

Programmable Controller

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

-NZ2GN-GFB

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 user's manual for the CPU module used.

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

- In the case of a communication failure in the network, data of the master station are held. Check Data link status (each station) (SW00B0 to SW00B7) and configure an interlock circuit in the program to ensure that the entire system will operate safely.
 - When a module on CC-Link IE TSN is disconnected due to a communication failure, outputs to the stations connected to CC-Link IE Field Network are held or turned off according to the I/O maintenance settings. In such a case, configure an interlock circuit in the program to ensure that the entire system will operate safely. If not, an accident may occur due to an incorrect output or malfunction.
 - When a module on CC-Link IE Field Network is disconnected due to a communication failure, outputs to the master station on CC-Link IE TSN are held or turned off according to the I/O maintenance settings. Configure an interlock circuit in the program to ensure that the entire system will operate safely even in such a case. If not, an accident may occur due to an incorrect output or malfunction.
 - Outputs may remain on or off due to a failure of the module. Configure an external circuit for monitoring output signals that could cause a serious accident.
 - Do not use any "use prohibited" signals as a remote I/O signal since they are used by the system. Do not write any data to the "use prohibited" areas in the remote register. If these operations are performed, an accident may occur due to an incorrect output or malfunction.
-

[Design Precautions]

CAUTION

- 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.
-

[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 a module. Failure to do so may result in electric shock or cause the module to fail or malfunction.
-

[Installation Precautions]

CAUTION

- Use the module in an environment that meets the general specifications in the user's manual for the module. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
 - Do not directly touch any conductive parts and electronic components of the module. Doing so can cause malfunction or failure of the module.
 - Securely connect the cable connectors. Poor contact may cause malfunction.
 - After the first use of the product, do not connect/remove the connector more than 50 times (IEC 61131-2/JIS B 3502 compliant). Exceeding the limit may cause malfunction.
-

[Wiring Precautions]

WARNING

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

[Wiring Precautions]

CAUTION

- Individually ground the FG terminal of the programmable controller with a ground resistance of 100 Ω or less. Failure to do so may result in electric shock or malfunction.
 - Check the rated voltage and terminal 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 a fire or failure.
 - When wiring, shield the module using a cover or similar means to prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction. Remove the shield for heat dissipation before operating the system.
 - Place the cables in a duct or clamp them. If not, dangling cables may swing or inadvertently be pulled, resulting in malfunction or damage to modules or cables. In addition, the weight of the cables may put stress on modules in an environment of strong vibrations and shocks.
 - Do not install the 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.
 - 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.
 - When an overcurrent caused by an error of an external device or a failure of the programmable controller flows for a long time, it may cause smoke and fire. To prevent this, configure an external safety circuit, such as a fuse.
 - Mitsubishi Electric programmable controllers must be installed in control panels. Wiring and replacement of a module must be performed by qualified maintenance personnel with knowledge of protection against electric shock. For wiring, refer to "INSTALLATION AND WIRING" in the user's manual.
-

[Startup and Maintenance Precautions]

WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
 - Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal block screws or the connector screws. Failure to do so may cause the module to fail or malfunction.
-

[Startup and Maintenance Precautions]

CAUTION

- Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.
 - Do not drop or apply strong shock to the module. Doing so may damage the module.
 - Use any radio communication device such as a cellular phone or PHS (Personal Handy-phone System) 25cm or more away from wiring as well as 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 a module. Failure to do so may cause the module to fail or malfunction.
 - After the first use of the product, do not connect/remove the terminal block more than 50 times (IEC 61131-2/JIS B 3502 compliant). Exceeding the limit may cause malfunction.
 - After the first use of the product, do not connect/remove the connector more than 50 times (IEC 61131-2/JIS B 3502 compliant). Exceeding the limit may cause malfunction.
 - Before handling the module or connection cables, touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.
 - 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.
-

[Disposal Precautions]

CAUTION

- When disposing of this product, treat it as industrial waste.
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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.

COMPLIANCE WITH EMC AND LOW VOLTAGE DIRECTIVES

Method of ensuring compliance

To ensure that Mitsubishi Electric programmable controllers maintain the EMC and Low Voltage Directives or other regulations when incorporated into other machinery or equipment, certain measures may be necessary. Please refer to one of the following manuals.

- User's manual for the CPU module or head module used
- Safety Guidelines (This manual is included with the CPU module, base unit, or head module.)

Certification marks on the side of the programmable controller indicate compliance with the relevant regulations.

Additional measures

To ensure that this product maintains EMC and Low Voltage Directives, please refer to the following.

☞ Page 281 EMC and Low Voltage Directives

INTRODUCTION

Thank you for purchasing the CC-Link IE TSN-CC-Link IE Field Network bridge module.

This manual describes the procedures, system configuration, parameter settings, 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 relevant product to handle the product correctly.

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

Note that the menu names and operating procedures may differ depending on an operating system in use and its version.

When reading this manual, replace the names and procedures with the applicable ones as necessary.

Relevant product

NZ2GN-GFB



Unless otherwise specified, this manual provides program examples in which the remote I/O signals and remote registers are assigned to the NZ2GN-GFB as follows.

- Remote input signal: RX0 to RX2F
- Remote output signal: RY0 to RY2F
- Remote register: RWr0 to RWr3F
- Remote register: RWw0 to RWw3F

For the assignment of remote I/O signals and remote registers, refer to the following.

Page 109 Program Examples

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RELEVANT MANUALS

The following manuals are relevant to this product.

Manual name [manual number]	Description
CC-Link IE TSN—CC-Link IE Field Network Bridge Module User's Manual [SH-082571ENG] (this manual)	Specifications, procedures before operation, system configuration, wiring, parameter settings, functions, communication examples, troubleshooting, remote I/O signals, remote register, and remote buffer memory of the NZ2GN-GFB
MELSEC iQ-R CC-Link IE TSN User's Manual (Startup) [SH-082127ENG]	Specifications, procedures before operation, system configuration, wiring, and communication examples of CC-Link IE TSN
MELSEC iQ-R CC-Link IE TSN User's Manual (Application) [SH-082129ENG]	Functions, parameter settings, troubleshooting, I/O signals, and buffer memory of CC-Link IE TSN
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 CC-Link IE Field Network User's Manual (Application) [SH-081259ENG]	Functions, parameter settings, programming, troubleshooting, I/O signals, and buffer memory of CC-Link IE Field Network
GX Works3 Operating Manual [SH-081215ENG]	System configuration, parameter settings, and online operations of GX Works3
SLMP Reference Manual [SH-080956ENG]	A protocol used to access an SLMP-compatible device from an external device (such as a personal computer or HMI (Human Machine Interface)) or an SLMP-compatible module (such as the Ethernet-equipped module or modules on CC-Link IE TSN)

TERMS

Unless otherwise specified, this manual uses the following terms.

Term	Description
Baton pass	A data transmission method by which transmission right (token) is passed around the network.
CC-Link IE TSN Class	A group of devices and industrial switches compatible with CC-Link IE TSN, ranked according to the functions and performance by the CC-Link Partner Association. For CC-Link IE TSN Class, refer to the CC-Link IE TSN Installation Manual (BAP-C3007ENG-001) published by the CC-Link Partner Association.
CC-Link IE TSN Protocol version 1.0	This protocol is used to perform communications by using the time sharing method defined by IEEE 802.1AS or IEEE 1588 for time synchronization.
CC-Link IE TSN Protocol version 2.0	This protocol is used to perform communications by using the time sharing method defined by IEEE 802.1AS and time-managed polling method for time synchronization.
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.
Cyclic transmission	A function by which data are periodically exchanged among stations on the same network using link devices.
Dedicated instruction	An instruction that simplifies programming for using functions of intelligent function modules
Device station	Stations other than a master station (such as a local station, a remote station, and an intelligent device station)
Disconnection	A process of stopping data link if a data link error occurs
Engineering tool	A tool used for setting up programmable controllers, programming, debugging, and maintenance
Intelligent device station	A station that exchanges I/O signals (bit data) and I/O data (word data) with the master station by cyclic transmission. This station responds to a transient transmission request from another station and also issues a transient transmission request to another station.
Link device	A device (such as RX, RY, RWr, or RWw) in a module
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.
Local station	A station that performs cyclic transmission and transient transmission with the master station and other local stations
Master operating station	A station that controls the entire system in the network where a master station and a submaster station are connected. Only one master operating station can be used in a network.
Master station	A station that controls the entire network. This station can perform cyclic transmission and transient transmission with all stations. Only one master station can be used in a network.
Multicast filter	A filter function that selects whether to send cyclic data of multicast mode received by the own station to the subsequent stations. Setting parameters for this function are not required because the master station automatically sets the parameters according to the system configuration.
Multicast mode	A communication mode used to send cyclic data to multiple stations
Relay station	A station in which multiple network modules are mounted on one programmable controller to relay data link to other stations
Remote buffer memory	Buffer memory in a remote station, intelligent device station, and other stations
Remote device station	A station that exchanges I/O signals (bit data) and I/O data (word data) with the master station by cyclic transmission. This station responds to a transient transmission request from another station.
Remote I/O station	A station that exchanges I/O signals (bit data) with the master station by cyclic transmission
Remote station	A station that exchanges I/O signals (bit data) and I/O data (word data) with another station by cyclic transmission. This station can perform transient transmission.
Reserved station	A station reserved for future use. This station is not actually connected, but counted as a connected station.
Return	A process of restarting data link when a station recovers from an error
Routing	A process of selecting paths for communication with other networks. There are two types of routing: dynamic routing that auto-selects the communication paths, and static routing where any communication paths can be set.
SLMP	SeamLess Message Protocol. This protocol is used to access an SLMP-compatible device or a programmable controller connected to an SLMP-compatible device from an external device.
Submaster operating station	A station that monitors the status of a master operating station in the network where a master station and a submaster station are connected. Only one submaster operating station can be used in a network.
Submaster station	A station that serves as a master station to control the entire network if the master station is disconnected. Only one submaster station can be used in a network.
Transient transmission	A function of communication with another station, which is used when requested by a dedicated instruction or the engineering tool.
Unicast mode	A communication mode used to send cyclic data to one station

GENERIC TERMS AND ABBREVIATIONS

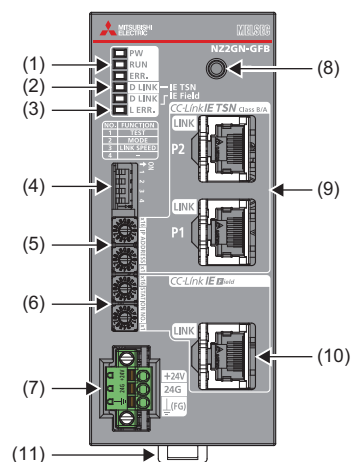
Unless otherwise specified, this manual uses the following generic terms and abbreviations.

Generic term/abbreviation	Description
CC-Link IE	A generic term for the following items: <ul style="list-style-type: none"> • CC-Link IE TSN • CC-Link IE Controller Network • CC-Link IE Field Network
CC-Link IE TSN remote module	A generic term for an A/D converter module, a D/A converter module, an I/O module of CC-Link IE TSN
Data link	A generic term for cyclic transmission and transient transmission
Ethernet device	A generic term for the devices supporting IP communication (such as a personal computer, a vision sensor, and a bar code reader)
REMFR	A generic term for the JP.REMFR and ZP.REMFR
REMFRD	An abbreviation for the JP.REMFRD
REMFRDIP	An abbreviation for the GP.REMFRDIP
REMFRIP	An abbreviation for the GP.REMFRIP
REMT0	A generic term for the JP.REMT0 and ZP.REMT0
REMTOD	An abbreviation for the JP.REMTOD
REMTODIP	An abbreviation for the GP.REMTODIP
REMT0IP	An abbreviation for the GP.REMT0IP
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
RWr	An abbreviation for a remote register of a link device. Word data (16-bit data) input from a device station to the master station. (For some areas in a local station, data are input in the opposite direction.)
RWw	An abbreviation for a remote register of a link device. Word data (16-bit data) output from the master station to a device station (For some areas in a local station, data are output in the opposite direction.)
RX	An abbreviation for remote input of a link device. Bit data input from a device station to the master station (For some areas in a local station, data are input in the opposite direction.)
RY	An abbreviation for remote output of a link device. Bit data output from the master station to a device station (For some areas in a local station, data are output in the opposite direction.)
SB	An abbreviation for a link special relay. Bit data that indicates the operating status and data link status of a module on CC-Link IE.
SEND	A generic term for the JP.SEND and GP.SEND
SLMPSND	A generic term for the J.SLMPSND, JP.SLMPSND, G.SLMPSND, and GP.SLMPSND
SW	An abbreviation for the link special register. Word data that indicates the operating status and data link status of a module on CC-Link IE.

1 PART NAMES

1

The following table indicates the part names of the NZ2GN-GFB.



No.	Name	Description
(1)	PW LED	Indicates the power status of the NZ2GN-GFB. On: Power-on Off: Power-off
	RUN LED	Indicates the operation status of the NZ2GN-GFB. On: Normal operation Flashing: Unit test mode Off: Major error
	ERR. LED	Indicates the error status of the NZ2GN-GFB. On: Major/minor error occurring, or searching for error in all CC-Link IE Field Network stations ^{*1} Flashing (500ms interval): Searching for data link faulty stations in CC-Link IE Field Network Flashing (200ms interval): Major/moderate error occurring ^{*1} Off: Normal operation
(2)	D LINK LED (CC-Link IE TSN)	Indicates the CC-Link IE TSN data link status. On: Cyclic transmission being performed Off: Cyclic transmission stopped Off: Disconnected
(3)	D LINK LED (CC-Link IE Field)	Indicates the CC-Link IE Field Network data link status. On: Data link in progress (cyclic transmission being performed) Flashing: Data link in progress (cyclic transmission stopped) Off: Data link not performed (disconnected)
	L ERR. LED	Indicates the CC-Link IE Field Network received data and link error status. On: Abnormal data received or loopback being performed Off: Normal data received and loopback not performed
(4)	Function setting switch	This switch sets the functions of the NZ2GN-GFB. (☞ Page 30 Function setting switch setting)
(5)	CC-Link IE TSN IP address setting switch	Sets the IP address (fourth octet) of CC-Link IE TSN. (☞ Page 27 Settings for CC-Link IE TSN IP address setting switch)
(6)	CC-Link IE Field Network station number setting switch	Sets the station number CC-Link IE Field Network. (☞ Page 29 Settings for CC-Link IE Field Network station number setting switch)
(7)	Terminal block for module power supply and FG	A terminal block to connect the module power supply (24VDC) and FG.
(8)	Reset switch	Resets the NZ2GN-GFB.
(9)	CC-Link IE TSN communication connector (P1 and P2)	Ports for CC-Link IE TSN connection. (RJ45 connector) Connect an Ethernet cable. (☞ Page 40 Wiring of Ethernet Cable) There is no restrictions on the connection order of P1 and P2.
	P1 LINK LED	Indicates the PORT1 link status of CC-Link IE TSN. On: Link-up Off: Link-down
	P2 LINK LED	Indicates the PORT2 link status of CC-Link IE TSN. On: Link-up Off: Link-down

No.	Name	Description
(10)	CC-Link IE Field Network communication connector	This port is to connect to CC-Link IE Field Network. (RJ45 connector) Connect an Ethernet cable. (Page 40 Wiring of Ethernet Cable)
	LINK LED	Indicates the CC-Link IE Field Network link status. On: Link-up Off: Link-down
(11)	DIN rail hook	This hook mounts the NZ2GN-GFB on a DIN rail.

*1 An error status can be determined by the on/off status of RUN LED and ERR. LED. (Page 14 NZ2GN-GFB status and LED status)

NZ2GN-GFB status and LED status

The following table lists the correspondence between the NZ2GN-GFB status and the LED status.

NZ2GN-GFB status		LED status				
		RUN LED	ERR. LED	D LINK LED (CC-Link IE TSN)	D LINK LED (CC-Link IE Field)	L ERR. LED
CC-Link IE TSN	Cyclic transmission in progress	On	—	On	—	—
	Disconnected	On	—	Off	—	—
	Reserved station setting in progress	On	—	Flashing	—	—
	Cyclic transmission stopped	On	—	Flashing	—	—
	Network initial setting in progress ^{*1}	On	—	Flashing	—	—
CC-Link IE Field Network	Cyclic transmission in progress	On	—	—	On	—
	Disconnected	On	—	—	Off	—
	Cyclic transmission stopped	On	—	—	Flashing	—
	Searching for error in all stations	On	On	—	Off	—
	Searching for data link faulty stations	On	Flashing	—	—	—
	Reserved station setting in progress ^{*2}	On	—	—	Flashing	—
	Connecting the master station set for ring topology ^{*2}	On	—	—	—	On
	Receiving abnormal data	On	—	—	—	On
Error	Major error	Off	On or flashing	—	—	—
	Moderate error	On	Flashing	—	—	—
	Minor error	On	On	—	—	—
Unit test	In progress	Flashing	Off	Off	Off	Off
	Normal completion	On	Off	Off	Off	Off
	Abnormal completion	On	On	Off	Off	Off

*1 If the CC-Link IE TSN master station becomes absent during network initialization, the D LINK LED may flash continuously.

*2 This only applies when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

2 SPECIFICATIONS

2.1 General Specifications

The following table lists the general specifications.

Item	Specifications					
Operating ambient temperature	0 to 55°C					
Storage ambient temperature	-25 to 75°C					
Operating ambient humidity	5 to 95%RH, non-condensing					
Storage ambient humidity						
Vibration resistance	—	Frequency	Constant acceleration	Half amplitude	Number of sweeps	Compliant with IEC 61131-2:2007/JIS B 3502:2011
	Under intermittent vibration	5 to 8.4Hz	—	3.5mm	10 times each in X, Y, and Z directions	
		8.4 to 150Hz	9.8m/s ²	—		
	Under continuous vibration	5 to 8.4Hz	—	1.75mm	—	
		8.4 to 150Hz	4.9m/s ²	—		
Shock resistance	Three shocks in each direction per axis, on 3 mutually perpendicular axes (total of 18 shocks)					
Operating atmosphere	No corrosive gases, flammable gases, less conductive dust					
Operating altitude*1	0 to 2000m					
Installation location	Inside a control panel*4					
Overvoltage category*2	II or less					
Pollution degree*3	2 or less					
Equipment class	Class I					

*1 Do not use or store the programmable controller under pressure higher than the atmospheric pressure of altitude 0m. Doing so may cause malfunction.

When using the programmable controller under pressure, please consult your local Mitsubishi representative.

*2 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises.

Category II applies to equipment for which electrical power is supplied from fixed facilities.

The surge voltage withstand level for the equipment with the rated voltage of 300V or less is 2500V.

*3 This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. In pollution degree 2, only non-conductive pollution occurs. A temporary conductivity caused by an accidental condensation may also occur occasionally.

*4 The equipment can also be used outside the control panel, provided that environmental conditions such as operating ambient temperature and operating ambient humidity are met.

Point

For compliance with the EMC Directive, refer to the following:

➡ Page 281 EMC and Low Voltage Directives

2.2 Performance Specifications

The following table shows the performance specifications of the NZ2GN-GFB.

Classification	Item		Specifications
CC-Link IE TSN	Station type		Remote station
	Maximum number of link points	Remote input (RX)	16K points (16384 points, 2K bytes)
		Remote output (RY)	16K points (16384 points, 2K bytes)
		Remote register (RWw)	2080 points (4160 bytes)
		Remote register (RWr)	2080 points (4160 bytes)
	CC-Link IE TSN Class		<ul style="list-style-type: none"> • CC-Link IE TSN Class B • CC-Link IE TSN Class A
	CC-Link IE TSN Protocol version	CC-Link IE TSN Class B	<ul style="list-style-type: none"> • CC-Link IE TSN Protocol version 2.0 • CC-Link IE TSN Protocol version 1.0
		CC-Link IE TSN Class A	CC-Link IE TSN Protocol version 2.0
	Maximum response time for time-managed polling (for CC-Link IE TSN Class A)* ¹		8192μs
	Network topology		Line topology, star topology, mix of line and star topologies, and ring topology* ²
	Multicast filter		Available
CC-Link IE Field Network	Station type		Master station and local stations
	Maximum number of link points (1 network)	Remote input (RX)	16K points (16384 points, 2K bytes)
		Remote output (RY)	16K points (16384 points, 2K bytes)
		Remote register (RWw)	2K points (2048 points, 4K bytes)
		Remote register (RWr)	2K points (2048 points, 4K bytes)
	Maximum number of link points (1 station)	Remote input (RX)	Master station: 16K points (16384 points, 2K bytes) Local station: 2K points (2048 points, 256 bytes)
		Remote output (RY)	Master station: 16K points (16384 points, 2K bytes) Local station: 2K points (2048 points, 256 bytes)
		Remote register (RWw)	Master station: 2K points (2048 points, 4K bytes) Local station: 1K points (1024 points, 2K bytes)* ³
		Remote register (RWr)	Master station: 2K points (2048 points, 4K bytes) Local station: 1K points (1024 points, 2K bytes)* ³
	Maximum number of connectable stations (for master station)		32 stations
	Network topology		Line topology, star topology, and mix of line and star topologies
Common	Protection degree		IP2X
	External interface	Communication part	RJ45 connector
		Module power supply part	Terminal block for module power supply and FG (2-piece spring clamp terminal block)
	Applicable wire size	For power supply	Stranded wire: 0.3 to 1.5mm ² (22 to 16 AWG), terminal slot size: 2.4mm × 1.5mm
	Applicable solderless terminal	Terminal block for module power supply and FG* ⁴	 Page 36 Wiring of Terminal Block for Module Power Supply and FG
	Module power supply* ⁵	Voltage	24VDC (ripple rate: 5% or less) (Allowable voltage range: 20.4 to 28.8VDC)
		Current	310mA
	Weight		0.26kg

*1 For details on time-managed polling, refer to the following.

 User's manual for the master station used

*2 Ring topology cannot be used when the CC-Link IE TSN Class is CC-Link IE TSN Class A.

*3 256 points (512 bytes) for high-speed mode.

*4 Only one wire can be inserted into a wire insertion opening. Multiple wires cannot be connected to a terminal. Connecting two or more wires may cause a poor contact.

*5 Power this equipment from a power supply that meets SELV (Safety Extra Low Voltage) and meets LIM (Limited Energy Circuit) or UL 1310 Class 2.

2.3 Ethernet Communication Specifications

The following table shows the Ethernet communication specifications for the NZ2GN-GFB.

CC-Link IE TSN

Item		Description
Data transmission speed		1Gbps or 100Mbps ^{*1}
Communication mode	1000BASE-T	Full-duplex
	100BASE-TX	
Interface		RJ45 connector (AUTO MDI/MDI-X)
Maximum frame size		1518 bytes
Maximum segment length		100m ^{*2}
Number of cascade connections	1000BASE-T	Consult the manufacturer of the industrial switch used.
	100BASE-TX	
IP version		IPv4
SNMP ^{*3}	Version	v2c
	Supported MIB	MIB-II (RFC1213)

*1 The data transmission speed can be switched by using the communication speed setting function.

*2 For the length between industrial switches, consult the manufacturer of the industrial switch used.

*3 This protocol can be used for the firmware version "03" or later.

CC-Link IE Field Network

Item		Description
Data transmission speed		1Gbps
Communication mode	1000BASE-T	Full-duplex
Interface		RJ45 connector (AUTO MDI/MDI-X)
Maximum segment length		100m (complies with ANSI/TIA/EIA-568-B (Category 5e))
Number of cascade connections		Maximum 20 modules

2.4 Function List

The following table shows the functions of the NZ2GN-GFB. For details on these functions, refer to the following.

☞ Page 70 FUNCTIONS

Cyclic transmission

This function allows periodic data communications among stations on the network using link devices.

Item	Description	Reference
Communications using RX, RY, RWr, and RWW	Allows I/O data to be exchanged in units of bits and in units of words between the master station and another station.	Page 70 Communications using RX, RY, RWr, and RWW
I/O maintenance settings	Sets whether to hold or clear the data to be transmitted from CC-Link IE TSN to CC-Link IE Field Network or vice versa, when an error occurs in the NZ2GN-GFB or the CC-Link IE TSN master station.	Page 75 I/O maintenance settings
Cyclic transmission stop and restart	Allows users to select a CC-Link IE Field Network connected station and stop the cyclic transmission during debugging and other operations. (Data will not be received from a device station nor transmitted from own station.) Also, the stopped cyclic transmission is restarted.	Page 79 Cyclic transmission stop and restart

Transient transmission

Data communication can be performed at any time.

Item	Description	Reference
Communications using a dedicated instruction	Data communication is performed with the NZ2GN-GFB using dedicated instructions at any time. Relay can also be performed across CC-Link IE TSN and CC-Link IE Field Network.	Page 80 Communications using a dedicated instruction
Communications using the SLMP	Data communication is performed with the NZ2GN-GFB using SLMP. Relay can also be performed across CC-Link IE TSN and CC-Link IE Field Network.	Page 87 Communications using the SLMP
Communications using an engineering tool	CC-Link IE TSN and CC-Link IE Field Network stations can be accessed seamlessly with the NZ2GN-GFB as a relay using an engineering tool.	Page 88 Communications using the engineering tool

RAS

RAS stands for Reliability, Availability, and Serviceability. This function improves overall usability of automated equipment.

Item	Description	Reference
Module power supply voltage drop detection function	Detects a voltage drop of the module power supply.	Page 90 Module power supply voltage drop detection
Device station disconnection	The data link of the CC-Link IE Field Network device station where an error occurred is stopped, and the data link continues only for stations that are operating normally.	Page 91 Device station disconnection
Automatic return	The data link is automatically restarted when the CC-Link IE Field Network device station that was disconnected due to an error becomes normal again.	Page 91 Automatic return
Master station duplication detection	If one network has multiple CC-Link IE Field Network master stations, an overlap error is detected.	Page 92 Master station duplication detection
Station number duplication detection	If one network has CC-Link IE Field Network device stations with the same station number, a duplication error is detected.	Page 93 Station number duplication detection

Troubleshooting

This function checks the status of modules and networks by executing diagnostics and operation tests using the engineering tool.

Item	Description	Reference
Unit test	Checks the module hardware when communication using the NZ2GN-GFB is unstable.	Page 152 Unit Test
CC-Link IE TSN diagnostics	Monitors the status of CC-Link IE TSN. The network maps, stations where data link is not operating, selected station communications status monitor and so on are displayed on the engineering tool.	Page 127 CC-Link IE TSN diagnostics
CC-Link IE Field Network diagnostics	Monitors the status of CC-Link IE Field Network. The network maps, stations where data link is not operating, selected station communications status monitor and so on are displayed on the engineering tool.	Page 129 CC-Link IE Field Network diagnostics

Others

Item	Description	Reference
Communication speed setting function	Sets the communication speed of P1 and P2 on CC-Link IE TSN.	Page 94 Communication speed setting function
CC-Link IE TSN Class setting function	Sets the CC-Link IE TSN Class of the NZ2GN-GFB as CC-Link IE TSN Class A or B of CC-Link IE TSN Protocol version 2.0. For differences between system configurations where the I/O module with CC-Link IE TSN Class B or CC-Link IE TSN Class A can be incorporated, refer to the following.  User's manual for the master station used	Page 95 CC-Link IE TSN Class setting function
Reserved station setting	Sets a CC-Link IE Field Network device station as a reserved station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. Reserved stations are included as stations in the network for future extension and set in the parameters. These stations are not regarded as faulty stations even though they are not connected to an actual network.	Page 98 Reserved station setting
Error invalid station setting	Prevents a CC-Link IE Field Network device station from being detected as a faulty station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. It is also set when a device station is to be replaced during communication.	Page 99 Error invalid station setting
SNMP agent compatibility	Operates as an SNMP agent. The NZ2GN-GFB can be monitored from the Ethernet device that operates as the SNMP manager.	Page 100 SNMP agent compatibility
Firmware update function	Updates the firmware of the NZ2GN-GFB via CC-Link IE TSN.	Page 102 Firmware update function

3 PROCEDURES BEFORE OPERATION

This chapter describes the procedures before operation.

1. Setting switches

Set the following switches.

☞ Page 27 Settings for CC-Link IE TSN IP address setting switch

☞ Page 29 Settings for CC-Link IE Field Network station number setting switch

☞ Page 30 Function setting switch setting

2. Mounting the module

Mount the NZ2GN-GFB on a DIN rail.

☞ Page 34 Installation

3. Wiring

Connect the power supply and Ethernet cables to the NZ2GN-GFB.

☞ Page 36 Wiring of Terminal Block for Module Power Supply and FG

☞ Page 40 Wiring of Ethernet Cable

4. Parameter settings

Set each parameter.

Item	Parameter to be set	Reference
When the NZ2GN-GFB is used as the CC-Link IE Field Network master station	CC-Link IE TSN parameter settings	☞ Page 43 Parameter Settings for CC-Link IE TSN
	Module parameter setting	☞ Page 48 Module Parameter Setting
	Parameter settings for CC-Link IE Field Network device station	☞ Page 67 Parameter Settings for CC-Link IE Field Network Device Station
When the NZ2GN-GFB is used as the CC-Link IE Field Network local station	CC-Link IE TSN parameter settings	☞ Page 43 Parameter Settings for CC-Link IE TSN
	Parameter settings for CC-Link IE Field Network	☞ Page 46 Parameter Settings for CC-Link IE Field Network
	Module parameter setting	☞ Page 48 Module Parameter Setting

5. Programming

Create a program.

☞ Page 109 Program Examples

Point

To replace the module, follow the procedure described below:

- When the parameters are set by the engineering tool, export the parameters.
- Power off the NZ2GN-GFB and remove it.
- Prepare a new NZ2GN-GFB and perform step 1 to step 4. At this time, the settings on each switch must be the same as the settings for the NZ2GN-GFB before replacement.
- When the parameters are set by the engineering tool, import the parameters.
- Check that the RUN LED and D LINK LED of the NZ2GN-GFB are on and the ERR. LED is off before restarting control operation.

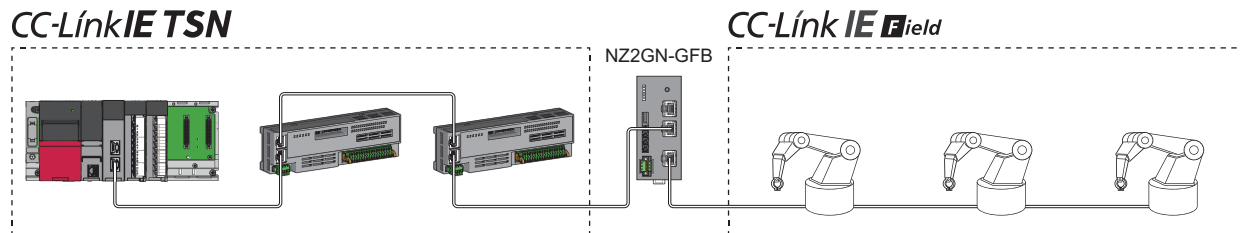
4 SYSTEM CONFIGURATION

This section describes the system configuration for the NZ2GN-GFB.

4.1 Network Configuration

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, devices connected to CC-Link IE Field Network are controlled from CC-Link IE TSN.

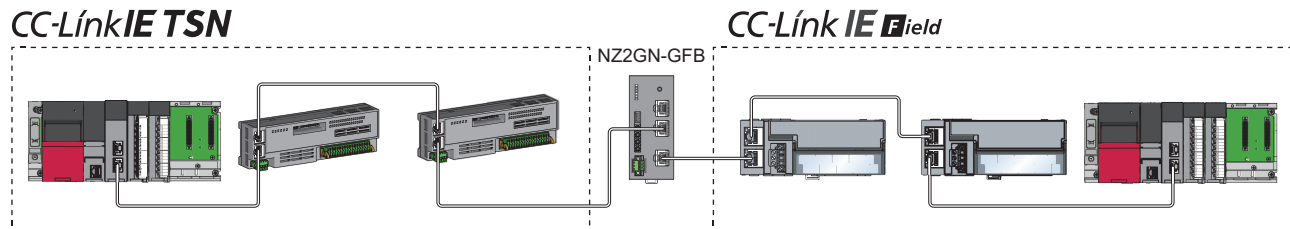


Point

- Up to 32 device stations can be connected to CC-Link IE Field Network.
- Submaster stations cannot be connected to CC-Link IE Field Network.
- Redundant device stations cannot be connected to CC-Link IE Field Network.

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, communication can be made between personal computers of the CC-Link IE TSN master station and the CC-Link IE Field Network master station.



4.2 Network Topology

The CC-Link IE TSN and CC-Link IE Field Network are configured using Ethernet cables.

CC-Link IE TSN

The connection on the CC-Link IE TSN side can be configured as follows.

- Line topology
- Ring topology
- Star topology (industrial switches are required)
- Mixture of line topology and star topology (industrial switches are required)

Point

A ring topology can be used only when the CC-Link IE TSN Class setting of the master station is B.

If a ring topology is used with an NZ2GN-GFB module that has CC-Link IE TSN Class A, data link cannot be performed.

CC-Link IE Field Network

The connection on the CC-Link IE Field Network side can be configured as follows.

- Line topology
- Star topology (industrial switches are required)
- Mixture of line topology and star topology (industrial switches are required)

Point

- For a line topology, connection can only be made at the end of the network.
- CC-Link IE Field Network only has one port, so a ring topology cannot be used.
- The station number has no bearing on the order of cable connection. (It can be connected if it does not follow the order of the station number.)
- Do not connect Ethernet devices to industrial switches that can handle 1Gbps used in CC-Link IE Field Network. Doing so may cause the CC-Link IE Field Network master station to time out due to industrial switch frame lag, resulting in disconnection of all stations.

4.3 Applicable Systems

When using the NZ2GN-GFB, use the following products.

Master station

CC-Link IE TSN

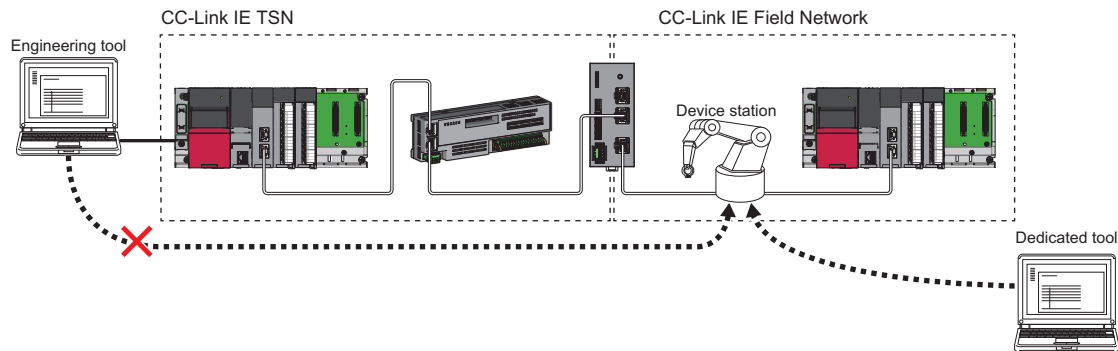
Use the following products as a CC-Link IE TSN master station.

Model name	Firmware version
RJ71GN11-T2	No restriction
RJ71GN11-SX	"04" or later
RJ71GN11-EIP	No restriction
RD78G64, RD78G32, RD78G16, RD78G8, RD78G4	No restriction
RD78GHV, RD78GHW	

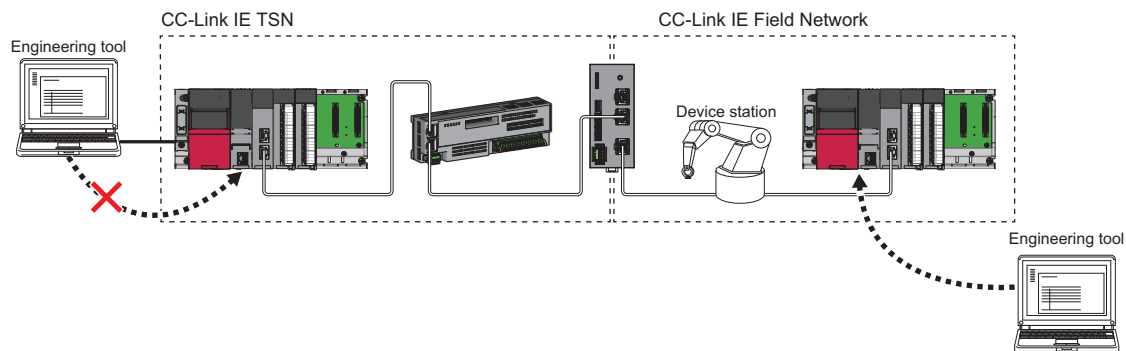
Although the CC-Link IE TSN master stations shown in the website of CC-Link Partner Association (www.cc-link.org) can be used for the models that are not shown above, some functions are restricted by the engineering tool.

■Function restrictions by the engineering tool

- The parameter processing and command execution of device stations cannot be performed from an engineering tool connected to the CC-Link IE TSN master station to the CC-Link IE Field Network device stations. Use a method specific to the CC-Link IE Field Network device station used, such as a dedicated tool or hardware switch.



- The CC-Link IE Field Network diagnostics cannot be performed from an engineering tool connected to the CPU modules on the CC-Link IE TSN master station or the local stations. Perform the operation from the engineering tool connected to the master station or local stations on the CC-Link IE Field Network. (CC-Link IE TSN diagnostics is available.)



CC-Link IE Field Network

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, use the following products as the CC-Link IE Field Network master station.

Model name	First 5 digits of the serial No.
R120ENCPU, R32ENCPU, R16ENCPU, R08ENCPU, R04ENCPU	No restriction
RJ71GF11-T2	
RJ71EN71	
RD77GF32, RD77GF16, RD77GF8, RD77GF4	
QJ71GF11-T2	The first 5 digits of the serial No. is "16012" or higher.*1
LJ71GF11-T2	

*1 If the first 5 digits of the serial No. is lower than "16012", refer to the following.

☞ Page 288 Connecting with modules of the MELSEC-Q/L series

The master station information shown above is current as of the date of this manual's publication. For the latest information, refer to the CC-Link Partner Association website.

www.cc-link.org

Ethernet cable

For the Ethernet cable specifications, refer to the following.

☞ Page 40 Wiring product

Industrial switch

For the models and usage methods of the industrial switches, refer to the CC-Link Partner Association website (www.cc-link.org).

Point

Do not connect Ethernet devices that can transmit at a speed of 100Mbps or 10Mbps or devices that can transmit at a speed of 1Gbps but not compatible with CC-Link IE Field Network to an industrial switch (capable of handling 1Gbps) that is being used on CC-Link IE Field Network. Doing so may cause the system to detect an error in all stations of the CC-Link IE Field Network master station, and data link to stop.

Applicable software package

An engineering tool with a supported version is required for setting parameters and performing diagnostics in the NZ2GN-GFB.

Engineering tool	Model name	Supported version
GX Works3	SW□DND-GXW3	Version 1.095Z or later

If the engineering tool version is not compatible with the CC-Link IE TSN master station to be used, some functions are restricted. (☞ Page 24 Function restrictions by the engineering tool)

CC-Link IE TSN master station to be used	Engineering tool	Supported version
RJ71GN11-T2	GX Works3	Version 1.095Z or later
RJ71GN11-T2 (when the MELSEC MX Controller MX-R Model is used as the CPU module)		Version 1.125F or later
RJ71GN11-SX		
RJ71GN11-EIP		
RD78G64, RD78G32, RD78G16, RD78G8, RD78G4		Version 1.095Z or later
RD78GHV, RD78GHW		

Always update the engineering tool to the latest version.

Applicable profile

A profile is required for using the NZ2GN-GFB in the "CC-Link IE TSN Configuration" window of GX Works3.

Firmware version of the NZ2GN-GFB	Profile version
"01" or later	"00" or later

The profile is a setting file that stores information required for the start-up, operation, and maintenance of devices supporting the CC-Link family.

Once the profile is registered to the engineering tool of the master station, a module is added to "Module List" of the "CC-Link IE TSN Configuration" window. For the profile registration, refer to the following.

☞ GX Works3 Operating Manual

For the latest version of the engineering tool and the profile of the NZ2GN-GFB, consult your local Mitsubishi representative.

5 INSTALLATION AND WIRING

This chapter describes the installation and wiring of the NZ2GN-GFB.

5.1 Setting Switch

Settings for CC-Link IE TSN IP address setting switch

Set the fourth octet of the CC-Link IE TSN IP address using the CC-Link IE TSN IP address setting switches on the front of the NZ2GN-GFB. The setting of CC-Link IE TSN IP address setting switch is enabled when the NZ2GN-GFB is powered on, so set this function when the module is powered off.

Point

When operating the CC-Link IE TSN IP address setting switch, use a flathead screwdriver with a blade width of 2.5mm or less.

5

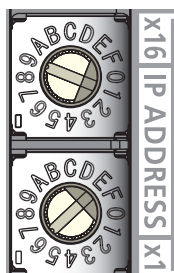
Setting method

Set the fourth octet (decimal) of the IP address using the CC-Link IE TSN IP address setting switch x1 and x16 (hexadecimal). A list of x1 and x16 combinations is as follows.

		x1															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
x16	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
	4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
	5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
	6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
	7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
	8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
	9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
	A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
	B	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
	C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
	D	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
	E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
	F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Ex.

If set to 30



Setting range

Set the value from 1 to 254.

When the value from 1 to 254 is set, the result is as follows.

- The first to third octets of the IP address: The first to third octets from the IP address of the CC-Link IE TSN master station are used for operation. The fourth octet uses the CC-Link IE TSN IP address setting switch value for operation.
- Subnet mask: The subnet mask of the CC-Link IE TSN master station is used for operation.

If a value other than 1 to 254 is set, the following will occur.

- When 0 is set, the IP address saved in the non-volatile memory and the subnet mask of the CC-Link IE TSN master station are used for operation.
- When 255 is set, an error (error code: 0106H) occurs.

Point

- Do not change the CC-Link IE TSN IP address setting switch when the NZ2GN-GFB is turned on. Doing so causes an error (error code: 0200H) to occur and the ERR. LED to turn on. Return the CC-Link IE TSN IP address setting switch to its previous position and turn on 'Error clear request flag' (RWw0.b10) to clear the error and turn off the ERR. LED.
- When the power is turned on with the CC-Link IE TSN IP address setting switch set to a value in the range of 1 to 254, the IP address is saved in the non-volatile memory when a data link with the CC-Link IE TSN master station is established. As the factory default, 192.168.3.250 is set for the non-volatile memory.
- Set the IP address in a way that the fourth octet is not duplicated in the access range of CC-Link IE TSN. If duplicated, the IP address will be duplicated due to the automatic setting of the first to third octet of the IP address, and data link will not be established.

Restriction

The following IP addresses cannot be used for the NZ2GN-GFB.

- IP addresses whose host addresses are all 0 or 255.
- IP address whose third octet and fourth octet are all 255
- IP address whose range is outside 0.0.0.1 to 223.255.255.254

Precautions

When operating the switch, use a static eliminating product or antistatic driver or touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.

Settings for CC-Link IE Field Network station number setting switch

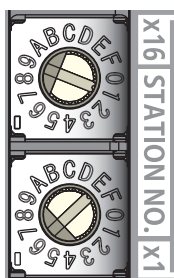
Set the CC-Link IE Field Network station number using the CC-Link IE Field Network station number setting switches on the front of the NZ2GN-GFB. The setting of CC-Link IE Field Network station number setting switch is enabled when the NZ2GN-GFB is powered on, so set this function when the module is powered off.

Point

When operating the CC-Link IE Field Network station number setting switch, use a flathead screwdriver with a blade width of 2.5mm or less.

Setting method

Set the station number using the CC-Link IE Field Network station number setting switch x1 and x16 (hexadecimal).



The setting method is the same as for the CC-Link IE TSN IP address setting switch. (➡ Page 27 Setting method)

Setting range

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Set the station number to 0.

When another value is set, an error (error code: 0113H) occurs.

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Set the station number to 1 to 120.

When a value other than 1 to 120 is set, an error (error code: 0114H) occurs.

Point

- For details on the station type setting of CC-Link IE Field Network of the NZ2GN-GFB, refer to the following.
➡ Page 48 Module Parameter Setting
- Do not change the CC-Link IE Field Network station number setting switch when the NZ2GN-GFB is ON. Doing so causes an error (error code: 0201H) to occur and the ERR. LED to flash. Return the CC-Link IE Field Network station number setting switch to its previous position and turn on 'Error clear request flag' (RWw0.b10) to clear the error and turn off the ERR. LED.
- If the CC-Link IE Field Network station number setting switch is outside the setting range, the NZ2GN-GFB does not perform data link on CC-Link IE Field Network.

Precautions

When operating the switch, use a static eliminating product or antistatic driver or touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.

Function setting switch setting

Set the following functions using the function setting switch on the front of the NZ2GN-GFB.

- Unit test
- CC-Link IE TSN Class setting function
- Communication speed setting function

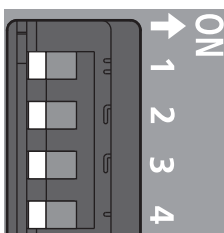
The setting of function setting switch is enabled when the NZ2GN-GFB is powered on, so set each function when the module is powered off.

Point

When operating the function setting switch, use a flathead screwdriver having a blade of 1.2mm or less in width.

Setting method

Set each function with function setting switch 1 to function setting switch 4.



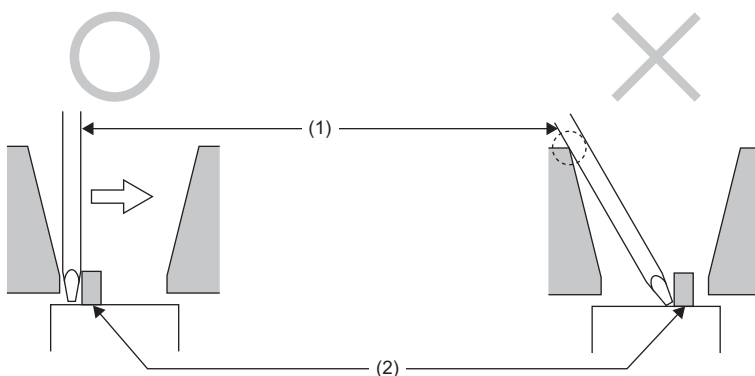
Switch name		Function name	Setting
Function setting switch 1	TEST	Unit test	Turn it off during normal operation. Turn it on when performing unit tests. (Page 152 Unit Test)
Function setting switch 2	MODE	CC-Link IE TSN Class setting function	Sets CC-Link IE TSN Class. (Page 95 CC-Link IE TSN Class setting function)
Function setting switch 3	LINK SPEED	Communication speed setting function	Set the communication speed. (Page 94 Communication speed setting function)
Function setting switch 4	—	Use prohibited	Fix these switches to off.

Point

Do not change any function setting switch while the NZ2GN-GFB is powered on. Doing so causes an error (error code: 0202H to 0205H) to occur and the changes are not applied. Returning the function setting switch to its previous position and turning on 'Error clear request flag' (RWw0.b10) eliminate the error.

Precautions

Slide one function setting switch at a time horizontally. Do not hold the screwdriver at an angle or pivot it off the edge of the case while working a function setting switch, since damage or deformation may result.



- (1) Flathead screwdriver
(2) Function setting switch

5.2 Installation Environment and Installation Position

Installation environment

Installation location

Do not install the NZ2GN-GFB in the following environment:

- Ambient temperature is outside the range from 0 to 55°C;
- Ambient humidity is outside the range from 5 to 95% RH;
- Condensation occurs due to rapid temperature change;
- Corrosive gas or combustible gas is present;
- Conductive powder such as dust and iron powder, oil mist, salinity, or organic solvent is filled;
- The I/O module is exposed to direct sunlight;
- A strong electric field or strong magnetic field is generated; and
- The I/O module is subject to vibration and shock.

Installation surface

Install the NZ2GN-GFB on a flat surface. If the mounting surface is uneven, excessive force will be applied to the printed-circuit board, possibly causing failure.

Point

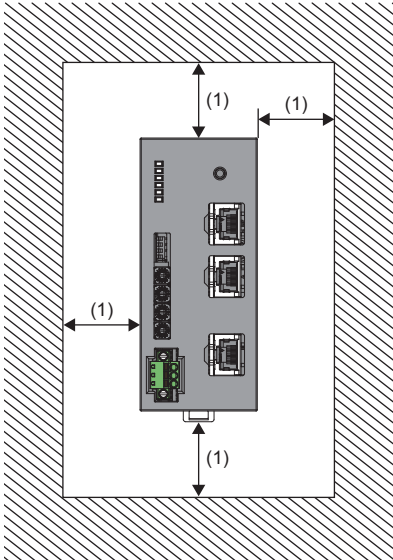
- Do not put oil on the screws used to install or set up wires for the NZ2GN-GFB. Failure to do so may damage the screw.
- Tighten the screws with an applicable screwdriver. Tightening with an inapplicable screwdriver may damage the screws.

Installation position

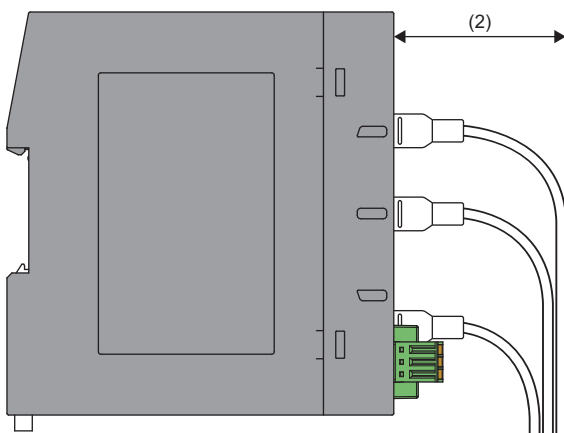
When installing the NZ2GN-GFB in a control panel, provide a clearance of 60mm or more (1) between the module and the sides of the control panel or other parts to ensure good ventilation and facilitate module change. (For the front direction, provide a clearance of 60mm or more (2).)

When installing two or more NZ2GN-GFB and CC-Link IE TSN remote modules next to each other, they can be installed in contact with each other.

- Vertical direction and horizontal direction



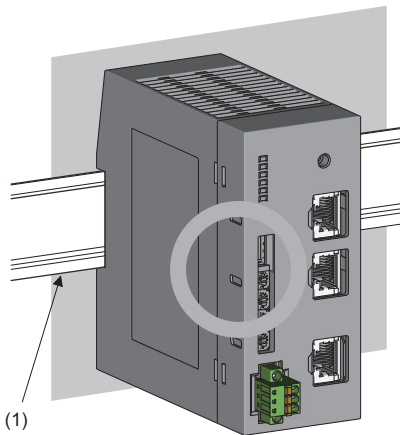
- Front direction



Mounting direction

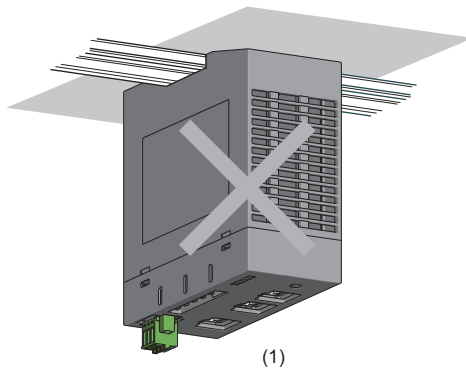
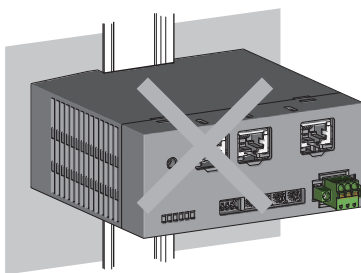
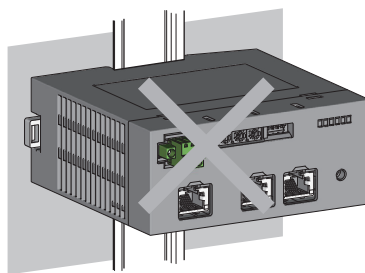
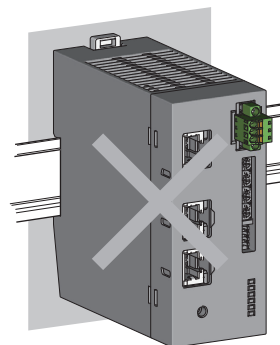
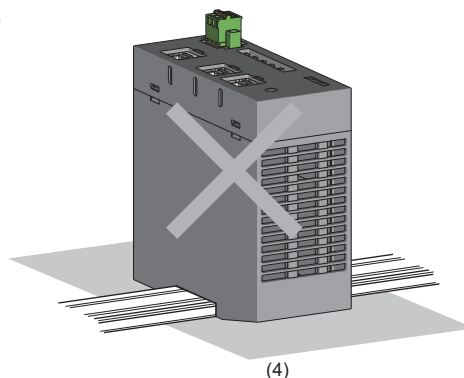
Use a DIN rail to install the NZ2GN-GFB.

