer function, such as an IP address and routing parameters, are correctly set on the communication path.
- All the CPU modules and CC-Link IE Controller Network modules on the communication path support the IP packet transfer function.

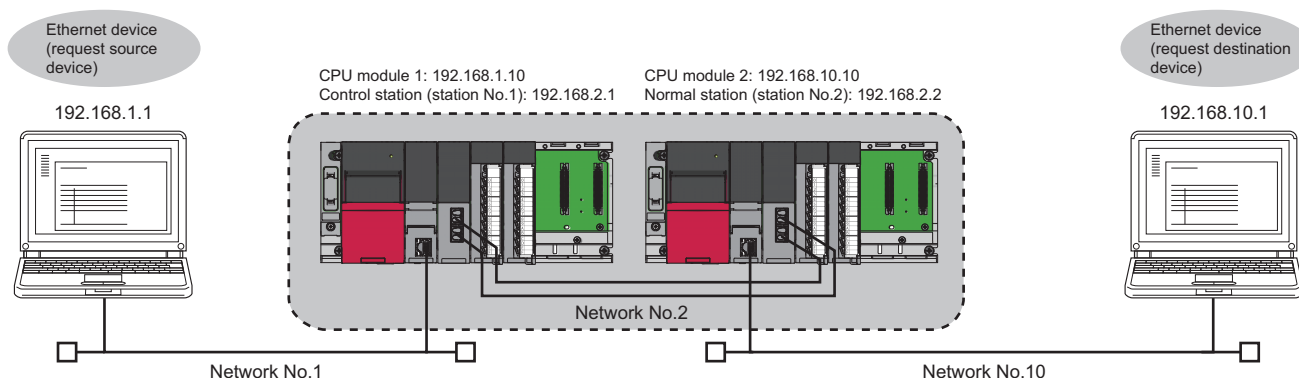
The following system configuration is used to explain the procedure of the IP communication test.

The IP communication test allows the communication paths in the dotted line above to be checked.

Restriction

The IP communication test cannot be executed if the engineering tool is connected to the RJ71EN71 or the RnENCPU (network part). Use one of the following methods to check whether no error occurs in the communication path.

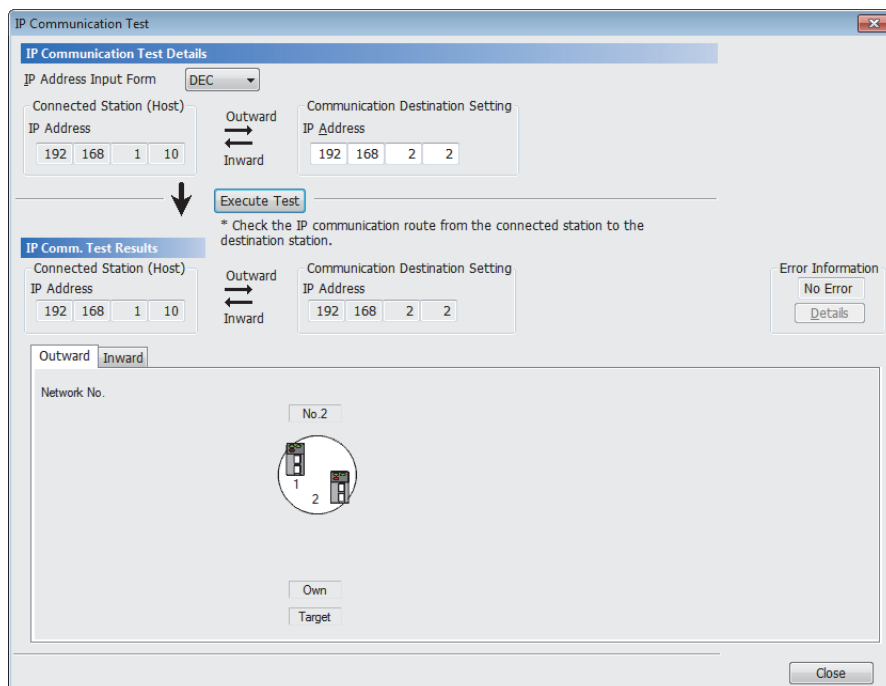
- Directly connect using the Ethernet and execute a PING test in the Ethernet diagnostics. (MELSEC iQ-R Ethernet User's Manual (Application))
- Execute a PING from the Ethernet device connected.



1. Open the "IP Communication Test" window. Enter the IP address of the CPU module 2 or the normal station (station No.2) connected to the request destination device in "Communication Target".

[Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Optical Cable)] ⇒ [IP Communication Test] button

2. Click on the [Execute Test] button to execute the test. When the test is completed, the route to the device set in "Communication Target" is displayed on the underside of the window. If the test fails, click the [Details] button in the "Error Information" area to check the error information.



Point

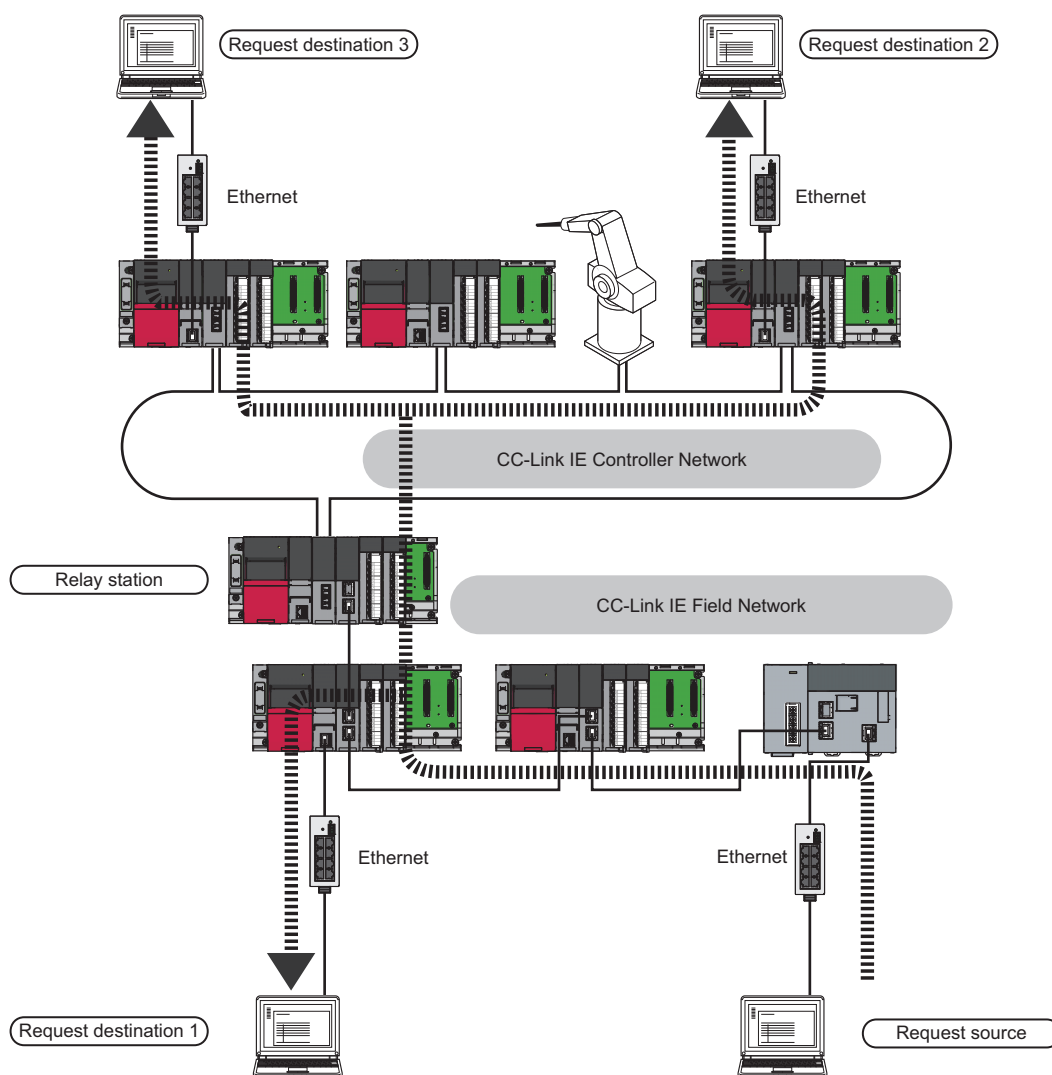
- If the cause cannot be identified from the error information after the IP communication test is executed, or communications cannot be performed even though the IP communication test is completed successfully, follow the troubleshooting instructions (on when the IP packet transfer function is used) and take corrective actions. (Page 142 When IP communications cannot be performed using the IP packet transfer function)
- Up to 127 levels of modules can be connected when the IP communication test is executed.
- When an Ethernet device (request destination device) is connected to an Ethernet-equipped module, the communication path to the Ethernet-equipped module connected to the Ethernet device (request destination device) or CC-Link IE Controller Network-equipped module can be checked using the IP communication test. Setting the IP address of the Ethernet device in "Communication Target" on the "IP Communication Test" window causes an error. (Error code of the CPU module: 4A2AH)

Precautions

Communications cannot be performed via modules that do not support the IP packet transfer function such as MELSECNET/H. Only an error code appears without any information displayed in "Error Information".

Relay using CC-Link IE Field Network

The IP packet transfer function can be used through a relay from CC-Link IE Field Network to CC-Link IE Controller Network.



When using the IP packet transfer function on CC-Link IE Field Network, refer to the following.

📖 User's manual for the CC-Link IE Field Network used

Precautions

Support for the IP packet transfer function

MELSEC iQ-R series modules support the IP packet transfer function from the first release.

To check whether other modules support the IP packet transfer function, refer to the following.

📖 User's manual for the module used

Using different networks

Communications cannot be performed via modules that do not support the IP packet transfer function such as MELSECNET/H.

Communications before a baton pass is established (D LINK LED off)

The IP packet transfer function can be used after a baton pass was established. If communications are performed before that, a timeout error occurs in an Ethernet device (request source device). Whether the baton pass is established in the own station can be checked on the D LINK LED.

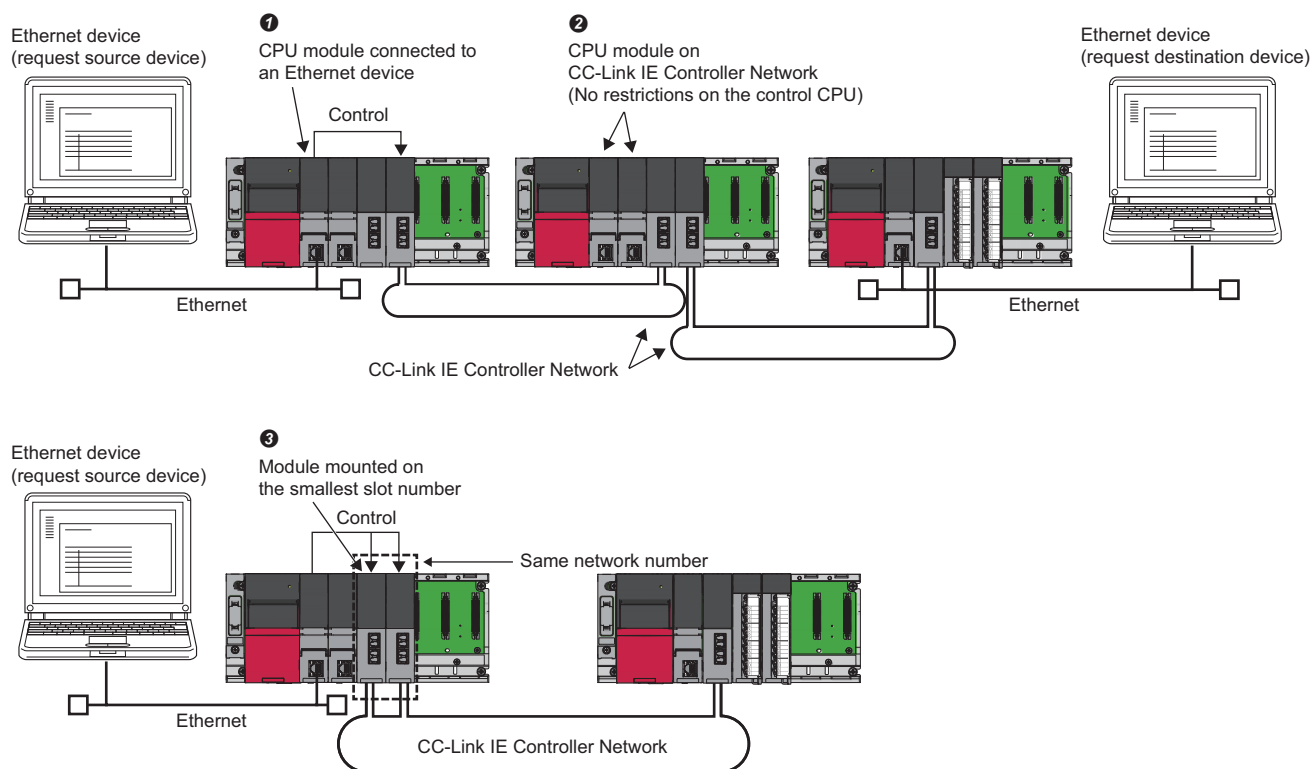
Precautions when using the UDP communication

Using UDP may reduce the reliability of data communications compared to TCP, causing a problem, such as data missing and changed order of data receiving. If any problem occurs, change the protocol to TCP.

Communications of Broadcast and Multicast

Communications of Broadcast and Multicast cannot be transferred using the IP packet transfer function. Use Unicast (identifying a single request destination) instead.

Precautions when configuring a multiple CPU system

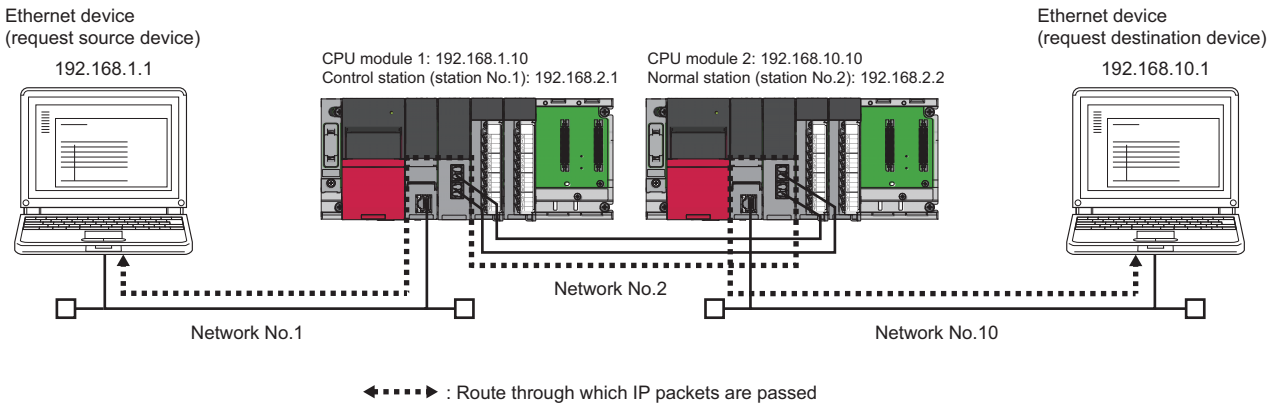


- 1 Set a CPU module connected to an Ethernet device as a control CPU of the CC-Link IE Controller Network-equipped module performing the IP packet transfer.
- 2 Any CPU module in a relay station on CC-Link IE Controller Network can be served as a control CPU of the CC-Link IE Controller Network-equipped module transferring the IP packet.

- ③ When multiple CC-Link IE Controller Network-equipped modules with the same network number are connected to one system, the CC-Link IE Controller Network-equipped module with the smallest slot number transfers the IP packet. To transfer the IP packet, connect the Ethernet device to a control CPU of the CC-Link IE Controller Network-equipped module with the same network number and smallest slot number.

Example of communications using the IP packet transfer function

The following system configuration is used to explain an example of communications.



Setting in the CPU module 1 and control station (station No.1)

1. Set the IP address of the CPU module 1 as follows.

[Navigation window] ⇒ [Parameter] ⇒ Target module ⇒ [Module Parameter] ⇒ [Basic Settings] ⇒ [Own Node Settings] ⇒ [IP Address]

| Item | Setting |
|--------------------------|--------------------|
| Own Node Settings | |
| Parameter Setting Method | Parameter Editor |
| IP Address | |
| IP Address | 192 . 168 . 1 . 10 |

2. Change the following setting to "Use" in the CPU module 1.

[Navigation window] ⇒ [Parameter] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [IP Packet Transfer Setting]

| | |
|-----------------------------------|-----|
| IP Packet Transfer Setting | |
| IP Packet Transfer Function | Use |

3. Set the IP address of the control station (station No.1) as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [IP Address]

| | |
|-------------------|-------------------|
| IP Address | |
| IP Address | 192 . 168 . 2 . 1 |

4. Write the set parameters to the CPU module 1. Then reset the CPU module 1 or power off and on the system.

Setting in the CPU module 2 and normal station (station No.2)

1. Set the IP address of the CPU module 2 as follows.

[Navigation window] ⇒ [Parameter] ⇒ Target module ⇒ [Module Parameter] ⇒ [Basic Settings] ⇒ [Own Node Settings] ⇒ [IP Address]

| Item | Setting |
|--------------------------|---------------------|
| Own Node Settings | |
| Parameter Setting Method | Parameter Editor |
| IP Address | |
| IP Address | 192 . 168 . 10 . 10 |

2. Change the following setting to "Use" in the CPU module 2.

[Navigation window] ⇒ [Parameter] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [IP Packet Transfer Setting]

| | |
|-----------------------------------|-----|
| IP Packet Transfer Setting | |
| IP Packet Transfer Function | Use |

3. The normal station (station No.2) does not require an IP address.

The network address set in the control station (station No.1) is automatically assigned.

4. Write the set parameters to the CPU module 2. Then reset the CPU module 2 or power off and on the system.

Checking the status of communications

After the setting is completed in each module, execute the IP communication test to check for an error in the communication path on CC-Link IE Controller Network. (☞ Page 49 IP communication test)

IP Communication Test

IP Communication Test Details

IP Address Input Form: DEC

Connected Station (Host): IP Address: 192 168 1 10

Communication Destination Setting: IP Address: 192 168 2 2

Execute Test

* Check the IP communication route from the connected station to the destination station.

IP Comm. Test Results

Connected Station (Host): IP Address: 192 168 1 10

Communication Destination Setting: IP Address: 192 168 2 2

Error Information: No Error

Details

Outward Inward

Network No.

No. 2

1 2

Own Target

Close

Communication speed

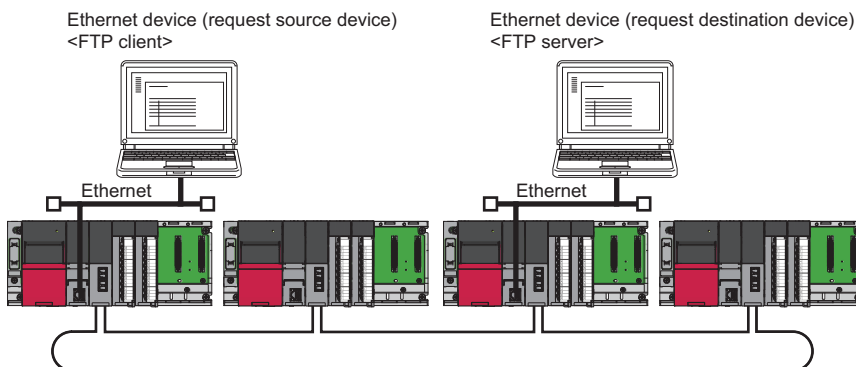
This section provides the results of communication speed measured using the IP packet transfer function. Use the results as a reference.

When request source and destination devices are connected to a CPU module

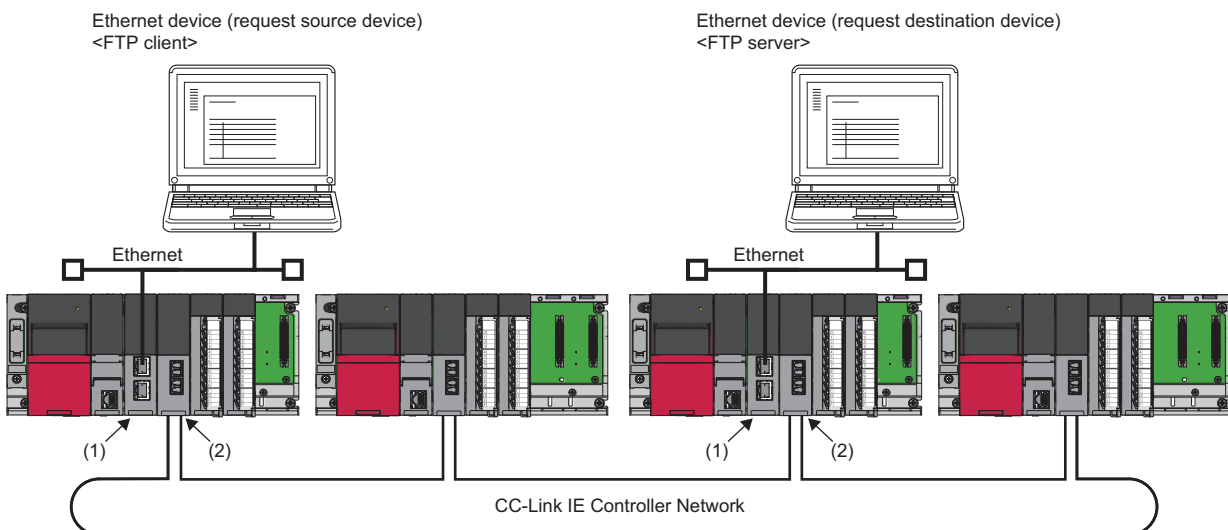
The results are based on measurement when FTP communications are performed with four RJ71GP21-SXs or RJ71EN71s connected.

■System configuration

- When optical fiber cables are used



- When Ethernet cables are used



| Device | Description | |
|--|-------------------------------|--|
| Ethernet device (request source device) <FTP client> | CPU | Intel® Core™ 2 Duo processor 2.00GHz |
| | OS | Microsoft® Windows® 7 Professional Operating System |
| | Ethernet board | 1000BASE-T |
| | FTP client application | FFFTP |
| Ethernet device (request destination device) <FTP server> | CPU | Intel® Core™ i5 Duo processor 2.67GHz |
| | OS | Microsoft® Windows® 7 Professional Operating System |
| | Ethernet board | 1000BASE-T |
| | FTP server application | FileZilla Server |
| Programmable controller | CPU module | <ul style="list-style-type: none"> • R04CPU • Sequence scan time: 1ms |
| | CC-Link IE Controller Network | <ul style="list-style-type: none"> • Cyclic transmission: 128 points assigned to each station for the LB and LW, 256 points assigned to each station for the LX and LY • Transient transmission: N/A |

■Measurement result of the communication speed

The following table lists the time that takes until a file is read from a request source device to a request destination device.

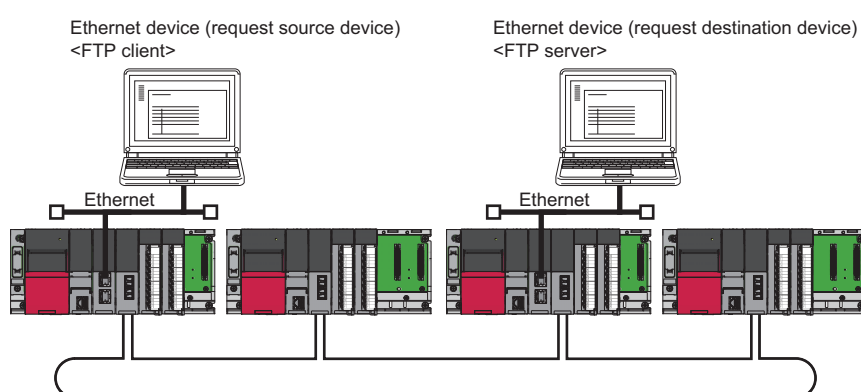
| Size of a file to be communicated | Time (same as those when optical fiber cables are used and Ethernet cables are used) |
|-----------------------------------|--|
| 1K bytes | 10ms |
| 50K bytes | 300ms |
| 100K bytes | 600ms |
| 1M bytes | 4000ms |

When request source and destination devices are connected to RJ71EN71

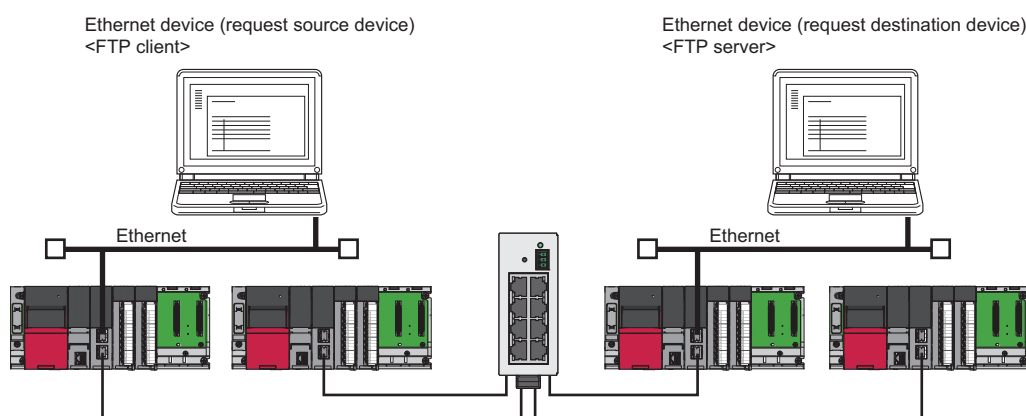
The results are based on measurement when FTP communications are performed with four RJ71GP21-SXs or RJ71EN71s connected.

■System configuration

- When optical fiber cables are used ("Port 1 Network Type" and "Port 2 Network Type" are set to "Ethernet" for the RJ71EN71.)



- When Ethernet cables are used ("Port 1 Network Type" is set to "Ethernet" and "Port 2 Network Type" is set to "CC-Link IE Control" for the RJ71EN71.)



| Device | Description |
|---|--|
| Ethernet device (request source device) <FTP client> | Same as those when a request source device and a request destination device are connected to a CPU module (Page 56) When request source and destination devices are connected to a CPU module) |
| Ethernet device (request destination device) <FTP server> | |
| Programmable controller | |

■Measurement result of the communication speed

The following table lists the time that takes until a file is read from a request source device to a request destination device.

| Size of a file to be communicated | Time (same as those when optical fiber cables are used and Ethernet cables are used) |
|-----------------------------------|--|
| 1K bytes | 10ms |
| 50K bytes | 100ms |
| 100K bytes | 200ms |
| 1M bytes | 2000ms |

To increase communication speed

Communication speed can be increased by checking the following items again.

■Sequence scan of a CPU module

Shortening sequence scan time can increase communication speed.

For causes extending sequence scan time, refer to the following.

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

■Transient transmission frequency

Communications using the IP packet transfer function are performed with transient transmission. Taking one of the following actions can increase communication speed.

- Executing the COM instruction on a program and executing a service processing at any timing other than an END processing increase the frequency of transient transmission (the amount of processing per transient transmission). Consequently, the frequency of communications using the IP packet transfer function increases, resulting in increased communication speed. (📖 MELSEC iQ-R Programming Manual (Module Dedicated Instructions))
- Decreasing the number of other transient transmission ensures the processing time of the IP packet transfer function; therefore, communication speed can be increased.

■Link scan time

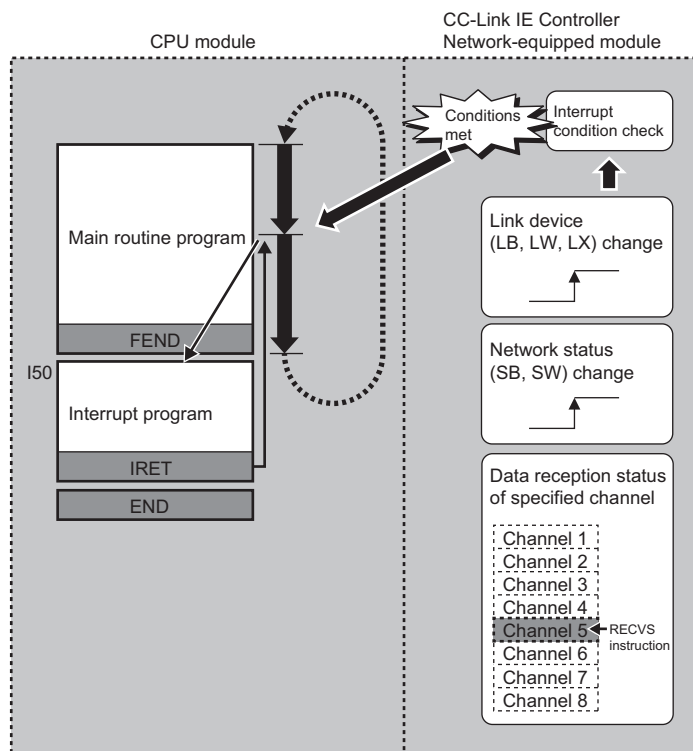
Minimizing the number of link device points used in the cyclic transmission shortens link scan time, resulting in increased communication speed.

1.4 Interrupt Request to CPU Module


1

This function makes an interrupt request to the CPU module to start the interrupt program if the interrupt conditions preset using the engineering tool are met.

Interrupt conditions are based on the changes in the link devices (LB, LW, LX) and the network statuses (SB, SW) checked every link scan or the data reception status of the channel specified via the RECVS instruction.



Setting method

Set the interrupt request to the CPU module in "Interrupt Settings" under "Application Settings". ( Page 91 Interrupt Settings)

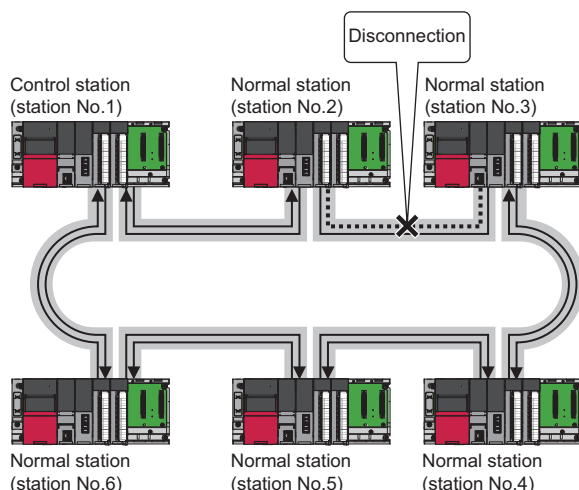
1.5 Loopback Function

When optical fiber cables are used

This function continues data link with normal stations even if a cable disconnection or faulty station occurs.

Cable disconnection

Even if a cable disconnection occurs, the system automatically performs loopback to continue the data link.

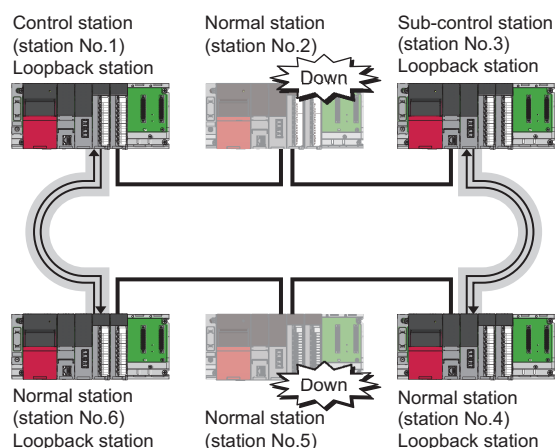


Occurrence of faulty stations

The system disconnects faulty stations and automatically performs loopback to continue the data link.

If two or more faulty stations occur, a station located between the faulty stations cannot perform data link.

However, when more than one station exists between the faulty stations, a normal station is changed to a sub-control station and continues data link.



Setting method

The loopback function remains effective at all times. No parameter setting is required.

Precautions

When the RJ71GP21(S)-SX fails, loopback may not be performed depending on what kind of failure occurs.

In such a case, data link may be stopped. To identify the RJ71GP21(S)-SX with a failure, perform either of the following.

- Identify a faulty station by checking the LED indications (off of RUN LED, on or flashing of ERR LED) of all RJ71GP21(S)-SXs.
- Turn off the power of all stations, then turn on the power of stations in order, starting from the control station. While doing this, check up to which station on the network loopback is normally performed. Check whether the control station and a reconnected normal station are displayed on a loopback station in the network information display of the CC-Link IE Controller Network diagnostics.

Replace the RJ71GP21(S)-SX where a failure was detected with a new one and check that data link has returned to normal status.

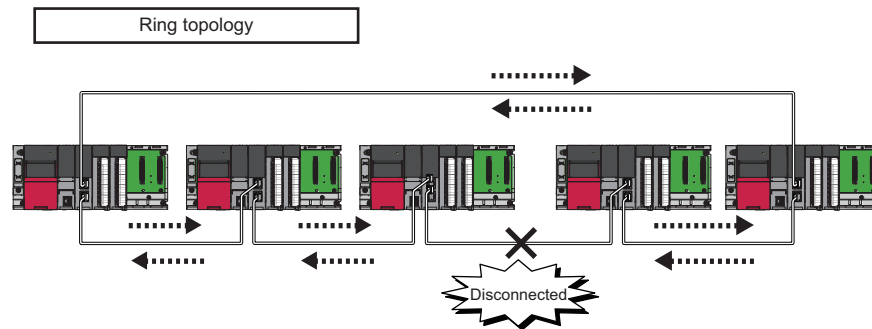
When Ethernet cables are used

This function continues data link with normal stations even if a cable disconnection or faulty station occurs. All stations after the cable disconnection point or faulty station are disconnected in a line topology. By using this function with ring topology, data link continues with normal stations.

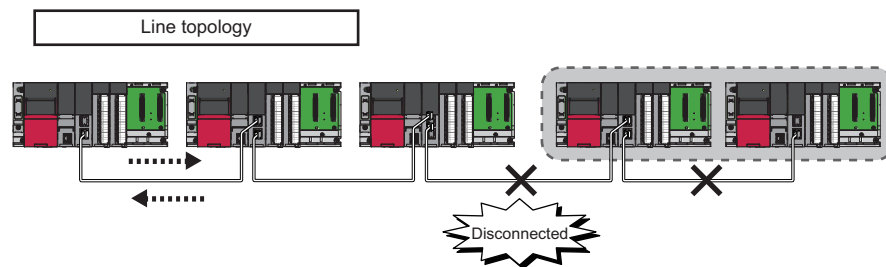
Point

The RJ71EN71 and RnENCPU can be used only when "Port 1 Network Type" is set to "CC-Link IE Control".

Cable disconnection

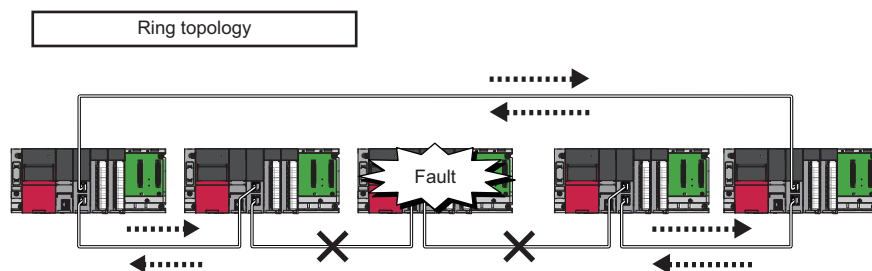


Even if a cable disconnection occurs, the system automatically performs loopback to continue the data link.

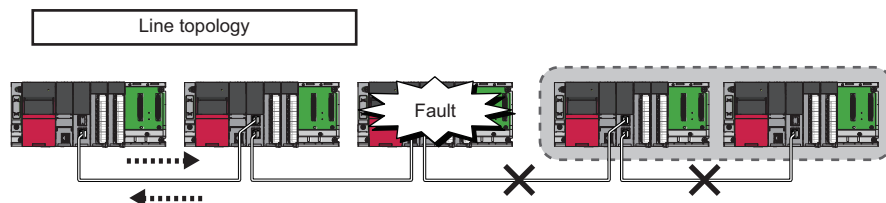


Stations connected after the cable disconnection point are disconnected.

Occurrence of faulty stations



The system disconnects faulty stations and automatically performs loopback to continue the data link.



Stations connected after the faulty station are disconnected.

Setting method

1. Configure the network in ring topology.
2. Set "Network Topology" to "Ring" in "Basic Settings" of the control station.

Precautions

■Loopback function setting and network configuration

To use the loopback function, configure the network in ring topology and set "Network Topology" to "Ring" in "Basic Settings" of the control station. If "Network Topology" and the network configuration are inconsistent, an error may occur in all stations and data link cannot be performed.

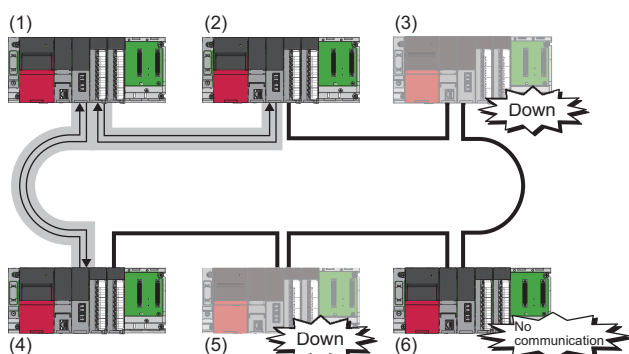
1.6 External Power Supply Function

This function directly supplies the power to the RJ71GP21S-SX from an external source.

Even at power down of a CPU module, the network is not cut off at the station with the power failure, and thus data link continues on normal stations. Furthermore, if the power failure occurs on more than one station, data link continues on a station existing between faulty stations.

Without the external power supply function

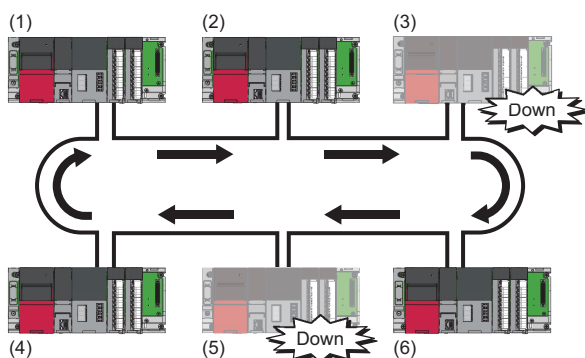
If the power failure of the CPU module occurs on the station No.3 and station No.5, loopback occurs on the station No.2 and station No.4, and data link stops on station No.6.



- (1) Control station (station No.1)
- (2) Normal station (station No.2): Loopback station
- (3) Normal station (station No.3)
- (4) Normal station (station No.4): Loopback station
- (5) Normal station (station No.5)
- (6) Normal station (station No.6)

With the external power supply function

Even though the power failure of the CPU module occurs on the station No.3 and station No.5, data link continues on the station No.6. Loopback does not occur on the station No.2 and station No.4.



- (1) Control station (station No.1)
- (2) Normal station (station No.2)
- (3) Normal station (station No.3)
- (4) Normal station (station No.4)
- (5) Normal station (station No.5)
- (6) Normal station (station No.6)

Operating precautions

If the external power supply of the RJ71GP21S-SX is turned on while the power of the CPU module is off, the RJ71GP21S-SX does not operate normally. Turn on both of the powers of CPU module and the RJ71GP21S-SX and start the operation.

1.7 Redundant System Function

The redundant system function improves system reliability by mounting CC-Link IE Controller Network-equipped modules on the base units of both systems of a redundant system so that the new control system can continue data link even if an error occurs in the control system.

Restriction

The following modules are required to use the redundant system function.

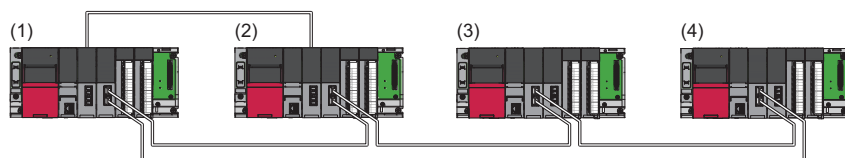
- Process CPU
- Redundant function module
- The RJ71GP21-SX or RJ71GP21S-SX with a firmware version of "12" or later

When using a redundant system, check the versions of the Process CPU and the engineering tool. (📖 MELSEC iQ-R CPU Module User's Manual (Application))

System configuration

This section describes the system configuration of a redundant system using CC-Link IE Controller Network-equipped modules.

CC-Link IE Controller Network-equipped modules are mounted on the base units of both systems of a redundant system. A redundant system is configured by connecting the CC-Link IE Controller Network-equipped modules in both systems together using optical fiber cables.



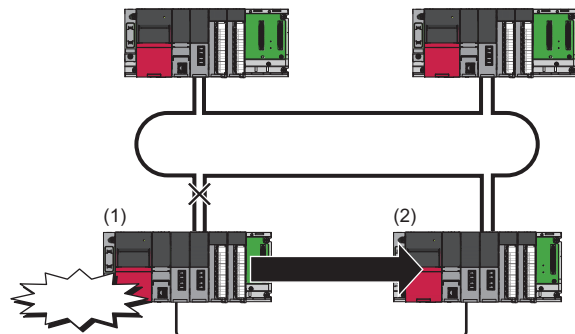
- (1) Control station (station No.1) as the control system (system A)
- (2) Normal station (station No.2) as the standby system (system B)
- (3) Normal station (station No.3)
- (4) Normal station (station No.4)

System switching operation

In a redundant system, if the control system fails, the control system and the standby system are switched.

In CC-Link IE Controller Network, send data is transferred to the new control system after system switching to continue data link.

The following shows system switching operation when a communication error occurs in the control system.



1. A communication error occurs in control system (1).
2. The CC-Link IE Controller Network-equipped module of control system (1) issues a system switching request to the CPU module.
3. System switching occurs in the redundant system.
4. Standby system (2) starts operating as the new control system to continue network control.

Point

- If system switching is performed by a cause not leading to a communication error, control station switching is not performed.
- While the control is switched to a station of the new control system, the cyclic data output is held. For cyclic data holding time (output holding time) when system switching occurs, refer to the following.

➡ Page 207 Cyclic data holding time when system switching occurs

Setting method

When using the module in a redundant system, select "RJ71GP21-SX (R)" or "RJ71GP21S-SX (R)" for the module name in the "Add New Module" window.

Note that pairing needs to be set for the CC-Link IE Controller Network-equipped modules of both systems.

Pairing is set under "Network Range Assignment" in "Required Settings" of the control station. (➡ Page 76 Network Range Assignment)

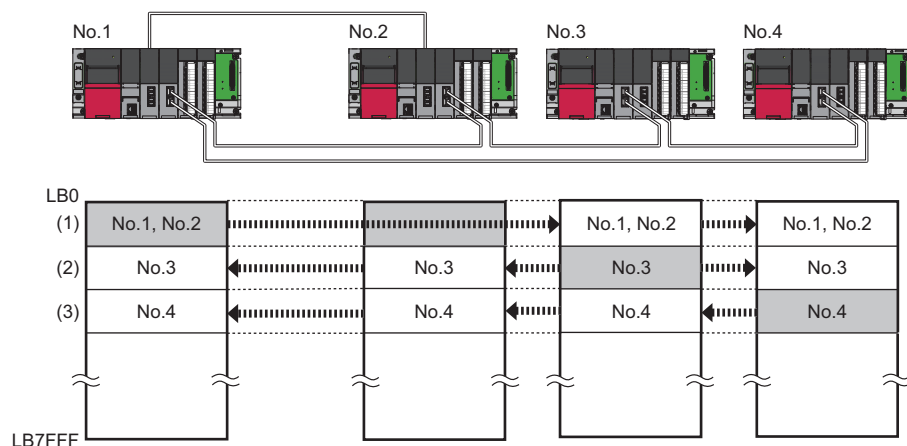
Cyclic transmission send/receive processing

When pairing is set for the CC-Link IE Controller Network-equipped modules of both systems, send data is transferred to the new control system at the time of system switching to continue cyclic transmission.

The following is the send range of cyclic transmission when pairing is set.

- The own station send ranges of the link devices (LB, LW) of both systems become the same when pairing is set.
- The station operating as the control system sends and receives cyclic data.
- The station operating as the standby system only receives cyclic data.

Each number in the figure, from No.1 to No.4, represents a station number.



Send range of station number□

- (1) From station No.1 as the control system, data in the send ranges of stations No.1 and No.2 are sent to station 3 and station 4. If system switching occurs to due to an error in station No.1, data in the send ranges of stations No.1 and No.2 are sent from station No.2, which starts operating as the new control system.
- (2) Data in the send range of station No.3 is sent to all stations including station No.2 operating as the standby system.
- (3) Data in the send range of station No.4 is sent to all stations including station No.2 operating as the standby system.


Precautions

■Tracking

- Of all refresh target devices (B, W) of link devices (LB, LW), tracking needs to be set for the devices in the own station send range.
- Tracking cannot be set for link direct devices.
- Do not set tracking for the link special relay areas (SB0020 to SB01FF), which are turned on/off by the system, or the link special register areas (SW0020 to SW01FF), where data is stored by the system.

Point

For details on tracking, refer to the following.

 MELSEC iQ-R CPU Module User's Manual (Application)

■Programming


In CC-Link IE Controller Network, the network detects a temporary communication error based on the condition of power-on/off, cables, noise, and others. Create a program using CC-Link IE Controller Network in such a way that control operation is not stopped even if such a temporary communication error is detected.

■Detection of an error when another station is powered on/off

When either of the following operations is performed, a temporary data link error may be detected and a system switching request may be issued.

- Another station (including the standby system) is powered on/off.
- A personal computer equipped with a CC-Link IE Controller Network interface board boots or shuts down.

If the above system switching request is issued before the standby system starts up, the control system CPU module may detect a continuation error (system switching error). Even in this case, the control system continues to control the system normally. Create a program where control operation is not stopped due to error detection.

Before clearing the continuation error (system switching error) detected by the control system CPU module, check that the standby system and the CC-Link IE Controller Network-equipped modules operate correctly with the special register. ( MELSEC iQ-R CPU Module User's Manual (Application))

System switching request to the control system CPU module

When the CC-Link IE Controller Network-equipped module mounted on the control system detects a data link error, it issues a system switching request to the control system CPU module.

However, depending on the operating status of the standby system, system switching is not executed.

For details on the operating status of the standby system and whether system switching is executable, refer to the following.

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

System switching cause

This section describes causes that make the CC-Link IE Controller Network-equipped module issue a system switching request.

Point

For details on causes other than a system switching request from the CC-Link IE Controller Network-equipped module, refer to the following.

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

■Moderate/major error and hardware failure

When detecting an error where the module cannot continue the processing, the CC-Link IE Controller Network-equipped module notifies the control system CPU module about the error and issues a system switching request.

■Data link error

If the data link error status (D LINK LED off) continues for the system switching monitoring time set in "Supplementary Cyclic Settings" under "Application Settings" or longer, the CC-Link IE Controller Network-equipped module issues a system switching request to the control system CPU module.

Point

When cyclic transmission is stopped using the link start/stop of the CC-Link IE Field Network diagnostics, a system switching request is not issued to the control system CPU module. (This also applies to cases in which cyclic transmission is stopped by the link special relay (SB) or link special register (SW).)

Disabling system switching

When 'Flag for disabling system switching due to data link error' (SB0017) is turned on for both systems in advance, even if a data link error is detected, a system switching request is not issued to the control system CPU module.

Point

- The disabling of system switching is a function for maintenance. Use this function to prevent system switching from occurring due to a data link error caused by faulty operation during network maintenance.
- To disable system switching, set tracking to 'Flag for disabling system switching due to data link error' (SB0017) so that 'Flag for disabling system switching due to data link error' (SB0017) is turned on for both systems.
- If a system switching request is issued due to a cause other than a data link error, system switching is executed regardless of the status of 'Flag for disabling system switching due to data link error' (SB0017).

Functions restricted in a redundant system

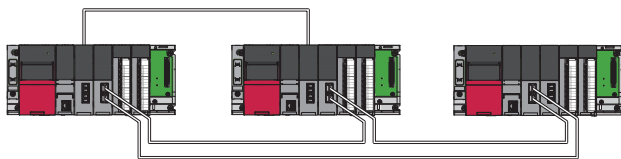
The following table lists the functions restricted when using CC-Link IE Controller Network-equipped modules in a redundant system.

| Function | Restrictions |
|-----------------------------|--|
| Transient transmission | <ul style="list-style-type: none"> • To perform the transient transmission specifying the control system or standby system, acquire the current target station address (address of the control system or standby system) by using the module FB (RedundantSystem_GetAddress) and access the acquired address. (MELSEC iQ-R Ethernet, CC-Link IE, and MELSECNET/H Function Block Reference) • Precautions exist for communications with different networks when the networks contain a redundant system. (Page 42 When the networks contain a redundant system) • Precautions exist for when the dedicated instructions are used to a redundant system. (Page 201 Precautions for dedicated instructions) |
| IP packet transfer function | <p>■IP address setting of the Ethernet-equipped module Use the IP address of the control system to maintain communications when system switching occurs. (MELSEC iQ-R Ethernet User's Manual (Application))</p> <p>■Communications at the time of system switching When system switching occurs in a redundant system on a communication path, communications may be interrupted or data may be lost. Also, communications may be disabled during system switching. If an error occurs in communications, resend data from the request source.</p> <p>■When the Ethernet-equipped module connecting to an Ethernet device is redundant</p> <ul style="list-style-type: none"> • When using the dynamic routing, execute this function via the control system. An error occurs if transfer operation is executed via the standby system. Set "Routing Setting" of "CPU Parameter" when executing this function via the standby system. • Set "Routing Setting" of "CPU Parameter" when executing this function even when stop errors exist in the CPU modules of both systems. |

Setting example

This section describes the setting details for communications in a redundant system.

System configuration example



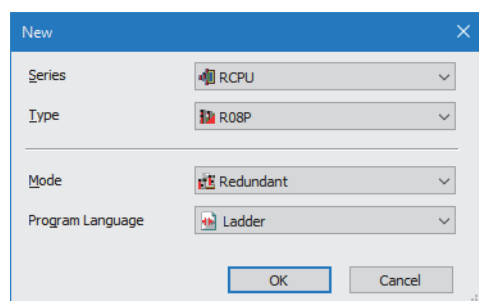
Setting in the control station

Connect the engineering tool to the CPU module to be set as the control system and set the parameters.

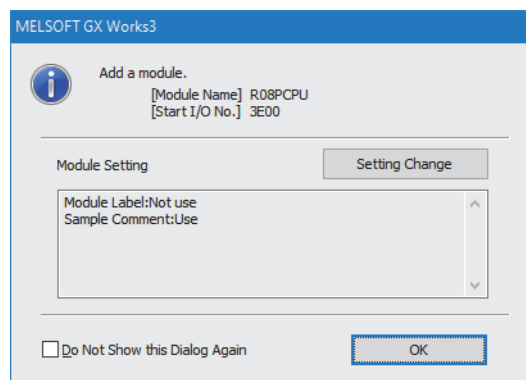
In a redundant system, the same program and parameter are written to both systems. A new project does not need to be created for the standby system.

1. Set the CPU module as follows.

 [Project] ⇒ [New]



2. Click the [Setting Change] button and set to use module labels.
3. Click the [OK] button to add the module labels of the CPU module.



4. In the I/O assignment setting, set the redundant function module for slot No.0.

[Navigation window] ⇒ [Parameter] ⇒ [System Parameter] ⇒ [I/O Assignment] tab ⇒ [I/O Assignment Setting]

5. Set the CC-Link IE Controller Network-equipped module for slot No.1.

6. Click the [Setting Change] button and set to use module labels.

7. Click the [OK] button to add the module labels of the CC-Link IE Controller Network-equipped module.

8. Set the network range assignment as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GP21-SX(R)] ⇒ [Module Parameter] ⇒ [Required Settings] ⇒ [Network Range Assignment]

Setting Item

Total No. of Stations: 3 Switch Windows: LB/LW Setting (1) Batch Setting(G)

| Station No. | Station Type | LB/LW Setting (1) | | | | | | Reserved Station | Pairing | Shared Group |
|-------------|-----------------|-------------------|-------|------|--------|-------|-------|------------------|---------|--------------|
| | | LB | | | LW | | | | | |
| | | Points | Start | End | Points | Start | End | | | |
| 1 | Control Station | 512 | 0000 | 01FF | 512 | 00000 | 001FF | No Setting | Enable | |
| 2 | Normal Station | 512 | 0000 | 01FF | 512 | 00000 | 001FF | No Setting | Enable | |
| 3 | Normal Station | 512 | 0200 | 03FF | 512 | 00200 | 003FF | No Setting | Disable | |

9. Set the refresh settings as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GP21-SX(R)] ⇒ [Module Parameter] ⇒ [Basic Settings] ⇒ [Refresh Setting]

| No. | Link Side | | | | | CPU Side | | | | |
|-----|-------------|--------|-------|-------|---|----------------|-------------|--------|-------|-------|
| | Device Name | Points | Start | End | | Target | Device Name | Points | Start | End |
| - | SB | 512 | 00000 | 001FF | ↔ | Module Label | | | | |
| - | SW | 512 | 00000 | 001FF | ↔ | Module Label | | | | |
| 1 | LB | 1024 | 00000 | 003FF | ↔ | Specify Device | B | 1024 | 00000 | 003FF |
| 2 | LW | 1024 | 00000 | 003FF | ↔ | Specify Device | W | 1024 | 00000 | 003FF |

10. Set the redundant function module of the own system as the system A in the "System A/B Setting" window, and reset the CPU modules of both systems or power off and on the both systems.

[Online] ⇒ [Redundant PLC Operation] ⇒ [System A/B Setting]

System A/B Setting

Please set the connective system of redundant system.
Please set other system based on the setting of connective system.

System Status

Connective System: System Unknown

Other System: System Unknown

Set the Connective System

System A

Execute Close

11. Write the set parameters to the system A CPU module.

[Online] ⇒ [Write to PLC]

12. Click the [Yes] button to write to the CPU modules of both systems.

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Write to both systems.
Are you sure you want to continue?

Please do not change the operation mode while it is running.

Yes No

13. Either reset the CPU modules of both systems or power off and on both systems.




Point

In this setting example, default settings are used for the parameters other than those described. For the parameter setting, refer to the chapter explaining the parameters in this manual. (Page 74 PARAMETER SETTINGS)

2 PARAMETER SETTINGS

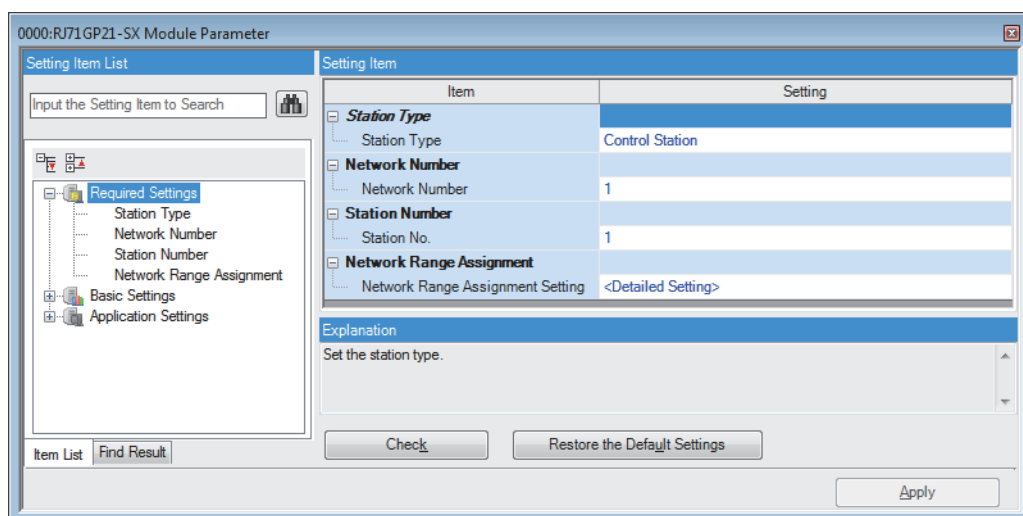
This chapter describes the parameter settings required for communications between the CC-Link IE Controller Network-equipped module and other stations.

2.1 Setting Parameters

1. Add the CC-Link IE Controller Network-equipped module in the engineering tool.
 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Right click ⇒ [Add New Module]
2. The required settings, basic settings, and application settings are included in the parameter settings. Select one of the settings from the tree on the window shown below and set parameters.
 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter]
3. After setting parameters, click the [Apply] button.
4. Write the settings to the CPU module using the engineering tool.
 [Online] ⇒ [Write to PLC]
5. The settings are reflected by resetting the CPU module or powering off and on the system.

2.2 Required Settings

Set the station type, network number, or other parameters for the CC-Link IE Controller Network-equipped module.




○: Can be set, ×: Cannot be set

| Item | Description | Availability | | Reference |
|--------------------------|---|-----------------|----------------|----------------------------------|
| | | Control station | Normal station | |
| Station Type | Set the station type of the CC-Link IE Controller Network-equipped module. | ○ | ○ | Page 75 Station Type |
| Network Number | Set the network number of the CC-Link IE Controller Network-equipped module. | ○ | ○ | Page 75 Network Number |
| Station Number | Set the station number of the CC-Link IE Controller Network-equipped module. | ○ | ○ | Page 75 Station Number |
| Network Range Assignment | Set parameters of each stations (the number of points and assignment of link devices) in the control station. | ○ | × | Page 76 Network Range Assignment |

Station Type

Set the station type of the CC-Link IE Controller Network-equipped module.

| Item | Description | Setting range |
|--------------|--|---|
| Station Type | <p>Select whether to use the CC-Link IE Controller Network-equipped module as the control station or a normal station. One control station can be set in a network.</p> <p>Send points can be extended by selecting "Ext. Mode Control Station" or "Ext. Mode Normal Station". ( Page 37 Number of send points extension by using multiple modules)</p> | <ul style="list-style-type: none"> • Control Station • Normal Station • Ext. Mode Control Station • Ext. Mode Normal Station <p>(Default: Station type set in the "Add New Module" window.)</p> |


Network Number

Set the network number of the CC-Link IE Controller Network-equipped module.

| Item | Description | Setting range |
|----------------|--|--------------------------|
| Network number | Set the network number of the CC-Link IE Controller Network-equipped module. | 1 to 239 (Default: 1) |

Station Number

Set the station number of the CC-Link IE Controller Network-equipped module.

| Item | Description | Setting range |
|----------------|--|--|
| Setting Method | <p>Select whether to set the station number in parameter editor or in program (UINI instruction). This item can be set only for a normal station.</p> <p>When selecting "Program", use the UINI instruction to set the number. ( MELSEC iQ-R Programming Manual (Module Dedicated Instructions))</p> <p>This item cannot be set when "RJ71GP21-SX(R)" or "RJ71GP21S-SX(R)" is selected for "Module Name". Set the number using a parameter.</p> | <ul style="list-style-type: none"> • Parameter Editor • Program <p>(Default: Parameter Editor)</p> |
| Station No. | <p>Set the station number of the CC-Link IE Controller Network-equipped module.</p> <ul style="list-style-type: none"> • Station number can be set within the range set in "Total No. of Stations" in the "Network Range Assignment" window in "Required Settings" of the control station. To set the larger value, change the value in "Total No. of Stations" in the "Network Range Assignment" window beforehand. • Set a station number different from those used in the same network. <p>To set the station number of a normal station in this setting, set "Setting Method" to "Parameter Editor".</p> | 1 to 120* ¹ (Default: 1 for control station, 2 for normal station) |

*1 The setting range is 1 to 119 when "RJ71GP21-SX(R)" or "RJ71GP21S-SX(R)" is selected for "Module Name".

Network Range Assignment

Set parameters of normal stations (the number of points and assignment of link devices) in the control station.

Point

- Network range assignments are set in the control station only. Normal stations perform cyclic transmission according to the range assigned at the control station.
- When "LB/LW Setting (2)" is used, link scan time will be longer compared to using "LB/LW Setting (1)" only.

Setting procedure

The procedure for the network range assignment settings is shown below.

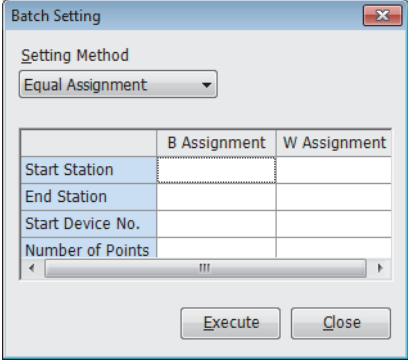
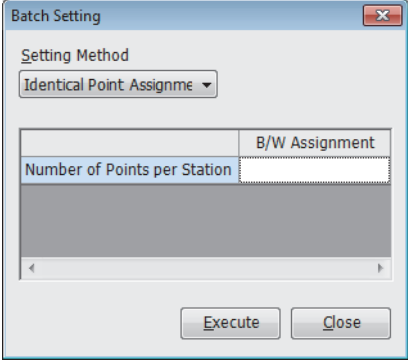
1. Set the required items.

| Total No. of Stations <input type="text" value="2"/> | | Switch Windows LB/LW Setting (1) | | Batch Setting(G) | | | | | | |
|--|-----------------|---|-------|------------------|--------|-------|-----|------------------|---------|--------------|
| Station No. | Station Type | LB/LW Setting (1) | | | | | | Reserved Station | Pairing | Shared Group |
| | | LB | | | LW | | | | | |
| | | Points | Start | End | Points | Start | End | | | |
| 1 | Control Station | | | | | | | No Setting | Disable | |
| 2 | Normal Station | | | | | | | No Setting | Disable | |

2. Click the [Apply] button to finish the network range assignment.

Setting items


| Item | Description | Setting range |
|--------------------------|--|---|
| Total No. Stations | When setting "Station Type" to "Control Station" or "Ext. Mode Control Station", set the total number of stations in a network. <ul style="list-style-type: none"> • When any reserved station is required, include the number of reserved stations. • When skipping a station number, specify the number to be skipped as a reserved station. | 2 to 120 (Default: 2) |
| Switch Windows | Select the "LB/LW Setting" window or "LX/LY Setting" window. | <ul style="list-style-type: none"> • LB/LW Setting (1) • LB/LW Setting (2) • LX/LY Setting (1) • LX/LY Setting (2) (Default: LB/LW Setting (1)) |
| Device Assignment Method | Right-click in the setting window and select a link device assignment method from the "Device Assignment Method" menu. <ul style="list-style-type: none"> • Start/End: Enter the start and end numbers of link devices. • Points/Start: Enter the start and end numbers of link devices. | <ul style="list-style-type: none"> • Start/End • Points/Start (Default: Start/End) |

| Item | Description | Setting range |
|----------------------------|---|--|
| Batch Setting | <p>Equal Assignment</p> <p>Specify the start station and end station, and equally assign link devices to stations.</p>  <ul style="list-style-type: none"> • Start Station: Enter the start station number of stations for which link devices are equally assigned. • End Station: Enter the end station number of stations for which link devices are equally assigned. • Start Device No.: Enter the start number of link devices to be equally assigned. • Number of Points: Enter the total points of link devices to be equally assigned. | <p>■Start Station: (Default: Blank)</p> <ul style="list-style-type: none"> • 1 to the end station number <p>■End Station: (Default: Blank)</p> <ul style="list-style-type: none"> • Number set to "Start Station" to the end station number <p>■Start Device No.: (Default: Blank)</p> <ul style="list-style-type: none"> • Same as "LB/LW Setting (1)", "LB/LW Setting (2)", "LX/LY Setting (1)", or "LX/LY Setting (2)". <p>■Number of Points</p> <p>LB (Default: Blank)</p> <ul style="list-style-type: none"> • 16 to 32768 (Link points extended setting: Not to Extend) • 16 to 65536 (Link points extended setting: Extend) <p>LW (Default: Blank)</p> <ul style="list-style-type: none"> • 1 to 131072 (Link points extended setting: Not to Extend) • 1 to 262144 (Link points extended setting: Extend) |
| Identical Point Assignment | <p>Assign the same points to each station's send range in LB/LW.</p>  | (Default: Blank) |

| Item | Description | | Setting range |
|--|---|--|---|
| LB/LW Setting (1) LB/LW Setting (2) | Assign LB/LW points. (☞ Page 19 Communications using LB and LW) Normally, setting only "LB/LW Setting (1)" is enough for communications using LB/LW. Set "LB/LW Setting (2)" in the following cases: <ul style="list-style-type: none"> When extending each station's send range without changing existing assignments (When changing the LB/LW assignment, correct link refresh range of each station. (☞ Page 84 Refresh Setting)) When intentionally dividing each station's send range into two (e.g. within and outside the link refresh range) When settings are configured with the following four conditions met, 32-bit data integrity is automatically assured. (☞ Page 27 Cyclic data integrity assurance) <ul style="list-style-type: none"> The start device number of LB is a multiple of 20H. The number of points assigned per station in LB is a multiple of 20H. The start device number of LW is a multiple of 2. The number of points assigned per station in LW is a multiple of 2. | | (Default: Blank) |
| LB | Points | Set the number of points (decimal) of LB sent by each station. (The sum of "LB/LW Setting (1)" and "LB/LW Setting (2)") Setting range can be assigned in increments of 16 points. | <ul style="list-style-type: none"> 16 to 16384 (Link points extended setting: Not to Extend) 16 to 16384 (Link points extended setting: Extend) |
| | | When "Station Type" in "Required Settings" is set to "Ext. Mode Control Station" or "Ext. Mode Normal Station" Setting range can be assigned in increments of 16 points. | <ul style="list-style-type: none"> 16 to 32768 (Link points extended setting: Not to Extend) 16 to 65536 (Link points extended setting: Extend) |
| | Start | Set the start number of the LB range to be sent by each station. Setting range can be assigned in multiples of 16. | <ul style="list-style-type: none"> 0000H to 7FFFH (Link points extended setting: Not to Extend) 0000H to FFFFH (Link points extended setting: Extend) |
| | End | Set the end number of the LB range to be sent by each station. Setting range can be assigned in multiples of 16 -1. | <ul style="list-style-type: none"> 000FH to 7FFFH (Link points extended setting: Not to Extend) 000FH to FFFFH (Link points extended setting: Extend) |
| LW | Points | Set the number of points (decimal) of LW sent by each station. (The sum of "LB/LW Setting (1)" and "LB/LW Setting (2)") Setting range can be assigned in increments of 1 point. | <ul style="list-style-type: none"> 1 to 16384 (Link points extended setting: Not to Extend) 1 to 16384 (Link points extended setting: Extend) |
| | | When "Station Type" in "Required Settings" is set to "Ext. Mode Control Station" or "Ext. Mode Normal Station" Setting range can be assigned in increments of 1 point. | <ul style="list-style-type: none"> 1 to 131072 (Link points extended setting: Not to Extend) 1 to 262144 (Link points extended setting: Extend) |
| | Start | Set the start number of the LW range to be sent by each station. | <ul style="list-style-type: none"> 0000H to 1FFFFH (Link points extended setting: Not to Extend) 0000H to 3FFFFH (Link points extended setting: Extend) |
| | End | Set the end number of the LW range to be sent by each station. | <ul style="list-style-type: none"> 0000H to 1FFFFH (Link points extended setting: Not to Extend) 0000H to 3FFFFH (Link points extended setting: Extend) |

| Item | Description | | | | Setting range |
|--|---|---|---|---|---|
| LX/LY Setting (1) LX/LY Setting (2) | Assign LX/LY points. (📄 Page 20 Communications using LX and LY) Set "LX/LY Setting (1)" for block 1, and "LX/LY Setting (2)" for block 2. Avoid duplication of the LX/LY settings for each station in "LX/LY Setting (1)" and "LX/LY Setting (2)". The LX/LY data of the same I/O numbers with the actual I/O (the range where actual modules are mounted) must be refreshed to the area after the actual I/O area or to any other than X/Y in refresh settings. Refresh target CPU-side devices in refresh settings cannot overlap with the actual I/O areas. (📄 Page 84 Refresh Setting) | | | | (Default: Blank) |
| M Station → L Station | LY | Points | Set the number of points (decimal) of the output range (LY) sent from the M station (I/O master station) to the other station. | 16 to 8192 (set in increments of 16 points) | |
| | | Start | Set the start number of the output range (LY) of the M station (I/O master station). | 0000H to 1FF0H (multiples of 16) | |
| | | End | Set the end number of the output range (LY) of the M station (I/O master station). | 000FH to 1FFFFH (multiples of 16 - 1) | |
| | LX | Points | The number of points (decimal) of the input range (LX) received by the L station (the station other than the I/O master station) from the M station is displayed. | — | |
| | | Start | Set the start number of the input range (LX) of the L station (the station other than the I/O master station). | 0000H to 1FF0H (multiples of 16) | |
| | | End | The end number of the input range (LX) of the L station (the station other than the I/O master station) is displayed. | — | |
| M Station ← L Station | LX | Points | Set the number of points (decimal) of the input range (LX) received by the M station (I/O master station) from the other station. | 16 to 8192 (set in increments of 16 points) | |
| | | Start | Set the start number of the input range (LX) of the M station (I/O master station). | 0000H to 1FF0H (multiples of 16) | |
| | | End | Set the end number of the input range (LX) of the M station (I/O master station). | 000FH to 1FFFFH (multiples of 16 - 1) | |
| | LY | Points | The number of points (decimal) of the output range (LY) sent from the L station (the station other than the I/O master station) to the I/O master station is displayed. | — | |
| | | Start | Set the start number of the output range (LY) of the L station (the station other than the I/O master station). | 0000H to 1FF0H (multiples of 16) | |
| | | End | The end number of the output range (LY) of the L station (the station other than the I/O master station) is displayed. | — | |
| I/O Master Station | | Set an I/O master station for each block to perform communication using LX/LY. Up to two I/O master stations can be set for one network (block 1 and block 2), regardless of the status of control or normal station. | | <ul style="list-style-type: none">• No Setting• I/O Master Station (Default: No Setting) | |
| Reserved Station | Set to specify the normal station as a reserved station. <ul style="list-style-type: none">• No Setting: The normal station is connected to the network.• Reserved Station: The normal station is reserved for future expansion. By reserving a normal station, link device assignment will not change even if the normal station is added or the reservation is cancelled. Therefore, the program needs not to be modified. Physical connection of the normal station is not required. | | | | <ul style="list-style-type: none">• No Setting• Reserved Station (Default: No Setting) |
| Pairing | When the network contains a redundant system, set a combination of stations of system A and system B. When Ethernet cables are used, it cannot be set to "Enable". | | | | <ul style="list-style-type: none">• Enable• Disable (Default: Disable) |
| Shared Group | Set the stations sharing cyclic data for the same shared group number. (📄 Page 81 Shared Group) | | | | 1 to 120 (Default: Blank) |

Pairing

When the network contains a redundant system, set a combination of stations of system A and system B. ( Page 65 Redundant System Function)

■Setting method

To pair station No.1 with station No.2, set as follows:

| Total No. of Stations <input type="text" value="4"/> | | Switch Windows LB/LW Setting (1) | | <input type="button" value="Batch Setting(G)"/> | | | | | | |
|--|-----------------|---|-------|---|--------|-------|-------|------------------|---------|--------------|
| Station No. | Station Type | LB/LW Setting (1) | | | | | | Reserved Station | Pairing | Shared Group |
| | | LB | | | LW | | | | | |
| | | Points | Start | End | Points | Start | End | | | |
| 1 | Control Station | 256 | 0000 | 00FF | 256 | 00000 | 000FF | No Setting | Enable | |
| 2 | Normal Station | 256 | 0000 | 00FF | 256 | 00000 | 000FF | No Setting | Enable | |
| 3 | Normal Station | 256 | 0100 | 01FF | 256 | 00100 | 001FF | No Setting | Disable | |
| 4 | Normal Station | 256 | 0200 | 02FF | 256 | 00200 | 002FF | No Setting | Disable | |

By setting "Enable" in the "Pairing" column for station No.1, the setting values in columns other than the "Reserved Station" column for station No.2 become the same as the setting values for station No.1.

■Precautions

- Only stations with adjacent station numbers can be paired in the pairing setting.
- Pairing cannot be set in "LX/LY Setting (1)" or "LX/LY Setting (2)".

Shared Group

Set the stations that share their cyclic data to the same shared group number with any of the following procedures. (Page 34 Group cyclic transmission)

- Directly entering a shared group number: Set the shared group number in each station.
- Using the shared group setting: Set the station numbers which belong to each shared group number.

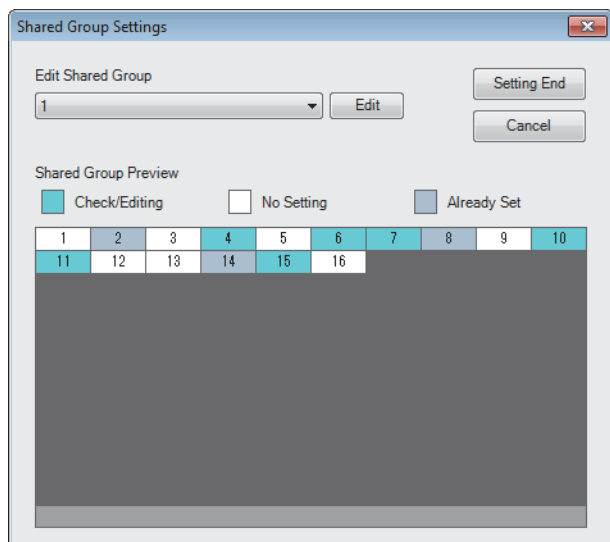
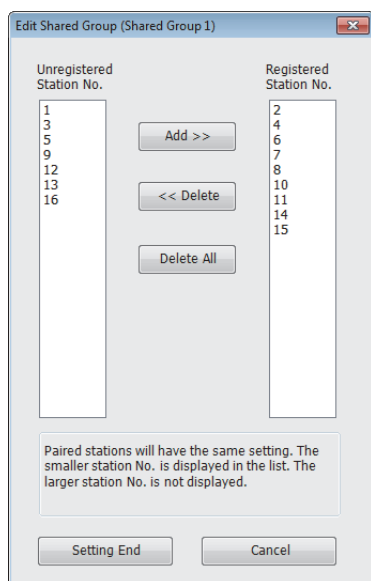
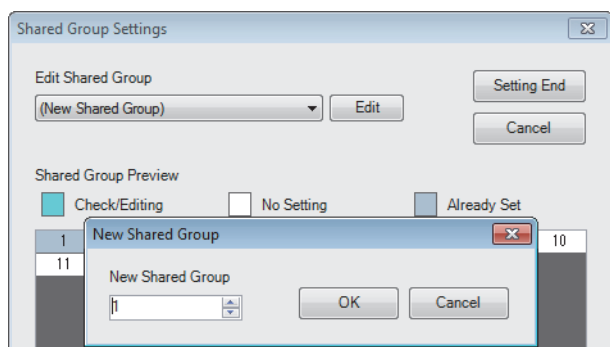
This setting is common to "LB/LW Setting (1)", "LB/LW Setting (2)" and "LX/LY Setting (1)", and "LX/LY Setting (2)".

■Directly entering a shared group number

Directly enter a shared group number in the "Shared Group" area of "Network Range Assignment".

■Shared Group Settings

The following is a procedure for setting a shared group No.1 in the "Shared Group Settings" window.



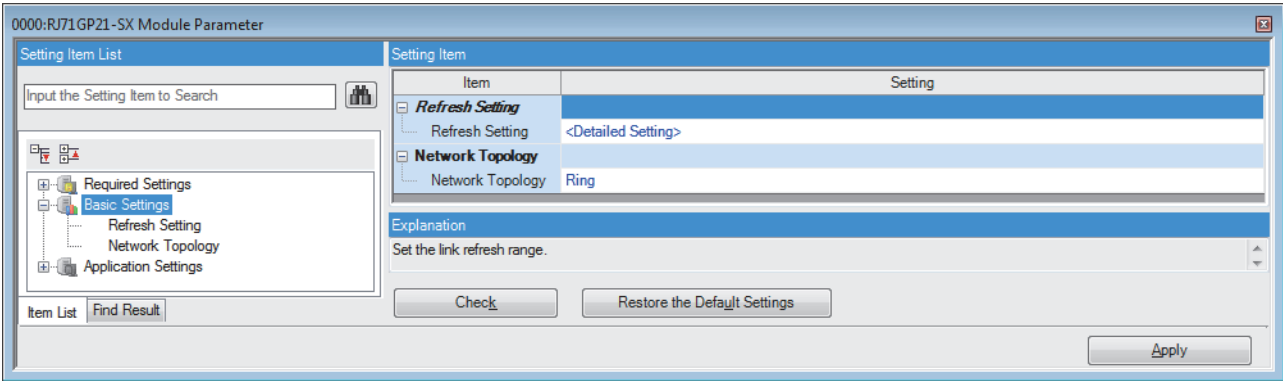
1. Clicking "Shared Group" in "Network Range Assignment" displays the "Shared Group Settings" window.
 2. Select "(New Shared Group)" in "Edit Shared Group".
 3. In the "New Shared Group" window, enter "1" and click the [OK] button.
 4. In the "Edit Shared Group (Shared Group 1)" window, add a station number displayed in the "Unregistered Station No." area to the "Registered Station No." area in order to set it in the shared group No.1. Click the [Setting End] button.
 5. Click the [Setting End] button in the "Shared Group Settings" button.
 6. "1" is set in "Shared Group" in "Network Range Assignment".
- To set a new shared group, repeat the above steps 2. to 4.
7. To edit an existing shared group, select the shared group number in "Edit Shared Group" and click the [Edit] button to perform the operation of the step 4.

■Precautions

When setting the shared group number, set "Enable" in "Station-based Block Data Assurance" under "Supplementary Cyclic Settings" in "Application Settings". When "Station-based Block Data Assurance" is set to "Enable", cyclic data of the stations in different shared groups will not be refreshed to the link devices. (👉 Page 26 Cyclic data integrity assurance)

2.3 Basic Settings

Set the link refresh settings and network topology setting for the CC-Link IE Controller Network-equipped module.



○: Can be set, ×: Cannot be set

| Item | Description | Availability | | Reference |
|------------------|--|-----------------|----------------|--------------------------|
| | | Control station | Normal station | |
| Refresh Setting | Set the link refresh ranges between the link devices (LB, LW, LX, LY, SB, SW) of the CC-Link IE Controller Network-equipped module and the devices of the CPU module or between the link devices (SB, SW) of the CC-Link IE Controller Network-equipped module and the module label of the CPU module. | ○ | ○ | Page 84 Refresh Setting |
| Network Topology | Select the topology type according to the actual network configuration. | ○ | × | Page 87 Network Topology |

Refresh Setting

Set the link refresh ranges between the link devices (LB, LW, LX, LY, SB, SW) of the CC-Link IE Controller Network-equipped module and the devices of the CPU module or between the link devices (SB, SW) of the CC-Link IE Controller Network-equipped module and the module label of the CPU module.

Setting procedure

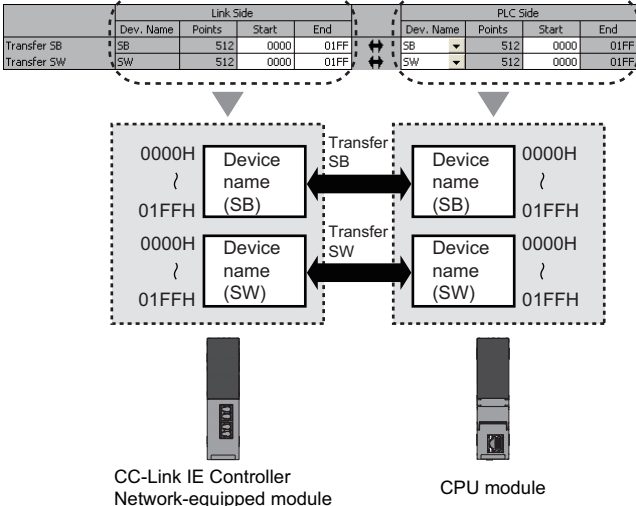
The procedure for the refresh settings is shown below.

1. Set the required items.

| No. | Link Side | | | | | CPU Side | | | | |
|-----|-------------|--------|-------|-------|---|--------------|-------------|--------|-------|-----|
| | Device Name | Points | Start | End | | Target | Device Name | Points | Start | End |
| - | SB | 512 | 00000 | 001FF | ↔ | Module Label | | | | |
| - | SW | 512 | 00000 | 001FF | ↔ | Module Label | | | | |
| 1 | | | | | ↔ | | | | | |
| 2 | | | | | ↔ | | | | | |
| 3 | | | | | ↔ | | | | | |
| 4 | | | | | ↔ | | | | | |
| 5 | | | | | ↔ | | | | | |
| 6 | | | | | ↔ | | | | | |
| 7 | | | | | ↔ | | | | | |
| 8 | | | | | ↔ | | | | | |

2. Click the [Apply] button to finish the refresh settings.

Setting items

| Item | Description | Setting range |
|--------------------------|---|--|
| Device Assignment Method | Right-click in the setting window and select a link device assignment method from the "Device Assignment Method" menu. <ul style="list-style-type: none"> Start/End: Enter the start and end numbers of link devices. Points/Start: Enter the start and end numbers of link devices. | <ul style="list-style-type: none"> Start/End Points/Start (Default: Start/End) |
| — | Link Side Set the link refresh ranges of SB and SW. One range can be set for each SB and SW. (☞ Page 21 Link refresh) Ex.  | Device Name <ul style="list-style-type: none"> SB (fixed) SW (fixed) Points <ul style="list-style-type: none"> SB (fixed): 16 to 512 SW (fixed): 1 to 512 (Default: 512) Start <ul style="list-style-type: none"> SB (fixed): 0H to 1F0H (set in increments of 16 points) SW (fixed): 0H to 1FFH (set in increments of 1 point) (Default: 0H) End <ul style="list-style-type: none"> SB (fixed): FH to 1FFH (set in increments of 16 points) SW (fixed): 0H to 1FFH (set in increments of 1 point) (Default: 1FFH) |
| — | CPU Side | Target <ul style="list-style-type: none"> Module Label Device (Default: Module Label) Device Name <ul style="list-style-type: none"> Module Label: — Device (when link side is SB): SB, M, L, B, D, R, ZR, RD Device (when link side is SW): SW, M, L, B, D, R, ZR, RD (Default: Blank) Points, Start, End <ul style="list-style-type: none"> Range of the device in a CPU module Set bit devices in increments of 16 points and word devices in increments of 1 point. (Default: Blank) |

| Item | Description | Setting range |
|----------|--|---|
| 1 to 256 | <p>Link Side</p> <p>Set the link refresh ranges of LB, LW, LX, and LY. Up to 256 ranges can be set. (☞ Page 21 Link refresh)</p> <p>Ex.</p> <p>CC-Link IE Controller Network-equipped module</p> <p>CPU module</p> | <p>Device Name</p> <ul style="list-style-type: none"> • LB, LW, LX, LY <p>(Default: Blank)</p> <p>■Points (Default: Blank)</p> <p>LB (set in increments of 16 points)</p> <ul style="list-style-type: none"> • 16 to 32768 (Link points extended setting: Not to Extend) • 16 to 65536 (Link points extended setting: Extend) <p>LW (set in increments of 1 point)</p> <ul style="list-style-type: none"> • 1 to 131072 (Link points extended setting: Not to Extend) • 1 to 262144 (Link points extended setting: Extend) <p>LX, LY (set in increments of 16 points)</p> <ul style="list-style-type: none"> • 16 to 8192 <p>■Start (Default: Blank)</p> <p>LB (set in multiples of 16)</p> <ul style="list-style-type: none"> • 0 to 7FFFH (Link points extended setting: Not to Extend) • 0 to FFFFH (Link points extended setting: Extend) <p>LW (set in increments of 1 point)</p> <ul style="list-style-type: none"> • 0 to 1FFFFH (Link points extended setting: Not to Extend) • 0 to 3FFFFH (Link points extended setting: Extend) <p>LX, LY (set in multiples of 16)</p> <ul style="list-style-type: none"> • 0H to 1FFFH <p>■End (Default: Blank)</p> <p>LB (set in multiples of 16-1)</p> <ul style="list-style-type: none"> • F to 7FFFH (Link points extended setting: Not to Extend) • F to FFFFH (Link points extended setting: Extend) <p>LW (set in increments of 1 point)</p> <ul style="list-style-type: none"> • 0 to 1FFFFH (Link points extended setting: Not to Extend) • 0 to 3FFFFH (Link points extended setting: Extend) <p>LX, LY (set in multiples of 16-1)</p> <ul style="list-style-type: none"> • FH to 1FFFH |
| | CPU Side | <p>Target</p> <ul style="list-style-type: none"> • Device <p>(Default: Blank)</p> <p>Device Name</p> <ul style="list-style-type: none"> • Device: X, Y, M, L, B, D, W, R, ZR, RD <p>(Default: Blank)</p> <p>Points, Start, End</p> <ul style="list-style-type: none"> • Range of the device in a CPU module • Set bit devices in increments of 16 points and word devices in increments of 1 point. <p>(Default: Blank)</p> |

Point

The link devices of the CC-Link IE Controller Network-equipped module can be accessed from a program. (☞ Page 23 Direct access to link devices)

Precautions

■Device set to "CPU Side"

Set a device range that differs from the one used for the following:

- "Refresh Setting" in "Basic Settings" of other network modules
- "Link Refresh Settings" in "Basic Settings" of a CC-Link master/local module
- I/O numbers used for I/O modules and intelligent function modules
- "Refresh Setting" of intelligent function modules
- "Refresh Setting between Multiple CPU" of "CPU Parameter" for a multiple CPU system

■Link refresh range

Set only link devices used in the CPU module for link refresh range. Doing so will reduce link refresh points, resulting in a shorter link refresh time.

■Changing link device assignment in the "Network Range Assignment" window of "Required Settings"

Correct the set range in "Refresh Setting" of "Basic Settings".

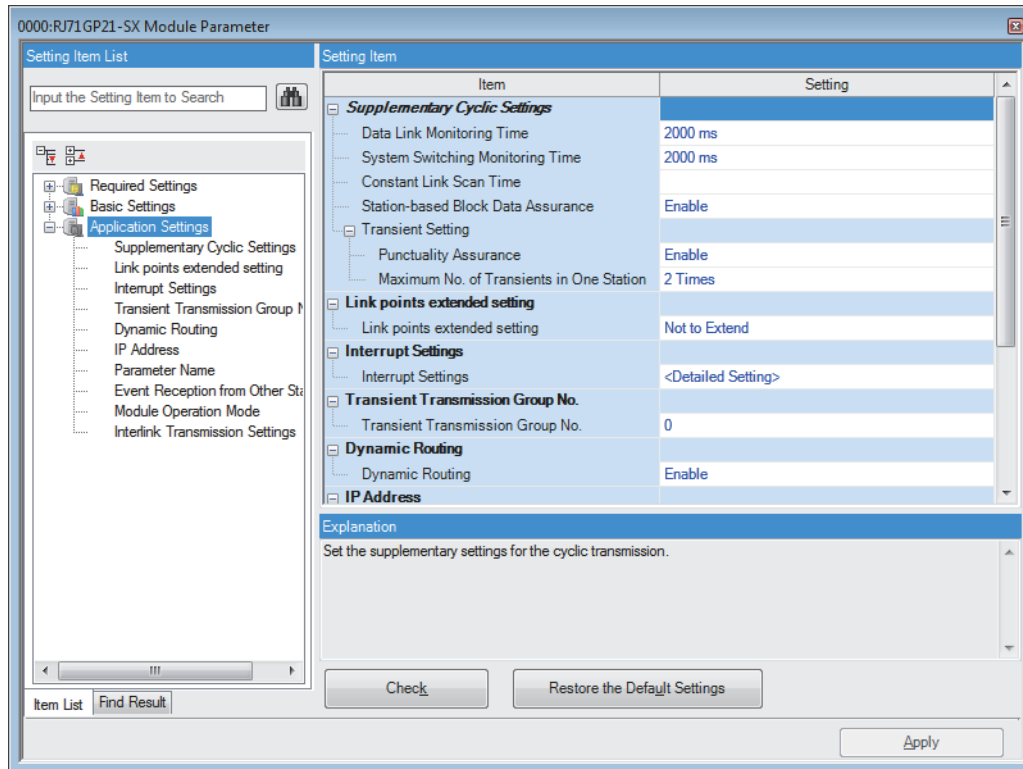
Network Topology

Select the topology type according to the actual network configuration.

| Item | Description | Setting range |
|------------------|---|---|
| Network Topology | <p>Select the topology type according to the actual network configuration. (☞ Page 60 Loopback Function)</p> <p>Select "Ring" in the following cases:</p> <ul style="list-style-type: none">• When the RJ71GP21(S)-SX is used• When the loopback function of the RJ71EN71 or RnENCPU is used | <p>■When the RJ71GP21(S)-SX is used</p> <ul style="list-style-type: none">• Ring• Line/Star (cannot be set) <p>(Default: Ring)</p> <p>■When "Port 1 Network Type" is set to "CC-Link IE Control" for the RJ71EN71 or RnENCPU</p> <ul style="list-style-type: none">• Ring• Line/Star <p>(Default: Ring)</p> <p>■When "Port 1 Network Type" is set to "Ethernet" and "Port 2 Network Type" is set to "CC-Link IE Control" for the RJ71EN71 or RnENCPU</p> <ul style="list-style-type: none">• Line/Star• Ring (cannot be set) <p>(Default: Line/Star)</p> |

2.4 Application Settings

Set the supplementary cyclic settings, interrupt settings, or other parameters for the CC-Link IE Controller Network-equipped module.



○: Can be set, ×: Cannot be set

| Item | Description | Availability | | Reference |
|-------------------------------------|--|-----------------|----------------|---|
| | | Control station | Normal station | |
| Supplementary Cyclic Settings | Set the data link monitoring time, system switching monitoring time, constant link scan time, station-based block data assurance, and transient transmission settings. | ○ | × | Page 90 Supplementary Cyclic Settings |
| Link points extended setting | Set whether to extend or not for the maximum number of link points per network in LB or LW. | ○ | ○ | Page 90 Link points extended setting |
| Interrupt Settings | Set conditions for sending an interrupt request to the CPU module. | ○ | ○ | Page 91 Interrupt Settings |
| Transient Transmission Group No. | Set the transient transmission group number. | ○ | ○ | Page 95 Transient Transmission Group No. |
| Dynamic Routing | Select whether to enable the dynamic routing function. | ○ | ○ | Page 95 Dynamic Routing |
| IP Address | Set the IP address of the control station to communicate with Ethernet device over CC-Link IE Controller Network. | ○ | × | Page 95 IP Address |
| Parameter Name | Set a name for the module parameter if desired. | ○ | ○ | Page 95 Parameter Name |
| Event Reception from Other Stations | Select whether to obtain the events occurring in the other stations. | ○ | ○ | Page 95 Event Reception from Other Stations |
| Module Operation Mode | Set the operation mode of the CC-Link IE Controller Network-equipped module. | ○ | ○ | Page 96 Module Operation Mode |
| Interlink Transmission Settings | Set link device ranges when cyclic data are transferred from a station in the own network to a station in another network. | ○ | ○ | Page 97 Interlink Transmission Settings |

| Item | Description | Availability | | Reference |
|---------------------------|--|-----------------|----------------|------------------------------------|
| | | Control station | Normal station | |
| Redundant System Settings | Set the operation mode for the CC-Link IE Controller Network-equipped module mounted on system B in a redundant system. This item can be set only when "RJ71GP21-SX(R)" or "RJ71GP21S-SX(R)" is selected for "Module Name". | ○ | ○ | Page 101 Redundant System Settings |

Supplementary Cyclic Settings

Set the data link monitoring time, constant link scan time, station-based block data assurance, and transient transmission settings.

| Item | Description | Setting range |
|------------------------------------|---|--|
| Data Link Monitoring Time | Set the time for monitoring the link scan time in units of 5ms. Normally, it is recommended to use the default value. If the link scan time exceeds the value set in "Data Link Monitoring Time", data linking is disabled. | 5ms to 2000ms (Default: 2000ms) |
| System Switching Monitoring Time | When the network contains a redundant system, set the time (in increments of 10ms) from data link stop ('Data link error status of own station' (SB0049) is turned on) to issuance of a system switching request. This item can be set only for the control station. | 10 to 5000ms (Default: 2000ms) |
| Constant Link Scan Time | Set the constant link scan time. (☞ Page 33 Cyclic transmission punctuality assurance) | 1ms to 500ms (Default: Blank) |
| Station-based Block Data Assurance | Set whether to ensure a data integrity of the data blocks being refreshed between the CC-Link IE Controller Network-equipped module and the CPU module. (☞ Page 27 Cyclic data integrity assurance) | • Enable • Disable (Default: Enable) |
| Transient Transmission Settings | • Punctuality Assurance: Set whether to assure the punctuality of cyclic transmissions. When the "Enable" is selected, each station performs transient transmissions for the number of times specified in "Maximum No. of Transient Transmissions", which keeps the link scan time constant. (☞ Page 33 Specification of the number of transient transmissions) | • Enable • Disable (Default: Enable) |
| | • Maximum No. of Transient Transmissions: Set the number of transient transmissions that one station can perform in one link scan. | 1 to 10 times (Default: 2 times) |

Link points extended setting

Set the link points extended setting

| Item | Description | Setting range |
|------------------------------|--|---|
| Link points extended setting | Set whether to extend or not for the maximum number of link points per network in LB or LW. For the specifications of the maximum number of link points, refer to the following. ☞ Page 35 Number of send points extension | • Not to Extend • Extend (Default: Not to Extend) |

Interrupt Settings

Set conditions for sending an interrupt request to the CPU module.

Setting procedure

The procedure for the interrupt settings is shown below.