The NZ2GN-GFB can only be installed from the front.



(1) DIN rail

Do not place the module in the directions shown below.



(1) Downward installation

(2) Horizontal installation

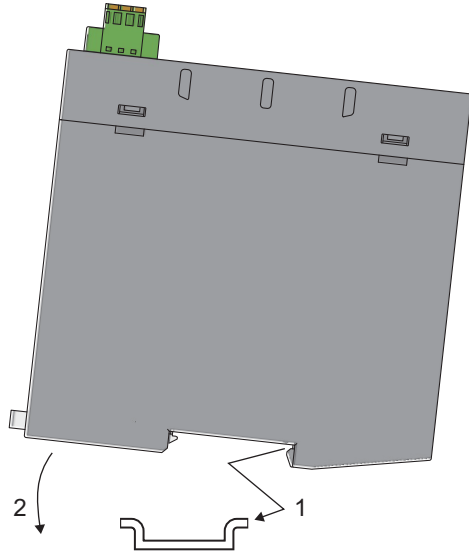
(3) Horizontal installation (upside down)

(4) Upward installation

5.3 Installation

Mounting a module on a DIN rail

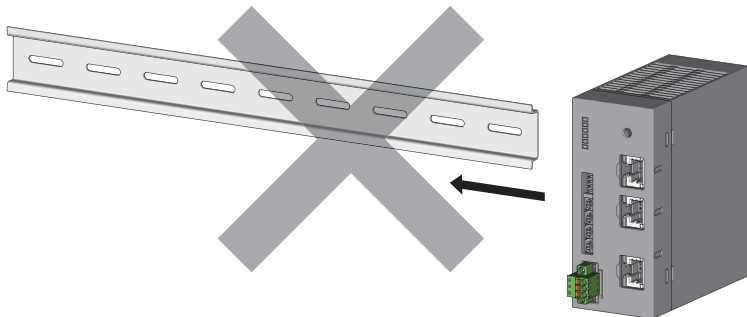
Installation procedure



1. Hang the fixed upper tabs at the bottom of the NZ2GN-GFB on a DIN rail.
2. Push in the DIN rail hooks of the NZ2GN-GFB until they click.

Point

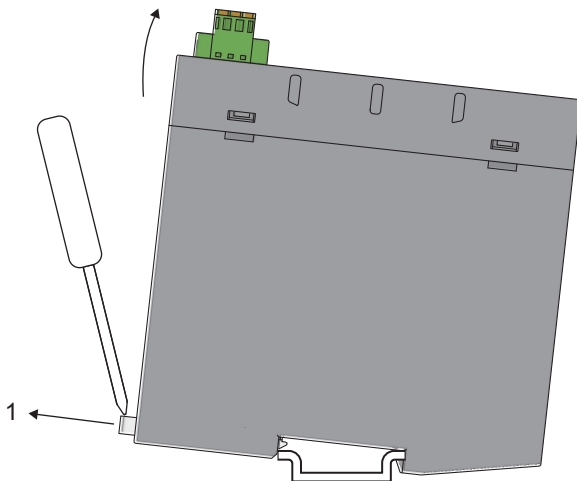
Do not slide modules from the edge of the DIN rail when mounting them. It may damage the NZ2GN-GFB.



Removal procedure

Remove the NZ2GN-GFB from the DIN rail by reversing the above procedure.

1. While pushing down the DIN rail hook with a flathead screwdriver, remove the NZ2GN-GFB from the DIN rail by pulling its lower part toward you.



5

Applicable DIN rail models

Use the following DIN rails that are compliant with IEC 60715/JIS C 2812.

- TH35-7.5Fe
- TH35-7.5Al

Interval between DIN rail mounting screws

Tighten the screws at intervals of 200mm or less.

5.4 Wiring of Terminal Block for Module Power Supply and FG

Tightening torque

Tighten the terminal block mounting screws within the following specified torque range.

Tightening the screws too much may damage the NZ2GN-GFB case.

Screws tightened	Tightening torque range
Terminal block mounting screw (M2.5 screw)	0.2 to 0.3N·m

Wire to be used

The following table describes the wire to be connected to the terminal block for module power supply and FG.

When handling the NZ2GN-GFB as a UL certified product, use the following wire for the wiring to the terminal block.

Wire diameter	Type	Material	Temperature rating	Strip length
22 to 16 AWG	Stranded wire	Copper wire	75°C or more	10mm

Applicable solderless terminal

When using bar solderless terminals, the following are recommended.

Regarding the terminal processing method such as the strip length of wire, follow the specifications of the terminal to be used and use the tools recommended by the solderless terminal manufacturer.

■UL certified products

When handling the NZ2GN-GFB as a UL certified product, use the following UL certified bar solderless terminals.

Product name	Terminal shape	Model	Applicable wire size	Bar solderless terminal tool	Contact
Bar solderless terminal	Ferrule (with insulation sleeve)	AI0.34-10TQ	0.34mm ² (AWG22)	CRIMPFOX6	PHOENIX CONTACT GmbH & Co. KG
		AI0.5-10WH	0.5mm ² (AWG20)		
		AI0.75-10GY	0.75mm ² (AWG18)		
	Ferrule (without insulation sleeve)	A0.5-10	0.5mm ² (AWG20)		
		A0.75-10	0.75mm ² (AWG18)		
		A1-10	1.0mm ² (AWG18)		
		A1.5-10	1.5mm ² (AWG16)		

■Others

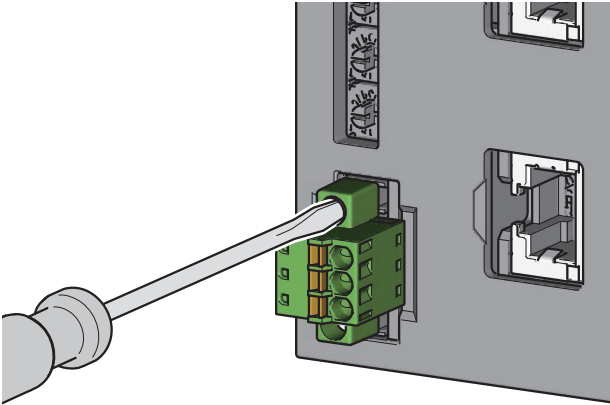
Product name	Terminal shape	Model	Applicable wire size	Bar solderless terminal tool	Contact
Bar solderless terminal	Ferrule (with insulation sleeve)	NF0.5-8, NF0.5-10	0.5mm ² (AWG20)	NH-79A	NICHIFU TERMINAL INDUSTRIES CO., LTD.
		NF0.75-8, NF0.75-10	0.5 to 0.75mm ² (20 to 18 AWG)		

Installing and removing the terminal block

To remove the terminal block, loosen the terminal block mounting screws with a flathead screwdriver.

To install the terminal block, tighten the terminal block mounting screw with a flathead screwdriver.

Failure to secure the terminal block may cause drop, short circuit, or malfunction.



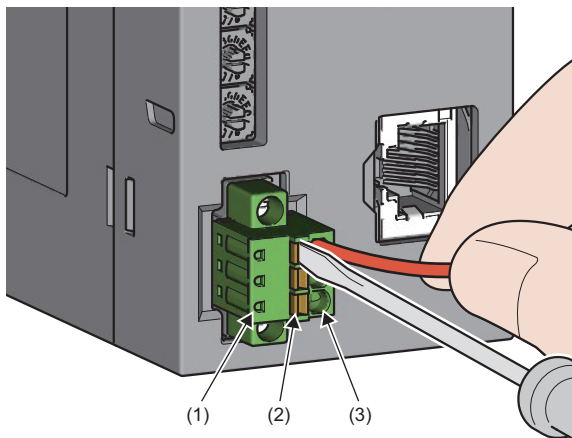
Connecting and disconnecting the cable

To connect the cable, push in the open/close button with a flathead screwdriver, insert the wire into the wire insertion opening, and remove the flathead screwdriver.

When using a bar solderless terminal, insert a wire with the bar solderless terminal into the wire insertion opening and push the wire.

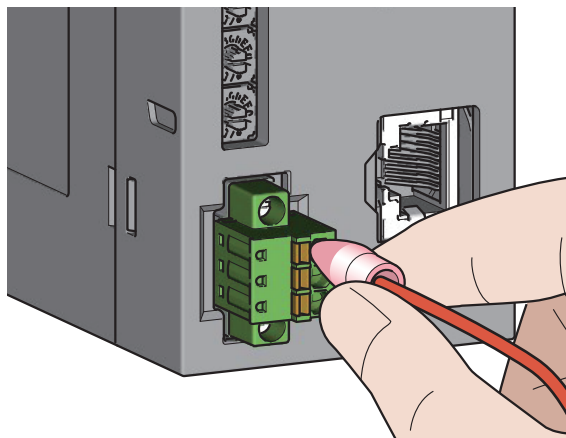
After inserting the wire, pull the wire or its bar solderless terminal lightly to check that the wire is securely clamped.

■Connecting the wire



- (1) Test terminal
- (2) Open/close button
- (3) Wire insertion opening

■Connecting the wire with a bar solderless terminal



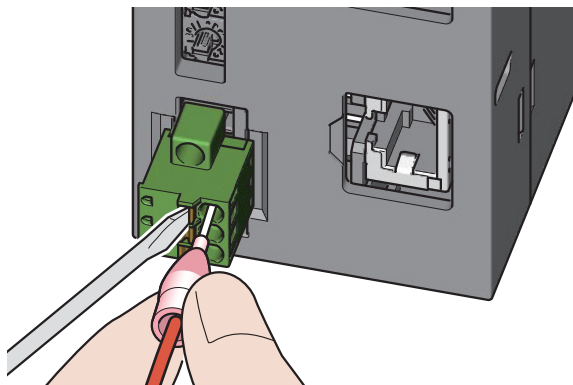
Point

Continuity can be checked with test terminal.

Use the following test plug to check continuity.

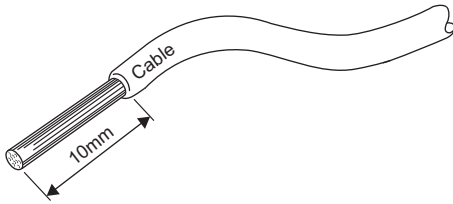
- PHOENIX CONTACT GmbH & Co. KG test plug ($\phi 1.0\text{mm}$): MPS-MT 1-S4-B RD, MPS-MT 1-S

To disconnect the cable, push in the open/close button with a flathead screwdriver. With the button pushed in, pull out the wire or bar solderless terminal.

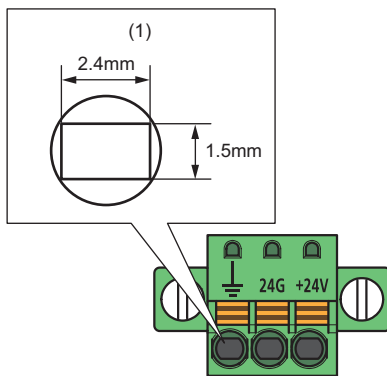


Precautions

- When using a wire (stranded wire), strip off 10mm of the sheath from the wire end.



- When using a bar solderless terminal, follow the strip length of wire in the specifications of the bar solderless terminal. To attach a bar solderless terminal to a wire, use a crimping tool.
- Before inserting a bar solderless terminal into a wire insertion opening (1), check the shape of the opening and the shape of the terminal. Insert the terminal paying attention to the orientation. If a bar solderless terminal larger than wire insertion opening (1) is inserted, the terminal block may be damaged.



5.5 Wiring of Ethernet Cable

Wiring product

Use Ethernet cable that meets the following standards.

■CC-Link IE TSN side

Communication speed	Ethernet cable	Connector	Type
1Gbps	Category 5e or higher, straight cable (shielded, STP)	RJ45 connector	Cable that meets the following standards <ul style="list-style-type: none"> • IEEE 802.3 (1000BASE-T) • ANSI/TIA/EIA-568-B (Category 5e)
100Mbps	Category 5 or higher, straight cable (shielded, STP)		Cable that meets the following standards <ul style="list-style-type: none"> • IEEE 802.3 (100BASE-TX) • ANSI/TIA/EIA-568-B (Category 5)

■CC-Link IE Field Network side

Communication speed	Ethernet cable	Connector	Type
1Gbps	Category 5e or higher, straight cable (double shielded, STP)	RJ45 connector	Cable that meets the following standards <ul style="list-style-type: none"> • IEEE 802.3 (1000BASE-T) • ANSI/TIA/EIA-568-B (Category 5e)

Installation procedure

■CC-Link IE TSN side

1. Power off the power supplies of the NZ2GN-GFB and the external device.
2. Push the Ethernet cable connector into the NZ2GN-GFB until it clicks. Pay attention to the direction of the connector.
3. Power on the power supplies of the NZ2GN-GFB and the external device.
4. Check if P1 LINK LED/P2 LINK LED on the port into which the Ethernet cable is connected is on.*1*2

If P1 LINK LED/P2 LINK LED does not turn on, refer to the following and take a corrective action.

☞ Page 146 When the P1 LINK LED or P2 LINK LED turns off

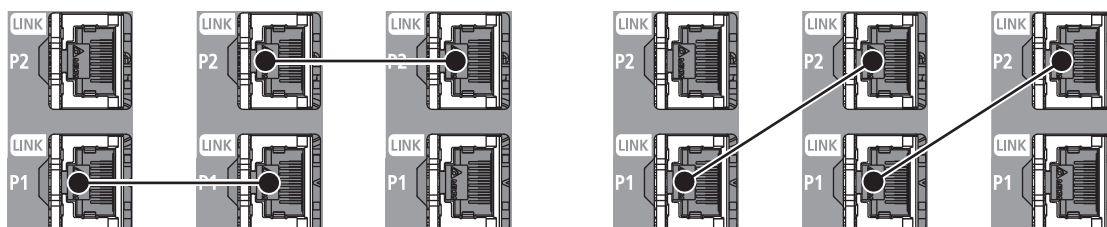
*1 The time taken for P1 LINK LED/P2 LINK LED to turn on after connection of the Ethernet cable may vary. The LINK LED normally turns on in a few second. However, if link-up processing is repeated due to a condition of a device on the line, the longer time may be required.

*2 When the communication speed of CC-Link IE TSN is set to 100Mbps and a device that can transmit at a speed of 100Mbps is connected to P1 and P2 of the NZ2GN-GFB, enable auto-negotiation of the device.



Both P1 and P2 connectors can be used.

- To use only one of them for the star topology, either P1 or P2 can be connected.
- To use both of them for the line topology and the ring topology, P1-P1, P2-P2, and P1-P2 connections are possible.



■CC-Link IE Field Network side

1. Power off the power supplies of the NZ2GN-GFB and the external device.
2. Push the Ethernet cable connector into the NZ2GN-GFB until it clicks. Pay attention to the direction of the connector.
3. Power on the power supplies of the NZ2GN-GFB and the external device.
4. Check whether LINK LED is on.*1

If the LINK LED does not turn on, refer to the following and take corrective actions.

 Page 148 When the LINK LED turns off

*1 The time between the Ethernet cable connection and the LINK LED turning on may vary. The LINK LED normally turns on in a few second. However, if link-up processing is repeated due to a condition of a device on the line, the longer time may be required.

Removal procedure

1. Power off the NZ2GN-GFB module.
2. Press the latch down and unplug the Ethernet cable.

Precautions

■Laying Ethernet cables

- Place the Ethernet cable in a duct or clamp them. If not, a dangling cable may swing or inadvertently be pulled, resulting in damage to the NZ2GN-GFB or cables or malfunction due to erroneous operation.
- Do not touch the core of the connector of the cable or the module, and protect it from dirt and dust. If any oil from your hand, or any dirt or dust sticks to the core, it can increase transmission loss, causing data link to fail.
- For the Ethernet cables to be used, check that they are not disconnected or short-circuited and that there is no problem with connector connection.

■Broken Ethernet cable latch

Do not use Ethernet cables with broken latches. Doing so may cause the cable to unplug or malfunction.

■Connecting and disconnecting the Ethernet cable

Hold the connector part when connecting and disconnecting the Ethernet cable. Pulling the cable connected to the NZ2GN-GFB may result in damage to the NZ2GN-GFB or cables or malfunction due to erroneous operation.

■Connectors without Ethernet cable

Attach a connector cover to prevent dirt and dust from entering the NZ2GN-GFB module and to prevent module failure and malfunction caused by static electricity.

■Maximum segment length for the Ethernet cable (Maximum cable length)

The maximum segment length for the Ethernet cable is 100m. However, the distance may be shorter depending on the operating environment of the cable. For details, contact the manufacturer of the cables used.

■Bending radius of the Ethernet cable

There are restrictions on the bending radius of the Ethernet cable. Check the bending radius in the specifications of the Ethernet cables used.

5.6 Precautions

Precautions when connecting a media converter

The following indicates the criteria under which a media converter can be used in CC-Link IE Field Network.

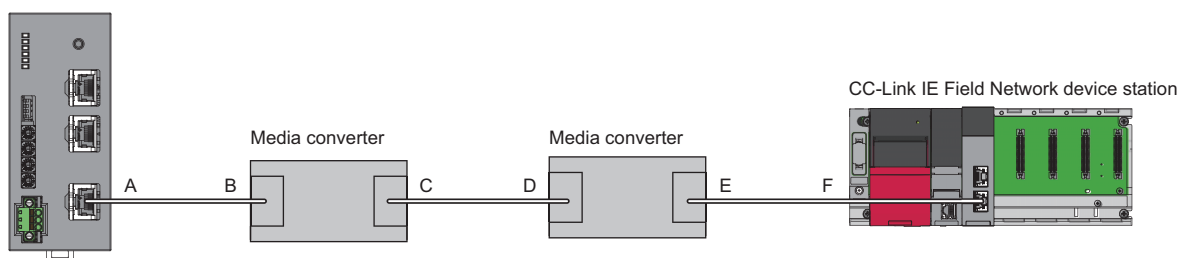
Inquire with the manufacturer of the media converter to determine if it meets the usage criteria.

- All ports are compliant with Gigabit Ethernet.
- The port of the external device complies with the IEEE 802.3 (1000BASE-T) standards.
- A shield has been attached to the RJ45 connector.
- The Auto MDI/MDI-X function has been installed.
- The auto-negotiation function has been installed.
- The link pass-through function has been installed.*1

*1 When the link is down on the port of the media converter on one side, the port on the other side also experiences the same.

When the links for ports A and B below are down, the links for ports C, D, E, and F are also down.

NZ2GN-GFB



Precautions for the entire system

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, if one of the following criteria is met, data link on CC-Link IE Field Network is reestablished and data link error may be detected for up to three seconds by the CC-Link IE Field Network link special relay (SB) and link special register (SW).

- All CC-Link IE Field Network device stations are disconnected.
- The network configuration is invalid.
- The network map is updated.

6 PARAMETER SETTINGS

6.1 Parameter Settings for CC-Link IE TSN

Set the parameters of CC-Link IE TSN with the network parameters written to the CPU module of the CC-Link IE TSN master station.

For the setting procedure for the master station, refer to the following.

📖 User's manual for the master station used

Communication Period Interval Setting

When using the NZ2GN-GFB in CC-Link IE TSN, set the communication cycle interval setting as follows.

■When the CC-Link IE TSN Class of the NZ2GN-GFB is set to B

Communication speed		Value that can be set
Master station	NZ2GN-GFB	
1Gbps	1Gbps	<ul style="list-style-type: none">When the value is set in increments of 1μs: 125.00μs or more and 10000.00μs or lessWhen the value is not set in increments of 1 μs: 125.00 μs, 250.00 μs, 500.00 μs, 1000.00 μs, 2000.00 μs, 4000.00 μs, or 8000.00 μs
	100Mbps*1	<ul style="list-style-type: none">When the value is set in increments of 1μs: 125.00μs or more and 625.00μs or lessWhen the value is not set in increments of 1μs: 125.00μs, 250.00μs, or 500.00μs
100Mbps	1Gbps	<ul style="list-style-type: none">When the value is set in increments of 1μs: 125.00μs or more and 10000.00μs or lessWhen the value is not set in increments of 1 μs: 125.00 μs, 2500.0 μs, 500.00 μs, 1000.00 μs, 2000.00 μs, 4000.00 μs, or 8000.00 μs
	100Mbps*2	<ul style="list-style-type: none">When the value is set in increments of 1μs: 500.00μs or more, 10000.00μs or less, and divisible by 2μsWhen the value is not set in increments of 1μs: 500.00μs, 1000.00μs, 2000.00μs, 4000.00μs, or 8000.00μs

*1 To use this combination, set "Communication Period Setting" of the NZ2GN-GFB to "Low-Speed".

*2 To use this combination, set "Communication Period Setting" of the NZ2GN-GFB to "Basic Period" or "Normal-Speed".

■When the CC-Link IE TSN Class of the NZ2GN-GFB is set to A

Set a value so that "Basic Period × Magnification" becomes 9ms or longer.

Item	Description
Basic Period	The basic cycle is determined by the value in "Communication Period Interval Setting", which is set in the parameter of the CC-Link IE TSN master station.
Magnification	The magnification is determined by the value in "Multiple Period Setting", which is set in the parameter of the CC-Link IE TSN master station, and the value of "Communication Period Setting" in "Network Configuration Settings".

When the communication speed of the CC-Link IE TSN master station is 1Gbps and that of the NZ2GN-GFB is 100Mbps, set the communication period setting of the NZ2GN-GFB to "Low-speed".

Network Topology

"Line/Star" or "Ring" can be set.

To set "Ring", make sure that the CC-Link IE TSN Class of the NZ2GN-GFB is B. If a module that has CC-Link IE TSN Class A is connected, data link cannot be performed.

Communication Mode

"Unicast" or "Multicast" can be set.

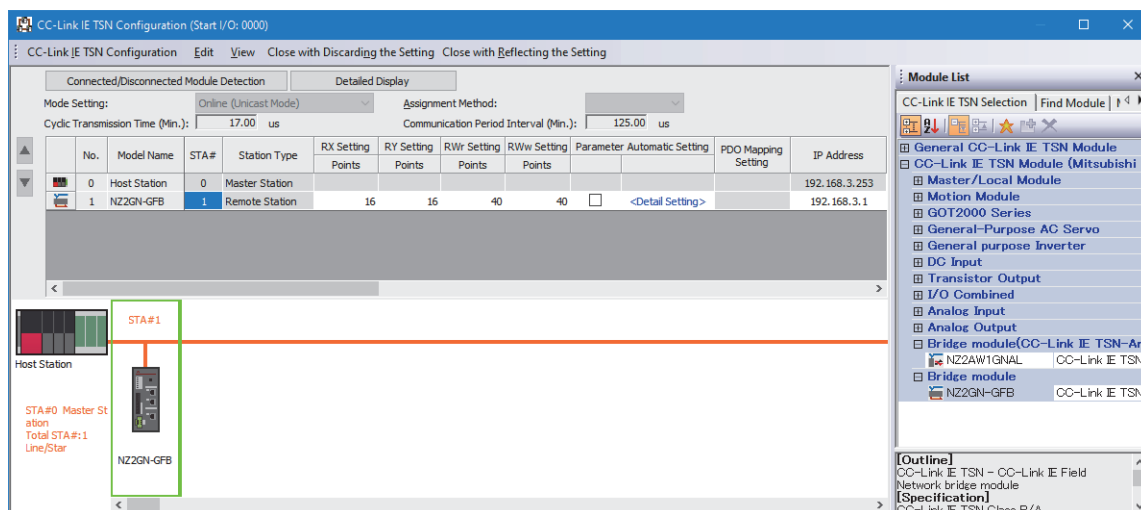
However, cyclic frames of multicast mode are not relayed when an Ethernet device (or a remote station of CC-Link IE TSN Class A) is connected to the NZ2GN-GFB in multicast mode.

Network Configuration Settings

The following shows the NZ2GN-GFB items set in network configuration settings.

■Setting procedure

1. Open the "CC-Link IE TSN Configuration" window from the parameter of the CC-Link IE TSN master station.
 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]
2. Select the NZ2GN-GFB in "Module List" and drag it to the list of stations or the network map.



3. An assignment setting row is added to the station list, the total number of stations is increased, and the selected module is added to the network map.
4. Set items in the station list if necessary.
5. Click the [Close with Reflecting the Setting] button to complete the setting process and close the window.

Point

Before setting an item for the NZ2GN-GFB, set "Station-specific mode setting" first. Changing the "Station-specific mode setting" returns some setting items to the initial value.

■Setting item

Item		Setting	Setting range
STA#		Sets the NZ2GN-GFB station number. ^{*1*2}	1 to 120 (Default: Serial number of the added station)
Station Type		Sets the station type.	Fixed to "Remote Station".
RX Setting, RY Setting ^{*3}	Points	Sets the assignment of RX, RY points.	0 to 16384 (Default: 16)
	Start	Sets the start number of RX, RY.	0000 to 3FF0 (Default: 0000)
	End	Sets the end number of RX and RY points.	000F to 3FFF (Default: 000F)
RWw Setting, RWr Setting ^{*3}	Points	Sets the assignment of RWw, RWr points. Set (the number used) + 32 for the NZ2GN-GFB.	0 to 2080 (Default: 40)
	Start	Sets the start number of RWw, RWr.	0000 to 1FFC (Default: 0000)
	End	Sets the end number of RWw and RWr points.	0003 to 1FFF (Default: 0027)
IP Address		Sets the IP address of CC-Link IE TSN on the NZ2GN-GFB. The default values are as follows: • First to third octet: Same as the CC-Link IE TSN master station • Fourth octet: Automatically set between 1 to 254, from the smallest number available	0.0.0.1 to 223.255.255.254 (Default: As described on the left)

Item	Setting	Setting range
Reserved/Error Invalid Station	Used to set the NZ2GN-GFB as a reserved station or an error invalid station on CC-Link IE TSN.	<ul style="list-style-type: none"> • No Setting • Reserved Station • Error Invalid Station (Default: No Setting)
Network Synchronous Communication	The CC-Link IE TSN Network synchronous communication function is not supported, so set "Asynchronous". ^{*4}	—
Communication Period Setting	When multiple communication cycles are set, set the cycle of the NZ2GN-GFB. When the communication speed differs between the master station and the NZ2GN-GFB, the setting range is limited. (☞ Page 43 Communication Period Interval Setting)	<ul style="list-style-type: none"> • Basic Period • Normal-Speed • Low-Speed (Default: Basic Period)
Station-specific mode setting	Sets the station type of the NZ2GN-GFB CC-Link IE Field Network. ^{*5}	<ul style="list-style-type: none"> • Local Station • Master station (Default: Local station)
CC-Link IE TSN Class	Sets the CC-Link IE TSN Class of the device for the NZ2GN-GFB. Set the same value as function setting switch 2. (☞ Page 30 Function setting switch setting) ^{*6}	<ul style="list-style-type: none"> • CC-Link IE TSN Class B • CC-Link IE TSN Class A (Default: CC-Link IE TSN Class B)

- *1 Set the CC-Link IE TSN station number here. Set the CC-Link IE Field Network station number using the CC-Link IE Field Network station number setting switch. (☞ Page 29 Settings for CC-Link IE Field Network station number setting switch)
- *2 If the station number differs from that of the CC-Link IE TSN station number of the NZ2GN-GFB, communication with different networks may not be performed.
- *3 For the RX setting, RY setting, RWw setting, and RWr setting, set a value in the corresponding setting range. If a value outside the setting range is set, an error occurs on the network configuration setting window.
- *4 If "Network Synchronous Communication" is set to "Synchronous", an error (error code: D020H) occurs or an event (event code: 00C71H) is registered with the event history of the CC-Link IE TSN master station.
- *5 Make sure to set the module parameters after changing station-specific mode settings. (☞ Page 48 Module Parameter Setting) Simply changing the station-specific mode setting and writing the parameters in the CC-Link IE TSN master station do not change the station type in CC-Link IE Field Network of the NZ2GN-GFB.
- *6 If a different CC-Link IE TSN Class value than the one set using function setting switch 2 is used, an event (event code: 00C81H) is registered with the event history of the CC-Link IE TSN master station, and the NZ2GN-GFB does not perform data link.

6.2 Parameter Settings for CC-Link IE Field Network

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, configure the settings described in this section. Set the parameters of CC-Link IE Field Network with the network parameters written to the CPU module of the CC-Link IE Field Network master station.

For the setting procedure for the master station, refer to the following.

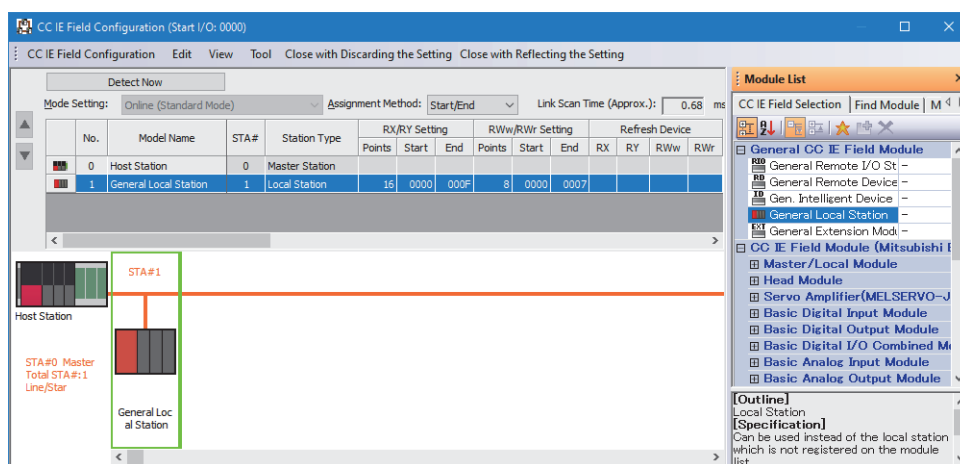
User's manual for the master station used

Network configuration setting

The following shows the NZ2GN-GFB items set in network configuration settings.

■Setting procedure

1. Open the "CC-Link IE TSN Configuration" window from the parameter of CC-Link IE Field Network master station.
 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]
2. Select a general local station in "Module List" and drag it to the list of stations or the network map.



3. An assignment setting row is added to the station list, the total number of stations is increased, and the selected module is added to the network map.
4. Set items in the station list if necessary.
5. Click the [Close with Reflecting the Setting] button to complete the setting process and close the window.

■Setting item

Item		Setting	Setting range
STA#		Sets the NZ2GN-GFB station number. Set the same value as CC-Link IE Field Network station number setting switch.	1 to 120 (Default: Serial number of the added station)
Station Type		Sets the station type. Set "Local station" for the NZ2GN-GFB.	<ul style="list-style-type: none"> Local Station Intelligent Device Station (Default: Local Station)
RX Setting, RY Setting ^{*2}	Points	Sets the assignment of RX, RY points.	0 to 2048 (Default: 16)
	Start	Sets the start number of RX, RY.	0000 to 3FF0 (Default: 0000)
	End	Sets the end number of RX and RY points.	000F to 3FFF (Default: 000F)
RWw Setting, RWr Setting ^{*2}	Points	Sets the assignment of RWw, RWr points.	0 to 1024 (Default: 8)
	Start	Sets the start number of RWw, RWr.	0000 to 1FFC (Default: 0000)
	End	Sets the end number of RWw and RWr points.	0003 to 1FFF (Default: 0007)

Item	Setting	Setting range
Reserved/Error Invalid Station/System Switching Monitoring Target Station	Used to set the NZ2GN-GFB as a reserved station, error invalid station, or system switching monitoring target station on CC-Link IE Field Network.	<ul style="list-style-type: none"> • No Setting • Reserved Station • Error Invalid Station • System Switching Monitoring Target Station (Default: No Setting)
Network Synchronous Communication	The CC-Link IE Field Network synchronous communication function is not supported, so set "Asynchronous".*1	—

*1 If "Network Synchronous Communication" is set to "Synchronous", an error (error code: 3601H) occurs on the NZ2GN-GFB or the error code of 1D01H is registered with the event history of the CC-Link IE Field Network master station.

*2 If the CC-Link IE TSN Class setting of the NZ2GN-GFB is set to A, set the values so that the total number of "RX/RX Setting" and "RWw/RWw Setting" does not exceed 2048 bytes. ( Page 95 CC-Link IE TSN Class setting function)

6.3 Module Parameter Setting

Set the module parameters of the NZ2GN-GFB from the "CC-Link IE TSN Configuration" window of the engineering tool. The following methods are available for to set the parameters of the NZ2GN-GFB.

- Parameter Automatic Setting ( Page 58 Parameter automatic setting)
- Parameter Processing of Device Station ( Page 63 Device station parameter processing)

The configured parameters are applied at the next startup.

Point

- The module parameters of the NZ2GN-GFB cannot be set from the CC-Link IE Field Network master station.
- The module parameters cannot be changed when the module is running. An error (error code: 02A0H) occurs when they are changed. Power off and on the NZ2GN-GFB or reset it. ( Page 57 Resetting the NZ2GN-GFB)

The following clears the NZ2GN-GFB errors.

- Parameters were written to the NZ2GN-GFB during device station parameter processing.
- A parameter different from the configured parameter is written due to parameter automatic setting.

Parameter save destination

The following table shows the parameter save destination for each method.

Item	Description
Parameter Automatic Setting	<ul style="list-style-type: none">• CPU module of CC-Link IE TSN master station (CPU built-in memory or SD memory card)• NZ2GN-GFB
Parameter Processing of Device Station	NZ2GN-GFB

Behavior of the NZ2GN-GFB

The following shows the operation of the NZ2GN-GFB related to parameters.

- When parameter automatic setting is used during NZ2GN-GFB data link, the parameters set by parameter automatic setting are saved in the non-volatile memory in the NZ2GN-GFB.
- When device station parameter processing is executed after NZ2GN-GFB data link, the parameters are saved in the non-volatile memory in the NZ2GN-GFB.

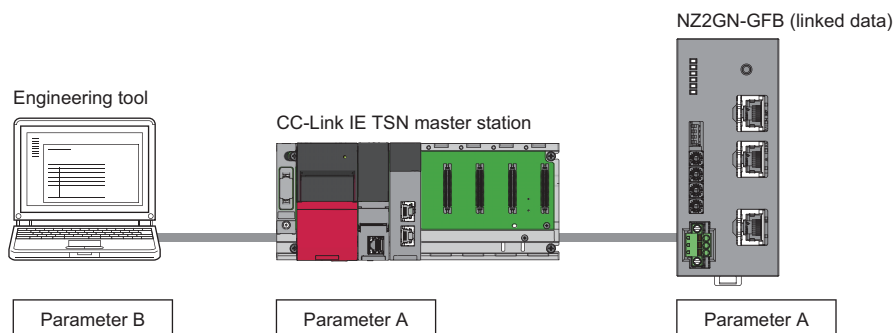
Point

When setting parameters using device station parameter processing, do not perform parameter automatic setting.

When device station parameter processing is executed after performing parameter automatic setting, the parameters in the non-volatile memory in the NZ2GN-GFB are changed into the parameters set using device station parameter processing. However, when the NZ2GN-GFB is turned off or disconnected and data link is executed again after that, the parameters in the non-volatile memory in the NZ2GN-GFB are overwritten by the parameters set using parameter automatic setting.

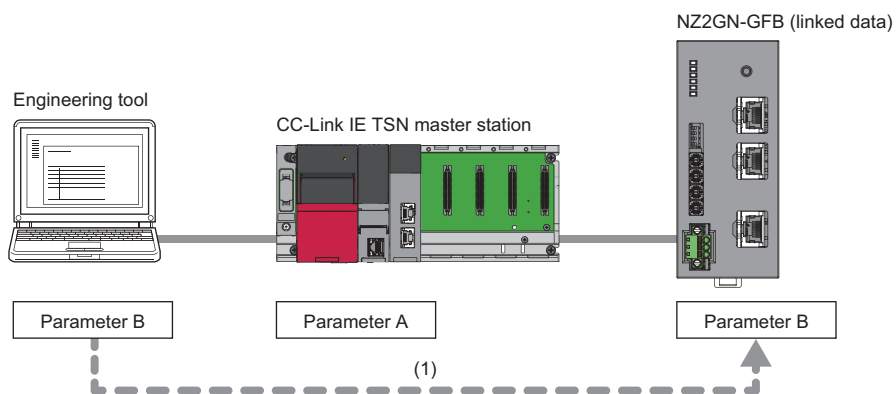
Ex.

The CC-Link IE TSN master station performs device station parameter processing for an NZ2GN-GFB module with data link established while retaining the parameters set using automatic setting.



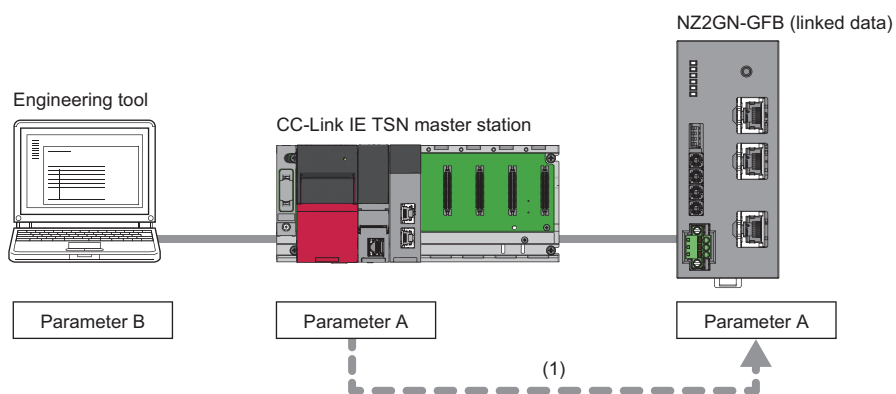
- Parameter A: Parameter set using parameter automatic setting. The CC-Link IE TSN master station retains this parameter and sends it when the NZ2GN-GFB performs data link.
- Parameter B: Parameter set using device station parameter processing.

1. Executing device station parameter processing changes the parameters saved in the non-volatile memory in the NZ2GN-GFB.



(1) Device station parameter processing

2. When a data link is reestablished after the NZ2GN-GFB is disconnected or turned off, the parameters set using parameter automatic setting are sent and overwrite the parameters saved in the non-volatile memory in the NZ2GN-GFB.



(1) Parameter automatic setting

Parameter information

The following shows the parameter information of the NZ2GN-GFB.



- Before configuring this, set the station type of CC-Link IE Field Network of the NZ2GN-GFB from "Station-specific mode setting" in the "CC-Link IE TSN Configuration" window. (Page 44 Network Configuration Settings)
- Be sure to configure this setting before changing the station type of CC-Link IE Field Network of the NZ2GN-GFB. Change the CC-Link IE Field Network station number setting switch to match the new station type as well.
- When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, station-based block data assurance is set to "Enable" for CC-Link IE Field Network local stations that are compatible with it. For details, refer to the User's manual for the CC-Link IE Field Network local station used.

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, settings may need to be configured depending on the CC-Link IE Field Network device station to be connected.

Set the total number of device stations, link device points/assignments for device stations, station number, station type, and reserved/error invalid station.

■Basic settings (CC-Link IE TSN)		
Item	Setting	Setting range ^{*1}
Network No.	Sets the CC-Link IE TSN network No. of own station. Set the value configured for the CC-Link IE TSN master station. ^{*2} If the CC-Link IE Field Network No. and the setting value overlap, an error (error code: 0290H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	1 to 239 (Default: 1)
Station No.	Sets the CC-Link IE TSN station number of own station. Set the value configured for the CC-Link IE TSN master station. ^{*2}	1 to 120 (Default: 1)

^{*1} If a parameter is not set, the module will operate using the default value.

^{*2} If a different value from the CC-Link IE TSN master station setting is set, it may not be possible to perform transient transmission.

■Basic settings (CC-Link IE Field Network)			
Item		Setting	Setting range ^{*3}
Network No.		Sets the CC-Link IE Field Network No. of own station. If the parameter overlaps with other network numbers, transient transmissions may not be successful. If the CC-Link IE TSN network No. and the setting value overlap, an error (error code: 0290H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	1 to 239 (Default: 2)
Total number of device stations		Sets the number of CC-Link IE Field Network device stations to connect.	1 to 32 (Default: 1)
CC-Link IE Field Network device station setting 1st station ^{*4}	Station No.	Sets the CC-Link IE Field Network device station number. If the device station numbers overlap, an error (error code: 0291H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	1 to 120 (Default: 1)
	Station type	Sets the CC-Link IE Field Network device station type. The station type that can be set differs depending on the connected module. For details, refer to the manual for the connected module. If the station type differs from that of the module connected to the network, data link cannot be performed for that module.	<ul style="list-style-type: none"> • 0: Remote I/O station • 1: Remote device station • 2: Intelligent device station • 3: Local station (Default: 2: Intelligent device station)
	RX/Ry points ^{*5*6}	The RX/Ry points of CC-Link IE Field Network device stations are set in increments of 16. The number of points that can be set differs depending on the connected module. For details, refer to the manual for the connected module. ■Setting range <ul style="list-style-type: none"> • "Station type" is "0: Remote I/O station": 0 to 64 • "Station type" is "1: Remote device station": 0 to 128 • "Station type" is "2: Intelligent device station": 0 to 2048 • "Station type" is "3: local station": 0 to 2048 If the RX/Ry points are not set in increments of 16, an error (error code: 0294H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	See the left. (Default: 16)
	RWw/RWr points ^{*5*6}	The RWw/RWr points of CC-Link IE Field Network device stations are set in increments of 4. The number of points that can be set differs depending on the connected module. For details, refer to the manual for the connected module. ■Setting range <ul style="list-style-type: none"> • "Station type" is "0: Remote I/O station": 0 • "Station type" is "1: Remote device station": 0 to 64 • "Station type" is "2: Intelligent device station": 0 to 1024 • "Station type" is "3: Local station" and "Communication Mode" is "0: Normal": 0 to 1024 • "Station type" is "3: Local station" and "Communication Mode" is "1: High-Speed": 0 to 256 If the RWw/RWr points are not set in increments of 4, an error (error code: 0295H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	See the left. (Default: 8)
	Reserved/Error Invalid Station	Sets a station as a reserved station or error invalid station. <ul style="list-style-type: none"> • No Setting: The CC-Link IE Field Network device station is connected to the network. • Reserved Station: Reserves a CC-Link IE Field Network device station using parameters for future extension. • Error Invalid Station: Prevents the NZ2GN-GFB from detecting a CC-Link IE Field Network device station as a faulty station even if the device station is disconnected during data link. For details, refer to the following.  Page 98 Reserved station setting, Page 99 Error invalid station setting	<ul style="list-style-type: none"> • 0: No Setting • 1: Reserved Station • 2: Error Invalid Station (Default: 0: No Setting)

■Basic settings (CC-Link IE Field Network)			
Item		Setting	Setting range ^{*3}
CC-Link IE Field Network device station setting 32nd station ^{*4}	Station No.	Same as 1st station	1 to 120 (Default: 32)
	Station type		Same as 1st station
	RX/RX points ^{*5*6}		
	RWw/RWr points ^{*5*6}		
	Reserved/Error invalid station		

^{*3} If a parameter is not set, the module will operate using the default value.

^{*4} The number of device stations set in "Total number of device stations" is reflected in the module parameters of the NZ2GN-GFB. Any value that exceeds the number of stations set in "Total number of device stations" is ignored.

^{*5} If the total number of "RX/RX points" and "RWw/RWr points" that were set exceeds the maximum number of link points (1 network) of CC-Link IE Field Network, an error (error code: 0292H or 0293H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value. ( Page 16 Performance Specifications)

^{*6} If the CC-Link IE TSN Class setting is set to A, set the values so that the total number of "RX/RX points" and "RWw/RWr points" does not exceed 2048 bytes. ( Page 95 CC-Link IE TSN Class setting function)

■Application settings (CC-Link IE Field Network)		
Item	Setting	Setting range ^{*7}
Communication Mode	Sets the communication mode of CC-Link IE Field Network of the NZ2GN-GFB. For details on the normal mode and high-speed mode, refer to the following.  Page 280 Differences in Cyclic Transmission Modes	<ul style="list-style-type: none"> • 0: Normal • 1: High-Speed (Default: 0: Normal)
Event Reception From Other Stations	Sets whether to acquire events that occur in other stations of CC-Link IE Field Network.	<ul style="list-style-type: none"> • 0: Disable • 1: Enable (Default: 1: Enable)

^{*7} If a parameter is not set, the module will operate using the default value.

■Application settings (common)			
Item		Setting	Setting range*8
I/O maintenance settings	CC-Link IE TSN side data link error station setting	Sets whether to hold or clear the data transmitted to the CC-Link IE Field Network device stations and master station when a data link error occurs in the NZ2GN-GFB on the CC-Link IE TSN side. For details, refer to the following. ☞ Page 76 Data link error station setting	<ul style="list-style-type: none"> • 0: Clear • 1: Hold (Default: 0: Clear)
	CC-Link IE Field Network side data link error station setting	Sets whether to hold or clear the data transmitted to the CC-Link IE TSN master station when a data link error occurs in the NZ2GN-GFB on the CC-Link IE Field Network side. For details, refer to the following. ☞ Page 76 Data link error station setting	<ul style="list-style-type: none"> • 0: Clear • 1: Hold (Default: 0: Clear)
	CC-Link IE TSN Master station output Hold/Clear setting during CPU STOP	Sets whether to hold or clear the data transmitted to the CC-Link IE Field Network device station of the NZ2GN-GFB when the CPU module on the CC-Link IE TSN master station is stopped. For details, refer to the following. ☞ Page 77 CC-Link IE TSN master station output hold/clear setting during CPU STOP	<ul style="list-style-type: none"> • 0: Clear • 1: Hold (Default: 1: Hold)
	CC-Link IE TSN Master station output mode upon CPU error	Sets whether to stop or continue the cyclic transmission to the CC-Link IE Field Network device station of the NZ2GN-GFB when a stop error occurs in the CPU module on the CC-Link IE TSN master station. (☞ Page 77 CC-Link IE TSN master station output mode upon CPU error)	<ul style="list-style-type: none"> • 0: Clear (stop cyclic transmission) • 1: Hold (continue cyclic transmission) (Default: 0: Clear)
Dynamic routing		Sets whether to enable the auto generation of communication route using dynamic routing (dynamic routing function). If "Routing setting" has already been configured, the configured routing setting is applied first. For details, refer to the following. ☞ Page 88 Communications using the engineering tool	<ul style="list-style-type: none"> • 0: Disable • 1: Enable (Default: 1: Enable)
Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"		Sets the number of CC-Link IE TSN station No. <-> IP address conversion setting to enable. The CC-Link IE TSN station No. <-> IP address conversion setting needs to be set when communicating between different networks and the NZ2GN-GFB and another station on CC-Link IE TSN that is connected to the NZ2GN-GFB exist on the path. For details, refer to the following. ☞ Page 56 CC-Link IE TSN station No. <-> IP address conversion setting	0 to 16*9 (Default: 0)
Valid number of routing setting		Sets the number of routing setting to enable. The routing setting is used when the system has network modules that do not support dynamic routing, and when setting clear communication routes. For details, refer to the following. ☞ Page 88 Communications using the engineering tool	0 to 16*10 (Default: 0)
CC-Link IE TSN station No. <-> IP address conversion setting No. 1	Station No.	Sets the station number of the other station on CC-Link IE TSN that forms the path when communicating between different networks. If station number 0 is not set, it is converted using the IP address of the CC-Link IE TSN master station. If the station numbers overlap, an error (error code: 0296H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	0 to 120 (Default: 0)
	IP address (1st octet)	Sets the IP address of the other station on CC-Link IE TSN that forms the path when communicating between different networks.	0 to 223 (Default: 192)
	IP address (2nd octet)	If the IP address is set outside the configurable range, an error (error code: 0299H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	0 to 255 (Default: 168)
	IP address (3rd octet)	If IP addresses overlap, an error (error code: 0297H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	0 to 255 (Default: 3)
	IP address (4th octet)		0 to 255 (Default: 253)
⋮			

■Application settings (common)			
Item		Setting	Setting range* ⁸
CC-Link IE TSN station No. <-> IP address conversion setting No.16	Station No.	Same value as No.1.	0 to 120 (Default: 16)
	IP address (1st octet)		0 to 223 (Default: 192)
	IP address (2nd octet)		0 to 255 (Default: 168)
	IP address (3rd octet)		0 to 255 (Default: 3)
	IP address (4th octet)		0 to 255 (Default: 16)
Routing setting No.1	Relay station network No.	Sets the network No. of own network (relay station) that is passed when performing transient transmission to another network.	1 to 239 (Default: 1)
	Relay station No.	Sets the station number of own network (relay station) that is passed when performing transient transmission to another network.	0 to 120 (Default: 0)
	Target station network No.	Sets the network No. of the final arrival network (destination station). If the network No. of the destination station overlaps with another, an error (error code: 0298H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.	1 to 239 (Default: 3)
⋮			
Routing setting No.16	Relay station network No.	Same as No.1	1 to 239 (Default: 1)
	Relay station No.		0 to 120 (Default: 0)
	Target station network No.		1 to 239 (Default: 18)

*⁸ If a parameter is not set, the module will operate using the default value.

*⁹ To set CC-Link IE TSN station No. <-> IP address conversion setting for 17 items or more, use the remote buffer memory and set the parameter using a program.

When setting parameters using a program, do not perform parameter automatic setting.

☞ Page 220 Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"

☞ Page 222 Station No. (CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120)

☞ Page 223 IP address (CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120)

*¹⁰ To set routing setting for 17 items or more, use the remote buffer memory and set the parameter using a program.

When setting parameters using a program, do not perform parameter automatic setting.

☞ Page 221 Valid number of routing setting

☞ Page 224 Relay station network No. (Routing setting No.1 to 237)

☞ Page 225 Relay station No. (Routing setting No.1 to 237)

☞ Page 226 Target station network No. (Routing setting No.1 to 237)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

For the value of each item, refer to the following.

Page 50 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Item			Setting range ^{*1}
Basic settings (CC-Link IE TSN)	Network No.		1 to 239 (Default: 1)
	Station No.		1 to 120 (Default: 1)
Basic settings (CC-Link IE Field Network)	Network No. ^{*2}		1 to 239 (Default: 2)
Application settings (CC-Link IE Field Network)	Event Reception From Other Stations		<ul style="list-style-type: none"> • 0: Disable • 1: Enable (Default: 1: Enable)
Application settings (common)	I/O maintenance settings	CC-Link IE TSN side data link error station setting	<ul style="list-style-type: none"> • 0: Clear • 1: Hold (Default: 0: Clear)
		CC-Link IE Field Network side data link error station setting	<ul style="list-style-type: none"> • 0: Clear • 1: Hold (Default: 0: Clear)
	Dynamic routing		<ul style="list-style-type: none"> • 0: Disable • 1: Enable (Default: 1: Enable)
	Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"		0 to 16 (Default: 0)
	Valid number of routing setting		0 to 16 (Default: 0)
	CC-Link IE TSN station No. <-> IP address conversion setting No.1	Station No.	0 to 120 (Default: 0)
		IP address (1st octet)	0 to 223 (Default: 192)
		IP address (2nd octet)	0 to 255 (Default: 168)
		IP address (3rd octet)	0 to 255 (Default: 3)
		IP address (4th octet)	0 to 255 (Default: 253)
	:		
	CC-Link IE TSN station No. <-> IP address conversion setting No.16	Station No.	0 to 120 (Default: 16)
		IP address (1st octet)	0 to 223 (Default: 192)
		IP address (2nd octet)	0 to 255 (Default: 168)
		IP address (3rd octet)	0 to 255 (Default: 3)
		IP address (4th octet)	0 to 255 (Default: 16)
	Routing setting No.1	Relay station network No.	1 to 239 (Default: 1)
		Relay station No.	0 to 120 (Default: 0)
		Target station network No.	1 to 239 (Default: 3)
	:		
	Routing setting No.16	Relay station network No.	1 to 239 (Default: 1)
		Relay station No.	0 to 120 (Default: 0)
		Target station network No.	1 to 239 (Default: 18)

*1 If a parameter is not set, the module will operate using the default value.

*2 Set the network No. of the CC-Link IE Field Network master station to be connected.
If an incorrect value is set, data link cannot be performed on CC-Link IE Field Network.

■CC-Link IE TSN station No. <-> IP address conversion setting

This setting is used for setting the combination of station number and IP address of another station on the CC-Link IE TSN to which the NZ2GN-GFB is connected.

Set this item when communicating between different networks with the NZ2GN-GFB as a relay station and the other station on CC-Link IE TSN is a request station, relay station, or destination station.

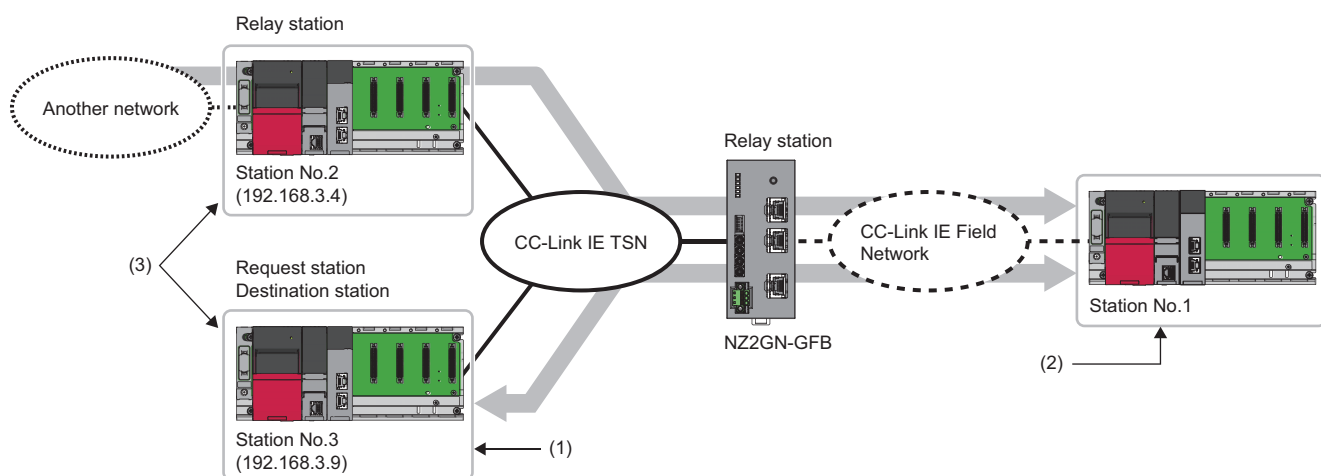
Without this setting, communication between different networks may fail.

This setting is not required for stations that only communicate within the same network, or stations that communicate between different networks using the NZ2GN-GFB as a relay station.

Ex.

Stations that require CC-Link IE TSN station No. <-> IP address conversion setting to be configured

CC-Link IE TSN station No. <-> IP address conversion setting No.	Station number	IP address
1	2	192.168.3.4
2	3	192.168.3.9



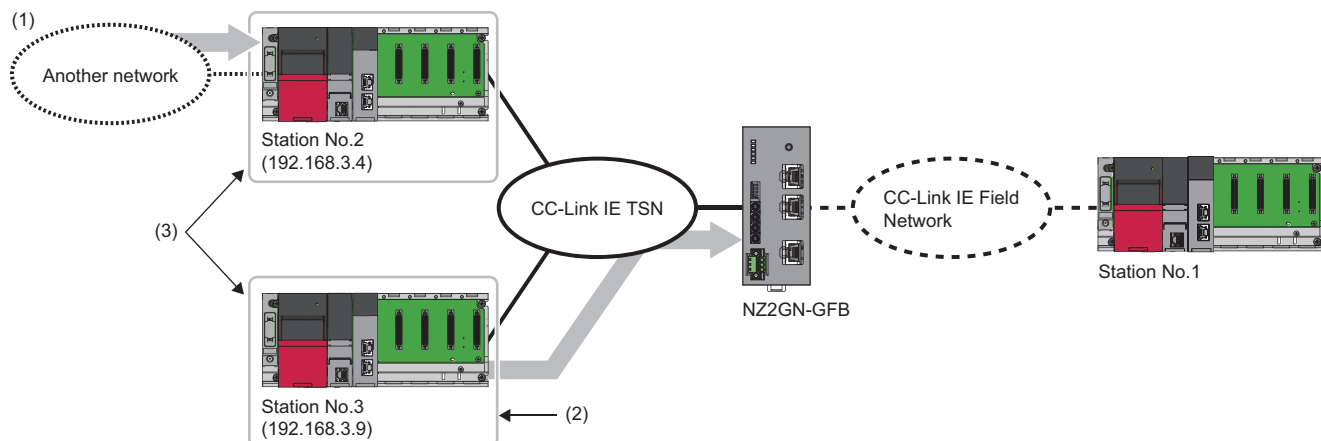
(1) Send to station No.1 of CC-Link IE Field Network.

(2) Send to station No.3 of CC-Link IE TSN.

(3) CC-Link IE TSN station No. <-> IP address conversion setting needs to be set when communicating between different networks with the NZ2GN-GFB as a relay station because this station will become a request station, relay station, or destination station.

Ex.

Stations that do not require CC-Link IE TSN station No. <-> IP address conversion setting to be configured



(1) Send to station No.2 of CC-Link IE TSN.

(2) Send to the NZ2GN-GFB.

(3) CC-Link IE TSN station No. <-> IP address conversion setting does not need to be set because communication is not done between different networks with the NZ2GN-GFB as a relay station.

Resetting the NZ2GN-GFB

The NZ2GN-GFB is reset after setting module parameters.

The following reset methods are available.

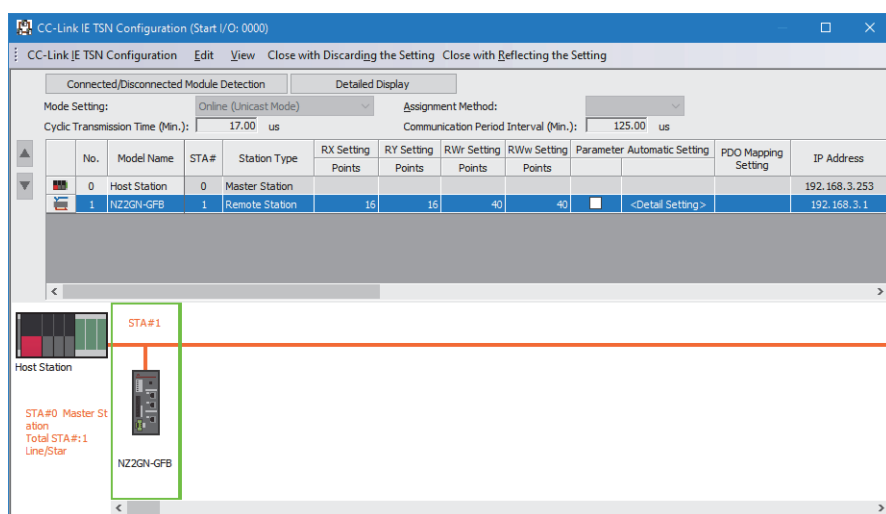
- Reset using the reset switch ( Page 13 PART NAMES)
- Reset using "Remote reset request" ( Page 57 Resetting using "Remote reset request")
- Remote reset from CC-Link IE TSN diagnostics ( Page 127 Remote reset)

■Resetting using "Remote reset request"

This section indicates the method to perform a remote reset.

1. Open the "CC-Link IE TSN Configuration" window.

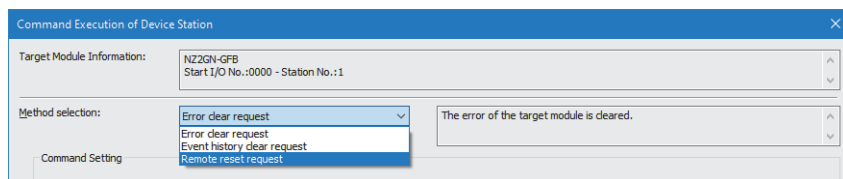
 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]



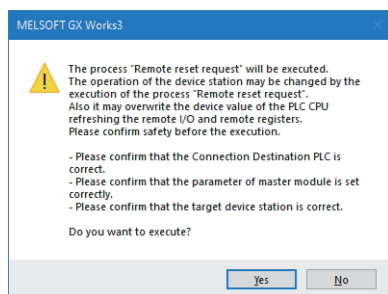
2. Open the "Command Execution of Device Station" window.

 Right-click on the command execution target of the NZ2GN-GFB, and select [Online] ⇒ [Command Execution of Device Station].

3. Select "Remote reset request" in "Method selection" and click the [Execute] button.



4. When the following window appears, click the [Yes] button to start resetting the NZ2GN-GFB.



5. The NZ2GN-GFB is reset.

Parameter automatic setting

When parameters are set using parameter automatic setting, the set parameters are saved in the CC-Link IE TSN master station. Those parameters are read from the CC-Link IE TSN master station and set automatically when the NZ2GN-GFB performs data link.

The parameters automatically set from the CC-Link IE TSN master station are also stored in the non-volatile memory in the NZ2GN-GFB.

When replacing the NZ2GN-GFB due to module failure or other reasons, the parameters that were set using parameter automatic setting are set in the new module.

Point

If the parameters saved in the CC-Link IE TSN master station are the same as the parameters saved in the non-volatile memory in the NZ2GN-GFB during parameter automatic setting, the parameters in the non-volatile memory in the NZ2GN-GFB are not overwritten.

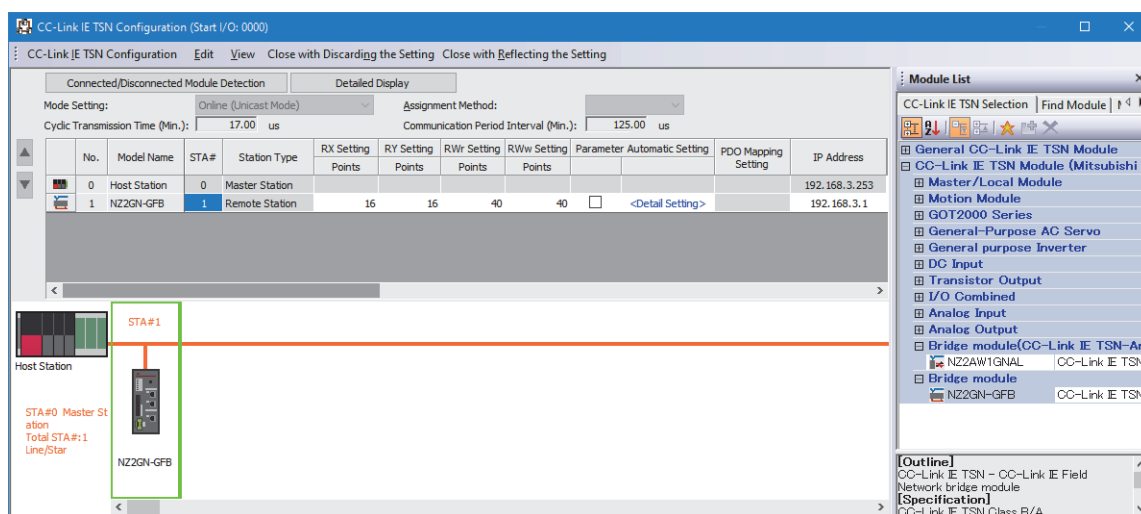
The error in the NZ2GN-GFB is cleared when the NZ2GN-GFB parameters are changed using parameter automatic setting.

Procedure

1. Open the "CC-Link IE TSN Configuration" window.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]

2. Select the NZ2GN-GFB in "Module List" and drag it to the list of stations or the network map.



3. Select the station type of CC-Link IE Field Network in "Station-specific mode setting".

No.	Model Name	Communication Period Setting	Station Information			Authentication Class
			Alias	Comment	Station-specific mode setting	
0	Host Station					
1	NZ2GN-GFB	Basic Period			Local station	Authentication Class B

4. Set the network parameters.

For details on the network parameters, refer to the following.

 User's manual for the master station used

Select the "Parameter Automatic Setting" checkbox of the network parameters.

	No.	Model Name	STA#	Station Type	RX Setting Points	RY Setting Points	RWr Setting Points	RWw Setting Points	Parameter Automatic Setting	
	0	Host Station	0	Master Station						
	1	NZ2GN-GFB	1	Remote Station	16	16	40	40	☒	<Detail Setting>

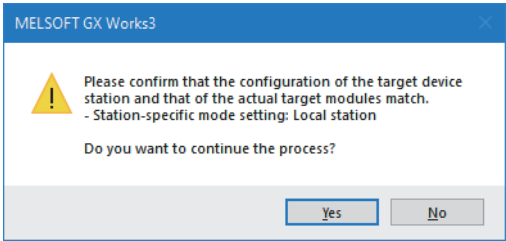


When the settings of the parameter automatic setting are not configured yet, the font of the [Detail Setting] button is blue.

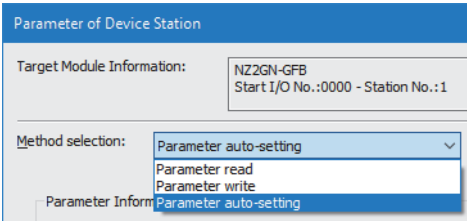
5. Double-click [Detail Setting] beside the "Parameter Automatic Setting" checkbox to display the "Parameter of Device Station" window.



When the "Parameter of Device station" window appears, the "Station-specific mode setting" window to confirm the settings appears.
If it is not the CC-Link IE Field Network station type that you want to set in the NZ2GN-GFB, stop the process and look at "Station-specific mode setting" again.



6. Set "Parameter auto-setting" in "Method Selection".



7. Double-click the item to change the setting, and input the setting value. (🔑 Page 50 Parameter information)
 To save the parameter information in a CSV file, click the [Export] button.
 To read the parameter information from a CSV file, click the [Import] button.

Point

Set all the items for the parameter. If any item is left blank, the "Parameter of Device Station" window cannot be closed.

8. Click the [Close with Reflecting the Setting] button to close the "Parameter of Device Station" window.

Point

Clicking the [Close with Reflecting the Setting] button in the "Parameter of Device Station" window does not write the module parameters to the CPU module and the NZ2GN-GFB.

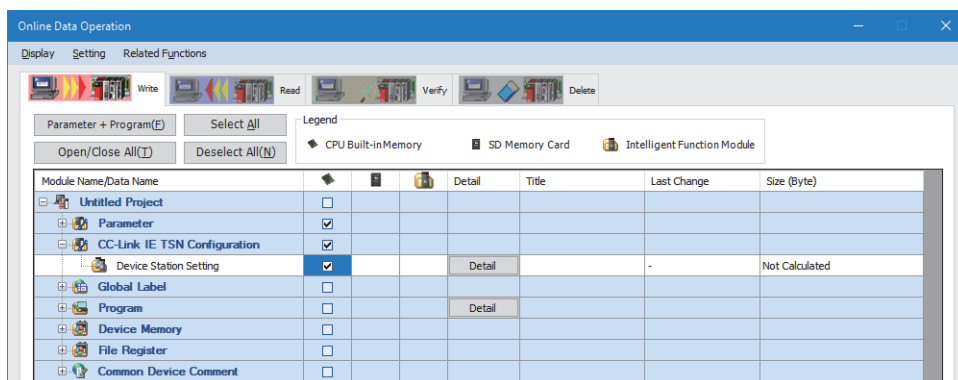
9. Check that the font of the [Detail Setting] button has changed to black for the NZ2GN-GFB with changed settings.

	No.	Model Name	STA#	Station Type	RX Setting Points	RY Setting Points	RWr Setting Points	RWw Setting Points	Parameter Automatic Setting	
	0	Host Station	0	Master Station						
	1	NZ2GN-GFB	1	Remote Station	16	16	40	40	☒	<Detail Setting>

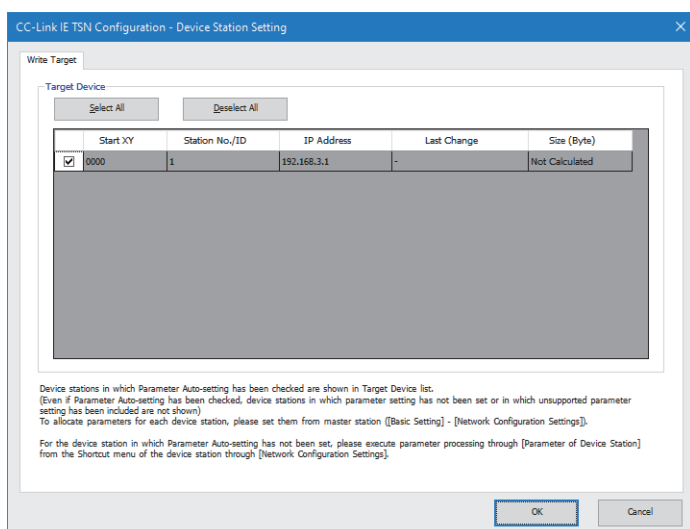
10. Click the [Close with Reflecting the Setting] button to close the "CC-Link IE TSN Configuration" window.
 11. When the parameter setting has been completed, click the [Apply] button.
 12. Display the "Online Data Operation" window.

🔑 [Online] ⇨ [Write to PLC]

13. Select the checkboxes for the parameter and the destination to write device station settings.



14. Click the [Detail] button for device station settings to display the "CC-Link IE TSN Configuration - Device Station Setting" window.



15. Check that the checkbox for the NZ2GN-GFB to which data is to be written is selected. Select the checkbox if not selected.
16. Click the [OK] button to close the "CC-Link IE TSN Configuration - Device Station Setting" window.
17. Write the set parameters to the CPU module of the CC-Link IE TSN master station and reset the CPU module of the CC-Link IE TSN master station, or turn off and on the power supply of the programmable controller.

Point

The module parameters will be written to the CPU module by performing [Write to PLC] operation, but they will not be written to the NZ2GN-GFB.

18. Set the CPU module of the CC-Link IE TSN master station to RUN, and check that the D LINK LED (CC-Link IE TSN) of the NZ2GN-GFB is turned on.
19. Power off and on the NZ2GN-GFB or reset it.

Point

The parameters of the NZ2GN-GFB can be read out by setting "Parameter read" in "Method Selection" and clicking the [Execute Parameter Processing] button in the "Parameter of Device Station" window. The parameters read out from the NZ2GN-GFB are displayed in "Read Value".

Precautions

- If the NZ2GN-GFB is not turned off and on or reset, the system runs using the old parameters.
- If the parameter automatic setting is completed with an error, data link cannot be performed on CC-Link IE TSN. Device station parameter automatic setting interruption (event code: 00C40H) is stored in the event history of the CC-Link IE TSN master station. Take an action corresponding to the code stored in the device station response code (end code).

Device station response code (end code)	Description and cause	Action
1C00H, CF44H	A module parameter that cannot be used for the NZ2GN-GFB is set in the CPU module.	Set the module parameter so that the model name of the device station set in the network configuration settings matches the model name of the actual module, and write that parameter to the CPU module of the CC-Link IE TSN master station.

Device station parameter processing

Before performing device station parameter processing, set the network parameters of the CC-Link IE TSN master station and write them to the CPU module.

For the setting method, refer to the following.

 User's manual for the CC-Link IE TSN master station used

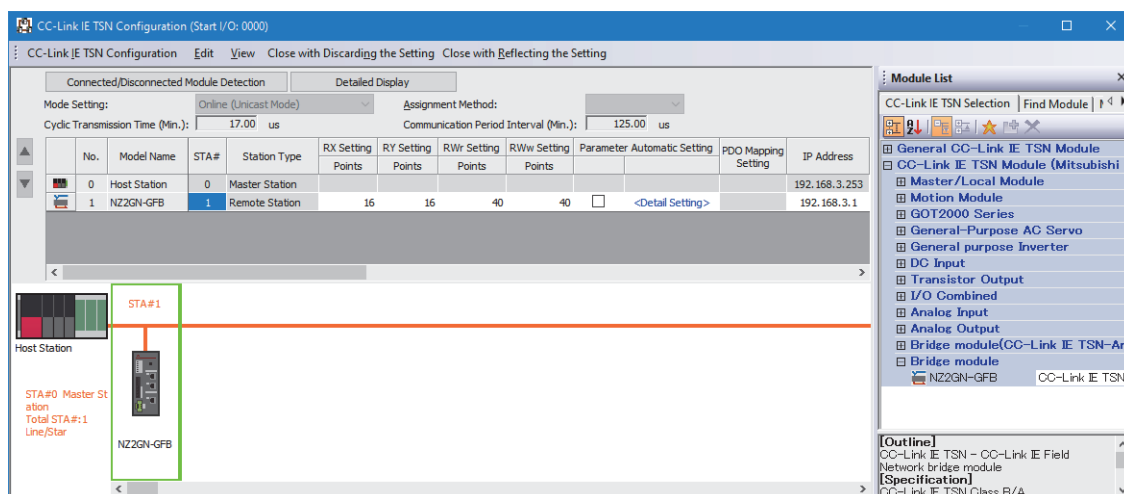
Parameters set using device station parameter processing are not saved in the CC-Link IE TSN master station, but are saved in the non-volatile memory in the NZ2GN-GFB.

Procedure

1. Open the "CC-Link IE TSN Configuration" window.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]

2. Select the NZ2GN-GFB in "Module List" and drag it to the list of stations or the network map.

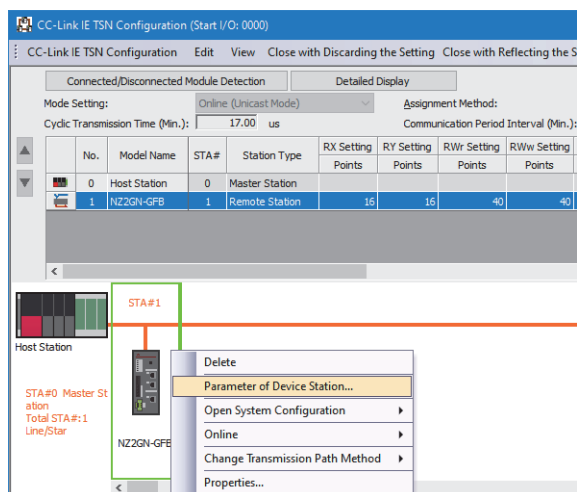


3. Select the station type of CC-Link IE Field Network in "Station-specific mode setting".

No.	Model Name	Communication Period Setting	Station Information			Authentication Class
			Alias	Comment	Station-specific mode setting	
0	Host Station					
1	NZ2GN-GFB	Basic Period			Local station	Authentication Class B

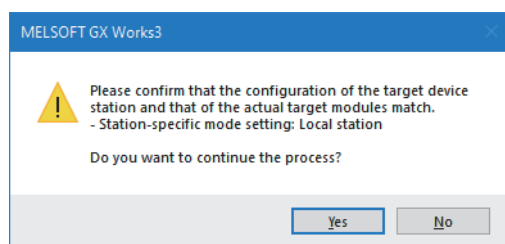
When "Station-specific mode settings" have been changed, write the set parameters to the CPU module of the CC-Link IE TSN master station and reset the CPU module of the CC-Link IE TSN master station, or turn off and on the power supply of the programmable controller.

4. Open the "Parameter of Device Station" window.

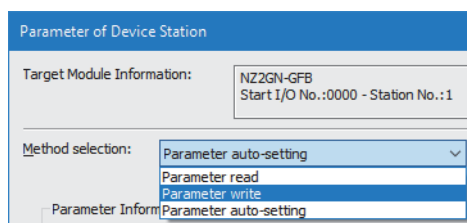


When the "Parameter of Device station" window appears, the "Station-specific mode setting" window to confirm the settings appears.

If it is not the CC-Link IE Field Network station type that you want to set in the NZ2GN-GFB, stop the process and look at "Station-specific mode setting" again.



5. Set "Method selection" to "Parameter write".



6. Double-click the item to change the setting, and input the setting value.
To save the parameter information in a CSV file, click the [Export] button.
To read the parameter information from a CSV file, click the [Import] button.

Point

Set all the items for the parameter. If any item is left blank, the parameter cannot be written to the NZ2GN-GFB.

7. When the [Execute Parameter Processing] button is clicked, a window to check the contents appears.
8. Check the contents, and click the [Yes] button.
9. Power off and on the NZ2GN-GFB or reset it.

Point

The parameters of the NZ2GN-GFB (the values written in the parameter area) can be read out by setting "Parameter read" in "Method Selection" and clicking the [Execute Parameter Processing] button in the "Parameter of Device Station" window.

The parameters read out from the NZ2GN-GFB are displayed in "Read Value".

In addition, parameters for all the items in "Read Value" can be copied to "Write Value/Setting Value" by taking the following steps.

- Click the title cell of "Read Value" to select all the items and copy them.
- Click the title cell of "Write Value/Setting Value" to select all the items and paste the copy.

Precautions

- If the NZ2GN-GFB is not turned off and on or reset, the system runs using the old parameters.
- Invalid parameters are not saved in the non-volatile memory. Check the event history after writing parameters. If "Parameter read" is performed after writing an invalid parameter, the invalid parameter is read instead of the parameter saved in the non-volatile memory.
- When setting parameters using device station parameter processing, do not perform parameter automatic setting. When device station parameter processing is executed after performing parameter automatic setting, the parameters in the NZ2GN-GFB are changed into the parameters set using device station parameter processing. However, when the NZ2GN-GFB is turned off or disconnected and data link is executed again after that, the parameters in the non-volatile memory in the NZ2GN-GFB are overwritten by the parameters set using parameter automatic setting.

6.4 Parameter Settings for CC-Link IE Field Network Device Station

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, configure the settings described in this section.

Read the parameters of the CC-Link IE Field Network device station from the CC-Link IE TSN master station and write the set parameters.

Point

- This setting cannot be configured if the CC-Link IE Field Network device station connected to the NZ2GN-GFB cannot perform device station parameter processing.
- Set the routing settings for all stations on the communication route to the CC-Link IE Field Network of the NZ2GN-GFB using an engineering tool.

Procedure

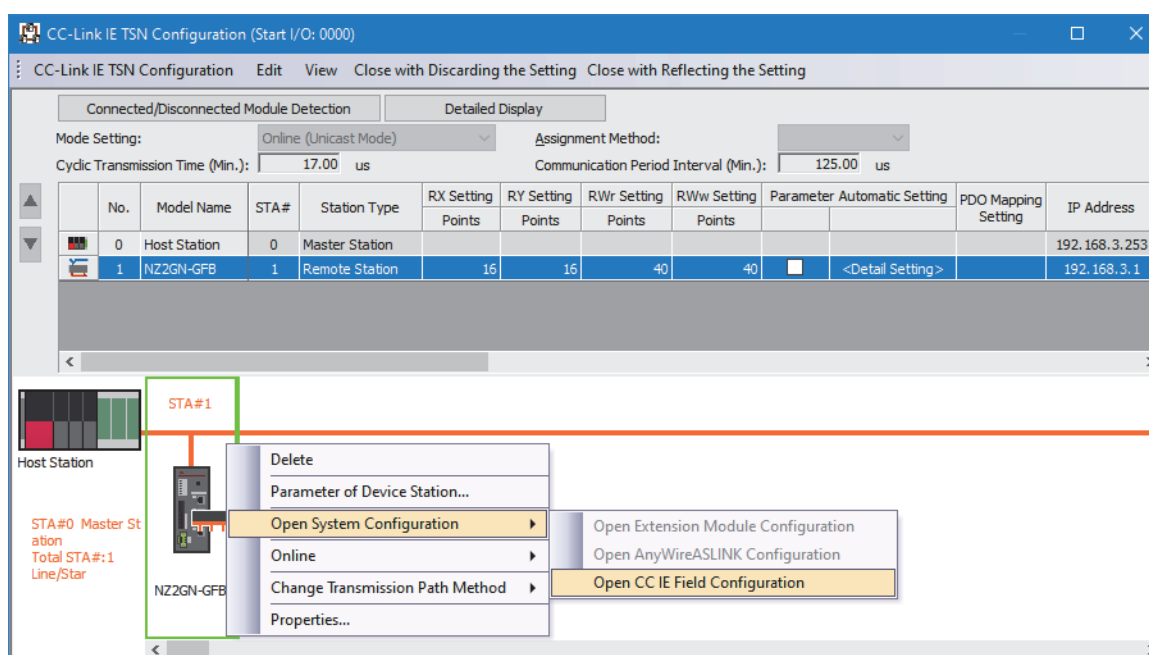
1. In "CC-Link IE TSN Configuration", set "Station-specific mode setting" to "Master Station".

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]

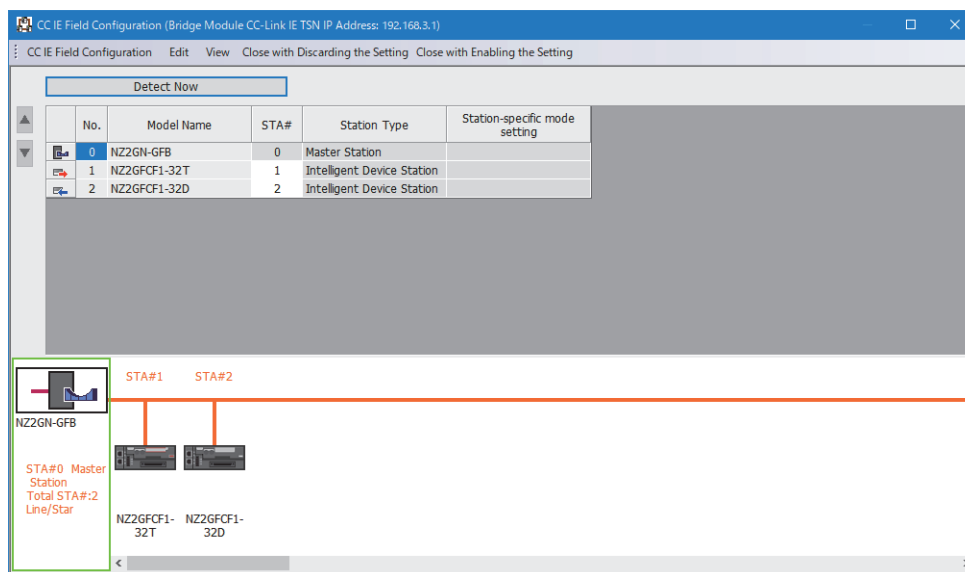
	No.	Model Name	Communication Period Setting	Station Information			Authentication Class
				Alias	Comment	Station-specific mode setting	
	0	Host Station					
	1	NZ2GN-GFB	Basic Period			Master station Local station Master station	Authentication Class B

2. After setting the CC-Link IE TSN parameters, write the set parameters to the CPU module of the CC-Link IE TSN master station and reset the CPU module of the CC-Link IE TSN master station, or turn off and on the power supply of the programmable controller. (Page 43 Parameter Settings for CC-Link IE TSN)
3. After setting the NZ2GN-GFB module parameters, write the parameters to the NZ2GN-GFB, and turn off and on the power supply of the NZ2GN-GFB or reset the NZ2GN-GFB. (Page 48 Module Parameter Setting)
4. Open the "CC IE Field Configuration" window.

In "CC-Link IE TSN Configuration", right-click the NZ2GN-GFB and click [Open System Configuration] → [Open CC IE Field Configuration].



- Click the [Detect Now] button to read the connected CC-Link IE Field Network device stations.



For details on automatic detection of CC-Link IE Field Network device stations, refer to the following.

iQ Sensor Solution Reference Manual

Setting item

■Parameter Processing of Device Station

Select the device station. ⇒ [CC IE Field Configuration] ⇒ [Online] ⇒ [Parameter Processing of Device Station]
The parameters of a device station can be read or written. This setting can be executed only when the device station supports "Parameter Processing of Device Station". The setting range varies depending on the target module.
For details, refer to the manual for the device station used.

■Command Execution of Device Station

Select the device station. ⇒ [CC IE Field Configuration] ⇒ [Online] ⇒ [Command Execution of Device Station]
The command of the device station is executed. This setting can be executed only when the device station supports the command execution. The setting range varies depending on the target module.
For details, refer to the manual for the device station used.

Precautions

■Parameters set in the "CC IE Field Configuration" window

The parameters set in the "CC IE Field Configuration" window are not written to the NZ2GN-GFB even after reflecting the settings and closing the window.

To write the parameters to the NZ2GN-GFB, execute the parameter processing of the device station in the "CC-Link IE TSN Configuration" window.

For the parameter processing of the device station, refer to the following.

 Page 63 Device station parameter processing

■Setting details of the "CC IE Field Configuration" window

The settings of the device station connected to the NZ2GN-GFB are not saved in the engineering tool until [Close with Reflecting the Setting] is selected in the "CC-Link IE TSN Configuration" window.

Ensure to select [Close with Enabling the Setting] in the "CC IE Field Configuration" window, and then select [Close with Reflecting the Setting] in the "CC-Link IE TSN Configuration" window.

7 FUNCTIONS

7.1 Cyclic Transmission

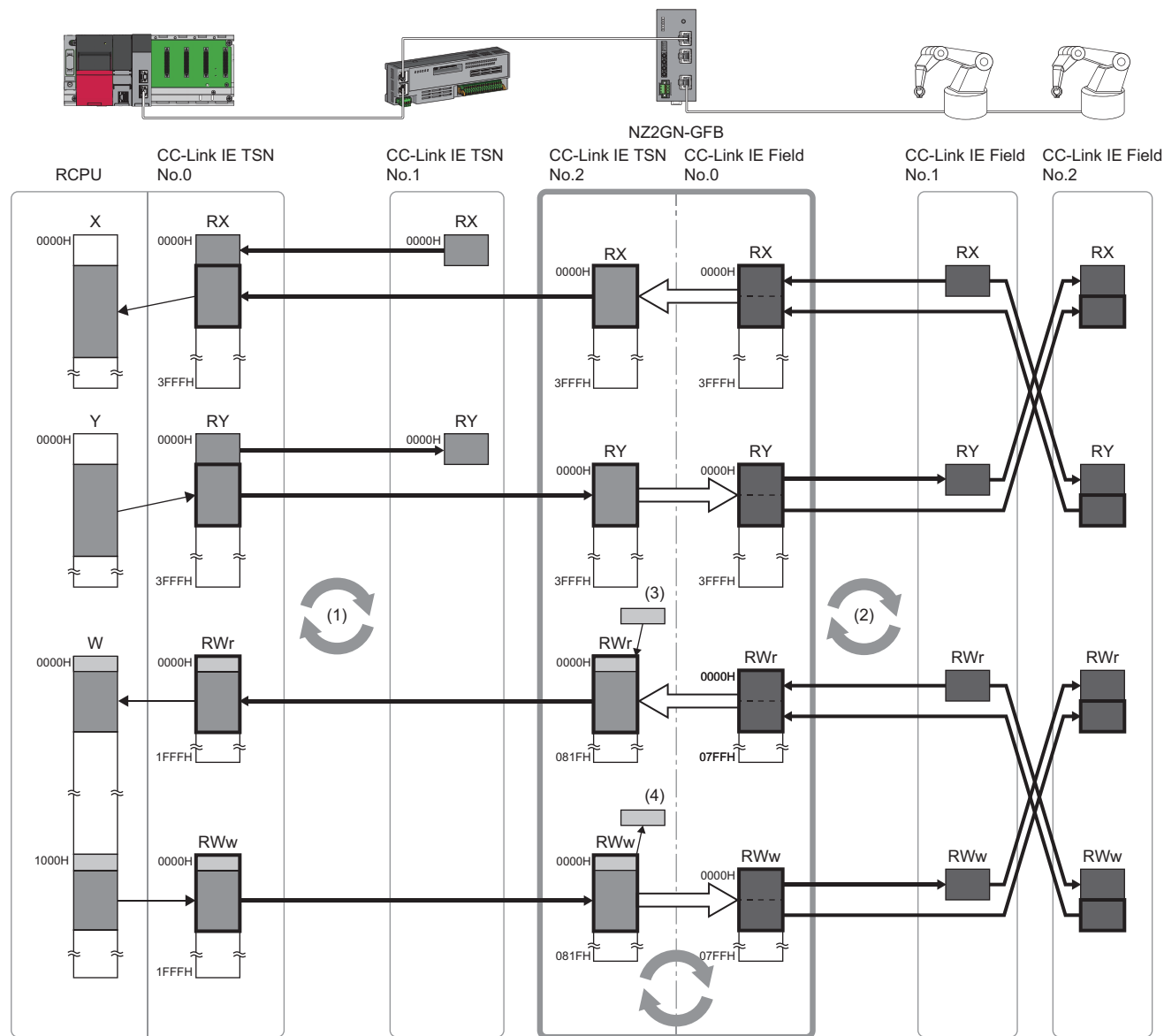
Communications using RX, RY, RWr, and RWw

The NZ2GN-GFB can periodically exchange data among stations on CC-Link IE TSN and CC-Link IE Field Network by transferring a link device (RX, RY, RWr, or RWw).

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, cyclic transmission can be performed between the CC-Link IE TSN master station and CC-Link IE Field Network device stations using a link device (RX, RY, RWr, or RWw).

The link device of each CC-Link IE Field Network device station assigned using module parameters is stored in the NZ2GN-GFB link device assigned from the CC-Link IE TSN master station.



- Link device on CC-Link IE TSN
- Link device on CC-Link IE Field Network
- Link device used in the NZ2GN-GFB system

- CC-Link IE TSN No.0: CC-Link IE TSN master station (station No.0)
- CC-Link IE TSN No.1 and No.2: CC-Link IE TSN remote station (No.1) and CC-Link IE TSN remote station (No.2)
- CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
- CC-Link IE Field No.1: CC-Link IE Field Network device station (No.1)
- CC-Link IE Field No.2: CC-Link IE Field Network device station (No.2)

(1) Cyclic data transfer processing

(2) Link scan

(3) NZ2GN-GFB operating status or others

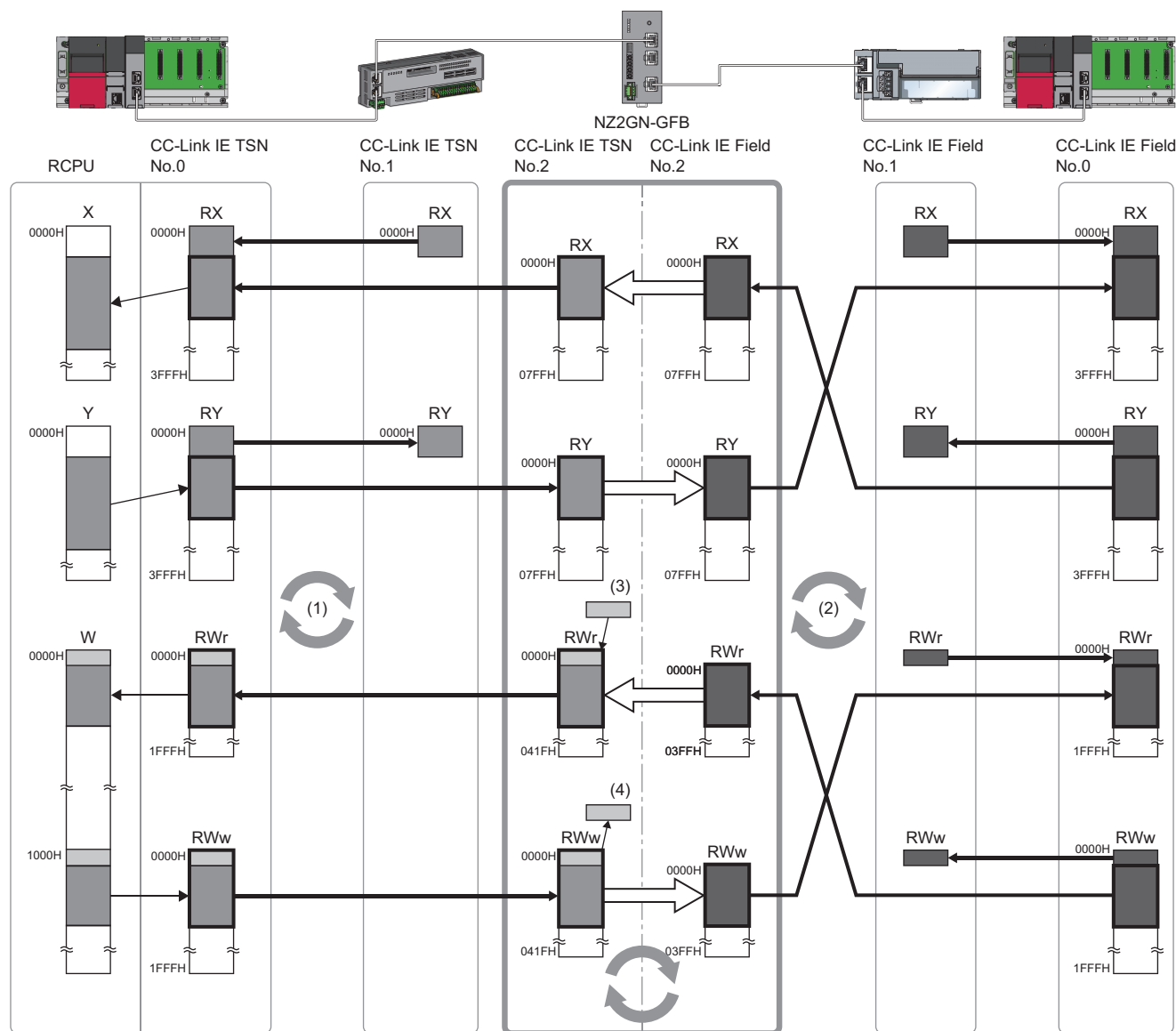
(4) NZ2GN-GFB settings or others



The first 32 remote register (RWr/RWw) points assigned to the NZ2GN-GFB by the CC-Link IE TSN master station is used by the system, so they cannot be used for data exchange with CC-Link IE Field Network device stations.

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, cyclic transmission can be performed between the CC-Link IE TSN master station and CC-Link IE Field Network master station using a link device (RX, RY, RWr, or RWw). The link device of the NZ2GN-GFB assigned using the CC-Link IE TSN master station is stored in the link device of the NZ2GN-GFB assigned using the CC-Link IE TSN master station.



- CC-Link IE TSN No.0: CC-Link IE TSN master station (station No.0)
 - CC-Link IE TSN No.1 and No.2: CC-Link IE TSN remote station (No.1) and CC-Link IE TSN remote station (No.2)
 - CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
 - CC-Link IE Field No.1: CC-Link IE Field Network remote device station (No.1)
 - CC-Link IE Field No.2: CC-Link IE Field Network local station (No.2)
- (1) Cyclic data transfer processing
(2) Link scan
(3) NZ2GN-GFB operating status or others
(4) NZ2GN-GFB settings or others

-
- The first 32 remote register (RWr/RWw) points assigned to NZ2GN-GFB by the CC-Link IE TSN master station is used by the NZ2GN-GFB system, so they cannot be used for data exchange with the CC-Link IE Field Network master station.
 - The cyclic data of each station other than the CC-Link IE Field Network master station cannot be sent on the CC-Link IE TSN line. To receive the cyclic data of each station other than the CC-Link IE Field Network master station in the CC-Link IE TSN master station, store the cyclic data of each station on CC-Link IE Field Network in the NZ2GN-GFB range assignment from the CC-Link IE Field Network master station.
-

I/O maintenance settings

This function sets whether to hold or clear the data to be transmitted from CC-Link IE TSN to CC-Link IE Field Network or vice versa, when an error occurs in the NZ2GN-GFB or the CC-Link IE TSN master station.

The items that can be set are as follows:

Item	Reference
CC-Link IE TSN side data link error station setting	Page 76 Data link error station setting
CC-Link IE Field Network side data link error station setting	
CC-Link IE TSN master station output hold/clear setting during CPU STOP ^{*1}	Page 77 CC-Link IE TSN master station output hold/clear setting during CPU STOP
CC-Link IE TSN master station output mode upon CPU error ^{*1}	Page 77 CC-Link IE TSN master station output mode upon CPU error

^{*1} These settings cannot be set when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Devices with I/O maintenance settings enabled

The following table indicates the devices with I/O maintenance settings enabled.

Item	Device (○: Enable, ×: Disable)	
	RX	RY
CC-Link IE TSN side data link error station setting	×	○
CC-Link IE Field Network side data link error station setting	○	×
CC-Link IE TSN master station output hold/clear setting during CPU STOP	×	○
CC-Link IE TSN master station output mode upon CPU error	×	○

7

Point

If "I/O maintenance settings" is set to "1: Hold" and a moderate error or major error occurs in the NZ2GN-GFB, I/O remains off.

If a major error occurs, data link is stopped on CC-Link IE Field Network.

Setting method

The I/O maintenance settings can be set using the NZ2GN-GFB module parameter of "I/O maintenance settings". (📖 Page 50 Parameter information)

■ When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

When a data link error occurs in CC-Link IE Field Network, the data transmitted from the CC-Link IE Field Network device station with the data link error to the CC-Link IE TSN master station (RX) is held or cleared according to the configured settings.

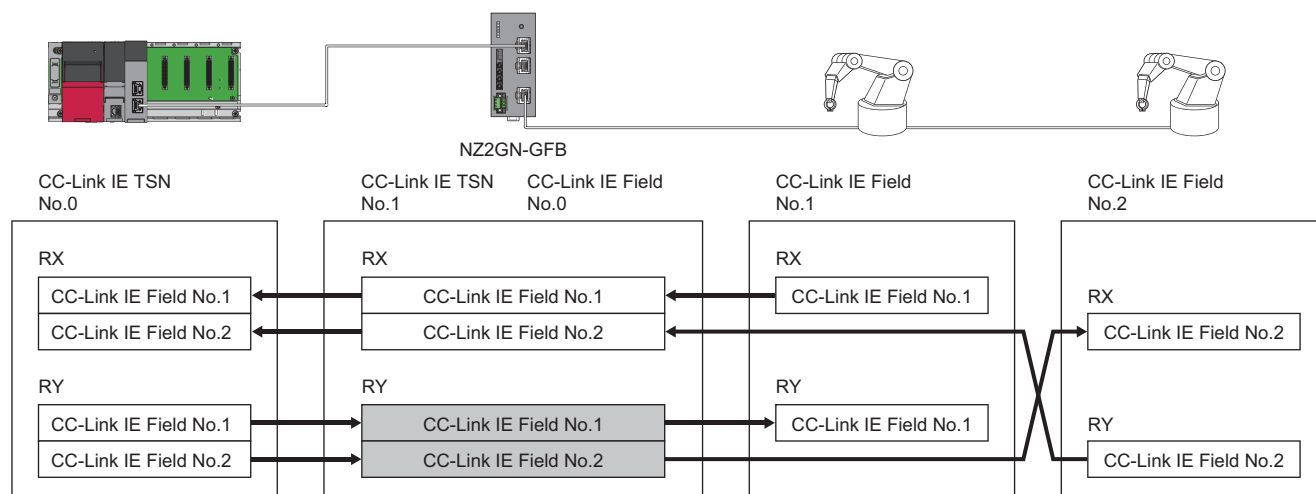


When a data link error occurs in CC-Link IE Field Network, the data transmitted from the CC-Link IE Field Network master station to the CC-Link IE TSN master station (RX) is held or cleared according to the configured settings.



CC-Link IE TSN master station output hold/clear setting during CPU STOP

This setting can only be set when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. When the CPU module of the CC-Link IE TSN master station is changed from RUN to STOP, the transmitted data in the NZ2GN-GFB (RY) is held or cleared depending on the configured settings.



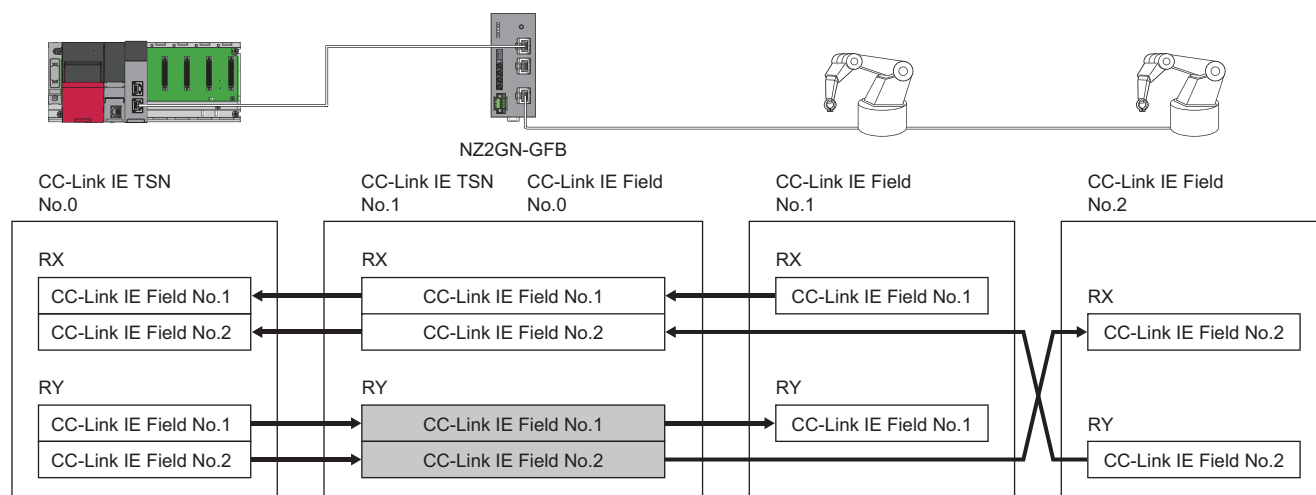
■ Data is held or cleared according to the output hold/clear setting during CPU STOP of the CC-Link IE TSN master station.

- CC-Link IE TSN No.0: CC-Link IE TSN master station (station No.0)
- CC-Link IE TSN No.1: CC-Link IE TSN remote station (station No.1)
- CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
- CC-Link IE Field No.1: CC-Link IE Field Network device station (No.1)
- CC-Link IE Field No.2: CC-Link IE Field Network device station (No.2)

7

CC-Link IE TSN master station output mode upon CPU error

This setting can only be set when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. When a CPU module stop error occurs in the CC-Link IE TSN master station, the transmitted data in the NZ2GN-GFB (RY) is held or cleared depending on the configured settings.



■ Data is held or cleared according to the output hold/clear setting during CPU STOP of the CC-Link IE TSN master station.

- CC-Link IE TSN No.0: CC-Link IE TSN master station (station No.0)
- CC-Link IE TSN No.1: CC-Link IE TSN remote station (station No.1)
- CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
- CC-Link IE Field No.1: CC-Link IE Field Network device station (No.1)
- CC-Link IE Field No.2: CC-Link IE Field Network device station (No.2)

Point

When "Output Mode upon CPU Error" is set to "0: Clear" and a CPU stop error occurs in the CC-Link IE TSN master station, data link is stopped on CC-Link IE Field Network.

■Operating status when an error occurs

When a moderate/major error occurs in the CPU module of the CC-Link IE TSN master station, the NZ2GN-GFB operating as the CC-Link IE Field Network master station is treated as the moderate error status on the CC-Link IE Field Network.

However, if a major error occurs in the NZ2GN-GFB, it is treated as the major error status.

Ex.

When the NZ2GN-GFB (CC-Link IE Field Network master station) is in the error-free status and a major error occurs in the CPU module of the CC-Link IE TSN master station, the status of the NZ2GN-GFB is as follows.

- CC-Link IE Field Network diagnostics: Moderate error status
- CC-Link IE Field Network station SB/SW: Moderate error status
- CC-Link IE TSN diagnostics: No error
- CC-Link IE TSN station SB/SW: No error
- NZ2GN-GFB LED status: No error (depends on the CC-Link IE Field Network status)

Precautions

- When an error is detected in all stations on CC-Link IE Field Network, input data are retained for at least 2 seconds after communication is disabled due to Ethernet cable disconnection or some other cause, even when "CC-Link IE Field Network data link faulty station setting" is set to "0: Clear".
- When "CC-Link IE Field Network data link faulty station setting" is set to "0: Clear" and data link on CC-Link IE Field Network is stopped intentionally without an error occurring, the input status is retained.
- When "Output hold/clear setting during CC-Link IE TSN master station CPU STOP" is set to "0: Clear" and the CPU module of the CC-Link IE TSN master station is stopped, forced output to CC-Link IE Field Network device stations using an engineering tool cannot be performed.
- If two or more of the statuses described in the following table occur, the transmitted data (RY) on CC-Link IE Field Network is cleared as long as the "I/O maintenance settings" for even one status is set to "0: Clear".

Status	Corresponding parameter items for I/O maintenance settings
Data link error in the NZ2GN-GFB on CC-Link IE TSN	CC-Link IE TSN side data link error station setting
Change of the CPU module status from RUN to STOP on the CC-Link IE TSN master station	CC-Link IE TSN Master station output Hold/Clear setting during CPU STOP
CPU module stop error on the CC-Link IE TSN master station	CC-Link IE TSN Master station output mode upon CPU error

Cyclic transmission stop and restart

This function allows users to select a CC-Link IE Field Network connected station and stop the cyclic transmission during debugging and other operations. (Data will not be received from a device station nor transmitted from own station.) It also restarts stopped cyclic transmissions. Transient transmission does not stop.