1. Set the interrupt conditions.

Up to 16 interrupt conditions can be set.

| No. | Device/ Reception Channel | Device No./ Channel No. | Detection Method | Condition Type | Condition Value | Interrupt Pointer | Comment |
|-------|------------------------------|----------------------------|------------------|----------------|-----------------|-------------------|---------|
| SI 00 | | | | | | | |
| SI 01 | | | | | | | |
| SI 02 | | | | | | | |
| SI 03 | | | | | | | |
| SI 04 | | | | | | | |
| SI 05 | | | | | | | |
| SI 06 | | | | | | | |
| SI 07 | | | | | | | |
| SI 08 | | | | | | | |
| SI 09 | | | | | | | |
| SI 10 | | | | | | | |
| SI 11 | | | | | | | |
| SI 12 | | | | | | | |
| SI 13 | | | | | | | |
| SI 14 | | | | | | | |
| SI 15 | | | | | | | |

2. Click the [Apply] button to finish the interrupt settings.

Setting items

| Item | Description | Setting range |
|--|---|---|
| Word Device Setting Value Input Format | Right click in the setting window and select a format from the "Word Device Setting Value Input Format" menu. | <ul style="list-style-type: none"> Decimal Hexadecimal (Default: Decimal) |
| Device/Reception Channel | Set an interrupt condition device. Set the channel number when "Reception Channel" is selected in "Device/Reception Channel". | Refer to the following table. |
| Device No./Channel No. | | |
| Detection Method | Select the detection timing of an interrupt generated by the device set in "Device/Reception Channel" and "Device No./Channel No.". | |
| Condition Type | | |
| Condition Value | When "LW" or "SW" is selected in "Device/Reception Channel", enter a word device value that triggers an interrupt. | |
| Interrupt Pointer | Set an interrupt pointer (I) to be used for an interrupt program. | |
| Comment | Set a comment for the interrupt pointer used. | |

(Setting range)

| Device/Reception Channel | Device No./Channel No. | Detection Method | Condition Type | Condition Value | Interrupt Pointer |
|--------------------------|---|--|-------------------------------|--------------------------|---------------------------------|
| LB | <ul style="list-style-type: none"> 0 to 7FFFH (Link points extended setting: Not to Extend) 0 to FFFFH (Link points extended setting: Extend) | Level + ON: Interrupt occurs by turning on the device. Level + OFF: Interrupt occurs by turning off the device. Edge + ON: Interrupt occurs at the rising edge of the device. Edge + OFF: Interrupt occurs at the falling edge of the device. | | — | Device: I0 to I15, I50 to I1023 |
| LX | 0H to 1FFFFH | | | | |
| SB | 0H to 1FFFH | | | | |
| LW | <ul style="list-style-type: none"> 0 to 1FFFFH (Link points extended setting: Not to Extend) 0 to 3FFFFH (Link points extended setting: Extend) | Level + Values Match: Interrupt occurs when values match. Level + Values Mismatch: Interrupt occurs when values do not match. Edge + Values Match: Interrupt occurs when values match (first time only). Edge + Values Mismatch: Interrupt occurs when values do not match (first time only). | | 0 to 65535 (0H to FFFFH) | |
| SW | 0H to 1FFFH | | | | |
| Reception Channel | 1 to 8 | Edge (fixed) | Reception Completed (fixed)*1 | — | |

*1 An interrupt occurs when the channel specified in "Device No./Channel No." receives data.

Using an interrupt program will eliminate the need for describing a start condition in a program. This leads to reduction in the number of steps and sequence scan time.

Precautions

■When "Detection Method" is set to "Level" and the interrupt condition is always met

If the sequence scan takes much longer than the link scan, since interrupt processing is activated in each link scan, sequence scan time may greatly increase, resulting in a watchdog timer error of the CPU module.

When "Detection Method" is set to "Level" and the interrupt condition is always met, do not use interrupt settings and correct the interrupt condition in the program.

■Before executing an interrupt program

Execute the EI instruction in a main routine program and enable an interrupt. (MELSEC iQ-R CPU Module User's Manual (Application))

■When multiple interrupts have simultaneously occurred

The operation may delay.

■When the mode of the CC-Link IE Controller Network-equipped module is "Module Communication Test" or "Offline"

The CC-Link IE Controller Network-equipped module can send an interrupt request to the CPU module when the mode is "Offline". The module cannot send the request when the mode is "Module Communication Test" or "Offline".

■Starting an interrupt program by the rising/falling edge of the specified device

Do not use the rising/falling edge of a specified device (such as the PLS and PLF instructions) as a trigger of an interrupt program because a change in the device may fail to be read.

Ex.

Sending an interrupt request by turning on LB100 in a station in network No.7



Since change of LB100 may not be read, this cannot be specified as interrupt condition.

■An interrupt cannot be generated

Changes in the interrupt condition device cannot be detected if the change is shorter than the transmission delay time.

■Using cyclic data in an interrupt program

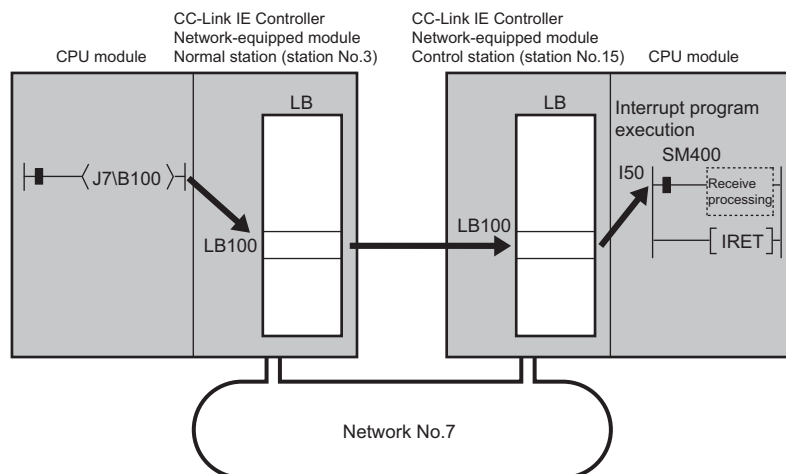
When an interrupt program is executed, the link device data is not link-refreshed to CPU module devices. Directly access the link devices of the CC-Link IE Controller Network-equipped module by direct access.

Setting examples

■ Starting the interrupt program when the status of a link device changes

Ex.

The following is a setting example to execute the interrupt program corresponding to the interrupt pointer I50 of the control station (station No.15) when LB100 turns on in the normal station (station No.3).



1. Set the interrupt setting parameters for the CC-Link IE Controller Network-equipped module control station (station No.15) as follows.

| No. | Device/ Reception Channel | Device No./ Channel No. | Detection Method | Condition Type | Condition Value | Interrupt Pointer | Comment |
|-------|------------------------------|----------------------------|------------------|----------------|-----------------|-------------------|---------|
| SI 00 | LB | 00100 | Edge | ON | | I50 | |

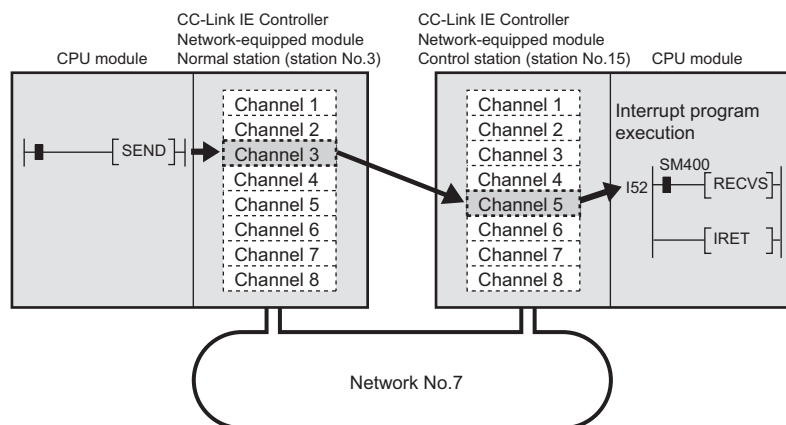
Point

By using link special relay (SB) and link special register (SW) as an interrupt condition device, an interrupt program can be started in case of data link error. (Page 166 List of Link Special Relay (SB) Areas, Page 179 List of Link Special Register (SW) Areas).

■ Starting the interrupt program when the channel specified in the RECVS instruction receives data sent from another station using the SEND instruction

Ex.

The following is a setting example to execute the interrupt program corresponding to the interrupt pointer I52 when the channel specified in the RECVS instruction (channel 5 of the control station (station No.15)) receives data sent from the normal station (station No.3) using the SEND instruction.



1. Set the interrupt setting parameters for the CC-Link IE Controller Network-equipped module control station (station No.15) as follows.

| No. | Device/ Reception Channel | Device No./ Channel No. | Detection Method | Condition Type | Condition Value | Interrupt Pointer | Comment |
|-------|------------------------------|----------------------------|------------------|-----------------------|-----------------|-------------------|---------|
| SI 00 | Reception Channel ▼ | 5 | Edge ▼ | Reception Completed ▼ | | I52 | |

Transient Transmission Group No.

Set the transient transmission group number.

| Item | Description | Setting range |
|----------------------------------|---|---|
| Transient Transmission Group No. | Set a group number for transient transmission with group specification. | 0 to 32 (0: No group specification) (Default: 0) |

Dynamic Routing


Select whether to enable the dynamic routing function.

| Item | Description | Setting range |
|-----------------|--|---|
| Dynamic Routing | When communicating with different networks, select whether to enable the dynamic routing function. | <ul style="list-style-type: none"> • Enable • Disable (Default: Enable) |

For details, refer to the following.

 Page 41 Communications with different networks

IP Address

Set the IP address of the control station to communicate with Ethernet device over CC-Link IE Controller Network. ( Page 46 Setting)

| Item | Description | Setting range |
|------------|--|---|
| IP Address | <p>Only the network address part (first and second octets) of the IP address needs to be set. The network number part (third octet) and the station number part (fourth octet) are automatically set.</p> <ul style="list-style-type: none"> • Set an IP address for the control station only. • Use the same network address for the request source device, request destination device, and modules among them. • Since automatically assigned, an IP address needs not to be set for normal stations. (The network address same as that of the control station is automatically set.) | First octet: 0 to 223 Second octet: 0 to 255 |

Parameter Name

Set a name for the module parameter if desired.

| Item | Description | Setting range |
|----------------|---|---|
| Parameter Name | Set a name for the module parameter if desired. | Up to 8 one-byte or two-byte characters (Default: Blank) |

Event Reception from Other Stations

Select whether to obtain the events occurring in the other stations.

| Item | Description | Setting range |
|-------------------------------------|--|---|
| Event Reception from Other Stations | Select whether to obtain the events occurring in the other stations. | <ul style="list-style-type: none"> • Enable • Disable (Default: Enable) |


Module Operation Mode

Select the operation mode of the CC-Link IE Controller Network-equipped module.

For the RJ71EN71 and RnENCPU, when the "Port 1 Network Type" is set to "Ethernet" and "Port 2 Network Type" is set to "CC-Link IE Control", set both of the P1 and P2 to the same mode.

For a redundant system, select the module operation mode of system A.

For details on module communication test mode, refer to the following.

 Page 108 Module communication test

| Item | Description | Setting range |
|-----------------------|---|--|
| Module Operation Mode | <p>Online</p> <ul style="list-style-type: none">Select this mode to connect the CC-Link IE Controller Network-equipped module to the network for performing data link with other stations. <p>Offline</p> <ul style="list-style-type: none">Select this mode to disconnect the CC-Link IE Controller Network-equipped module from the network for stopping data link with other stations. <p>Module Communication Test</p> <ul style="list-style-type: none">Select this mode to check the hardware of the CC-Link IE Controller Network-equipped module. Select this mode to check the module hardware when communication is unstable. | <ul style="list-style-type: none">OnlineOfflineModule Communication Test (Default: Online) |

Restriction

The following functions are disabled when "Module Operation Mode" is set to "Offline" or "Module Communication Test".

- Cyclic transmission
- Transient transmission
- RAS (automatic return, loopback function, control station switching)
- Interrupt request to CPU module
- IP packet transfer function

Interlink Transmission Settings

Set link device ranges when cyclic data are transferred from a station in the own network to a station in another network.

Setting procedure

The procedure for the interlink transmission settings is shown below.

1. Select combination of modules in the "Transfer Source Module" and "Transfer Destination Module" boxes and enter setting values.

Interlink Transmission Parameters

Transfer Source Module: Setting Method:

Transfer Destination Module:

| No. | LB/RV | | | | | | LW/RVw | | | | | |
|-----|--------|-------|-----|-------------|-------|-----|--------|-------|-----|-------------|-------|-----|
| | Source | | | Destination | | | Source | | | Destination | | |
| | Points | Start | End | Points | Start | End | Points | Start | End | Points | Start | End |
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |

- Click the [OK] button to finish the interlink transmission settings.

| Item | Description | | Setting range |
|-----------------------------|--|--|---|
| Setting Method | Right-click in the "Interlink Transmission Parameters" window and select a link device setting method from the "Setting Method" menu. <ul style="list-style-type: none">Start/End: Enter the start and end numbers of link devices.Points/Start: Enter the start and end numbers of link devices. | | <ul style="list-style-type: none">Start/EndPoints/Start (Default: Start/End) |
| Transfer Source Module | Select the transfer source and target modules. | | The setting varies depending on the set module. |
| Transfer Destination Module | | | |
| LB/RY RX/LB | Source Destination | <p>Enter the link device range of the transfer source and destination modules. Up to 64 ranges can be set. LB points can be assigned in increments of 16 (Start: □□□0H, End: □□□FH).</p> <div><div><p>When the transfer source is a CC-Link IE Controller Network-equipped module</p></div><div><p>When the transfer target is a CC-Link IE Controller Network-equipped module</p></div></div> <div><div><p>CC-Link IE Controller Network-equipped module Network module</p></div><div><p>Network module CC-Link IE Controller Network-equipped module</p></div></div> <div></div> <div></div> | <ul style="list-style-type: none">■LB (Default: Blank)Points: 16 to 16384Range: 0H to 7FFFH (Link points extended setting: Not to Extend)Range: 0H to FFFFH (Link points extended setting: Extend) |

| Item | | Description | Setting range |
|------------------|-------------|--|---|
| LW/RWw RWr/LW | Source | <p>Enter the link device range of the transfer source and destination modules. Up to 64 ranges can be set. LW points can be assigned in increments of 1.</p> <p>When the transfer source is a CC-Link IE Controller Network-equipped module</p> <p>When the transfer target is a CC-Link IE Controller Network-equipped module</p> <p>CC-Link IE Controller Network-equipped module Network module Network module CC-Link IE Controller Network-equipped module</p> | <p>■LW (Default: Blank)</p> <ul style="list-style-type: none"> • Points: 1 to 16384 • Range: 0H to 1FFFFH • Range: 0H to 3FFFFH (Link points extended setting: Extend) |
| | Destination | | |

Point

Link devices set for "Source" can be overlapped. Doing so will allow transfer of the same link devices to multiple network modules.

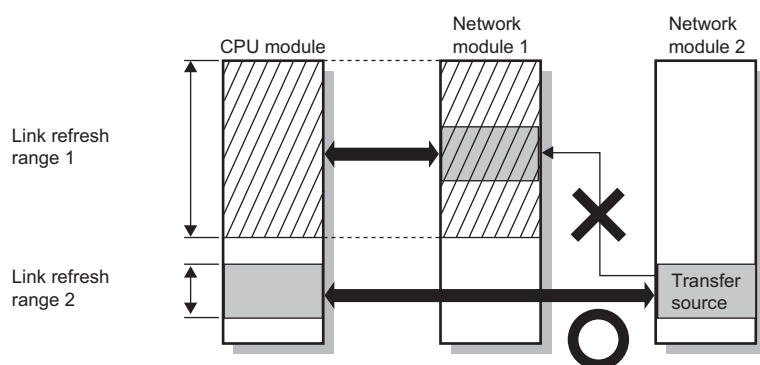
Precautions

■Modules supporting interlink transmission

- RJ71GN11-T2 (master station)
- CC-Link IE Controller Network-equipped module (control station, normal station)
- CC-Link IE Field Network-equipped module (master station and submaster station)
- RJ71LP21-25 (control station, normal station)

■Transfer destination link device setting

Do not use link devices set for link refresh range as a transfer target. If doing so, transfer target link devices will be overwritten by link refresh. To use transfer target link device data in the CPU module, set the transfer source link device as the link refresh range.

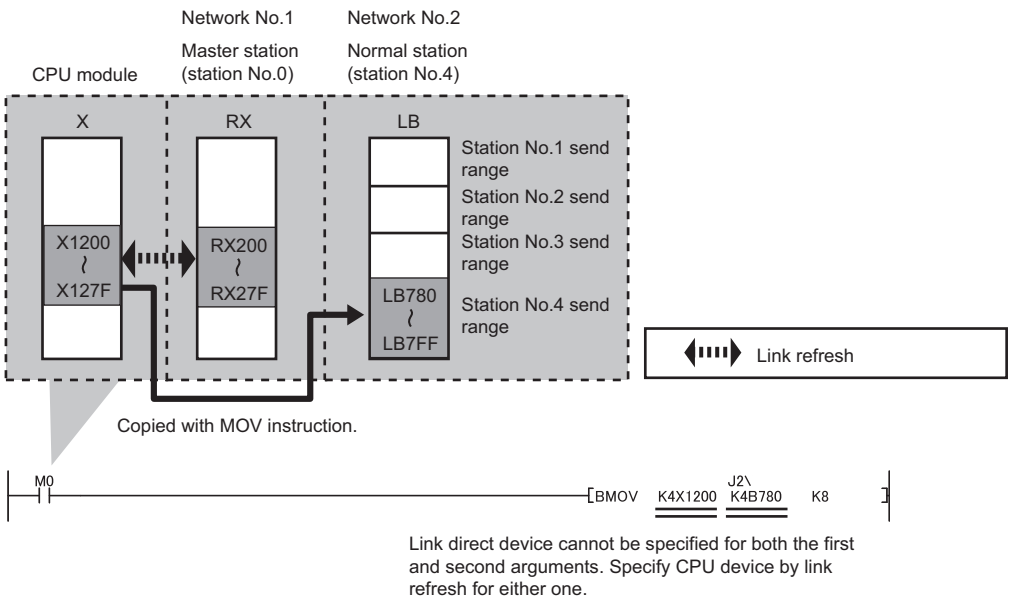


■Setting 65 or more interlink transmission ranges

Use link direct devices in a program to perform interlink transmission.

Ex.

The following is a setting example to perform interlink transmission between the master station on Network No.1 (CC-Link IE Field Network) and the normal station on Network No.2 (CC-Link IE Controller Network).



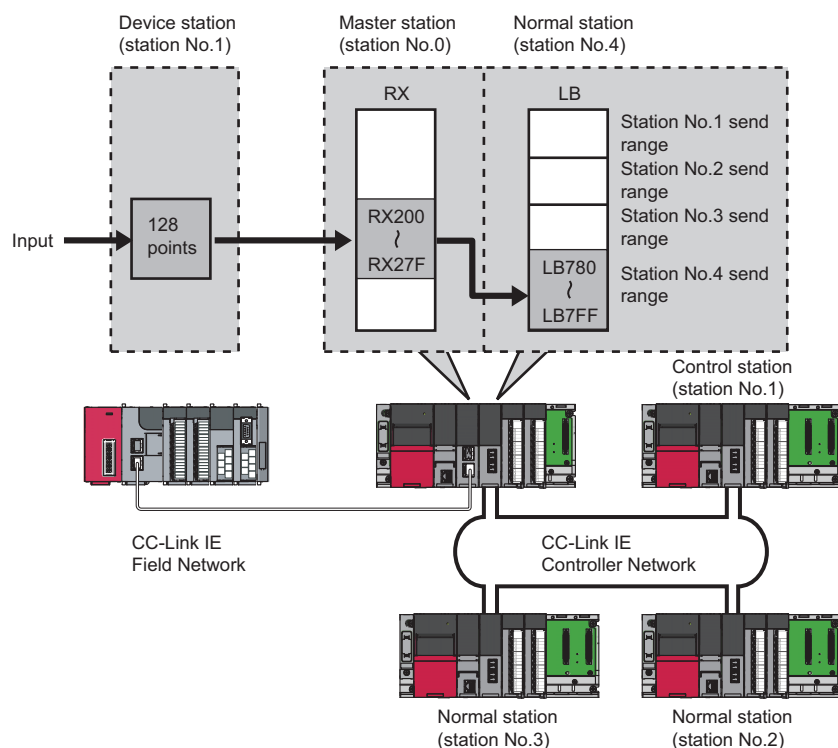
■Performing interlink transmission in a multiple CPU system

When different control CPUs are set for the network modules, interlink transmission cannot be performed using interlink transmission parameters or a program. Perform interlink transmission using data communication by the CPU buffer memory.

(MELSEC iQ-R CPU Module User's Manual (Application))

Setting example

The following is a setting example to perform interlink transmission from the master station on CC-Link IE Field Network to stations on CC-Link IE Controller Network. In this example, 128-point data input from the device station (station No.1) on CC-Link IE Field Network is transferred.



1. Select "0000: RJ71GF11-T2 (Master Station)" for "Transfer Source Module" and "0020: RJ71GP21-SX (Normal Station)" for "Transfer Destination Module", and enter the transfer ranges of link devices.

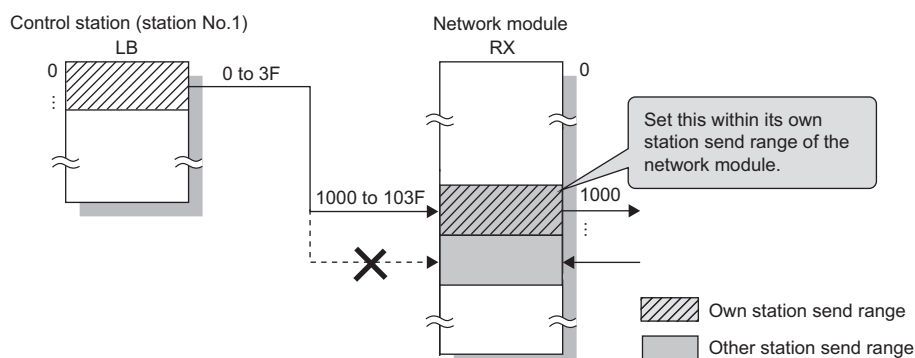
The screenshot shows the **Interlink Transmission Parameters** dialog box. The **Transfer Source Module** is set to **0000: RJ71GF11-T2 (Master Station)** and the **Transfer Destination Module** is set to **0020: RJ71GP21-SX (Normal Station)**. Below these settings is a table for defining transfer ranges.

| No. | RX/LB | | | | | | RW/LW | | | | | |
|-----|--------|-------|------|-------------|-------|------|--------|-------|-----|-------------|-------|-----|
| | Source | | | Destination | | | Source | | | Destination | | |
| | Points | Start | End | Points | Start | End | Points | Start | End | Points | Start | End |
| 1 | 128 | 0200 | 027F | 128 | 0780 | 07FF | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |

2. Click the [OK] button.


Point

If the transfer target network module is on a network other than CC-Link IE Controller Network, set the transfer target link devices within the own station send range of the network module. If the link devices are set within the send range of another station, the transferred data are overwritten with the send data of another station.



Redundant System Settings

Set the operation mode for the CC-Link IE Controller Network-equipped module mounted on system B in a redundant system.

| Item | Description | Setting range |
|-------------------------------------|--|--|
| Station Number (System A) | Displays the station number set in "Station Number" under "Required Settings". | — |
| Module Operation Mode (System A) | Displays the module operation mode set for "Module Operation Mode" under "Application Settings". | — |
| Station Number (System B) | Displays the station number of system B. | — |
| Module Operation Mode (System B) | Set the module operation mode of system B. For details on the module operation mode, refer to the following.  Page 96 Module Operation Mode | <ul style="list-style-type: none">• Online• Offline• Module Communication Test (Default: Online) |

3 TROUBLESHOOTING

This chapter describes troubleshooting of CC-Link IE Controller Network.

3.1 Checking with LED

This section describes troubleshooting using LED.

Error status can be determined by status of the RUN LED and the ERR LED.

| RUN LED | ERR LED | Error status ^{*1} | Description |
|---------|--------------|----------------------------|---|
| Off | On, flashing | Major error | An error such as hardware failure or memory failure. The module stops operating. |
| On | Flashing | Moderate error | An error, such as parameter error, which affect module operation. The module stops operating. |
| On | On | Minor error | An error such as communication failure. The module continues operating. |

*1 When multiple errors occur, the error status is displayed in the order of major, moderate, and minor.



For the RJ71EN71 or RnENCPU, whether the error occurs in the P1 or P2 can be checked with P ERR LED.

When the RUN LED turns off

When the RUN LED turns off after powering on the CC-Link IE Controller Network-equipped module, check the following.

| Check item | Action |
|---|--|
| Is the CC-Link IE Controller Network-equipped module mounted correctly? | Securely mount the CC-Link IE Controller Network-equipped module on the base unit. |

If the above action does not solve the problem, perform the module communication test to check for hardware failure. (Page 108 Module communication test)

When the ERR LED turns on or is flashing

When the ERR LED turns on or is flashing, check the following.

| Check item | Action |
|--|---|
| Does any error occur in the module diagnostics? | Take the actions displayed on the window. |
| Does any error occur in the CC-Link IE Controller Network diagnostics? | <ul style="list-style-type: none">• Correct "Network Range Assignment" in "Basic Settings" of the control station in accordance with the normal station actually connected.• Perform troubleshooting for when the D LINK LED turns off or is flashing in the disconnected station. (Page 103 When the D LINK LED turns off or is flashing) |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (Page 108 Module communication test)
- Cable test (Page 133 Cable test (only when Ethernet cables are used))

When the D LINK LED turns off or is flashing

When the D LINK LED turns off or is flashing, check the following.

| Common (when optical fiber cables and Ethernet cables are used) check item | Action |
|---|--|
| Is the control station operating normally? | <ul style="list-style-type: none"> If an error has occurred in the CPU module on the control station (sub-control station), eliminate the cause of the CPU module error. (MELSEC iQ-R CPU Module User's Manual (Application)) Check if the control station (sub-control station) are performing data link using CC-Link IE Controller Network diagnostics. (Page 111 Checking the Network Status) |
| Is the control station connected to the network? | Check if the control station (sub-control station) are performing data link using CC-Link IE Controller Network diagnostics. (Page 111 Checking the Network Status) |
| Does the communication cable used conform to the standard? | Replace the communication cable with one conforming to the standard. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Does the station-to-station distance meet the specifications? | Set the station-to-station distance within range. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Does the cabling condition (bending radius) meet the specifications? | Refer to the manual for the communication cable, and correct the bending radius. |
| Is any communication cable disconnected? | Replace the communication cable. |
| Are 120 or more normal stations connected? | Change the connection of the normal stations to 119 stations or less. |
| Are other stations connected to the CC-Link IE Controller Network-equipped module normally? | <ul style="list-style-type: none"> Check if the modules on the other stations are performing data link using CC-Link IE Controller Network diagnostics. (Page 111 Checking the Network Status) Check the operation status of modules on other stations. (User's manual for the module used) |
| Are station numbers unique? | Change the duplicated station number. |
| Is the CC-Link IE Controller Network-equipped module with the supported firmware version used when the Process CPU is used and "Link points extended setting" is set to "Extend"? | Use the CC-Link IE Controller Network-equipped module with the supported firmware version. (Page 213 Added and Enhanced Functions) |
| Check item only when Ethernet cables are used | Action |
| Is a switching hub connected in ring topology? | Configure the network in ring topology without a switching hub. |
| Is the switching hub used operating normally? | <ul style="list-style-type: none"> Check if a switching hub which conforms the standard is used. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) Power off and on the switching hub. |
| Check that the cables are not connected as described below. <ul style="list-style-type: none"> Both P1 and P2 are connected to the same switching hub. The network is configured in ring topology although "Network Topology" under "Basic Settings" of the control station is set to "Line/Star". The network is configured in star topology although "Network Topology" under "Basic Settings" of the control station is set to "Ring". The network is incorrectly configured in ring topology. | Correct the wiring. When the system does not contain a switching hub, take any of the following actions: <ul style="list-style-type: none"> For line topology, disconnect an Ethernet cable (either P1 or P2) connected to any station on the network. The network topology will become a line topology and data link will start. For ring topology, set "Network Topology" under "Basic Settings" of the control station to "Ring" and rewrite the parameters to the CPU module. When the system contains a switching hub, take any of the following actions: <ul style="list-style-type: none"> Check if "Network Topology" under "Basic Settings" of the control station is set to "Ring". Because the network cannot be configured in ring topology which contains a switching hub, set "Network Topology" to "Line/Star" and rewrite the parameters to the CPU module. When data link starts across the entire network, this procedure is successfully completed. Disconnect one Ethernet cable connected to the switching hub and power off and on the hub. (Repeat this operation until data link starts over the network.) When data link starts over the network, check the network configuration using CC-Link IE Controller Network diagnostics. |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (Page 108 Module communication test)
- Cable test (Page 133 Cable test (only when Ethernet cables are used))

When the L ERR LED turns on (when optical fiber cables are used)

When the L ERR LED turns on, check the following.

| Check item | Action |
|--|---|
| Are the communication cables used normally? | <ul style="list-style-type: none"> • Check if the communication cable which conforms the standard is used. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) • Check if the station-to-station distance is set within range. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) • Check if the communication cables are not disconnected. |
| Are other stations connected to the RJ71GP21(S)-SX normal? | Check if the other stations are performing data link using CC-Link IE Controller Network diagnostics. (Page 111 Checking the Network Status) |
| Is "Module Operation Mode" under "Application Settings" of the control station set to one other than "Online"? | Set "Module Operation Mode" under "Application Settings" of the control station to "Online". |

If the above actions do not solve the problem, perform troubleshooting for when communication is unstable. (Page 142 When communication is unstable)

When the L ER LED turns on (when Ethernet cables are used)

When the L ER LED turns on, check the following.

| Check item | Action |
|--|---|
| Are the Ethernet cables used normally? | <ul style="list-style-type: none"> • Check if the Ethernet cable which conforms the standard is used. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) • Check if the station-to-station distance is set within range. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) • Check if the Ethernet cables are not disconnected. |
| Is the switching hub used operating normally? | <ul style="list-style-type: none"> • Check if a switching hub which conforms the standard is used. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) • Power off and on the switching hub. |
| Is there any source of noise near the module or cables? | Change the location of the module or cables. |
| Is "Network Topology" under "Basic Settings" of the control station set to "Ring"? | Check if the ring topology is correctly configured for the port where the L ER LED is on. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (Page 108 Module communication test)
- Troubleshooting for when communication is unstable (Page 142 When communication is unstable)

When the LINK LED turns off (when Ethernet cables are used)

When the LINK LED turns off, check the following.

| Check item | Action |
|---|---|
| Do the used Ethernet cables conform to the Ethernet standard? | Replace the cables with the Ethernet cable which conforms the standard. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Does the station-to-station distance meet the specifications? | Set the station-to-station distance within range. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Does the cabling condition (bending radius) meet the specifications? | Refer to the manual for the Ethernet cable, and correct the bending radius. |
| Is any Ethernet cable disconnected? | Replace the Ethernet cable. |
| Is the switching hub used operating normally? | <ul style="list-style-type: none"> • Check if a switching hub which conforms the standard is used. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) • Power off and on the switching hub. |
| Are other stations connected to the RJ71EN71 and the RnENCPU (network part) normally? | <ul style="list-style-type: none"> • Check if the modules on the other stations are performing data link using CC-Link IE Controller Network diagnostics. (Page 111 Checking the Network Status) • Check the operation status of modules on other stations. (User's manual for the module used) |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (Page 108 Module communication test)
- Cable test (Page 133 Cable test (only when Ethernet cables are used))

When the EXT PW LED turns off

When the EXT PW LED turns off, check the following.

| Check item | Action |
|---|--|
| Is the external power supply connected to the RJ71GP21S-SX? | Connect the external power supply to the RJ71GP21S-SX. |

If the above action does not solve the problem, the possible cause is a hardware failure of the RJ71GP21S-SX.

Please consult your local Mitsubishi representative.

3.2 Checking the Module Status

The following items can be checked in the "Module Diagnostics" window for the CC-Link IE Controller Network-equipped module.

| Item | Description |
|-------------------------|---|
| Error Information | Displays the details of the errors currently occurring. Click the [Event History] button to check the history of errors that have occurred on the network, errors detected for each module, and operations that have been executed. "-" may be displayed in "Occurrence Date" of an error that occurred immediately after power-on. |
| Module Information List | Displays various status information of the CC-Link IE Controller Network-equipped module. |
| Supplementary Function | <ul style="list-style-type: none"> • CC IE Control Diagnostics Enables checking the cause to resolve the problem when an error occurs in CC-Link IE Controller Network. (Page 111 Checking the Network Status) |

Error information

Check the details of the error currently occurring and action to remove the error.

Module Diagnostics(Start I/O No. 0000)

Module Name: RJ71GP21-SX Production information: --

Supplementary Function: CC IE Control Diagnostics Monitoring Stop Monitoring Execute

Error Information Module Information List

| No. | Occurrence Date | Status | Error Code | Overview |
|-----|-------------------------|--------|------------|-----------------------|
| 1 | 2014/11/19 02:33:51.655 | Major | 1811 | CPU module stop error |

Buttons: Error Jump, Event History, Clear Error, Detail

Legend: Major (Red Triangle), Moderate (Yellow Triangle), Minor (Green Triangle)

Detailed Information

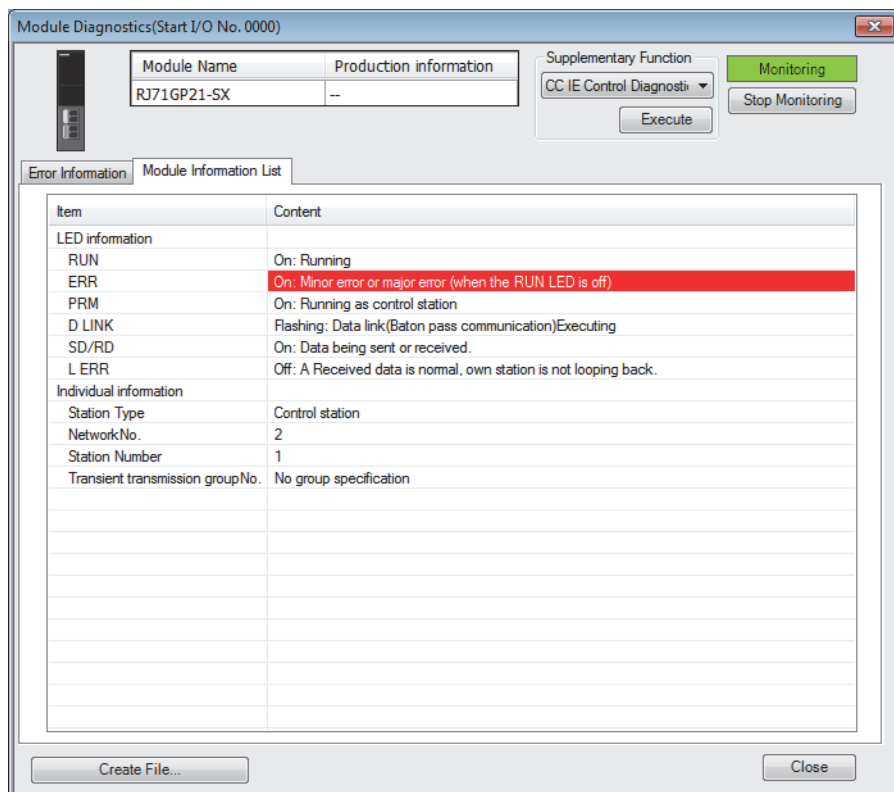
| | |
|-------------------|---|
| Cause | A stop error was detected in the CPU module. |
| Corrective Action | Check the error of the CPU module and take corrective action using the module diagnostics of an engineering tool. |

Buttons: Create File..., Close

| Item | Description |
|----------------------|--|
| Status | Major: An error such as hardware failure or memory failure. The module stops operating. Moderate: An error, such as parameter error, which affect module operation. The module stops operating. Minor: An error such as communication failure. The module continues operating. |
| Detailed Information | Displays detailed information about each error (maximum of 3 pieces). |
| Cause | Displays the detailed error causes. |
| Corrective Action | Displays the actions to eliminate the error causes. |

Module information list

Switch to the [Module Information List] tab to check various status information of the CC-Link IE Controller Network-equipped module.



| Item | | Description |
|------------------------|----------------------------------|---|
| LED information | | Displays the LED status of the CC-Link IE Controller Network-equipped module. |
| Individual information | Station Type | Displays the station type set for the module selected. |
| | Network No. | Displays the network number set for the module selected. |
| | Station Number | Displays the station number set for the selected module. |
| | Transient transmission group No. | Displays the transient transmission group number set for the selected module. |

Module communication test


The module communication test checks the hardware of the CC-Link IE Controller Network-equipped module. When the communication using the CC-Link IE Controller Network-equipped module is unstable, whether a hardware failure occurs or not can be checked.

The following table lists the tests performed.

| Test item | Description |
|-----------------------------|---|
| Internal self-loopback test | Checks whether the communication function of the module can be performed normally. |
| External self-loopback test | Checks whether the communication can be performed normally with the cable connected between two connectors. |

■Procedure (for a system other than a redundant system)

1. Set the module operation mode to module communication test mode in the following item.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [Module Operation Mode]

2. Perform the following.

- For the RJ71GP21(S)-SX: Connect IN connector and OUT connector with an optical fiber cable.
- For the RJ71EN71: Connect the P1 and P2 with an Ethernet cable.
- For the RnENCPU: Connect the P1 and P2 with an Ethernet cable.

3. Write the module parameters to the CPU module.

4. Reset or power off and on the CPU module to start the module communication test.

Point


- Do not perform a module communication test while connected to another station. The operation of another station may fail.
- For the RJ71EN71 or RnENCPU, when "Port 1 Network Type" is set to "Ethernet" and "Port 2 Network Type" is set to "CC-Link IE Control", set both of the P1 and P2 to "Module Communication Test".

■Procedure (for a redundant system)


To perform a module communication test for a redundant system, set the operation mode to separate mode. Before execution, perform system switching in advance so that the module communication test target station operates as the standby system.

The following describes a procedure for executing a module communication test for the RJ71GP21(S)-SX of system B.

1. Set the module operation mode of system A to online mode in the following item.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [Module Operation Mode]

2. Set the module operation mode of system B to module communication test mode in the following item.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Target module ⇒ [Module Parameter] ⇒ [Application Settings] ⇒ [Redundant System Settings] ⇒ [Module Operation Mode (System B)]

3. Connect the IN connector and OUT connector of the RJ71GP21(S)-SX of system B together using optical fiber cables.
4. Set the system B CPU module to the STOP state.
5. Write the module parameters to the system B CPU module.
6. Reset or power off and on the system B CPU module to start a module communication test.

- To perform a module communication test on system A, set the module operation mode of system A to module communication test mode and the module operation mode of system B to online mode.
- When returning the module to a normal operation state after the test, reconnect the optical fiber cable as before the test, and then execute the CPU module memory copy to transfer the parameters of the control system to the standby system. (📖 MELSEC iQ-R CPU Module User's Manual (Application))
- Do not perform a module communication test while connected to another station. The operation of another station may failed.

■Checking the status and result of module communication test.

The test status and result can be checked with LED indication of the module.

| Test status | LED indication |
|--------------------|--|
| Test in progress | The dot matrix LED indicates "UCT". |
| Completed normally | The dot matrix LED indicates "OK". |
| Abnormal end | The ERR LED turns on and the dot matrix LED indicates "ERR" and error number alternately at intervals of 1 second. |

- When optical fiber cables are used, the error number when the test abnormally ended is indicated in the dot matrix LED as shown below.

| Error No. | Error detection connector | Description | Action |
|-----------|---------------------------|---|--|
| 1_1 | IN connector | Internal self-loopback test failure | Please consult your local Mitsubishi representative. |
| 2_1 | OUT connector | | |
| 1_2 | IN connector | External self-loopback test connection error | Check the optical fiber cable connection or replace the cable, and perform the test again. If the test fails again, Please consult your local Mitsubishi representative. |
| 2_2 | OUT connector | | |
| 1_3 | IN connector | External self-loopback test communication error | Replace the optical fiber cable and perform the test again. If the test fails again, Please consult your local Mitsubishi representative. |
| 2_3 | OUT connector | | |

- When Ethernet cables are used, the dot matrix LED indicates the error number with the form of "Port number Error number". For example, "1 3" is displayed when error No.3 occurs in P1.

| Error number | Description | Action |
|--------------|---|--|
| 1 | Internal self-loopback test failure | Please consult your local Mitsubishi representative. |
| 2 | External self-loopback test connection error | Check the Ethernet cable connection or replace the Ethernet cable, and perform the test again. If the test fails again, Please consult your local Mitsubishi representative. |
| 3 | External self-loopback test communication error | Replace the Ethernet cable and perform the test again. If the test fails again, Please consult your local Mitsubishi representative. |

3.3 Checking the Network Status

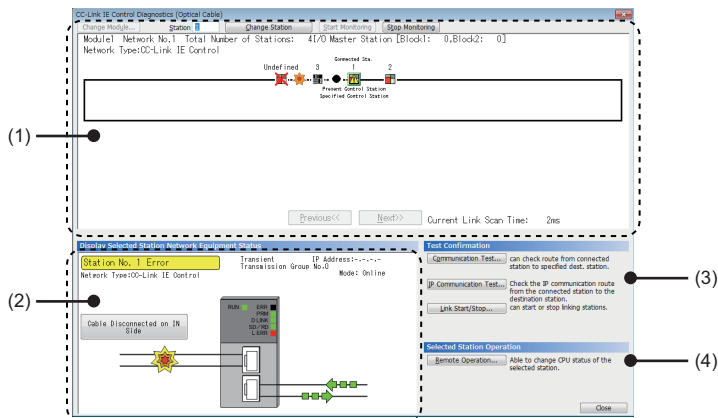
Perform the CC-Link IE Controller Network diagnostics to check the network status and error details or to perform an operation test for troubleshooting.

When optical fiber cables are used

This section describes the CC-Link IE Controller Network diagnostics when optical fiber cables are used.

Diagnostic items

The following table lists items that can be diagnosed by the CC-Link IE Controller Network diagnostics.



○: Diagnosed, ×: Not diagnosed

| Item | | | "Other Station Setting" on the "Specify Connection Destination Connection" window | | Restrictions | Reference |
|------|---|---|---|---------------------------------|--|-------------------------------|
| | | | "No Specification" | Other than "No Specification"*1 | | |
| (1) | Network information display | Network map and error status | ○ | ○ | — | Page 116 Diagnostics window |
| | | Cable disconnection and disconnected station | ○ | ○ | | |
| (2) | Display Selected Station Network Equipment Status | Status of the selected station and the error definition | ○ | ○ | | |
| (3) | Test Confirmation | Communication Test | ○ | × | This can be selected when the selected station is an engineering tool connected station (own station). This cannot be selected when the selected station is another station. | Page 43 Communication test |
| | | IP Communication Test | ○ | × | — | Page 49 IP communication test |
| | | Link Start/Stop | ○ | × | This can be selected when the selected station is an engineering tool connected station (own station). This cannot be selected when the selected station is another station. | Page 134 Link Start/Stop |
| (4) | Selected Station Operation | Remote Operation | ○ | ○ | When the selected station is other than MELSEC iQ-R series, this function cannot be executed. | Page 138 Remote Operation |

*1 When starting the CC-Link IE Controller Network diagnostics with a setting other than "No Specification" in "Other Station Setting" on the "Specify Connection Destination Connection" window, use the engineering tool of the version 1.035M or later.

Starting diagnostics

This section describes how to use the CC-Link IE Controller Network diagnostics.

■When "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window

1. Connect the engineering tool to the CPU module.

If a normal station cannot be monitored due to an error such as cable disconnection, directly connect the engineering tool to the normal station.

2. Start the CC-Link IE Controller Network diagnostics.

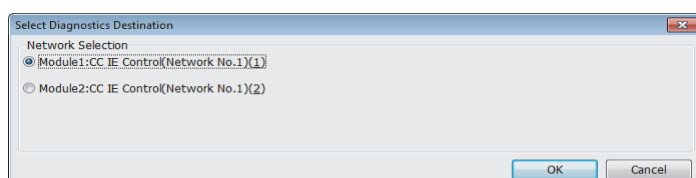
[Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Optical Cable)]

Point

In a redundant system, the CC-Link IE Controller Network diagnostics cannot be started when a system has been specified in "Specify Redundant CPU" of "Target System" in the "Specify Connection Destination Connection" window. Directly connect the engineering tool to the station to be diagnosed, and specify the own remote head module (set "Not Specified" in "Specify Redundant CPU"), and start the CC-Link IE Controller Network diagnostics.

3. When the following window opens, select the RJ71GP21(S)-SX to be diagnosed and click the [OK] button to start the CC-Link IE Controller Network diagnostics.

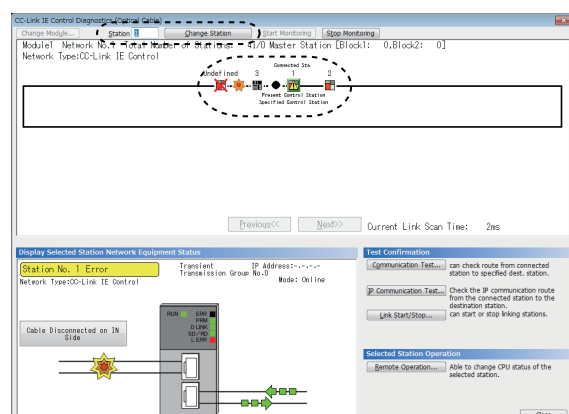
Modules are listed in the order configured in module information.



Point


When multiple CC-Link IE Controller Network-equipped modules of the same network number are mounted on the same base unit, the module with the smallest start I/O number is always diagnosed, regardless of setting.

4. Select the station to be diagnosed from "Selected Station" or "Network information display".
 - An icon indicating an error is displayed on the station icon of the station where an error occurs.
 - A disconnected station that has performed data link is indicated with the icon in the disconnected station.
 - An icon is displayed on the cable where a communication error occurs. To check the details of the communication error, click the neighboring stations of the icon of the communication error.



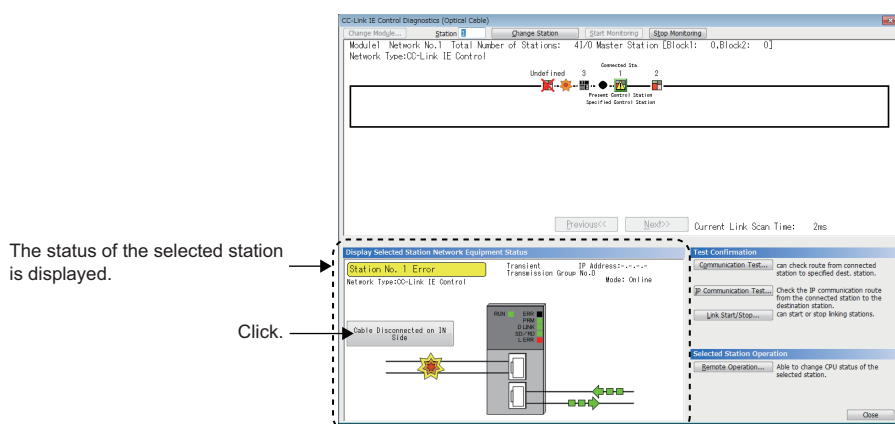



When the station to be diagnosed cannot be selected, the status of network number disparity, control station duplication, or station number duplication cannot be checked using the CC-Link IE Controller Network diagnostics. Check the error details by directly connecting the engineering tool to the CPU module where an error occurs, and opening the "System Monitor" window.