Point

The cyclic transmission of any station can be stopped and restarted when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

The cyclic transmission of own station can be stopped and restarted when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Setting method

Cyclic transmissions can be stopped and restarted using the following methods.

Item	Reference
"Link Start/Stop" in the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window	 Page 129 CC-Link IE Field Network diagnostics
Remote buffer memory	 Page 231 Details of remote buffer memory (Link special relay (SB) area of CC-Link IE Field Network)  Page 249 Details of remote buffer memory (Link special register (SW) area of CC-Link IE Field Network)

Precautions

If the link special relay (SB) that instructs the CC-Link IE Field Network master station or the target station to start/stop the link is on (Startup or stop requested), it may not be possible to start/stop the link from the "CC-Link IE TSN/CC-Link IE Field diagnostics" window.

When executing link start/stop from the "CC-Link IE TSN/CC-Link IE Field diagnostics" window, turn off (Startup or stop not requested) the link special relay (SB) that instructs link start/stop.

7.2 Transient Transmission

Point

- Communication with the engineering tool (such as the "CC-Link IE TSN/CC-Link IE Field diagnostics" window, error/event history display) is transient transmission.
- Executing multiple transient transmissions at the same time may increase the response time of transient transmissions.

Communications using a dedicated instruction

Data communication is performed with the NZ2GN-GFB using dedicated instructions at any time. Relay can also be performed across CC-Link IE TSN and CC-Link IE Field Network.

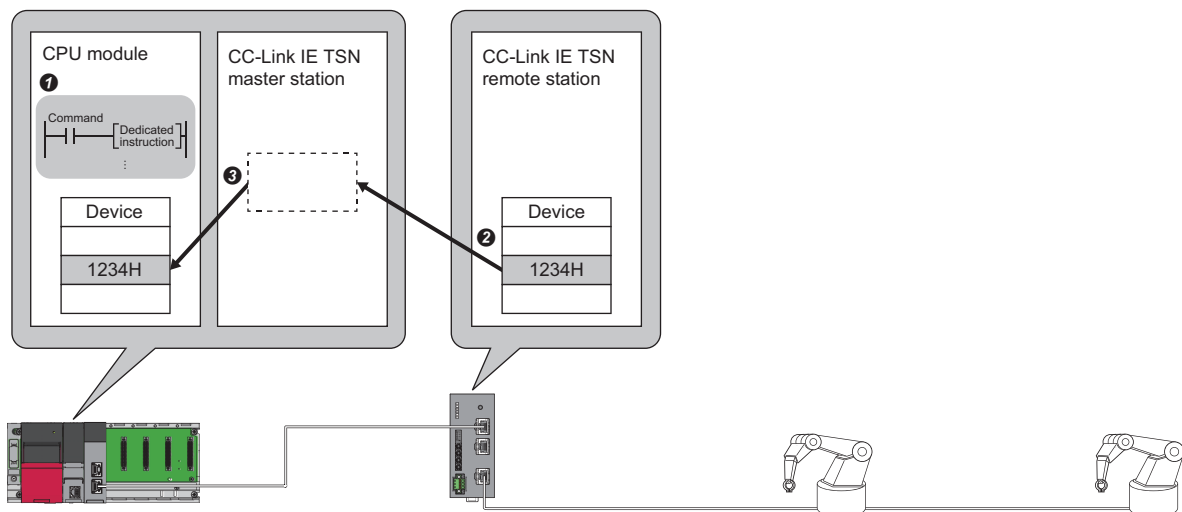
Point

For details on dedicated instructions, refer to the following.

- 📖 MELSEC iQ-R Programming Manual (Module Dedicated Instructions)
- 📖 User's manual for the master station used

Dedicated instructions for the NZ2GN-GFB

The following table lists the dedicated instructions that can be executed in the NZ2GN-GFB from the CC-Link IE TSN master station.



Instruction name	Description
REMFR	Reads data in units of words from the remote buffer memory of the NZ2GN-GFB. (16-bit address specification)
REMFRD	Reads data in units of words from the remote buffer memory of the NZ2GN-GFB. (32-bit address specification)
REMFRIP	Reads data in units of words from the remote buffer memory of the NZ2GN-GFB. (Target station IP address specification) (16-bit address specification)
REMFRDIP	Reads data in units of words from the remote buffer memory of the NZ2GN-GFB. (Target station IP address specification) (32-bit address specification)
REMT0	Writes data in units of words from the remote buffer memory of the NZ2GN-GFB. (16-bit address specification)
REMT0D	Writes data in units of words from the remote buffer memory of the NZ2GN-GFB. (32-bit address specification)
REMT0IP	Writes data in units of words from the remote buffer memory of the NZ2GN-GFB. (Target station IP address specification) (16-bit address specification)
REMT0DIP	Writes data in units of words from the remote buffer memory of the NZ2GN-GFB. (Target station IP address specification) (32-bit address specification)
SLMPSEND	Sends SLMP messages to the NZ2GN-GFB.

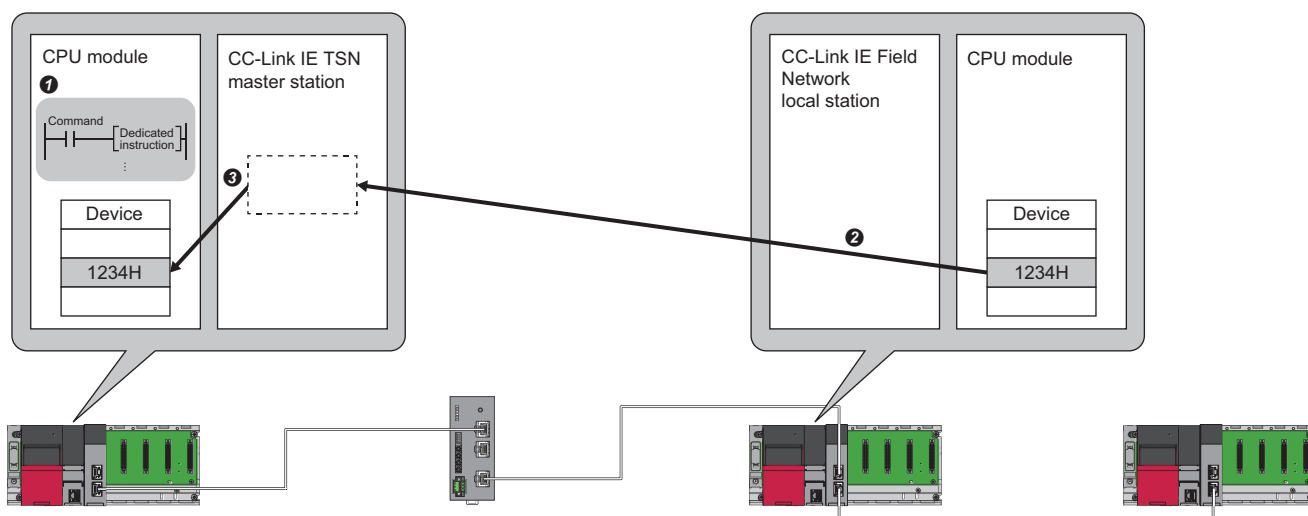


Do not execute multiple dedicated instructions at the same time for a single NZ2GN-GFB. If multiple dedicated instructions are executed at the same time, the NZ2GN-GFB may not be able to receive the dedicated instructions, and the dedicated instructions may time out.

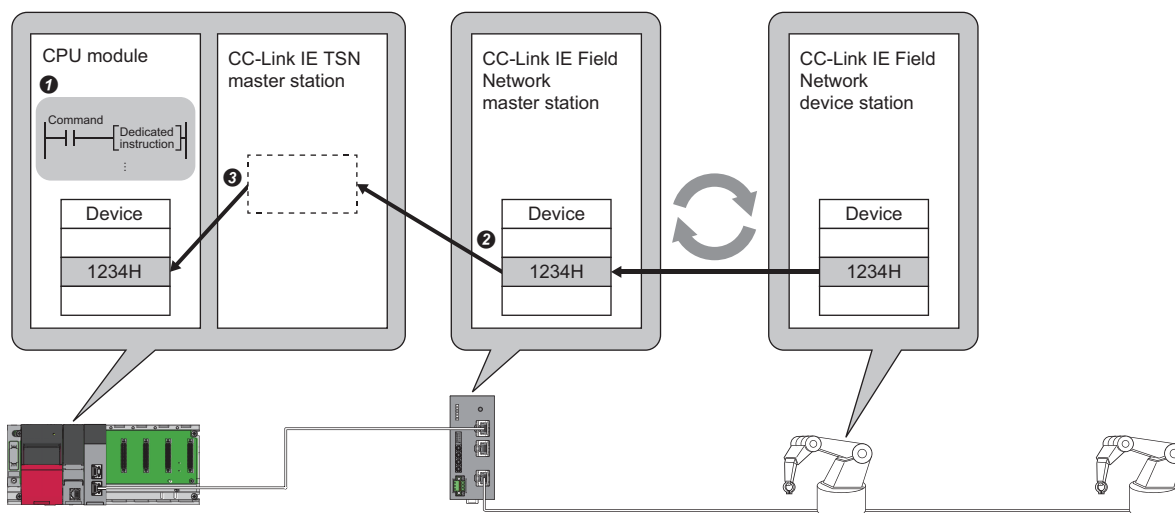
Dedicated instructions that can be executing using the NZ2GN-GFB as a relay station

If a dedicated instruction can be executed in the station of another network, the NZ2GN-GFB can be used as a relay station to execute the instruction.

For the applicable dedicated instructions, refer to the user's manual for the master station used.



Dedicated instructions can be executed in a CC-Link IE Field Network device station from the NZ2GN-GFB by using remote buffer memory when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. (➡ Page 83 Transient transmission with other stations using remote buffer memory)



This table shows the dedicated instructions that can be executed on a CC-Link IE Field Network device station from the CC-Link IE TSN master station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Instruction name	Description
REMFR	Reads data in units of words from the remote buffer memory in the intelligent device station/remote device station. (16-bit address specification)
REMRD	Reads data in units of words from the remote buffer memory in the intelligent device station/remote device station. (32-bit address specification)
REMT0	Writes data in units of words to the remote buffer memory in the intelligent device station/remote device station. (16-bit address specification)
REMTOD	Writes data in units of words to the remote buffer memory in the intelligent device station/remote device station. (32-bit address specification)
RIRD	Reads the specified points of data from the intelligent device station/remote device station.
RIWT	Writes the specified points of data from the intelligent device station/remote device station.

Transient transmission with other stations using remote buffer memory

Transient transmission can be performed with another station that is connected to CC-Link IE Field Network by reading/writing the NZ2GN-GFB remote buffer memory from the program of the CPU module of the CC-Link IE TSN master station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Transient transmission that can be executed	Notes
Reads data in units of words from the buffer memory in the intelligent device station/remote device station.	Same behavior as the REMFR and REMFRD instructions.
Writes data in units of words to the buffer memory in the intelligent device station/remote device station.	Same behavior as the REMTO and REMTOD instructions.
Reads the specified points of data from the target station device.	Same behavior as the RIRD instruction.
Writes the specified points of data to the target station device.	Same behavior as the RIWT instructions.

Data is written to or read from the specified target station using the 'Transient transmission area with another station' (16000H to 163FFH) of the remote buffer memory. (🔗 Page 272 Setting value)

The handshake flag is used to control the writing and reading of data to/from the target station.

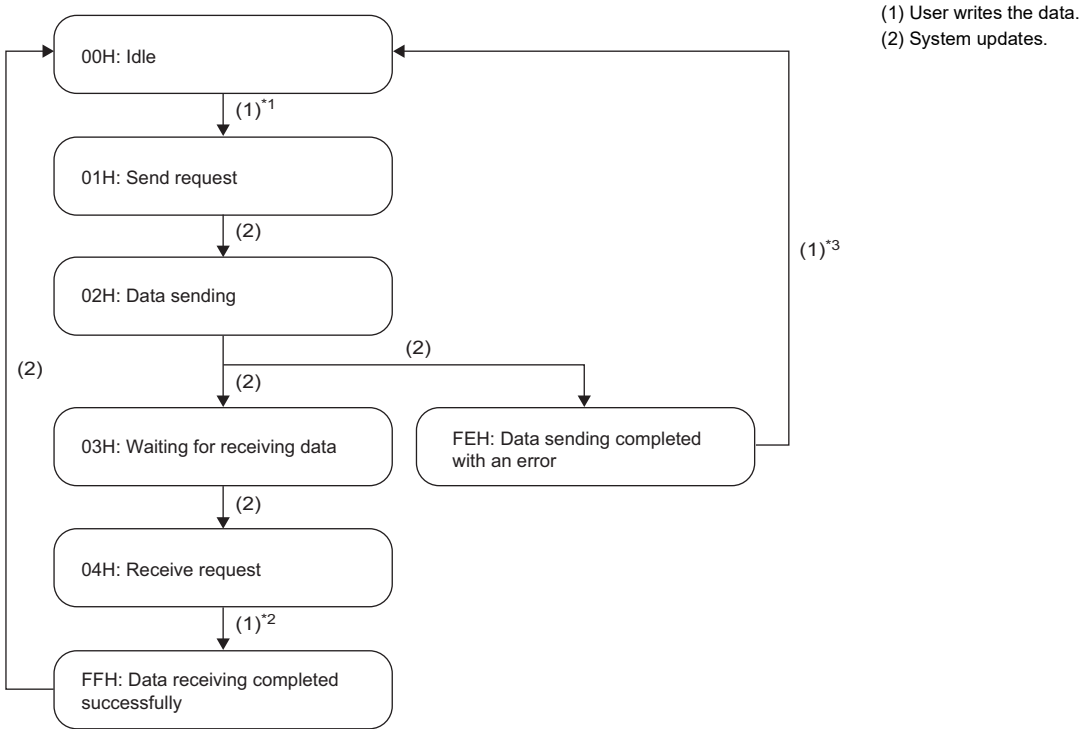
Point

The transient transmission response wait timeout is 10 seconds.

Data is not resent, so resend it again using the program if necessary.

Handshake flag

The following shows the how the status of 'Handshake flag' (16000H) of remote buffer memory changes.



- *1 When the handshake flag is 00H (Idle), 01H (Send request) can be written.
- *2 When the handshake flag is 04H (Reception request), FFH (Received successfully) can be written.
- *3 When the handshake flag is FEH (Transmission completed with an error), 00H (Idle) can be written.

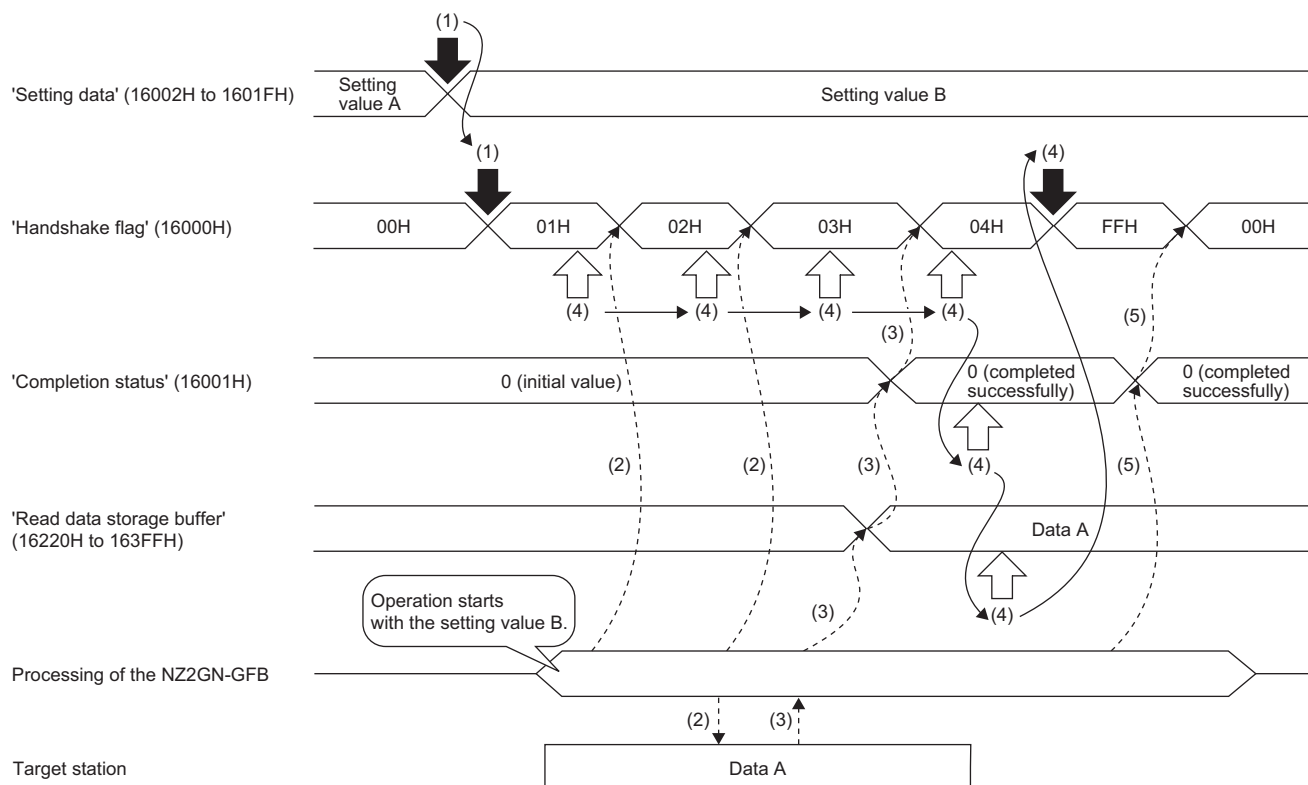
Point

If the above is not observed, the written value is ignored and the completion status becomes an error (error code: 0001H).

Operation

This section describes the operations for normal completion and completion with an error using REMFR as an example.

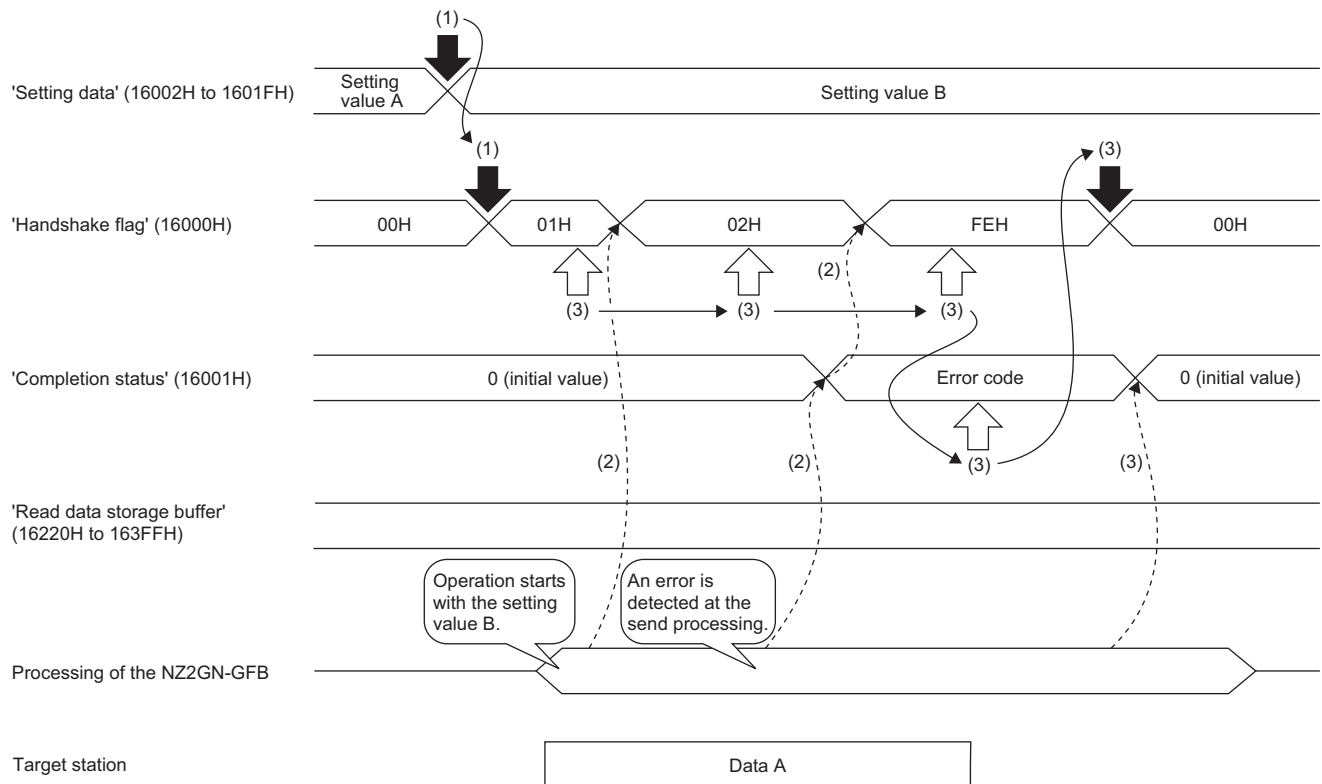
■When the process is completed successfully



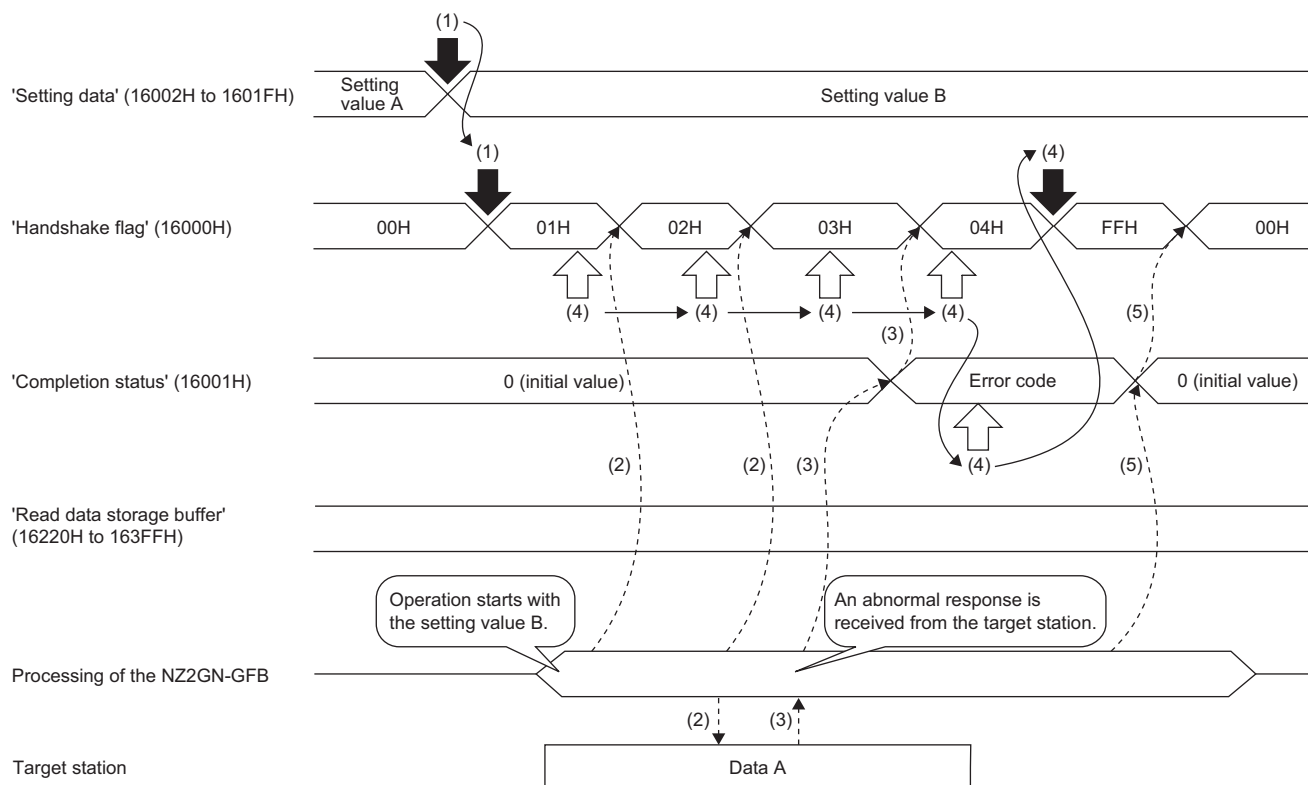
- Writing the remote buffer memory
- Reading the remote buffer memory
- Executed by the NZ2GN-GFB
- Executed by the program

- (1) The program checks if the handshake flag is 00H (Idle). Once the setting data from 'Instruction specification' (16002H) onwards is written using the program, 01H (Send request) is written as the handshake flag.
- (2) The system updates the handshake flag to 02H (Sending). After transient transmission (REMFR instruction) is executed in the target station, the handshake flag is updated to 03H (Waiting reception).
- (3) Transient transmission (REMFR instruction) is completed successfully, the data read from the target station is stored in the read data storage buffer. After 0 (Completed successfully), is stored as the completion status, the handshake flag is updated to 04H (Reception request).
- (4) Once it has been confirmed that the handshake flag has been updated to 04H (Reception request), the completion status is read. If the completion status is 0 (Completed successfully), data is written from the read data storage buffer and FFH (Received successfully) is written as the handshake flag.
- (5) The system updates the handshake flag to 00H (Idle).

■When the send processing is completed with an error (error detected)



■When the process is completed with an error (abnormal response from the target station)



- (1) Same operation as when the process is completed successfully.
- (2) Same operation as when the process is completed successfully.
- (3) Transient transmission (REMFR instruction) is completed with an error, so the system stores the error code as the completion status, and the handshake flag is updated to 04H (Reception request).
- (4) Once it has been confirmed that the handshake flag has been updated to 04H (Reception request), the completion status is read. The completion status is not 0 (error code), so data is not written from the read data storage buffer and FFH (Received successfully) is written as the handshake flag.
- (5) The system updates the handshake flag to 00H (Idle).

Error code

When the process is completed with an error, the error code is stored in 'Completion status' (16001H).

For details, refer to the following.

📖 Page 174 Error codes stored in 'Completion status' (16001H).

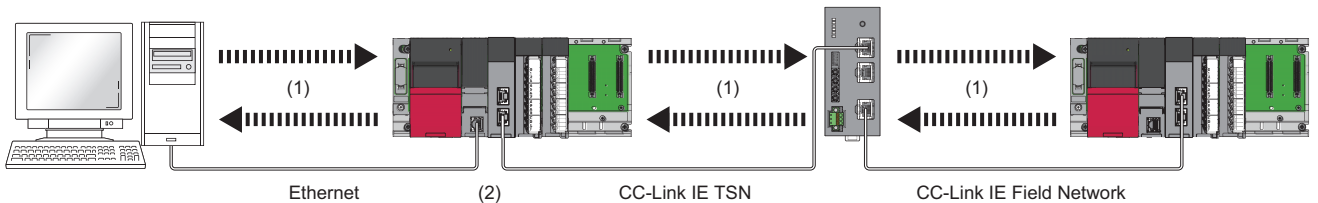
Program example

For details, refer to the following.

📖 Page 115 Program example (2)

Communications using the SLMP

Data communication is performed with the NZ2GN-GFB using SLMP.
Data communication can be performed with other stations on CC-Link IE TSN and CC-Link IE Field Network from an upper system using the NZ2GN-GFB as a relay.



- (1) Sending and receiving SLMP messages
- (2) Relay station

For details on SLMP, refer to the following.

SLMP Reference Manual

Available commands

The following table lists the commands that can be executed for the NZ2GN-GFB from the CC-Link IE TSN master station.

SLMP command*1				Application
Type	Operation	Command	Subcommand	
Remote Control	Remote Reset	1006H	0000H	Resets the NZ2GN-GFB remotely.
Memory	Read	0613H	0000H	Reads data from the remote buffer memory.
	Write	1613H	0000H	Writes data to the remote buffer memory.
Clear Error		1617H	0000H	Initializes an error code of the NZ2GN-GFB and turns off the ERR. LED.

*1 The SLMP commands are compatible with 3E frame, 4E frame, and station number extension frame.

Point

Do not execute multiple SLMP commands at the same time for a single NZ2GN-GFB. If multiple SLMP commands are executed at the same time, the NZ2GN-GFB may not be able to receive the SLMP commands, and the SLMP commands may time out.

Communication settings

To communicate with the NZ2GN-GFB using SLMP, set as follows.

- TCP/UDP: UDP
- Port: 45239
- Code: Binary code

How to communicate

Use the SLMPSEND instruction to send SLMP commands to the NZ2GN-GFB from the CPU module of the CC-Link IE TSN of the master station.

For the SLMPSEND instruction, refer to the following.

MELSEC iQ-R Programming Manual (Module Dedicated Instructions)

End codes for SLMP communications

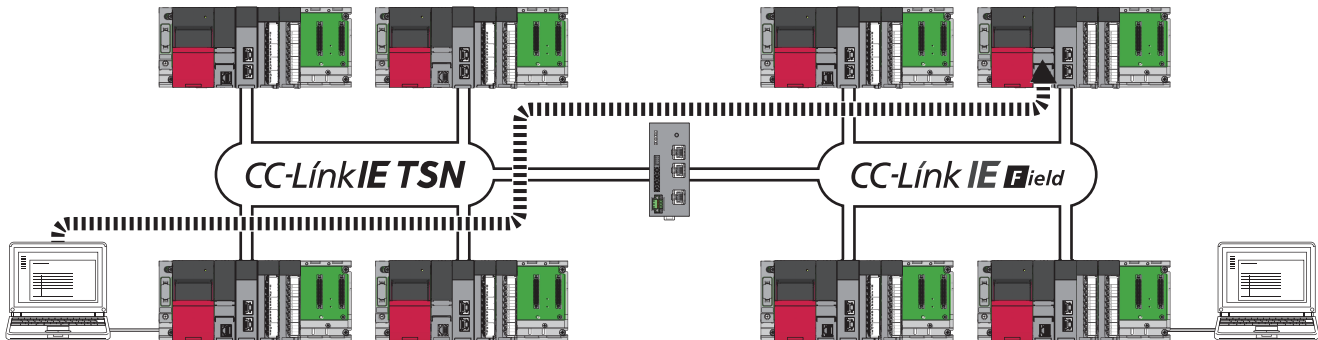
If the NZ2GN-GFB sends back an abnormal response, the NZ2GN-GFB error code is stored in the end code of that message.

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

Page 166 Error codes that can be checked as processing results

Communications using the engineering tool

CC-Link IE TSN and CC-Link IE Field Network stations can be accessed seamlessly with the NZ2GN-GFB as a relay using an engineering tool.



For the access range, refer to the user's manual for the master station used.

When the networks consist of only MELSEC iQ-R series

If the system configuration without the NZ2GN-GFB only consists of MELSEC iQ-R series, communication paths are automatically set for communications with the following networks of MELSEC iQ-R series.

- CC-Link IE TSN
- CC-Link IE Field Network

■Setting method

Set the following module parameters of the NZ2GN-GFB. (👉 Page 48 Module Parameter Setting)

Item		Description
Application settings (common)	Dynamic routing	1: Enable
	Valid number of routing setting	0

Point🔍

- Dynamic routing is a function for a network module to transmit information with other network modules and to create or update the communication path to pass the least number of relay stations.
- If a system only consists of network modules that support dynamic routing, it automatically sets the parameters for the routing settings and conducts routing. (The communication path is automatically set, but it can also be done manually. (👉 Page 89 When the networks consist of MELSEC iQ-R series and other series))
- The 'Communication path determination status' (15FA0H to 15FAFH) of remote buffer memory can be used to check if the communication path for each destination station network number has been established with routing. (👉 Page 271 Setting value)

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

If the system configuration without the NZ2GN-GFB consists of other components than MELSEC iQ-R series, data communication can be performed with the following networks other than MELSEC iQ-R series by setting the communication path.

- CC-Link IE Field Network

■Setting method

Set the following module parameters of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

Item			Description
Application settings (common)	Valid number of routing setting		1 or greater (number of modules with routing setting enabled)
	Routing setting No.1 to 16	Relay station network No.	Relay station network number
		Relay station No.	Relay station number
		Target station network No.	Target station network number

For stations that require this setting, refer to the following.

 MELSEC iQ-R Programmable Controller CPU Module User's Manual

Communication test

This test checks if transient transmission data can be properly routed from the own station to the communication target.
For details, refer to the user's manual for the CC-Link IE TSN master station used.

7.3 RAS

RAS stands for Reliability, Availability, and Serviceability. This function improves overall usability of automated equipment.

Module power supply voltage drop detection

Detects a voltage drop of the module power supply.

This function makes troubleshooting easy when the voltage of power supplied to the NZ2GN-GFB drops or when poor connection in the wiring occurs.

Operation

The module power supply voltage drop detection function starts from the time 500ms passes after the NZ2GN-GFB is powered on.

When the module power supply voltage drops below 20.4VDC, an error (error code: 0240H) occurs.

Setting method

This function is always enabled. There is no need to set it.

Precautions

The voltage to be detected varies depending on the environment.

When an error is detected, since the power supply environment is out of specification range, the operation is not guaranteed.

A power supply voltage drop is not detected in the event of a sudden power failure or when power-off operation is performed.

Device station disconnection

The data link of the CC-Link IE Field Network device station where an error occurred is stopped, and the data link continues only for stations that are operating normally.

In a line topology, the device station where an error occurred and all subsequent stations are disconnected.

Automatic return

The data link is automatically restarted when the CC-Link IE Field Network device station that was disconnected due to an error becomes normal again.

Precautions

This table explains the precautions that appear when operating the system under one of the following conditions.

Condition	Precautions
Star topology	<ul style="list-style-type: none">When turning off or on a CC-Link IE Field Network device stationWhen changing the connection destination of a CC-Link IE Field Network device station on the network by disconnecting and reconnecting the cable connected to the industrial switch
Line topology	<ul style="list-style-type: none">Two or more CC-Link IE Field Network device stations performed the following actions and returned to the network successfully after a data link error<ul style="list-style-type: none">Turning off or on the CC-Link IE Field Network device stationUnplugging and plugging the cable connected to the module of the CC-Link IE Field Network device station

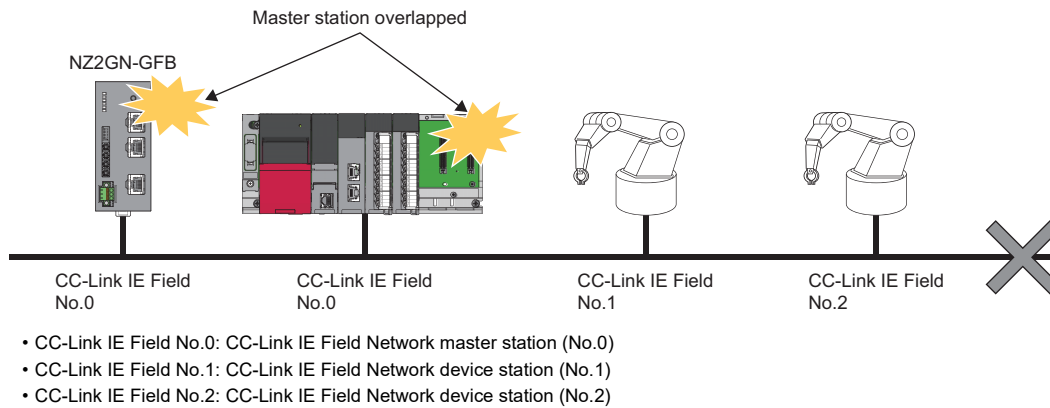
Master station duplication detection

If one network has multiple CC-Link IE Field Network master stations, an overlap error is detected.

After resolving the cause of error for the affected station, reset or turn off and on the module to restore the system.

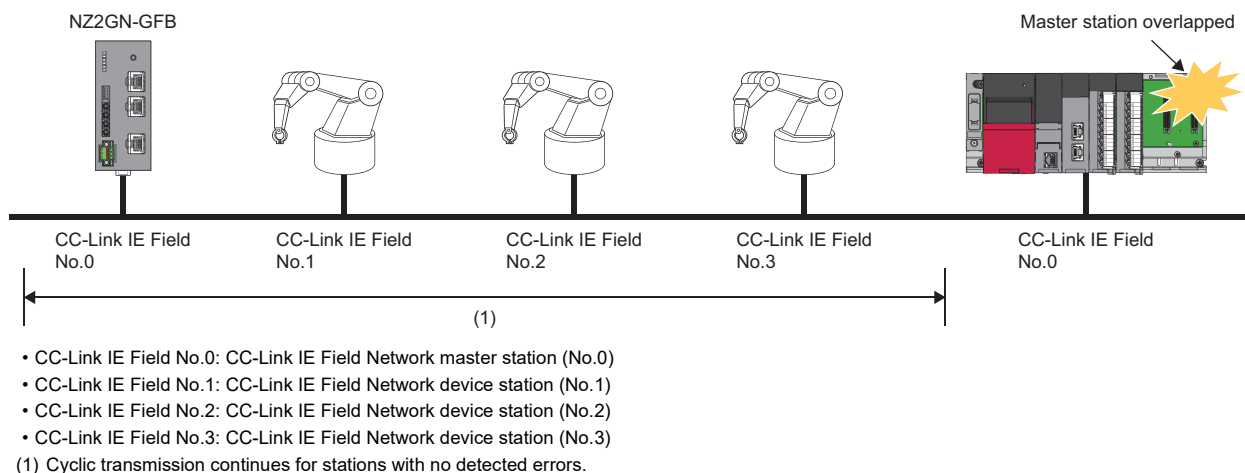
Simultaneously turning off and on the power

When multiple master stations are simultaneously powered off and on or connected, an error is detected in all master stations and cyclic transmission and transient transmission cannot be performed in all stations.



Adding another master station to a network during data communication

If another master station is added to CC-Link IE Field Network during data communication, an error is detected in the added master station and cyclic transmission and transient transmission cannot be performed in all stations. Data communication continues for all other stations.

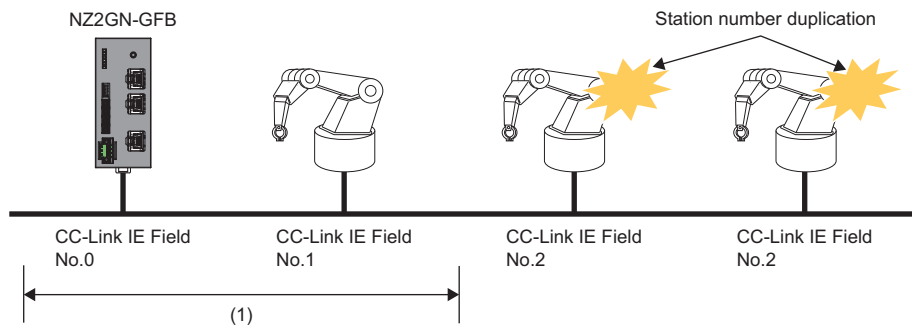


Station number duplication detection

If one network has CC-Link IE Field Network device stations with the same station number, a duplication error is detected. After resolving the cause of error for the affected station, reset or turn off and on the module to restore the system. If the network number is different, station number duplication is not detected.

Simultaneously turning off and on the power

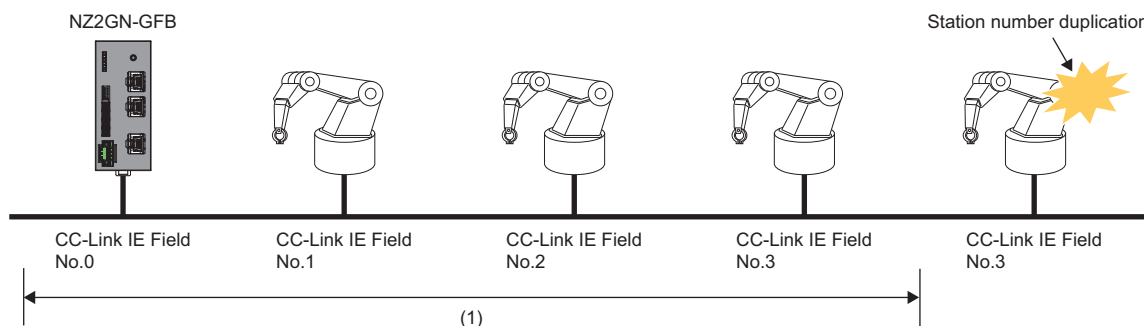
When multiple device stations are simultaneously powered off and on or connected, an error is detected in the device stations with duplicated station number and cyclic transmission and transient transmission cannot be performed. Data communication can be done for all other stations.



- CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
 - CC-Link IE Field No.1: CC-Link IE Field Network device station (No.1)
 - CC-Link IE Field No.2: CC-Link IE Field Network device station (No.2)
- (1) Cyclic transmission continues for stations with no detected errors.

Adding a device station to a network during data communication

If a device station is added to CC-Link IE Field Network during data communication, an error is detected in the added device station and cyclic transmission and transient transmission cannot be performed. Data communication continues for all other stations.



- CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
 - CC-Link IE Field No.1: CC-Link IE Field Network device station (No.1)
 - CC-Link IE Field No.2: CC-Link IE Field Network device station (No.2)
 - CC-Link IE Field No.3: CC-Link IE Field Network device station (No.3)
- (1) Cyclic transmission continues for stations with no detected errors.

Point

Even if one of the stations detected with a duplicate station number is disconnected, the other station does not automatically return to the network.

7.4 Others

Communication speed setting function

This function sets the communication speed of P1 and P2 on CC-Link IE TSN.

Setting method

Set the communication speed using function setting switch 3 of the NZ2GN-GFB.
This setting is common to P1 and P2.

Function setting switch 3	Setting value
Off	1Gbps (factory default)
On	100Mbps

Point

- The communication speed setting is determined by the status of function setting switch 3 when the NZ2GN-GFB is powered on.
- When function setting switch 3 is changed while the NZ2GN-GFB is on, an error (error code: 0204H) occurs, but the communication speed setting does not change.

Setting status

The communication speed setting status can be checked with 'Communication speed setting status' (RWr2.b8) of the remote register. For details, refer to the following.

 Page 187 Communication speed setting status (RWr2.b8)

Precautions

- Depending on the communication speed, the communication cycle range of the CC-Link IE TSN master station that can be set varies. For details, refer to the following.

 Page 43 Communication Period Interval Setting

- For details on the system configuration when using a CC-Link IE TSN device station that operates at a communication speed of 100Mbps, refer to the following.

 User's manual for the CC-Link IE TSN master station used

CC-Link IE TSN Class setting function

This function sets the CC-Link IE TSN Class of the NZ2GN-GFB as CC-Link IE TSN Class A or B of CC-Link IE TSN Protocol version 2.0.

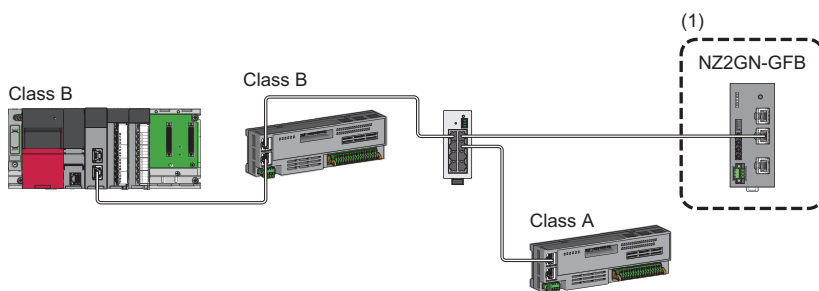
For differences between system configurations that can be connected depending on the CC-Link IE TSN Class, refer to the following.

 User's manual for the CC-Link IE TSN master station used

When the NZ2GN-GFB is used as a CC-Link IE TSN Class A device

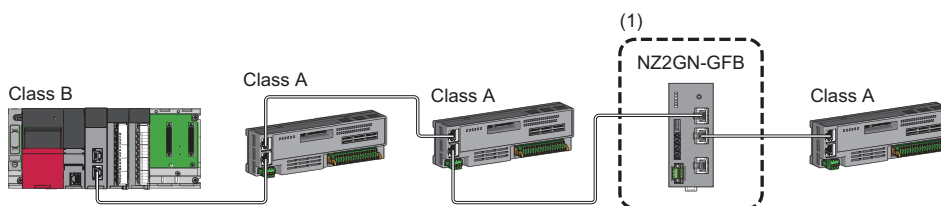
When the NZ2GN-GFB is used with the following system configuration, set the CC-Link IE TSN Class setting of the NZ2GN-GFB to A.

■When connecting the NZ2GN-GFB through an industrial switch



Class A: CC-Link IE TSN Class A device
Class B: CC-Link IE TSN Class B device
(1) Set the CC-Link IE TSN Class to A.

■When the NZ2GN-GFB is connected after a CC-Link IE TSN Class A remote station



Class A: CC-Link IE TSN Class A device
Class B: CC-Link IE TSN Class B device
(1) Set the CC-Link IE TSN Class to A.

Setting method

Set using function setting switch 2 of the NZ2GN-GFB and "CC-Link IE TSN Class" in network configuration settings of the CC-Link IE TSN master station.

Set the same value in function setting switch 2 and "CC-Link IE TSN Class" in network configuration settings.

Point

If a different CC-Link IE TSN Class value is set in function setting switch 2 of the NZ2GN-GFB and in an engineering tool, the event code (00C81H) is registered with the event history of the CC-Link IE TSN master station, and the NZ2GN-GFB does not perform data link.

■Setting using function setting switches

The CC-Link IE TSN Class setting is determined by the status of function setting switch 2 when the NZ2GN-GFB is powered on.

Function setting switch 2	Description
Off	CC-Link IE TSN Class B (factory default)
On	CC-Link IE TSN Class A

When the status of function setting switch 2 is changed while the NZ2GN-GFB is on, an error (error code: 0203H) occurs, but the CC-Link IE TSN Class setting does not change.

■Setting using an engineering tool

Set the CC-Link IE TSN Class using the engineering tool. For details, refer to the following.

☞ Page 44 Network Configuration Settings

Checking setting status

The status set using the setting function of the CC-Link IE TSN Class can be checked with remote registers or an engineering tool.

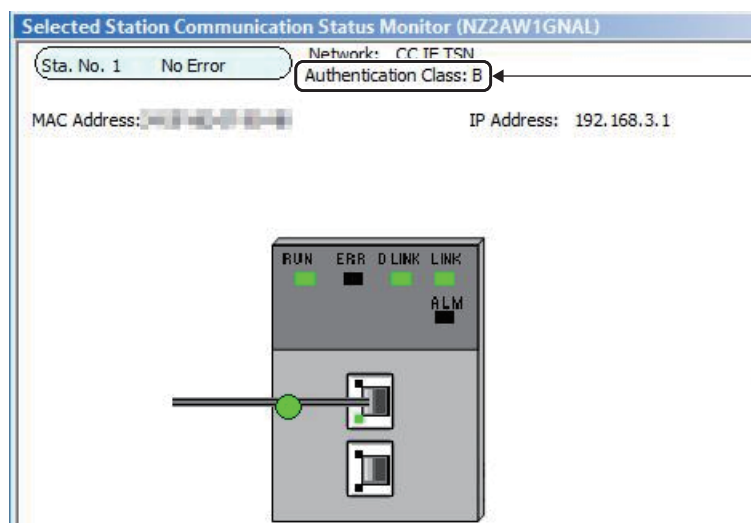
■Checking with remote registers

The status can be checked with 'CC-Link IE TSN Class setting status' (RWr2.b11) of the remote register. (☞ Page 187 CC-Link IE TSN Class setting status (RWr2.b11))

■Checking with an engineering tool

The status can be checked with "Selected Station Communications Status Monitor" of CC-Link IE TSN/CC-Link IE Field diagnostics.

🔍 [Diagnostics] ⇒ [CC-Link IE TSN/CC-Link IE Field Diagnostics]



Precautions

- When CC-Link IE TSN Class A is set for the CC-Link IE TSN Class, use the master station that can operate with CC-Link IE TSN protocol version 2.0.
- The range of values that can be set for the communication cycle interval setting of the CC-Link IE TSN master station parameter varies depending on the CC-Link IE TSN Class that is set. ( Page 43 Communication Period Interval Setting)
- A ring topology cannot be used when CC-Link IE TSN Class A is set for the CC-Link IE TSN Class. To use the ring topology, set the CC-Link IE TSN Class to B.
- When CC-Link IE TSN Class A is set for the CC-Link IE TSN Class, set the total points for the link device used by the NZ2GN-GFB in CC-Link IE Field Network to meet the following criteria.

Calculation formula

(The total number of "RX/RX points" ÷ 8) + (The total number of "RWw/RWr points" × 2) ≤ 2048

Reserved station setting

This function sets a CC-Link IE Field Network device station as a reserved station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Reserved stations are included as stations in the network for future extension and set in the parameters. These stations are not regarded as faulty stations even though they are not connected to an actual network.

By setting a reserved station, link device assignment will not change even if a device station is connected (or the reservation is cleared). Therefore, the program does not need to be modified.

Setting method

When setting the CC-Link IE Field Network device station as a reserved station, set the NZ2GN-GFB module parameter of "Reserved/error invalid station" to "1: Reserved station". ( Page 50 Parameter information)

Checking setting status

The setting status of reserved stations for CC-Link IE Field Network device stations can be checked using the following remote buffer memory. ( Page 196 Remote Buffer Memory)

Address	Description
2007H.b4	Reserved station specification status
30C0H to 30C7H	Reserved station setting status

Error invalid station setting

This function prevents a CC-Link IE Field Network device station from being detected as a faulty station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.
It is also set when a device station is to be replaced during communication.

Setting method

When setting the CC-Link IE Field Network device station as an error invalid station, set the NZ2GN-GFB module parameter of "Reserved/error invalid station" to "2: Error invalid station". ( Page 50 Parameter information)

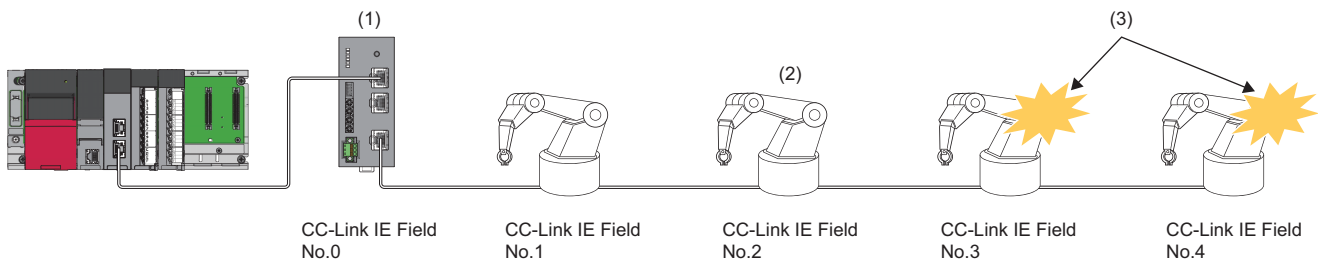
Checking setting status

The setting status of error invalid stations for CC-Link IE Field Network device stations can be checked using the following remote buffer memory. ( Page 196 Remote Buffer Memory)

Address	Description
2007H.b5	Error invalid station setting status
30D0H to 30D7H	Error invalid station setting status

Precautions

When the system configuration is a line topology, a station that was set as an error invalid station is not detected as a data link faulty station. However, subsequently connected stations become data link faulty stations.