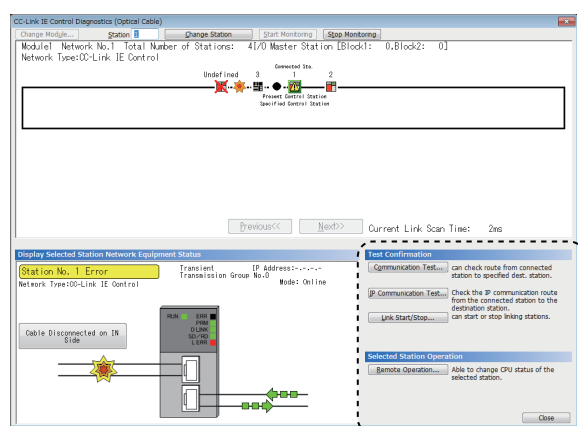
5. The status of a station selected in "Network information display" is displayed in "Display Selected Station Network Equipment Status". ( Page 119 Select station network device status display)

The station status is displayed on the top of "Display Selected Station Network Equipment Status".

If an error occurs, a button indicating the error such as [Cable Disconnected on OUT Side] is displayed in "Display Selected Station Network Equipment Status". Click the button to check the error details and actions.



6. Various tests and operations can be performed by clicking the "Test Confirmation" or "Selected Station Operation" on the bottom left of the window. ( Page 134 Procedure to Page 138 Precautions)



Various tests and operations can be performed.

■When a setting other than "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window

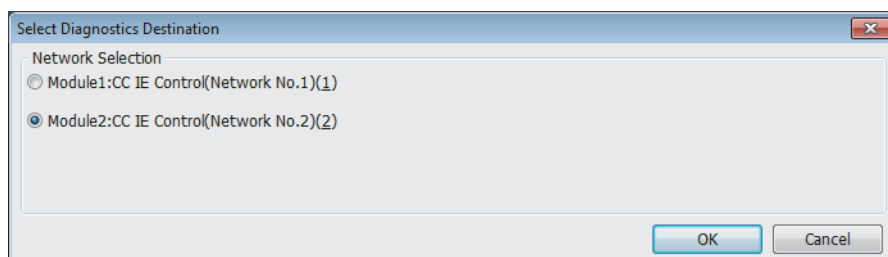
1. Connect the engineering tool to the CPU module.
2. Start the CC-Link IE Controller Network diagnostics.

 [Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Optical Cable)]

Point

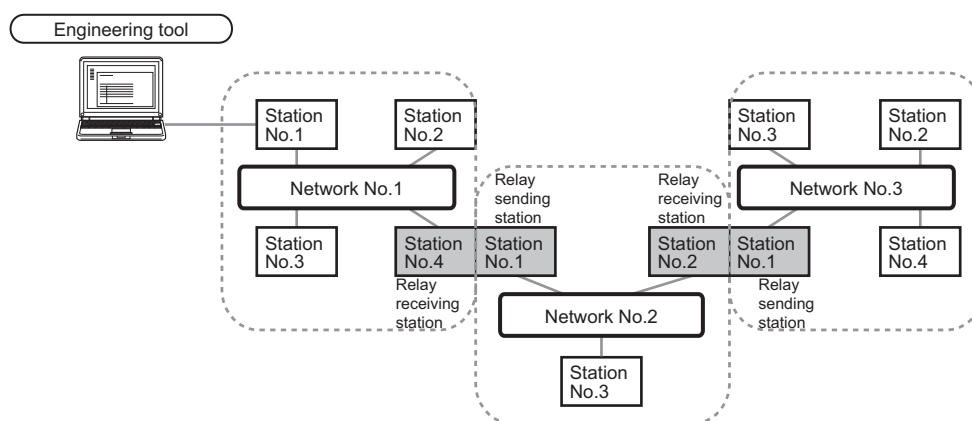
- In a redundant system, the CC-Link IE Controller Network diagnostics cannot be started when a system has been specified in "Specify Redundant CPU" of "Target System" in the "Specify Connection Destination Connection" window. Directly connect the engineering tool to the station to be diagnosed, and specify the own remote head module (set "Not Specified" in "Specify Redundant CPU"), and start the CC-Link IE Controller Network diagnostics.
- The CC-Link IE Controller Network diagnostics cannot be started when "Other Station (Co-existence Network)" has been specified in "Other Station Setting" on the "Specify Connection Destination Connection" window and "CC-Link" or "C24" has been specified in "Co-existence Network Route".

3. Select the RJ71GP21(S)-SX of the diagnostics-target network number and click the [OK] button to start the CC-Link IE Controller Network diagnostics.



Point

- Although the CC-Link IE Controller Network diagnostics of the network to which the relay sending station belongs can be started, that of the network to which the relay receiving station belongs cannot be started.
- To start the CC-Link IE Controller Network diagnostics, specify the network number and station number of the relay receiving station or relay sending station for "Network No." and "Station No." in "Network Communication Route" on the "Specify Connection Destination Connection" window. For example, to start the CC-Link IE Controller Network diagnostics of the network number 2, specify the network number 1 and station number 4, or the network number 2 and station number 1 in "Network No." and "Station No.".



- The CC-Link IE Controller Network diagnostics can be started for stations of up to eight networks ahead (number of relay stations: 7) including the station directly connected to the engineering tool. However, for the stations of five networks ahead (number of relay stations: 4) or later, it can be started only when the firmware version of the RJ71GP21-SX or RJ71GP21S-SX is "18" or later.

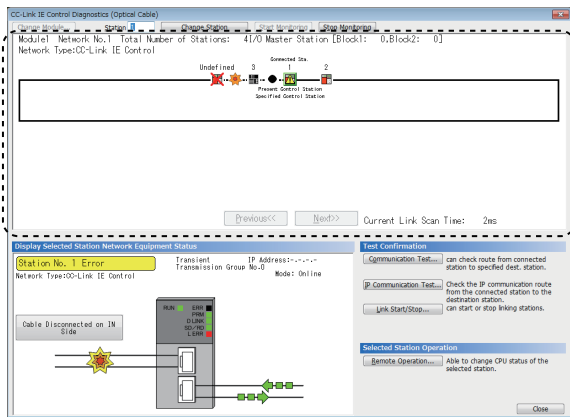
4. Step 4 and later is the same procedure as when "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window. (Page 112 When "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window)

Precautions

If the communication path includes the following items, the CC-Link IE Controller Network diagnostics cannot be started.

- MELSECNET/H
- Multidrop connection with a serial communication module
- Interface board for a personal computer
- GOT (when the transparent function is used)
- MELSEC-Q/L series network module

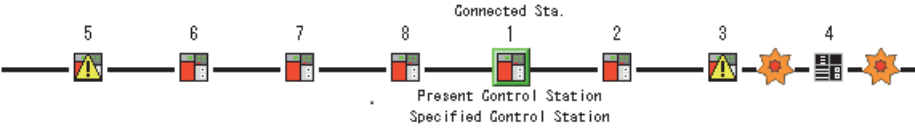
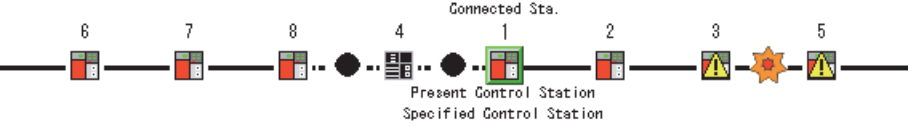
Diagnostics window



Network information display

| Item | | Description |
|-----------------------------|---------|--|
| [Change Module] button | | Changes the CC-Link IE Controller Network-equipped module to be diagnosed when multiple CC-Link IE Controller Network-equipped modules are mounted. However, when multiple CC-Link IE Controller Network-equipped modules of the same network number are mounted on the same base unit, the module with the smallest start I/O number is always diagnosed, regardless of setting. |
| Station | | Specifies the station number of the station to be diagnosed. A station to be diagnosed can also be selected by clicking the station icon displayed in "Network information display". |
| [Change Station] button | | Enter another station number in "Station" and click this button to change the selected station. |
| [Start Monitoring] button | | Starts monitoring of the CC-Link IE Controller Network diagnostics. |
| [Stop Monitoring] button | | Stops monitoring of the CC-Link IE Controller Network diagnostics. |
| Network information display | Module□ | Displays the module number of the network being diagnosed. |

| Item | | Description |
|-----------------------------|---------------------------|--|
| Network information display | Network No. | Displays the network number of the network being diagnosed. |
| | Total Number of Stations | Indicates the total number of stations (sum of control stations and normal stations) set in "Network Range Assignment" of "Required Settings". |
| | I/O Master Station | Block 1: Indicates the station number of the I/O master station of block 1. |
| | | Block 2: Indicates the station number of the I/O master station of block 2. |
| | Network Type | Displays "CC-Link IE Control Extended Mode" or "CC-Link IE Control". |
| | Icon | <p>Indicates the network map and the status of each station.</p> <p>If the status is not displayed, check that there is only one control station in the system and no station number is overlapped.</p> |
| | Station number | <p>1 to 120: The station number of the CC-Link IE Controller Network-equipped module is displayed.</p> <p>Control/Standby: The stations of the control system and standby system of a redundant system is displayed.*1</p> <p>A/B: The stations of system A and system B of a redundant system is displayed.</p> <p>Undefined: The station for which parameters have not been set or station No. is not assigned is displayed.</p> |
| | Connected station | Displayed the station (own station) where the engineering tool is connected. |
| | Current control station | Displayed to the station actually operating as control station. |
| | Specified control station | Displayed for the station set as the control station by module parameters. |
| | Icon | The station icons that may be displayed are listed below. |
| | | Normally operating station |
| | | <p>Faulty station (A fault has occurred on a module and cable while cyclic transmission is performed.)</p> <p>If a station that is not cleared an error is to be a connected station, the icon at the station that is cleared an error still indicates as a faulty station even after the following error information is cleared at a faulty station.</p> <ul style="list-style-type: none"> • 'Clear IN-side transmission error count' (SB0007) • 'Clear OUT-side transmission error count' (SB0008) <p>When error information is cleared at a connected station, the icon at the station that is cleared an error will indicate as a normally operating station.</p> |
| | | Faulty station (Cyclic transmission is stopped.) |
| | | Station in a different shared group (No cyclic data are received.) |
| | | Disconnected station (black) |
| | | Reserved station (gray) |
| | | <p>Selected station (station icon edged with green)</p> <ul style="list-style-type: none"> • This can be selected by clicking a station icon or moving a focus and holding down a space bar. • The station status is displayed at "Display Selected Station Network Equipment Status". • Disconnected station and reserved station cannot be selected. |
| | | <p>Focusing (station icon edged with dotted line)</p> <ul style="list-style-type: none"> • This can be selected by holding down a space bar. • Disconnected station and reserved station cannot be selected. |
| | | <p>Communication error</p> <ul style="list-style-type: none"> • If the station adjacent to the one where a communication error occurs is selected, the station status is displayed at "Display Selected Station Network Equipment Status". |

| Item | | Description |
|---|--|---|
| Network information display | Display position of a disconnected station | <p>■When normal connection information has been obtained (☞ Page 118 Acquisition of normal connection information) The disconnected station (station No.4) is displayed in the position where it was connected when normal.</p>  <p>■When normal connection information has not been obtained The disconnected station (station No.4) is displayed on the IN side of the engineering tool connected station.</p>  |
| | [Previous] button | When the total number of stations is 61 or more, the window prior to "Network information display" is displayed by clicking this button. |
| | [Next] button | When the total number of stations is 61 or more, the window next to "Network information display" is displayed by clicking this button. |
| | Current link scan time | Indicates the link scan time of the displayed network. |
| Display Selected Station Network Equipment Status | | Indicates status of the station selected in "Network information display". For details on "Display Selected Station Network Equipment Status", refer to the following. ☞ Page 119 Select station network device status display |
| Test Confirmation | [Communication Test] button | Performs a communication test. (☞ Page 43 Communication test) |
| | [IP Communication Test] button | Performs an IP communication test. (☞ Page 49 IP communication test) |
| | [Link Start/Stop] button | Starts or stops cyclic transmission. (☞ Page 134 Procedure) |
| Selected Station Operation | [Remote Operation] button | Performs remote operation (such as RUN, STOP, or RESET operations) to the CPU module. (☞ Page 138 Precautions) |

*1 When a stop error occurs in the CPU modules of both systems, both systems are displayed as the standby system.

■Acquisition of normal connection information

The normal connection information is network configuration data that the CC-Link IE Controller Network-equipped module on the engineering tool connected station stores in its memory when all stations are normal.

When all of the following conditions are met, the normal connection information can be obtained. Also, after any of the conditions became unsatisfied, if all of them are met again, the normal connection information will be updated.

- Data link status is all stations normal. ('Data link error status of each station' (SB00B0) is off.)
- No loopback station ('Loopback status' (SB0065) is off.)
- No station has a parameter error. ('Parameter error status of each station' (SB00E0) is off.)
- The number of actually connected stations is the same as the total of stations that is set for the control station (except reserved stations).

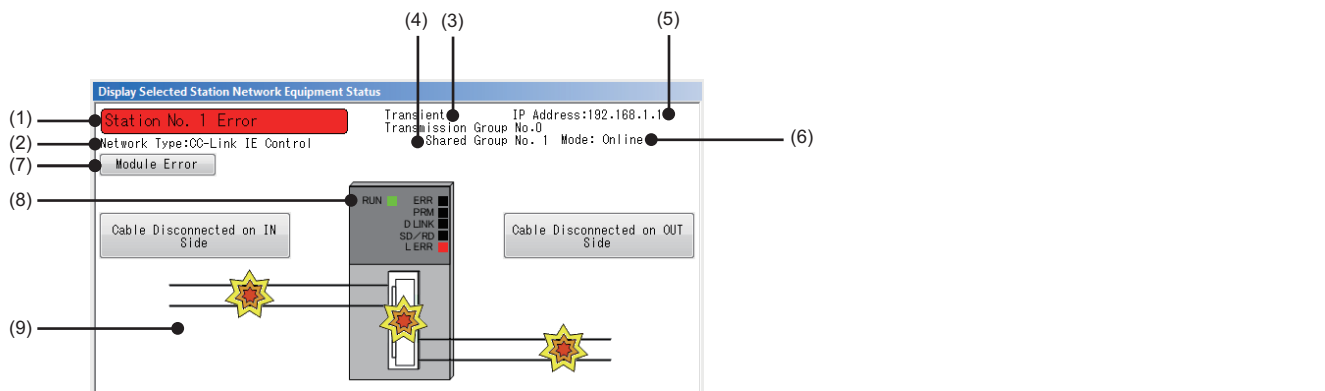
Point






When multiple stations on the same system have the same network number, if a station other than those on the system is selected while a station of the lowest start I/O number has a baton pass error, a transient execution error (no baton passing on the own station) (E504H) will occur.
Execute again after correcting the baton pass error.

Select station network device status display

Indicates status of the station selected in "Network information display".

■When a station where an error has occurred is selected

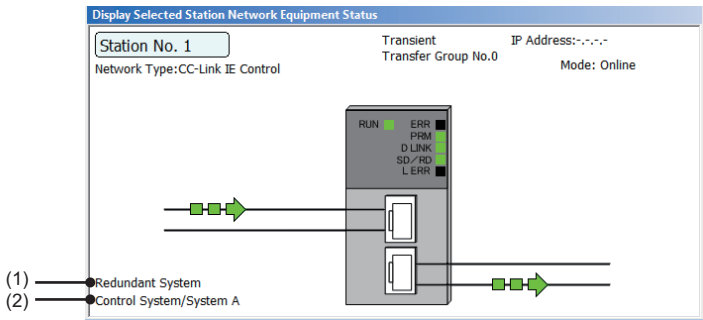


| No. | Description |
|-----|---|
| (1) | Indicates the operating status. <ul style="list-style-type: none"> Station No.□: Normal operation Station No.□ Error (yellow): Error (Data link is continued.) Station No.□ Error (red): Error (Data link is stopped.) |
| (2) | The network type is displayed. |
| (3) | The transient transmission group number of the selected station is displayed. |
| (4) | The shared group number of the selected station is displayed. |
| (5) | An IP address is displayed. (only when it is set). |
| (6) | Mode is displayed. |
| (7) | Click this button to check error details. Take actions following the description displayed in "Error Factor" and "Troubleshooting". |
| (8) | The LED status of a module and communication status of IN connector and OUT connector is displayed. ( MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| (9) | <p>Communication status</p> <ul style="list-style-type: none"> Properly connected  <ul style="list-style-type: none"> Error (cable disconnection)  <ul style="list-style-type: none"> Error (other than cable disconnection)  <ul style="list-style-type: none"> Module error (CC-Link IE Controller Network parameter setting error or transient transmission error)  |

Point

- When a transient transmission error occurs, check the error description in error code and take action.
- When multiple stations on the same system have the same network number: If a station other than those on the system is selected while a station of the lowest start I/O number has a baton pass error, a transient execution error (no baton passing on the own station) (E504H) will occur. Execute again after correcting the baton pass error.

■When a redundant system station is selected



| No. | Description |
|-----|--|
| (1) | Indicates that the station is set as a redundant system. |
| (2) | The status of the selected station in a redundant system (control system/standby system and system A/system B) is displayed.*1 |

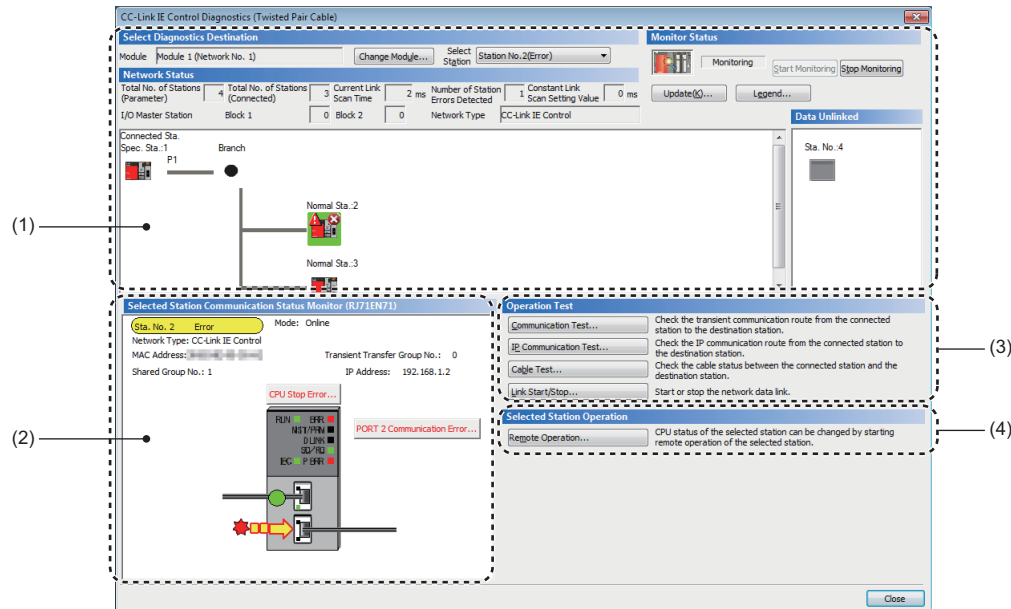
*1 When a stop error occurs in the CPU modules of both systems, both systems are displayed as the standby system.

When Ethernet cables are used

This section describes the CC-Link IE Controller Network diagnostics when Ethernet cables are used.

Diagnostic items

The following table lists items that can be diagnosed by the CC-Link IE Controller Network diagnostics.



○: Diagnosed, ×: Not diagnosed

| Item | | | "Other Station Setting" on the "Specify Connection Destination Connection" window | | Reference |
|------|--|---|---|---------------------------------|--|
| | | | "No Specification" | Other than "No Specification"*1 | |
| (1) | Network information display | Network map and error status | ○ | ○ | Page 126 Diagnostics window |
| | | Cable disconnection and disconnected station | ○ | ○ | |
| (2) | Selected Station Communication Status Monitor (RJ71EN71) | Status of the selected station and the error definition | ○ | ○ | |
| (3) | Operation Test | Communication Test | ○ | × | Page 43 Communication test |
| | | IP Communication Test | ○ | × | Page 49 IP communication test |
| | | Cable Test | ○ | × | Page 133 Cable test (only when Ethernet cables are used) |
| | | Link Start/Stop | ○ | × | Page 134 Link Start/Stop |
| (4) | Selected Station Operation | Remote Operation | ○ | ○ | Page 138 Remote Operation |

*1 When starting the CC-Link IE Controller Network diagnostics with a setting other than "No Specification" in "Other Station Setting" on the "Specify Connection Destination Connection" window, use the engineering tool of the version 1.035M or later.

Starting diagnostics

This section describes how to use the CC-Link IE Controller Network diagnostics.

■ When "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window

1. Connect the engineering tool to the CPU module.

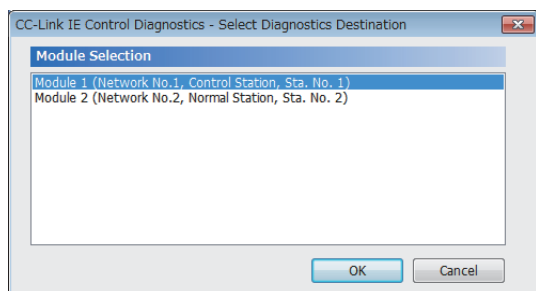
If a normal station cannot be monitored due to an error such as cable disconnection, directly connect the engineering tool to the normal station.

2. Start the CC-Link IE Controller Network diagnostics.

 [Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Twisted Pair Cable)]

3. When the following window opens, select the module to be diagnosed and click the [OK] button to start the CC-Link IE Controller Network diagnostics.

Modules are listed in the order configured in module information.



Point

However, when multiple RJ71EN71s and RnENCPUUs of the same network number are mounted on the same base unit, the module with the smallest start I/O number is always diagnosed, regardless of setting.

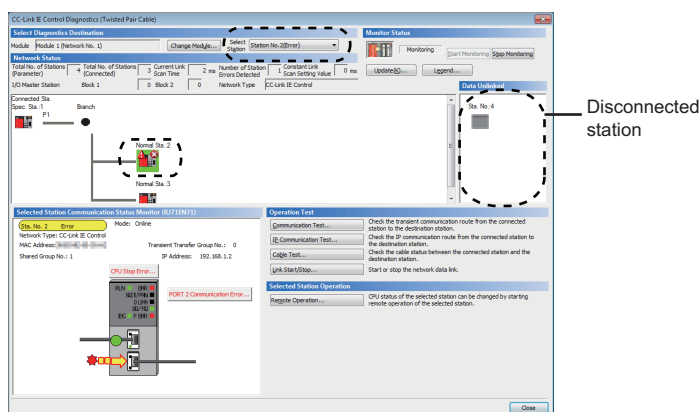
4. Select the station to be diagnosed from "Select Station" or in "Network Status".

- An icon indicating an error is displayed on the module icon of the station where an error occurs.
- A disconnected station that has performed data link is indicated with the "Disconnected Station" icon in the network map. However, a disconnected station in following case is displayed on the right end of the area.

Stations displayed on the right end of the area.

- A station that was reconnected to a network after disconnecting/inserting the cable or powering off and on the system, and remains disconnected.
 - A disconnected station with the station icon deleted in the network map by clicking the [Update] button
-
- The "Error" icon is displayed on the icon of a cable where a communication error occurs. To check the details of the communication error, click the neighboring stations of the "Error" icon.
 - The "Error (Illegal loop connection detected)" icon is displayed if the network is configured in ring topology although "Network Topology" of "Basic Settings" of the control station is set to "Line/Star".
 - The "Error (Illegal loop connection detected)" icon is displayed if the network is configured in star topology although "Network Topology" of "Basic Settings" of the control station is set to "Ring".

- The "Error (Illegal loop connection detected)" icon is displayed if the network is incorrectly configured in ring topology.



3

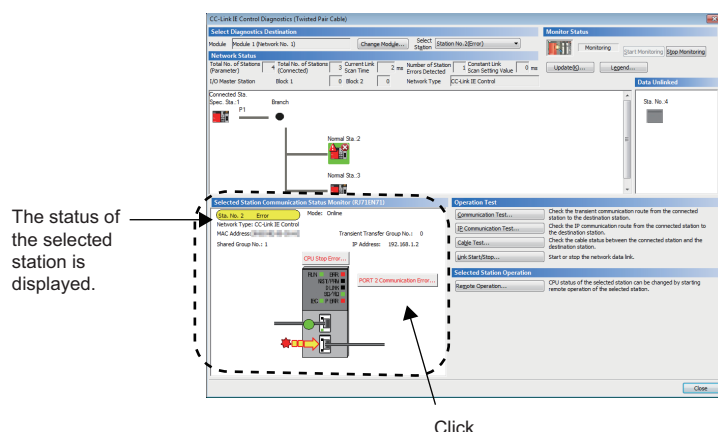


When the station to be diagnosed cannot be selected, the status of network number disparity, control station duplication, or station number duplication cannot be checked using the CC-Link IE Controller Network diagnostics. Check the error details by directly connecting the engineering tool to the CPU module where an error occurs, and opening the "System Monitor" window.

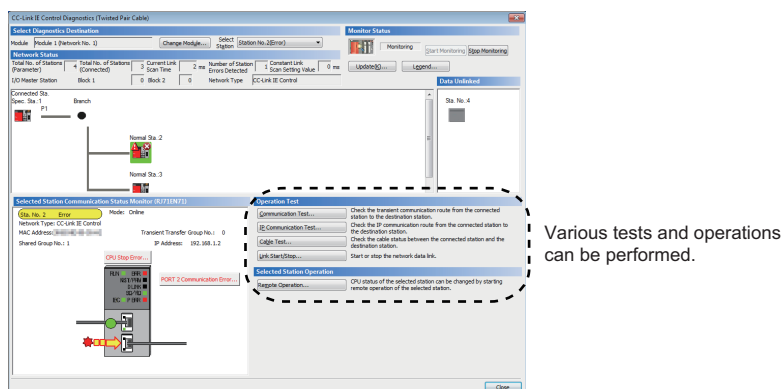
5. The status of a station selected in "Network Status" is displayed in "Selected Station Communication Status Monitor". (Page 126 Diagnostics window)

The station status is displayed on the top of "Selected Station Communication Status Monitor".

If an error occurs, a button indicating the error such as [PORT2 Communication Error] is displayed in "Selected Station Communication Status Monitor". Click the button to check the error details and actions.



6. Various tests and operations can be performed by clicking the "Operation Test" or "Selected Station Operation" on the bottom left of the window. (Page 134 Link Start/Stop to Page 138 Remote Operation)



■When a setting other than "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window

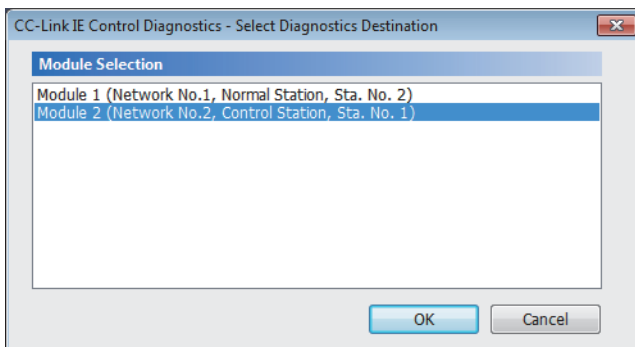
1. Connect the engineering tool to the CPU module.
2. Start the CC-Link IE Controller Network diagnostics.

[Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Twisted Pair Cable)]

Point

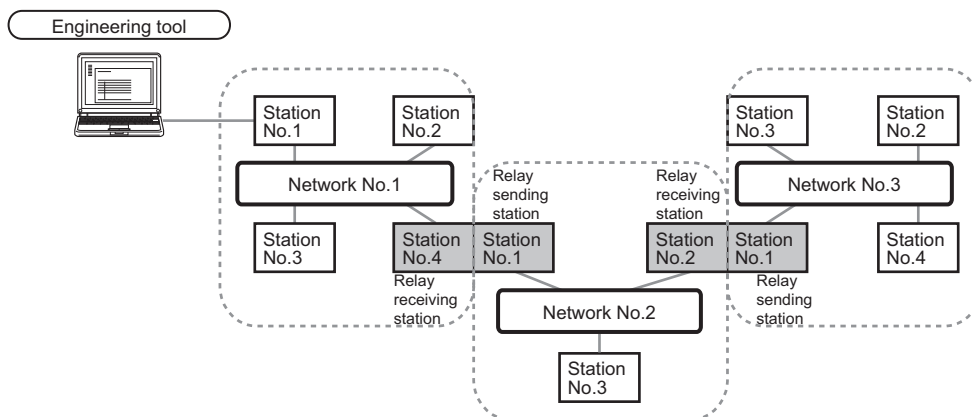
The CC-Link IE Controller Network diagnostics cannot be started when "Other Station (Co-existence Network)" has been specified in "Other Station Setting" on the "Specify Connection Destination Connection" window and "CC-Link" or "C24" has been specified in "Co-existence Network Route".

3. Select the module of the diagnostics-target network number and click the [OK] button to start the CC-Link IE Controller Network diagnostics.



Point

- Although the CC-Link IE Controller Network diagnostics of the network to which the relay sending station belongs can be started, that of the network to which the relay receiving station belongs cannot be started.
- To start the CC-Link IE Controller Network diagnostics of the network to which the relay sending station belongs, specify the network number and station number of the relay receiving station or relay sending station for "Network No." and "Station No." in "Network Communication Route" on the "Specify Connection Destination Connection" window. For example, to start the CC-Link IE Controller Network diagnostics of the network number 2, specify the network number 1 and station number 4, or the network number 2 and station number 1 in "Network No." and "Station No.".



- The CC-Link IE Controller Network diagnostics can be started for stations of up to eight networks ahead (number of relay stations: 7) including the station directly connected to the engineering tool. However, for the stations of five networks ahead (number of relay stations: 4) or later, it can be started only when the firmware version of the RJ71EN71 is "18" or later.

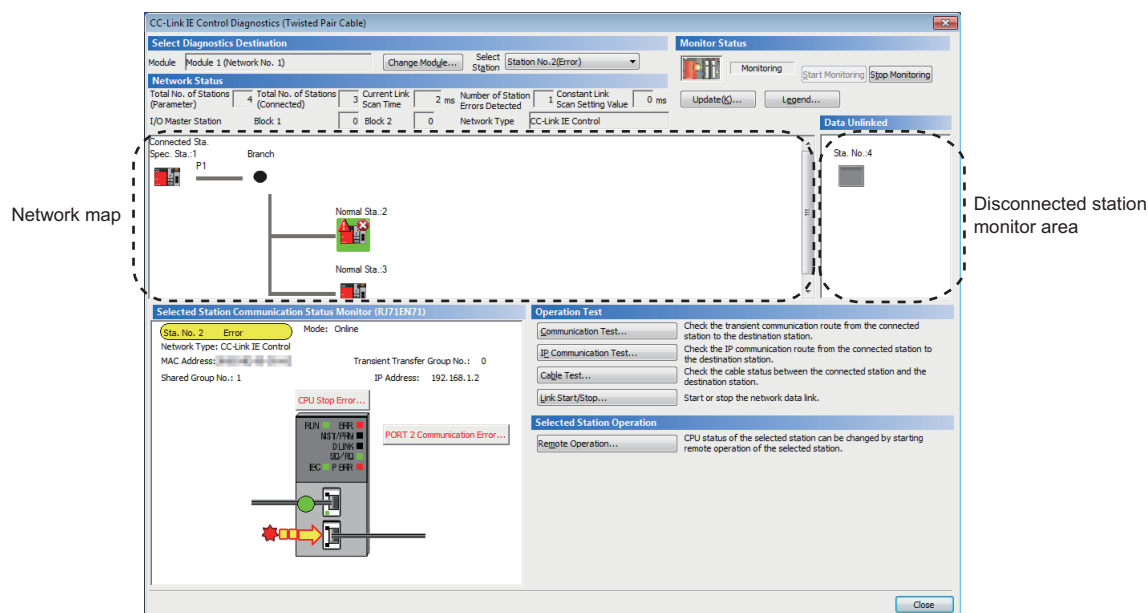
4. Step 4 and later is the same procedure as when "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window. (Page 122 When "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window)

Precautions


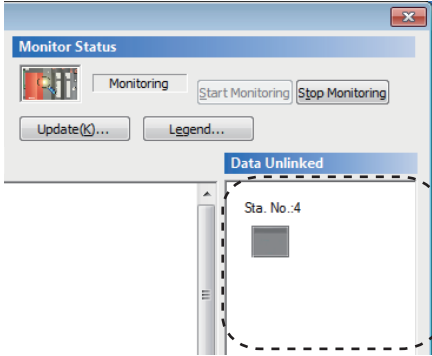






If the communication path includes the following items, the CC-Link IE Controller Network diagnostics cannot be started.

- MELSECNET/H
- Multidrop connection with a serial communication module
- Interface board for a personal computer
- GOT (when the transparent function is used)
- MELSEC-Q/L series network module

Diagnostics window



| Item | | Description |
|--------------------------------|---------------------------|--|
| Select Diagnostics Destination | Module | Displays the RJ71EN71 or the RnENCPU (network part) being diagnosed. |
| | [Change Module] button | Changes the RJ71EN71 or the RnENCPU (network part) to be diagnosed when multiple modules are mounted. However, when multiple RJ71EN71s or the RnENCPU (network part) of the same network number are mounted on the same base unit, the module with the smallest start I/O number is always diagnosed, regardless of setting. |
| | Selected Station | Selects the station number of the station to be diagnosed. A station to be diagnosed can also be selected by clicking the module icon displayed in the network map. |
| Monitor Status | [Start Monitoring] button | Starts monitoring of the CC-Link IE Controller Network diagnostics. |
| | [Stop Monitoring] button | Stops monitoring of the CC-Link IE Controller Network diagnostics. |
| [Update] button | | <ul style="list-style-type: none"> When the firmware version of the control station is "05" or later: If the actual network configuration and network map of the diagnostic window are inconsistent with each other, clicking this button executes the network map update to make them match. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) When the firmware version of the control station is "04" or earlier: Deletes a disconnected station displayed in the network map. The deleted station is displayed in the disconnected station monitor area. |
| [Legend] button | | Indicates the meaning of icons displayed in the CC-Link IE Controller Network diagnostics. |

| Item | | Description |
|---|--------------------------------------|---|
| Network Status | Total Number of Stations (Parameter) | Indicates the total number of stations (sum of control stations and normal stations) set in "Network Range Assignment" of "Required Settings". |
| | Total Number of Stations (Connected) | Indicates the total number of stations (sum of control stations and normal stations) during data link on CC-Link IE Controller Network. |
| | Current link scan time | Indicates the link scan time of the displayed network. |
| | Number of Station Errors Detected | Indicates the number of error stations in the displayed network. |
| | Constant Link Scan Setting Value | Indicates the setting value of the "Constant Link Scan" under "Supplementary Cyclic Settings" of "Application Settings". |
| | I/O Master Station | <div>Block 1</div> <div>Block 2</div> Indicates the station number of the I/O master station of block 1. Indicates the station number of the I/O master station of block 2. |
| | Network map | Indicates the network map and the status of each station. If the status is not displayed, check that there is only one control station in the system and no station number is overlapped. For details on the network map, refer to the following.  Page 129 Network map |
| | Disconnected station monitor area | Displays a disconnected station that has been set in "Network Range Assignment" of "Required Settings" but has not yet performed data link. However, even if a disconnected station had performed data link, it is displayed in this area in the following cases. <ul style="list-style-type: none"> • A station that was reconnected to a network after disconnecting/inserting the cable or powering off and on the system, and remains disconnected. • A disconnected station with the station icon deleted in the network map by clicking the [Update] button  <p>The "Other Modules" icon indicates a station that has not yet performed data link. Icons other than "Other Modules" icon indicate stations that had performed data link before disconnection. For details on the displayed icon, click the [Legend] button.</p> |
| Selected Station Communication Status Monitor | | Displays status of the station selected in "Network Status". For details on "Selected Station Communication Status Monitor", refer to the following.  Page 132 Selected Station Communication Status Monitor |
| Operation Test | [Communication Test] button | Performs a communication test. ( Page 43 Communication test) |
| | [IP Communication Test] button | Performs an IP communication test. ( Page 49 IP communication test) |
| | [Cable Test] button | Performs a cable test. ( Page 133 Cable test (only when Ethernet cables are used)) |
| | [Link Start/Stop] button | Starts or stops cyclic transmission. ( Page 134 Link Start/Stop) |
| Selected Station Operation | [Remote Operation] button | Performs remote operation (such as RUN, STOP, or RESET operations) to the CPU module. ( Page 138 Remote Operation) |

When "Error (Illegal loop connection detected)" icon is displayed

When "Error (Illegal loop connection detected)" icon is displayed in "Network Status", take following actions.

■When the system does not contain a switching hub

The network is configured in ring topology although "Network Topology" of "Basic Settings" of the control station is set to "Line/Star".

Take any of the following actions.

Action

Disconnect an Ethernet cable connected to any station on the network (either P1 or P2).

The network topology will become a line topology and data link will start.

To configure the network in a ring topology, set "Network Topology" under "Basic Settings" of the control station to "Ring" and rewrite the parameters to the CPU module.

■When the system contains a switching hub

The "Error (Illegal loop connection detected)" icon is displayed due to any of the following causes.

- The network is configured in ring topology although "Network Topology" of "Basic Settings" is set to "Line/Star".
- The network is configured in star topology although "Network Topology" under "Basic Settings" is set to "Ring".
- The switching hub is connected with "Network Topology" under "Basic Settings" of the control station being set to "Ring".

Take the following actions.

Action

1. Check if "Network Topology" under "Basic Settings" of the control station is different from the network configuration. If so, correct "Network Topology" and rewrite it to the CPU module. When data link starts across the entire network, this procedure is successfully completed.

If data link does not start, perform step 2 and 3.

2. When "Network Topology" of "Basic Settings" of the control station is set to "Line/Star", take the following actions.

- Disconnect one Ethernet cable connected to the switching hub and power off and on the hub. (Repeat this operation until data link starts over the network.)
- When data link starts over the network, check the network configuration using CC-Link IE Controller Network diagnostics. The procedure is successfully completed. (📖 Page 111 Checking the Network Status)

3. When "Network Topology" of "Basic Settings" of the control station is set to "Ring", take the following actions.

- Configure the network in ring topology without a switching hub. Connecting a switching hub will cause a problem such as data link failure. (📖 MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup))

Network map

Icon

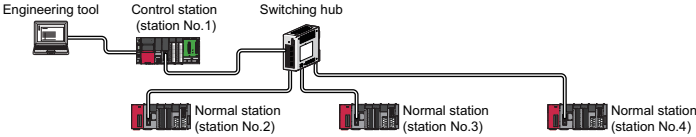
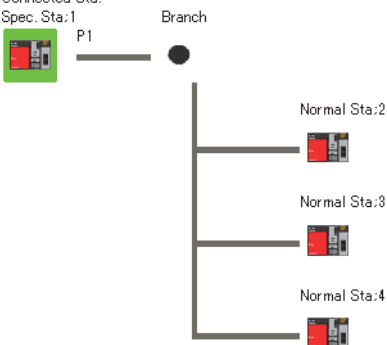


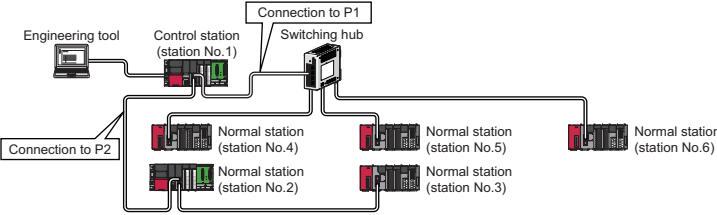
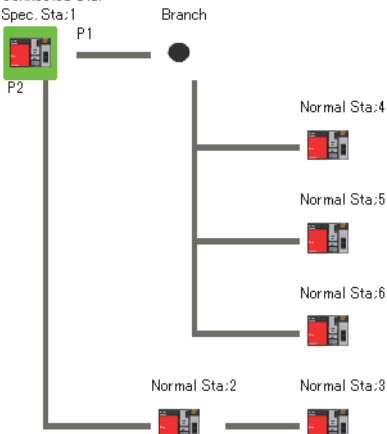

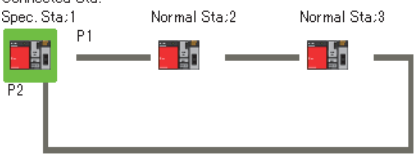
The module type and station number are displayed with an icon.



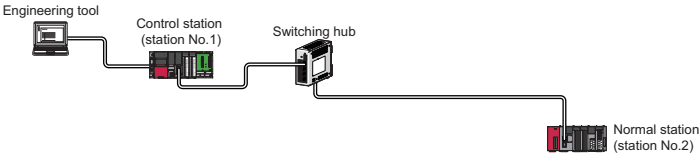
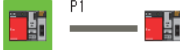
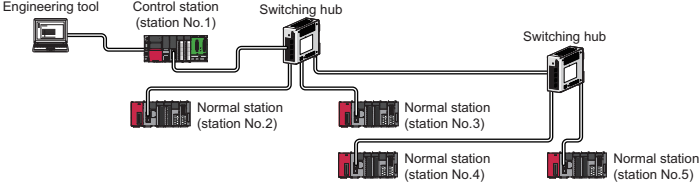
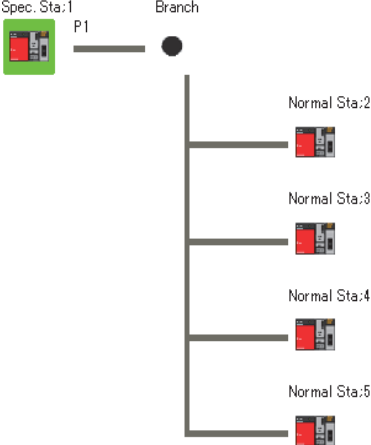
| No. | Description |
|-----|---|
| (1) | Displayed the station (own station) where the engineering tool is connected. |
| (2) | Displayed the station type and station number. "?" is displayed when a station number has not been set. When the background of the text if colored, the relevant station may have been set as a reserved station or an error invalid station. Click the [Legend] button to check the meaning of the background colors. |
| (3) | Module status is displayed. Click the [Legend] button to check the meaning of the icon. When "Error (Illegal loop connection detected)" icon is displayed, take actions displayed in "Troubleshooting" of "Error Details". (Page 132 When a station where an error has occurred is selected) |
| (4) | A port to which an Ethernet cable is connected is displayed. |

■Network map

A network map is displayed according to the connection status.

| System configuration | Display of the network map |
|---|---|
| <p>Star topology</p>  | <p>Connected Sta. Spec. Sta:1</p>  |
| <p>Line topology</p>  | <p>Connected Sta. Spec. Sta:1</p>  |
| <p>Star and line mixed</p>  | <p>Connected Sta. Spec. Sta:1</p>  |
| <p>Ring topology</p>  | <p>Connected Sta. Spec. Sta:1</p>  |

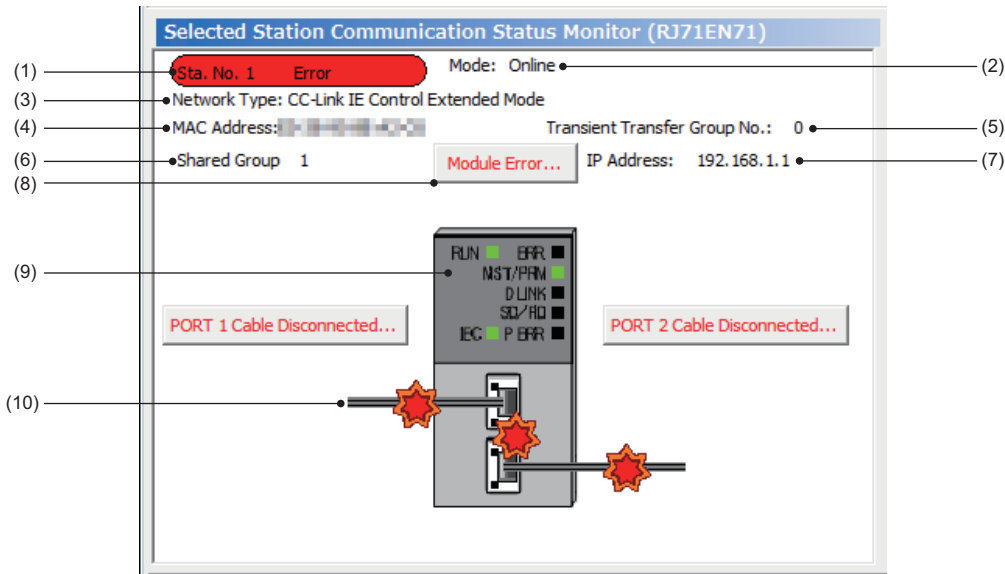
In the following cases, the network map that is different from the actual system configuration is displayed.

| System configuration | Display of the network map |
|--|---|
| <p>Two stations are connected through a switching hub.</p>  | <p>Branches are not displayed in the network map.</p> <p>Connected Sta. Spec. Sta:1</p>  |
| <p>Switching hubs are in cascade connection.</p>  | <p>Only one branch is displayed.</p> <p>Connected Sta. Spec. Sta:1</p>  |

Selected Station Communication Status Monitor

Displays status of the station selected in "Network Status".
When the network type of the RJ71EN71 is set to "E+CCIEC" or the network type of the RnENCPU is set to "E+IEC", status of P1 is not displayed.

■When a station where an error has occurred is selected



| No. | Description |
|------|--|
| (1) | The operating status is displayed. <ul style="list-style-type: none">• Station No.□: Normal operation• Station No.□ Error (yellow): Error (Data link is continued.)• Station No.□ Error (red): Error (Data link is stopped.) |
| (2) | Mode is displayed. |
| (3) | The network type is displayed. |
| (4) | A MAC address is displayed. |
| (5) | The transient transmission group number is displayed. |
| (6) | The shared group number is displayed. (only when the shared group number is set) |
| (7) | An IP address is displayed. (only when it is set). |
| (8) | Click this button to check error details. Take actions following the description displayed in "Error Factor" and "Troubleshooting". |
| (9) | The LED status of a module and communication status of P1 and P2 is displayed. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| (10) | Status of the cables connected to P1 and P2 is displayed. |

Cable test (only when Ethernet cables are used)

Cable test checks if the Ethernet cables are properly connected.

Only the Ethernet cable connected to the P1 or P2 of the target station is tested. For the whole network status, check the network map or "Selected Station Communication Status Monitor" of the CC-Link IE Controller Network diagnostics. (☞ Page 111 Checking the Network Status)

Procedure

Cable Test

Cable Test Content

Testing Station Setting

Network No. Station No.

↓ Execute Test

* Check the cable status between the connected station and the destination station.

Cable Test Result

| PORT 1 | PORT 2 |
|-----------------------|---|
| Test Result Normal | Test Result Cable disconnected/unconnected |
| Error Factor - | Error Factor Cable between this PORT and the connected device is disconnected or the cable is not connected to PORT. |
| Troubleshooting - | Troubleshooting Please check if cable is connected to PORT. Please check if cable to connected equipment is not disconnected. |

Close

1. Start the CC-Link IE Controller Network diagnostics.
☞ [Diagnostics] ⇒ [CC-Link IE Control Diagnostics (Twisted Pair Cable)]
2. Click the [Cable Test] button in the "CC-Link IE Control Diagnostics" window.
"Cable Test" window is displayed.
3. Enter a station number and click the [Execute Test] button to operate the test.
If an error occurs, take actions according to the error message.

3


Link Start/Stop

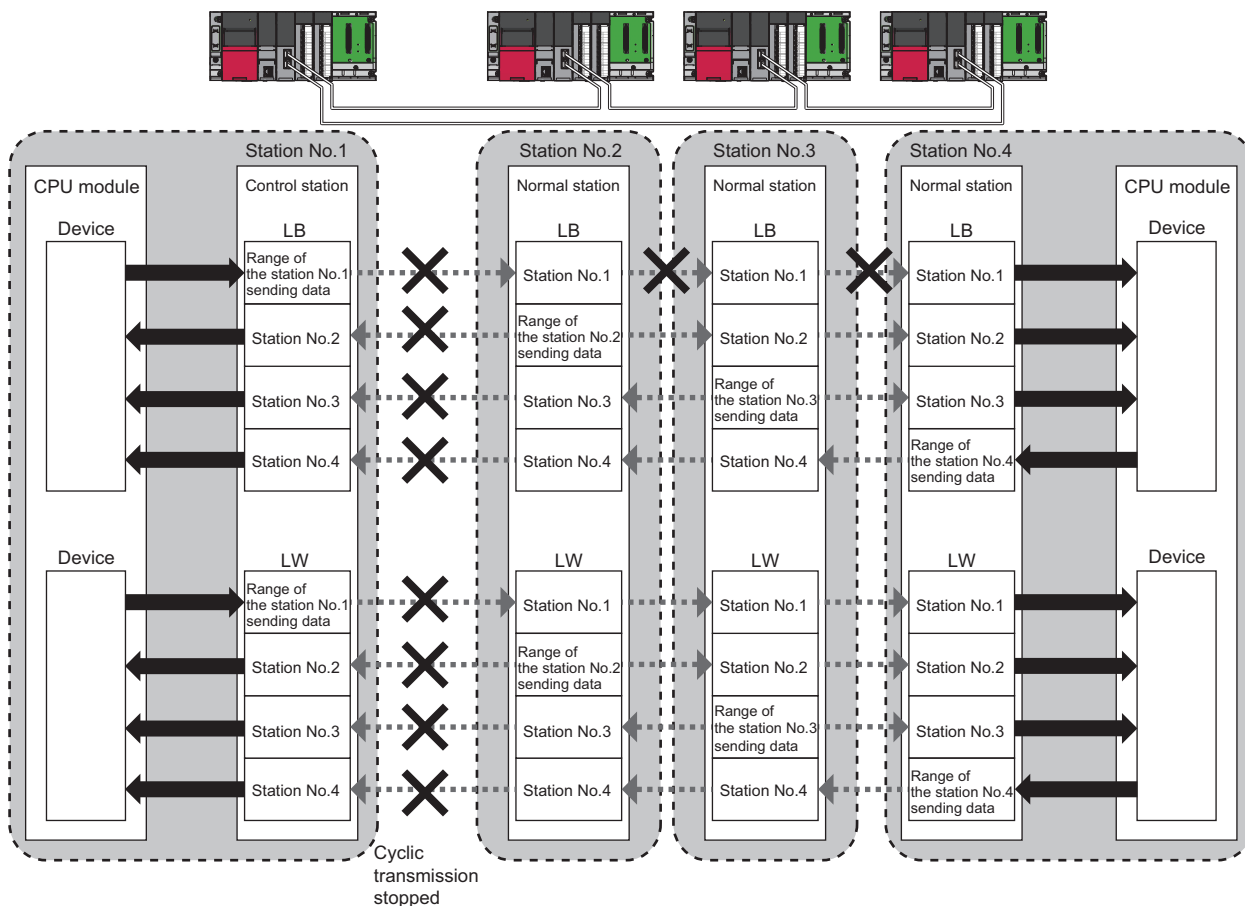
This function stops the cyclic transmission during debugging and other operations. (Data reception from other stations and data sending from the own station are stopped.)

Also, the stopped cyclic transmission is restarted. This function does not stop or restart transient transmission.

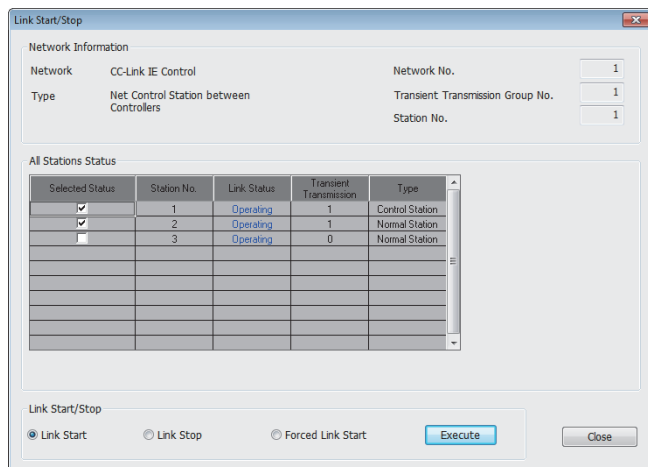
Point

Cyclic transmission can be started and stopped using link special relay (SB) and link special register (SW).

( Page 166 List of Link Special Relay (SB) Areas, Page 179 List of Link Special Register (SW) Areas)



Procedure when optical fiber cables are used



1. Click the [Link Start/Stop] button in the "CC-Link IE Control Diagnostics" window. Or right-click a station icon in "Network information display" and click [Link Start/Stop].

"Link Start/Stop" window is displayed.

2. Select a target station for starting or stopping cyclic transmission in "Selected Status".

When the engineering tool is connected to a normal station, only the own station can be selected. The station to which the engineering tool is connected can be checked in "Network information display".

3. Select whether to start or stop cyclic transmission in "Link Start/Stop".

Selecting "Forced Link Start" will forcibly start cyclic transmission of the station where cyclic transmission was stopped by a command from another station or by link special relay (SB) or link special register (SW).

4. Click the [Execute] button.

The execution status of cyclic transmission can be checked in "Link Status".

■When target stations are collectively specified

- Group specification: Right-click on the line of "Transient Transmission Group No.", and select "Group Selection".
- All stations specification: Right-click on the "All Stations Status" area, and select "Select All". Also, selecting "Deselect All" will cancel all the selection.

Procedure when Ethernet cables are used

Link Start/Stop

Network Information

Connected Station Information

Network Type: CC-Link IE Control Network No.: 1

Station Type: Control Station Transient Transfer Group No.: 1

Station No.: 1

Link Start/Stop Setting Content

All Stations Information

Select All Deselect All(N) Group No. Selection

| Selected Status | Station No. | Link Status | Transient Transfer Group No. | Station Type |
|-------------------------------------|-------------|-------------|------------------------------|-----------------|
| <input type="checkbox"/> | 1 | Operating | 1 | Control Station |
| <input checked="" type="checkbox"/> | 2 | Operating | 1 | Normal Station |
| <input type="checkbox"/> | 3 | Operating | 0 | Normal Station |

Link Start/Stop Execution Details (Execution Content)

☒ Link Start ☐ Link Stop

☐ Forced Link Start

*Forced Link Start will be executed for the station that is link-stopped by other stations or the station that is link-stopped by special relay/special register.

Execute

*Issuing request for Link start/stop contents in stations that are on selected status in all stations information.
Link status might not be changed immediately because of circuit status factor.
Please reopen window or check in network configuration when there is no change in link status.

Close

1. Click the [Link Start/Stop] button in the "CC-Link IE Control Diagnostics" window. Or right-click a module icon in "Network Status" and click "Link Start/Stop". "Link Start/Stop" window is displayed.

2. Select a station for starting or stopping cyclic transmission in "Selected Status".

3. Select whether to start or stop cyclic transmission in "Link Start/Stop".

Selecting "Forced Link Start" will forcibly start cyclic transmission of the station where cyclic transmission was stopped by a command from another station or by link special relay (SB) or link special register (SW).

4. Click the [Execute] button.

■When target stations are collectively specified

- Group specification: Select the line of which "Transient Transmission Group No." is not 0 and click the [Group No. Selection] button.
- All stations specification: Click the [Select All] button. Also, clicking the [Deselect All] button will cancel all the selection.

When the CPU module is reset or the system is powered off and on

Even if cyclic transmission has been stopped by this function, it will restart.

Stations to which the link start cannot be executed

The link start cannot be executed to the following stations.

- Link startup/stop processing station^{*1}

The conditions that the link startup cannot execute due to the link startup/stop processing

When the link startup/stop is executed at the same station while the link startup/stop is being executed.

When the link startup/stop is executed at a station that either of the following link special relay (SB) is on.

- 'Link startup of own station' (SB0000)
- 'Link stop of own station' (SB0001)
- 'System link startup' (SB0002)
- 'System link stop' (SB0003)

- Station where cyclic transmission was stopped due to an error
- Station where link was stopped by a command from another station^{*1}
- Station where link was stopped by link special relay (SB) or link special register (SW)^{*1}

^{*1} Performing Forced Link Start will start the link.

Precautions

When "Link Start" is executed, the cyclic transmission is not restarted and the error definition is not stored in 'System link startup result' (SW0051) in the following cases. Check if the data link is being performed normally using the CC-Link IE Controller diagnostics and 'Data link status of each station' (SW00B0 to SW00B7) after the cyclic transmission is restarted by executing Forced Link Start, resetting the CPU module, or powering off and on the system.

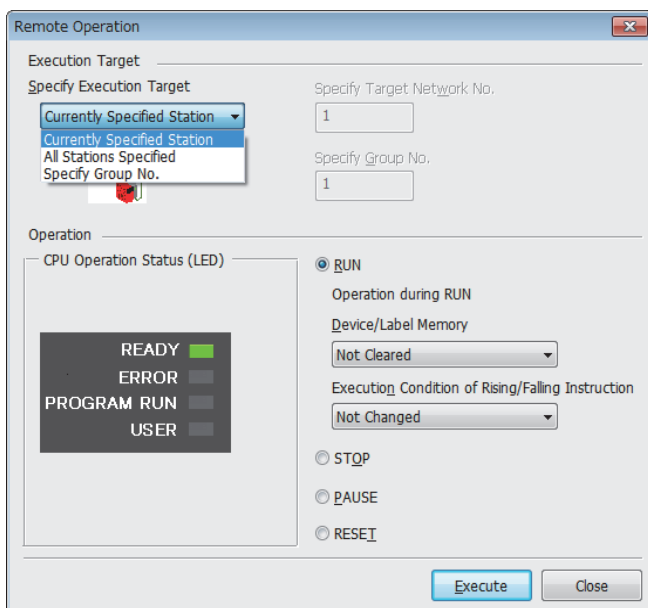
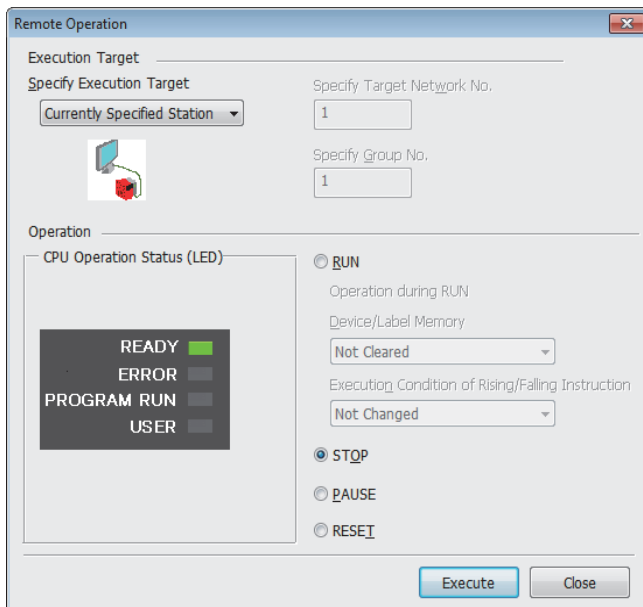
- When executing "Link Start/Stop" from another station to the station where cyclic transmission was stopped by executing "Link Start" in the own station or 'Link stop of own station' (SB0001).
- When executing "Link Start" from another station C to the station A where "Link Stop" was executed from another station B (including when "Link Start" for the own station and station A is executed by specifying multiple stations)

Remote Operation

This function executes remote operations (such as RUN, STOP, and RESET operations) to the station selected on the "CC-Link IE Control Diagnostics" window, from the engineering tool.

Procedure

To perform remote operation, follow the steps below.



1. Select the module where the remote operations are performed in the CC-Link IE Controller Network diagnostics.
2. Click the [Remote Operation] button in the "CC-Link IE Control Diagnostics" window. Or right-click a station icon in the "Network information display" and click [Remote Operation].

"Remote Operation" window is displayed.

3. Specify the target station in "Specify Execution Target".
 - "Currently Specified Station": A remote operation is executed only to the CPU module on the station selected in the CC-Link IE Controller Network diagnostics.
 - "All Stations Specified": A remote operation is performed on all stations on the network specified by "Specify Execution Target".
 - "Specify Group No.": A remote operation is performed only on stations with the specified group number on the network specified by "Specify Execution Target".
4. Select a remote operation (RUN, STOP, PAUSE, or RESET) to be performed in "Operation".*1
5. Click the [Execute] button to perform the remote operation.

*1 To perform remote RESET, preset "Remote Reset Setting" under "Operation Related Setting" to "Enable" in the CPU Parameters.



For details on the remote operations, refer to user's manual for the CPU module used.

3.4 Troubleshooting by Symptom

This section describes troubleshooting method by symptom. Perform these troubleshooting if data link cannot be performed even though no error is detected in the CC-Link IE Controller Network-equipped module.

If an error has occurred in the CC-Link IE Controller Network-equipped module, identify the error cause using the engineering tool. (☞ Page 111 Checking the Network Status)

When cyclic transmission cannot be performed

The following lists the actions to be taken if cyclic transmission cannot be performed.

| Check item | Action |
|---|--|
| Is the D LINK LED of the control or normal station turned off or flashing? | Perform troubleshooting for when the D LINK LED turns off or is flashing. (☞ Page 103 When the D LINK LED turns off or is flashing) |
| Is a target station specified as a reserved station in "Network Range Assignment" of "Required Settings" of the control station? | Cancel the reserved station setting. (☞ Page 76 Network Range Assignment) |
| Has "Network Range Assignment" of "Required Settings" of the control station been set? | Set "Network Range Assignment" of "Required Settings" of the control station. (☞ Page 76 Network Range Assignment) |
| Is there any station which exceed total number of stations set in "Network Range Assignment" of "Required Settings" of the control station? | Correct station numbers. (☞ Page 75 Station Number) |
| Are station numbers unique? | Change the duplicated station number. (☞ Page 75 Station Number) |
| Is the range set in "Refresh Setting" of "Basic Settings" correct? | Correct the range setting in "Refresh Setting" of "Basic Settings". (☞ Page 84 Refresh Setting) |
| Is any refresh target device in "Refresh Setting" of "Basic Settings" overlapped with that of another network module? | Correct the range setting in "Refresh Setting" of "Basic Settings". (☞ Page 84 Refresh Setting) |
| Are the transfer ranges set in "Interlink Transmission Settings" of "Application Settings" correct? | Correct the transfer ranges set in "Interlink Transmission Settings" of "Application Settings". (☞ Page 97 Interlink Transmission Settings) |
| Are the source and destination modules set in "Interlink Transmission Settings" of "Application Settings" correct? | Correct the source and destination modules set in "Interlink Transmission Settings" of "Application Settings". (☞ Page 97 Interlink Transmission Settings) |
| Are the shared group numbers correctly set for the target station? | Correct the shared group numbers same as those for the target station. (☞ Page 81 Shared Group) |
| Is the setting value of data link monitoring time shorter than that of actual link scan time? | Increase the monitoring time value. (☞ Page 90 Supplementary Cyclic Settings) |

If the above action does not solve the problem, perform the module communication test to check for hardware failure. (☞ Page 108 Module communication test)

When transient transmission cannot be performed

The following lists the actions to be taken if transient transmission cannot be performed with the target station, and the engineering tool cannot perform monitoring.

| Check item | Action |
|--|---|
| Is the D LINK LED of the control or normal station turned off or flashing? | Perform troubleshooting for when the D LINK LED turns off or is flashing. (☞ Page 103 When the D LINK LED turns off or is flashing) |
| Is the baton pass status of the destination normal? | In the CC-Link IE Controller Network diagnostics, identify the cause of the error and take action. (☞ Page 111 Checking the Network Status) |
| Are the following control data of the dedicated instruction correct? <ul style="list-style-type: none"> • CPU type of the target module • Target network number • Target station number | Correct the control data of the dedicated instruction. |
| Is the setting of the station number in the normal station correct? | Correct station numbers. (☞ Page 75 Station Number) |
| Is the network number duplicated on the network? | Change the duplicated network number. |
| Is a communication path by the dynamic routing function is determined? | <ul style="list-style-type: none"> • Power on the system and start transient transmission after a while. • When "Dynamic Routing" under "Application Settings" of the station on the communication path is set to "Disable", change it to "Enable". |
| Does the relay station to be passed support the dynamic routing function? | If the relay station to be passed does not support the dynamic routing function, set all the stations on the communication path in "Routing Setting" of "CPU Parameter". |
| Is the routing parameter for the sending source of transient transmission correct? | Correct the "Routing Setting" of "CPU Parameters". (📖 MELSEC iQ-R CPU Module User's Manual (Application)) |
| Have the routing parameters of the relay station correctly been set? | Correct the "Routing Setting" of "CPU Parameters". (📖 MELSEC iQ-R CPU Module User's Manual (Application)) |
| Are multiple link dedicated instructions with same channel setting executed simultaneously? | <ul style="list-style-type: none"> • Set different channel to each instructions. • Shift the execution timing of the link dedicated instructions. |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (☞ Page 108 Module communication test)
- Communication Test (☞ Page 43 Communication test)

When a station is disconnected from the network

The following is the action to be taken when a station in data link is disconnected

| Check item | Action |
|---|--|
| Is the ambient temperature for the module within the specified range? | Keep the ambient temperature within the specified range by taking action such as removing heat source. |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (☞ Page 108 Module communication test)
- Cable test (☞ Page 133 Cable test (only when Ethernet cables are used))

When a station is repeatedly disconnected and reconnected

The following lists the actions to be taken when a station in data link is repeatedly disconnected and reconnected.

| Common (when optical fiber cables and Ethernet cables are used) check item | Action |
|--|---|
| Does the communication cable used conform to the standard? | Replace the communication cable with one conforming to the standard. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Does the length of the communication cable meet the specifications? | Set the length of the communication cable within range. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) |
| Does the cabling condition (bending radius) meet the specifications? | Refer to the manual for the communication cable, and correct the bending radius. |
| Check item only when Ethernet cables are used | Action |
| Is any Ethernet cable disconnected? | Replace the Ethernet cable. |
| Is the switching hub used operating normally? | <ul style="list-style-type: none"> Check if a 1000BASE-T-compliant switching hub is used. (MELSEC iQ-R Ethernet/CC-Link IE User's Manual (Startup)) Power off and on the switching hub. |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (Page 108 Module communication test)
- Cable test (Page 133 Cable test (only when Ethernet cables are used))

When communication is unstable

The following lists the actions to be taken when link scan time or transmission delay time is long or when a transient transmission timeout occurred.

| Common (when optical fiber cables and Ethernet cables are used) check item | Action |
|---|---|
| <p>■When Ethernet cables are used Is the L ER LED of the control or normal station on?</p> <p>■When optical fiber cables are used Is the L ERR LED of the control or normal station on?</p> | <p>■When Ethernet cables are used Perform troubleshooting for when the L ER LED turns on. (☞ Page 104 When the L ER LED turns on (when Ethernet cables are used))</p> <p>■When optical fiber cables are used Perform troubleshooting for when the L ERR LED turns on. (☞ Page 104 When the L ERR LED turns on (when optical fiber cables are used))</p> |
| Is the ambient temperature for the module within the specified range? | Keep the ambient temperature within the specified range by taking action such as removing heat source. |
| Check item only when Ethernet cables are used | Action |
| Is there any noise affecting the system? | Check the wiring condition. |

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (☞ Page 108 Module communication test)
- Cable test (☞ Page 133 Cable test (only when Ethernet cables are used))

When IP communications cannot be performed using the IP packet transfer function

Before troubleshooting the problem as listed below, perform the IP communication test and take actions according to the error code. (☞ Page 49 IP communication test)

If the problem cannot be solved using the IP communication test, take actions listed below.

| Check item | Action |
|--|--|
| Is the IP address of the connected Ethernet device correct? | Set an IP address meeting the IP address setting rules. (☞ Page 47 Rules for the IP address setting) |
| Is the IP address already in use? | <ul style="list-style-type: none"> • For the Ethernet device, set the IP address different from that of other devices on the network, such as an Ethernet-equipped module and CC-Link IE Controller Network-equipped module. • Disconnect the Ethernet device from the line and execute the Ping command to the IP address of the disconnected Ethernet device. If a response is received even though the device is disconnected, the IP address is already in use. Change the IP address. |
| Has a communication time over error occurred in the IP communication test? | <ul style="list-style-type: none"> • When "Dynamic Routing" under "Application Settings" is set to "Disable", correct "Relay Station Network Number" in "Routing Setting" of the CPU parameters. • When "Dynamic Routing" under "Application Settings" is set to "Enable", check 'Communication path determination status' (Un\G12080 to Un\G12095) to check that the communication path to the destination station network number which is set in the third octet of the Ethernet device IP address is determined. |
| Have the routing parameters correctly been set? (Only when "Dynamic Routing" under "Application Settings" is set to "Disable") | <ul style="list-style-type: none"> • Correct the "Routing Setting" of "CPU Parameters". • When the first and second octets of the IP address are the same for the request source device, request destination device, and modules between them, set the routing parameters so that the third octet of the IP address of the Ethernet device is used as "Target Station Network Number". |
| Is the network number of the Ethernet device side (the third octet of the IP address) the same as that of modules and another Ethernet device? (This applies only when the request source external device, request destination external device, and modules between them have the same first and second octets of the IP address.) | <p>Change the network number of the Ethernet device side (the third octet of the IP address) to the one different from that of modules and another Ethernet device.</p> <div style="text-align: center;"> <p>The diagram illustrates a network configuration where three stations are connected to three different networks. The stations are labeled 'Normal station (station No.2)', 'Control station (station No.1)', and 'Normal station (station No.3)'. They are connected to 'Network No.3', 'Network No.1', and 'Network No.2' respectively. Above the stations, a table lists IP addresses for 'Ethernet', 'CC-Link IE Controller', and 'Network'. The Ethernet addresses are 192.168.3.1, 192.168.3.30, 192.168.2.30, and 192.168.2.1. The CC-Link IE Controller addresses are 192.168.1.2 (Automatically assigned) and 192.168.1.1. The Network addresses are 192.168.1.3 (Automatically assigned) and 192.168.1.2. A note at the bottom says 'Change the network numbers to those not used for other stations.'</p> </div> |

| Check item | Action |
|--|--|
| Are settings configured in modules connected to the Ethernet device correct? • First and second octets of the IP address • Subnet mask pattern • Default router IP address | Check and correct the setting in the module connected to the Ethernet device. |
| Is the firewall or proxy server setting enabled on the Ethernet device? | Check and correct the settings on the Ethernet device. Is a response to the Ping command (ICMP echo request) enabled? |
| Is the antivirus software on the Ethernet device blocking the communication? | Check and correct the antivirus software settings on the Ethernet device. • Is the security setting level of the antivirus software low? • Is a response to the Ping command (ICMP echo request) enabled in the firewall settings? |
| When the Ethernet device has two or more Ethernet ports, have different default gateway settings been configured for each Ethernet port? | • Set the same IP address in the default gateway of each Ethernet port. • Set the communication route on the Ethernet device side using the route command so that communications using the IP packet transfer function can be transmitted to the Ethernet device through the module connected to the Ethernet device. (This applies only to Ethernet devices that have the route command, such as Microsoft® Windows®.) When the gateway setting is completed, execute the Ping command from the Ethernet device to check whether communications can be performed. |
| Is the switching hub used operating normally? | • If an error has occurred in the switching hub, eliminate the error cause. • If communications cannot be performed although no error has occurred in the switching hub, replace the switching hub.*1 |
| Has any device on the line, such as an Ethernet device, Ethernet-equipped module, and switching hub, been replaced? (This applies only when the device has been replaced by the one having the same IP address.) | Reset the device on the line.*2 |

*1 When the device has been reconnected to the switching hub, or the switching hub has been replaced, it may take some time to read the MAC address. If so, retry communication from the Ethernet device again after a while or power on the switching hub again.

*2 A device on Ethernet has a table of IP addresses and their corresponding MAC address, called ARP cache. When a device on the line is replaced by the one having the same IP address, the MAC address in the ARP cache is different from that of the replaced device; therefore, communications may not be normally performed. The ARP cache is updated by resetting the device or after a while. The time varies depending on the device.

If the above actions do not solve the problem, perform the following tests to check for an error.

- Module communication test (🔧 Page 108 Module communication test)
- Cable test (🔧 Page 133 Cable test (only when Ethernet cables are used))

When redundant system function is used

■An error occurs in a CPU module

When a redundant system is configured, if an error occurs in a CPU module, check the following items.

| Check item | Action |
|---|--|
| Is pairing set to the CC-Link IE Controller Network-equipped modules? | Set pairing in "Network Range Assignment" of "Required Settings". (☞ Page 76 Network Range Assignment) |
| Do the CC-Link IE Controller Network-equipped modules being used support the redundant system function? | Use CC-Link IE Controller Network-equipped modules supporting the redundant system function. (☞ Page 213 Added and Enhanced Functions) |

■System switching cannot be performed

When system switching cannot be performed by a system switching cause of CC-Link IE Controller Network-equipped modules, check the following.

| Check item | Action |
|--|---|
| Is the power supply module, CPU module, or redundant function module of the standby system operating normally? | Perform troubleshooting on the power supply module, CPU module, or redundant function module of the standby system. ☞ MELSEC iQ-R CPU Module User's Manual (Application) |
| Is any cable for the CC-Link IE Controller Network-equipped module of the standby system disconnected? | Check the wiring condition and put the network of the standby system in normal condition. |
| Is 'Flag for disabling system switching due to data link error' (SB0017) turned on? | Turn 'Flag for disabling system switching due to data link error' (SB0017) off. |

■Cyclic data is turned off when system switching occurs.

If cyclic data is turned off or momentarily turned off when system switching occurs, check whether the cyclic data communication range is included in the tracking target. (☞ MELSEC iQ-R CPU Module User's Manual (Application))

■Data link is not performed with the pairing-set normal station

If data link is not performed with the pairing-set normal station, check whether the pairing-set normal station supports the redundant system function. (☞ Page 213 Added and Enhanced Functions)

3.5 List of Error Codes

This section lists the error codes, error details and causes, and action for the errors occur in the processing for data communication between CC-Link IE Controller Network-equipped module and external devices or caused by processing requests from the CPU module on the own station.

Error codes are classified into major error, moderate error, and minor error, and can be checked in the "Error Information" tab in the "Module Diagnostics" window. (📖 Page 106 Error information)

| Error code | Error details and causes | Action | Detailed information |
|------------|---|--|---|
| 1080H | The number of writes to the flash ROM has exceeded 100000. | Replace the module. | — |
| 1800H | A connection failure was detected in the network. | Correct the wiring status. | — |
| 1811H | An error was detected in the CPU module. | Check the error of the CPU module and take action using the module diagnostics of the engineering tool. | — |
| 1830H | Number of reception requests of transient transmission (link dedicated instruction) exceeded upper limit of simultaneously processable requests. | Lower the transient transmission usage frequency, and then perform again. | — |
| 1845H | Too many processings of transient transmission (link dedicated instruction) and cannot perform transient transmission. | Correct the transient transmission execution count. | — |
| 1860H | Baton pass stops with an error of communication line or CC-Link IE Controller Network-equipped module. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| 20E0H | The module cannot communicate with the CPU module. | The hardware failure of the CPU module may have been occurred. Please consult your local Mitsubishi representative. | — |
| 2220H | The parameter is set for extending the link points extended setting, however the CPU module and network modules do not support the link points extended setting. | <ul style="list-style-type: none"> When the link points extended setting is used, use a CPU module and network modules with the firmware version supported the link points extended setting. When the link points extended setting is not used, set "Not to Extend" of "Link points extended setting" on "Application Settings". | Parameter information • Parameter type |
| | The parameter setting is corrupted. | Check the detailed information of the error by executing module diagnostics using the engineering tool, and write the displayed parameter. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module. Please consult your local Mitsubishi representative. | |
| 2221H | The network number set on the own station is different from one on the control station | Set the same network number as the own station and the control station. | Parameter information • Parameter type • I/O No. • Parameter No. • Network No. • Station No. |
| | The own station is set to extended mode, however, the control station is set to normal mode. Or, the own station is set to normal mode and the control station is set to extended mode. | Set the same mode as the own station and the control station. | |
| | The own station is set to "Extend" of "Link points extended setting" in "Application Settings", however, the control station is set to "Not to Extend". Or, the own station is set to "Not to Extend" and the control station is set to "Extend". | Set the same setting of "Link points extended setting" in "Application Settings" to the own station and the control station. | |
| | The set value is out of the range. | Check the detailed information of the error by executing module diagnostics using the engineering tool, and correct the parameter setting corresponding to the displayed number. | |

| Error code | Error details and causes | Action | Detailed information |
|----------------|---|--|--|
| 24C0H to 24C3H | An error was detected on the system bus. | <ul style="list-style-type: none"> Take measures to reduce noise. Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module, base unit, or extension cable. Please consult your local Mitsubishi representative. | System configuration information <ul style="list-style-type: none"> I/O No. Base No. Slot No. CPU No. |
| 24C6H | An error was detected on the system bus. | <ul style="list-style-type: none"> Take measures to reduce noise. Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module, base unit, or extension cable. Please consult your local Mitsubishi representative. | — |
| 3001H | <ul style="list-style-type: none"> A station with the same station number was found in the same network. Multiple control stations were detected in the same network. | Correct the station number or station type of the station where the error was detected. After taking the above actions, power off and on or reset all stations where the error was detected. | Parameter information <ul style="list-style-type: none"> Parameter type I/O No. Parameter No. Parameter item No. |
| 3006H | Pairing is not set to the stations in a redundant system. | Check the pairing setting in "Network Range Assignment" of "Required Settings" of the control station. | Parameter information <ul style="list-style-type: none"> Parameter type I/O No. Parameter No. Network No. Station No. |
| 3007H | Pairing is set to the stations not included in a redundant system. | Check the pairing setting in "Network Range Assignment" of "Required Settings" of the control station. | Parameter information <ul style="list-style-type: none"> Parameter type I/O No. Parameter No. Network No. Station No. |
| 3008H | • "RJ71GP21-SX" or "RJ71GP21S-SX" is selected for the module name in a redundant system. | • When using the module in a redundant system, select "RJ71GP21-SX (R)" or "RJ71GP21S-SX (R)" for the module name in the "Add New Module" window. | Parameter information <ul style="list-style-type: none"> Parameter type I/O No. Parameter No. Network No. Station No. |
| | • "RJ71GP21-SX (R)" or "RJ71GP21S-SX (R)" is selected for the module name in a system other than a redundant system. | • When using the module in a system other than a redundant system, select "RJ71GP21-SX" or "RJ71GP21S-SX" for the module name in the "Add New Module" window. | |
| 3040H | Response data of the dedicated instruction cannot be created. | <ul style="list-style-type: none"> Increase the request interval. Decrease the number of request nodes. Wait for a response to the previous request before sending the next request. Correct the timeout value. | — |
| 3C00H to 3C03H | A hardware failure has been detected. | <ul style="list-style-type: none"> Take measures to reduce noise. Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module, base unit, or extension cable. Please consult your local Mitsubishi representative. | — |
| 3C0FH | A hardware failure has been detected. | <ul style="list-style-type: none"> Take measures to reduce noise. Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module, base unit, or extension cable. Please consult your local Mitsubishi representative. | — |
| 3C10H | A hardware failure has been detected. | <ul style="list-style-type: none"> Take measures to reduce noise. Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module, base unit, or extension cable. Please consult your local Mitsubishi representative. | — |
| | A function which is not supported was used. (When Ethernet cables are used) | Check that firmware version of the RJ71EN71 supports the function to be used. | — |

| Error code | Error details and causes | Action | Detailed information |
|----------------|---|--|----------------------|
| 3C11H | A hardware failure has been detected. | <ul style="list-style-type: none"> Take measures to reduce noise. Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the module, base unit, or extension cable. Please consult your local Mitsubishi representative. | — |
| 3C14H | A hardware failure has been detected. | Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the error module or CPU module. Please consult your local Mitsubishi representative. | — |
| 3C2FH | An error was detected in the memory. | Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the error module. Please consult your local Mitsubishi representative. | — |
| 3E00H | An error was detected in the network module. | Reset the CPU module, and run it again. If the error occurs again even after taking the above, the possible cause is a hardware failure of the error module. Please consult your local Mitsubishi representative. | — |
| 3E01H | Network type of the own station is unexpected setting. | Rewrite the module parameter using the engineering tool. If the error occurs again even after taking the above, the possible cause is a hardware failure of the error module. Please consult your local Mitsubishi representative. | — |
| 4000H to 4FFFH | Errors detected by the CPU module (MELSEC iQ-R CPU Module User's Manual (Application)) | | |
| E006H | The receive queue is full. | <ul style="list-style-type: none"> Pause the transient transmission temporarily, and retry the operation. Lower the transient transmission usage frequency, and then perform again. Use the COM instruction to increase the frequency of transient transmission. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E102H | The own station is set as a reserved station. | Cancel the reserved station setting in "Network Range Assignment" of "Required Settings" of the control station. Or change the own station number to the one that is not specified as a reserved station. | — |
| E103H | The own station number set is out of the range of total stations. | Increase the number of total stations in "Network Range Assignment" of "Required Settings" of the control station. Or change the own station number to the one that is within the number of total stations. | — |
| E120H | The UINI instruction was executed at the control station. | The station number of the control station cannot be set by the UINI instruction. Set it in "Station No." of "Required Settings". | — |
| E121H | The UINI instruction was executed when "Parameter Editor" is selected for "Setting Method" under "Station Number" of "Required Settings". | Execute again after setting "Setting Method" under "Station Number" in "Required Settings" of the normal station to "Program". | — |
| | The UINI instruction was executed in a redundant system. | The station number cannot be set by the UINI instruction in a redundant system. | |
| E122H | The station number set for the own station by the UINI instruction is already used for the other station. | <ul style="list-style-type: none"> Execute again after changing the own station number setting in the control data. Execute again after changing the station number of other station which is duplicated. | — |
| E123H | After setting a station number with the UINI instruction, the instruction was executed again. | Station number setting with the UINI instruction is limited to one time only. Execute again after resetting the CPU module. | — |
| E160H | 'Link startup/stop direction' (SW0000) is not set properly. | Check the setting and stop or restart cyclic transmission. | — |
| E162H | Re-execution was attempted during the processing of cyclic transmission stop/restart. | Retry the operation after the stop or restart of cyclic transmission is completed. | — |
| E163H | Re-execution was attempted during the processing of cyclic transmission stop/restart. | Retry the operation after the stop or restart of cyclic transmission is completed. | — |
| E164H | Re-execution was attempted during the processing of cyclic transmission stop/restart. | Retry the operation after the stop or restart of cyclic transmission is completed. | — |
| E165H | 'Link startup/stop station specification' (SW0001 to SW0008) is not set properly. | Check the setting and stop or restart cyclic transmission. | — |

| Error code | Error details and causes | Action | Detailed information |
|----------------|---|---|----------------------|
| E166H | 'Link startup/stop group specification' (SW0012 to SW0013) is not set properly. | Check the setting and stop or restart cyclic transmission. | — |
| E170H to E172H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E173H | During execution of the communication test, the test was retried. | After completion of the communication test, retry the operation. | — |
| E174H | The maximum number of transmission completion signal retries was reached. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and retry the operation. Check if "Routing Setting" in "CPU Parameter" is correctly set. | — |
| E175H | No response has been returned within the communication monitoring time. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and retry the operation. Check if "Routing Setting" in "CPU Parameter" is correctly set. | — |
| E176H | Timeout has occurred without transmission completion. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and retry the operation. Check if "Routing Setting" in "CPU Parameter" is correctly set. | — |
| E177H to E179H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E17AH | The response data have been received two times or more. | Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and retry the operation. | — |
| E17BH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E17CH | The target station specified for the communication test is incorrect. | <ul style="list-style-type: none"> Correct "Target Station" of communication test, and retry the operation. The own station, relay sending station, and the station which is mounted on the same base unit (main base unit and extension base unit) cannot be specified as the communication test target. | — |
| E17DH | The IP address of the own station cannot be obtained when an IP communication test is performed. | Check the destination IP address of the IP communication test. | — |
| E17EH | The same numbers are not used for the first and second octets of the IP addresses set in the IP communication test destination setting in the network of the request source device, request destination device, and modules between them. | Check the destination IP address of the IP communication test. | — |
| E17FH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E180H | During execution of the cable test, the test was retried. (only when Ethernet cables are used) | After completion of the cable test, retry the operation. | — |
| E181H | The IP packet transfer function is not supported. | The transfer destination of the IP data does not support the IP packet transfer function. | — |
| E182H | During execution of the IP communication test, the test was retried. | Retry the operation after a while. | — |
| E183H | Transient transmission failed. | <ul style="list-style-type: none"> Lower the transient transmission usage frequency, and then perform again. Check if the switching hub is connected properly. (only when Ethernet cables are used) Check if the cables are connected properly. | — |
| E184H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E185H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E186H | The IP address of the standby system is set for "Connected Station (Host)" or "Communication Destination Setting" for the IP communication test. | Check the IP address set for "Connected Station (Host)" or "Communication Destination Setting" for the IP communication test. | — |
| E201H | The same transient data have been received two times or more. | Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. Although the error occurs, the second or later received transient data is discarded in the module. | — |

| Error code | Error details and causes | Action | Detailed information |
|------------|---|--|----------------------|
| E203H | The send buffer is full. | <ul style="list-style-type: none"> • Pause the transient transmission temporarily, and retry the operation. • Lower the transient transmission usage frequency, and then perform again. • Use the COM instruction to increase the frequency of transient transmission. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E204H | The specified number of resends has been reached. | Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. | — |
| E205H | The receive buffer is full. | <ul style="list-style-type: none"> • Pause the transient transmission temporarily, and retry the operation. • Lower the transient transmission usage frequency, and then perform again. • Use the COM instruction to increase the frequency of transient transmission. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E206H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E207H | Although the target station of transient transmission is connected in the same network, different network number is set. | Correct "Network No." in "Required Settings". When the parameter is not set, network number is set to 1 (default). Correct the network number of the other station. | — |
| E208H | The target station number specified for transient send/receive is out of range. | <ul style="list-style-type: none"> • Correct the target station number at the own station, and retry the operation. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E20BH | In transient transmission, the number of relay to other networks exceeded seven. | <ul style="list-style-type: none"> • Change the system configuration so that the number of relay stations may be seven or less. • Check if "Routing Setting" in "CPU Parameter" is correctly set. | — |
| E20AH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E20FH | The target station number is set to zero in transient transmission using protocols such as SLMP. | <ul style="list-style-type: none"> • Correct the target station number at the own station, and retry the operation. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E211H | When there was no control station, "Specified Control Station" was specified for transient transmission using protocols such as SLMP. | <ul style="list-style-type: none"> • Correct the target station number at the own station, and retry the operation. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E212H | When there was no control station, "Present Control Station" was specified for transient transmission using protocols such as SLMP. | <ul style="list-style-type: none"> • Correct the target station number at the own station, and retry the operation. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E213H | In transient transmission, timeout has occurred without transmission completion. | <ul style="list-style-type: none"> • Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E215H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E216H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E218H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E21BH | Transient transmission was performed when the station number of the own station has not been set yet. | <ul style="list-style-type: none"> • Specify the station number using the UINI instruction, and retry the operation. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E21CH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E21EH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E21FH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |

| Error code | Error details and causes | Action | Detailed information |
|----------------|---|--|----------------------|
| E221H to E223H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E224H | Attribute code set in the CC-Link transient request frame is out of range. | <ul style="list-style-type: none"> Execute the RIRD/RIWT instruction again after correcting the attribute code in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E225H | Access code set in the CC-Link transient request frame is out of range. | <ul style="list-style-type: none"> Execute the RIRD/RIWT instruction again after correcting the access code in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E226H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E228H | <ul style="list-style-type: none"> The request command of transient transmission is incorrect. The CC-Link IE Controller Network diagnostics was used for the network to which the relay receiving station belongs. | <ul style="list-style-type: none"> Correct the request command at the request source, and retry the operation. Review the connection destination so that the CC-Link IE Controller Network diagnostics is used for the network to which the relay sending station belongs. | — |
| E229H | The control station does not exist. | Add the control station to the network. | — |
| E22AH | A transient transmission error was detected. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and take action. Check if the switching hub and the cables are connected properly. If the request source is on another network, check if the routing parameters are set correctly, and take action. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E22BH | Baton pass has not been performed. | Check the communication status. | — |
| E22CH | A transient transmission error was detected. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and take action. Check if the switching hub and the cables are connected properly. If the request source is on another network, check if the routing parameters are set correctly, and take action. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E22DH | A transient transmission error was detected. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool, and take action. Check if the switching hub and the cables are connected properly. If the request source is on another network, check if the routing parameters are set correctly, and take action. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E236H | The TTL of the IP data is incorrect. | Correct the TTL at the IP request source and retry the operation. | — |
| E237H | The IP address setting is not correctly set. | Correct the IP address of the control station. | — |
| E241H to E245H | The hardware of the target network module for dedicated instruction has failed. | Please consult your local Mitsubishi representative. | — |
| E24FH | When the dedicated instruction is executed, the target station number setting is not correct. | <ul style="list-style-type: none"> Execute again after correcting the target station number in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E251H | Transient data for the same dedicated instruction have been received two times or more. | Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. | — |
| E254H | The target station's CPU type specified for the dedicated instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the target station's CPU type in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E255H | The data size specified for the dedicated instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the data length in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |

| Error code | Error details and causes | Action | Detailed information |
|------------|--|---|----------------------|
| E256H | The arrival monitoring time specified for the dedicated instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the arrival monitoring time in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E257H | The number of resends specified for the dedicated instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the number of resends in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E258H | The network number specified for the dedicated instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the target station No. in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E259H | The channel used in the dedicated instruction is incorrect. | <ul style="list-style-type: none"> Set 1 to 8 for the target channel number in the control data when executing the SEND instruction. Execute again after correcting the channel number used by own station in the control data. | — |
| E25AH | The modification specification specified for the UINI instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the modification specification in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E25BH | The own station No. specified for the dedicated instruction is out of range. | <ul style="list-style-type: none"> Execute again after correcting the own station number in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E262H | When the target station specified for the dedicated instruction is "Group" or "All stations", "With arrival confirmation" is specified for execution type. For the REQ instruction, the specified request type is incorrect. | <ul style="list-style-type: none"> Execute again after changing the execution type in the control data to "No arrival confirmation". For the REQ instruction, execute again after correcting request type. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E264H | Transmission did not completed after execution of the dedicated instruction, and timeout has occurred. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E265H | No response was received after execution of the dedicated instruction, and timeout has occurred. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. When the dynamic routing function is used, check the buffer memory area of Communication path determination status and check if communication to the target network number is possible. For the RECV instruction, execute again after correcting the channels used by own station in the control data. For the RECV instruction, check that 'RECV execution request flag CH1' (SB0030) to 'RECV execution request flag CH8' (SB0037) are on. Execute the transient transmission again after the dedicated instruction completed with an error. If the request destination is on another network, check if the CPU module of the relay station supports the routing setting, and take an action. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E266H | The SEND instruction was received from other network. | <ul style="list-style-type: none"> Change the target station at the station that executed the SEND instruction. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E267H | The own station number was set as the target station number. | <ul style="list-style-type: none"> Execute again after correcting the target station number in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E268H | In the execution/abnormal completion type specification, the bit in the area fixed to 0 is turned on. | <ul style="list-style-type: none"> Execute again after correcting the execution/abnormal completion type in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E269H | The request type or sub-request type specified in the REQ instruction is incorrect. | <ul style="list-style-type: none"> Execute again after correcting the request or sub-request type in the request data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |

| Error code | Error details and causes | Action | Detailed information |
|------------|---|---|----------------------|
| E26AH | When there was no control station on the network, the dedicated instruction was executed specifying the specified control station or current control station. | <ul style="list-style-type: none"> Execute again after correcting the target station number in the control data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E26CH | The channel specified is being used for another instruction. | <ul style="list-style-type: none"> Retry the operation after a while. Change the channels used by own station or the target station's channel in the control data. | — |
| E26DH | The channel specified is being used for event parameters. | <ul style="list-style-type: none"> Execute again after correcting the channel used by own station in the control data. Execute again after correcting the channel used in "Interrupt Settings" of "Application Setting". If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E26EH | The device range specified for the ZNRD/ZNWR instruction is not correct. | <ul style="list-style-type: none"> Execute again after correcting the setting data for the ZNRD/ZNWR instruction. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E26FH | The device range specified for the ZNRD/ZNWR instruction is not correct. | <ul style="list-style-type: none"> Execute again after correcting the setting data for the ZNRD/ZNWR instruction. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E271H | The operation mode specified in the REQ instruction (remote RUN/STOP) is incorrect. | <ul style="list-style-type: none"> Execute again after correcting the operation mode in the setting data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E272H | When the remote RUN is specified in the REQ instruction (remote RUN/STOP), the specified clear mode is not correct. | <ul style="list-style-type: none"> Execute again after correcting the clear mode in the setting data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E273H | The control data specified for the RRUN instruction is not correct. | <ul style="list-style-type: none"> Execute again after correcting the mode in the setting data. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E274H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E277H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E278H | The request data size of transient transmission is out of range. | <ul style="list-style-type: none"> Correct the request command at the request source, and retry the operation. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E279H | The routing setting is not correctly set. | <ul style="list-style-type: none"> Correct the network number at the request source, and retry the operation. If the request source is on another network, check if the routing parameters are correctly set. | — |
| E27AH | Dedicated instructions which cannot be executed simultaneously were executed. | <ul style="list-style-type: none"> Other dedicated instructions are in execution. Execute again after a while. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E27BH | The target station type specification of the dedicated instruction is incorrect. | <ul style="list-style-type: none"> Execute again after correcting the station type of the target station at the request source. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E27CH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E27DH | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E286H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E2A0H | The receive buffer for the CC-Link dedicated instruction is full. | Too many transient requests have been received from CC-Link IE Controller Network devices. Adjust the timing of transient requests from CC-Link IE Controller Network devices so that each request will issued at certain intervals. | — |

| Error code | Error details and causes | Action | Detailed information |
|------------|---|--|----------------------|
| E2A1H | The send buffer for the CC-Link dedicated instruction is full. | Too many transient requests have been received from CC-Link IE Controller Network devices. Adjust the timing of transient requests from CC-Link IE Controller Network devices so that each request will be issued at certain intervals. | — |
| E2A2H | The hardware of the network module has failed. | <ul style="list-style-type: none"> Check the network status using the CC-Link IE Controller Network diagnostics of the engineering tool. If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E2A3H | The frame length (L) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2A4H | The gate count (GCNT) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2A5H | The destination station number (DA) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2A6H | The source station number (SA) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2A7H | The destination application type (DAT) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2A8H | The source application type (SAT) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2A9H | The destination network number (DNA) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2AAH | The destination station number (DS) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2ABH | The source network number (SNA) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2ACH | The source station number (SS) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2ADH | The data length (L1) in the transient transmission frame is incorrect. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2AEH | The destination station number (DA) in the transient transmission frame of the received data matches the own station, but the destination network number (DNA) or the destination station number (DS) does not match the own station. | An invalid transient frame was received from a CC-Link IE Controller Network device. Correct the contents of the transient frame on the external device side. For details, please consult the manufacturer of the CC-Link IE Controller Network device. | — |
| E2AFH | The own station number was set as the target station number of the CC-Link dedicated instruction. | Check that the target station in the send data is not the own station. | — |
| E2B0H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |

| Error code | Error details and causes | Action | Detailed information |
|----------------|---|---|----------------------|
| E501H to E503H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E504H | Transient transmission (dedicated instruction, engineering tool connection) was executed while the own station did not perform baton pass. | <ul style="list-style-type: none"> • Execute the dedicated instruction interlocking with 'Baton pass error status of own station' (SB0047) and 'Baton pass status of each station' (SW00A0 to SW00A7). • Check the 'Cause of baton pass interruption' (SW0048) at the own station and restart baton pass before executing the transient transmission. • Execute the transient transmission again after the dedicated instruction completed with an error. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E505H | Transient transmission (dedicated instruction, engineering tool connection) was executed with the own station number duplicated. | Remove the duplication of the own station numbers before executing the transient transmission. | — |
| E521H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| E5F0H | Transient transmission (dedicated instruction, engineering tool connection) was executed while the target station did not perform baton pass. | <ul style="list-style-type: none"> • Return the target station. • Execute the dedicated instruction interlocking with 'Baton pass error status of own station' (SB0047) and 'Baton pass status of each station' (SW00A0 to SW00A7). • Check the 'Cause of baton pass interruption' (SW0048) at the target station and restart baton pass before executing the transient transmission. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative. | — |
| E5F1H | The target station number of transient transmission is already in use. | Change the target station number. | — |
| E5F8H | There is a station that does not support the IP packet transfer function on the communication path when the IP packet transfer function is used. | Check the station on the communication path, and check whether the module in the station supports the IP packet transfer function. | — |
| E840H | Number of transient request exceeded the upper limit of simultaneously processable requests. | <ul style="list-style-type: none"> • Pause the transient transmission temporarily, and retry the operation. • Lower the transient transmission usage frequency, and then perform again. | — |
| E841H | The request data size of memory read/write command is out of range. | Correct the read or write size specification at the transient request source, and retry the operation. | — |
| E842H | <ul style="list-style-type: none"> • Routing information to the destination network number is not registered. • In transient transmission, the number of relay to other networks exceeded seven. | <ul style="list-style-type: none"> • Correct the target network number at the request source, and retry the operation. • Correct the communication path from the transient request source to the destination, and retry the operation. • When the dynamic routing is not used, or the module of the series other than MELSEC iQ-R is included, retry the operation after correcting the routing setting. • Change the system configuration so that the number of relay stations may be seven or less. | — |
| E843H | The module operation mode is set to a mode in which transient transmission cannot be executed. | After completion of the module communication test, retry the operation. | — |
| E844H | Incorrect frame is received. <ul style="list-style-type: none"> • Unsupported pre-conversion protocol • Unsupported frame type • Application header variable part • Application header HDS • Application header RTP • Read command not requiring response | Correct the request data at the transient request source, and retry the operation. | — |
| EA00H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |
| EA01H | An error was detected in the network module. | Please consult your local Mitsubishi representative. | — |