- CC-Link IE Field No.0: CC-Link IE Field Network master station (No.0)
 - CC-Link IE Field No.1: CC-Link IE Field Network device station (No.1)
 - CC-Link IE Field No.2: CC-Link IE Field Network device station (No.2)
 - CC-Link IE Field No.3: CC-Link IE Field Network device station (No.3)
 - CC-Link IE Field No.4: CC-Link IE Field Network device station (No.4)
- (1) Errors in station No.2 are not detected
(2) Station set as error invalid stations. (They are powered off.)
(3) Detected as data link faulty stations

SNMP agent compatibility

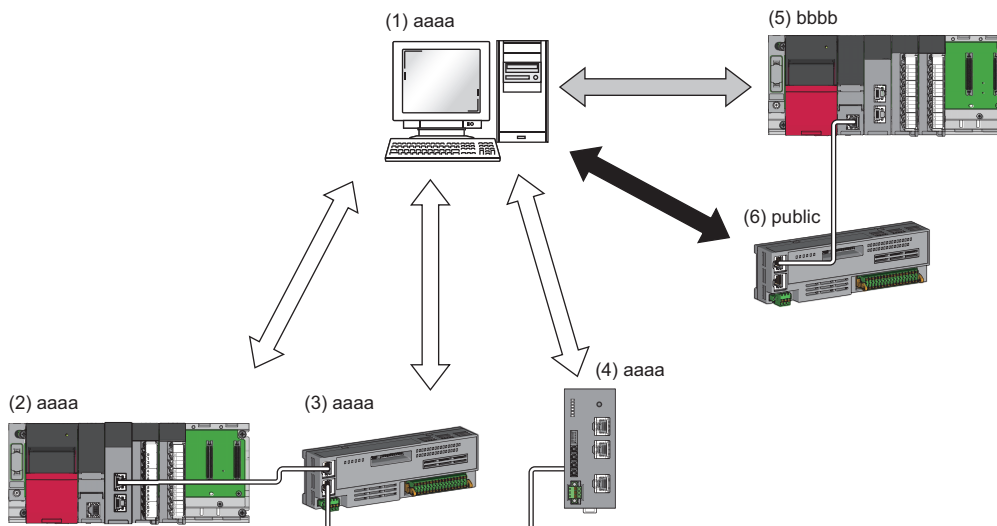
This function operates as an SNMP agent. The NZ2GN-GFB can be monitored from the Ethernet device that operates as the SNMP manager.

SNMP stands for Simple Network Management Protocol. Ethernet devices used to manage the network (for example, personal computers) are called SNMP managers, and devices being managed are called SNMP agents.

An SNMP manager monitors the target devices by accessing the MIB (Management Information Base) held by each SNMP agent. For the MIB compatible with the NZ2GN-GFB, refer to the following.

☞ Page 290 Supported MIBs

Setting the SNMP community name allows an SNMP manager to access only SNMP agents that share the same SNMP community name, thereby improving the security.



(1) SNMP manager (for example, a personal computer): When the SNMP community name is set to "aaaa", it monitors the SNMP agents (2), (3), and (4).

(2) SNMP agent (CC-Link IE TSN master station): SNMP community name "aaaa"

(3) SNMP agent (CC-Link IE TSN device station): SNMP community name "aaaa"

(4) SNMP agent (NZ2GN-GFB): SNMP community name "aaaa"

(5) SNMP agent (CC-Link IE TSN master station): If the SNMP community name is set to a value other than "aaaa", this module cannot be accessed unless the community name is changed.

(6) SNMP agent (CC-Link IE TSN device station): If not compatible with the SNMP community name, this module is defined as "public" (default) and cannot be accessed.



For the SNMP agent compatibility, refer to the following.

- Firmware version of the NZ2GN-GFB (☞ Page 299 Added and Enhanced Functions)
- SNMP version and MIB supporting the NZ2GN-GFB (☞ Page 17 Ethernet Communication Specifications)

SNMP community name

The SNMP manager monitors only the SNMP agents that belong to the same SNMP community (group). The SNMP agents accept requests only from the SNMP manager that belongs to the same community. The name used for this identification is called the SNMP community name.

■SNMP community name setting function

When the CC-Link IE TSN master station supports the SNMP community name setting function, the SNMP community name of the NZ2GN-GFB automatically becomes the same as that of the CC-Link IE TSN master station. (Manual for the CC-Link IE TSN master station used)

- When the NZ2GN-GFB is disconnected from the network, it is reconnected to a CC-Link IE TSN master station compatible with the SNMP community name setting function, or operates with the SNMP community name set before disconnection until remote reset or power-off of the NZ2GN-GFB.
- If the NZ2GN-GFB has never connected to a CC-Link IE TSN master station compatible with the SNMP community name setting function since power-on, the device operates with the default SNMP community name "public".

Precautions

- The SNMP community name serves as a password for communications between SNMP managers and SNMP agents. Therefore, using a CC-Link IE TSN master station compatible with the SNMP community name function is recommended.
- When setting the SNMP community name to a value other than "public", use an engineering tool with firmware version 1.115V or later. Otherwise, the following operations cannot be performed for the NZ2GN-GFB.

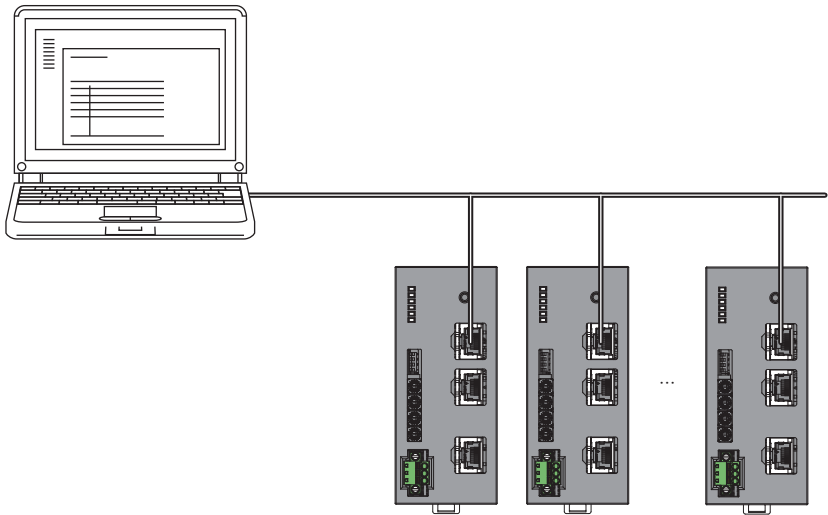
Item	Description
"CC-Link IE TSN Configuration" window	Parameter processing of device stations
	Command execution to device stations
"CC-Link IE TSN/CC-Link IE Field Diagnostics" window	Selected Station Communication Status Monitor
	Error/Event History

Firmware update function

This function updates the firmware of the NZ2GN-GFB via CC-Link IE TSN.
Update the firmware by using the CC-Link IE TSN Firmware Update Tool.
When the CC-Link IE TSN Firmware Update Tool is necessary, please consult your local Mitsubishi representative.

System configuration

Connect a personal computer and the NZ2GN-GFBs that are the firmware update targets with an Ethernet cable.
Connect the Ethernet cable to the CC-Link IE TSN communication connector (P1 or P2) of the NZ2GN-GFBs. Do not connect any connectors to the CC-Link IE Field Network communication connector.



Firmware update file

When the firmware update file is necessary, please consult your local Mitsubishi representative.
The file name of the firmware update file is as follows.

Model	File name	Firmware version
NZ2GN-GFB	CCJET_GFB.SYF	"01" or later

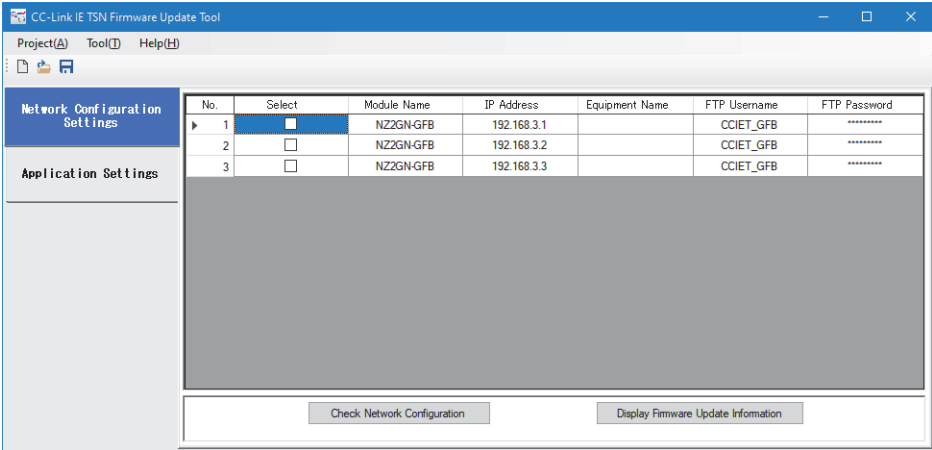
Setting method

To perform a firmware update on the NZ2GN-GFB, set the CC-Link IE TSN Firmware Update Tool.
For details on the CC-Link IE TSN Firmware Update Tool, refer to the "Help".

■Setting the Network Configuration Settings window

Set the following items in the Network Configuration Settings window.

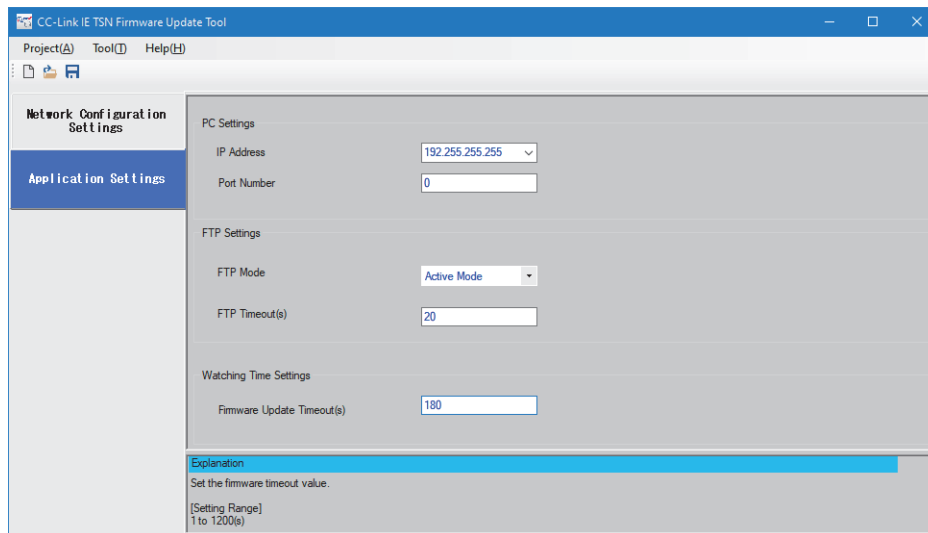
Item	Setting details
Module Name	Set "NZ2GN-GFB".
IP Address	Set the IP addresses of the firmware update target NZ2GN-GFBs.
Equipment Name	This setting is optional. Set this item when registering multiple pieces of equipment and needing to distinguish them.
FTP User name	Set "CCIET_GFB".
FTP Password	Set "CCIET_GFB".



■Setting the Application Settings window

Set the following items in the Application Settings window.

Classification	Item	Setting range	Setting details
PC Settings	IP Address	0.0.0.1 to 223.255.255.254	Set the IP address of the personal computer.
	Port Number	0, 49152 to 65535	Set 0.
FTP Settings	FTP Mode	"Active Mode" (fixed)	The NZ2GN-GFBs support only "Active Mode".
	FTP Timeout(s)	1 to 600(s)	Set the FTP timeout time.
Watching Time Settings	Firmware Update Timeout(s)	1 to 1200(s)	Set "Firmware Update Timeout(s)".



Operation

■LED status

The firmware update status can be checked by the LED of the NZ2GN-GFB.

LED	Normal operation	Firmware update in progress	Firmware update completed (completed successfully or completed with an error)
RUN LED	On	Flashing	Off

Error information list

The following table lists error information on NZ2GN-GFB-specific errors that occur when a firmware update is performed.

Error information	Error name	Description and cause	Action
0001H	File error	A file that cannot be used for the update target NZ2GN-GFB is specified.	Check the firmware update file specified by the CC-Link IE TSN Firmware Update Tool. After specifying a correct file, turn off and on the power supply of the NZ2GN-GFB, and perform the firmware update again.
0002H	Communication error	A communication error occurred during firmware update.	<ul style="list-style-type: none"> • Check the Ethernet cable connection. • Take measures against noise on the transmission path. After performing the above, turn off and on the power supply of the NZ2GN-GFB, and perform the firmware update again.
0003H	Module error	An error occurred in the module during firmware update.	Turn off and on the power supply of the NZ2GN-GFB, and restart the CC-Link IE TSN Firmware Update Tool. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
0004H	Firmware update failure	The firmware update was performed while a data link for CC-Link IE TSN or CC-Link IE Field Network was in operation.	Perform the firmware update when a data link for CC-Link IE TSN or CC-Link IE Field Network is not performed (disconnected).

If error information other than the above is displayed on the CC-Link IE TSN Firmware Update Tool, refer to the "Help" on the CC-Link IE TSN Firmware Update Tool.

Precautions

- After completing a firmware update, turn off and on the power supply of the NZ2GN-GFB.
- A firmware update cannot be performed on the NZ2GN-GFB with a data link established on CC-Link IE TSN or CC-Link IE Field Network. To perform a firmware update on the NZ2GN-GFB, do not connect the NZ2GN-GFB to the CC-Link IE TSN master station and CC-Link IE Field Network stations. If a firmware update is performed on the NZ2GN-GFB with a data link established on CC-Link IE TSN or CC-Link IE Field Network, in the error information of the firmware update information window, Firmware update failure (error code: 0004H) is displayed.
- If an error has occurred during a firmware update, before attempting the firmware update again, turn off and on the power supply of the NZ2GN-GFB, or perform remote reset.
- Do not perform a firmware update on the NZ2GN-GFB simultaneously with multiple CC-Link IE TSN Firmware Update Tools.

8 PROGRAMMING

This chapter describes programming and startup examples using the NZ2GN-GFB.

8.1 Precautions for Programming

This section describes precautions when creating programs.

Cyclic transmission program

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

For a cyclic transmission program on CC-Link IE TSN, configure an interlock with the following link special relay (SB), link special register (SW), and the NZ2GN-GFB remote registers.

- Own station data link status (CC-Link IE TSN master station) (SB0049)
- Data link status of each station (CC-Link IE TSN master station) (SW00B0 to SW00B7)
- 'CC-Link IE Field Network operating status' (RWr6 to RWr7)
- 'Data link status of each station on CC-Link IE Field Network' (RWr18 to RWr1F)

For details on link special relay (SB) and link special register (SW), refer to the following.

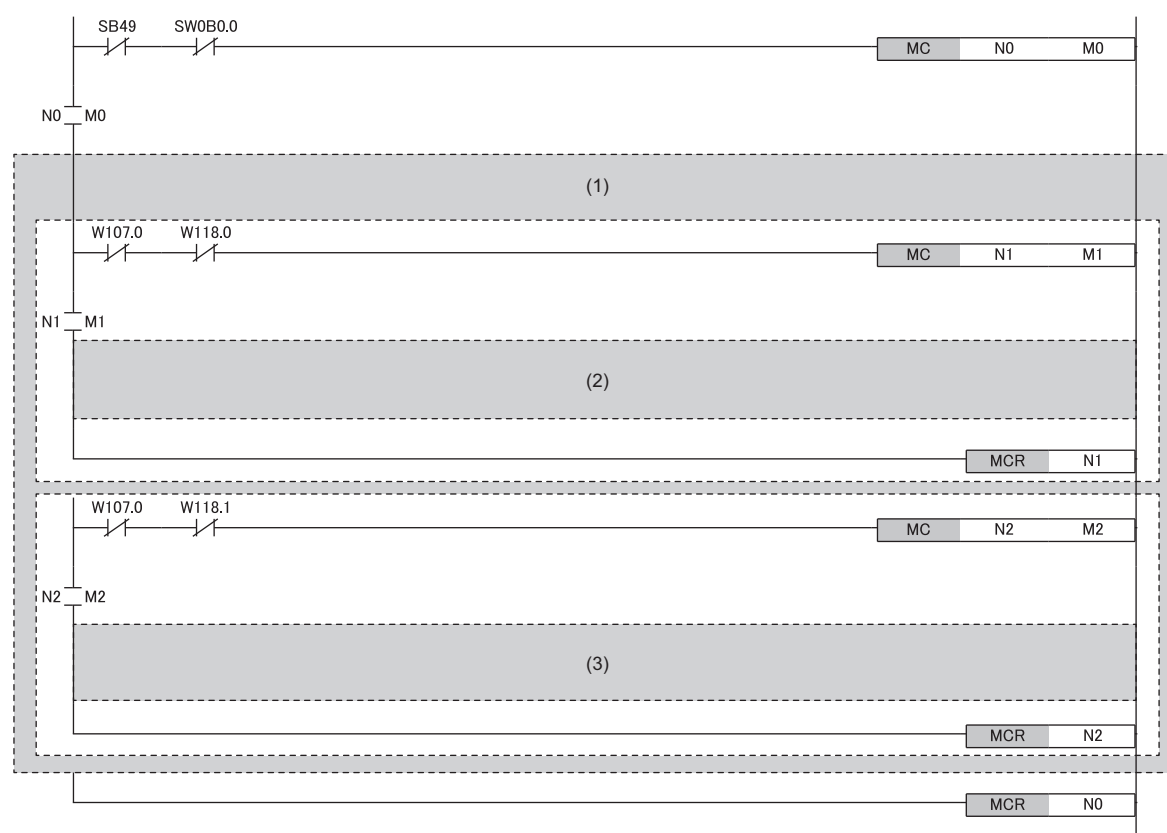
 User's manual for the master station used

For details on the NZ2GN-GFB remote registers, refer to the following.

 Page 183 Remote Register

Ex.

Interlock example



- (1) Communication program with CC-Link IE TSN station No.1 (NZ2GN-GFB)
(2) Communication program with station No.1 of CC-Link IE Field Network
(3) Communication program with station No.2 of CC-Link IE Field Network

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

For a cyclic transmission program on CC-Link IE TSN, configure an interlock with the following link special relay (SB), link special register (SW), and the NZ2GN-GFB remote registers.

- Own station data link status (CC-Link IE TSN master station) (SB0049)
- Data link status of each station (CC-Link IE TSN master station) (SW00B0 to SW00B7)
- 'CC-Link IE Field Network operating status' (RWr6 to RWr7)

For details on link special relay (SB) and link special register (SW), refer to the following.

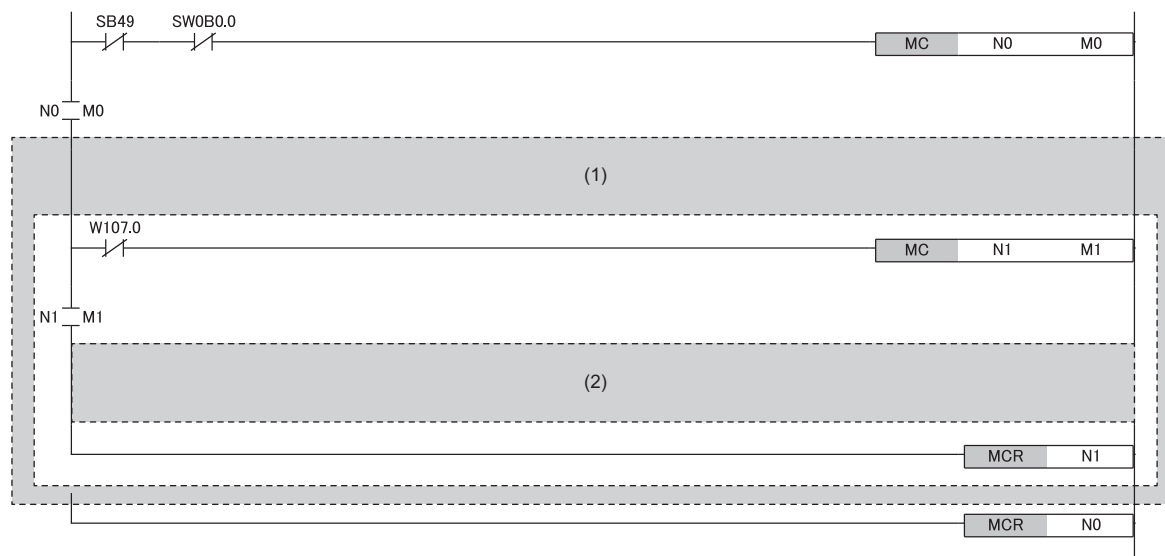
User's manual for the master station used

For details on the NZ2GN-GFB remote registers, refer to the following.

Page 183 Remote Register

Ex.

Interlock example



(1) Communication program with CC-Link IE TSN station No.1 (NZ2GN-GFB)

(2) Communication program with the CC-Link IE Field Network master station

Transient transmission program

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

For a transient transmission program for CC-Link IE Field Network device stations, configure an interlock with the following link special relay (SB), link special register (SW), and the NZ2GN-GFB remote registers.

- Own station data link status (CC-Link IE TSN master station) (SB0049)
- Data link status of each station (CC-Link IE TSN master station) (SW00B0 to SW00B7)
- 'CC-Link IE Field Network operating status' (RWr6 to RWr7)
- 'Baton pass status of each station of CC-Link IE Field Network' (RWr10 to RWr17)

For details on link special relay (SB) and link special register (SW), refer to the following.

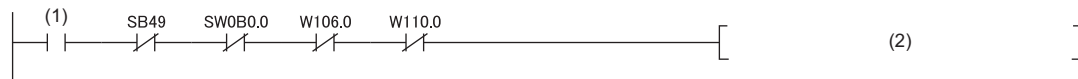
 User's manual for the master station used

For details on the NZ2GN-GFB remote registers, refer to the following.

 Page 183 Remote Register

Ex.

Interlock example



(1) Start contact

(2) Dedicated instruction for CC-Link IE Field Network device station (station No.1)

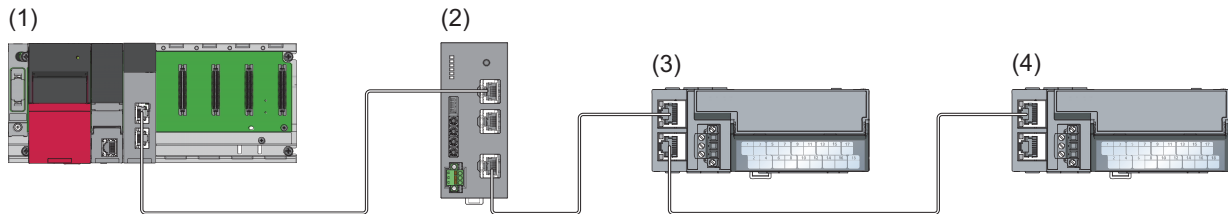
Point

When dynamic routing setting is enabled, it takes time to automatically set the communication route. After powering on, wait a while before starting transient transmission.

8.2 Program Examples

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

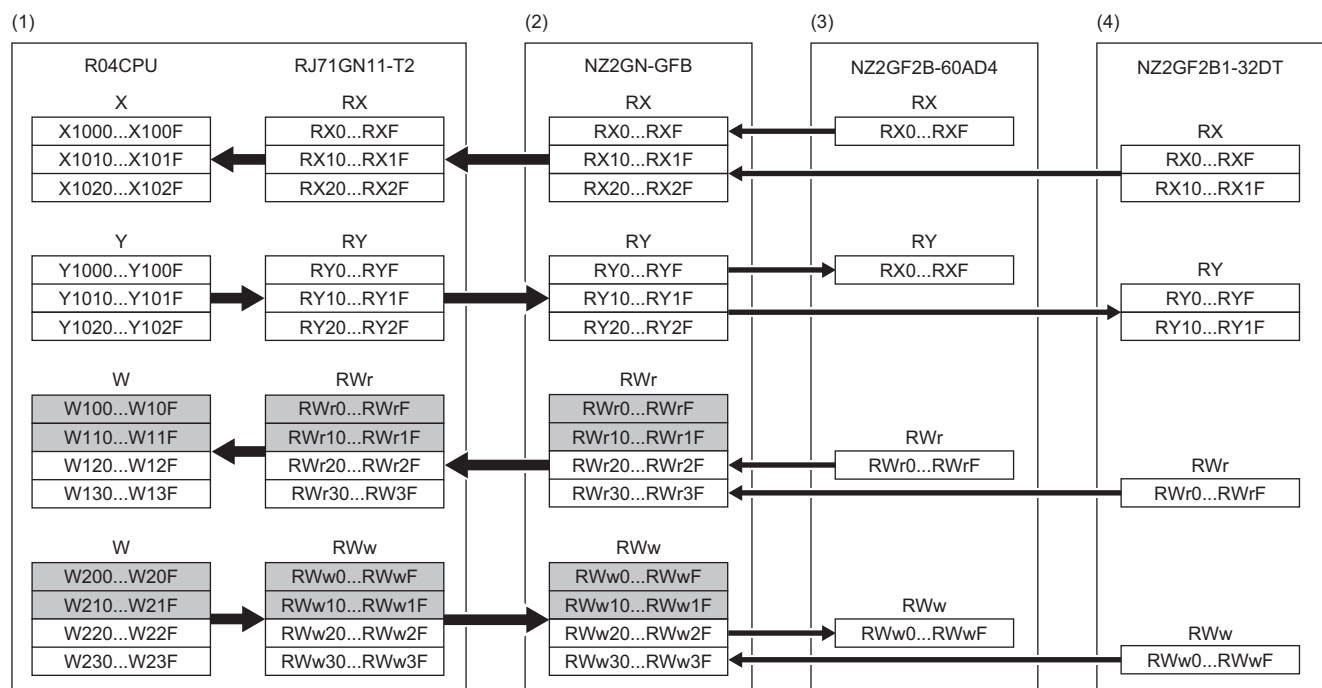
System configuration



- (1) CC-Link IE TSN master station (base unit: R35B, power supply module: R62P, CPU module: R04CPU, master/local module: RJ71GN11-T2 (start I/O number: 0000H to 001FH))
 (2) NZ2GN-GFB (CC-Link IE TSN: station No.1, CC-Link IE Field Network: No.0 (master station))
 (3) NZ2GF2B-60AD4 (CC-Link IE Field Network remote device station (station No.1))
 (4) NZ2GF2B1-32DT (CC-Link IE Field Network intelligent device station (station No.2))

Link device assignment

The shaded areas in the following table indicate the devices used in the NZ2GN-GFB system.



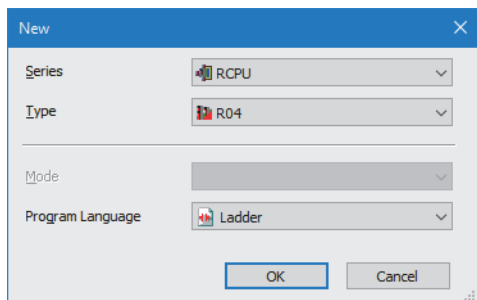
- (1) CC-Link IE TSN master station
 (2) CC-Link IE TSN remote station (station No.1)/CC-Link IE Field Network master station
 (3) CC-Link IE Field Network remote device station (station No.1)
 (4) CC-Link IE Field Network intelligent device station (station No.2)

Parameter settings

Connect the engineering tool to the CPU module on the CC-Link IE TSN master station and set the parameters.

1. Set the CPU module as follows.

 [Project] ⇒ [New]



2. Set "Link Direct Device Setting" in "CPU Parameter" to "Extended Mode (iQ-R Series Mode)".

 [CPU Parameter] ⇒ [Memory/Device Setting] ⇒ [Link Direct Device Setting] ⇒ [Link Direct Device Setting]

Item	Setting
Link Direct Device Setting	
Link Direct Device Setting	Extended Mode (iQ-R Series Mode)

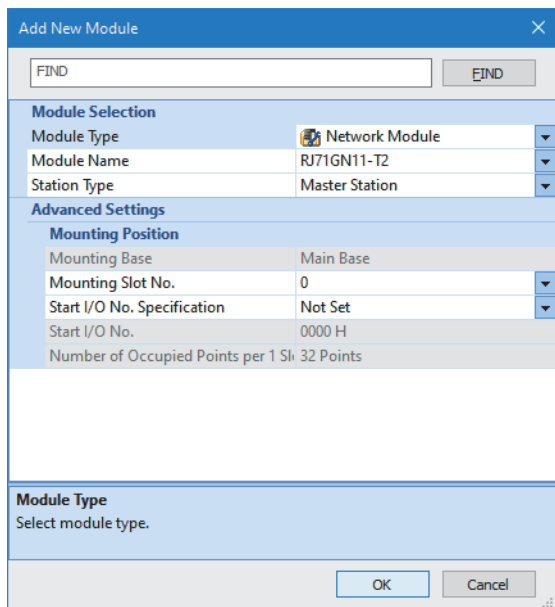
Restriction

To write module parameters of the RJ71GN11-T2 on a CPU module using an engineering tool, set "Link Direct Device Setting" to "Extended Mode (iQ-R Series Mode)".

If "Link Direct Device Setting" is "Q Series Compatible Mode", "Write to PLC" cannot be executed.

3. Set the RJ71GN11-T2 as follows.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Right-click ⇒ [Add New Module]



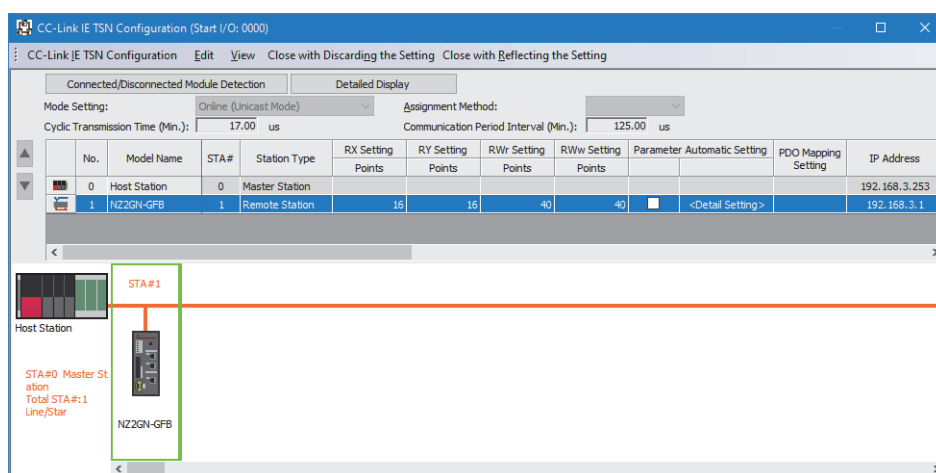
4. Set the refresh settings as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GN11-T2] ⇒ [Basic Settings] ⇒ [Refresh Settings] ⇒ [Detailed Setting]

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB	512	00000	001FF		Specify Device	SB	512	00000	001FF
-	SW	512	00000	001FF		Specify Device	SW	512	00000	001FF
1	RX	256	00000	000FF		Specify Device	X	256	01000	010FF
2	RY	256	00000	000FF		Specify Device	Y	256	01000	010FF
3	RWr	256	00000	000FF		Specify Device	W	256	00100	001FF
4	RWw	256	00000	000FF		Specify Device	W	256	00200	002FF

5. Display the CC-Link IE TSN configuration window and add the NZ2GN-GFB.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GN11-T2] ⇒ [Basic Settings] ⇒ [Network Configuration Settings] ⇒ [Detailed Setting]



6. Set "Station-specific mode setting" to "Master Station".

No.	Model Name	Communication Period Setting	Station Information			Authentication Class
			Alias	Comment	Station-specific mode setting	
0	Host Station					
1	NZ2GN-GFB	Basic Period			Master station	Authentication Class B

7. Set the following parameters for the NZ2GN-GFB.

Setting item		Description
RX Setting RY Setting	Points	48
	Start	0000
	End	002F
RWw Setting RWw Setting	Points	64
	Start	0000
	End	003F

8. Click the [Close with Reflecting the Setting] button to close the "CC-Link IE TSN Configuration" window.

9. Click the [Apply] button.

10. Write the set parameters to the CPU module on the CC-Link IE TSN master station. Then, reset the CPU module or power off and on the system.

[Online] ⇒ [Write to PLC]

- 11.** Display the CC-Link IE TSN configuration window and select the "Parameter Automatic Setting" checkbox of the NZ2GN-GFB.

No.	Model Name	STA#	Station Type	RX Setting Points	RY Setting Points	RWr Setting Points	RWw Setting Points	Parameter Automatic Setting	PDO Mapping Setting	IP Address
0	Host Station	0	Master Station							192.168.3.253
1	NZ2GN-GFB	1	Remote Station	48	48	64	64	☒	<Detail Setting>	192.168.3.1

- 12.** Double-click [Detail Setting] beside the "Parameter Automatic Setting" checkbox to display the "Parameter of Device Station" window.

- 13.** Set "Method selection" to "Parameter write".

- 14.** Set the parameter information as follows.

Parameter of Device Station

Target Module Information: NZ2GN-GFB
Start I/O No.:0000 - Station No.:1

Method selection: **Parameter write** The parameters are written to the target module.

Parameter Information

Select All Cancel All Selections Copy "Initial Value" to "Write Value/Setting Value" Copy "Read Value" to "Write Value/Setting Value"

Name	Initial Value	Unit	Read Value	Unit	Write Value/Setting Value	Unit	Setting Range	Description
Basic settings (CC-Link IE TSN)								
☒ Network No.	1				1		1 to 239	Set the network No. of own station for CC-Link IE TSN.
☒ Station No.	1				1		1 to 120	Set the station No. of own station for CC-Link IE TSN.
Basic settings (CC-Link IE Field Network)								
☒ Network No.	2				2		1 to 239	Set the network No. of own station for CC-Link IE Field Network.
☒ Total number of device stations	1	Unit		Unit	2		1 to 32	Set the number of connected CC-Link IE Field Network device stations.
☒ CC-Link IE Field Network device station setting 1st module								
Station No.	1				1		1 to 120	Set the station No. of the device station.
Station type	2: Intelligent...				0: Remote I/O station			Set the station type of the device station.
RX/Ry points	16	Point		Point	32	Point	0 to 2048	Set the number of assigned RX/Ry points.
RWw/RWr points								Set the number of assigned RWw/RWr points.
Reserved/Error invalid station								Set the reserved/error invalid station.

Process Option

There is no option in the selected process.

-The refreshed device values of remote I/O or remote registers may be overwritten.
-Accesses the PLC CPU by using the current connection destination. Please check if there is any problem with the connection destination.
-Process is executed according to the parameters written in the PLC CPU.
-For information on items not displayed on the screen, please refer to the Operation Manual.

☐ Enable safety module when succeed to write parameter

Execute Parameter Processing

Import... Export... Close with Discarding the Setting Close with Reflecting the Setting

■Basic settings (CC-Link IE TSN)		
Item		Description
Network No.		1
Station No.		1
■Basic settings (CC-Link IE Field Network)		
Item		Description
Network No.		2
Total number of device stations		2
CC-Link IE Field Network device station setting 1st module	Station No.	1
	Station type	Remote device station
	RX/RY points	16
	RWw/RWr points	16
	Reserved/Error invalid station	No Setting
CC-Link IE Field Network device station setting 2nd module	Station No.	2
	Station type	Intelligent device station
	RX/RY points	32
	RWw/RWr points	16
	Reserved/Error invalid station	No Setting

- 15.** Click the [Execute Parameter Processing] button to write the set module parameters of the NZ2GN-GFB.
- 16.** Click the [Close with Reflecting the Setting] button to close the "Parameter of Device Station" window.
- 17.** Click the [Close with Reflecting the Setting] button to close the "CC-Link IE TSN Configuration" window.
- 18.** Power off and on the NZ2GN-GFB or reset it.
- 19.** Set the CPU module of the CC-Link IE TSN master station to RUN, and check that the D LINK LED (CC-Link IE TSN) and D LINK LED (CC-Link IE Field) of the NZ2GN-GFB is turned on.

Point

In the program example, default values are used for parameters that are not shown above. For the parameters, refer to the following.

 Page 43 PARAMETER SETTINGS

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

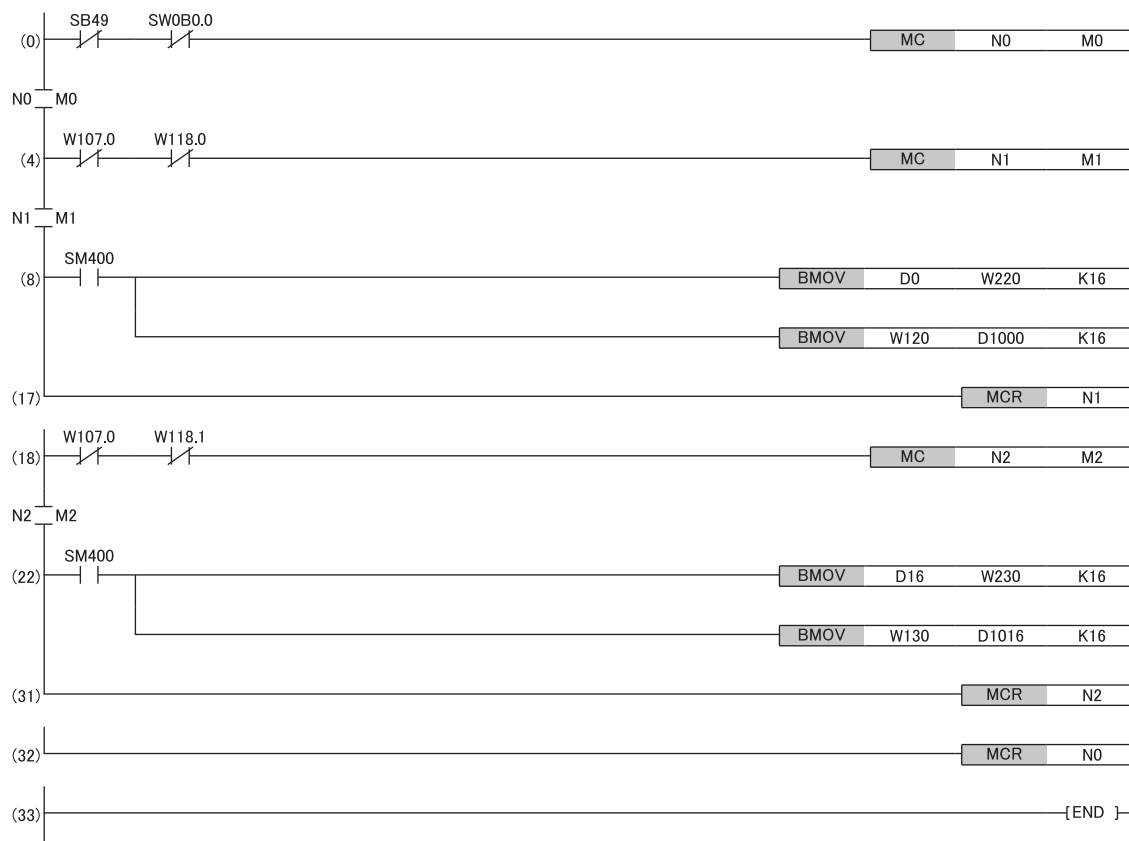
Program example (1)

The following program is for communicating between the CPU module of CC-Link IE TSN master station and the NZ2GN-GFB.

■Devices to be used

Device	Description
SB49	Own station data link error status of CC-Link IE TSN master station
SW0B0.0	Data link status of each station on CC-Link IE TSN (station No.1 (NZ2GN-GFB))
M0	Communication ready flag (CC-Link IE TSN station No.1)
N0	Nesting (CC-Link IE TSN station No.1)
W107.0	Own station data link error status of CC-Link IE Field Network master station (NZ2GN-GFB)
W118.0	Data link status of each station on CC-Link IE Field Network (station No.1)
M1	Communication ready flag (CC-Link IE Field Network station No.1)
N1	Nesting (CC-Link IE Field Network station No.1)
D0	Start device of data that is sent to CC-Link IE Field Network station No.1
W220	Device to which RWw0 of CC-Link IE Field Network station No.1 is assigned
W120	Device to which RWr0 of CC-Link IE Field Network station No.1 is assigned
D1000	Start device of data that is received from CC-Link IE Field Network station No.1
W118.1	Data link status of each station on CC-Link IE Field Network (station No.2)
M2	Communication ready flag (CC-Link IE Field Network station No.2)
N2	Nesting (CC-Link IE Field Network station No.2)
D16	Start device of data that is sent to CC-Link IE Field Network station No.2
W230	Device to which RWw0 of CC-Link IE Field Network station No.2 is assigned
W130	Device to which RWr0 of CC-Link IE Field Network station No.2 is assigned
D1016	Start device of data that is received from CC-Link IE Field Network station No.2
SM400	Always ON

■Program



(8) Communication program with remote device station (station No.1) of CC-Link IE Field Network

(22) Communication program with intelligent device station (station No.2) of CC-Link IE Field Network

Program example (2)

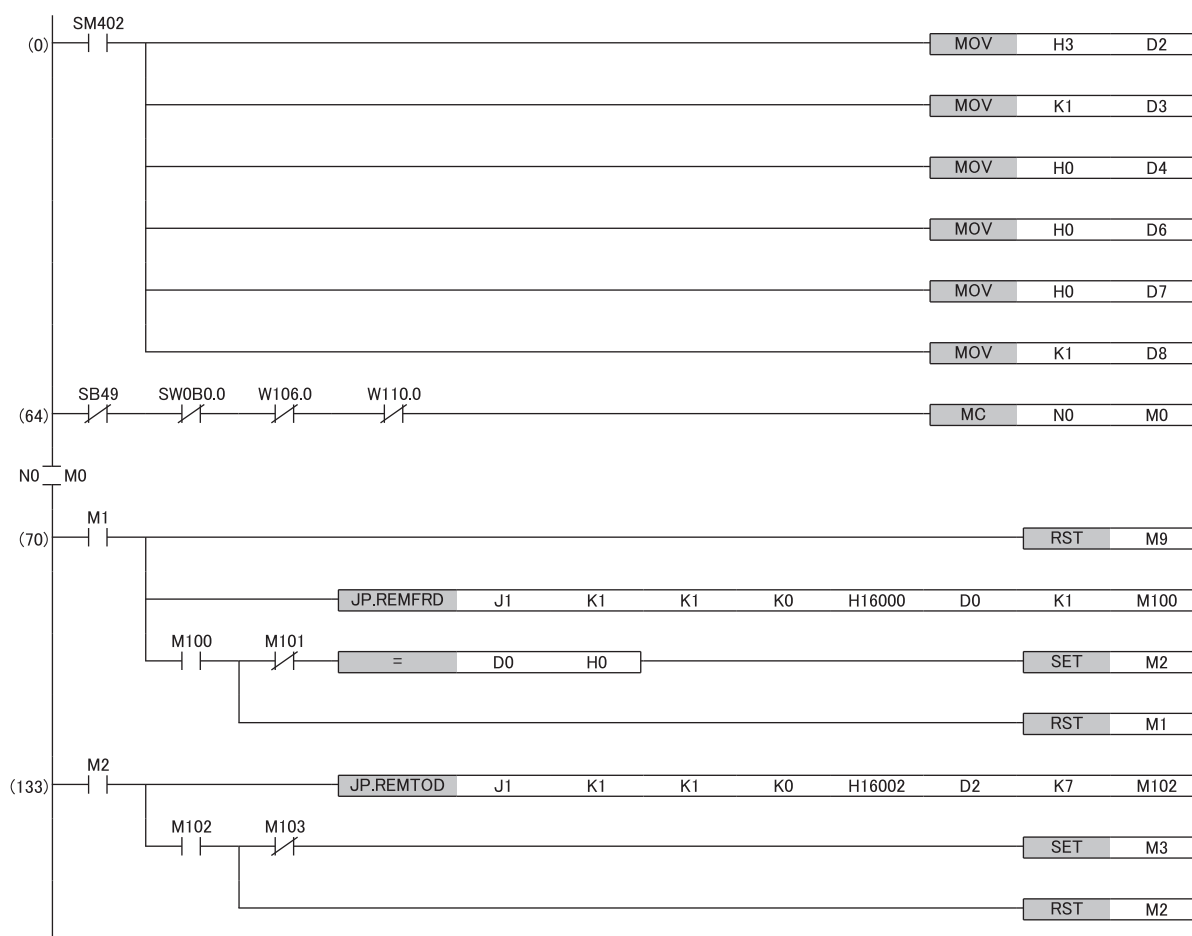
The following shows a program example of the transient transmission function with other stations using remote buffer memory. (Page 83 Transient transmission with other stations using remote buffer memory)

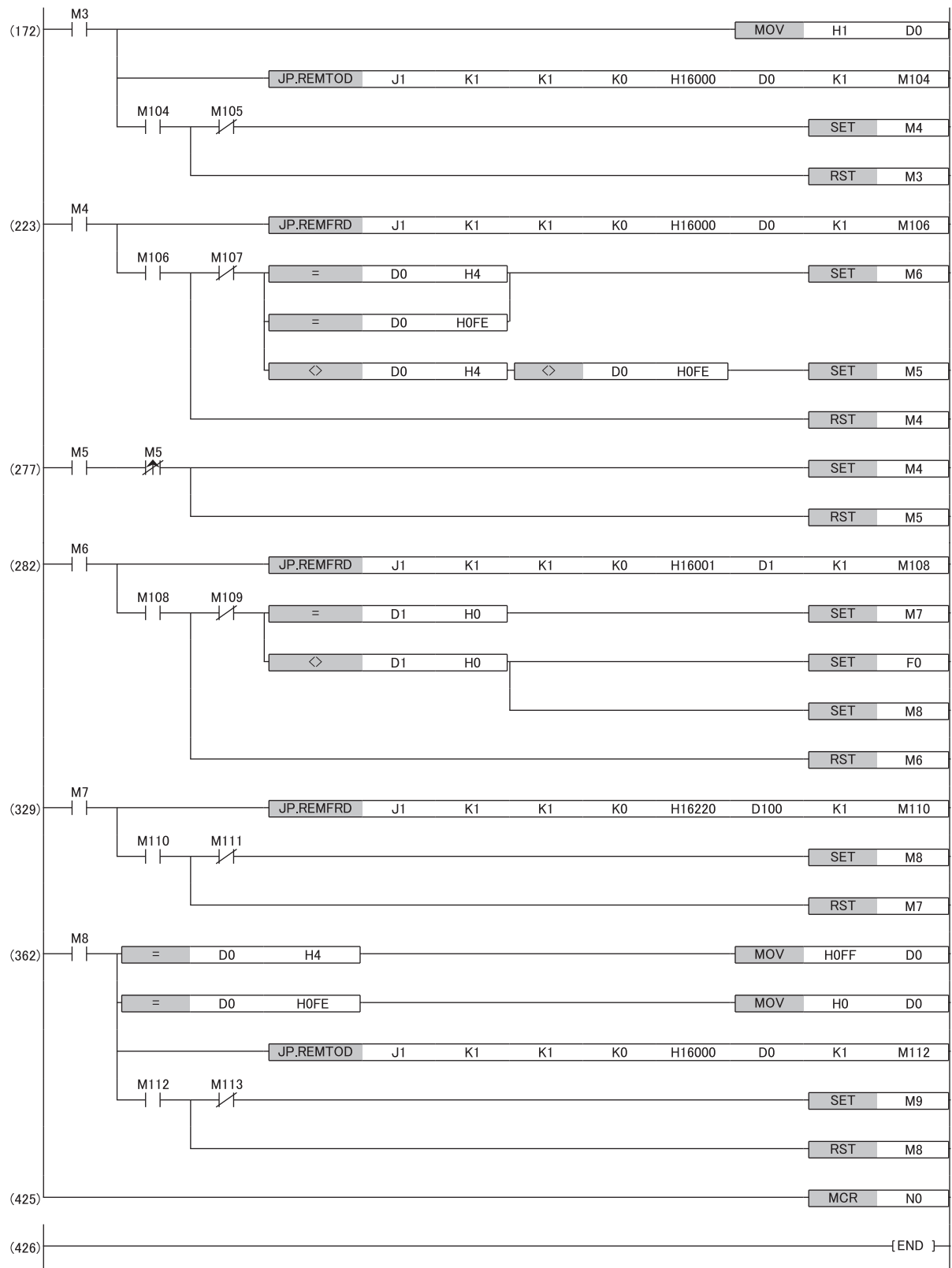
The following program is to read the remote buffer memory of the CC-Link IE Field Network remote device station from the CPU module of the CC-Link IE TSN master station using the REMFR instruction.

Devices to be used

Device	Description
SB49	Own station data link error status of CC-Link IE TSN master station
SW0B0.0	Data link status of each station on CC-Link IE TSN (station No.1 (NZ2GN-GFB))
W106.0	Own station baton pass status of CC-Link IE Field Network master station (NZ2GN-GFB)
W110.0	Baton pass status of each station on CC-Link IE Field Network (station No.1)
M0	Communication ready flag
N0	Nesting
M1	Start contact
M2 to M8	Contacts for transient transmission with other stations
M9	Execution completion flag
M100 to M113	Devices with which REMFRD instruction and REMTOD instruction are completed
D0	Handshake flag for read/write
D1	Completion status for read
D2 to D8	Devices for writing after instruction specification (+2)
D100	Start device of data that is read out from CC-Link IE Field Network station No.1
F0	Error completion flag

Program

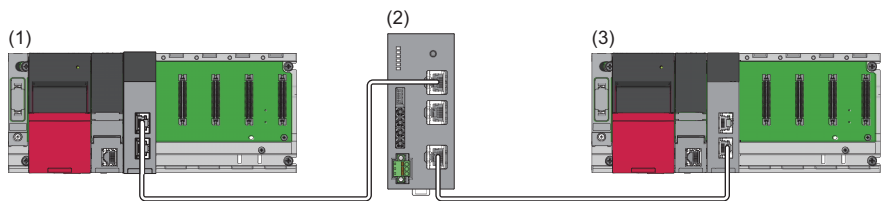




- (0) Specifies the setting data (CC-Link IE Field Network remote device station (station No.1)) to be used by dedicated instructions.
(70) Reads the handshake flag by turning on M1.
(133) Writes the setting data after instruction specification.
(172) Updates the handshake flag. (idle → send request)
(223) Reads the handshake flag and turns on M6 if the flag is Reception request or Transmission completed with an error.
(282) Reads the completion status and turns on M7 if the status is Completed successfully.
(329) Transfers read data.
(362) Updates the handshake flag. If M9 is on, execution is completed.

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

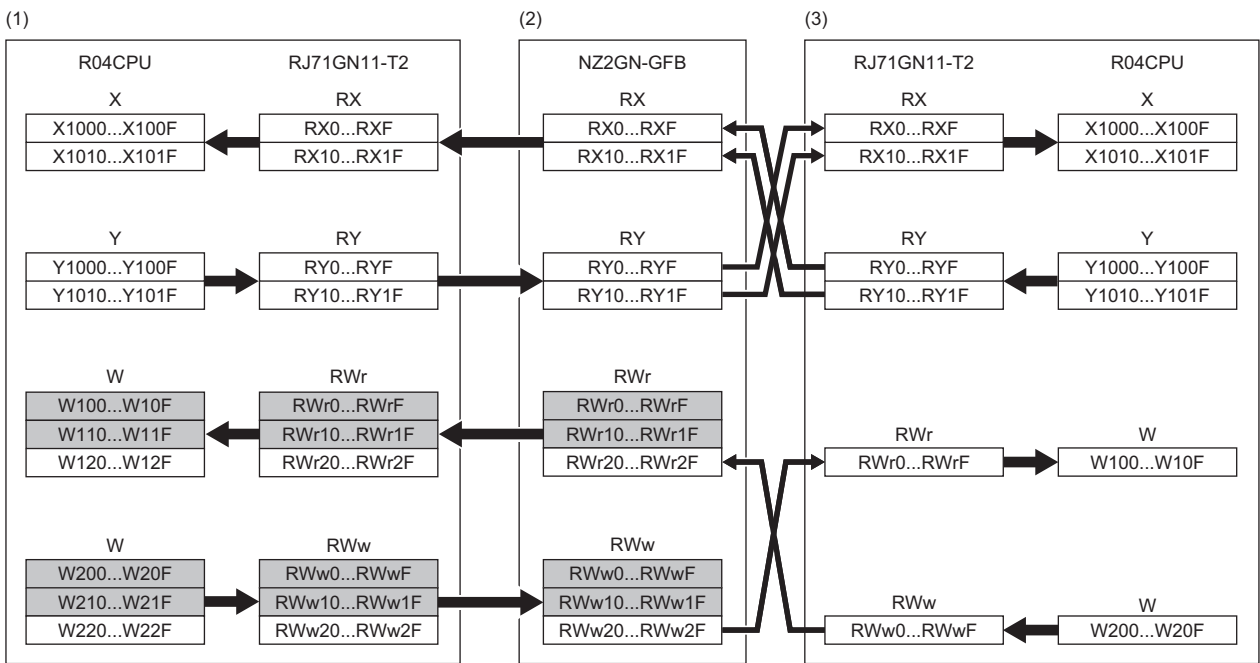
System configuration



- (1) CC-Link IE TSN master station (base unit: R35B, power supply module: R62P, CPU module: R04CPU, master/local module: RJ71GN11-T2 (start I/O number: 0000H to 001FH))
- (2) NZ2GN-GFB (CC-Link IE TSN: station No.1, CC-Link IE Field Network: station No.1)
- (3) CC-Link IE Field Network master station (base unit: R35B, power supply module: R62P, CPU module: R04CPU, master/local module: RJ71GF11-T2 (start I/O number: 0000H to 001FH))

Link device assignment

The shaded areas in the following table indicate the devices used in the NZ2GN-GFB system.



- (1) CC-Link IE TSN master station
- (2) CC-Link IE TSN remote station (station No.1)/CC-Link IE Field Network local station (station No.1)
- (3) CC-Link IE Field Network master station

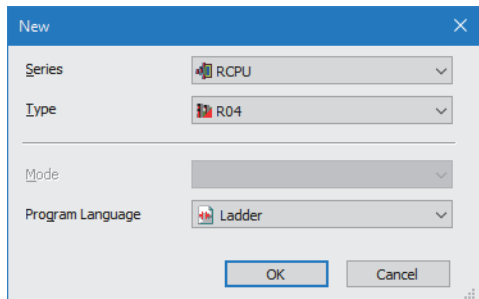
Parameter settings

■Setting parameters on the CC-Link IE TSN side

Connect the engineering tool to the CPU module on the CC-Link IE TSN master station and set the parameters.

1. Set the CPU module as follows.

 [Project] ⇒ [New]



The "New" dialog box is shown with the following settings:

Field	Value
Series	RCPU
Type	R04
Mode	
Program Language	Ladder

Buttons: OK, Cancel

2. Set "Link Direct Device Setting" in "CPU Parameter" to "Extended Mode (iQ-R Series Mode)".

 [CPU Parameter] ⇒ [Memory/Device Setting] ⇒ [Link Direct Device Setting] ⇒ [Link Direct Device Setting]

Item	Setting
Link Direct Device Setting	Extended Mode (iQ-R Series Mode)

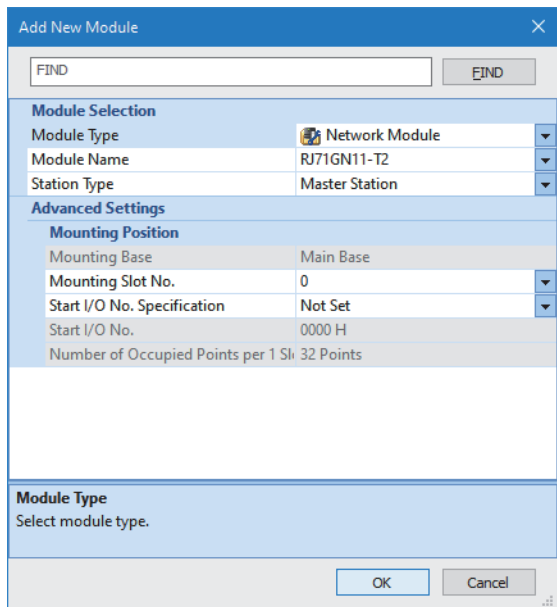
Restriction

To write module parameters of the RJ71GN11-T2 on a CPU module using an engineering tool, set "Link Direct Device Setting" to "Extended Mode (iQ-R Series Mode)".

If "Link Direct Device Setting" is "Q Series Compatible Mode", "Write to PLC" cannot be executed.

3. Set the RJ71GN11-T2 as follows.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Right-click ⇒ [Add New Module]



The "Add New Module" dialog box is shown with the following settings:

Module Selection	
Module Type	Network Module
Module Name	RJ71GN11-T2
Station Type	Master Station

Advanced Settings	
Mounting Position	
Mounting Base	Main Base
Mounting Slot No.	0
Start I/O No. Specification	Not Set
Start I/O No.	0000 H
Number of Occupied Points per 1 Slot	32 Points

Buttons: OK, Cancel

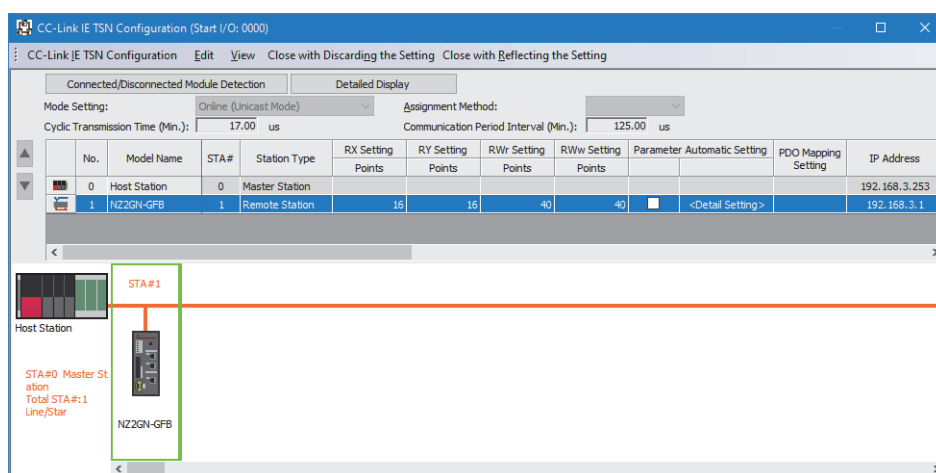
4. Set the refresh settings as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GN11-T2] ⇒ [Basic Settings] ⇒ [Refresh Settings] ⇒ [Detailed Setting]

No.	Link Side					CPU Side				
	Device Name	Points	Start	End		Target	Device Name	Points	Start	End
-	SB	512	00000	001FF	↔	Specify Device	SB	512	00000	001FF
-	SW	512	00000	001FF	↔	Specify Device	SW	512	00000	001FF
1	RX	256	00000	000FF	↔	Specify Device	X	256	01000	010FF
2	RY	256	00000	000FF	↔	Specify Device	Y	256	01000	010FF
3	RWr	256	00000	000FF	↔	Specify Device	W	256	00100	001FF
4	RWw	256	00000	000FF	↔	Specify Device	W	256	00200	002FF

5. Display the CC-Link IE TSN configuration window and set parameters as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GN11-T2] ⇒ [Basic Settings] ⇒ [Network Configuration Settings] ⇒ [Detailed Setting]



6. Check if "Station-specific mode setting" is set to "Local station".

No.	Model Name	Communication Period Setting	Station Information			Authentication Class
			Alias	Comment	Station-specific mode setting	
0	Host Station					
1	NZ2GN-GFB	Basic Period			Local station	Authentication Class B

7. Set the following parameters for the NZ2GN-GFB.

Setting item		Description
RX Setting RY Setting	Points	32
	Start	0000
	End	001F
RWw Setting RWw Setting	Points	48
	Start	0000
	End	002F

8. Click the [Close with Reflecting the Setting] button to close the "CC-Link IE TSN Configuration" window.

9. Click the [Apply] button.

10. Write the set parameters to the CPU module on the CC-Link IE TSN master station. Then, reset the CPU module or power off and on the system.

[Online] ⇒ [Write to PLC]

- 11.** Display the CC-Link IE TSN configuration window and select the "Parameter Automatic Setting" checkbox of the NZ2GN-GFB.

No.	Model Name	STA#	Station Type	RX Setting Points	RY Setting Points	RWr Setting Points	RWw Setting Points	Parameter Automatic Setting	PDO Mapping Setting	IP Address
0	Host Station	0	Master Station							192.168.3.253
1	NZ2GN-GFB	1	Remote Station	32	32	48	48	☒ <Detail Setting>		192.168.3.1

- 12.** Double-click [Detail Setting] beside the "Parameter Automatic Setting" checkbox to display the "Parameter of Device Station" window.

- 13.** Set "Method selection" to "Parameter write".

- 14.** Set according to initial settings in the "Parameter of Device Station" window.

- 15.** Click the [Execute Parameter Processing] button to write the set module parameters of the NZ2GN-GFB.

- 16.** Click the [Close with Reflecting the Setting] button to close the "Parameter of Device Station" window.

- 17.** Click the [Close with Reflecting the Setting] button to close the "CC-Link IE TSN Configuration" window.

- 18.** Power off and on the NZ2GN-GFB or reset it.

- 19.** Set the CPU module of the CC-Link IE TSN master station to RUN, and check that the D LINK LED (CC-Link IE TSN) of the NZ2GN-GFB is turned on.



In the program example, default values are used for parameters that are not shown above. For the parameters, refer to the following.

Page 43 PARAMETER SETTINGS

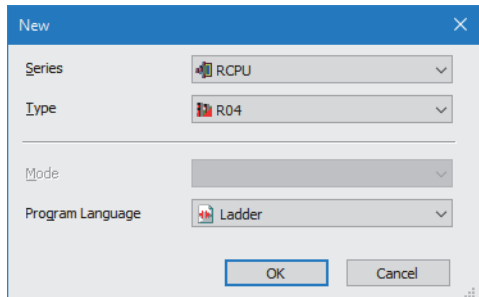
MELSEC iQ-R CC-Link IE TSN User's Manual (Application)

■ Settings parameters on the CC-Link IE Field Network side

Connect the engineering tool to the CPU module on the CC-Link IE Field Network master station and set the parameters.

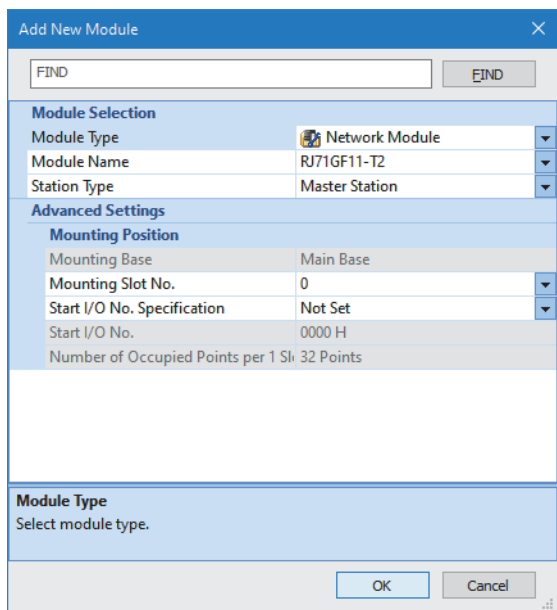
1. Set the CPU module as follows.

 [Project] ⇒ [New]



2. Set the RJ71GF11-T2 as follows.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Right-click ⇒ [Add New Module]



3. Set the items in "Required Settings" as follows.

 [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GF11-T2] ⇒ [Required Settings]

Item	Setting
Station Type	
Station Type	Master Station
Network No.	
Network No.	2
Station No.	
Setting Method	Parameter Editor
Station No.	0
Parameter Setting Method	
Setting Method of Basic/Application Settings	Parameter Editor

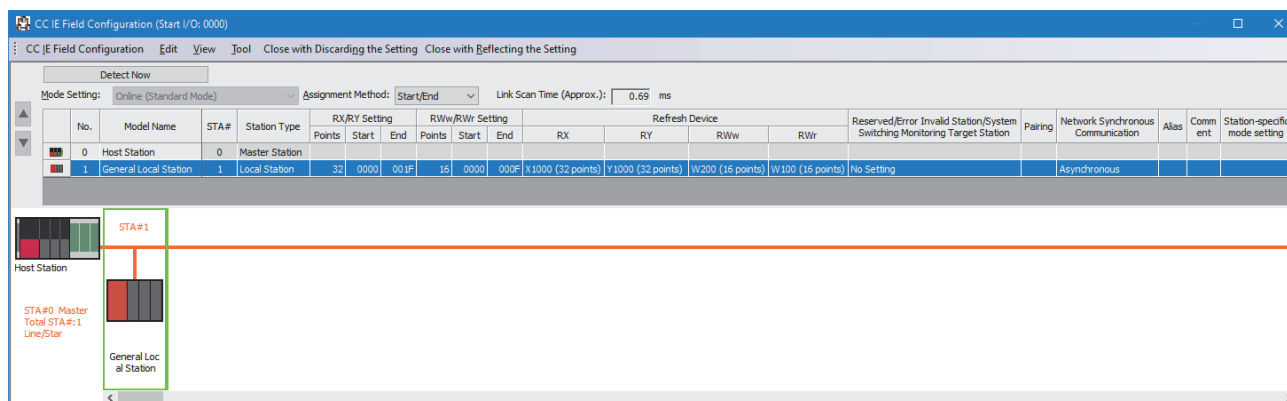
4. Set the refresh settings as follows.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GF11-T2] ⇒ [Basic Settings] ⇒ [Refresh Settings] ⇒ [Detailed Setting]

No.	Link Side						CPU Side				
	Device Name	Points	Start	End			Target	Device Name	Points	Start	End
-	SB	512	00000	001FF			Specify Device	SB	512	00000	001FF
-	SW	512	00000	001FF			Specify Device	SW	512	00000	001FF
1	RX	256	00000	000FF			Specify Device	X	256	01000	010FF
2	RY	256	00000	000FF			Specify Device	Y	256	01000	010FF
3	RWr	256	00000	000FF			Specify Device	W	256	00100	001FF
4	RWw	256	00000	000FF			Specify Device	W	256	00200	002FF

5. Display the CC-Link IE Field configuration window and register a general local station.

[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ [RJ71GF11-T2] ⇒ [Basic Settings] ⇒ [Network Configuration Settings] ⇒ [Detailed Setting]



6. Set the following parameters for the general local station.

Setting item		Description
RX/RX Setting	Points	32
	Start	0000
	End	001F
RWw/RWr Setting	Points	16
	Start	0000
	End	000F

7. Click the [Close with Reflecting the Setting] button to close the "CC-Link IE Field Configuration" window.

8. Click the [Apply] button.

9. Write the set parameters to the CPU module of the CC-Link IE Field Network master station. Then, reset the CPU module or power off and on the system.

[Online] ⇒ [Write to PLC]

10. Set the CPU module of the CC-Link IE Field Network master station to RUN, and check that the D LINK LED (CC-Link IE Field) of the NZ2GN-GFB is turned on.

Point

In the program example, default values are used for parameters that are not shown above. For the parameters, refer to the following.

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

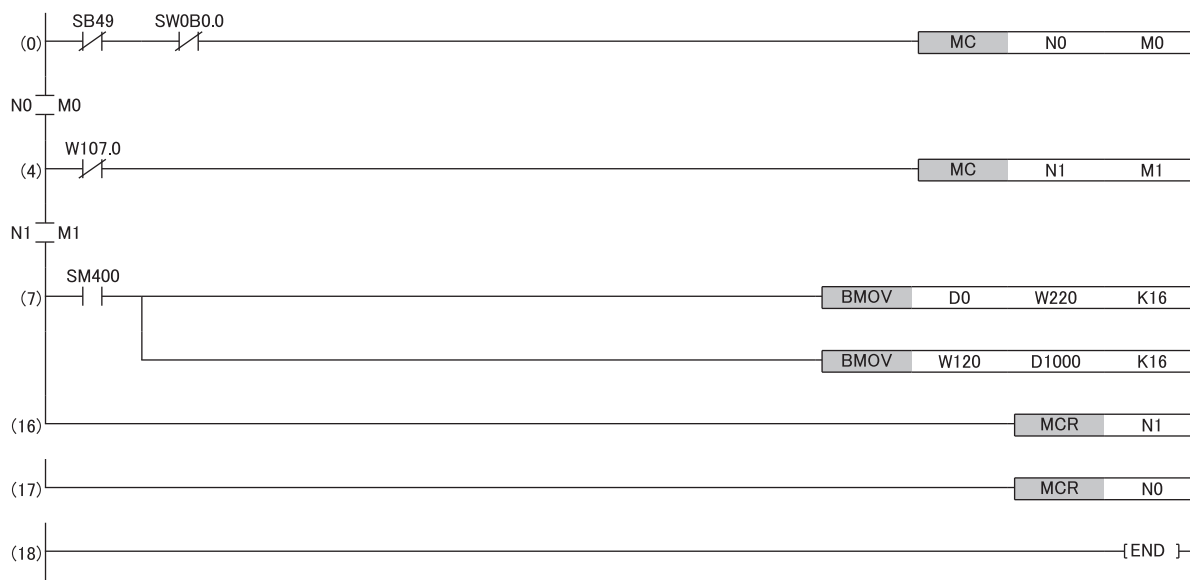
Program examples

■ Programs for CC-Link IE TSN master station

- Devices to be used

Device	Description
SB49	Own station data link error status of CC-Link IE TSN master station
SW0B0.0	Data link status of each station on CC-Link IE TSN (station No.1 (NZ2GN-GFB))
M0	Communication ready flag (CC-Link IE TSN station No.1)
N0	Nesting (CC-Link IE TSN station No.1)
W107.0	Own station data link error status of CC-Link IE Field Network station No.1 (NZ2GN-GFB)
M1	Communication ready flag (CC-Link IE Field Network master station)
N1	Nesting (CC-Link IE Field Network master station)
D0	Start device of data that is sent to CC-Link IE Field Network master station
W220	Device to which RWw0 of CC-Link IE Field Network master station is assigned
W120	Device to which RWr0 of CC-Link IE Field Network master station is assigned
D1000	Start device of data that is received from CC-Link IE Field Network master station
SM400	Always ON

- Program example

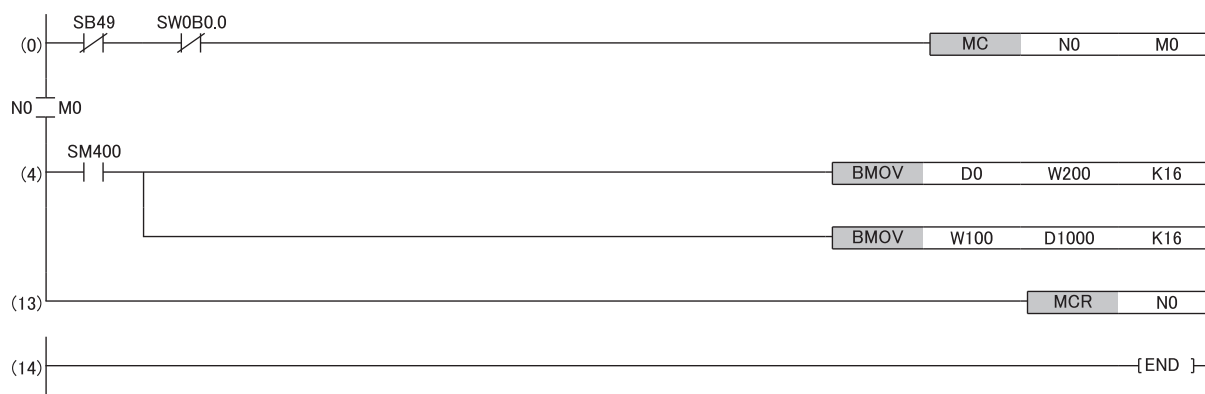


■Programs for CC-Link IE Field Network master station

- Devices to be used

Device	Description
SB49	Own station data link error status of CC-Link IE Field Network master station
SW0B0.0	Data link status of each station on CC-Link IE Field Network (station No.1 (NZ2GN-GFB))
M0	Communication ready flag (CC-Link IE Field Network station No.1)
N0	Nesting (CC-Link IE Field Network station No.1)
D0	Start device of data that is sent to CC-Link IE TSN master station
W200	Device to which RWr0 of CC-Link IE TSN master station is assigned
W100	Device to which RWr0 of CC-Link IE TSN master station is assigned
D1000	Start device of data that is received from CC-Link IE TSN master station
SM400	Always ON

- Program example



The NZ2GN-GFB has no special item to be inspected. However, to maintain the best condition of the system, perform an inspection in accordance with the inspection items described in the following manual based on the system configuration of the master station used.

- MELSEC iQ-R series:  MELSEC iQ-R Module Configuration Manual
- Non MELSEC iQ-R series:  User's manual for the CPU module used

MEMO

10 TROUBLESHOOTING

This chapter describes error contents that may occur while the NZ2GN-GFB is used and troubleshooting for those errors.

10.1 "CC-Link IE TSN/CC-Link IE Field Diagnostics" window

10

Status monitoring, operation tests, or other diagnostics are performed for CC-Link IE TSN and CC-Link IE Field Network.

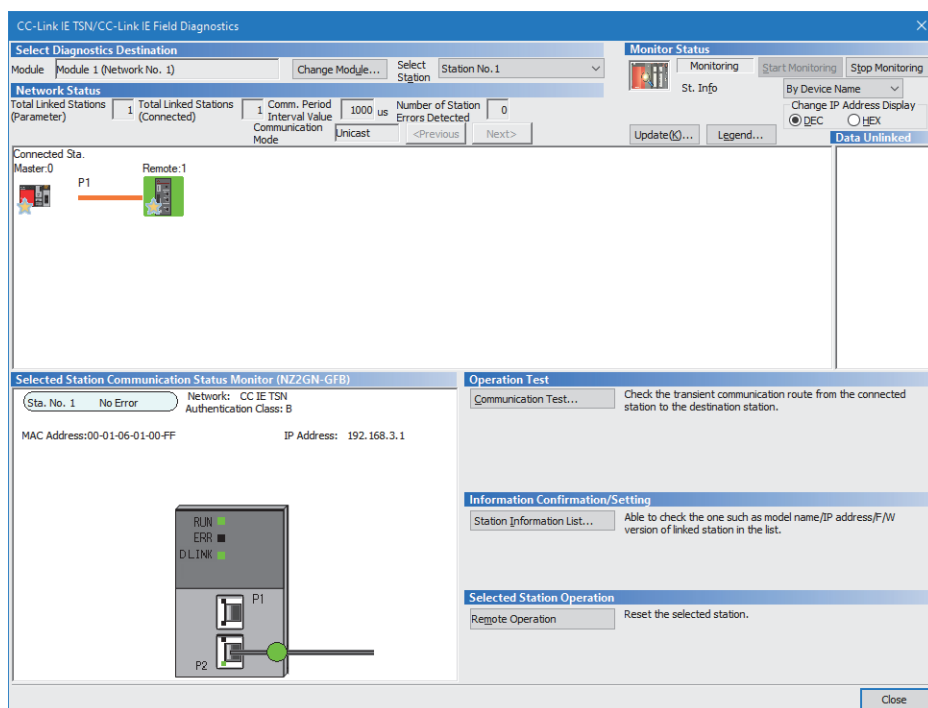
CC-Link IE TSN diagnostics

CC-Link IE TSN can be diagnosed using the engineering tool connected to the CPU module of the CC-Link IE TSN master station and local station. (📖 User's manual for the CC-Link IE TSN master station used)

Remote reset

Perform the following steps to remotely reset a selected NZ2GN-GFB.

1. Select the device station to be reset and click the [Remote Operation] button.



2. Follow the on-screen instructions and click the [Yes] button.
3. Follow the on-screen instructions and click the [OK] button.

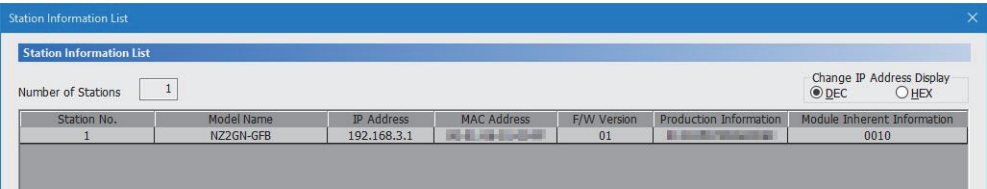
Point

- The remote reset of the NZ2GN-GFB affects communications on other stations so it may cause other stations to disconnect.
- When remote reset is performed, if the setting of either function setting switch 1 or 3 is different from the setting during module power-on, an error (error code: 0270H) occurs, and the NZ2GN-GFB is not reset remotely.
- Remote reset can also be done from the "Command Execution of Device Station" window. (📖 Page 57 Resetting the NZ2GN-GFB)
- To remotely reset the NZ2GN-GFB from the CC-Link IE Field Network master station or local stations, connect the master station or local station to the CC-Link IE TSN master station that is connected to the NZ2GN-GFB using "Other Station Setting" on the "Specify Connection Destination Connection" window of

the engineering tool. Then, start the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window.

Checking station information

Information on the NZ2GN-GFB with established communication is displayed in the "Station Information List" window. Information on the NZ2GN-GFB, such as the production information, firmware version, and module inherent information, can be checked by clicking the [Station Information List] button in the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window.



For items displayed in the "Station Information List" window, refer to the following.

User's manual for the CC-Link IE TSN master station used

The module inherent information of the NZ2GN-GFB shows the statuses of the CC-Link IE Field Network station number setting switch during startup and function setting switches.

Item	Bit															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
	0 (fixed)				CC-Link IE Field Network station number setting switch								Function setting switch			
					× 16				× 1				1	2	3	4
Switch setting status example	—				1				A				0	1	0	0
Display of module inherent information (in hexadecimal)	0				1				A				4			

Ex.

When the CC-Link IE Field Network station number setting switch is set to 1AH and function setting switch 2 is on, "Module Inherent Information" shows "01A4".

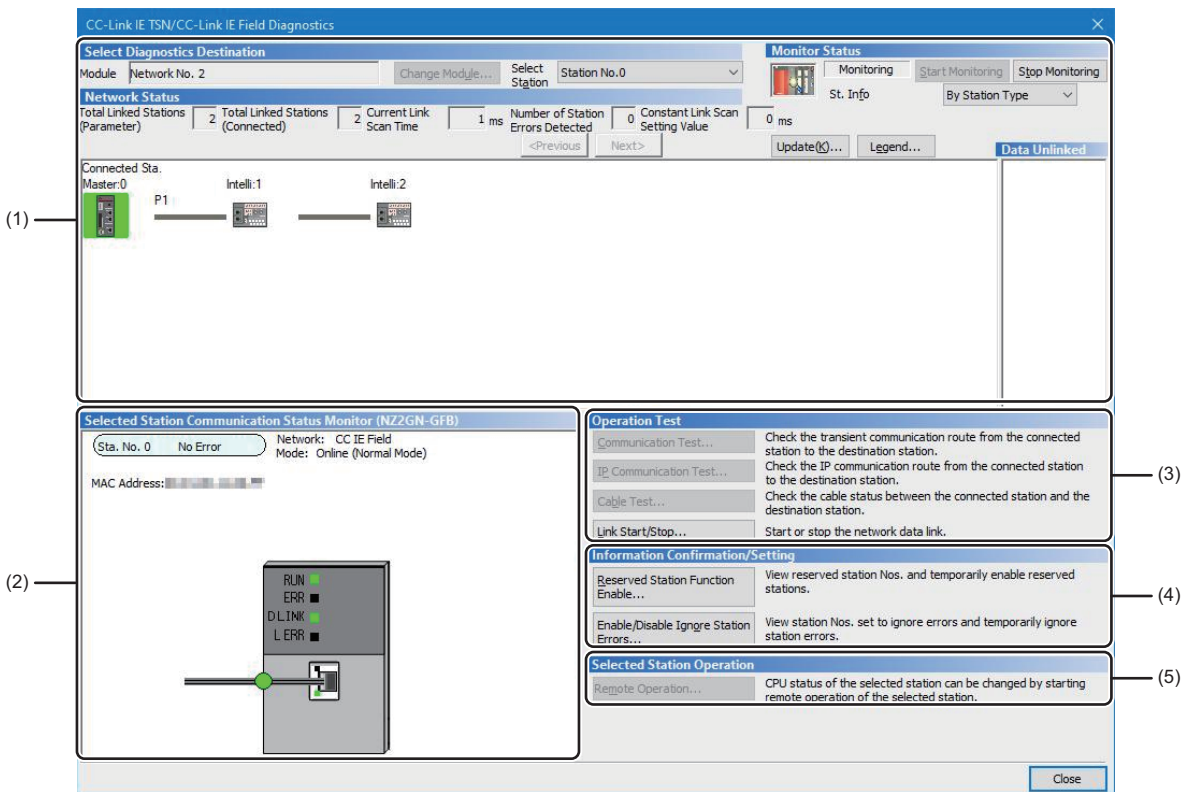
CC-Link IE Field Network diagnostics

CC-Link IE Field Network can be diagnosed using the engineering tool connected to the CPU module of the CC-Link IE TSN master station and local station.

[Diagnostics] ⇒ [CC-Link IE TSN/CC-Link IE Field Diagnostics] ⇒ Select the NZ2GN-GFB ⇒ Right-click ⇒ [CC-Link IE Field Diagnostics]

Point

When CC-Link IE Field Network diagnostics is started on a CC-Link IE Field Network master station or local station that is not the NZ2GN-GFB on CC-Link IE Field Network, refer to the user's manual for the CC-Link IE Field Network master station being used.



Diagnostic items

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

○: Diagnosed △: Diagnosed with restrictions ×: Not diagnosed

Item		NZ2GN-GFB station type		Restrictions	Reference
		Master station	Local station		
(1)	Network map and error status	○	○	—	Page 133 Diagnostics window
	Cable disconnection and disconnected station	○	○		
(2)	Status of the selected station and the error definition	○	○	This item is not displayed when the selected module does not support "Selected Station Communication Status Monitor" of the engineering tool.	
	Setting of device station number	○	×	—	
(3)	Link start/stop ^{*1}	○	△	Link start/stop for other stations can only be done if the NZ2GN-GFB is the master station.	Page 137 Link start/stop
(4)	Reserved Station Function Enable ^{*1}	○	△	When the NZ2GN-GFB is set as a local station, only reserved stations are displayed.	Page 138 Reserved Station Function Enable
	Enable/Disable Ignore Station Errors ^{*1}	○	△	When the NZ2GN-GFB is set as a local station, only temporary error invalid stations are displayed.	Page 141 Enable/Disable Ignore Station Errors
(5)	Remote Operation ^{*2}	○	○	—	Page 144 Remote operation

*1 This item cannot be used when a setting other than "No Specification" is specified in "Other Station Setting" on the "Specify Connection Destination Connection" window.

*2 Remote reset of the NZ2GN-GFB cannot be performed by remote operation. Reset remotely from CC-Link IE TSN diagnostics.

Restriction

The following functions cannot be used in the CC-Link IE Field Network diagnostics executed with these steps.

- Communication test (can be performed from the diagnostics on the CC-Link IE TSN side. (📖 User's manual for the CC-Link IE TSN master station used))
- IP communication test
- Cable test

Range for performing diagnostics

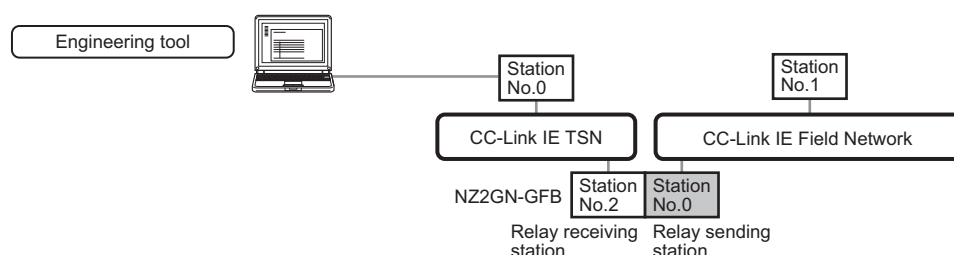
CC-Link IE Field Network diagnostics of the NZ2GN-GFB can be started from CC-Link IE TSN diagnostics only when all of the following conditions are met.

- On the communication route from the station directly connected to the engineering tool to the CC-Link IE Field Network to which the NZ2GN-GFB is connected, the NZ2GN-GFB is a relay sending station on the CC-Link IE Field Network.
- There is a CC-Link IE TSN in which the NZ2GN-GFB is connected within seven networks, including the network to which the station directly connected to the engineering tool belongs.
- All the stations on the communication route from the station directly connected to the engineering tool to the CC-Link IE Field Network connected to the NZ2GN-GFB have routing settings (including dynamic routing enable) configured.

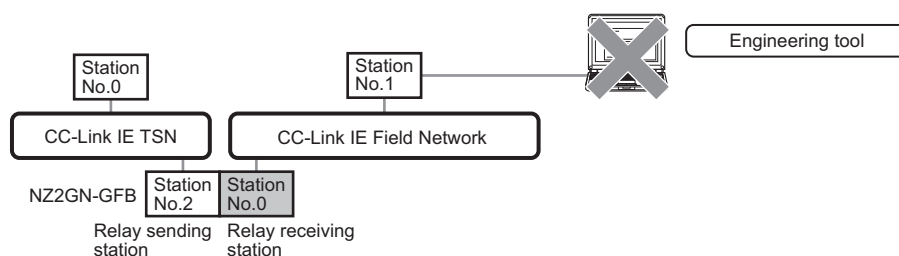
However, if the diagnosis is made from four or more networks ahead to the CC-Link IE TSN, the selected station communication status monitor of the RJ72GF15-T2 cannot be performed.

Ex.

Example of network configuration that can be diagnosed

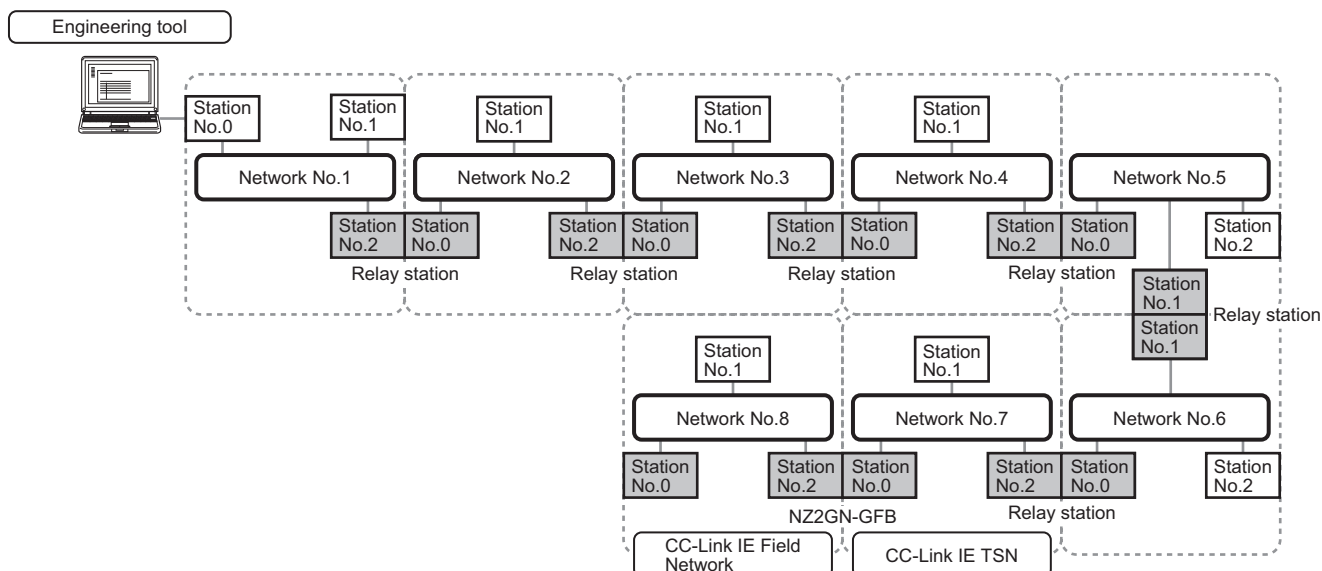


In the following cases, the NZ2GN-GFB becomes a relay receiving station on the CC-Link IE Field Network, so CC-Link IE Field Network diagnostics cannot be started from CC-Link IE TSN diagnostics.

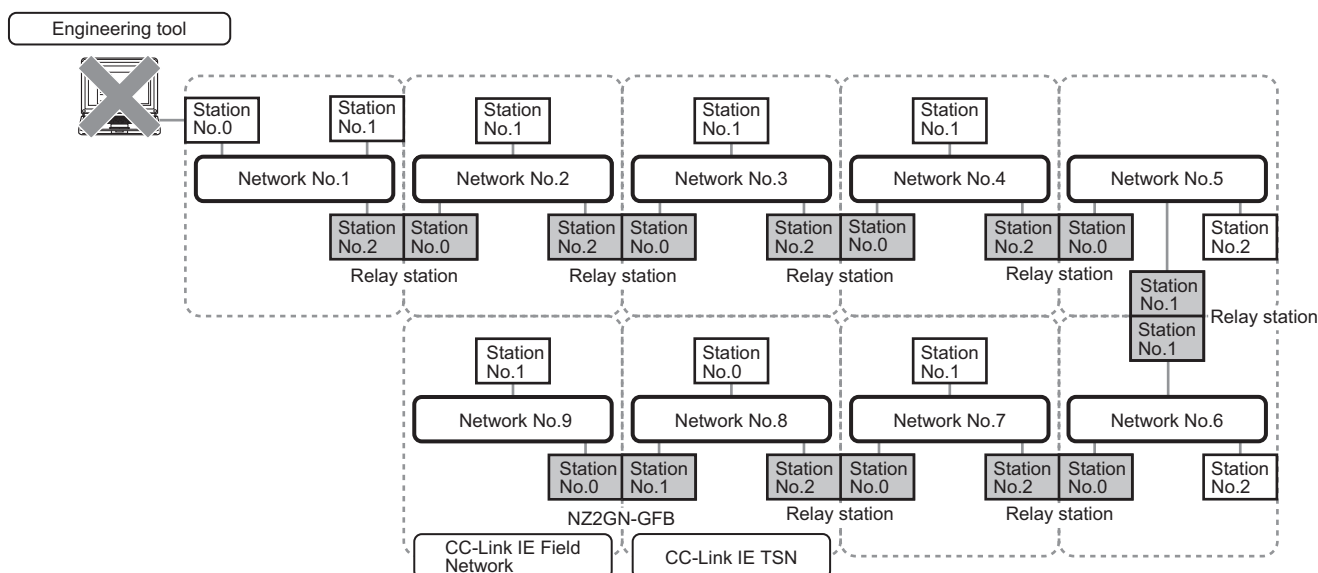


Ex.

Example of maximum network configuration within range for performing diagnostics



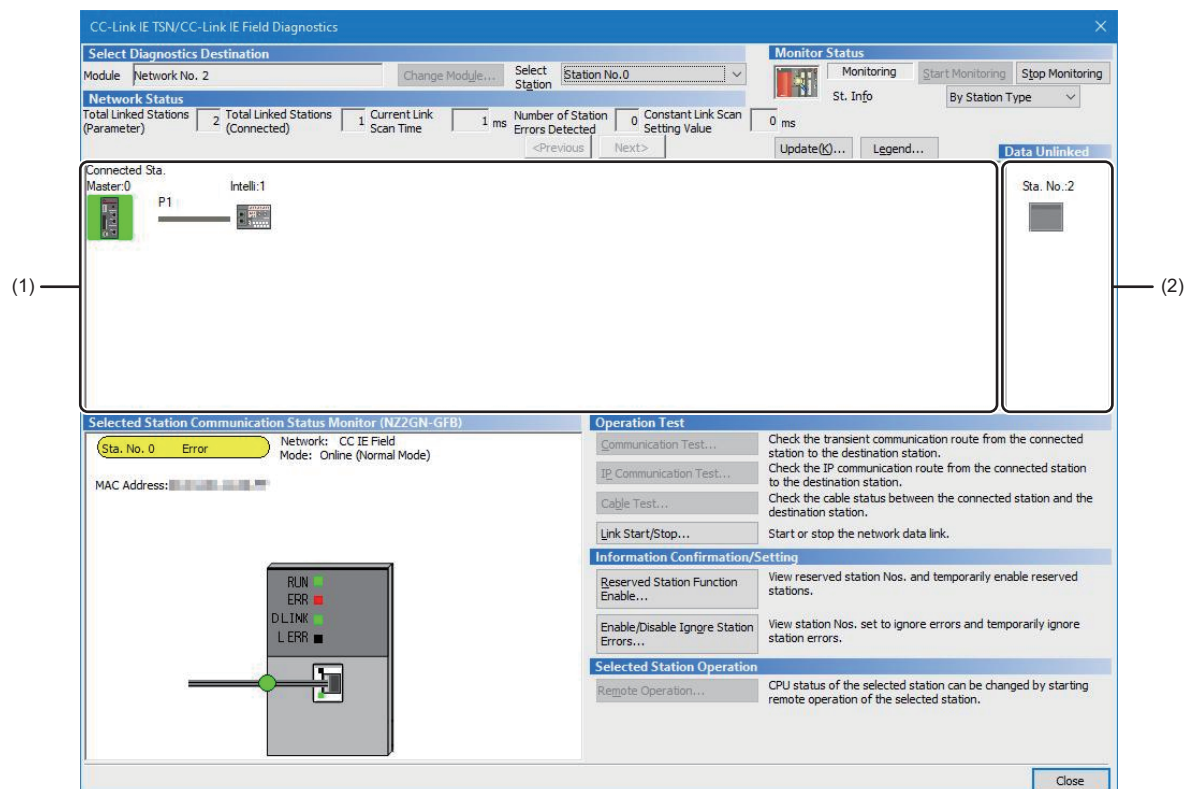
Since there are more than seven stations in this example, CC-Link IE Field Network diagnostics cannot be started from CC-Link IE TSN diagnostics.


Restriction

If the communication path includes the following items, the CC-Link IE Field 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 NZ2GN-GFB that is being diagnosed.
	Select 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 Field Network diagnostics.
	[Stop Monitoring] button	Stops monitoring of the CC-Link IE Field Network diagnostics.
[Update] button ^{*1*2}		If the actual network configuration and the network map of the diagnostic window are inconsistent, the network map is updated to match them. A data link error may momentarily occur in all the stations and outputs of the connected device stations may turn off since all stations on the network will be reconnected when executing the network map update. Set output data if needed.
[Legend] button		Displays the meaning of icons displayed in the CC-Link IE Field Network diagnostics.
St. Info ^{*1}		Displays the station type.

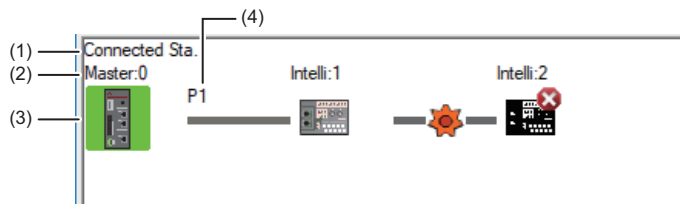
Item		Description
Network Status ^{*1}	Total Linked Stations (Parameter)	Displays "Total Linked Stations" (number of device stations) set in "Network Configuration Settings" under "Basic Settings".
	Total Linked Stations (Connected)	Displays "Total Linked Stations" (number of device stations) actually performing baton pass on CC-Link IE Field 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	Displays the constant link scan setting value. (Fixed to 0)
	Network map (Figure (1) above)	Indicates the network map and the status of each station. If the status is not displayed, check that there is only one master station in the system and no station number is overlapped. For details on the network map, refer to the following.  Page 135 Network map
	Disconnected station monitor area (Figure (2) above)	Displays a disconnected station that has been set in "Network Configuration Settings" of "Basic 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 The "Other Modules" icon indicates a station that has not yet performed data link. Icons other than the "Other Modules" icon indicate stations that had performed data link before disconnection. For details on the displayed icon, click the [Legend] button.
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 136 Selected Station Communication Status Monitor
Operation Test	[Link Start/Stop] button	Starts or stops cyclic transmission. ( Page 137 Link start/stop)
Information Confirmation/ Setting	[Reserved Station Function Enable] button	Temporarily cancels a reservation for a device station or reserves the device station again. ( Page 138 Reserved Station Function Enable)
	[Enable/Disable Ignore Station Errors] button	Sets a device station as a temporary error invalid station. ( Page 141 Enable/Disable Ignore Station Errors)
Selected Station Operation	[Remote Operation] button	Performs remote operation (such as RUN, STOP, or RESET operations) to the selected station. ( Page 144 Remote operation)

*1 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, refer to the user's manual for the CC-Link IE Field Network master station used.

*2 The network map match status can be checked using 'Network configuration mismatch occurrence status' (2009H.b8). ( Page 238 Network configuration mismatch occurrence status (2009H.b8))

■Network map

A network map is displayed according to the connection status.



- Click: Selection
- Right-click: Executes tests or debugging.
- keys on the keyboard: Move the focus to the module to be diagnosed, and determine it with the key.

- (1) Displays the station (own station) where the engineering tool is connected.
- (2) Displays the station type and station number. "?" is displayed when a station number has not been set.
When the background of the text is 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 the "Error (Illegal ring connection detected/Execute loopback)" icon is displayed, take actions displayed in "Troubleshooting" of "Error details". (Page 136 Selected Station Communication Status Monitor)
- (4) A port to which an Ethernet cable is connected is displayed. (The NZ2GN-GFB is fixed to P1.)

System configuration	Display of the network map
■Line topology 	
■Star topology 	
■Mixture of line topology and star topology 	

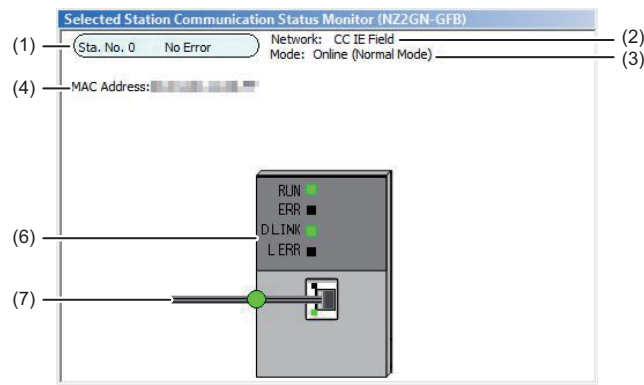
In the following cases, the network map that is different from the actual system configuration is displayed.

System configuration	Display of the network map
Two stations are connected through an industrial switch. 	Branches are not displayed in the network map.
Industrial switches are in cascade connection. 	Only one branch is displayed.

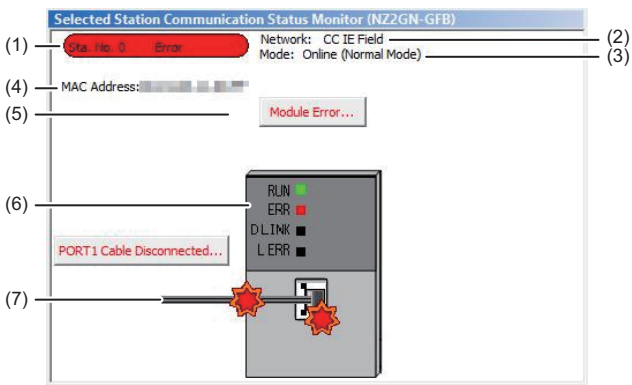
■Selected Station Communication Status Monitor

Displays status of the station selected in "Network Status".

■Normal operation



■Error status



No.	Description
(1)	Indicates the CC-Link IE Field Network station number and operation status. ■Normal operation • Station No.□: Normal operation ■Error status • Station No.□ Error (yellow): Error (Data link is continued.) • Station No.□ Error (red): Error (Data link is stopped.)
(2)	Displays the network type.
(3)	Displays a mode.
(4)	Displays a MAC address.
(5)	Click this button to check error details. Take actions following the description displayed in "Error Factor" and "Troubleshooting".
(6)	Displays the module LED status and CC-Link IE Field Network communication connector communication status. ( Page 13 PART NAMES)
(7)	Displays the cable status of the CC-Link IE Field Network communication connector.

Link start/stop

Stops the cyclic transmission during debugging and other operations. (Data is not received from any device station nor sent from own station.)

It also restarts stopped cyclic transmissions. This function does not stop or restart transient transmission.

10



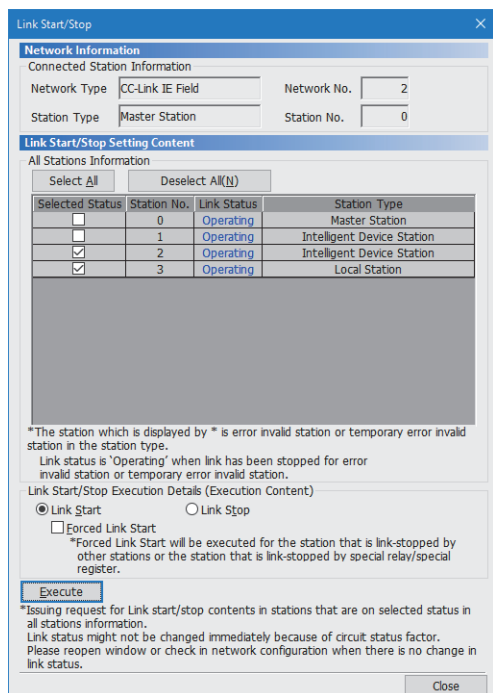
Cyclic transmission can also be started and stopped using the remote buffer memory.

☞ Page 231 Details of remote buffer memory (Link special relay (SB) area of CC-Link IE Field Network)

☞ Page 249 Details of remote buffer memory (Link special register (SW) area of CC-Link IE Field Network)

■Procedure

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



1. Click the [Link Start/Stop] button in the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window. Or right-click a module icon in "Network Status" and click [Link Start/Stop].
2. "Link Start/Stop" window is displayed.
3. Select a station for starting or stopping cyclic transmission in "Selected Status". When the engineering tool is connected to a local station, only the own station can be selected. The station to which the engineering tool is connected can be checked in "Connected Station Information".
4. Select whether to start or stop cyclic transmission in "Link Start/Stop Execution Details (Execution Content)". 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 SB or SW.
5. Click the [Execute] button.

■When the NZ2GN-GFB is powered off and on or reset

Even if cyclic transmission has been stopped by link stop, powering off and on the NZ2GN-GFB or resetting it restarts cyclic transmission.

■When the link stop is executed to an error invalid station or temporary error invalid station

Note that the station is displayed as a station during data link in the CC-Link IE Field Network diagnostics window even after data link has been stopped. If the link is stopped for an error invalid station or temporary error invalid station, it can be checked with 'Data link error status of own station' (2004H.b9) in the remote buffer memory of the NZ2GN-GFB.

■Stations to which the link start cannot be executed

The link start cannot be executed to the following stations.

- 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 the remote buffer memory of the NZ2GN-GFB^{*1}

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

Reserved Station Function Enable

This function temporarily cancels a reservation for a device station. Use this function to cancel the reservation of a device station when it is connected to the network.

Alternatively, set it as a reserved station again.

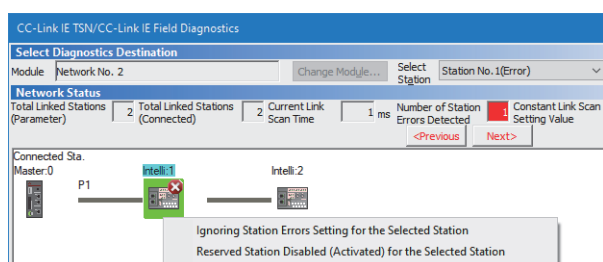


Reserved stations can be canceled or restored using the following remote buffer memory. (Page 196 Remote Buffer Memory)

- 'Reserved station function disable request' (2001H.b2)
- 'Reserved station function enable request' (2001H.b3)
- 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H)

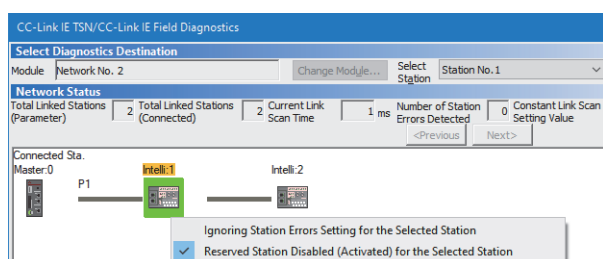
■Selecting the target module in "Network Status"

To temporarily cancel a reservation, follow the steps below.



1. Connect the device station set as a reserved station to the network.
2. In "Network Status" of the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window, select the icon of the station for which reservation is to be temporarily canceled.
3. Right-click the selected icon, and select "Reserved Station Disabled (Activated) for the Selected Station".
4. The text background turns orange. The reservation for the device station is temporarily canceled.
5. Debug the device station that has been added.

To reserve the device station again, follow the steps below.

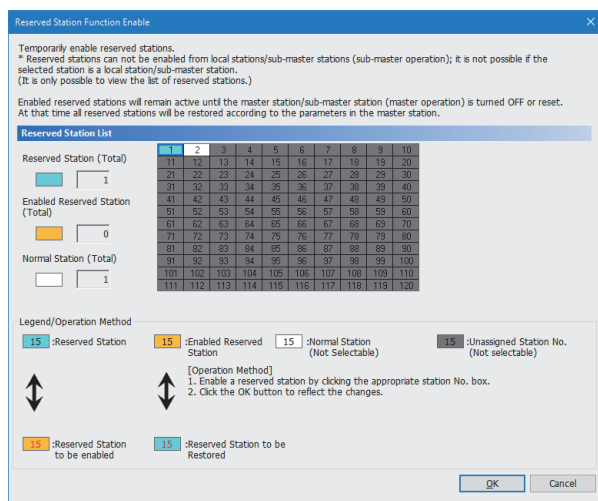


1. In "Network Status" of the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window, select the icon of the station to be reserved again.
2. Right-click the selected icon, and select "Reserved Station Disabled (Activated) for the Selected Station".
3. The text background turns light blue. The device station is reserved again.