3.6 List of Parameter Numbers

This section lists the parameter numbers displayed in the module diagnostics.

| Item | | Parameter No. |
|----------------------|-------------------------------------|-----------------------|
| Required Settings | Station Type | 7100H |
| | Network Number | 7100H |
| | Station Number | 7100H |
| | Network Range Assignment | Total No. of Stations |
| | | LB/LW Setting (1) |
| | | LB/LW Setting (2) |
| | | LX/LY Setting (1) |
| | | LX/LY Setting (2) |
| | | I/O Master Station |
| | | Reserved Station |
| | | Pairing |
| | | Shared Group |
| Basic Settings | Refresh Setting | 7401H |
| | Network Topology | A060H |
| Application Settings | Supplementary Cyclic Settings | A060H |
| | Link points extended setting | A071H |
| | Interrupt Settings | A014H A015H |
| | Transient Transmission Group No. | A010H |
| | Dynamic Routing | A050H |
| | IP Address | A012H |
| | Parameter Name | 7310H |
| | Event Reception from Other Stations | A016H |
| | Module Operation Mode | 7100H |
| | Interlink Transmission Settings | 7500H |
| | Redundant System Settings | 7110H |

3.7 Event List

This section lists the events which occur in CC-Link IE Controller Network.

| Event code | Event type | Overview | Cause |
|------------|------------|---|--|
| 00100 | System | Link-up | Link-up has occurred when the network cable connected to the external device was connected. |
| 00130 | | Receive frame error | Receive frame error was detected. |
| 00500 | | <<Own station>> Baton pass return | Baton pass of the own station was returned from interruption status to normal status. |
| 00501 | | <<Another station>> Baton pass return | Baton pass of another station was returned from interruption status to normal status. |
| 00502 | | All stations baton pass normalization | Baton pass was returned to normal status at all stations. |
| 00510 | | <<Own station>> Data link restart | Data link of the own station was restarted. |
| 00511 | | <<Another station>> Data link restart | Data link of another station was restarted. |
| 00512 | | All stations data link normalization | Data link was returned to normal status at all stations. |
| 00513 | | <<Own station>> Data link start instruction acceptance | Data link startup of the own station instruction was received. |
| 00514 | | <<Own station>> Data link stop instruction acceptance | Data link stop instruction of the own station was received. |
| 00540 | | Loopback resolution | Loopback execution status was resolved when using a ring topology (using the loopback function). |
| 00541 | | Receive parameter error resolution | A parameter error received from control station was resolved. (Normal parameter was received.) |
| 00700 | | Power applied from the external power supply | The power applied from the external power supply was detected. |
| 00800 | | Link-down | Link-down occurred when network cable connected to the external device was disconnected. |
| 00A00 | | System switching request issued | A system switching request occurred. |
| 00C00 | | <<Own station>> Baton pass interruption | Baton pass of the own station was interrupted. |
| 00C01 | | <<Another station>> Baton pass interruption | Baton pass of another station was interrupted. |
| 00C02 | | Response error from/to another station | <ul style="list-style-type: none"> Abnormal response was returned from another station when accessing another station. Abnormal response was returned to another station when accessed from another station. |
| 00C10 | | <<Own station>> Data link stop | Data link of the own station was stopped. |
| 00C11 | | <<Another station>> Data link stop | Data link of another station was stopped. |
| 00C20 | | <<Another station>> Parameter error occurrence | A parameter error has occurred in another station. |
| 00C21 | | <<Another station>> CPU error occurrence | An error has occurred in the CPU module on another station. |
| 00C23 | | Loopback occurrence | Path switching has occurred when using a ring topology (using the loopback function). |
| 00C24 | | <<Another station>> Receive frame error occurrence | A receive frame error has occurred at another station. |
| 00C25 | | Receive parameter error occurrence | A parameter error received from the control station has been detected. |
| 00F00 | | Interrupt of power from the external power supply | Interrupt of power from the external power supply was detected. |
| 24000 | Operation | Data link startup instruction | Data link startup to the own station or another station was instructed. |
| 24001 | | Data link stop instruction | Data link stop to the own station or another station was instructed. |
| 24031 | | Network number, station number setting/change execution | Setting or change of the network number or station number of the own station was executed. |
| 24100 | | <<Own station>> Parameter change/new parameter acceptance | Parameter was changed. Or new parameter was received at power-on. |
| 24F00 | | <<Another station>> CPU operating status change detection | Operating status of the programmable controller CPU on another station was changed. |

APPENDICES

Appendix 1 Module Label

The link special relay (SB) and link special register (SW) of the CC-Link IE Controller Network-equipped module can be set using module label.

Structure of the module label

The module label name is defined with the following structure.

"Instance name"_"Module number"."Label name"

"Instance name"_"Module number"."Label name"_D

Ex.

GP21_1.bDetect_DataLinkError

■Instance name

The following is the instance name of the RJ71GP21(S)-SX.

| Model | Instance name |
|--------------|---------------|
| RJ71GP21-SX | GP21 |
| RJ71GP21S-SX | GP21 |

For the instance name of the RJ71EN71 and RnENCPU when the CC-Link IE Controller Network function is used, refer to the following.

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

■Module number


A sequential number starting with "1" for identifying a module from the one with the same instance name.

■Label name

A label name unique to the module.

■_D

This symbol indicates that the module label is for direct access. The label without "_D" is for link refresh. The following are the differences between link refresh and direct access.

| Type | Description | Access timing |
|---------------|---|--|
| Link refresh | The values read/written from/to the module labels are reflected to the module at link refresh. The execution time of the program can be shortened. | At link refresh |
| Direct access | The values read/written from/to the module labels are reflected to the module immediately. Although the execution time of the program is longer than the one at the link refresh, the responsiveness is improved. For the instruction processing time, refer to the following.  MELSEC iQ-R Programming Manual (CPU Module Instructions, Standard Functions/Function Blocks) | At writing to or reading from the module label |

Point

When multiple CC-Link IE Controller Network-equipped modules of the same network number are mounted and the module labels of link special relay (SB) and link special register (SW) is used for direct access, the access target is the module which has the smallest slot number.

Appendix 2 I/O Signals

This section describes the I/O signals for the CPU module when Ethernet cables are used. The I/O signal assignment of when the start I/O number of the RJ71EN71 and RnENCPU (when the CC-Link IE Controller Network function is used) is "0" is listed below.

When optical fiber cables are used, the I/O signals cannot be used.

List of I/O signals

The following table lists I/O signals. The device X is an input signal from the RJ71EN71 or the RnENCPU (network part) to the CPU module. The device Y is an output signal from the CPU module to the RJ71EN71 or the RnENCPU (network part).

Input signals

| Device No. | Signal name |
|------------|----------------|
| X0 to XE | Use prohibited |
| XF | Module ready |
| X10 to X1F | Use prohibited |

Output signals

| Device No. | Signal name |
|------------|----------------|
| Y0 to Y1F | Use prohibited |

Point

Do not use (turn on) any "use prohibited" signals as an input or output signal to the CPU module. Doing so may cause malfunction of the programmable controller system.

Details of I/O signals

Module ready (XF)

This signal is used to check the status of module operation preparation.

- Off: Not available for module operation
- On: Available for module operation

Appendix 3 Buffer Memory

The buffer memory is used to exchange data between the CC-Link IE Controller Network-equipped module and the CPU module. Buffer memory values are reset to default when the CPU module is reset or the system is powered off.

Point

For the RJ71EN71 and RnENCPU, add the following value to the buffer memory addresses when setting "Port 1 Network Type" to "Ethernet" and "Port 2 Network Type" to "CC-Link IE Control".

- Address (decimal): 2000000
- Address (hexadecimal): 1E8480H

List of buffer memory addresses

| Address (decimal) | Address (hexadecimal) | Name | | Initial value | Read, write | | |
|----------------------|--------------------------|---|------------------------------------|------------------------------|----------------|------|--|
| 0 to 2591 | 0H to A1FH | System area | | | | | |
| 2592 | A20H | Transient transmission error log information area | Transient transmission error count | | 0 | Read | |
| 2593 | A21H | | Error log pointer | | | | |
| 2594 | A22H | | Error log block 1 | Error code | 0 | Read | |
| 2595 | A23H | | | System area | | | |
| 2596 | A24H | | | Target station network No. | | | |
| 2597 | A25H | | | Target station number | | | |
| 2598 | A26H | | | Own station's network No. | | | |
| 2599 | A27H | | | Own station's station No. | | | |
| 2600 to 2603 | A28H to A2BH | | | Time of error occurrence | | | |
| 2604 to 2613 | A2CH to A35H | | Error log block 2 | Same as in Error log block 1 | | | |
| 2614 to 2623 | A36H to A3FH | | Error log block 3 | Same as in Error log block 1 | | | |
| 2624 to 2633 | A40H to A49H | | Error log block 4 | Same as in Error log block 1 | | | |
| 2634 to 2643 | A4AH to A53H | | Error log block 5 | Same as in Error log block 1 | | | |
| 2644 to 2653 | A54H to A5DH | | Error log block 6 | Same as in Error log block 1 | | | |
| 2654 to 2663 | A5EH to A67H | | Error log block 7 | Same as in Error log block 1 | | | |
| 2664 to 2673 | A68H to A71H | | Error log block 8 | Same as in Error log block 1 | | | |
| 2674 to 2683 | A72H to A7BH | | Error log block 9 | Same as in Error log block 1 | | | |
| 2684 to 2693 | A7CH to A85H | | Error log block 10 | Same as in Error log block 1 | | | |
| 2694 to 2703 | A86H to A8FH | | Error log block 11 | Same as in Error log block 1 | | | |
| 2704 to 2713 | A90H to A99H | | Error log block 12 | Same as in Error log block 1 | | | |
| 2714 to 2723 | A9AH to AA3H | | Error log block 13 | Same as in Error log block 1 | | | |
| 2724 to 2733 | AA4H to AADH | | Error log block 14 | Same as in Error log block 1 | | | |
| 2734 to 2743 | AAEH to AB7H | | Error log block 15 | Same as in Error log block 1 | | | |
| 2744 to 2753 | AB8H to AC1H | | Error log block 16 | Same as in Error log block 1 | | | |
| 2754 to 2783 | AC2H to ADFH | System area | | | | | |

| Address (decimal) | Address (hexadecimal) | Name | | | Initial value | Read, write | |
|----------------------|--------------------------|--|---|----------------------------------|------------------|----------------|------|
| 2784 | AE0H | Transmission path switching history (only when optical fiber cables are used) | Transmission path switching count | | 0 | Read | |
| 2785 | AE1H | | Transmission path switching history pointer | | | | |
| 2786 | AE2H | | History 1 | Post-switching status | | | |
| 2787 | AE3H | | | Number of connected modules | | | |
| 2788 | AE4H | | | IN-side loopback station No. | | | |
| 2789 | AE5H | | | OUT-side loopback station No. | | | |
| 2790 to 2791 | AE6H to AE7H | | System area | | | | |
| 2792 to 2795 | AE8H to AEBH | | Time of occurrence | 0 | | | Read |
| 2796 to 2805 | AECH to AF5H | | History 2 | Same as in History 1 | | | |
| 2806 to 2815 | AF6H to AFFH | | History 3 | Same as in History 1 | | | |
| 2816 to 2825 | B00H to B09H | | History 4 | Same as in History 1 | | | |
| 2826 to 2835 | B0AH to B13H | | History 5 | Same as in History 1 | | | |
| 2836 to 2845 | B14H to B1DH | | History 6 | Same as in History 1 | | | |
| 2846 to 2855 | B1EH to B27H | | History 7 | Same as in History 1 | | | |
| 2856 to 2865 | B28H to B31H | | History 8 | Same as in History 1 | | | |
| 2866 to 2875 | B32H to B3BH | | History 9 | Same as in History 1 | | | |
| 2876 to 2885 | B3CH to B45H | | History 10 | Same as in History 1 | | | |
| 2886 to 2895 | B46H to B4FH | | History 11 | Same as in History 1 | | | |
| 2896 to 2905 | B50H to B59H | | History 12 | Same as in History 1 | | | |
| 2906 to 2915 | B5AH to B63H | | History 13 | Same as in History 1 | | | |
| 2916 to 2925 | B64H to B6DH | | History 14 | Same as in History 1 | | | |
| 2926 to 2935 | B6EH to B77H | | History 15 | Same as in History 1 | | | |
| 2936 to 2945 | B78H to B81H | | History 16 | Same as in History 1 | | | |
| 2946 to 8191 | B82H to 1FFFH | | System area | | | | |

| Address (decimal) | Address (hexadecimal) | Name | | | Initial value | Read, write | |
|----------------------|--------------------------|--|---|--|------------------|----------------|-------------|
| 8192 | 2000H | System configuration information | Own station (network card) information | Manufacturer code | 0 | Read | |
| 8193 | 2001H | | | Model type | | | |
| 8194 | 2002H | | | Model code | | | |
| 8195 | 2003H | | | Version | | | |
| 8196 to 8199 | 2004H to 2007H | | | System area | | | |
| 8200 | 2008H | | Own station (controller) information | Controller information valid/ invalid flag | | 0 | Read, write |
| 8201 | 2009H | | | Manufacturer code | | | |
| 8202 | 200AH | | | Model type | | | |
| 8203 | 200BH | | | Model code | | | |
| 8204 | 200CH | | | Version | | | |
| 8205 to 8214 | 200DH to 2016H | | | Model name string | | | |
| 8215 to 8216 | 2017H to 2018H | | | Vendor-specific device information | | | |
| 8217 to 8223 | 2019H ~201FH | | | System area | | | |
| 8224 | 2020H | | Other station (station No.1) (network card) information | Manufacturer code | 0 | Read | |
| 8225 | 2021H | | | Model type | | | |
| 8226 | 2022H | | | Model code | | | |
| 8227 | 2023H | | | Version | | | |
| 8228 to 8231 | 2024H to 2027H | | System area | | | | |
| 8232 | 2028H | | Other station (station No.1) (controller) information | Controller information valid/ invalid flag | | 0 | Read |
| 8233 | 2029H | | | Manufacturer code | | | |
| 8234 | 202AH | | | Model type | | | |
| 8235 | 202BH | | | Model code | | | |
| 8236 | 202CH | | | Version | | | |
| 8237 to 8246 | 202DH to 2036H | | | Model name string | | | |
| 8247 to 8248 | 2037H to 2038H | | | Vendor-specific device information | | | |
| 8249 to 8255 | 2039H to 203FH | | | System area | | | |
| 8256 to 12063 | 2040H to 2F1FH | | Other station information (station No.2 to 120) | Same as Other station information (station No.1) | | | |
| 12064 to 12079 | 2F20H to 2F2FH | System area | | | | | |
| 12080 | 2F30H | Communication path determination status | Communication path determination status (network No.1 to 16) | | | 0 | Read |
| 12081 to 12095 | 2F31H to 2F3FH | | Communication path determination status (network No.17 to 239) | | | | |
| 12096 to 65535 | 2F40H to FFFFH | System area | | | | | |

A



- Do not write data to "System area". Doing so may cause malfunction of the programmable controller system.
- If the value in an area of one word in size becomes equal to or higher than 65536, the count stops at 65535 (FFFFH).

Details of buffer memory addresses

Transient transmission error log

■Transient transmission error count (Un\G2592)

The cumulative number of errors saved in the error log blocks is stored.

■Error log pointer (Un\G2593)

The error log block number of the latest error log is stored.

- 0: No error (No error log data)
- 1 or more: Error log block number of the latest error log

Ex.


When the pointer value is "16", the latest error log is registered to Error log block 16.

The 17th and subsequent errors will be registered to the error log from Error log block 1 again.

■Error log blocks 1 to 16 (Un\G2594 to Un\G2753)

Transient transmission error logs are stored.

Error log blocks 1 to 16 are composed of data in the same arrangement.


- Error code: An error code is stored. ( Page 145 List of Error Codes)
- Target station network No./Target station No.: Network number and station number of an error-detected station are stored.
- Own station's network No./Own station's station No.: Network number and station number of the own station are stored.
- Time of error occurrence: Time of transient transmission error is stored as a BCD code.

| Name | Address | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|--------------------------|------------------------|---|-----|-----|-----|-----|-----|----|----|----|--|----|----|----|----|----|----|
| Error log block 1 | Un\G2594 | Error code | | | | | | | | | | | | | | | |
| | Un\G2595 | System area | | | | | | | | | | | | | | | |
| | Un\G2596 | Target station network No. | | | | | | | | | | | | | | | |
| | Un\G2597 | Target station number | | | | | | | | | | | | | | | |
| | Un\G2598 | Own station's network No. | | | | | | | | | | | | | | | |
| | Un\G2599 | Own station's station No. | | | | | | | | | | | | | | | |
| | Un\G2600* ¹ | Month (01H to 12H) | | | | | | | | | Year (00H to 99H), last 2 digits | | | | | | |
| | Un\G2601* ¹ | Hour (00H to 23H) | | | | | | | | | Day (01H to 31H) | | | | | | |
| | Un\G2602* ¹ | Second (00H to 59H) | | | | | | | | | Minute (00H to 59H) | | | | | | |
| | Un\G2603* ¹ | Year (00H to 99H), first 2 digits | | | | | | | | | Day of week (0H: Sunday to 6H: Saturday) | | | | | | |
| Error log blocks 2 to 16 | Un\G2604 to Un\G2753 | Information on Error log blocks 2 to 16 is stored in the same order as Error log block 1. | | | | | | | | | | | | | | | |

*1 Indicates the time of error occurrence.

Point

Transient transmission error logs can be cleared by the following.

- Turning on 'Clear transient transmission error count' (SB000A). ( Page 166 List of Link Special Relay (SB) Areas)
- Powering off and on the system or resetting the CPU module.

If a transient transmission error is detected at start of the CC-Link IE Controller Network-equipped module, the time of error occurrence may be left blank.

Transmission path switching history (only when optical fiber cables are used)

The transmission path switching history data are cleared at the time the module is first placed in the loop status after power-on.

■Transmission path switching count (Un\G2784)

The cumulative number of transmission path switching saved in the transmission path switching history is stored.

■Transmission path switching history pointer (Un\G2785)

History number of the latest history is stored.

- 0: No history (No history data)
- 1 or more: History number of the latest history

Ex.

When the pointer value is "16", the latest history is registered to History 16.

The 17th and subsequent switching will be registered to the histories from History 1 again.

■Histories 1 to 16 (Un\G2786 to Un\G2945)

Transmission path switching history data are stored.

Histories 1 to 16 are composed of data in the same arrangement.

- Post-switching status: The loop status after transmission path switching is stored. (0: Normal, 1: Loopback, 2: Error on all the stations)
- Number of connected modules: The number of modules connected to the network is stored.
- IN-side loopback station No.: Station number of the station where a loopback has occurred on its IN-side is stored.
- OUT-side loopback station No.: Station number of the station where a loopback has occurred on its OUT-side is stored.
- Time of occurrence: Time of transmission path switching is stored as a BCD code.

| Name | Address | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|-------------------|------------------------|--|-----|-----|-----|-----|-----|----|----|----|--|----|----|----|----|----|----|
| History 1 | Un\G2786 | Post-switching status | | | | | | | | | | | | | | | |
| | Un\G2787 | Number of connected modules | | | | | | | | | | | | | | | |
| | Un\G2788 | IN-side loopback station No. | | | | | | | | | | | | | | | |
| | Un\G2789 | OUT-side loopback station No. | | | | | | | | | | | | | | | |
| | Un\G2790 to Un\G2791 | System area | | | | | | | | | | | | | | | |
| | Un\G2792 ^{*1} | Month (01H to 12H) | | | | | | | | | Year (00H to 99H), last 2 digits | | | | | | |
| | Un\G2793 ^{*1} | Hour (00H to 23H) | | | | | | | | | Day (01H to 31H) | | | | | | |
| | Un\G2794 ^{*1} | Second (00H to 59H) | | | | | | | | | Minute (00H to 59H) | | | | | | |
| | Un\G2795 ^{*1} | Year (00H to 99H), first 2 digits | | | | | | | | | Day of week (0H: Sunday to 6H: Saturday) | | | | | | |
| Histories 2 to 16 | Un\G2796 to Un\G2945 | Information on Histories 2 to 16 is stored in the same order as History 1. | | | | | | | | | | | | | | | |

*1 Indicates the transmission path switching occurrence time.

A

Point

Transmission path switching history can be cleared by the following.

- Turning on 'Clear loop switching count' (SB0009). (☞ Page 166 List of Link Special Relay (SB) Areas)
- Powering off and on the system or resetting the CPU module.

System configuration information

The information of the own station and other stations on the network is stored. The other station information areas can be used in a control station only.

■Own station (network card) information (Un\G8192 to Un\G8195)

| Address | Name | Description |
|----------|-------------------|--|
| Un\G8192 | Manufacturer code | The information on the CC-Link IE Controller Network-equipped module of the own station is stored. |
| Un\G8193 | Model type | |
| Un\G8194 | Model code | |
| Un\G8195 | Version | |

■Own station (controller) information (Un\G8200 to Un\G8216)

| Address | Name | Description |
|----------------------|---|---|
| Un\G8200 | Controller information valid/invalid flag | Whether the value stored in the own station (controller) information is valid or invalid is stored. 0: Invalid 1: Valid |
| Un\G8201 | Manufacturer code | The information on the CC-Link IE Controller Network-equipped module of the own station is stored. |
| Un\G8202 | Model type | |
| Un\G8203 | Model code | |
| Un\G8204 | Version | |
| Un\G8205 to Un\G8214 | Model name string | |
| Un\G8215 to Un\G8216 | Vendor-specific device information | |

■Other station (network card) information (station No.1) (Un\G8224 to Un\G8231)

| Address | Name | Description |
|----------------------|-------------------|--|
| Un\G8224 | Manufacturer code | The information of the other station (station No.1) is stored. |
| Un\G8225 | Model type | |
| Un\G8226 | Model code | |
| Un\G8227 | Version | |
| Un\G8228 to Un\G8231 | System area | |

■Other station (controller) information (station No.1) (Un\G8232 to Un\G8255)

| Address | Name | Description |
|----------------------|---|--|
| Un\G8232 | Controller information valid/invalid flag | Whether the value stored in Other station (controller) information (station No.1) is valid or invalid is stored. 0: Invalid 1: Valid |
| Un\G8233 | Manufacturer code | The information on the CC-Link IE Controller Network-equipped module of another station is stored. |
| Un\G8234 | Model type | |
| Un\G8235 | Model code | |
| Un\G8236 | Version | |
| Un\G8237 to Un\G8246 | Model name string | |
| Un\G8247 to Un\G8248 | Vendor-specific device information | |
| Un\G8249 to Un\G8255 | System area | |

■Other station information (station No.2 to 120) (Un\G8256 to Un\G12063)

The information on station number 2 to station number 120 is stored in the same order as Other station (network card) information (station No.1) and Other station (controller) information (station No.1).

Communication path determination status

The determination status on the communication path for each network number of the destination station is stored.

- 0: Route undetermined
- 1: Route determined

| Address | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 |
|-----------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Un\G12080 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
| Un\G12081 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 |
| ⋮ | | | | | | | | | | | | | | | | |
| Un\G12094 | Empty | 239 | 238 | 237 | 236 | 235 | 234 | 233 | 232 | 231 | 230 | 229 | 228 | 227 | 226 | 225 |
| Un\G12095 | Empty | | | | | | | | | | | | | | | |

The numbers in the table indicate network numbers.


Appendix 4 List of Link Special Relay (SB) Areas

The link special relay (SB) is turned on/off depending on various factors during data link. Any error status of the data link can be checked by using or monitoring it in the program.

Application of the link special relay (SB)

By using the link special relay (SB), the status of CC-Link IE Controller Network can be checked from HMI (Human Machine Interfaces) as well as the engineering tool.

Refresh of the link special relay (SB)

To use the link special relay (SB), set them in "Refresh Setting" in "Basic Settings" so that they are refreshed to the devices or labels of the CPU module. ( Page 84 Refresh Setting)


Ranges turned on/off by users and by the system

The following ranges correspond to when the link special relay (SB) areas are assigned from SB0000 to SB01FF.

- Turned on/off by users: SB0000 to SB001F
- Turned on/off by the system: SB0020 to SB01FF

List of link special relay (SB) areas

The following table lists the link special relay (SB) areas when they are assigned from SB0000 to SB01FF.

**Point**

Do not turn on or off areas whose numbers are not on the following list or ranges turned on/off by the system. Doing so may cause malfunction of the programmable controller system.

| No. | Name | Description | Availability | |
|--------|--|---|-----------------|----------------|
| | | | Control station | Normal station |
| SB0000 | Link startup of own station | Starts cyclic transmission of the own station. Off: Startup not requested On: Startup requested (valid at rising edge) On state will be held even after completion of the startup command. Turn on 'link startup completion status of own station' (SB004D), then turn off SB0000. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. • For SB0000 to SB0003, only one of the areas can be turned on. | ○ | ○ |
| SB0001 | Link stop of own station | Stops cyclic transmission of the own station. Off: Stop not requested On: Stop requested (valid at rising edge) On state will be held even after completion of the stop command. Turn on 'Link stop completion status of own station' (SB004F), then turn off SB0001. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. • For SB0000 to SB0003, only one of the areas can be turned on. | ○ | ○ |
| SB0002 | System link startup | Starts cyclic transmission of the entire system. The station where cyclic transmission is started is specified in 'Link startup/stop direction' (SW0000) and 'Link startup/stop station specification' (SW0001 to SW0008). Off: Startup not requested On: Startup requested (valid at rising edge) On state will be held even after completion of the stop command. Turn on 'System link startup completion status' (SB0051), turn off SB0002. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. • For SB0000 to SB0003, only one of the areas can be turned on. | ○ | ○ |
| SB0003 | System link stop | Stops cyclic transmission of the entire system. The station where cyclic transmission is stopped is specified in 'Link startup/stop direction' (SW0000) and 'Link startup/stop station specification' (SW0001 to SW0008). Off: Stop not requested On: Stop requested (valid at rising edge) On state will be held even after completion of the stop command. Turn on 'System link stop completion status' (SB0053), then turn off SB0003. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. • For SB0000 to SB0003, only one of the areas can be turned on. | ○ | ○ |
| SB0007 | ■When optical fiber cables are used Clear IN-side transmission error count | Clears the IN-side line error detection area (SB006E, SB0140, SW0068, SW0069, SW0074, SW0140 to SW0147) to 0. Off: Clear not requested On: Clear requested (valid while on) | ○ | ○ |
| | ■When Ethernet cables are used Clear PORT1 transmission error count | Clears the P1-side line error detection area (SB006E, SB0140, SW0068, SW0069, SW0074, SW0120 to SW0127, SW0140 to SW0147) to 0. Off: Clear not requested On: Clear requested (valid while on) | ○ | ○ |
| SB0008 | ■When optical fiber cables are used Clear OUT-side transmission error count | Clears the OUT-side line error detection area (SB006F, SB0150, SW006A, SW006B, SW0084, SW0150 to SW0157) to 0. Off: Clear not requested On: Clear requested (valid while on) | ○ | ○ |
| | ■When Ethernet cables are used Clear PORT2 transmission error count | Clears the P2-side line error detection area (SB006F, SB0150, SW006A, SW006B, SW0084, SW0130 to SW0137, SW0150 to SW0157) to 0. Off: Clear not requested On: Clear requested (valid while on) | ○ | ○ |
| SB0009 | ■Only when optical fiber cables are used Clear loop switching count | Clears the path switching detection area of the own station (SB008E, SB0160, SW006E, SW0160 to SW0167) and Transmission path switching history (Un\G2784 to Un\G2945) to 0. Off: Clear not requested On: Clear requested (valid while on) | ○ | ○ |
| SB000A | Clear transient transmission error count | Clears the transient transmission error area of the own station (SB008F, SB0170, SW006F, SW0170 to SW0177) and Transient transmission error log (Un\G2592 to Un\G2753) to 0. Off: Clear not requested On: Clear requested (valid while on) | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|--|-----------------------|-----------------------|
| | | | Control station | Normal station |
| SB0017 | ■Only when optical fiber cables are used Flag for disabling system switching due to data link error | Disables system switching due to data link error. Off: Enabled (A system switching request will be issued to the control system CPU module) On: Disabled (A system switching request will not be issued to the control system CPU module) | <input type="radio"/> | <input type="radio"/> |
| SB0020 | Communication status with the CPU module | Stores the communication status between a CC-Link IE Controller Network-equipped module and a CPU module. Off: Normal On: Error | <input type="radio"/> | <input type="radio"/> |
| SB0030 | RECV execution request flag CH1 | Stores the data reception status of own station channel 1. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0031 | RECV execution request flag CH2 | Stores the data reception status of own station channel 2. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0032 | RECV execution request flag CH3 | Stores the data reception status of own station channel 3. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0033 | RECV execution request flag CH4 | Stores the data reception status of own station channel 4. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0034 | RECV execution request flag CH5 | Stores the data reception status of own station channel 5. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0035 | RECV execution request flag CH6 | Stores the data reception status of own station channel 6. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0036 | RECV execution request flag CH7 | Stores the data reception status of own station channel 7. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0037 | RECV execution request flag CH8 | Stores the data reception status of own station channel 8. Off: No data received On: Data received (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on, data prior to error is held. | <input type="radio"/> | <input type="radio"/> |
| SB0040 | Network type of own station | Stores the network type of the own station Off: Controller Network | <input type="radio"/> | <input type="radio"/> |
| SB0041 | Redundant function information of own station | Stores the redundant system support information of own station. Off: Redundant function not supported On: Redundant function supported | <input type="radio"/> | <input type="radio"/> |

| No. | Name | Description | Availability | |
|--------|---|--|-----------------|----------------|
| | | | Control station | Normal station |
| SB0042 | Power status of own station | Stores the external power supply status of own station. Off: External power supply not applied (EXT PW LED is off) On: External power supply applied (EXT PW LED is on) The SB0042 is always off for the CC-Link IE Controller Network module that does not have the external power supply function. | ○ | ○ |
| SB0043 | Module operation mode of own station | Stores the module operation mode of the own station. Off: Online On: Other than online | ○ | ○ |
| SB0044 | Station setting of own station | Stores the station type of the own station. Off: Normal station On: Control station | ○ | ○ |
| SB0047 | Baton pass error status of own station | Stores the baton pass status (transient transmission availability) of the own station. Off: Normal On: Error When this relay is turned on, the cause of the error can be checked with 'Baton pass status of own station' (SW0047) and 'Cause of baton pass interruption' (SW0048). Depending on the link refresh timing, the update of 'Baton pass status of own station' (SW0047) and 'Cause of baton pass interruption' (SW0048) may be offset by one sequence scan. | ○ | ○ |
| SB0048 | Station status of own station | Stores the station type (current status) of the own station. Off: Normal station On: Control station (when SB0044 is turned on)/sub-control station (when SB0044 is turned off) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0049 | Data link error status of own station | Stores the data link status of the own station. Off: Normal On: Error When this relay is turned on, the cause of the error can be checked with 'Cause of data link stop' (SW0049). Depending on the link refresh timing, the update of 'Cause of data link stop' (SW0049) may be offset by one sequence scan. | ○ | ○ |
| SB004A | CPU minor error status of own station | Stores the minor error occurrence status of the CPU module on the own station. Off: No minor error On: Minor error | ○ | ○ |
| SB004B | CPU moderate/major error status of own station | Stores the moderate/major error occurrence status of the CPU module on own station. Off: No moderate/major error On: Moderate/major error | ○ | ○ |
| SB004C | Link startup request accept status of own station | Stores the acceptance status of 'Link startup of own station' (SB0000). Off: Not accepted (SB0000 is off.) On: Accepted (SB0000 is on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB004D | Link startup completion status of own station | Stores the status of link startup processing requested with 'Link startup of own station' (SB0000). Off: Link startup not completed (SB0000, SB0050 are off.) On: Link startup completed (SB0000, SB0050 are on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB004E | Link stop request accept status of own station | Stores the acceptance status of 'Link stop of own station' (SB0001). Off: Not accepted (SB0001 is off.) On: Accepted (SB0001 is on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|---|-----------------|----------------|
| | | | Control station | Normal station |
| SB004F | Link stop completion status of own station | Stores the link stop processing status requested with 'Link stop of own station' (SB0001). Off: Not completed (SB0001, SB0052 are off.) On: Completed (SB0001, SB0052 are on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0050 | System link startup request accept status | Stores the acceptance status of 'System link startup' (SB0002). Off: Not accepted (SB0002 is off.) On: Accepted (SB0002 is on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0051 | System link startup completion status | Stores the status of link startup processing requested with 'System link startup' (SB0002). Off: Not completed (SB0002, SB0054 are off.) On: Completed (SB0002, SB0054 are on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0052 | System link stop request accept status | Stores the acceptance status of 'System link stop' (SB0003). Off: Not accepted (SB0003 is off.) On: Accepted (SB0003 is on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0053 | System link stop completion status | Stores the status of link stop processing requested with 'System link stop' (SB0003). Off: Not completed (SB0003, SB0056 are off.) On: Completed (SB0003, SB0056 are on.) (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0054 | Parameter reception status | Stores the status of parameter reception. For the control station, this relay stores the status of parameter reception from the CPU module. For the normal station, this relay stores the status of parameter reception from the control station. Off: Reception completed On: Reception not completed | ○ | ○ |
| SB0055 | Received parameter error | Stores the status of received parameter. (Own parameter status is stored for the control station.) Off: Parameters normal On: Parameter error | ○ | ○ |
| SB0056 | Communication status | Stores the transient transmission status. Off: Transient transmission by the control station On: Transient transmission by the sub-control station (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB005A | Parameter type of control station | Stores the station type (mode) of the control station. Off: Control station On: Extended mode (control station) | ○ | ○ |
| SB005B | CPU operating status of own station | Stores the operating status of the CPU module on the own station. Off: RUN On: STOP, PAUSE, or moderate/major error | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|---|-----------------|----------------|
| | | | Control station | Normal station |
| SB005C | Block 1 I/O master station | Stores the I/O master station settings status of block 1 (LX/LY setting (1)). Off: No setting On: Set When this relay is turned on, the station number is stored in 'Block 1 I/O master station' (SW005C). (Conditions) • This relay is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SB005D | Block 2 I/O master station | Stores the I/O master station settings status of block 2 (LX/LY setting (2)). Off: No setting On: Set When this relay is turned on, the station number is stored in 'Block 2 I/O master station' (SW005D). (Conditions) • This relay is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SB005E | CPU type of own station | Stores the CPU type of the own station. Off: RCPUR | ○ | ○ |
| SB0060 | Constant link scan status | Stores the constant link scan status. Off: No constant link scan time setting On: Set (Conditions) • This relay is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SB0061 | Cyclic transmission punctuality assurance | Stores the status of cyclic transmission punctuality assurance. Off: Not assured On: Assured (Conditions) • This relay is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SB0063 | Link points extended setting | Stores the status of link points extended setting. Off: Not to Extend On: Extend | ○ | ○ |
| SB0064 | ■When optical fiber cables are used Loop status of own station | Stores the transmission path status of the own station. When this relay is turned on, the error definition can be checked with 'Loop status of own station' (SW0064). Off: Normal On: Error (Conditions) • This relay is turned on when 'Loop status of own station' (SW0064) is not 00H. | ○ | ○ |
| | ■When Ethernet cables are used Connection status of own station | Stores the transmission path status of the own station. When this relay is turned on, the error definition can be checked with 'Connection status of own station' (SW0064). Off: Normal On: Error (Conditions) • 'Connection status of own station' (SW0064) is turned on except when the status is normal and loopback is being performed. | ○ | ○ |
| SB0065 | Loopback status | ■When optical fiber cables are used Stores the loopback status for the loopback function. The station number of the loopback station can be checked with 'IN-side loopback station number' (SW0070) and 'OUT-side loopback station number' (SW0080). Off: Normal (no loopback stations) On: Loopback being performed (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | | ■When Ethernet cables are used Stores the loopback status for the loopback function. The station number of the loopback station can be checked with 'Loopback station number 1' (SW0070) and 'Loopback station number 2' (SW0080). Off: Normal (no loopback stations) On: Loopback being performed (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|---|--|-----------------|----------------|
| | | | Control station | Normal station |
| SB0066 | ■When optical fiber cables are used IN-side link-up status of own station | Stores the IN-side link-up status of the own station. Off: Link-up On: Link-down | ○ | ○ |
| | ■When Ethernet cables are used PORT1 link-up status of own station | Stores the P1-side link-up status of the own station. Off: Link-up On: Link-down | ○ | ○ |
| SB0067 | ■When optical fiber cables are used OUT-side link-up status of own station | Stores the OUT-side link-up status of the own station. Off: Link-up On: Link-down | ○ | ○ |
| | ■When Ethernet cables are used PORT2 link-up status of own station | Stores the P2-side link-up status of the own station. Off: Link-up On: Link-down | ○ | ○ |
| SB0068 | ■When optical fiber cables are used IN-side link establishing status of own station | Stores the IN-side link establishing status of the own station. Off: Link establishment completed On: Link establishing | ○ | ○ |
| | ■When Ethernet cables are used PORT1 link establishing status of own station | Stores the P1-side link establishing status of the own station. Off: Link establishment completed On: Link establishing | ○ | ○ |
| SB0069 | ■When optical fiber cables are used OUT-side link establishing status of own station | Stores the OUT-side link establishing status of the own station. Off: Link establishment completed On: Link establishing | ○ | ○ |
| | ■When Ethernet cables are used PORT2 link establishing status of own station | Stores the P2-side link establishing status of the own station. Off: Link establishment completed On: Link establishing | ○ | ○ |
| SB006A | ■Only when optical fiber cables are used IN-side cabling status of own station | Stores the IN-side cabling status of the own station. Off: Normal On: Inserted incorrectly | ○ | ○ |
| SB006B | ■Only when optical fiber cables are used OUT-side cabling status of own station | Stores the OUT-side cabling status of the own station. Off: Normal On: Inserted incorrectly | ○ | ○ |
| SB006C | ■When optical fiber cables are used IN-side current error frame reception status of own station | Stores whether the error frame is currently received at the IN side of the own station. Off: Not received On: Currently receiving | ○ | ○ |
| | ■When Ethernet cables are used PORT1 current error frame reception status of own station | Stores whether the error frame is currently received at the P1 side of the own station. Off: Not received On: Currently receiving | ○ | ○ |
| SB006D | ■When optical fiber cables are used OUT-side current error frame reception status of own station | Stores whether the error frame is currently received at the OUT side of the own station. Off: Not received On: Currently receiving | ○ | ○ |
| | ■When Ethernet cables are used PORT2 current error frame reception status of own station | Stores whether the error frame is currently received at the P2 side of the own station. Off: Not received On: Currently receiving | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|---|---|-----------------|----------------|
| | | | Control station | Normal station |
| SB006E | ■When optical fiber cables are used IN-side error frame detection of own station | Stores whether the error frame was received at the IN side of the own station from power-on to the present. Off: Not received On: Received When 'Clear IN-side transmission error count' (SB0007) is turned on, the stored value is cleared. | ○ | ○ |
| | ■When Ethernet cables are used PORT1 error frame detection of own station | Stores whether the error frame was received at the P1 side of the own station from power-on to the present. Off: Not received On: Received When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored value is cleared. | ○ | ○ |
| SB006F | ■When optical fiber cables are used OUT-side error frame detection of own station | Stores whether the error frame was received at the OUT side of the own station from power-on to the present. Off: Not received On: Received When 'Clear OUT-side transmission error count' (SB0008) is turned on, the stored value is cleared. | ○ | ○ |
| | ■When Ethernet cables are used PORT2 error frame detection of own station | Stores whether the error frame was received at the P2 side of the own station from power-on to the present. Off: Not received On: Received When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored value is cleared. | ○ | ○ |
| SB0070 | Station number setting status of own station | Stores the station number setting status. Off: Station number set On: Station number not set (When the station number is set by the parameters, this relay is always off.) | × | ○ |
| SB0078 | ■Only when Ethernet cables are used Network topology setting | Stores the setting status of "Network Topology" in "Basic Settings" for the own station (control station). Off: Line topology, star topology, or coexistence of star and line topologies On: Ring topology | ○ | ○ |
| SB007F | IP address setting status | Stores the status of the IP address setting by parameter. Off: No setting On: Set For normal stations, this relay stores the reception status of an IP address from the control station. | ○ | ○ |
| SB008E | ■Only when optical fiber cables are used Path switching detection flag | Stores the path switching detection status. Off: Path switching not detected On: Path switching detected When 'Clear loop switching count' (SB0009) is turned on, the stored value is cleared. | ○ | ○ |
| SB008F | Transient error | Stores the transient transmission error detection status. Off: Error not detected On: Error detected When this relay is turned on, the number of errors can be checked with 'Transient transmission error count' (SW006F). | ○ | ○ |
| SB0098 | ■Only when Ethernet cables are used Network configuration mismatch occurrence status | Stores the match or mismatch status of the actual network configuration and the network map of the CC-Link IE Controller Network diagnostics. Off: Match On: Mismatch After return or addition of the normal station, SB0098 may be turned on regardless of the actual match/mismatch status. | ○ | × |
| SB0099 | ■Only when Ethernet cables are used Number of connected modules over occurrence status | Stores whether the number of normal stations connected is 119 or less, or 120 or more. Off: 119 or less On: 120 or more Number of connected modules is the total of the normal stations which are currently connected and the disconnected stations (normal stations which were previously connected). | ○ | × |