■Selecting the target module in the "Reserved Station Function Enable" window

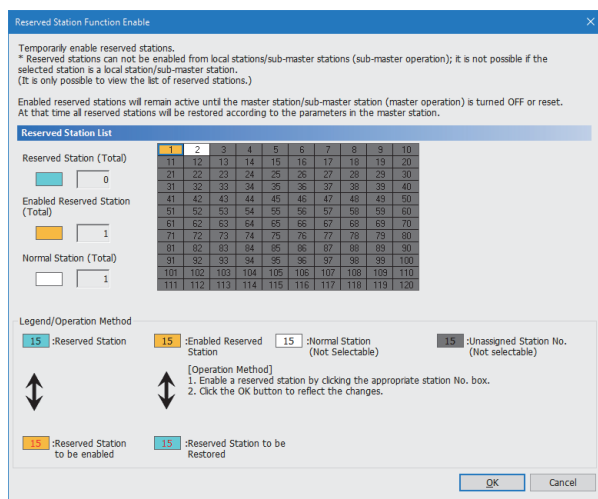
Reservation of multiple device stations can be temporarily canceled through the "Reserved Station Function Enable" window all at once.

To temporarily cancel a reservation, follow the steps below.



1. Connect the device station set as a reserved station to the network.
2. Click the [Reserved Station Function Enable] button in the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window.
3. "Reserved Station Function Enable" window is displayed.
4. In "Reserved Station List", click the number of the target station. The text turns red and the background turns orange. Only reserved stations can be selected. The background of a reserved station number is displayed in light blue.
5. Click the [OK] button to temporarily cancel the reservation.
6. Debug the device station that has been added.

To reserve the device station again, follow the steps below.



1. Open the "Reserved Station Function Enable" window in the same way as described in the procedure for temporarily canceling a reservation.
2. In "Reserved Station List", click the number of the target station. The text turns red and the background turns light blue. Only stations not specified as a reserved station can be selected. The background of available modules is orange.
3. Click the [OK] button to set the station as a reserved station again.

■Parameter setting

The temporary cancellation of a reserved station is not reflected in the module parameter of the NZ2GN-GFB.

■When the master station is reset or the system is powered off

The disabled reserved station setting is ignored, and the status returns to the status set in the module parameter of the NZ2GN-GFB.

■When a station for which the reserved station setting has been temporarily disabled is disconnected from the network

The following status differs between the master station and local stations after the NZ2GN-GFB is reset or the system is powered off.

- ERR. LED status
- Information on 'Reserved station setting status' (30C0H to 30C7H) and 'Reserved station cancel setting status' (3180H to 3187H)

The difference can be corrected by the following procedure.

1. Reconnect the disconnected station.
2. Disable the reserved station setting, and enable the reserved station setting again.

■Checking the station number of a reserved station

The station number of a reserved station can be checked in the "Reserved Station Function Enable" window.

Enable/Disable Ignore Station Errors

A device station not set as an error invalid station can be temporarily set as an error invalid station. This function is used to temporarily prevent detection of an error in a device station.

This function also cancels temporary error invalid station settings configured to a device station.

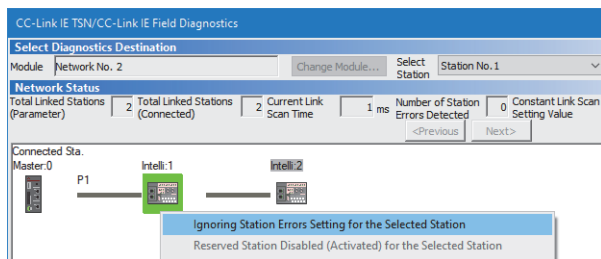
Point

Temporary error invalid stations can be set or restored using the following remote buffer memory. (☞ Page 196 Remote Buffer Memory)

- 'Temporary error invalid station setting request' (2001H.b0)
- 'Temporary error invalid station setting clear request' (2001H.b1)
- 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H)

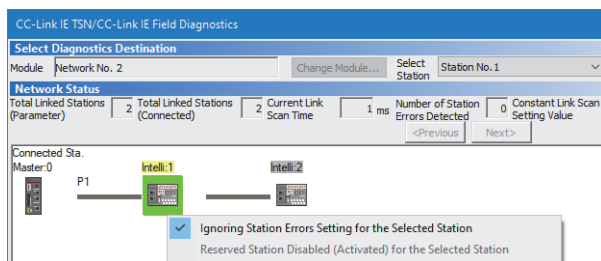
■Selecting the target module in "Network Status"

To set a temporary error invalid station, follow the steps below.



1. In "Network Status" of the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window, select the icon of the station to be temporarily set as an error invalid station.
2. Right-click the selected icon, and select "Ignoring Station Errors Setting for the Selected Station".
3. The text background turns yellow. The target station is temporarily set as an error invalid station.

To cancel temporary error invalid station setting, follow the steps below.

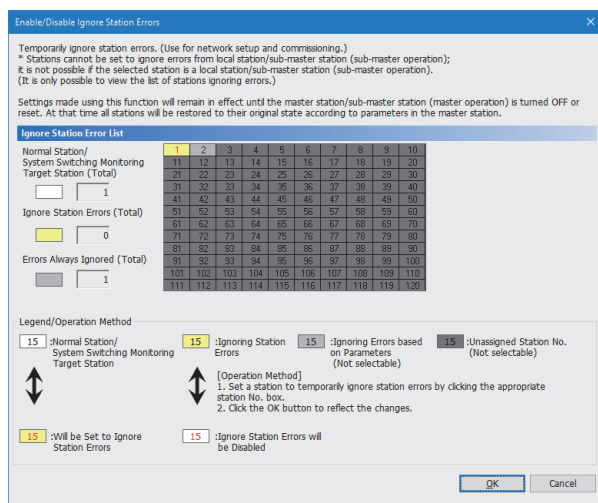


1. In "Network Status" of the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window, select the icon of the station for which temporary error invalid station setting is to be canceled.
2. Right-click the selected icon, and select "Ignoring Station Errors Setting for the Selected Station".
3. The text background turns white. The temporary error invalid station setting is canceled.

■Selecting the target module in the "Enable/Disable Ignore Station Errors" window

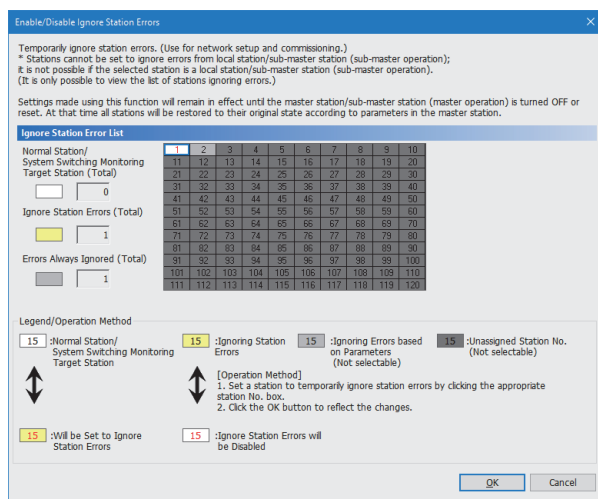
Temporary error invalid station setting can be configured to multiple device stations through the "Enable/Disable Ignore Station Errors" window all at once.

To set a temporary error invalid station, follow the steps below.



1. Click the [Enable/Disable Ignore Station Errors] button in the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window.
2. "Enable/Disable Ignore Station Errors" window is displayed.
3. In "Ignore Station Error List", click the number of the target station. The text turns red and the background turns yellow. Only stations for which temporary error invalid station setting has not been configured can be selected. The background of available modules is white.
4. Click the [OK] button to temporarily set the station as an error invalid station.

To cancel temporary error invalid station setting, follow the steps below.



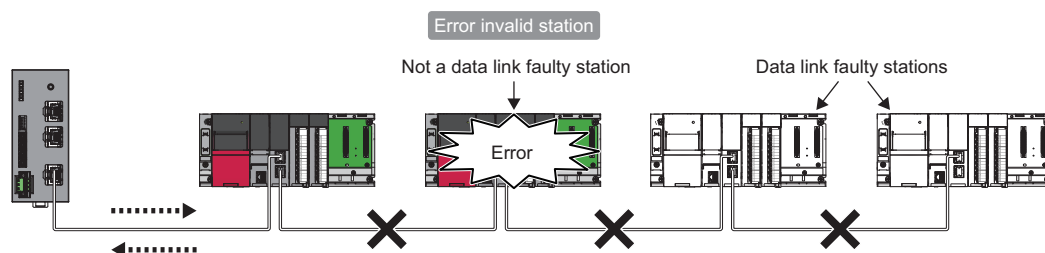
1. Open the "Enable/Disable Ignore Station Errors" window in the same way as described in the procedure for setting a temporary error invalid station.
2. In "Ignore Station Error List", click the number of the target station. The text turns red and the background turns white. Only temporary error invalid stations can be selected. The background of a temporary error invalid station number is displayed in yellow.
3. Click the [OK] button to cancel temporary error invalid station setting.

■Stations which cannot be set as a temporary error invalid station

The temporary error invalid station setting is not available for temporarily canceled reserved stations.

■Setting a temporary error invalid station in a line topology

In the following case, even if a data link error occurs in the station set as an error invalid station, the station is not detected as a data link faulty station. However, subsequently connected stations are detected as data link faulty stations.



■Parameter setting

The temporary error invalid station setting is not reflected in the module parameter of the NZ2GN-GFB.

■When the master station is reset or the system is powered off

The temporary error invalid station setting is ignored, and the status returns to the status set in the module parameter of the NZ2GN-GFB.

■When a temporary error invalid station is disconnected from the network

The following status differs between the master station and local stations after the NZ2GN-GFB is reset or the system is powered off.

- ERR. LED status
- 'Temporary error invalid station setting status' (30E0H to 30E7H)

The difference can be corrected by the following procedure.

1. Reconnect the disconnected station.
2. Configure the temporary error invalid station setting, and cancel the setting.

■Checking the station number of an error invalid station

The station number of an error invalid station can be checked in the "Enable/Disable Ignore Station Errors" window.

Remote operation

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

The displayed window varies depending on the station selected. For details, refer to the manual for the module used.

10.2 Checking the LEDs

This section describes how to troubleshoot the system by the LEDs.

Determining the module error status

An error status can be determined by the on/off status of RUN LED and ERR. LED as follows.

RUN LED	ERR. LED	Error type ^{*1}	Description
Off	On/flashing ^{*2}	Major error	When this error occurs, the module stops operating, and the customer must consult with their local Mitsubishi representative for troubleshooting.
On	Flashing	Moderate error	When this error occurs, the module stops operating, but the error can be handled through operation by the customer.
On	On	Minor error	When this error occurs, the module continues to operate.

*1 When multiple errors occur, the error status is displayed in the order of major error > moderate error > minor error.
When the error type is the same, the error that occurred later is stored.

*2 When the module is faulty, the LED may not turn on or flash.

When the PW LED does not turn on

When the PW LED does not turn on, check the following items.

Check item	Action
Is any LED other than the PW LED turned on?	When any LED other than the PW LED turns on, the possible cause is a hardware error. Please consult your local Mitsubishi representative.
Is the module power supply (24VDC) wired?	Wire the module power supply (24VDC).
Is the module power supply (24VDC) turned on?	Turn on the module power supply (24VDC).
Is the voltage of the module power supply (24VDC) within the specified range?	Check that the module power supply voltage is within the range of performance specifications. (☞ Page 16 Performance Specifications)

When the RUN LED does not turn on

When the RUN LED does not turn on, check the following items.

Check item	Action
Has any major error occurred?	Power off and on the module power supply. If the RUN LED still does not turn on, the possible cause is a module failure. Please consult your local Mitsubishi representative.

If the above action does not solve the problem, perform a unit test to check for an error. (☞ Page 152 Unit Test)

When the RUN LED flashes

When the RUN LED flashes, check the following items.

Check item	Action
Is function setting switch 1 of the NZ2GN-GFB set to on?	When a unit test is conducted on the NZ2GN-GFB, the RUN LED turns on after the unit test is completed. Take corrective action according to the result of the unit test. (☞ Page 152 Unit Test) When a unit test is not conducted, set function setting switch 1 to off.

When the ERR. LED turns on or flashes

When the ERR. LED turns on or flashes, check the following items.

Check item	Action
Has any error occurred in the NZ2GN-GFB?	Identify the cause of error from the 'error code' (RWr1) of the remote register or CC-Link IE TSN diagnostics and take actions. (☞ Page 156 Checking Event Codes and Error Codes)
Is the disconnected station displayed in the CC-Link IE Field Network diagnostics?	<ul style="list-style-type: none">Correct the network configuration settings in accordance with the station that is actually connected.Perform the troubleshooting steps for when the D LINK LED is flashing or off in the station disconnected from CC-Link IE Field Network.

If the above action does not solve the problem, perform a unit test to check for an error. (☞ Page 152 Unit Test)

When the P1 LINK LED or P2 LINK LED turns off

When the P1 LINK LED or P2 LINK LED turns off on CC-Link IE TSN, check the following items.

Check item	Action
Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (🔗 Page 40 Wiring product)
Is the segment length 100m or less?	Change the segment length to 100m or less.
Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
Is any Ethernet cable disconnected?	Replace the Ethernet cable.
Are the other stations connected to the NZ2GN-GFB operating normally?	Check that the power supplies of the other stations are turned on.
Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> • Check that the power supply of the industrial switch is turned on. • Check that the industrial switch used is compliant with the specifications of the CC-Link IE TSN master station in use. (🔗 User's manual for the CC-Link IE TSN master station used) • Disconnect Ethernet cables, and then reconnect them. • Power off and on the industrial switch.
Does the connected device support the communication speed of the NZ2GN-GFB?	When function setting switch 3 is set to off, connect to a device that can communicate at 1Gbps, and when it is set to on, connect to a device that can communicate at 100Mbps.
When the communication speed of the NZ2GN-GFB is set to 100Mbps, is auto-negotiation of the connected device enabled?	Enable auto-negotiation of the connected device. Alternatively, connect a device with auto-negotiation enabled.

If the above action does not solve the problem, perform a unit test to check for an error. (🔗 Page 152 Unit Test)

When D LINK LED (CC-Link IE TSN) turns off

When the D LINK LED (CC-Link IE TSN) turns off, check the following.

Check item	Action
Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (🔗 Page 40 Wiring product)
Is the segment length 100m or less?	Change the segment length to 100m or less.
Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
Is any Ethernet cable disconnected?	Replace the Ethernet cable.
Are the other stations connected to the NZ2GN-GFB operating normally?	Check that the power supplies of the other stations are turned on.
Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> • Check that the power supply of the industrial switch is turned on. • Check that the industrial switch used is compliant with the specifications of the CC-Link IE TSN master station in use. (🔗 User's manual for the CC-Link IE TSN master station used) • Disconnect Ethernet cables, and then reconnect them. • Power off and on the industrial switch.
Is the CC-Link IE TSN master station connected to the network operating normally?	<ul style="list-style-type: none"> • If an error occurs in the CC-Link IE TSN master station, clear the error. • Check that the CC-Link IE TSN master station in use is supported. (🔗 Page 24 Applicable Systems)
Is another station that is powered off or in the middle of remote reset connected between the CC-Link IE TSN master station and the NZ2GN-GFB?	<ul style="list-style-type: none"> • The NZ2GN-GFB is disconnected when it is off so turn it on. • The NZ2GN-GFB is disconnected during remote reset. Avoid unnecessary remote reset.
Is the others station between the CC-Link IE TSN master station and the NZ2GN-GFB linking up at the desired communication speed?	Change the communication speed of another station or the industrial switch to satisfy the communication speed.
Is the IP address of the NZ2GN-GFB duplicated with any other devices within the access range of CC-Link IE TSN?	Change the IP address so that no IP address duplication occurs in the access range of CC-Link IE TSN.
Is function setting switch 1 turned off?	Turn off function setting switch 1 if it is turned on, and turn off and on the module power supply.
Is a device that does not support CC-Link IE TSN connected between the CC-Link IE TSN master station and the NZ2GN-GFB?	Disconnect any device that does not support CC-Link IE TSN. For a device that can be set to operate on CC-Link IE TSN, make sure that it is operating as CC-Link IE TSN.

If the above action does not solve the problem, perform a unit test to check for an error. (🔗 Page 152 Unit Test)

When D LINK LED (CC-Link IE TSN) is flashing

When the D LINK LED (CC-Link IE TSN) is flashing, check the following.

Check item	Action
Does the station type match?	Make sure that the NZ2GN-GFB station type matches the station type set in the network configuration settings of the CC-Link IE TSN master station.
Is the NZ2GN-GFB set as a reserved station?	Change the "Reserved/Error Invalid Station" setting of the NZ2GN-GFB to "No Setting" in the network configuration settings of the CC-Link IE TSN master station.
Is the IP address of the NZ2GN-GFB duplicated with that of other stations?	If two or more duplicate IP addresses exist, change the setting so that they are different from each other.
In the network configuration settings of the CC-Link IE TSN master station, is the third or fourth octet of the IP address duplicated with that of other stations?	Configure the setting so that there is no duplication in the third and fourth octet of IP address for all the stations.
In the network configuration settings of the CC-Link IE TSN master station, does each network address (the subnet mask part of the IP address) match that of the master station?	Set each IP address and subnet mask so that the network addresses of all the stations are the same.
Is another station with a communication error connected between the CC-Link IE TSN master station and the NZ2GN-GFB?	The NZ2GN-GFB cannot establish data link if there is no path available with which to communicate with the CC-Link IE TSN master station without relaying data via a station with a communication error. If there are multiple stations with a communication error, resolve the error from the station closest to the CC-Link IE TSN master station on the communication route first.
Has another station been reset or powered off?	Disconnection temporarily occurs due to reset or power-off of another station. Wait until communication restarts.
Are the other stations on CC-Link IE TSN linking up at the desired communication speed?	Change the communication speed of another station or the industrial switch to satisfy the communication speed.
Does the time synchronization source station operate normally?	<ul style="list-style-type: none"> • If an error occurs in the time synchronization source station, clear the error. • When the time synchronization source station is reset or powered off, disconnection temporarily occurs due to switching of time synchronization sources. Wait until communication restarts.
Is a time synchronization source station with a higher priority newly connected to the network?	Disconnection temporarily occurs due to switching of time synchronization sources. Wait until communication restarts.
Is the CC-Link IE TSN master station connected to the network operating normally?	If an error occurs in the CC-Link IE TSN master station, clear the error.
Check that the model name of the CC-Link IE TSN device station set in the network configuration settings matches the model name of the actual device.	Change the network configuration settings so that the model name of the CC-Link IE TSN device station set in the network configuration settings matches the model name of the actual device. Alternatively, set the NZ2GN-GFB as a "General Remote Station" in the network configuration settings.
Is the parameter automatic setting completed with an error when the parameter automatic setting is enabled?	If device station parameter automatic setting interruption (event code: 00C40H) is stored in the event history of the CC-Link IE TSN master station, take an action corresponding to the code stored in the device station response code (end code). For details, refer to the following.  Page 62 Precautions
Is the event code 00C81H registered in the event history of the CC-Link IE TSN master station?	Change the CC-Link IE TSN Class setting in the network configuration settings so that the value matches the value set with function setting switch 2. Alternatively, change the CC-Link IE TSN Class setting of function setting switch 2.
Is the event code 00C71H registered in the event history of the CC-Link IE TSN master station?	Disable the CC-Link IE TSN Network synchronous communication function of the CC-Link IE TSN master station.
Has any error occurred in the NZ2GN-GFB?	<p>If an error has occurred in the NZ2GN-GFB, a network parameter may be set to a value that the module cannot handle.</p> <p>Check following errors in order from the top one, and find the error cause by referring to "Description and cause" described in "Error Code List".</p> <p>When the cause is found, eliminate it by referring to "Action" described in "Error Code List". ( Page 160 Error Code List)</p> <ul style="list-style-type: none"> • Communication cycle setting error (CC-Link IE TSN Class B/1Gbps) (error code: D023H) • Communication cycle setting error (CC-Link IE TSN Class B/100Mbps) (error code: D024H) • Communication cycle setting error (CC-Link IE TSN Class A) (error code: D028H) • Number of RX/RX points error (error code: D021H) • RWr/RWw number of points error (error code: D022H) • Network synchronous communication setting error (error code: D020H) • Communication setting error 2 (error code: D001H) • Communication setting error 1 (error code: D000H)
Is the system configured with a ring topology?	When the CC-Link IE TSN Class of the NZ2GN-GFB is set to A (function setting switch 2 is on), change the class to B (turn off function setting switch 2), or set the system configuration to a line topology, a star topology, or mixture of line topology and star topology.

Check item	Action
Is the network overloaded?	<p>Reduce the load on the network using the steps below.</p> <ul style="list-style-type: none"> • If a broadcast storm has occurred, eliminate the cause. • The NZ2GN-GFB may not be able to send packets because it intermittently relays packets sent from an Ethernet device to other stations. If an Ethernet device is connected to the network, reduce the frequency of sending packets from the Ethernet device.

If the above action does not solve the problem, perform a unit test to check for an error. (🔧 Page 152 Unit Test)

When the LINK LED turns off

When the LINK LED on the CC-Link IE Field Network side is off, check the following.

Check item	Action
Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (🔧 Page 40 Wiring product)
Is the segment length 100m or less?	Change the segment length to 100m or less.
Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
Is any Ethernet cable disconnected?	Replace the Ethernet cable.
Are the other stations connected to the NZ2GN-GFB operating normally?	Check that the power supplies of the other stations are turned on.
Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> • Check that the power supply of the industrial switch is turned on. • Check that the industrial switch used is compliant with the specifications of the CC-Link IE Field Network master station in use. (📖 User's manual for the CC-Link IE Field Network master station used) • Disconnect Ethernet cables, and then reconnect them. • Power off and on the industrial switch.

If the above action does not solve the problem, perform a unit test to check for an error. (🔧 Page 152 Unit Test)

When D LINK LED (CC-Link IE Field) is off or flashing

When the D LINK LED (CC-Link IE Field) turns off, check the following.

Check item	Action	
When the NZ2GN-GFB is used as the CC-Link IE Field Network master station	Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (Page 40 Wiring product)
	Is the segment length 100m or less?	Change the segment length to 100m or less.
	Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
	Is any Ethernet cable disconnected?	Replace the Ethernet cable.
	Are the other stations connected to the NZ2GN-GFB operating normally?	<ul style="list-style-type: none"> Check if the other stations are performing data link using CC-Link IE Field Network diagnostics. Check the operation status of modules of other stations connected to the NZ2GN-GFB. For details, refer to the manual for each module.
	Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> Check if the industrial switch in use is compliant with the standards. Power off and on the industrial switch.
	Is the network in the ring topology configured correctly?	Correct the wiring. When the system contains an industrial switch, take any of the following actions: <ul style="list-style-type: none"> Disconnect one Ethernet cable connected to the industrial switch and power off and on the switch. (Repeat this operation until data link starts over the network.) When data link starts over CC-Link IE Field Network, check the network configuration using CC-Link IE Field Network diagnostics.
	Are station numbers unique?	Change the station number so that they do not overlap.
	Is function setting switch 1 turned off?	Turn off function setting switch 1 if it is on, and turn off and on the module power supply.
	Are devices with different network types connected to the same network line?	Use separate cables for different network types. After taking the above action, power off and on or reset all stations where the error was detected.
	Are there 33 or more CC-Link IE Field Network device stations connected?	Make adjustments so that there are no more than 32 CC-Link IE Field Network device stations connected.
	Is the link stopped?	Check the link status using CC-Link IE Field Network diagnostics, and start the link if it is stopped.

Check item		Action
When the NZ2GN-GFB is used as the CC-Link IE Field Network local station	Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (☞ Page 40 Wiring product)
	Is the segment length 100m or less?	Change the segment length to 100m or less.
	Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
	Is any Ethernet cable disconnected?	Replace the Ethernet cable.
	Is the CC-Link IE Field Network master station that is connected to the network operating normally?	<ul style="list-style-type: none"> • If an error occurs in the CC-Link IE Field Network master station, clear the error. • Check that the CC-Link IE Field Network master station used is supported. (☞ Page 24 Applicable Systems)
	Are the other stations connected to the NZ2GN-GFB operating normally?	<ul style="list-style-type: none"> • Check if the other stations are performing data link using CC-Link IE Field Network diagnostics. • Check the operation status of modules of other stations connected to the NZ2GN-GFB. For details, refer to the manual for each module.
	Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> • Check if the industrial switch in use is compliant with the standards. • Power off and on the industrial switch.
	Are station numbers unique?	Change the station number so that they do not overlap.
	Is function setting switch 1 turned off?	Turn off function setting switch 1 if it is on, and turn off and on the module power supply.
	Are devices with different network types connected to the same network line?	Use separate cables for different network types. After taking the above action, power off and on or reset all stations where the error was detected.
	Does the station type match?	Make sure that the NZ2GN-GFB station type matches the station type set in the network configuration settings of the CC-Link IE Field Network master station.
	Is it set as a reserved station?	Change the "Reserved/Error Invalid Station" setting of the NZ2GN-GFB to "No Setting" in the network configuration settings of the CC-Link IE Field Network master station and reflect the changed parameter in the CPU module.
	Is the link stopped in the CC-Link IE Field Network diagnostics?	Check the link status in the CC-Link IE Field Network diagnostics, and start the link if it is stopped.
	Is a station with a communication error connected between the CC-Link IE Field Network master station and the NZ2GN-GFB?	The NZ2GN-GFB cannot establish data link if there is no path available with which to communicate with the CC-Link IE Field Network master station without relaying data via a station with a communication error. If there are multiple stations with a communication error, resolve the error from the station closest to the CC-Link IE Field Network master station on the communication route first.

If the above action does not solve the problem, perform a unit test to check for an error. (☞ Page 152 Unit Test)

When the L ERR. LED turns on

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

Check item		Action
When the NZ2GN-GFB is used as the CC-Link IE Field Network local station	Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (☞ Page 40 Wiring product)
	Is the segment length 100m or less?	Change the segment length to 100m or less.
	Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
	Is any Ethernet cable disconnected?	Replace the Ethernet cable.
	Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> • Check if the industrial switch in use is compliant with the standards. • Power off and on the industrial switch.
	Is there any noise affecting the system?	Check the wiring condition.
	Is "Network Topology" set to "Ring" in the CC-Link IE Field Network master station?	Set "Network Topology" to a value other than "Ring" in the CC-Link IE Field Network master station.

If the above action does not solve the problem, check the following items.

☞ Page 155 Communications are unstable

10.3 Check with Remote Register and Remote Buffer Memory

This section describes the troubleshooting of CC-Link IE Field Network using remote registers and remote buffer memory.

10

Remote registers

Check the following remote register items. (☞ Page 185 Details of remote registers)

Check item	Action
Is 'Baton pass status of own station' (RWr6.b0) on?	The baton pass status of CC-Link IE Field Network is abnormal. Take actions while referring to the following. ☞ Page 154 Transient transmission has failed
Is 'Baton pass status of each station of CC-Link IE Field Network' (RWr10 to RWr17) on?	There is a station with an abnormal baton pass status for CC-Link IE Field Network. Take actions for stations that are experiencing the baton pass error while referring to the following. ☞ Page 154 Transient transmission has failed
Is 'Data link error status of own station' (RWr7.b0) on?	The data link status of CC-Link IE Field Network is abnormal. Take actions while referring to the following. ☞ Page 154 Cyclic transmission has failed
Is 'Data link status of each station on CC-Link IE Field Network' (RWr18 to RWr1F) on? ^{*1}	There is a station with an abnormal data link status for CC-Link IE Field Network. Take actions for the station that is experiencing the data link error while referring to the following. ☞ Page 154 Cyclic transmission has failed

*1 Check if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Remote buffer memory

Check the following remote buffer memory items. (☞ Page 209 Details of remote buffer memory (parameter area))

Check item	Action
Is 'CPU moderate/major error status of each station; (3100H to 3107H) on?	There is a station with a moderate/major error (stop error). Perform troubleshooting for CPU modules that are experiencing an error while referring to the user's manual of the CPU module.
Is 'CPU minor error status of each station' (3110H to 3117H) on?	There is a station with a minor error (continuation error). Perform troubleshooting for CPU modules that are experiencing an error while referring to the user's manual of the CPU module.

10.4 Unit Test

Run a unit test to check if there is any abnormality in the hardware of the NZ2GN-GFB.

- 1.** Power off the NZ2GN-GFB.
- 2.** Connect CC-Link IE TSN communication connectors P1 and P2 of the NZ2GN-GFB with an Ethernet cable.
- 3.** Turn on function setting switch 1 of the NZ2GN-GFB.
- 4.** Power on the NZ2GN-GFB.
- 5.** Unit test begins.

The RUN LED flashes during the unit test.

- 6.** The RUN LED turns on when the unit test is completed.
 - If the test is completed normally, the ERR. LED does not turn on, but remains off.
 - If the test is completed with an error, the ERR. LED turns on. If the test is completed with an error, replace the Ethernet cable and run the test again. If the test is completed with an error again, it may be due to a hardware error in the NZ2GN-GFB. Please consult your local Mitsubishi representative.

Precautions

If the module is connected to the network while a unit test is being performed, data link may not be properly performed on the modules of other stations. Do not connect to the network when performing a unit test.

10.5 Troubleshooting by Symptom

Perform troubleshooting for each symptom when the NZ2GN-GFB does not operate properly even though there is no error. If an error has occurred in the NZ2GN-GFB, identify the error cause using the engineering tool.

Before checking this section, check the module status of the connected master station or the LED of the NZ2GN-GFB and perform troubleshooting.

-  Page 153 CC-Link IE TSN diagnostics and CC-Link IE Field Network diagnostics have failed
-  Page 153 "Selected Station Communication Status Monitor" information vary from actual device
-  Page 153 Displaying the error/event history has failed
-  Page 154 Parameter settings for CC-Link IE Field Network device station have failed
-  Page 154 Cyclic transmission has failed
-  Page 154 Transient transmission has failed
-  Page 155 Station is disconnected from the network
-  Page 155 Station is repeatedly disconnected and reconnected
-  Page 155 Communications are unstable
-  Page 155 A duplicate station number has occurred in CC-Link IE Field Network

Point

If the actions described in this section do not solve the problem, perform a unit test to check for an error. ( Page 152 Unit Test)

CC-Link IE TSN diagnostics and CC-Link IE Field Network diagnostics have failed

When CC-Link IE TSN diagnostics and CC-Link IE Field Network diagnostics cannot be performed, check the following items.

Check item	Action
Is the version of the engineering tool supported?	Check the version of the engineering tool, and if it is prior to the compatible versions, update it.
Have routing settings been set for all stations on the communication route to CC-Link IE Field Network of the NZ2GN-GFB using an engineering tool?	<ul style="list-style-type: none"> • Enable dynamic routing for all stations on the communication route. • If dynamic routing is not supported, configure the routing setting.

"Selected Station Communication Status Monitor" information vary from actual device

If the information in "Selected Station Communication Status Monitor" differs from the actual device in CC-Link IE TSN diagnostics (all LEDs are turned off), check the following. (Cases detected by CC-Link IE Field Network diagnostics are excluded.)

Check item	Action
Is the SNMP community name set to a value other than "public" on the CC-Link IE TSN master station?	Check the version of the engineering tool in use. If it is prior to the versions compatible with SNMP agents, change it to the compatible version. ( GX Works3 Operating Manual)

Displaying the error/event history has failed

When the error/event history cannot be displayed using CC-Link IE TSN diagnostics, check the following. (Cases detected by CC-Link IE Field Network diagnostics are excluded.)

Check item	Action
Is the SNMP community name set to a value other than "public" on the CC-Link IE TSN master station?	Check the version of the engineering tool in use. If it is prior to the versions compatible with SNMP agents, change it to the compatible version. ( GX Works3 Operating Manual)

Parameter settings for CC-Link IE Field Network device station have failed

If parameter settings CC-Link IE Field Network device station have failed, check the following items.

Check item	Action
Have routing settings been set for all stations on the communication route to CC-Link IE Field Network of the NZ2GN-GFB using an engineering tool?	<ul style="list-style-type: none"> • Enable dynamic routing for all stations on the communication route. • If dynamic routing is not supported, configure the routing setting.

Cyclic transmission has failed

If a cyclic transmission of CC-Link IE Field Network has failed, check the following items.

Check item	Action
When the NZ2GN-GFB is used as the CC-Link IE Field Network master station	Is the D LINK LED of the module connected to CC-Link IE Field Network turned on?
	<p>If the D LINK LED of the NZ2GN-GFB is off or flashing, refer to the following.</p> <p>☞ Page 149 When D LINK LED (CC-Link IE Field) is off or flashing</p> <p>If the D LINK LEDs of other stations is off or flashing, refer to the user's manual for the module used.</p>
	Is a CC-Link IE Field Network device station set as a reserved station in the module parameter settings of the NZ2GN-GFB?
	Clear the reserved status for the CC-Link IE Field Network device station in the module parameter settings of the NZ2GN-GFB.
	Has "RX/Ry setting" or "RWw/RWr setting" been set for CC-Link IE Field Network device stations in the module parameter settings of the NZ2GN-GFB?
	Check the scope of "RX/Ry setting" or "RWw/RWr setting" for CC-Link IE Field Network device stations in the module parameter settings of the NZ2GN-GFB.
	Is the station number set using the module parameter settings of the NZ2GN-GFB the same as the station number set from a CC-Link IE Field Network device station?
	<ul style="list-style-type: none"> • Look at the station number settings for the connected CC-Link IE Field Network device station again. • Look at the CC-Link IE Field Network device station number in the module parameter settings of the NZ2GN-GFB again.
	Is the station type set using the module parameter settings of the NZ2GN-GFB the same as the station type set from a CC-Link IE Field Network device station?
	Look at the CC-Link IE Field Network device station type in the module parameter settings of the NZ2GN-GFB again.
	Is there any error in the link devices (RX/Ry/RWw/RWr) assigned to the NZ2GN-GFB from the CC-Link IE TSN master station?
	<ul style="list-style-type: none"> • Check that there is no error in the link devices (RX/Ry/RWw/RWr) assigned to the NZ2GN-GFB in the network configuration settings of CC-Link IE TSN master station. • Check that there is no error in the descriptions of instructions in the program.
	Is there an error in the link devices (RX/Ry/RWw/RWr) assigned to CC-Link IE Field Network device stations in the module parameter settings of the NZ2GN-GFB?
	<ul style="list-style-type: none"> • Check that there is no error in "RX/Ry setting" or "RWw/RWr setting" for CC-Link IE Field Network device stations in the module parameter settings of the NZ2GN-GFB. • Check that there is no error in the descriptions of instructions in the program.
	Are station numbers unique?
	Change the overlapped station number.

Transient transmission has failed

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

Check item	Action
Is "CC-Link IE TSN Network No." in the module parameter the same as the CC-Link IE TSN master station network No.?	Set the network No. configured for the CC-Link IE TSN master station.
Is "CC-Link IE TSN station No." in the module parameter the same as the station number configured using the network configuration settings of the CC-Link IE TSN master station?	Set the station number configured using the network configuration settings of the CC-Link IE TSN master station.
Is data communication performed between different networks?	Correct the CC-Link IE TSN station No. <-> IP address conversion setting. (☞ Page 56 CC-Link IE TSN station No. <-> IP address conversion setting)
When the NZ2GN-GFB is used as the CC-Link IE Field Network master station	Is the D LINK LED of the module connected to CC-Link IE Field Network turned on?
	<ul style="list-style-type: none"> • If the D LINK LED of the NZ2GN-GFB is off or flashing, refer to the following. ☞ Page 149 When D LINK LED (CC-Link IE Field) is off or flashing • If the D LINK LEDs of other stations is off or flashing, refer to the user's manual for the module used.
	Is the baton pass status of the CC-Link IE Field Network target station normal?
	In the CC-Link IE Field Network diagnostics, identify the cause of the error and take action.
	Are station numbers unique?
	Correct station numbers.

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 outside the specified range?	Keep the ambient temperature within the specified range by taking action, such as removing the heat source.

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.

Check item	Action
Are Ethernet cables used compliant with the relevant standard?	Replace the cable with an Ethernet cable compliant with the relevant standard. (☞ Page 40 Wiring product)
Is the segment length 100m or less?	Change the segment length to 100m or less.
Does the cabling condition (bending radius) meet the specifications?	Refer to the manual for the Ethernet cable used, and correct the bending radius.
Is any Ethernet cable disconnected?	Replace the Ethernet cable.
Does the industrial switch in use normally operate?	<ul style="list-style-type: none"> • Check if the industrial switch in use is compliant with the standards. • Power off and on the industrial switch.

Communications are 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.

Check item	Action
CC-Link IE TSN side	Is the ambient temperature for the module outside the specified range?
	Keep the ambient temperature within the specified range by taking action, such as removing the heat source.
	Is there any NZ2GN-GFB error shown in "Selected Station Communication Status Monitor" of CC-Link IE TSN diagnostics?
	If an error is identified, perform a unit test. (☞ Page 152 Unit Test)
	Is there any noise affecting the system?
	Check the wiring condition.
CC-Link IE Field Network side	Is the L ERR. LED of the NZ2GN-GFB turned off?
	If it is on, refer to the following and take corrective actions. ☞ Page 150 When the L ERR. LED turns on
	Is the ambient temperature for the module outside the specified range?
	Keep the ambient temperature within the specified range by taking action, such as removing the heat source.
	Is there any NZ2GN-GFB error shown in "Selected Station Communication Status Monitor" of CC-Link IE Field Network diagnostics?
	If an error is identified, perform a unit test. (☞ Page 152 Unit Test)
	Is there any noise affecting the system?
	Check the wiring condition.

A duplicate station number has occurred in CC-Link IE Field Network

If a duplicate station number has occurred when the NZ2GN-GFB is the CC-Link IE Field Network master station, check the following.

Check item	Action
Does any network number duplicate on CC-Link IE Field Network?	Change the station number of the duplicate station.
When the CC-Link IE Field Network device station was replaced, was any station other than the one being replaced disconnected?	Perform either of the following operations.
When the CC-Link IE Field Network device station was replaced, was the connection position changed?	<ul style="list-style-type: none"> • Click the [Update] button in the CC-Link IE Field Network diagnostics. (☞ Page 129 CC-Link IE Field Network diagnostics) • Reset the CC-Link IE Field Network master station or turn off and on the system.
Were the CC-Link IE Field Network device stations on the same network switched?	Then, reset the CC-Link IE Field Network device station whose station number duplicates, or turn off and on its power.

10.6 Checking Event Codes and Error Codes

Checking method

Error codes and event codes can be checked by any of the following methods:

Item	Checking method	Reference
Error code	"CC-Link IE TSN/CC-Link IE Field Diagnostics" window	Page 156 Checking by using the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window
	Latest error code (RWr1)	Page 157 Checking the latest error code (RWr1)
Event code	"CC-Link IE TSN/CC-Link IE Field Diagnostics" window	Page 156 Checking by using the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window

To check the NZ2GN-GFB error code and event code from the CC-Link IE Field Network master station or local stations, connect the master station or local station to the CC-Link IE TSN master station that is connected to the NZ2GN-GFB using "Other Station Setting" on the "Specify Connection Destination Connection" window. Then, start the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window.

Checking by using the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window

The error and event history held in the NZ2GN-GFB can be read. Information generated before powering off can be checked as well.

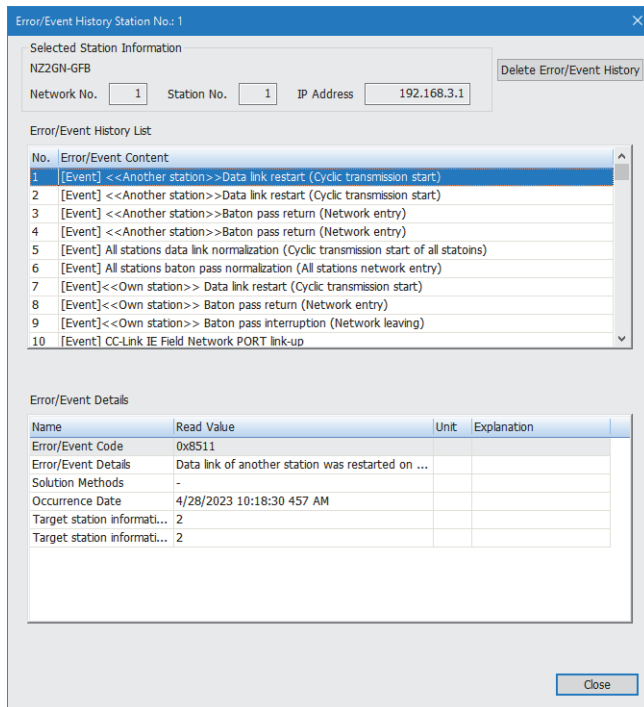


- The error and event history records a maximum of 512 items in reverse chronological order of occurrence. If more than 512 errors and events occur, information is deleted from the oldest first.
- If the same error occurs continuously, only the first information is stored in the history.
- The error and event history is stored in the non-volatile memory in the NZ2GN-GFB. It is not lost when the power is cut off. However, when the upper limit for the number of writes to the non-volatile memory is reached, the history cannot be stored in the non-volatile memory.
- The "Occurrence Date" information in the error and event history is recorded after clock information is distributed from the CC-Link IE TSN master station. When an error and event occurs before clock information is distributed from the master station, "Occurrence Date" is not recorded.
- When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, the time distributed from the CC-Link IE TSN master station is recorded as the occurrence time in the error and event history of the CC-Link IE Field Network device station. For operations before the time is distributed, refer to the user's manual for the CC-Link IE TSN master station used.

■Procedure

1. Connect the engineering tool to the CPU module on the CC-Link IE TSN master station.
2. Start the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window from the menu.
 [Diagnostics] ⇒ [CC-Link IE TSN/CC-Link IE Field Diagnostics]
3. Right-click the device station whose error history you want to check, and select "Error/Event History".
4. Follow the on-screen instructions and click the [Yes] button.

5. The error and event history appears.



To initialize the error and event history, click the [Delete Error/Event History] button.

Checking the latest error code (RWr1)

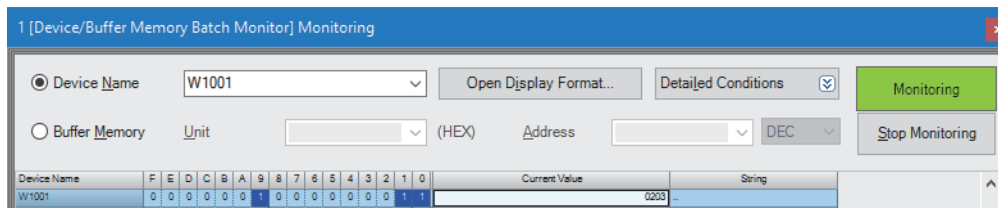
Check the latest error code with the remote registers of the CC-Link IE TSN master module.

■ Procedure

[Online] ⇒ [Monitor] ⇒ [Device/Buffer Memory Batch Monitor]

Ex.

When the refresh target device for the 'Latest error code' (RWr1) is W1001



How to clear an error

How to clear an error depends on the error type.

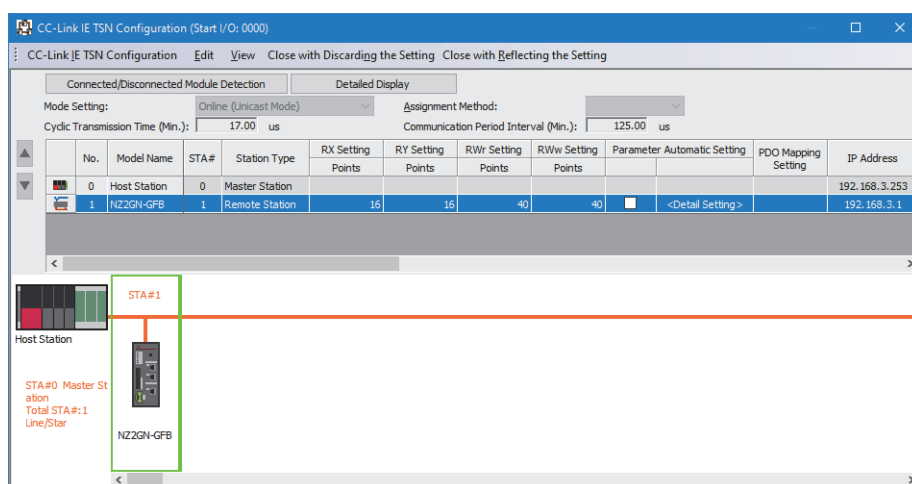
Error type	How to clear an error
Major error	An error cannot be cleared.
Moderate error	After resolving the cause of the error, take any of the following actions.
Minor error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • Turn on and off 'Error clear request flag' (RWw0.b10). • Request to clear the error from the "Command Execution of Device Station" window. (➡ Page 158 How to clear an error using the command execution of device station)

How to clear an error using the command execution of device station

This section describes the method to clear an error using the command execution of device station.

1. Open the "CC-Link IE TSN Configuration" window.

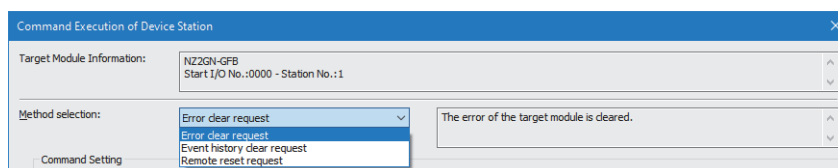
🖱️ [Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]



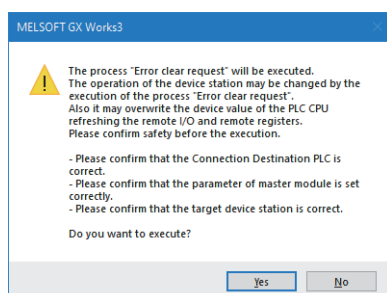
2. Open the "Command Execution of Device Station" window.

🖱️ Right-click on the command execution target of the NZ2GN-GFB, and select [Online] ⇒ [Command Execution of Device Station].

3. Set "Method selection" to "Error clear request", and click the [Execute] button.



4. When the following window is displayed, click the [Yes] button.



5. The NZ2GN-GFB error is cleared.

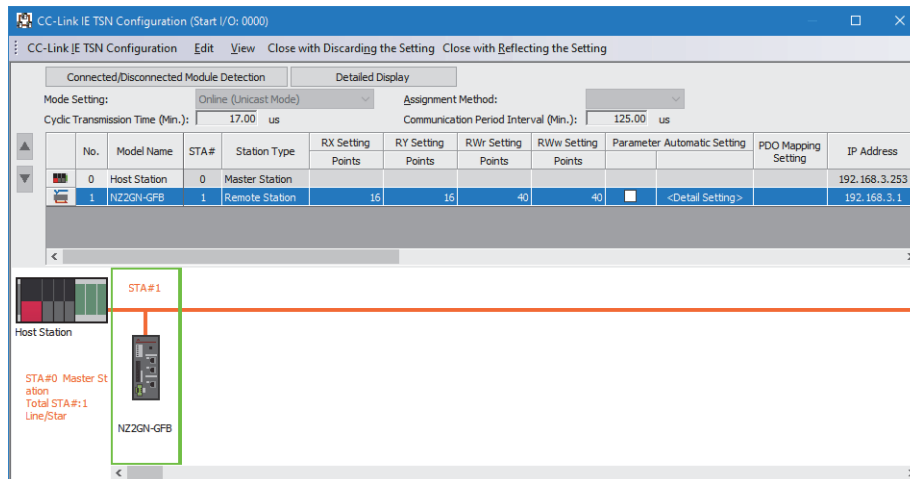
How to clear an event history

How to clear an event history using the command execution of device station

This section describes the method to clear an event history using the command execution of device station.

1. Open the "CC-Link IE TSN Configuration" window.

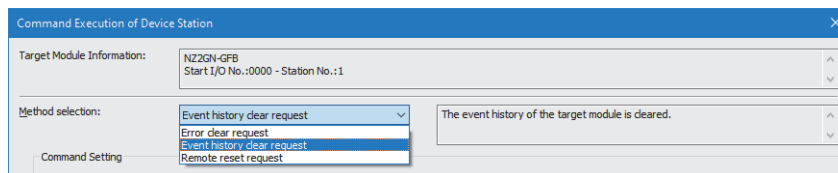
[Navigation window] ⇒ [Parameter] ⇒ [Module Information] ⇒ Model name ⇒ [Basic Settings] ⇒ [Network Configuration Settings]



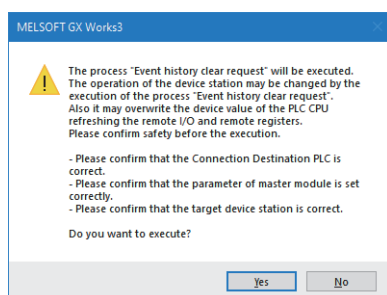
2. Open the "Command Execution of Device Station" window.

Right-click on the command execution target of the NZ2GN-GFB, and select [Online] ⇒ [Command Execution of Device Station].

3. Set "Method selection" to "Event history clear request", and click the [Execute] button.



4. When the following window appears, click the [Yes] button.



5. The NZ2GN-GFB event history is cleared.

10.7 Error Code List

The error codes are classified into the following three types.

Classification	Description
Major error	An error that cannot be recovered. The RUN LED turns off.
Moderate error	An error where the module cannot continue to operate. The ERR. LED flashes.
Minor error	An error where the module can continue to operate. The ERR. LED turns on.

This sections describes the error codes of the NZ2GN-GFB.

Error codes viewable via the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window

The following table shows the error codes that can be checked with "Error history/event history" of the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window. ( Page 156 Checking Event Codes and Error Codes)

Error code (Hex)	Error type	Error name	Error definition and causes	Action
0010H	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> Power off and on the NZ2GN-GFB. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
0105H	Moderate error	Non-volatile memory data error (IP address)	The IP address and subnet mask stored in the non-volatile memory are abnormal.	<ul style="list-style-type: none"> The module will be automatically recovered immediately after the error occurs. However, the stored IP address and subnet mask are lost, and operation is performed assuming that the following are stored. IP address: 192.168.3.250 Subnet mask: 255.255.255.0 Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
0106H	Moderate error	CC-Link IE TSN IP address setting switch out of range error	The CC-Link IE TSN IP address setting switches are set to 255.	Turn on the power supply with the CC-Link IE TSN IP address setting switches set to a value in the range 0 to 254.
0108H	Moderate error	Non-volatile memory data error (parameter)	The parameter data stored in the non-volatile memory are abnormal.	<ul style="list-style-type: none"> Change the 'Parameter area initialization command' (1002H) from Off (no command) to On (Command) to Off (no command), then turn off and on the NZ2GN-GFB or reset the non-volatile memory parameters to their default values. After that, set the parameters again. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
010AH	Moderate error	Non-volatile memory access error (module parameter)	The module parameters cannot be saved because an error in access to the non-volatile memory was detected.	<ul style="list-style-type: none"> The module parameters are not saved in the non-volatile memory. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
0112H	Moderate error	Non-volatile memory data error (F/W update information)	The F/W update information stored in the non-volatile memory is faulty.	<ul style="list-style-type: none"> Update the F/W of the NZ2GN-GFB using the F/W update function. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
0113H	Moderate error	CC-Link IE Field Network station number setting switch out of range error (Master station)	The CC-Link IE Field Network station number setting switch is set to something other than 0.	<ul style="list-style-type: none"> Take any of the following actions, and then turn off and on the NZ2GN-GFB or perform reset. Set the CC-Link IE Field Network station number setting switch to 0. Set "Station-specific mode setting" to "Local station" and then set the module parameters.