| No. | Name | Description | Availability | |
|--------|--|--|-----------------|----------------|
| | | | Control station | Normal station |
| SB00A0 | Baton pass error status of each station | <p>Stores the baton pass status of each station.</p> <p>Off: All stations normal On: Faulty station exists</p> <p>When this relay is turned on, the status of each station can be checked with 'Baton pass status of each station' (SW00A0 to SW00A7).</p> <p>Depending on the link refresh timing, the update of 'Baton pass status of each station' (SW00A0 to SW00A7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. Reserved stations and stations higher than the maximum station number are ignored. | ○ | ○ |
| SB00B0 | Data link error status of each station | <p>Stores the data link status of each station.</p> <p>Off: All stations normal On: Faulty station exists</p> <p>When this relay is turned on, the status of each station can be checked with 'Data link status of each station' (SW00B0 to SW00B7).</p> <p>Depending on the link refresh timing, the update of 'Data link status of each station' (SW00B0 to SW00B7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. Reserved stations and stations higher than the maximum station number are ignored. | ○ | ○ |
| SB00C0 | Reserved station setting status | <p>Stores whether a reserved station is set.</p> <p>Off: No setting On: Set</p> <p>When this relay is turned on, the status of each station can be checked with 'Reserved station setting status' (SW00C0 to SW00C7).</p> <p>Depending on the link refresh timing, the update of 'Reserved station setting status' (SW00C0 to SW00C7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SB00D0 | Parameter communication status of each station | <p>Stores the parameter communication status of each station.</p> <p>Off: Parameter communication is completed or not executed in all stations On: Station where parameter communication is in execution exists</p> <p>When this relay is turned on, the status of each station can be checked with 'Parameter communication status of each station' (SW00D0 to SW00D7).</p> <p>Depending on the link refresh timing, the update of 'Parameter communication status of each station' (SW00D0 to SW00D7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. Reserved stations and stations higher than the maximum station number are ignored. | ○ | × |
| SB00E0 | Parameter error status of each station | <p>Stores the parameter error status of each station.</p> <p>Off: All stations normal On: Faulty station exists</p> <p>When this relay is turned on, the status of each station can be checked with 'Parameter error status of each station' (SW00E0 to SW00E7).</p> <p>Depending on the link refresh timing, the update of 'Parameter error status of each station' (SW00E0 to SW00E7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. Reserved stations and stations higher than the maximum station number are ignored. | ○ | × |
| SB00F0 | CPU operating status of each station | <p>Stores the operating status of the CPU module on each station. (Including own station)</p> <p>Off: All stations are at RUN or STEP-RUN state On: Station at STOP or PAUSE state, or station with a moderate/major error exists.</p> <p>When this relay is turned on, the status of each station can be checked with 'CPU operating status of each station' (SW00F0 to SW00F7).</p> <p>Depending on the link refresh timing, the update of 'CPU operating status of each station' (SW00F0 to SW00F7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|--|-----------------|----------------|
| | | | Control station | Normal station |
| SB0100 | CPU moderate/major error status of each station | Stores the moderate/major error occurrence status of the CPU module on each station. Off: No moderate/major error On: Station with a moderate/major error exists When this relay is turned on, the status of each station can be checked with 'CPU moderate/major error status of each station' (SW0100 to SW0107). Depending on the link refresh timing, the update of 'CPU moderate/major error status of each station' (SW0100 to SW0107) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0110 | CPU minor error status of each station | Stores the minor error occurrence status of the CPU module on each station. Off: All stations normal or station with a moderate/major error exists. On: Station with a minor error exists. When this relay is turned on, the status of each station can be checked with 'CPU minor error status of each station' (SW0110 to SW0117). Depending on the link refresh timing, the update of 'CPU minor error status of each station' (SW0110 to SW0117) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0120 | ■When optical fiber cables are used IN-side current error frame reception status of each station | Stores whether the error frame is currently received at the IN side of each station. Off: Not received at all stations When this relay is turned on, the status of each station can be checked with 'IN-side current error frame reception status of each station' (SW0120 to SW0127). Depending on the link refresh timing, the update of 'IN-side current error frame reception status of each station' (SW0120 to SW0127) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | ■When Ethernet cables are used PORT1 current error frame reception status of each station | Stores whether the error frame is currently received at the P1 side of each station. Off: Not received at all stations On: Error frame is being received at one or more stations. When this relay is turned on, the status of each station can be checked with 'PORT1 current error frame reception status of each station' (SW0120 to SW0127). Depending on the link refresh timing, the update of 'PORT1 current error frame reception status of each station' (SW0120 to SW0127) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0130 | ■When optical fiber cables are used OUT-side current error frame reception status of each station | Stores whether the error frame is currently received at the OUT side of each station. Off: Not received at all stations On: Error frame is being received at one or more stations. When this relay is turned on, the status of each station can be checked with 'OUT-side current error frame reception status of each station' (SW0130 to SW0137). Depending on the link refresh timing, the update of 'OUT-side current error frame reception status of each station' (SW0130 to SW0137) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | ■When Ethernet cables are used PORT2 current error frame reception status of each station | Stores whether the error frame is currently received at the P2 side of each station. Off: Not received at all stations On: Error frame is being received at one or more stations. When this relay is turned on, the status of each station can be checked with 'PORT2 current error frame reception status of each station' (SW0130 to SW0137). Depending on the link refresh timing, the update of 'PORT2 current error frame reception status of each station' (SW0130 to SW0137) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|--|-----------------|----------------|
| | | | Control station | Normal station |
| SB0140 | ■When optical fiber cables are used IN-side error frame detection status of each station | Stores the status that has received an error frame from power-on until the present at the IN side of each station. Off: Not received at all stations On: Error frame has been received at one or more stations. When this relay is turned on, the status of each station can be checked with 'IN-side error frame detection status of each station' (SW0140 to SW0147). Depending on the link refresh timing, the update of 'IN-side error frame detection status of each station' (SW0140 to SW0147) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | ■When Ethernet cables are used PORT1 error frame detection of each station | Stores whether the error frame was received at the P1 side of each station from power-on to the present. Off: Not received at all stations On: Error frame has been received at one or more stations. When this relay is turned on, the status of each station can be checked with 'PORT1 error frame detection of each station' (SW0140 to SW0147). Depending on the link refresh timing, the update of 'PORT1 error frame detection of each station' (SW0140 to SW0147) may be offset by one sequence scan. When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored value is cleared. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0150 | ■When optical fiber cables are used OUT-side error frame detection status of each station | Stores the status that has received an error frame from power-on until the present at the OUT side of each station. Off: Not received at all stations On: Error frame has been received at one or more stations. When this relay is turned on, the status of each station can be checked with 'OUT-side error frame detection status of each station' (SW0150 to SW0157). Depending on the link refresh timing, the update of 'OUT-side error frame detection status of each station' (SW0150 to SW0157) may be offset by one sequence scan. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | ■When Ethernet cables are used PORT2 error frame detection of each station | Stores whether the error frame was received at the P2 side of the station No.0 from power-on to the present. Off: Not received at all stations On: Error frame has been received at one or more stations. When this relay is turned on, the status of each station can be checked with 'PORT2 error frame detection of each station' (SW0150 to SW0157). Depending on the link refresh timing, the update of 'PORT2 error frame detection of each station' (SW0150 to SW0157) may be offset by one sequence scan. When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored value is cleared. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0160 | ■Only when optical fiber cables are used Path switching detection flag of each station | Stores the detection status of path switching of each station. (Including own station) Off: Path switching not detected On: Path switching detected When this relay is turned on, the status of each station can be checked with 'Path switching detection status of each station' (SW0160 to SW0167). Depending on the link refresh timing, the update of 'Path switching detection status of each station' (SW0160 to SW0167) may be offset by one sequence scan. The path switching detection status is cleared when 'Clear loop switching count' (SB0009) is turned on. The stored value is cleared when 'Clear loop switching count' (SB0009) is turned on in each station and the path switching detection status for all stations is cleared. (Conditions) • This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|---|--|-----------------|----------------|
| | | | Control station | Normal station |
| SB0170 | Transient error of each station | <p>Stores the transient transmission error detection status for all stations. (Including own station)</p> <p>Off: Error not detected On: Error detected</p> <p>When this relay is turned on, the status of each station can be checked with 'Transient error detection status of each station' (SW0170 to SW0177).</p> <p>Depending on the link refresh timing, the update of 'Transient error detection status of each station' (SW0170 to SW0177) may be offset by one sequence scan.</p> <p>The transient error detection status of the own station is cleared when 'Clear transient transmission error count' (SB000A) is turned on.</p> <p>The stored value is cleared when 'Clear transient transmission error count' (SB000A) is turned on in each station and the transient error detection status for all stations is cleared.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0180 | External power supply information of each station | <p>Stores the external electrical supply status of the CC-Link IE Controller Network module for each station. (Including own station)</p> <p>Off: No external power supplied to any station On: External power supplied to station(s)</p> <p>When this relay is turned on, the status of each station can be checked with 'External power supply status of each station' (SW0180 to SW0187).</p> <p>Depending on the link refresh timing, the update of 'External power supply status of each station' (SW0180 to SW0187) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB0190 | External power supply error information of each station | <p>Stores the external power supply error status of the CC-Link IE Controller Network module with external power supply function on each station. (Including own station)</p> <p>Off: All stations normal or no stations providing external power supply On: Faulty station exists</p> <p>When this relay is turned on, the status of each station can be checked with 'External power supply error status of each station' (SW0190 to SW0197).</p> <p>Depending on the link refresh timing, the update of 'External power supply error status of each station' (SW0190 to SW0197) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB01A0 | Group cyclic transmission station information | <p>Stores shared group setting information on the stations. (Including own station)</p> <p>Off: Station in shared group different from the own station not exist. On: Station in shared group different from the own station exists.</p> <p>When this relay is turned on, the status of each station can be checked with 'Group cyclic transmission station information' (SW01A0 to SW01A7).</p> <p>Depending on the link refresh timing, the update of 'Group cyclic transmission station information' (SW01A0 to SW01A7) may be offset by one sequence scan.</p> | ○ | ○ |
| SB01B0 | CPU type information of each station | <p>Stores the CPU type information of each station. (Including own station)</p> <p>Off: No basic model QCPU or safe CPU On: Basic model QCPU or safe CPU present</p> <p>When this relay is turned on, the status of each station can be checked with 'CPU type information of each station' (SW01B0 to SW01B7).</p> <p>Depending on the link refresh timing, the update of 'CPU type information of each station' (SW01B0 to SW01B7) may be offset by one sequence scan.</p> | ○ | ○ |
| SB01C0 | Redundant system information | <p>Stores the redundant system information of each station. (Including own station)</p> <p>Off: No redundant system station On: Redundant system station exists.</p> <p>When this relay is turned on, the status of each station can be checked with 'Redundant function information of each station' (SW01C0 to SW01C7).</p> <p>Depending on the link refresh timing, the update of 'Redundant function information of each station' (SW01C0 to SW01C7) may be offset by one sequence scan.</p> | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|---|-----------------|----------------|
| | | | Control station | Normal station |
| SB01D0 | Separate-mode station exists information | <p>Stores the CPU operation mode status of each station. (Including own station)</p> <p>Off: No separate mode station On: Separate mode station exists.</p> <p>This relay is turned off for a station other than a redundant system station.</p> <p>When this relay is turned on, the status of each station can be checked with 'Separate mode status of each station' (SW01D0 to SW01D7).</p> <p>Depending on the link refresh timing, the update of 'Separate mode status of each station' (SW01D0 to SW01D7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB01E0 | Pairing-set station exists information | <p>Stores the pairing setting status of each station. (Including own station)</p> <p>Off: No pairing-set station On: Pairing-set station exists.</p> <p>When this relay is turned on, the status of each station can be checked with 'Pairing setting status of each station' (SW01E0 to SW01E7).</p> <p>Depending on the link refresh timing, the update of 'Pairing setting status of each station' (SW01E0 to SW01E7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SB01F0 | Station of standby system exists information | <p>Stores the CPU operation status (control/standby system) of each station. (Including own station)</p> <p>Off: No station of standby system CPU On: Station of standby system CPU exists.</p> <p>This relay is turned off for a station other than a redundant system station.</p> <p>When this relay is turned on, the status of each station can be checked with 'Redundant CPU system status of each station' (SW01F0 to SW01F7).</p> <p>Depending on the link refresh timing, the update of 'Redundant CPU system status of each station' (SW01F0 to SW01F7) may be offset by one sequence scan.</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This relay is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

Appendix 5 List of Link Special Register (SW) Areas

The link special register (SW) stores the information during data link as a numerical value. Error locations and causes can be checked by using or monitoring the link special register (SW) in programs.

Application of the link special register (SW)

By using the link special register (SW), the status of CC-Link IE Controller Network can be checked from HMI (Human Machine Interfaces) as well as the engineering tool.

Refresh of the link special register (SW)

To use the link special register (SW), set them in "Refresh Setting" under "Basic Settings" so that they are refreshed to the devices or labels of the CPU module. (📖 Page 84 Refresh Setting)

Range where data are stored by users and range where data are stored by the system

The following ranges correspond to when the link special register (SW) areas are assigned from SW0000 to SW01FF.

- Stored by users: SW0000 to SW001F
- Stored by the system: SW0020 to SW01FF

List of link special register (SW) areas

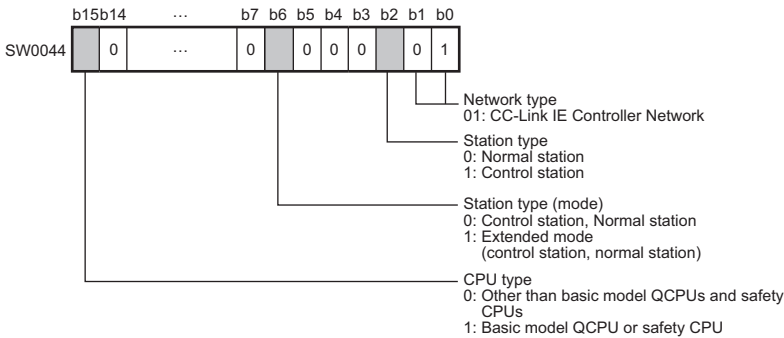
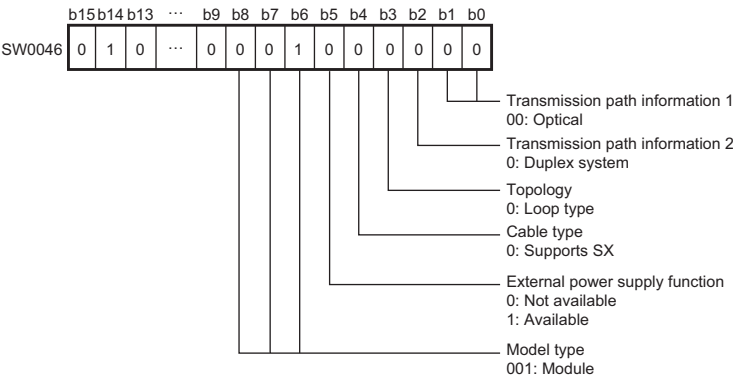
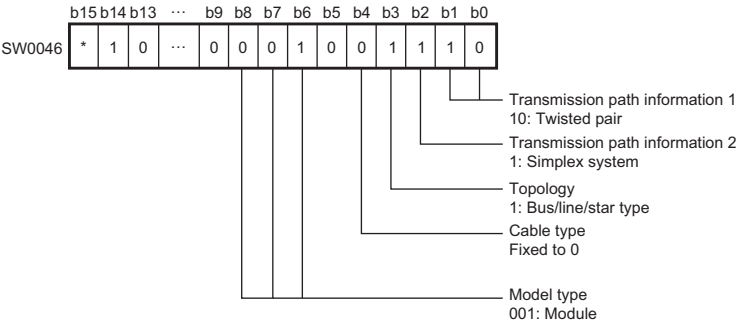
The following table lists the link special register (SW) areas when they are assigned from SW0000 to SW01FF.

Point🔍

Do not write any data to an area whose number is not on the following list or ranges where data are stored by the system. Doing so may cause malfunction of the programmable controller system.

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|---|--|-----------------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--------|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--------|---|---|---|---|---|---|---|---|-----|-----|-----|-----|-----|-----|-----|-----|---|---|
| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0000 | Link startup/stop direction | Set the content of link startup/stop directions. 00H: Own station 01H: All stations 02H: Specified stations 03H: Specified group 80H: Own station enforced (enabled only for link startup) 81H: All stations enforced (enabled only for link startup) 82H: Specified stations enforced (enabled only for link startup) 83H: Specified group enforced (enabled only for link startup) • Link startup is performed by 'System link startup' (SB0002) or 'System link stop' (SB0003). | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0001 to SW0008 | Link startup/stop station specification | Set the station number to start or stop data link when 02H or 82H is set in 'Link startup/stop direction' (SW0000). 0: Startup or stop not requested 1: Startup or stop requested <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0001</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0002</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0003</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0004</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0005</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0006</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0007</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0008</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> Each number in the table represents a station number. — is fixed to 0. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0001 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0002 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0003 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0004 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0005 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0006 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0007 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0008 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0001 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0002 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0003 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0004 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0005 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0006 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0007 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0008 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0009 | RIRD/RIWT instruction arrival monitoring time | Specify the monitoring time until the instruction completion. If the instruction is not completed within the time, it will be resent the number of times specified in 'RIRD/RIWT instruction resend count' (SW000B). 0: 10 seconds (default) 1 to 360: 1 to 360 seconds If a value other than the above is specified, 360 seconds will be applied. | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW000B | RIRD/RIWT instruction resend count | Specify the number of times the instruction is to be resent when it is not completed within the monitoring time specified in 'RIRD/RIWT instruction arrival monitoring time' (SW0009). 0: Not resent (default) 1 to 7: 1 to 7 times If a value other than the above is specified, 7 times will be applied. | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0012 to SW0013 | Link startup/stop group specification | Set the transient transmission group number to start or stop data link when 03H or 83H is set in 'Link startup/stop direction' (SW0000). 0: Startup or stop not requested 1: Startup or stop requested <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0012</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0013</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr></table> Each number in the table represents a transient transmission group number. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0012 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0013 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0012 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0013 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0020 | Communication status with the CPU module | Stores the status of communications between a CC-Link IE Controller Network-equipped module and a CPU module. 0: Normal 1 or greater: Error (An error code is stored.) | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0030 | Link dedicated instructions processing result CH1 | Stores the processing results of the link dedicated instruction that used channel 1 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0031 | Link dedicated instructions processing result CH2 | Stores the processing results of the link dedicated instruction that used channel 2 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0032 | Link dedicated instructions processing result CH3 | Stores the processing results of the link dedicated instruction that used channel 3 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | |
|--------|--|---|-----------------|----------------|
| | | | Control station | Normal station |
| SW0033 | Link dedicated instructions processing result CH4 | Stores the processing results of the link dedicated instruction that used channel 4 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0034 | Link dedicated instructions processing result CH5 | Stores the processing results of the link dedicated instruction that used channel 5 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0035 | Link dedicated instructions processing result CH6 | Stores the processing results of the link dedicated instruction that used channel 6 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0036 | Link dedicated instructions processing result CH7 | Stores the processing results of the link dedicated instruction that used channel 7 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0037 | Link dedicated instructions processing result CH8 | Stores the processing results of the link dedicated instruction that used channel 8 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0038 | ■Only when optical fiber cables are used Link dedicated instructions processing result CH9 | Stores the processing results of the link dedicated instruction that used channel 9 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0039 | ■Only when optical fiber cables are used Link dedicated instructions processing result CH10 | Stores the processing results of the link dedicated instruction that used channel 10 of the own station. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW003A | ZNRD processing result | Stores the processing result of the ZNRD instruction. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW003B | ZNWR processing result | Stores the processing result of the ZNWR instruction. 0: Completed normally 1 or greater: Completed with an error (An error code is stored.) | ○ | ○ |
| SW0040 | Network number | Stores the network number of the own station. Range: 1 to 239 | ○ | ○ |
| SW0041 | Transient transmission group number | Stores the transient transmission group number of the own station. 0: No group specification 1 to 32: Transient transmission group number | ○ | ○ |
| SW0042 | Station number | Stores the station number of the own station. 1 to 120: Station number of own station ('Station number setting status of own station' (SB0070) is off) 255: Station number not determined ('Station number setting status of own station' (SB0070) is on) | ○ | ○ |
| SW0043 | Mode status of own station | Stores the module operation mode of the own station. 0: Online mode 2: Offline mode B: Module communication test mode | ○ | ○ |

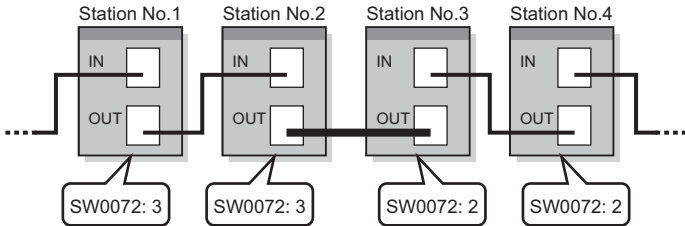
| No. | Name | Description | Availability | |
|--------|----------------------------------|---|-----------------|----------------|
| | | | Control station | Normal station |
| SW0044 | Station setting | <p>Stores the settings status of the own station.</p>  | ○ | ○ |
| SW0046 | Module type | <p>■When optical fiber cables are used</p> <p>Stores the hardware status of the own station.</p>  <p>b14: Fixed to 1 (used in the system)</p> | ○ | ○ |
| | | <p>■When Ethernet cables are used</p> <p>Stores the hardware status of the own station.</p>  <p>b14: Fixed to 1 (used in the system) b15: Variable (used in the system)</p> | ○ | ○ |
| SW0047 | Baton pass status of own station | <p>Stores the baton pass status (transient transmission availability) of the own station.</p> <p>0: Data link in progress 1: Data link stop 2: Baton pass in progress 3: Baton pass being terminated 4: Test in progress 5: Offline</p> | ○ | ○ |

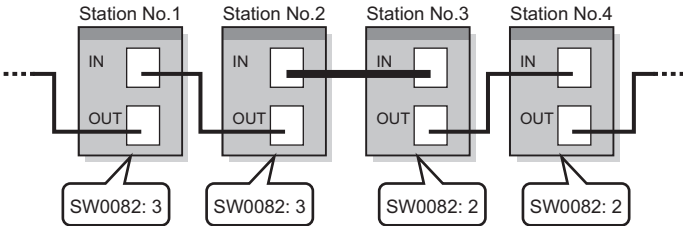
| No. | Name | Description | Availability | |
|--------|----------------------------------|--|-----------------|----------------|
| | | | Control station | Normal station |
| SW0048 | Cause of baton pass interruption | <p>■When optical fiber cables are used</p> <p>Stores the cause of interruption in the communication (baton pass) of the own station.</p> <p>00H: Normal communication</p> <p>30H: At cable disconnection or power-on</p> <p>31H: Cable insertion error</p> <p>32H: Cable IN-OUT checking</p> <p>33H: Disconnection or return in progress</p> <p>40H: Offline mode</p> <p>50H: Self-diagnostics in execution</p> | ○ | ○ |
| | | <p>■When Ethernet cables are used</p> <p>Stores the cause of interruption in the communication (baton pass) of the own station.</p> <p>00H: Normal communication</p> <p>30H: At cable disconnection or power-on</p> <p>33H: Disconnection or return in progress</p> <p>40H: Offline mode</p> | ○ | ○ |
| SW0049 | Cause of data link stop | <p>■When optical fiber cables are used</p> <p>Stores the cause which stopped the data link of the own station.</p> <p>00H: Normal communication</p> <p>01H: Stop direction</p> <p>02H: Monitoring time timeout</p> <p>10H: Parameter unreceived</p> <p>11H: Station number of the own station out of the range</p> <p>12H: Own station reserved</p> <p>13H: Own station number duplication</p> <p>14H: Control station duplication</p> <p>15H: Control station duplication and own station number duplication</p> <p>16H: Station number not set</p> <p>17H: Network number irregularity</p> <p>18H: Parameter error</p> <p>19H: Parameter communication in progress</p> <p>20H: CPU module stop error</p> <p>21H: CPU module power stop error</p> <p>A CPU module power stop error (21H) is detected in the RJ71GP21S-SX.</p> <p>This error is detected when the CPU module is powered off.</p> | ○ | ○ |
| | | <p>■When Ethernet cables are used</p> <p>Stores the cause which stopped the data link of the own station.</p> <p>00H: Normal communication</p> <p>01H: Stop direction</p> <p>02H: Monitoring time timeout</p> <p>10H: Parameter unreceived</p> <p>11H: Station number of the own station out of the range</p> <p>12H: Own station reserved</p> <p>13H: Own station number duplication</p> <p>14H: Control station duplication</p> <p>15H: Control station duplication and own station number duplication</p> <p>16H: Station number not set</p> <p>17H: Network number irregularity</p> <p>18H: Parameter error</p> <p>19H: Parameter communication in progress</p> <p>20H: CPU module stop error</p> <p>60H: The network is incorrectly configured in ring topology (only for control station).</p> | ○ | ○ |
| SW004A | Data link stop request station | <p>Stores the station number of the station that performed the data link stop request for the own station.</p> <p>Range: 1 to 120</p> <p>The data link stop request is performed by 'System link stop' (SB0003).</p> <p>(Conditions)</p> <ul style="list-style-type: none"> This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|------------------------------------|--|-----------------|----------------|
| | | | Control station | Normal station |
| SW004B | CPU status of own station | Stores the status of the CPU module of the own station. 00H: No module mounted 01H: STOP (normal) 02H: STOP (moderate/major error) 03H: STOP (minor error) 04H: RUN (normal) 05H: RUN (minor error) 07H: PAUSE 0EH: Reset in progress 0FH: Initial processing | ○ | ○ |
| SW004C | Shared group number | Stores the shared group number of the own station. 0: No shared group setting 1 to 120: Shared group number | ○ | ○ |
| SW004D | Link startup result of own station | Stores the results when link is started by 'Link startup of own station' (SB0000). 0: Normal 1 or greater: Error (An error code is stored.) (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW004F | Link stop result of own station | Stores the results when link is stopped by 'Link stop of own station' (SB0001). 0: Normal 1 or greater: Error (An error code is stored.) (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0051 | System link startup result | Stores the results when link is started by 'System link startup' (SB0002). 0: Normal 1 or greater: Error definition in own station (An error code is stored.) (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0053 | System link stop result | Stores the results when link is stopped by 'System link stop' (SB0003). 0: Normal 1 or greater: Error definition in own station (An error code is stored.) (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0054 | Parameter information | Stores parameter information. (Conditions) • This register is enabled when 'Received parameter error' (SB0055) is off. | ○ | ○ |
| SW0055 | Parameter setting status | Stores the parameter status. 0: Normal 1 or greater: Error (An error code is stored.) (Conditions) • This register is enabled when 'Received parameter error' (SB0055) is on. | ○ | ○ |
| SW0056 | Current control station number | Stores the station number of the station which is actually operating as a control station. (Including sub-control station) Range: 1 to 120 | ○ | ○ |
| SW0057 | Specified control station number | Stores the control station number that has been set using a parameter. 0: Control station or sub-control station does not exist in a network. 1 to 120: Station number of the control station | ○ | ○ |
| SW0059 | Total number of link stations | Stores the total number of stations which is set by a parameter. Range: 2 to 120 | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|--|-----------------|----------------|
| | | | Control station | Normal station |
| SW005A | Maximum baton pass station number | Stores the maximum station number of the stations where the baton pass is normally performed. Range: 2 to 120 (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW005B | Maximum data link station number | Stores the maximum station number of the station where the data link is normally performed. Range: 1 to 120 (Conditions) • This register is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SW005C | Block 1 I/O master station | Stores the I/O master station number of block 1 (LX/LY setting (1)). 0: No I/O master station 1 to 120: Station number (Conditions) • This register is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SW005D | Block 2 I/O master station | Stores the I/O master station number of block 2 (LX/LY setting (2)). 0: No I/O master station 1 to 120: Station number (Conditions) • This register is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SW0060 | Maximum link scan time | Stores the maximum value of the link scan time during cyclic transmission. (Unit: ms) (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0061 | Minimum link scan time | Stores the minimum value of the link scan time during cyclic transmission. (Unit: ms) (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0062 | Current link scan time | Stores the present value of the link scan time during cyclic transmission. (Unit: ms) The stored value contains a maximum error of 1ms. (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0063 | Constant link scan time setting value | Stores the setting value of the constant link scan which is set by a parameter. 0: No setting 1 to 500: Setting value of constant link scan (Unit: ms) (Conditions) • This register is enabled when 'Data link error status of own station' (SB0049) is off. | ○ | ○ |
| SW0064 | ■When optical fiber cables are used Loop status of own station | Stores the transmission path status of the own station. 00H: Normal 12H: IN side loopback (OUT side cable disconnection) 13H: IN side loopback (OUT-side cable insertion error) 14H: IN side loopback (OUT-side line establishing) 21H: OUT side loopback (IN-side cable disconnection) 31H: OUT side loopback (IN-side cable insertion error) 41H: OUT side loopback (IN-side line establishing) 22H: Disconnecting (IN-side or OUT-side cable disconnection) 23H: Disconnecting (IN-side cable disconnection, OUT-side cable insertion error) 24H: Disconnecting (IN-side cable disconnection, OUT-side line establishing) 32H: Disconnecting (IN-side cable insertion error, OUT-side cable disconnection) 33H: Disconnecting (IN-side or OUT-side cable insertion error) 34H: Disconnecting (IN-side cable insertion error, OUT-side line establishing) 42H: Disconnecting (IN-side line establishing, OUT-side cable disconnection) 43H: Disconnecting (IN-side line establishing, OUT-side cable insertion error) 44H: Disconnecting (IN-side or OUT-side line establishing) | ○ | ○ |
| | ■When Ethernet cables are used Connection status of own station | Stores the connection status of the own station. 00H: Normal (communication in progress on P1 and P2) 02H: Normal (communication in progress on P1, cable disconnected on P2) 20H: Normal (cable disconnected on P1, communication in progress on P2) 12H: Loopback on P1 (cable disconnected on P2) 21H: Loopback on P2 (cable disconnected on P1) 22H: Disconnecting (cable disconnected on P1 and P2) 24H: Disconnecting (cable disconnected on P1, establishing line on P2) 42H: Disconnecting (establishing line on P1, cable disconnected on P2) 44H: Disconnecting (establishing line on P1 and P2) | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|--|-----------------|----------------|
| | | | Control station | Normal station |
| SW0065 | Loopback information | Stores the network loop status. 0: Normal 1: Loopback (enabled only when "Network Topology" under "Basic Settings" of the control station is set to "Ring" for Ethernet cables) 2: Errors on all stations | ○ | ○ |
| SW0068 | ■When optical fiber cables are used IN-side line error occurrence rate maximum value | Stores the occurrence rate (maximum value) of received error frames at the IN side of the own station. (Unit: %) When 'Clear IN-side transmission error count' (SB0007) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| | ■When Ethernet cables are used PORT1 line error occurrence rate maximum value | Stores the occurrence rate (maximum value) of received error frames at the P1 side of the own station. (Unit: %) When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| SW0069 | ■When optical fiber cables are used IN-side line error occurrence rate present value | Stores the occurrence rate (present value) of received error frames at the IN side of the own station. (Unit: %) When 'Clear IN-side transmission error count' (SB0007) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| | ■When Ethernet cables are used PORT1 line error occurrence rate present value | Stores the occurrence rate (present value) of received error frames at the P1 side of the own station. (Unit: %) When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| SW006A | ■When optical fiber cables are used OUT-side line error occurrence rate maximum value | Stores the occurrence rate (maximum value) of received error frames at the OUT side of the own station. (Unit: %) When 'Clear OUT-side transmission error count' (SB0008) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| | ■When Ethernet cables are used PORT2 line error occurrence rate maximum value | Stores the occurrence rate (maximum value) of received error frames at the P2 side of the own station. (Unit: %) When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| SW006B | ■When optical fiber cables are used OUT-side line error occurrence rate present value | Stores the occurrence rate (present value) of received error frames at the OUT side of the own station. (Unit: %) When 'Clear OUT-side transmission error count' (SB0008) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| | ■When Ethernet cables are used PORT2 line error occurrence rate present value | Stores the occurrence rate (present value) of received error frames at the P2 side of the own station. (Unit: %) When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored value for the occurrence rate is cleared. | ○ | ○ |
| SW006E | ■Only when optical fiber cables are used Number of loop switches | Stores the number of switches (cumulative) of the communication path. When 'Clear loop switching count' (SB0009) is turned on, the stored value for the number of errors is cleared. When FFFFH (maximum value 65535) is counted, counting stops. | ○ | ○ |
| SW006F | Transient transmission error count | Stores the cumulative count of transient transmission errors. When 'Clear transient transmission error count' (SB000A) is turned on, the stored value for the number of errors is cleared. Range: 0 to 16 If count reaches the maximum value 16, the count stops. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|--|---|-----------------|----------------|
| | | | Control station | Normal station |
| SW0070 | ■When optical fiber cables are used IN-side loopback station number | Stores the number of the station where loopback is being performed on the IN side. 0: No loopback stations 1 to 120: Station number 255: Station number not set (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | ■When Ethernet cables are used Loopback station number 1 | Stores the number of the station where loopback is being performed. The other station numbers where loopback is being performed can be checked with 'Loopback station number 2' (SW0080). 0: No loopback stations 1 to 120: Station number 255: Station number not set (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off and 'Network configuration mismatch occurrence status' (SB0098) is off. • When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0071 | ■Only when optical fiber cables are used IN-side loopback factor | Stores the cause of loopback on the IN side. 00H: No loopback stations 02H: OUT-side cable disconnection 03H: OUT-side cable insertion error 04H: OUT-side line settling (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0072 | ■Only when optical fiber cables are used OUT-side mis-cabling station number | Stores the station number of the station where the OUT side cable is incorrectly inserted. The station number stored is the number for the other station the cable is connected to.  0: No station connects cable incorrectly 1 to 120: Station number (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. • This register is enabled when 'IN-side loopback factor' (SW0071) is 03H (OUT side cable inserted incorrectly). | ○ | ○ |
| SW0074 | ■When optical fiber cables are used IN-side cable disconnection detection count | Stores the cumulative count that was detected for cable disconnections at the IN side. When 'Clear IN-side transmission error count' (SB0007) is turned on, the stored detection count is cleared. When FFFFH (maximum value 65535) is counted, counting stops. | ○ | ○ |
| | ■When Ethernet cables are used PORT1 cable disconnection detection count | Stores the cumulative count that was detected for cable disconnections at the P1 side. When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored detection count is cleared. When FFFFH (maximum value 65535) is counted, counting stops. | ○ | ○ |

| No. | Name | Description | Availability | |
|--------|---|--|-----------------|----------------|
| | | | Control station | Normal station |
| SW0080 | ■When optical fiber cables are used OUT-side loopback station number | Stores the number of the station where loopback is being performed on the OUT side. 0: No loopback stations 1 to 120: Station number 255: Station number not set (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| | ■When Ethernet cables are used Loopback station number 2 | Stores the number of the station where loopback is being performed. The other station numbers where loopback is being performed can be checked with 'Loopback station number 1' (SW0070). 0: No loopback stations 1 to 120: Station number 255: Station number not set (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off and 'Network configuration mismatch occurrence status' (SB0098) is off. • When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0081 | ■Only when optical fiber cables are used OUT-side loopback factor | Stores the cause of loopback on the OUT side. 00H: No loopback stations 20H: IN-side cable disconnection 30H: IN-side cable insertion error 40H: IN-side line establishing (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | ○ | ○ |
| SW0082 | ■Only when optical fiber cables are used IN-side mis-cabling station number | Stores the station number of the station where the IN side cable is incorrectly inserted. The station number stored is the number for the other station the cable is connected to.  0: No station connects cable incorrectly 1 to 120: Station number (Conditions) • This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. • This register is enabled when 'OUT-side loopback factor' (SW0081) is 30H (IN side cable inserted incorrectly). | ○ | ○ |
| SW0084 | ■When optical fiber cables are used OUT-side cable disconnection detection count | Stores the cumulative count that was detected for cable disconnections at the OUT side. When 'Clear OUT-side transmission error count' (SB0008) is turned on, the stored detection count is cleared. When FFFFH (maximum value 65535) is counted, counting stops. | ○ | ○ |
| | ■When Ethernet cables are used PORT2 cable disconnection detection count | Stores the cumulative count that was detected for cable disconnections at the P2 side. When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored detection count is cleared. When FFFFH (maximum value 65535) is counted, counting stops. | ○ | ○ |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------|-----------------------------------|--|-----------------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--------|----|----|----|----|----|----|----|---|---|---|---|---|---|---|---|---|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--------|---|---|---|---|---|---|---|---|-----|-----|-----|-----|-----|-----|-----|-----|---|---|
| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A0 to SW00A7 | Baton pass status of each station | <p>Stores the baton pass status of each station.</p> <p>0: Baton pass normal station</p> <p>1: Baton pass faulty station</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW00A0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW00A1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW00A2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW00A3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW00A4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW00A5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW00A6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW00A7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW00A0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW00A1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW00A2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW00A3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW00A4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW00A5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW00A6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW00A7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00A7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B0 to SW00B7 | Data link status of each station | <p>Stores the data link status for each station.</p> <p>0: Data link normal station</p> <p>1: Data link faulty station</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW00B0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW00B1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW00B2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW00B3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW00B4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW00B5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW00B6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW00B7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>When group cyclic transmission is used, a station whose shared group is different from the group of the own station is detected as a cyclic transmission error station. (Including reserved stations)</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• Stations higher than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW00B0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW00B1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW00B2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW00B3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW00B4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW00B5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW00B6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW00B7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00B7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C0 to SW00C7 | Reserved station setting status | <p>Stores the reserved station setting status for each station.</p> <p>0: A station other than a reserved station</p> <p>1: Reserved station</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW00C0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW00C1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW00C2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW00C3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW00C4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW00C5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW00C6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW00C7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Data link error status of own station' (SB0049) is off.• Stations higher than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW00C0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW00C1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW00C2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW00C3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW00C4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW00C5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW00C6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW00C7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00C7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D0 to SW00D7 | Parameter communication status of each station | <p>Stores the parameter communication status of each station.</p> <p>0: Parameter communication completed or not executed</p> <p>1: Parameter communication in progress</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW00D0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW00D1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW00D2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW00D3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW00D4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW00D5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW00D6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW00D7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW00D0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW00D1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW00D2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW00D3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW00D4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW00D5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW00D6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW00D7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | × |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00D7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E0 to SW00E7 | Parameter error status of each station | <p>Stores the parameter error status of each station.</p> <p>0: No error</p> <p>1: Errors</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW00E0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW00E1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW00E2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW00E3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW00E4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW00E5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW00E6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW00E7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW00E0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW00E1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW00E2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW00E3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW00E4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW00E5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW00E6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW00E7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | × |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00E7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F0 to SW00F7 | CPU operating status of each station | <p>Stores the status of the CPU module for each station. (Including own station)</p> <p>0: RUN, STEP-RUN</p> <p>1: STOP, PAUSE, or a moderate or serious error occurring</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW00F0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW00F1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW00F2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW00F3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW00F4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW00F5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW00F6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW00F7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW00F0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW00F1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW00F2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW00F3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW00F4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW00F5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW00F6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW00F7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW00F7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0100 to SW0107 | CPU moderate/major error status of each station | <p>Stores the moderate/major error occurrence status of the CPU module on each station. (Including own station)</p> <p>0: No moderate/major error</p> <p>1: Moderate or serious error occurring</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0100</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0101</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0102</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0103</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0104</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0105</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0106</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0107</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0100 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0101 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0102 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0103 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0104 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0105 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0106 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0107 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0100 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0101 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0102 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0103 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0104 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0105 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0106 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0107 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0110 to SW0117 | CPU minor error status of each station | <p>Stores the minor error occurrence status of the CPU module on each station. (Including own station)</p> <p>0: Normal operation, or a moderate or serious error occurring</p> <p>1: Minor error occurring</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0110</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0111</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0112</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0113</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0114</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0115</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0116</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0117</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0110 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0111 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0112 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0113 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0114 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0115 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0116 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0117 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0110 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0111 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0112 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0113 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0114 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0115 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0116 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0117 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0120 to SW0127 | ■When optical fiber cables are used IN-side current error frame reception status of each station | <p>Stores whether the error frame is currently received at the IN side of each station.</p> <p>0: Not receiving 1: Currently receiving</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0120</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0121</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0122</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0123</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0124</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0125</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0126</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0127</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0120 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0121 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0122 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0123 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0124 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0125 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0126 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0127 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | <div>○</div> | <div>○</div> |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0120 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0121 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0122 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0123 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0124 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0125 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0126 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0127 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ■When Ethernet cables are used PORT1 current error frame reception status of each station | <p>Stores whether the error frame is currently received at the P1 side of each station.</p> <p>0: Not receiving 1: Currently receiving</p> <p>When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored value is cleared.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0190</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0191</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0192</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0193</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0194</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0195</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0196</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0197</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0190 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0191 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0192 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0193 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0194 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0195 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0196 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0197 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | <div>○</div> | <div>○</div> |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0190 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0191 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0192 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0193 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0194 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0195 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0196 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0197 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0130 to SW0137 | ■When optical fiber cables are used OUT-side current error frame reception status of each station | <p>Stores whether the error frame is currently received at the OUT side of each station.</p> <p>0: Not receiving 1: Currently receiving</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0130</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0131</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0132</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0133</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0134</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0135</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0136</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0137</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0130 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0131 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0132 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0133 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0134 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0135 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0136 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0137 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0130 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0131 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0132 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0133 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0134 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0135 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0136 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0137 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ■When Ethernet cables are used PORT2 current error frame reception status of each station | <p>Stores whether the error frame is currently received at the P2 side of each station.</p> <p>0: Not receiving 1: Currently receiving</p> <p>When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored value is cleared.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0130</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0131</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0132</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0133</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0134</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0135</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0136</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0137</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0130 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0131 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0132 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0133 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0134 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0135 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0136 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0137 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0130 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0131 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0132 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0133 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0134 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0135 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0136 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0137 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0140 to SW0147 | ■When optical fiber cables are used IN-side error frame detection status of each station | <p>Stores the status that has received an error frame from power-on until the present at the IN side of each station.</p> <p>0: Not received 1: Received</p> <p>When 'Clear IN-side transmission error count' (SB0007) is turned on, the stored value is cleared.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0140</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0141</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0142</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0143</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0144</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0145</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0146</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0147</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0140 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0141 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0142 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0143 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0144 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0145 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0146 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0147 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0140 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0141 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0142 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0143 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0144 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0145 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0146 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0147 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ■When Ethernet cables are used PORT1 error frame detection of each station | <p>Stores whether the error frame was received at the P1 side of each station from power-on to the present.</p> <p>0: Not received 1: Received</p> <p>When 'Clear PORT1 transmission error count' (SB0007) is turned on, the stored value is cleared.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0140</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0141</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0142</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0143</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0144</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0145</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0146</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0147</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0140 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0141 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0142 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0143 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0144 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0145 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0146 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0147 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0140 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0141 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0142 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0143 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0144 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0145 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0146 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0147 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0150 to SW0157 | ■When optical fiber cables are used OUT-side error frame detection status of each station | <p>Stores the status that has received an error frame from power-on until the present at the OUT side of each station.</p> <p>0: Not received 1: Received</p> <p>When 'Clear OUT-side transmission error count' (SB0008) is turned on, the stored value is cleared.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0150</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0151</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0152</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0153</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0154</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0155</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0156</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0157</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0150 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0151 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0152 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0153 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0154 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0155 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0156 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0157 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0150 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0151 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0152 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0153 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0154 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0155 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0156 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0157 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ■When Ethernet cables are used PORT2 error frame detection of each station | <p>Stores whether the error frame was received at the P2 side of the station No.0 from power-on to the present.</p> <p>0: Not received 1: Received</p> <p>When 'Clear PORT2 transmission error count' (SB0008) is turned on, the stored value is cleared.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0150</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0151</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0152</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0153</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0154</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0155</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0156</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0157</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7). | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0150 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0151 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0152 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0153 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0154 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0155 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0156 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0157 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0150 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0151 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0152 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0153 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0154 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0155 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0156 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0157 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0160 to SW0167 | ■Only when optical fiber cables are used Path switching detection status of each station | <p>Stores the path switching detection status of each station from power-on to the present.</p> <p>0: Not received 1: Detected</p> <p>The path switching detection status is cleared when 'Clear loop switching count' (SB0009) is turned on.</p> <p>Turn on 'Clear loop switching count' (SB0009) when clearing the path switching detection status of other stations.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0160</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0161</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0162</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0163</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0164</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0165</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0166</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0167</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0160 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0161 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0162 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0163 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0164 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0165 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0166 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0167 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0160 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0161 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0162 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0163 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0164 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0165 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0166 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0167 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0170 to SW0177 | Transient error detection status of each station | <p>Stores the transient transmission error detection status of each station from power-on to the present.</p> <p>0: Not received 1: Detected</p> <p>The transient error detection status of the own station is cleared when 'Clear transient transmission error count' (SB000A) is turned on.</p> <p>Turn on 'Clear transient transmission error count' (SB000A) at other station side when clearing the transient error detection status of other stations.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0170</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0171</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0172</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0173</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0174</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0175</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0176</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0177</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0170 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0171 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0172 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0173 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0174 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0175 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0176 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0177 | — | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0170 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0171 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0172 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0173 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0174 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0175 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0176 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0177 | — | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0180 to SW0187 | External power supply status of each station | <p>Stores the power supply status for external power supply by the CC-Link IE Controller Network module with external power supply function of each station. (Including own station)</p> <p>0: Not supplied 1: Supplied</p> <p>This register is always off when the CC-Link IE Controller Network module does not have the external power supply function.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0180</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0181</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0182</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0183</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0184</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0185</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0186</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0187</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0180 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0181 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0182 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0183 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0184 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0185 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0186 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0187 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0180 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0181 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0182 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0183 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0184 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0185 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0186 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0187 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0190 to SW0197 | External power supply error status of each station | <p>Stores the power supply error status for external power supply by the CC-Link IE Controller Network module with external power supply function of each station. (Including own station)</p> <p>0: Normal 1: Error</p> <p>This register is always off when the CC-Link IE Controller Network module does not have the external power supply function.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW0190</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW0191</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW0192</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW0193</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW0194</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW0195</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW0196</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW0197</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW0190 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW0191 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW0192 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW0193 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW0194 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW0195 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW0196 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW0197 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0190 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0191 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0192 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0193 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0194 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0195 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0196 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW0197 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A0 to SW01A7 | Group cyclic transmission station information | <p>Stores shared group setting information of each station. (Including own station)</p> <p>0: Station in same shared group as own station or station with no shared group setting 1: Station in shared group different from own station</p> <p>Cyclic data from stations in different shared groups are not received.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW01A0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW01A1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW01A2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW01A3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW01A4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW01A5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW01A6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW01A7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• Stations higher than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW01A0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW01A1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW01A2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW01A3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW01A4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW01A5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW01A6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW01A7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01A7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B0 to SW01B7 | CPU type information of each station | <p>Stores the CPU type information of each station. (Including own station)</p> <p>0: Other than basic model QCPU and safe CPU 1: Basic model QCPU or safe CPU</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW01B0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW01B1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW01B2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW01B3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW01B4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW01B5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW01B6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW01B7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW01B0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW01B1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW01B2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW01B3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW01B4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW01B5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW01B6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW01B7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01B7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C0 to SW01C7 | Redundant function information of each station | <p>Stores redundant system support information of Redundant CPU or CC-Link IE Controller Network module of each station. (Including own station)</p> <p>0: Redundant function not supported 1: Redundant function supported</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW01C0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW01C1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW01C2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW01C3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW01C4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW01C5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW01C6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW01C7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW01C0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW01C1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW01C2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW01C3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW01C4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW01C5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW01C6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW01C7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01C7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D0 to SW01D7 | Separate mode status of each station | <p>Stores the redundant system CPU operating mode of each station. (Including own station)</p> <p>0: Backup mode 1: Separate mode</p> <p>Stores 0 for a station other than a redundant system station.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW01D0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW01D1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW01D2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW01D3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW01D4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW01D5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW01D6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW01D7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW01D0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW01D1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW01D2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW01D3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW01D4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW01D5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW01D6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW01D7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01D7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| No. | Name | Description | Availability | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | Control station | Normal station | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E0 to SW01E7 | Pairing setting status of each station | <p>Stores the pairing setting status for each station. (Including own station)</p> <p>0: No pairing setting 1: Pairing-set</p> <p>If pairing is set, the bit corresponding to the system B station is turned on.</p> <p>Stores 0 for a station other than a redundant system station.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW01E0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW01E1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW01E2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW01E3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW01E4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW01E5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW01E6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW01E7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Stations higher than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW01E0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW01E1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW01E2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW01E3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW01E4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW01E5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW01E6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW01E7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01E7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F0 to SW01F7 | Redundant CPU system status of each station | <p>Stores the redundant CPU system status (control/standby system) of each station. (Including own station)</p> <p>0: Control system 1: Standby system</p> <p>Stores 0 for a station other than a redundant system station.</p> <table><tr><td></td><td>b15</td><td>b14</td><td>b13</td><td>b12</td><td>b11</td><td>b10</td><td>b9</td><td>b8</td><td>b7</td><td>b6</td><td>b5</td><td>b4</td><td>b3</td><td>b2</td><td>b1</td><td>b0</td></tr><tr><td>SW01F0</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>SW01F1</td><td>32</td><td>31</td><td>30</td><td>29</td><td>28</td><td>27</td><td>26</td><td>25</td><td>24</td><td>23</td><td>22</td><td>21</td><td>20</td><td>19</td><td>18</td><td>17</td></tr><tr><td>SW01F2</td><td>48</td><td>47</td><td>46</td><td>45</td><td>44</td><td>43</td><td>42</td><td>41</td><td>40</td><td>39</td><td>38</td><td>37</td><td>36</td><td>35</td><td>34</td><td>33</td></tr><tr><td>SW01F3</td><td>64</td><td>63</td><td>62</td><td>61</td><td>60</td><td>59</td><td>58</td><td>57</td><td>56</td><td>55</td><td>54</td><td>53</td><td>52</td><td>51</td><td>50</td><td>49</td></tr><tr><td>SW01F4</td><td>80</td><td>79</td><td>78</td><td>77</td><td>76</td><td>75</td><td>74</td><td>73</td><td>72</td><td>71</td><td>70</td><td>69</td><td>68</td><td>67</td><td>66</td><td>65</td></tr><tr><td>SW01F5</td><td>96</td><td>95</td><td>94</td><td>93</td><td>92</td><td>91</td><td>90</td><td>89</td><td>88</td><td>87</td><td>86</td><td>85</td><td>84</td><td>83</td><td>82</td><td>81</td></tr><tr><td>SW01F6</td><td>112</td><td>111</td><td>110</td><td>109</td><td>108</td><td>107</td><td>106</td><td>105</td><td>104</td><td>103</td><td>102</td><td>101</td><td>100</td><td>99</td><td>98</td><td>97</td></tr><tr><td>SW01F7</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>120</td><td>119</td><td>118</td><td>117</td><td>116</td><td>115</td><td>114</td><td>113</td></tr></table> <p>Each number in the table represents a station number. — is fixed to 0.</p> <p>(Conditions)</p> <ul style="list-style-type: none">• This register is enabled when 'Baton pass error status of own station' (SB0047) is off. When 'Baton pass error status of own station' (SB0047) is turned on (error), data prior to error is held.• This register is enabled only for normally operating stations in 'Baton pass status of each station' (SW00A0 to SW00A7).• Reserved stations and stations with a number equal to or greater than the maximum station number are ignored. | | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | SW01F0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | SW01F1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | SW01F2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | SW01F3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | SW01F4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | SW01F5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | SW01F6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | SW01F7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | ○ | ○ |
| | b15 | b14 | b13 | b12 | b11 | b10 | b9 | b8 | b7 | b6 | b5 | b4 | b3 | b2 | b1 | b0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F0 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F1 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F2 | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F3 | 64 | 63 | 62 | 61 | 60 | 59 | 58 | 57 | 56 | 55 | 54 | 53 | 52 | 51 | 50 | 49 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F4 | 80 | 79 | 78 | 77 | 76 | 75 | 74 | 73 | 72 | 71 | 70 | 69 | 68 | 67 | 66 | 65 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F5 | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 | 84 | 83 | 82 | 81 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F6 | 112 | 111 | 110 | 109 | 108 | 107 | 106 | 105 | 104 | 103 | 102 | 101 | 100 | 99 | 98 | 97 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SW01F7 | — | — | — | — | — | — | — | — | 120 | 119 | 118 | 117 | 116 | 115 | 114 | 113 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Appendix 6 Dedicated Instruction

This section describes dedicated instructions that can be used in the CC-Link IE Controller Network-equipped modules.



For details on dedicated instructions, refer to the following.

MELSEC iQ-R Programming Manual (Module Dedicated Instructions)

Link dedicated instructions

The following table lists the instructions used for transient transmission to or from programmable controllers on other stations. Each link dedicated instruction allows access to a station on a network other than CC-Link IE Controller Network.

| Instruction | Description |
|-------------|--|
| READ | Reads data from the word device of another station. |
| SREAD | Reads data from the word device of another station. (with completion device) |
| WRITE | Writes data in the word device of another station. |
| SWRITE | Writes data in the word device of another station. (with completion device) |
| SEND | Sends data to another station. |
| RECV | Reads the receive data from another station. (for main program) |
| RECVS | Reads the receive data from another station. (for interrupt program) |
| REQ | Requests the remote RUN/STOP to the CPU module on another station. Reads/writes clock data from/to another station. |
| ZNRD | Reads data from the word device of another station. (for A series) |
| ZNWR | Writes data in the word device of another station. (for A series) |
| RRUN | Sends the request of remote RUN to another station. |
| RSTOP | Sends the request of remote STOP to another station. |
| RTMRD | Reads the clock data from another station. |
| RTMWR | Writes the clock data to another station. |

■Transient transmission range of the link dedicated instruction

In a single network system, communication with all stations on the network is possible.

In multi-network system, communications can be made with stations up to eight networks apart

CC-Link dedicated instructions

The following table lists the instructions used for transient transmission with CC-Link IE Controller Network-compliant devices.

| Instruction | Description |
|-------------|--|
| RIRD | Reads the specified points of data from the target station device. |
| RIWT | Writes the specified points of data to the target station device. |

■Transient transmission range of CC-Link dedicated instructions

Communication with all stations in the same network is possible.

Communication is not available with stations in other networks.

Other dedicated instructions

This instruction is for setting the parameter on the CC-Link IE Controller Network-equipped module of the own station.

| Instruction | Description |
|-------------|---|
| UINI | Sets a station number for a normal station. |

■Transient transmission range of other dedicated instructions

Only the CC-Link IE Controller Network-equipped module of the own station can be accessed.

Precautions for dedicated instructions

This section describes precautions when using dedicated instructions.

Precautions for dedicated instructions (common)

■When changing data specified by dedicated instructions

Do not change any data (such as control data) until execution of the dedicated instruction is completed.

■When the dedicated instruction is not completed

Check whether the mode of the CC-Link IE Controller Network-equipped module is online.

A dedicated instruction cannot be executed when the mode is offline or module communication test.

Precautions for dedicated instructions (when used in a redundant system)

■System switching during execution of a dedicated instruction

When systems are switched during execution of a dedicated instruction, the dedicated instruction may not be completed.

Execute the dedicated instruction again from the control system CPU module after system switching.

■Specification of the target station CPU type in dedicated instructions

For a dedicated instruction in which the target station CPU type can be specified with a control data, the control system CPU, standby system CPU, system A CPU, or system B CPU can be accessed by this instruction when the target station CPU type is specified in it. (📖 MELSEC iQ-R Programming Manual (Module Dedicated Instructions))

■Processing at abnormal end of a dedicated instruction

When the dedicated instruction is executed by specifying the access destination CPU module, it may be completed with an error if systems are switched in the target station. If the dedicated instruction was completed with an error, execute it again.

■SEND instruction

- When the target station is in a redundant system, the communication request source station must identify that the target station is the control system to execute the SEND instruction. When the target station is the standby system, the RECV instruction is not executed at the target station after data is sent by the SEND instruction, and the target station storage channel becomes occupied and unable to be used.
- When a redundant system exists in a network where broadcast communications are performed, the RECV instruction is not executed at the standby system, and the storage channel becomes occupied and unable to be used.

■RECV and RECVS instructions

- When the SEND instruction is executed for the control system, if the systems are switched before execution of the RECV instruction and interrupt program, the control system retains RECV instruction execution request area (SB0030 to SB0037) and the interrupt program interrupt factor (interrupt pointer). If system switching occurs again, and the standby system is switched to the control system, the RECV instruction and interrupt program will be executed by the data retained in RECV instruction execution request area (SB0030 to SB0037) and the retained interrupt program interrupt factor.
- When the SEND instruction is executed for the standby system, and the standby system receives data from the sending station, the standby system retains RECV instruction execution request area (SB0030 to SB0037) and the interrupt program interrupt factor (interrupt pointer). Therefore, when the standby system is switched to the control system due to system switching, the RECV instruction and interrupt program will be executed by the data retained in RECV instruction execution request area (SB0030 to SB0037) and the retained interrupt program interrupt factor.

■REQ, RRUN, and RSTOP instructions

When performing remote STOP or remote RUN on a redundant system, do as follows: Perform STOP on the standby system → STOP on the control system → RUN on the control system → RUN on the standby system.

■UINI instruction

The station number cannot be set by the UINI instruction in a redundant system.

Precautions for link dedicated instructions

The following describes precautions when executing multiple link dedicated instructions simultaneously.

■Channel of the link dedicated instructions

When executing multiple link dedicated instructions simultaneously, check that the channels for the instructions are not duplicated. When the same channel is to be set for different tasks, access to one of other stations first and after completion of the access, access to another. The completion status of a dedicated instruction can be checked with the completion device of the instruction.

■Simultaneous execution of a link dedicated instruction

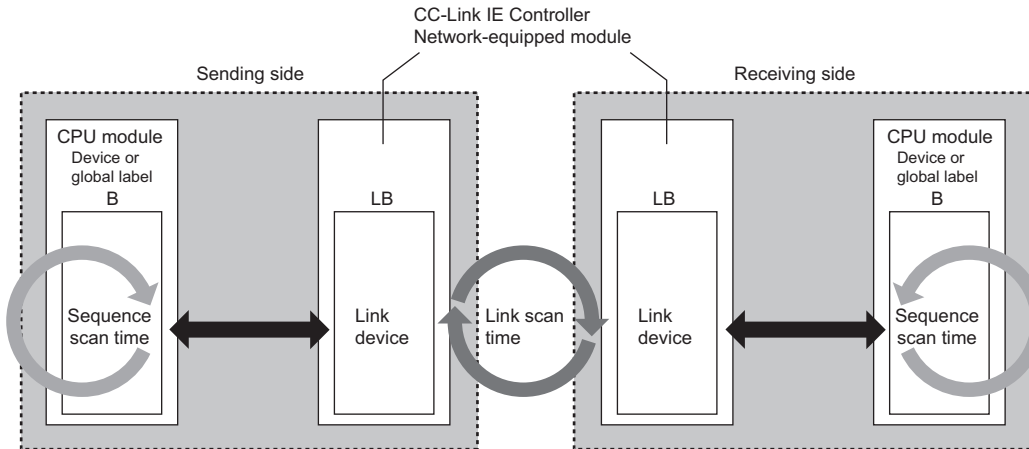
The following table lists operations when link dedicated instructions are executed at the same time.

○: Executable, △: Executable if not using the same channel (When the same channel is used, the latter instruction is not executed.), ×: Not executable (The latter one is not executed.)

| Link dedicated instructions | Instruction to be executed concurrently | | |
|--|--|------|------|
| | READ/SREAD/WRITE/SWRITE/SEND/ RECV/RECVS/REQ/RRUN/RSTOP/ RTMRD/RTMWR | ZNRD | ZNWR |
| READ/SREAD/WRITE/SWRITE/SEND/ RECV/RECVS/REQ/RRUN/RSTOP/ RTMRD/RTMWR | △ | △ | △ |
| ZNRD | △ | × | ○ |
| ZNWR | △ | ○ | × |

Appendix 7 Processing Time

The processing time of the CC-Link IE Controller Network-equipped module consists of the time components below.
 Sending-side sequence scan time + Link scan time + Receiving-side sequence scan time = Transmission delay time



- Sequence scan time: MELSEC iQ-R CPU Module User's Manual (Application)
- Link scan time: Page 203 Link scan time
- Transmission delay time: Page 204 Cyclic transmission delay time

Link scan time

The following is the formula to calculate the time required for all the stations on the network to transmit data.

Case of other than extended mode

■Case of assigning LB/LW setting (1) and LX/LY setting (1)

$$LS = [KB + (n \times 56) + \{LB + LY + (LW \times 16)\} \div 8 \times 0.016 + (N_T \times T \times 30)] \div 1000 + N_c \text{ [ms]}^{*1}$$

KB (constant): Total number of stations: 1 to 32 → 1100, Total number of stations: 33 to 64 → 2100, Total number of stations: 65 to 120 → 3100

■In addition to above, case of assigning LB/LW setting (2) or LX/LY setting (2)

$$LS = [1100 + (n \times 116) + \{LB + LY + (LW \times 16)\} \div 8 \times 0.016 + (N_T \times T \times 30)] \div 1000 + N_c \text{ [ms]}^{*1}$$

Case of extended mode

$$LS = [1100 + (n \times 116) + \{LB + LY + (LW \times 16)\} \div 8 \times 0.017 + (N_T \times T \times 30)] \div 1000 + N_c \text{ [ms]}^{*1}$$

*1 The meaning of the variables in the equation are as follows.

| Variable | Meaning |
|----------------|---|
| n | Total number of stations (stations actually connected, not including reserved stations) |
| LB | Total number of LB points set using LB/LW setting (1) and LB/LW setting (2) (excluding reserved stations) (Page 76 Network Range Assignment) |
| LW | Total number of LW points set using LB/LW setting (1) and LB/LW setting (2) (excluding reserved stations) (Page 76 Network Range Assignment) |
| LY | Total number of LY points set using LX/LY setting (1) and LX/LY setting (2) (excluding reserved stations) (Page 76 Network Range Assignment) |
| N _T | Number of stations transient is being executed on (total number of stations if number of transient transmissions is specified) (Page 33 Cyclic transmission punctuality assurance) |
| T | Maximum number of transients for one station (Page 90 Supplementary Cyclic Settings) |
| N _c | Line control time for one station (normal value: 50ms, worst case: 100ms) The time for reconfiguring the data link if the CC-Link IE Controller Network-equipped module is disconnected or reset by cable disconnection or powering off and on the system. (0ms if the module is not disconnected or reset) Causes an error on all stations for cyclic transmission status and baton pass status if during line control. If the constant link scan time setting value is large, it takes a lot of time before the start of line control, and there are cases where the time required for completion of reconfiguration of the data link exceeds 100ms. If several cable disconnections or power off → on instances occur at the same time, line control processing overlaps one another, and the line control time may exceed 100ms. |

Cyclic transmission delay time

The following are the formulas to calculate cyclic transmission delay time.

In the case of a single network system

■When a redundant system is not used

| Condition | | | | Calculation formula |
|----------------|--------------------------------------|--------------------------|---------------|---|
| For $S_T > LS$ | Station-based block data assured | Other than extended mode | Normal value | $TD1 = (S_T + \alpha_T) \times 1.5 + LS \times 0.5 + (S_R + \alpha_R) \times 1.5$ |
| | | | Maximum value | $TD1max = (S_T + \alpha_T) \times 2 + LS \times 1 + (S_R + \alpha_R) \times 2$ |
| | | Extended mode used | Normal value | $TD1 = (S_T + \alpha_T) \times 1.5 + LS \times 0.5 + (S_R + \alpha_R) \times 2.5$ |
| | | | Maximum value | $TD1max = (S_T + \alpha_T) \times 2 + LS \times 1 + (S_R + \alpha_R) \times 3$ |
| | Station-based block data not assured | Other than extended mode | Normal value | $TD2 = (S_T + \alpha_T) + LS \times 0.5 + (S_R + \alpha_R) \times 1.5$ |
| | | | Maximum value | $TD2max = (S_T + \alpha_T) + LS + (S_R + \alpha_R) \times 2$ |
| | | Extended mode used | Normal value | $TD2 = (S_T + \alpha_T) + LS \times 0.5 + (S_R + \alpha_R) \times 1.5$ |
| | | | Maximum value | $TD2max = (S_T + \alpha_T) + LS + (S_R + \alpha_R) \times 2$ |
| For $S_T < LS$ | Station-based block data assured | Other than extended mode | Normal value | $TD3 = (S_T + \alpha_T) + LS + (S_R + \alpha_R) \times 1.5$ |
| | | | Maximum value | $TD3max = (S_T + \alpha_T) + LS \times 2 + (S_R + \alpha_R) \times 2$ |
| | | Extended mode used | Normal value | $TD3 = (S_T + \alpha_T) + LS \times 2 + (S_R + \alpha_R) \times 2.5$ |
| | | | Maximum value | $TD3max = (S_T + \alpha_T) + LS \times 3 + (S_R + \alpha_R) \times 3$ |
| | Station-based block data not assured | Other than extended mode | Normal value | $TD4 = (S_T + \alpha_T) + LS \times 0.5 + (S_R + \alpha_R) \times 1.5$ |
| | | | Maximum value | $TD4max = (S_T + \alpha_T) + LS + (S_R + \alpha_R) \times 2$ |
| | | Extended mode used | Normal value | $TD4 = (S_T + \alpha_T) + LS + (S_R + \alpha_R) \times 1.5$ |
| | | | Maximum value | $TD4max = (S_T + \alpha_T) + LS \times 2 + (S_R + \alpha_R) \times 2$ |

TD1 to TD4: Transmission delay time (normal value)

TD1max to TD4max: Transmission delay time (maximum value)

S_T : Sequence scan time on sending side (excluding link refresh time)

S_R : Sequence scan time on receiving side (excluding link refresh time)

α_T : Link refresh time on sending side (total number of mountable network modules)

α_R : Link refresh time on receiving side (total number of mountable network modules)

LS: Link scan time

■When a redundant system is used

| Condition | | | | Calculation formula |
|----------------|---------------------------------------|--------------------------|---------------|----------------------------------|
| For $S_T > LS$ | Station-based block data assured | Other than extended mode | Normal value | $TDr1 = TD1 + Ts \times 1.5$ |
| | | | Maximum value | $TDr1max = TD1max + Ts \times 2$ |
| | | Extended mode used | Normal value | $TDr1 = TD1 + Ts \times 1.5$ |
| | | | Maximum value | $TDr1max = TD1max + Ts \times 2$ |
| | No station-based block data assurance | Other than extended mode | Normal value | $TDr2 = TD2 + Ts \times 1.5$ |
| | | | Maximum value | $TDr2max = TD2max + Ts \times 2$ |
| | | Extended mode used | Normal value | $TDr2 = TD2 + Ts \times 1.5$ |
| | | | Maximum value | $TDr2max = TD2max + Ts \times 2$ |
| For $S_T < LS$ | Station-based block data assured | Other than extended mode | Normal value | $TDr3 = TD3 + Ts \times 1.5$ |
| | | | Maximum value | $TDr3max = TD3max + Ts \times 2$ |
| | | Extended mode used | Normal value | $TDr3 = TD3 + Ts \times 1.5$ |
| | | | Maximum value | $TDr3max = TD3max + Ts \times 2$ |
| | No station-based block data assurance | Other than extended mode | Normal value | $TDr4 = TD4 + Ts \times 1.5$ |
| | | | Maximum value | $TDr4max = TD4max + Ts \times 2$ |
| | | Extended mode used | Normal value | $TDr4 = TD4 + Ts \times 1.5$ |
| | | | Maximum value | $TDr4max = TD4max + Ts \times 2$ |

TDr1 to TDr4: Transmission delay time (normal value)

TDr1max to TDr4max: Transmission delay time (maximum value)

TD1 to TD4: Transmission delay time when a redundant system is not used (normal value)

TD1max to TD4max: Transmission delay time when a redundant system is not used (maximum value)

S_T : Sequence scan time on sending side (excluding link refresh time)

LS: Link scan time

Ts: Extended scan time due to tracking (MELSEC iQ-R CPU Module User's Manual (Application))

In the case of a multi-network system

The following shows the cyclic transmission delay time for the case where link device data are transferred to another network with the interlink transmission function.

$$TD = (S_T + \alpha_T) + LST + LSR + (SR \times 2 + \alpha_R) \text{ [ms]}$$

TD: Transmission delay time

S_T : Sequence scan time on sending side (excluding link refresh time)

S_R : Sequence scan time on receiving side (excluding link refresh time)

α_T : Link refresh time on sending side (total number of mountable network modules)

α_R : Link refresh time on receiving side (total number of mountable network modules)

LS_T : Link scan time on sending side

LS_R : Link scan time on receiving side

Interlink transmission time

The following is the formula to calculate the time required for interlink transmission. Interlink transmission does not affect the sequence scan time.

Interlink transmission time to completely transmit all set points

$$\alpha_{DL} = KM4 \times (LB \div 16 + LW)[ms]$$

α_{DL} : Interlink transmission time

LB: Total number of LB points set in "Interlink Transmission Settings" of "Application Settings".

LW: Total number of LW points set in "Interlink Transmission Settings" of "Application Settings".

- Constant (KM4)

| Base unit to which the network module is mounted | | KM4($\times 10^{-3}$) |
|--|----------------------|-------------------------|
| Transfer source | Transfer destination | |
| Main base unit | Main base unit | 0.470 |
| Main base unit | Extension base unit | 0.478 |
| Extension base unit | Main base unit | 0.483 |
| Extension base unit | Extension base unit | 0.489 |

Precautions

The interlink transmission time may become longer due to the following causes.






- Communication with the engineering tool (such as CC-Link IE Controller diagnostics or module diagnostics)
- Execution of a link dedicated instruction
- Link refresh
- Interlink transmission between other units

Cyclic data holding time when system switching occurs







This section describes cyclic data holding time when system switching occurs.

Calculation formula


The following are the formulas to calculate cyclic data holding time when system switching occurs.*1

| Pattern No. | System switching cause | Condition | Cyclic data holding time (T_H) [ms] | Timing chart |
|-------------|--|--|---|--|
| 1 | <ul style="list-style-type: none"> Power-off of the control system Failure of the control system CPU module Failure of the control system base unit | <ul style="list-style-type: none"> The control station is in a redundant system. $T_{jo} < C_{sw}$ | Delay time until detection of the system switching cause*2 + T_{sw} + C_{sw} + SS |  Page 208 Pattern 1 |
| 2 | <ul style="list-style-type: none"> Failure of the control system redundant function module*3 Failure of the control system power supply module*4 | <ul style="list-style-type: none"> The control station is redundant. $T_{jo} > C_{sw}$ | Delay time until detection of the system switching cause*2 + T_{sw} + T_{jo} + SS |  Page 209 Pattern 2 |
| 3 | | A normal station is redundant. | |  Page 210 Pattern 3 |
| 4 | <ul style="list-style-type: none"> Stop error of the control system CPU module Execution of the system switching instruction System switching request from the engineering tool System switching request from another network module | — | Delay time until detection of the system switching cause*2 + T_{sw} + T_{jo} + SS |  Page 211 Pattern 4 |
| 5 | System switching request from the CC-Link IE Controller Network-equipped module (own station). | — | $150 + T_d + T_c$ + Delay time until detection of the system switching cause*2 + T_{sw} + T_{jo} + SS |  Page 212 Pattern 5 |

*1 The meanings of the variables in the equation are as follows.

| Variable | Meaning |
|----------|---|
| T_{jo} | Delay time until initial output after system switching [ms] ( MELSEC iQ-R CPU Module User's Manual (Application)) |
| T_{sw} | CPU module system switching time [ms] ( MELSEC iQ-R CPU Module User's Manual (Application)) |
| T_c | System switching monitoring time setting value ( Page 90 Supplementary Cyclic Settings) |
| T_d | Data link monitoring time setting value ( Page 90 Supplementary Cyclic Settings) |
| C_{sw} | Control station switching time [ms] = $20 + \text{Constant link scan time setting value}$ ( Page 90 Supplementary Cyclic Settings) |
| SS | CPU module sequence scan time [ms] ( MELSEC iQ-R CPU Module User's Manual (Application)) |
| N_c | Line control time for one station (normal value: 50ms, worst case: 100ms). The time for reconfiguring the data link if the CC-Link IE Controller Network-equipped module is disconnected or reset by cable disconnection or powering off and on the system. (0ms if the module is not disconnected or reset) Cyclic transmission status and baton pass status will be error on all stations during line control. If the constant link scan time setting value is large, it takes a lot of time before the start of line control, and there are cases where the time required for completion of reconfiguration of the data link exceeds 100ms. If several cable disconnections or power off → on instances occur at the same time, line control processing overlaps one another, and the line control time may exceed 100ms. |

*2 For delay time until detection of the system switching cause, refer to the following.

 MELSEC iQ-R CPU Module User's Manual (Application)

*3 When the redundant function module fails, the cyclic data holding time (T_H) [ms] is calculated as follows:

The delay time until detection of the system switching cause + T_{sw} + T_{jo} + SS

*4 Depending on the failure status of the power supply module, the calculation formula for the cyclic data holding time (T_H) [ms] may be as follows:

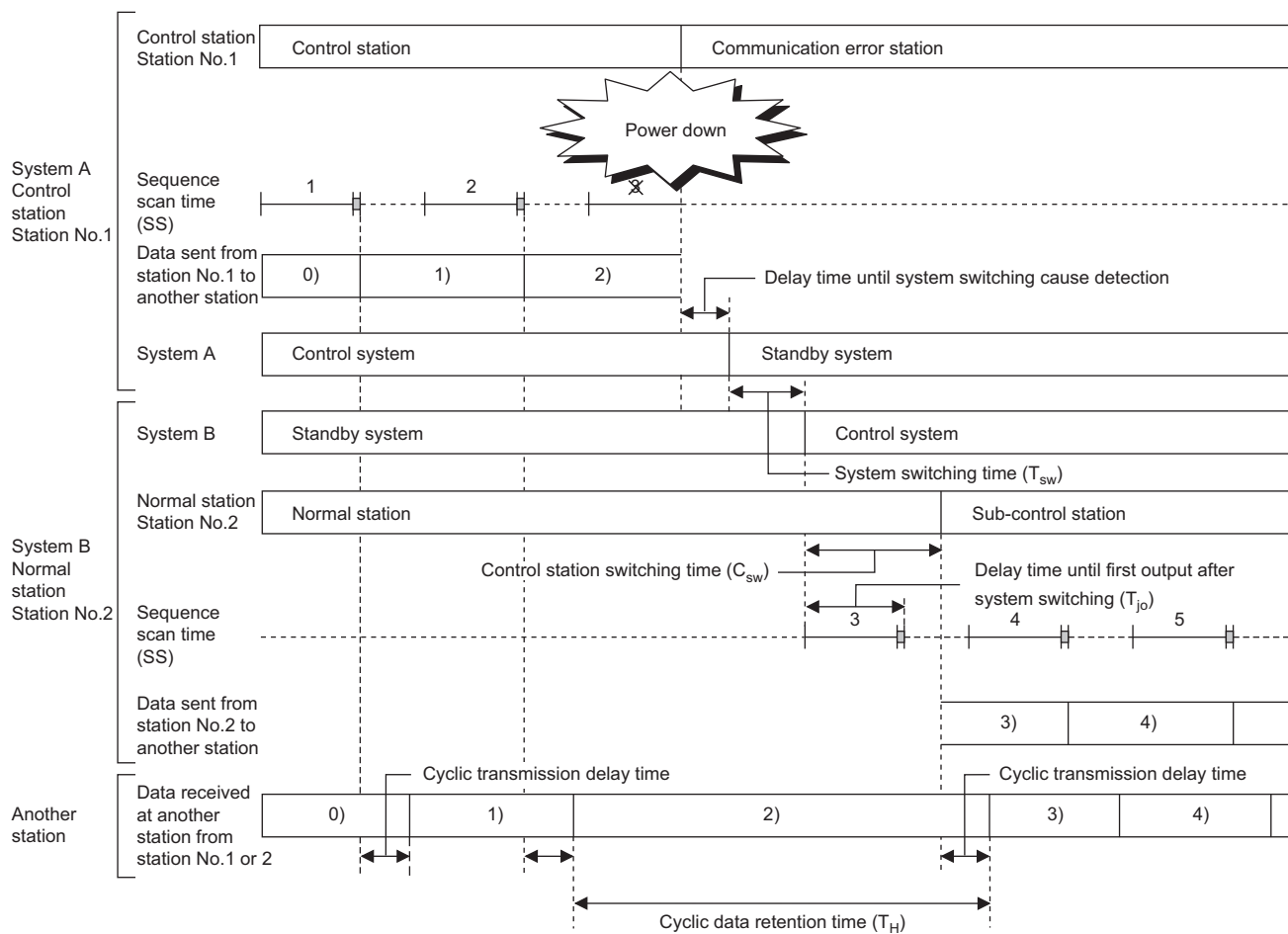
$1000 + C_{sw} + T_{sw} + T_{jo} + SS$

Timing chart

This section describes a timing chart for each system switching cause.

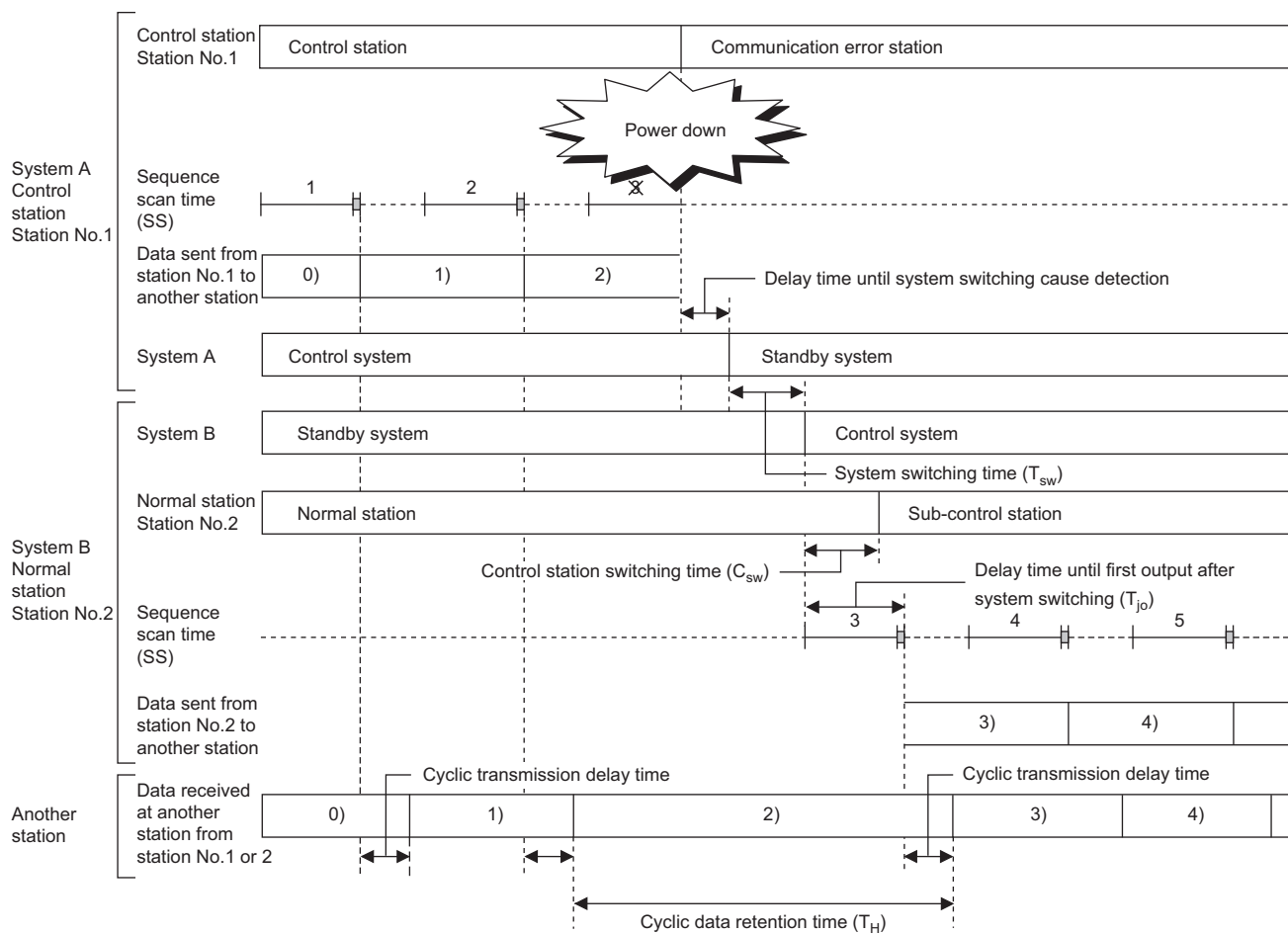
■Pattern 1

The following figure shows a timing chart for normal value.



■Pattern 2

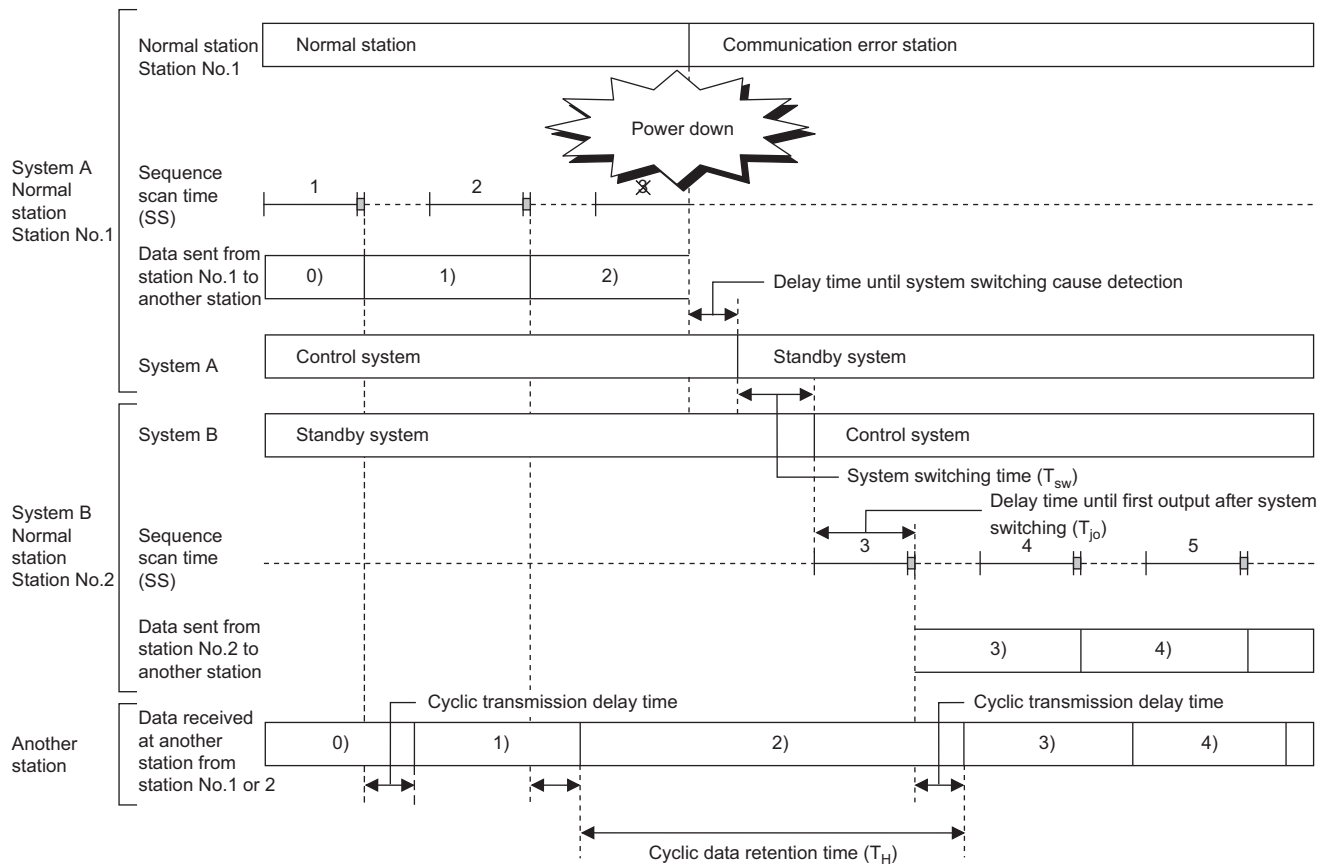
The following figure shows a timing chart for normal value.



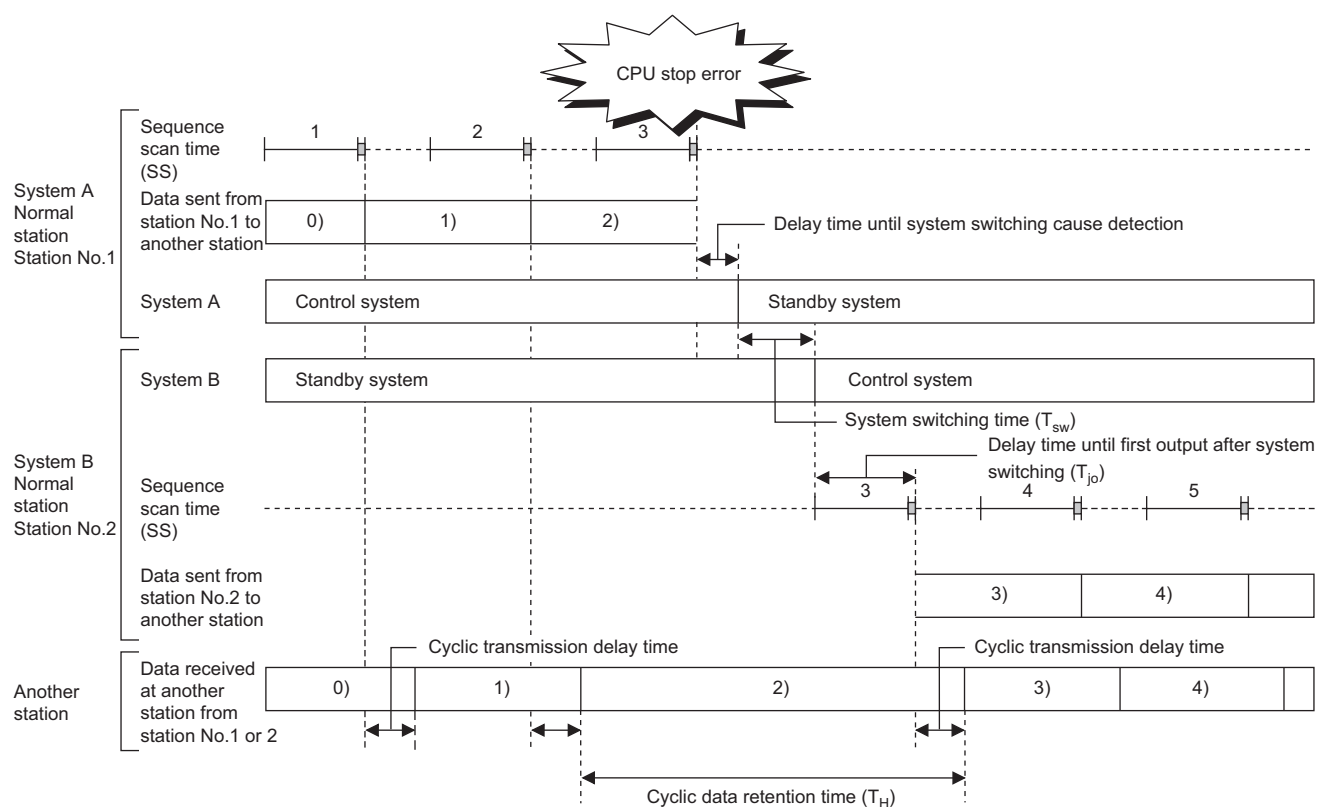
A

■Pattern 3

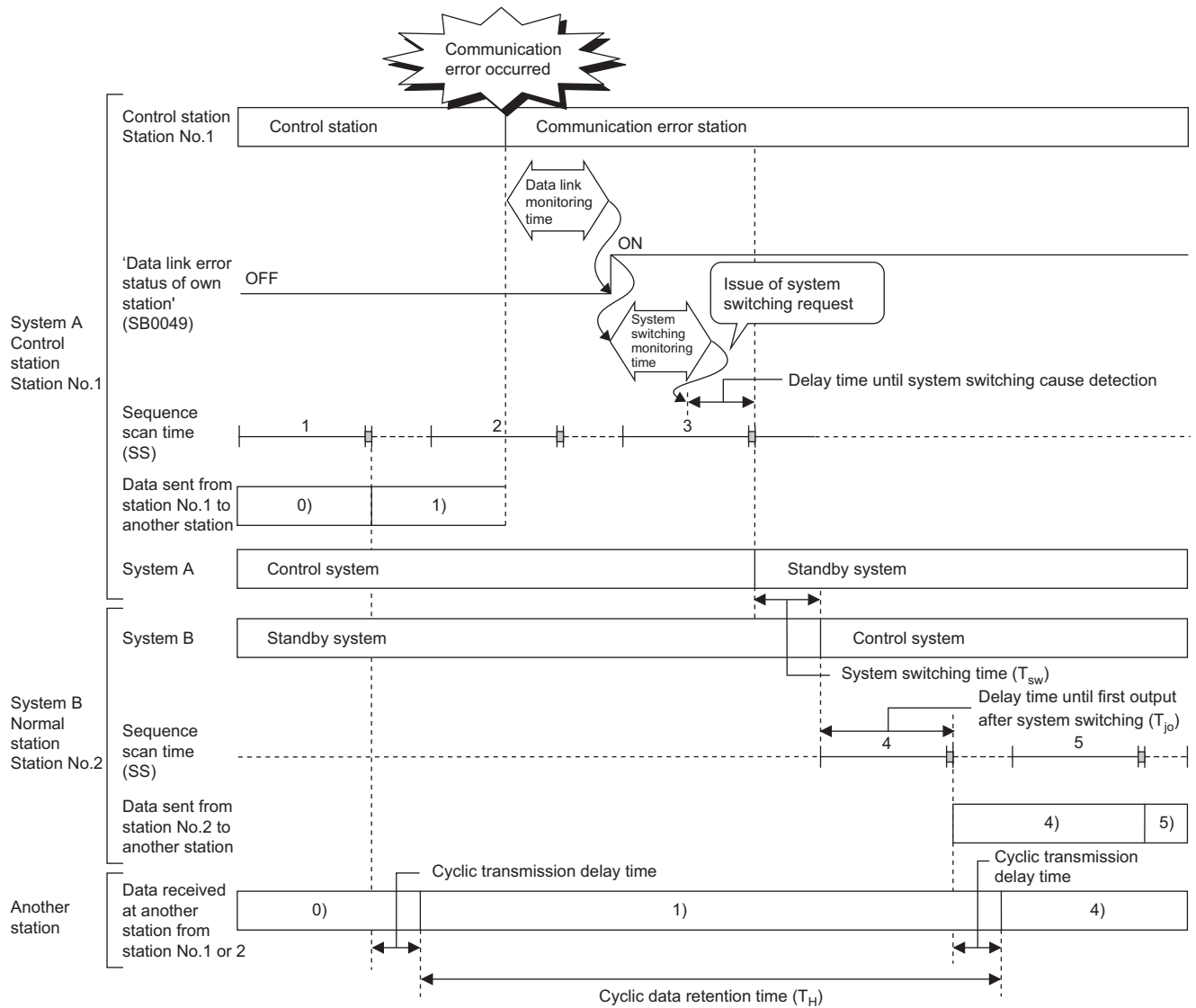
The following figure shows a timing chart for normal value.



■Pattern 4



■Pattern 5




Appendix 8 Added and Enhanced Functions

The following table lists the added and enhanced functions in the CC-Link IE Controller Network-equipped module.


○: Available (No version restriction), ×: Not available

| Added and enhanced function | Firmware version | | | |
|---|------------------|---------------|---------------|-----------------------------|
| | RJ71GP21-SX | RJ71GP21S-SX | RJ71EN71 | RnENCPU |
| CC-Link IE Controller Network function ^{*1} | ○ | ○ | "03" or later | ○ |
| Network map update in the CC-Link IE Controller Network diagnostics | "05" or later | ○ | "05" or later | ○ |
| Redundant system function ^{*1} | "12" or later | ○ | × | × |
| External power supply function | × | ○ | × | × |
| Link points extended setting ^{*2} | "36" or later | "36" or later | "39" or later | "39" or later ^{*3} |
| "Link points extended setting" when the Process CPU is used ^{*2} | "56" or later | "56" or later | × | × |

*1 There are restrictions on the CPU module to be used. For details, refer to the following.

 MELSEC iQ-R CPU Module User's Manual (Application)

*2 There are restrictions on the CPU module to be used. For CPU modules that support the link points extended setting, refer to the following.

 MELSEC iQ-R CPU Module User's Manual (Application)

*3 The firmware version is for the network part.

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MEMO

REVISIONS

*The manual number is given on the bottom left of the back cover.

| Revision date | *Manual number | Description |
|---------------|--------------------|--|
| June 2014 | SH(NA)-081258ENG-A | First edition |
| November 2014 | SH(NA)-081258ENG-B | <p>■Added model RJ71EN71</p> <p>■Added function CC-Link IE Controller Network function of the RJ71EN71</p> <p>■Added or modified parts SAFETY PRECAUTIONS, INTRODUCTION, TERMS, Section 1.2, 1.3, 1.5, 2.2, 2.3, 2.4, Chapter 3, Appendix 1, 2, 3, 4, 5, 8</p> |
| February 2015 | SH(NA)-081258ENG-C | <p>■Added function Network map update in the CC-Link IE Controller Network diagnostics of the RJ71EN71</p> <p>■Added or modified parts Section 3.1, 3.3, 3.5, 3.7, Appendix 4, 5, 7</p> |
| July 2015 | SH(NA)-081258ENG-D | <p>■Added model R04ENCPU, R08ENCPU, R16ENCPU, R32ENCPU, R120ENCPU</p> <p>■Added or modified parts INTRODUCTION, TERMS, Section 1.3, 1.5, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, Appendix 1, 2, 3, 8</p> |
| May 2016 | SH(NA)-081258ENG-E | <p>■Added function Redundant system function</p> <p>■Added or modified parts TERMS, Section 1.1, 1.2, 1.6, 2.2, 2.3, 2.4, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, Appendix 4, 5, 6, 7, 8</p> |
| April 2017 | SH(NA)-081258ENG-F | <p>■Added function Improvements on CC-Link IE Controller Network diagnostics</p> <p>■Added or modified parts SAFETY PRECAUTIONS, INTRODUCTION, RELEVANT MANUALS, TERMS, Section 3.3</p> |
| May 2018 | SH(NA)-081258ENG-G | <p>■Added model RJ71GP21S-SX</p> <p>■Added function External Power Supply Function</p> <p>■Added or modified parts INTRODUCTION, TERMS, Section 1.6, 1.7, 2.2, 2.3, 2.4, 3.1, 3.2, 3.7, Appendix 4, 5, 7, 8</p> |
| April 2019 | SH(NA)-081258ENG-H | <p>■Added function Link points extended setting</p> <p>■Added or modified parts Section 1.1, 2.2, 2.3, 2.4, 3.3, 3.5, 3.6, Appendix 4, 8</p> |
| April 2021 | SH(NA)-081258ENG-I | <p>■Added or modified parts SAFETY PRECAUTIONS, CONDITIONS OF USE FOR THE PRODUCT, Section 1.1</p> |
| July 2021 | SH(NA)-081258ENG-J | <p>■Added function "Link points extended setting" when the Process CPU is used</p> <p>■Added or modified parts RELEVANT MANUALS, Section 1.1, 1.2, 1.3, 1.7, 2.4, 3.1, Appendix 7, 8</p> |
| April 2022 | SH(NA)-081258ENG-K | <p>■Added or modified parts SAFETY PRECAUTIONS, TERMS, GENERIC TERMS AND ABBREVIATIONS, Section 3.5, Appendix 1</p> |
| October 2023 | SH(NA)-081258ENG-L | <p>■Added or modified parts SAFETY PRECAUTIONS, Section 2.4</p> |
| April 2025 | SH(NA)-081258ENG-M | <p>■Added or modified parts SAFETY PRECAUTIONS, RELEVANT MANUALS, Section 3.2, Appendix 4, 5, 7</p> |

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