Error code (Hex)	Error type	Error name	Error definition and causes	Action
0114H	Moderate error	CC-Link IE Field Network station number setting switch out of range error (Local station)	The CC-Link IE Field Network station number setting switches are set outside the range of 1 to 120.	Take any of the following actions, and then turn off and on the NZ2GN-GFB or perform reset. <ul style="list-style-type: none"> Set the CC-Link IE Field Network station number setting switch to 1 to 120. Set "Station-specific mode setting" to "Master station" and then set the module parameters.
0121H	Moderate error	CC-Link IE Field Network allocation point error (CC-Link IE TSN Class A)	The total number of link devices used by the NZ2GN-GFB in CC-Link IE Field Network exceeds 2,048 bytes.	Take any of the following actions. <ul style="list-style-type: none"> Set the CC-Link IE TSN Class setting to CC-Link IE TSN Class B. If the NZ2GN-GFB is a CC-Link IE Field Network master station, set so that the total of "RX/Ry points" and "RWw/RWt points" in the device station setting does not exceed 2048 bytes. If the NZ2GN-GFB is a CC-Link IE Field Network local station, set the total number of link devices assigned to the NZ2GN-GFB in "Network configuration settings" of the CC-Link IE Field Network master station so that it does not exceed 2048 bytes.
0200H	Minor error	CC-Link IE TSN IP address setting switch changed error	The CC-Link IE TSN IP address setting switch has been changed with the module power supply on.	Return the CC-Link IE TSN IP address setting switch to the setting it had when the module was powered on.
0201H	Minor error	CC-Link IE Field Network station number setting switch changed error	The CC-Link IE Field Network station number setting switch has been changed with the module power supply on.	Return the CC-Link IE Field Network station number setting switch to the setting it had when the module was powered on.
0202H	Minor error	Function setting switch 1 changed error	The function setting switch 1 has been changed with the module power supply on.	Return the function setting switch 1 to the setting when the module power supply was on.
0203H	Minor error	Function setting switch 2 changed error	The function setting switch 2 has been changed with the module power supply on.	Return the function setting switch 2 to the setting when the module power supply was on.
0204H	Minor error	Function setting switch 3 changed error	The function setting switch 3 has been changed with the module power supply on.	Return the function setting switch 3 to the setting when the module power supply was on.
0205H	Minor error	Function setting switch 4 changed error	The function setting switch 4 has been changed with the module power supply on.	Return the function setting switch 4 to the setting when the module power supply was on.
0220H	Minor error	Event history save limit error	The upper limit for the number of times an event is saved in the event history is reached.	No more events can be saved in the event history. Check the error by the latest error code.
0221H	Minor error	IP address save limit error	The upper limit for the number of times the IP address is changed is reached.	An IP address change made when and after this error occurred is not saved into the non-volatile memory.
0222H	Minor error	Module parameter save limit error	The upper limit for the number of times a module parameter is saved is reached.	A module parameter change made in and after this error will not be saved into the non-volatile memory.
0240H	Minor error	Module power supply voltage drop error	The module power supply voltage is dropped.	<ul style="list-style-type: none"> Check the state of the module power supply. Check if the power supply voltage satisfies the specifications for the NZ2GN-GFB.
0250H	Minor error	Non-volatile memory access error (IP address)	The IP address cannot be saved because an error in access to the non-volatile memory was detected.	<ul style="list-style-type: none"> The IP address is not saved into the non-volatile memory. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
0251H	Minor error	Non-volatile memory access error (Event history)	The event cannot be saved because an error was detected when accessing the non-volatile memory.	<ul style="list-style-type: none"> An event that occurred during or before this error may not be saved into the non-volatile memory. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.

Error code (Hex)	Error type	Error name	Error definition and causes	Action
0270H	Minor error	Remote reset disable error	Remote reset could not be performed because the setting of the LINK SPEED switch or the TEST switch is different from the setting it had when the module was powered on.	Return the TEST switch and LINK SPEED switch to the settings they had when the module was powered on, and then perform remote reset again.
0280H	Minor error	Parameter error (CC-Link IE TSN network No. out of range)	The module parameter "CC-Link IE TSN network No." is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0281H	Minor error	Parameter error (CC-Link IE TSN station No. out of range)	The module parameter "CC-Link IE TSN station No." is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0282H	Minor error	Parameter error (CC-Link IE Field Network No. out of range)	The module parameter "CC-Link IE Field Network No." is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0283H	Minor error	Parameter error (total number of device stations out of set range)	The module parameter "Total number of device stations" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0284H	Minor error	Parameter error (device station No. out of set range)	The "Station No." of the module parameter of the device station setting is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0285H	Minor error	Parameter error (device station RX/Ry points out of set range)	The "RX/Ry points" of the module parameter of the device station setting is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0286H	Minor error	Parameter error (device station RWw/RWr points out of set range)	The "RWw/RWr points" of the module parameter of the device station setting is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0287H	Minor error	Parameter error (Reserved/Error invalid station for device station out of set range)	The "Reserved/Error invalid station" of the module parameter of the device station setting is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
028AH	Minor error	Parameter error (valid number of "CC-Link IE TSN station No. <-> IP address conversion setting" out of range)	The module parameter "CC-Link IE TSN station No. <-> No. of modules with IP address conversion setting enabled" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
028BH	Minor error	Parameter error (Valid number of routing setting out of range)	The module parameter "Valid number of routing setting" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
028CH	Minor error	Parameter error (CC-Link IE TSN station No. <-> IP address conversion setting station No. out of range)	The "Station No." of the module parameter "CC-Link IE TSN station No. <-> IP address conversion setting" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
028DH	Minor error	Parameter error (Relay station network No. out of range)	The "Relay station network No." of the module parameter "Routing setting" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
028EH	Minor error	Parameter error (Relay station No. out of range)	The "Relay station No." of the module parameter "Routing setting" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
028FH	Minor error	Parameter error (target station network No. out of range)	The "Target station network No." of the module parameter "Routing setting" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
0290H	Minor error	Parameter error (network No. duplication error)	"CC-Link IE TSN Network No." and "CC-Link IE Field Network No." in the module parameters are duplicated.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "CC-Link IE TSN network No." and "CC-Link IE Field Network No." so that they do not overlap, and set them again.
0291H	Minor error	Parameter error (device station No. duplication error)	The "Station No." of the module parameter of the device station setting is duplicated.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "Station No." of the device station setting so that it does not overlap, and then set it again.

Error code (Hex)	Error type	Error name	Error definition and causes	Action
0292H	Minor error	Parameter error (device station RX/Ry points abnormal total points)	The total number of "RX/Ry points" of the module parameter of the device station setting exceeds 16384 points.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the total number of "RX/Ry points" in the device station setting so that it does not exceed 16384 points, and set again.
0293H	Minor error	Parameter error (device station RWw/RWr points abnormal total points)	The total number of "RWw/RWr points" of the module parameter of the device station setting exceeds 2048 points.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the total number of "RWw/RWr points" in the device station setting so that it does not exceed 2048 points, and set again.
0294H	Minor error	Parameter error (device station RX/Ry points abnormal unit)	"RX/Ry points" in the device station setting of the module parameter is not set in units of 16 points.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "RX/Ry points" in the device station setting to be in units of 16 points, and set again.
0295H	Minor error	Parameter error (device station RWw/RWr points abnormal unit)	"RWw/RWr points" in the device station setting of the module parameter is not set in units of 4 points.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "RWw/RWr points" in the device station setting to be in units of 4 points, and set again.
0296H	Minor error	Parameter error (CC-Link IE TSN station No. <-> IP address conversion setting station No. duplication error)	The "Station No." of the module parameter "CC-Link IE TSN station No. <-> IP address conversion setting" is duplicated.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "Station No." so that it does not overlap, and then set it again.
0297H	Minor error	Parameter error (CC-Link IE TSN station No. <-> IP address conversion setting IP address duplication error)	The "IP address" of the module parameter "CC-Link IE TSN station No. <-> IP address conversion setting" is duplicated.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "IP address" so that it does not overlap, and then set it again.
0298H	Minor error	Parameter error (target station network No. setting duplication error)	The "Target station network No." of the module parameter "Routing setting" is duplicated.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change the "Target station network No." so that it does not overlap, and then set it again.
0299H	Minor error	Parameter error (CC-Link IE TSN station No. <-> IP address conversion setting IP address out of range)	The "IP address" of the module parameter "CC-Link IE TSN station No. <-> IP address conversion setting" is outside the configurable range.	<ul style="list-style-type: none"> The parameters are not reflected in the module. Change it to a value within the configurable range and set it again.
02A0H	Minor error	Reset not performed after setting parameters	Reset has not been performed after setting parameters. Parameters are not changed until the system has been reset.	<ul style="list-style-type: none"> When "CC-Link IE Field Network station type" is changed, change the CC-Link IE Field Network station number setting switch to match the setting. Power off and on the NZ2GN-GFB or reset it.
1155H	Minor error	Receive processing error of transient transmission	Transient transmission could not be performed successfully because an error occurred in the receiving process.	<ul style="list-style-type: none"> Power off and on the NZ2GN-GFB or reset it. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
1D01H	Minor error	Control device station inter-module synchronization target mismatch	Detected a CC-Link IE Field Network device station that has been set to perform CC-Link IE Field Network synchronous communications.	Set the corresponding module to "Asynchronous" in the inter-module synchronization settings of the target station.
2220H	Moderate error	Parameter error	The parameters from the CC-Link IE Field Network master station could not be received successfully.	<ul style="list-style-type: none"> Power off and on the NZ2GN-GFB. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
2221H	Moderate error	Parameter error	The parameter data of the module parameter is abnormal.	<ul style="list-style-type: none"> Reset the parameter and power off and on the NZ2GN-GFB. Take measures against noise with a shielded cable for connection. If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.

Error code (Hex)	Error type	Error name	Error definition and causes	Action
3001H	Moderate error	CC-Link IE Field Network Station No. duplication detection	One of the following is detected. <ul style="list-style-type: none"> • There is a station with the same station number on the same CC-Link IE Field Network. • There are multiple master stations and sub-master stations on the same CC-Link IE Field Network. • There is a CC-Link IE Controller Network (twisted pair cable) station on the same CC-Link IE Field Network. 	<ul style="list-style-type: none"> • Correct the station number or station type of the station where the error was detected. • Divide it into CC-Link IE Controller Network (twisted pair cable) and the network. • After taking the above action, power off and on or reset all stations where the error was detected.
3601H	Moderate error	Inter-module synchronization target mismatch	The NZ2GN-GFB is set to "Synchronous" in the network configuration settings of the CC-Link IE Field Network master station.	In the network configuration settings of the CC-Link IE Field Network master station, Set the bridge module to "Asynchronous".
3C00H	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3C01H	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • Take measures against noise with a shielded cable for connection. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3C0FH	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • Take measures against noise with a shielded cable for connection. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3C10H	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • Take measures against noise with a shielded cable for connection. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3C13H	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • Take measures against noise with a shielded cable for connection. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3C14H	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3C2FH	Major error	Hardware error	Module hardware error	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
3E00H	Major error	CC-Link IE Field Network error	An error was detected in the CC-Link IE Field Network.	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
D000H ^{*1*2}	Minor error	CC-Link IE TSN Communication setting error 1	Invalid network settings are received.	<ul style="list-style-type: none"> • Power off and on the NZ2GN-GFB. • If this error occurs again, the possible cause is a module failure. Please consult your local Mitsubishi representative.
D001H ^{*1*2}	Minor error	CC-Link IE TSN Communication setting error 2	Network settings that cannot be handled by the NZ2GN-GFB are received.	<ul style="list-style-type: none"> • Check that the model name of the CC-Link IE TSN device station set in the network configuration settings of the CC-Link IE TSN master station matches the model name of the actual device. • If this error occurs even when the model names match, the possible cause is a module failure. Please consult your local Mitsubishi representative.

Error code (Hex)	Error type	Error name	Error definition and causes	Action
D010H ^{*1}	Minor error	IP address duplication detection	An IP address duplication is detected.	Change the IP address so that no IP address duplication occurs in the access range of CC-Link IE TSN. After changing the settings, power off and on the NZ2GN-GFB or reset it.
D011H ^{*1*2}	Moderate error	IP address setting error	Values that the NZ2GN-GFB cannot use were set for the IP address and subnet mask settings.	<ul style="list-style-type: none"> Without using the set IP address and subnet mask, the module is operated based on the previous IP address and subnet mask. The set IP address and subnet mask will not be saved in non-volatile memory. Check the IP address and subnet mask again, and change the settings to values that the NZ2GN-GFB can use. After changing the settings, power off and on the NZ2GN-GFB or reset it.
D020H ^{*1*2}	Minor error	CC-Link IE TSN Network synchronous communication setting error	The network synchronous communication settings of the NZ2GN-GFB of the CC-Link IE TSN master station was set to "Synchronous".	In the network configuration settings of the CC-Link IE TSN master station, set the network synchronous communication settings of the NZ2GN-GFB to "Asynchronous".
D021H ^{*1*2}	Minor error	Number of RX/RX points error	RX/RX have been set with points that cannot be handled by the NZ2GN-GFB.	Set 16384 or less for the number of points for RX and RX in the network configuration settings of the CC-Link IE TSN master station.
D022H ^{*1*2}	Minor error	RWr/RWw number of points error	RWr/RWw have been set with points that cannot be handled by the NZ2GN-GFB.	Set 2080 or less for the number of points for RWr and RWw in the network configuration settings of the CC-Link IE TSN master station.
D023H ^{*1*2}	Minor error	Communication cycle setting error (CC-Link IE TSN Class B/ 1Gbps)	A communication cycle that cannot be handled by the NZ2GN-GFB is set while the NZ2GN-GFB is operating with CC-Link IE TSN Class B at a communication speed of 1Gbps.	For the communication cycle setting of the CC-Link IE TSN master station, set a value supported by the NZ2GN-GFB.
D024H ^{*1*2}	Minor error	Communication cycle setting error (CC-Link IE TSN Class B/ 100Mbps)	A communication cycle that cannot be handled by the NZ2GN-GFB is set while the NZ2GN-GFB is operating with CC-Link IE TSN Class B at a communication speed of 100Mbps.	For the communication cycle setting of the CC-Link IE TSN master station, set a value supported by the NZ2GN-GFB.
D028H ^{*1*2}	Minor error	Communication cycle setting error (CC-Link IE TSN Class A)	A communication cycle that cannot be handled by the NZ2GN-GFB is set while the NZ2GN-GFB is operating with CC-Link IE TSN Class A.	For the communication cycle setting of the CC-Link IE TSN master station, set a value supported by the NZ2GN-GFB.

*1 This error occurs only once when an abnormality is detected. Before clearing the error, eliminate the cause of error and check that a data link is established.

*2 When this error occurs, other errors may not occur at the same time. Eliminate the cause of error one by one until a data link is established.

Error codes that can be checked as processing results

The following table shows the error codes that are generated in processes for the NZ2GN-GFB to establish a data link.

Error code	Error definition and causes	Action
1845H	Too much transient transmission (link dedicated instruction) to process and transient transmission cannot be performed.	Correct the transient transmission (link dedicated instruction) execution count.
C051H	<ul style="list-style-type: none"> The number of read/write points from/to the device of SLMP message is out of the allowable range in the CPU module (in units of words). The number of write points for the long counter of SLMP message is not in two-word units. 	Correct the number of read/write points and send the SLMP message to the NZ2GN-GFB again.
C052H	The number of read/write points from/to the device of SLMP message is out of the allowable range in the CPU module (in units of bits).	Correct the number of read/write points and send the SLMP message to the NZ2GN-GFB again.
C053H	The number of read/write points from/to the random device of SLMP message is out of the allowable range in the CPU module (in units of bits).	Correct the number of read/write points and send the SLMP message to the NZ2GN-GFB again.
C054H	The number of read/write points from/to the random device of SLMP message is out of the allowable range in the CPU module (in units of words, double words).	Correct the number of read/write points and send the SLMP message to the NZ2GN-GFB again.
C055H	The read/write size from/to the file data of SLMP message is out of the allowable range.	Correct the number of read/write points and send the SLMP message to the NZ2GN-GFB again.
C056H	The read/write request exceeds the largest address.	<ul style="list-style-type: none"> Correct the start address or the number of read/write points so that the request does not exceed the largest address and send the data to the CC-Link IE TSN-equipped module again. If the access target and connection stations are modules of the MELSEC iQ-R series, send the SLMP message again to the NZ2GN-GFB using 00□3 and 00□2 of subcommands.
C057H	The request data length of the SLMP message does not match the number of data in the character (a part of text).	Check and correct the text or request data length, and send the SLMP message to the NZ2GN-GFB again.
C058H	The request data length of the SLMP message after the ASCII/binary conversion does not match the number of data in the character (part of the text).	Check and correct the text or request data length, and send the SLMP message to the NZ2GN-GFB again.
C059H	<ul style="list-style-type: none"> The specified command and subcommand of the SLMP message are incorrect. A function that is not supported by the target device was executed. 	<ul style="list-style-type: none"> Check that there are no errors in the specification of the command and subcommand of the SLMP message. Check whether the function executed is supported by the target device. Check the version of the target device.
C05AH	The NZ2GN-GFB cannot read/write data from/to the device specified by the SLMP message.	Correct the specification of the device to be read/written and send the SLMP message to the NZ2GN-GFB again.
C05BH	The NZ2GN-GFB cannot read/write data from/to the device specified by the SLMP message.	Correct the specification of the device to be read/written and send the SLMP message to the NZ2GN-GFB again.
C05CH	The received request data of the SLMP message is incorrect.	Check and correct the request data, and send the SLMP message to the NZ2GN-GFB again.
C05DH	The "Monitor Request" command is received before the monitor registration is performed by the "Monitor Registration/Clear" command of the SLMP message.	Register the monitoring data using "Monitor Registration/Clear" command and perform monitoring.
C05EH	<ul style="list-style-type: none"> The time from when the NZ2GN-GFB receives the SLMP message until the access destination returns the response exceeded the monitoring timer value set in the SLMP command. An unresponsive command was sent to another network station as the access destination. (If this error does not cause any problems, it can be ignored.) 	<ul style="list-style-type: none"> Increase the monitoring timer value. Check if the access destination is operating normally. Correct the network number or request destination station number. If the access destination is a module with a different network number, correct the routing parameter setting. If the access destination is a module with a different network number, check if the network number is not in use.
C05FH	This request cannot be executed to the access destination specified by the SLMP message.	Correct the access destination.

Error code	Error definition and causes	Action
C060H	The request details for bit devices of the SLMP message is incorrect.	Correct the request and send the SLMP message to the NZ2GN-GFB again.
C061H	<ul style="list-style-type: none"> The request data length of the SLMP message does not match the number of data in the character (a part of text). The write data length specified by the label write command is not even byte. 	<ul style="list-style-type: none"> Check and correct the text or request data length, and send the SLMP message to the NZ2GN-GFB again. Add one byte of dummy data, and specify the length as an even number of bytes.
C06FH	The network number specified as the request destination in the SLMP request message cannot be used for communication with stations whose station number is 121 or higher. Or, the SLMP request message frame used does not support stations whose station number is 121 or higher.	<ul style="list-style-type: none"> If the SLMP3E or 4E frame is used, check that there is no error for the network number of the request destination and station number. If the SLMP station number extension frame is used, check that there is no error for the network number of the request destination and station number.
C070H	The device memory cannot be extended for the access destination specified by the SLMP message.	<ul style="list-style-type: none"> Correct the SLMP message to read/write data without the device memory set for extension. Specify the extension of the device memory only for the CC-Link IE TSN-equipped module mounted station and RCPUCPU/QnACPU via CC-Link IE Controller Network, MELSECNET/H, or MELSECNET/10.
C071H	The number of device points for data read/write set for modules other than R/Q/QnACPU with the SLMP message is out of the range.	Correct the number of read/write points and send the SLMP message to the NZ2GN-GFB again.
C072H	The request details of the SLMP message are incorrect. (For example, a request for data read/write in bit units has been issued to a word device.)	<ul style="list-style-type: none"> Check if the data can be requested to the access destination. Correct the request and send the SLMP message to the NZ2GN-GFB again.
C073H	The access destination of the SLMP message cannot issue this request. (For example, the number of double word access points cannot be specified for modules other than R/Q/QnACPU.)	Correct the request details of the SLMP message.
C075H	The request data length for the label access is out of range.	<ul style="list-style-type: none"> Correct the number of array points or read/write points and send the SLMP message to the NZ2GN-GFB again. Correct the number of abbreviated points and send the SLMP message to the NZ2GN-GFB again. Correct the label name length and send the SLMP message to the NZ2GN-GFB again. Shorten the label name and send the SLMP message to the NZ2GN-GFB again. Correct the number of read/write data length and send the SLMP message to the NZ2GN-GFB again.
C0B2H	There is insufficient space in the receive buffer or send buffer. (Send · receive buffer full error)	<ul style="list-style-type: none"> Increase the request interval (execution interval) and execute the operation. Do not access only through the NZ2GN-GFB using the link dedicated instruction or SLMP. Wait for a response to the previous request before sending the next request.
C0D4H	The number of relaying times to communicate with other networks exceeds the allowable range.	<ul style="list-style-type: none"> Check if the specification (network number and station number) for the communication destination is correct. Check that the number of relaying times to reach the communication destination is 7 or less. Correct the settings in the "Network/Station No. <-> IP information setting" for the Ethernet-equipped module on the communication path.
C0D8H	The number of specified blocks exceeded the range.	Correct the number of blocks.
C0D9H	The specified subcommand of the SLMP message is incorrect.	Correct the subcommand.
C1A4H	<ul style="list-style-type: none"> There is an error with the command, subcommand, or request destination module I/O number specified by the SLMP message. A function that is not supported by the target device was executed. 	<ul style="list-style-type: none"> Correct the command, subcommand, or request destination module I/O number specified by SLMP message. Check the version of the target device.
C1A7H	The specified network number is incorrect.	Correct the specified network number.
C1A8H	The specified station number is incorrect.	Correct the specified station number.
C1A9H	The specified device number is incorrect.	Correct the specified device number.
C1ADH	The specified data length is incorrect.	Correct the specified data length.
CF44H	The request destination cannot handle divided data.	The NZ2GN-GFB cannot handle divided data. Send a request message without dividing it.

Error code	Error definition and causes	Action
C840H	The number of transient requests 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.
C842H	The routing setting is not set to reach the destination station network No.	<ul style="list-style-type: none"> • Execute the link dedicated instruction again after correcting the target network number/station number. • When dynamic routing is used, check that the communication path to the destination station network No. is set. • 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.
C844H	An incorrect frame was received. <ul style="list-style-type: none"> • Unsupported command 	<ul style="list-style-type: none"> • Replace the network module with a module of the version supporting the function that has been executed. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D041H	The number of communication stations is incorrect.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • If the number of device stations per network is more than the maximum number of connectable stations, reduce it so that it does not exceed the maximum number.
D080H to D083H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
D0A0H	Transmission response wait timeout has occurred in transient transmission.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • When the own station, target station, or relay station detected an error, identify the cause of the error and take action. • Lower the transient transmission usage frequency, and then perform again. • When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. • Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D0A1H	Transmission completion wait timeout has occurred in transient transmission.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • When the own station, target station, or relay station detected an error, identify the cause of the error and take action. • Lower the transient transmission usage frequency, and then perform again. • When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. • Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D0A2H	Transmission processing wait timeout has occurred in transient transmission.	<ul style="list-style-type: none"> • Lower the transient transmission usage frequency, and then perform again. • Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D0A3H	Send processing of the transient transmission has failed.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • When the own station, target station, or relay station detected an error, identify the cause of the error and take action. • Correct the target station number of transient data, and retry the operation. • When the access destination is a module with a different network number, check if "Routing Setting" of "CPU Parameter" is correctly set.
D0A4H to D0A6H	Transient transmission sending has failed.	<ul style="list-style-type: none"> • Check if there is any problem with the connection of the cables at the request source and the industrial switch. • Connect the cable to the other port on the request source, and retry the operation. • Lower the transient transmission usage frequency, and then perform again.
D0C0H	Reserved station specification was performed again during processing of the specification.	Retry the operation after a while.
D0C1H	Temporary reserved station cancel specification was performed again during processing of the specification.	Retry the operation after a while.
D0C4H	Temporary error invalid station setting was performed again during processing of the setting.	Retry the operation after a while.
D0C5H	Temporary error invalid station setting cancel specification was performed again during processing of the specification.	Retry the operation after a while.
D0D0H	Station number setting of the other stations has failed.	Retry the operation after a while.

Error code	Error definition and causes	Action
D200H	When the transient transmission was executed, data was received twice.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • Check if there is any problem with the connection of the cables at the request source and the industrial switch. • If the request source is on another network, check if the routing parameters are set correctly, and take action.
D202H	The send buffer is full.	<ul style="list-style-type: none"> • Lower the transient transmission usage frequency, and then perform again. • When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. • Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D203H	The read data or write address of the transient transmission is incorrect.	Correct the read data or write address at the transient request source, and retry the operation.
D204H	The network number of transient transmission is incorrect.	<ul style="list-style-type: none"> • Correct the network number at the transient request source, and retry the operation. • If the request source is on another network, check if "Routing Setting" are correctly set.
D205H	The target station number of transient transmission is incorrect.	Correct the target station number at the transient request source, and retry the operation.
D206H	The network number of transient transmission is incorrect.	<ul style="list-style-type: none"> • Correct the network number at the transient request source, and retry the operation. • If the request source is on another network, check if "Routing Setting" are correctly set.
D207H	In transient transmission, there are over seven relays to other networks.	<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" are correctly set.
D208H	The network number of transient transmission is incorrect.	<ul style="list-style-type: none"> • Correct the network number at the transient request source, and retry the operation. • If the request source is on another network, check if "Routing Setting" are correctly set.
D209H to D20AH	The target station number of transient transmission is incorrect.	Correct the target station number at the transient request source, and retry the operation.
D20BH to D20CH	There was no master station when the specified master station was specified for transient transmission.	Correct the target station number at the transient request source, and retry the operation.
D20DH	Transmission completion wait timeout has occurred in transient data transmission.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • When the own station, target station, or relay station detected an error, identify the cause of the error and take action. • Lower the transient transmission usage frequency, and then perform again. • When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. • Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D20EH	The header information of transient transmission is incorrect.	Correct the header information at the transient request source, and retry the operation.
D20FH	In transient transmission, the command which cannot be requested to all or a group of stations was executed with all stations specification or group specification.	Check that the command can be requested to all or a group of stations at the transient request source, and retry the operation.
D210H	The target station number of transient transmission is incorrect.	Correct the header information at the transient request source, and retry the operation.
D212H	Transient transmission sending has failed.	<ul style="list-style-type: none"> • Check if there is any problem with the connection of the cables at the request source and the industrial switch. • Connect the cable to the other port on the request source, and retry the operation. • Lower the transient transmission usage frequency, and then perform again.
D213H	<ul style="list-style-type: none"> • The command of transient transmission is incorrect. • The CC-Link IE Field 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 transient request source, and retry the operation. • Review the connection destination so that the CC-Link IE Field Network diagnostics is used for the network to which the relay sending station belongs.
D214H	The data length of transient transmission is incorrect.	Correct the data length at the transient request source, and retry the operation.
D216H to D217H	The command of transient transmission is incorrect.	Correct the request command at the transient request source, and retry the operation.

Error code	Error definition and causes	Action
D218H	The number of read/write data of transient transmission is incorrect.	Correct the number of read or write device data at the transient request source, and retry the operation.
D219H	The attribute code of transient transmission is incorrect.	Correct the attribute code at the transient request source, and retry the operation.
D21AH	The access code of transient transmission is incorrect.	Correct the access code at the transient request source, and retry the operation.
D21EH	The target station number of transient transmission is incorrect.	<ul style="list-style-type: none"> • A communication test cannot be executed on a relay sending station. Correct "Target Station" setting, and execute the communication test again. • Transient data of the application type that cannot be executed on the own station were received. Correct the application type or the target station number at the transient request source, and retry the operation.
D220H	The master station does not exist.	Add the master station to the network.
D222H	The command of transient transmission is incorrect.	Correct the request command at the transient request source, and retry the operation.
D223H	A transient transmission error was detected.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • Check if there is any problem with the connection of the cables and the industrial switch. • If the request source is on another network, check if "Routing Setting" are correctly set. • Check if an external device supporting the iQ Sensor Solution data backup/restoration function is connected to the network. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D224H	A transient transmission error was detected.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • Check if there is any problem with the connection of the cables and the industrial switch. • If the request source is on another network, check if "Routing Setting" are correctly set. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D22EH	Station number setting is not available for the target station.	<ul style="list-style-type: none"> • Although there was an attempt to change the target station number online from the master station, the target station does not have the online station number setting function. • Check the manual for the target station if the station number setting function is available. • If the module supports the function, please consult your local Mitsubishi representative.
D22FH	Baton pass has not been performed in the target station.	Check the communication status of the station whose station number is to be changed.
D230H	The target station of station number change is incorrectly specified.	<ul style="list-style-type: none"> • The station number change was attempted for own station. • Check that no station number is set for the target station.
D231H	The station number has been already set for the target station of station number change.	<ul style="list-style-type: none"> • The station number has been already set for the target station. • Check that no station number is set for the target station.
D232H	The target station of station number change does not exist.	<ul style="list-style-type: none"> • The station where the station number change was attempted does not exist. • Check that no station number is set for the target station.
D233H	The station number specified for station number change is incorrect.	Set the station number within 1 to 120, and retry the operation.
D234H	Baton pass has not been performed.	Check the communication status.
D235H	A transient transmission error was detected.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • Check if there is any problem with the connection of the cables and the industrial switch. • If the request source is on another network, check if "Routing Setting" are correctly set. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D238H	The send 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. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D239H	SLMP transmission failed.	<ul style="list-style-type: none"> • Retry the operation after a while. • If the error occurs again even after taking the above, please consult your local Mitsubishi representative.

Error code	Error definition and causes	Action
D23AH	The subheader in the SLMP data is incorrect.	Correct the subheader information at the request source, and retry the operation.
D23BH	The network number in the SLMP data is incorrect.	Correct the network number at the request source, and retry the operation.
D23CH	The target station number in the SLMP data is incorrect.	Correct the station number at the request source and retry the operation.
D23DH	The information of the device station failed to be acquired.	<ul style="list-style-type: none"> Set the network configuration settings properly, write the parameters in the master station, and retry the operation. If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D23EH	The information of the device station failed to be acquired.	<ul style="list-style-type: none"> Set the network configuration settings properly, write the parameters in the master station, and retry the operation. If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D25DH	The transient data is incorrect.	<ul style="list-style-type: none"> Correct the transient data at the transient request source, and retry the operation. If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D269H	The station type of the REMFR/REMTO/REMFDR/REMTOD instruction target station is not an intelligent device station/remote device station.	Set an intelligent device station/remote device station as a target station of the REMFR/REMTO/REMFDR/REMTOD instruction.
D26AH	The target station of the REMFR/REMTO/REMFDR/REMTOD instruction does not exist.	Return the target station of the REMFR/REMTO/REMFDR/REMTOD instruction, and retry the operation.
D280H	The request command of transient transmission is incorrect.	Correct the request command at the transient request source, and retry the operation.
D281H	Transient reception failed.	<ul style="list-style-type: none"> Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. When the target station or the relay station is overloaded and cannot receive transient data, send the data to the target/relay station after the load on the station is reduced.
D282H	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. If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D283H	Transient transmission sending has failed.	<ul style="list-style-type: none"> Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. Connect the cable to the other port on the request source, and retry the operation. Lower the transient transmission usage frequency, and then perform again.
D284H	The target execution module in the SLMP data is incorrect.	Correct the target execution module in the SLMP header, and retry the operation.
D2A0H	The receive buffer is full.	<ul style="list-style-type: none"> Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. When the target station or the relay station is overloaded and cannot receive transient data, send the data to the target/relay station after the load on the station is reduced.
D2A1H	The send buffer is full.	<ul style="list-style-type: none"> Lower the transient transmission usage frequency, and then perform again. Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D2A2H	Transmission completion wait timeout has occurred in transient transmission.	<ul style="list-style-type: none"> Lower the transient transmission usage frequency, and then perform again. When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. Check if there is any problem with the connection of the cables at the request source and the industrial switch.
D2A3H	The data length in the transient transmission frame is incorrect.	Correct the number of data (frame length) at the transient request source, and retry the operation.
D2A4H	The header information in the transient transmission frame is incorrect.	Correct the header information at the transient request source, and retry the operation.
D2A5H	The target station number in the transient transmission frame is incorrect.	Correct the target station number at the transient request source, and retry the operation.
D2A6H	The request source number in the transient transmission frame is incorrect.	Correct the request source number at the transient request source, and retry the operation.
D2A7H to D2A8H	The header information in the transient transmission frame is incorrect.	Correct the header information at the transient request source, and retry the operation.

Error code	Error definition and causes	Action
D2A9H	The target network number in the transient transmission frame is incorrect.	Correct the target network number at the transient request source, and retry the operation.
D2AAH	The target station number in the transient transmission frame is incorrect.	Correct the target station number at the transient request source, and retry the operation.
D2ABH	The request source network number in the transient transmission frame is incorrect.	Correct the network number of the request source at the transient request source, and retry the operation.
D2ACH	The request source station number in the transient transmission frame is incorrect.	Correct the station number of the request source at the transient request source, and retry the operation.
D2ADH	The data length in the transient transmission frame is incorrect.	Correct the number of data (frame length) at the transient request source, and retry the operation.
D2AEH	The target station number in the transient transmission frame is incorrect.	<ul style="list-style-type: none"> The own station received transient data addressed to another station. Correct the network and target station numbers, and retry the operation. Check if "Routing Setting" are correctly set.
D2AFH	The own station number was specified as the target station number of transient transmission.	<ul style="list-style-type: none"> A transient data transmission addressed to own station was requested. Check the network number and target station number, and retry the operation. Check if "Routing Setting" are correctly set.
D2B0H	Transient transmission sending has failed.	<ul style="list-style-type: none"> Check if there is any problem with the connection of the cables at the request source and the industrial switch. Connect the cable to the other port on the request source, and retry the operation. Lower the transient transmission usage frequency, and then perform again.
D2B1H	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. If the error occurs again even after taking the above, please consult your local Mitsubishi representative.
D701H	Temporary error invalid station setting/cancel or reserved station setting cancel/restoration was executed without specifying the target station.	Set the target station(s) in 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H), and retry the operation.
D706H	Temporary error invalid station setting/cancel or reserved station setting cancel/restoration was executed from a local station.	Temporary error invalid station setting/cancel or reserved station setting cancel/restoration cannot be executed from a local station. Retry the operation from the master station.
D70BH	Temporary error invalid station setting/cancel and reserved station cancel/restoration was executed simultaneously.	<ul style="list-style-type: none"> Enable/Disable Ignore Station Errors using 2001H.b0 and 2001H.b1 and Reserved Station Function Enable using 2001H.b2 and 2001H.b3 cannot be simultaneously executed. Retry the operation so that only one bit in 2001H.b0 to 2001H.b3 turns on after all bits in them are turned off.
D720H	Link startup/stop direction is incorrect.	Check the setting, and stop or start data link.
D721H to D722H	Link start/stop was requested from another station during link start/stop processing.	Retry the operation after the stop or restart of data link is completed.
D723H	System link start/stop was requested during link start/stop processing.	Retry the operation after the stop or restart of data link is completed.
D724H	Link startup/stop station specification is incorrect.	Check the setting, and stop or start data link.
D725H	System link start/stop was requested from a local station.	A local station cannot start or stop data link of all or multiple stations. Perform these operations from the master station.
D726H	The request command of transient transmission is incorrect.	Correct the request command at the transient request station, and retry the operation.
D727H	Link start was requested from a station other than the station which had requested link stop.	<ul style="list-style-type: none"> Data link start was instructed from a station different from the one that had instructed the data link stop. Instruct data link start and data link stop from the same station. The method of the data link start differs from that of the data link stop. Instruct the data link start using the same method as the data link stop. (Ex. Data link is stopped using the CC-Link IE Field Network diagnostics, and the data link is started using a program.) Data link start has failed. Forcibly restart the data link.
D728H	Data link startup instruction was executed to the station which is performing data link.	Execute the data link startup instruction to the station where data link had been stopped.
D783H	A transient transmission error was detected.	<ul style="list-style-type: none"> Close the CC-Link IE Field Network diagnostics window in the engineering tool, and perform the diagnostics again. Check the read request data at the transient request station, and retry the operation.
D784H	A transient transmission error was detected.	<ul style="list-style-type: none"> Close the CC-Link IE Field Network diagnostics window in the engineering tool, and perform the diagnostics again. Check the read request data at the transient request station, and retry the operation.
D806H	The receive queue is full.	<ul style="list-style-type: none"> Lower the transient transmission usage frequency, and then perform again.

Error code	Error definition and causes	Action
D840H	The number of transient requests 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.
D841H	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.
D842H	<ul style="list-style-type: none"> • Routing information to the destination station network number is not registered. • In transient transmission, there are over seven relays to other networks. 	<ul style="list-style-type: none"> • Correct the target network number at the transient 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.
D843H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
D844H	An incorrect frame was 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.
D902H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
D903H	During execution of the communication test, the test was retried.	After completion of the communication test, retry the operation.
D905H	A communication monitoring timeout has occurred in communication test.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. Then, retry the operation. • Check if "Routing Setting" of "CPU Parameter" is correctly set, and take action.
D906H	Transmission completion wait timeout has occurred in communication test.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. Then, retry the operation. • Lower the transient transmission usage frequency, and then perform again. • When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. • Check if "Routing Setting" are correctly set.
D909H	The header information of transient transmission is incorrect.	Correct the header information at the transient request source, and retry the operation.
D90AH	During execution of the communication test, the test was retried.	Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. Then, retry the operation.
D90BH	The number of stations that communicate in the network is out of the specification range.	<ul style="list-style-type: none"> • Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action. • If the number of device stations per network is more than the maximum number of connectable stations, reduce it so that it does not exceed the maximum number.
D90CH	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. • "Communication Test" cannot be executed for own station and relay sending station.
D912H	Transient transmission sending has failed.	<ul style="list-style-type: none"> • Lower the transient transmission usage frequency, and then perform again. • When "Communication Mode" in "Application Settings" of the master station (submaster station) is set to "High-Speed", change it to "Normal" and retry the operation. • Check if there is any problem with the connection of the cables and the industrial switch.
D913H to D917H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
D919H	No response from the target station of the communication test.	<ul style="list-style-type: none"> • Change the IP address or station number and network number of the target station of the communication test. • Check if the network configuration setting is correctly set in the master station within the same network as the target station of the communication test.
DA00H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
DA01H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
DA10H to DA17H	An error was detected in the network module.	Please consult your local Mitsubishi representative.
DA19H	An error was detected in the network module.	Please consult your local Mitsubishi representative.

■Error codes stored in 'Completion status' (16001H).

The following table shows the error codes stored in 'Completion status' (16001H).

Error code	Error definition and causes	Action
0001H	A value that is out of range or cannot be set in the current status is set in 'Handshake flag' (16000H).	Refer to the following and change the value. ☞ Page 83 Handshake flag
0002H	An error was detected in send processing. A value that is out of range is set in 'Instruction specification' (16002H).	Correct the value.
0003H	An error was detected in send processing. A value that is out of range is set in 'Target station number' (16003H).	Correct the value.
0004H	An error was detected in send processing. A value that is out of range is set in 'Start I/O number of target station' (16004H).	Correct the value.
0005H	An error was detected in send processing. A value that is out of range is set in 'Access points' (16008H).	Correct the value.
0006H	An error was detected in send processing. The instruction timed out.	<ul style="list-style-type: none">• Check the network status using the CC-Link IE Field Network diagnostics of the engineering tool, and take action.• Lower the transient transmission usage frequency, and then perform again.

10.8 Event List

This section lists the events that occur in the NZ2GN-GFB. System and operation are included in the event types.

System		
Event code (Hex)	Overview	Cause
8100H	CC-Link IE Field Network PORT link-up	The CC-Link IE Field Network PORT linked up when the network cable connected to the external device was connected.
8130H	Receive frame error	A receive frame error was detected on the CC-Link IE Field Network or a network with a different network type was connected.
8500H	<<Own station>> Baton pass return (network entry)	Baton pass of own station returned from interruption status to normal status on CC-Link IE Field Network.
8501H	<<Another station>> Baton pass return (network entry)	Baton pass of another station was returned from interruption status to normal status on the CC-Link IE Field Network.
8502H	All stations baton pass normalization (network entry in all stations)	Baton pass returned to normal status at all stations of CC-Link IE Field Network.
8510H	<<Own station>> Data link restart (cyclic transmission started)	Data link of the own station was restarted on the CC-Link IE Field Network.
8511H	<<Another station>> Data link restart (cyclic transmission started)	Data link of another station was restarted on the CC-Link IE Field Network.
8512H	All-station data link normalization (all-station cyclic transmission start)	Data link was returned to normal status at all stations of the CC-Link IE Field Network.
8513H	<<Own station>> Data link start instruction acceptance	Data link startup of the own station instruction was received on the CC-Link IE Field Network.
8514H	<<Own station>> Data link stop instruction acceptance	Data link stop instruction of the own station was received on the CC-Link IE Field Network.
8520H	<<Own station>> Temporary error invalid station setting instruction acceptance	Temporary error invalid station setting instruction was received on the CC-Link IE Field Network.
8521H	<<Own station>> Temporary error invalid station cancel instruction acceptance	Temporary error invalid station cancel instruction was received on the CC-Link IE Field Network.
8524H	<<Another station>> Temporary error invalid station setting execution	Temporary error invalid station was set at another station of the CC-Link IE Field Network.
8525H	<<Another station>> Temporary error invalid station cancel execution	Temporary error invalid station was canceled at another station of the CC-Link IE Field Network.
8530H	<<Own station>> Reserved station cancel setting instruction acceptance	Reserved station cancel setting instruction was received on the CC-Link IE Field Network.
8531H	<<Own station>> Reserved station enable setting instruction acceptance	Reserved station enable setting instruction was received on the CC-Link IE Field Network.
8534H	<<Another station>> Reserved station cancel setting execution	Reserved station cancel setting was executed at another station of the CC-Link IE Field Network.
8535H	<<Another station>> Reserved station enable setting instruction execution	Reserved station enable setting was executed at another station of the CC-Link IE Field Network.
8541H	Receive parameter error resolution	A parameter error received from the CC-Link IE Field Network master station was resolved. (A normal parameter was received.)
8542H	<<Own station>> Receive frame error line status caution level	A receive frame error (Line status: caution level) occurred on the CC-Link IE Field Network.
8543H	<<Another station>> Receive frame error line status caution level	A receive frame error (Line status: caution level) occurred on the CC-Link IE Field Network.
8800H	CC-Link IE Field Network PORT link-down	The CC-Link IE Field Network PORT link-down occurred when the network cable connected to the external device was disconnected.
8907H	Divided messages receive timeout error	<ul style="list-style-type: none"> • Sufficient data for the data length could not be received. • The remaining part of the divided message could not be received.
890AH	UDP specification port number error	A port number being used for opened connection was set.
8C00H	<<Own station>> Baton pass interruption (departure from network)	Baton pass of the own station was interrupted on the CC-Link IE Field Network.
8C01H	<<Another station>> Baton pass interruption (departure from network)	Baton pass of another station was interrupted on the CC-Link IE Field Network.

Eventcode (Hex)	Overview	Cause
8C02H	Abnormal access response of another station	<ul style="list-style-type: none"> When accessing another station of CC-Link IE Field Network, a response error was returned from the station. When accessed from another station, a response error was returned to the station.
8C10H	<<Own station>> Data link stop (cyclic transmission stopped)	Own station data link was stopped on the CC-Link IE Field Network.
8C11H	<<Another station>> Data link stop (cyclic transmission stopped)	Another station data link was stopped on the CC-Link IE Field Network.
8C20H	<<Another station>> Parameter error occurrence	A parameter error has occurred in another station of the CC-Link IE Field Network.
8C21H	<<Another station>> Error occurrence	An error has occurred in another station of the CC-Link IE Field Network.
8C22H	Station already in use	Master station duplication, or station No. overlap has occurred on CC-Link IE Field Network.
8C24H	<<Another station>> Receive frame error occurrence	A receive frame error has occurred at another station of the CC-Link IE Field Network.
8C25H	Receive parameter error occurrence	A parameter error received from the CC-Link IE Field Network master station has been detected.
8C28H	<<Own station>> Receive frame error line status warning level	A receive frame error (Line status: warning level) occurred on the CC-Link IE Field Network.
8C29H	<<Another station>> Receive frame error line status warning level	A receive frame error (Line status: warning level) occurred on the CC-Link IE Field Network.
8C58H	SLMP response frame disposal	<p>The SLMP response frame was disposed of due to one of the following causes.</p> <ul style="list-style-type: none"> The request source of the received SLMP response frame is not clear. The received SLMP response frame has already returned an error response according to the monitoring timeout. The SLMP communication load is high, so the received SLMP response frame could not be transferred.
8C5DH	Send processing execution disabled	<ul style="list-style-type: none"> The receive buffer or send buffer is not sufficient. The window size of the external device is not sufficient.
8C5EH	UDP/IP send failed	<p>Data was not sent correctly with UDP or IP due to either of the following causes.</p> <ul style="list-style-type: none"> An error has occurred in the external device. An error has occurred in the industrial switch or cable. The line is congested.
8C60H	IP address of the external device acquisition error	Target IP address could not be acquired from the network No. and station No.
8D00H	Loss of event history	Events were lost due to frequent event detection.

Operation

Eventcode (Hex)	Overview	Cause
9000H	Data link startup instruction	Data link startup to the own station or another station was instructed of the CC-Link IE Field Network.
9001H	Data link stop instruction	Data link stop to the own station or another station was instructed of the CC-Link IE Field Network.
9010H	Temporary error invalid station setting instruction	Temporary error invalid station setting was instructed to the CC-Link IE Field Network device station.
9011H	Temporary error invalid station cancel instruction	Temporary error invalid station cancel was instructed to the CC-Link IE Field Network device station.
9020H	Reserved station cancel setting instruction	Reserved station cancel setting was instructed to the CC-Link IE Field Network device station.
9021H	Reserved station enable setting instruction	Reserved station enable setting was instructed to the CC-Link IE Field Network device station.
9030H	The network number, station number setting/change instruction execution	Setting or change of the network No. or station No. was instructed to the CC-Link IE Field Network device station.
9100H	CC-Link IE Field Network parameter acceptance	The parameter was accepted from the CC-Link IE Field Network master station.
9F00H	<<Another station>> CPU operating status change detection	Operating status of the programmable controller CPU on another station was changed of the CC-Link IE Field Network.

APPENDICES

Appendix 1 Remote I/O Signals

List of remote I/O signals

This section lists I/O signals for the NZ2GN-GFB.

The I/O signals in this section are examples with the start of remote I/O signals of the NZ2GN-GFB assigned to the device number of RX0 and RY0.

Point

- The use of remote I/O signals that are not assigned to a link device is prohibited for RX/RX points of the NZ2GN-GFB set in the CC-Link IE TSN master station.
- Using remote I/O signals that are prohibited may result in an accident due to an incorrect output or malfunction.
- The CC-Link IE Field Network device station (excluding local stations) only receives signals that it has assigned.

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

■ Remote I/O signals for the CC-Link IE TSN master station

NZ2GN-GFB → CC-Link IE TSN master station		CC-Link IE TSN master station → NZ2GN-GFB	
Device No.	Description	Device No.	Description
RX0	Remote input signals received from CC-Link IE Field Network ( Page 179 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)	RY0	Remote output signals sent to CC-Link IE Field Network ( Page 180 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)
RX1		RY1	
⋮		⋮	
RX□*1		RY□*1	

*1 The value obtained after deducting 1 from the total number of "RX/RX points" set in the module parameter of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

■ Remote I/O signal for the CC-Link IE Field Network device station

CC-Link IE Field Network device station → NZ2GN-GFB		NZ2GN-GFB → CC-Link IE Field Network device station	
Device No.	Description	Device No.	Description
RX0	Remote input signals sent to CC-Link IE TSN ( Page 181 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)	RY0	Remote output signals received from CC-Link IE TSN ( Page 182 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)
RX1		RY1	
⋮		⋮	
RX□*1		RY□*1	

*1 The value obtained after deducting 1 from the total number of "RX/RX points" set in the module parameter of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

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When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

■Remote I/O signals for the CC-Link IE TSN master station

NZ2GN-GFB → CC-Link IE TSN master station		CC-Link IE TSN master station → NZ2GN-GFB	
Device No.	Description	Device No.	Description
RX0	Remote input signals received from CC-Link IE Field Network ( Page 179 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)	RY0	Remote output signals sent to CC-Link IE Field Network ( Page 180 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)
RX1		RY1	
⋮		⋮	
RX□*1		RY□*1	

*1 The value obtained after deducting 1 from the "RX/RX Setting" set in the network configuration settings of the CC-Link IE Field Network master station. ( Page 46 Parameter Settings for CC-Link IE Field Network)

■Remote I/O signal for the CC-Link IE Field Network master station

CC-Link IE Field Network master station → NZ2GN-GFB		NZ2GN-GFB → CC-Link IE Field Network master station	
Device No.	Description	Device No.	Description
RX0	Remote input signals sent to CC-Link IE TSN ( Page 181 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)	RY0	Remote output signals received from CC-Link IE TSN ( Page 182 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)
RX1		RY1	
⋮		⋮	
RX□*1		RY□*2	

*1 The value obtained after deducting 1 from the "RX Setting" set in the network configuration settings of the CC-Link IE TSN master station. ( Page 44 Parameter Settings for CC-Link IE TSN)

*2 The value obtained after deducting 1 from the "RY Setting" set in the network configuration settings of the CC-Link IE TSN master station. ( Page 44 Parameter Settings for CC-Link IE TSN)

Remote I/O signal details

This section describes details of I/O signals for the NZ2GN-GFB.

Point

If an error occurs in the NZ2GN-GFB, the remote I/O signals may be retained or cleared.
For details, refer to the following.
☞ Page 75 I/O maintenance settings

Remote input signals received from CC-Link IE Field Network (RX0 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote input signal (RX) is the area that stores remote input signals received from CC-Link IE Field Network device stations.

☞ Page 70 Communications using RX, RY, RWr, and RWw)

Device No.	Description
RX0	Remote input signals received from CC-Link IE Field Network device stations (1st station)
RX1	
⋮	
$RX\Box_{(1)}$	
$RX(\Box_{(1)} + 1)$	Remote input signals received from CC-Link IE Field Network device stations (2nd station)
$RX(\Box_{(1)} + 2)$	
⋮	
$RX\Box_{(2)}$	
⋮	Remote input signals received from CC-Link IE Field Network device stations (m-th station)
$RX(\Box_{(m-1)} + 1)$	
$RX(\Box_{(m-1)} + 2)$	
⋮	
$RX\Box_{(m)}$	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. (☞ Page 48 Module Parameter Setting)

$\Box_{(1)}$: The value obtained after deducting 1 from the "RX/RX points" of CC-Link IE Field Network device stations (1st station).

$\Box_{(2)}$: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st and 2nd stations).

$\Box_{(m-1)}$: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

$\Box_{(m)}$: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st to m-th station).

Ex.

When the "RX/RX points" is set to 16 points for the first CC-Link IE Field Network device station and 32 points for the second in the module parameter of the NZ2GN-GFB

CC-Link IE Field Network device station	Device No.
1st station	RX0
	RX1
	⋮
	RXF
2nd station	RX10
	RX11
	⋮
	RX2F

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote input signal (RX) is the area that stores remote input signals received from the CC-Link IE Field Network master station. (☞ Page 70 Communications using RX, RY, RWr, and RWw)

The points set for "RX/RX Setting" in the NZ2GN-GFB under the network configuration settings of the CC-Link IE Field Network master station are assigned. (☞ Page 46 Parameter Settings for CC-Link IE Field Network)

Remote output signals sent to CC-Link IE Field Network (RY0 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote output signal (RY) is the area to write remote output signals sent to CC-Link IE Field Network device stations. ( Page 70 Communications using RX, RY, RWr, and RWw)

The value written in this area is sent to CC-Link IE Field Network device stations.

Device No.	Description
RY0	Remote output signals sent to CC-Link IE Field Network device stations (1st station)
RY1	
⋮	
RY□ ₍₁₎	
RY (□ ₍₁₎ + 1)	Remote output signals sent to CC-Link IE Field Network device stations (2nd station)
RY (□ ₍₁₎ + 2)	
⋮	
RY□ ₍₂₎	
⋮	Remote output signals sent to CC-Link IE Field Network device stations (m-th station)
RY (□ _(m-1) + 1)	
RY (□ _(m-1) + 2)	
⋮	
RY□ _(m)	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

□₍₁₎: The value obtained after deducting 1 from the "RX/RX points" of CC-Link IE Field Network device stations (1st station).

□₍₂₎: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st and 2nd stations).

□_(m-1): The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

□_(m): The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st to m-th station).

Ex.

When the "RX/RX points" is set to 16 points for the first CC-Link IE Field Network device station and 32 points for the second in the module parameter of the NZ2GN-GFB

CC-Link IE Field Network device station	Device No.
1st station	RY0
	RY1
	⋮
	RYF
2nd station	RY10
	RY11
	⋮
	RY2F

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote output signal (RY) is the area to write remote output signals sent to the CC-Link IE Field Network master station.

( Page 70 Communications using RX, RY, RWr, and RWw)

The value written in this area is sent to the CC-Link IE Field Network master station.

The points set for "RX/RX Setting" in the NZ2GN-GFB under the network configuration settings of the CC-Link IE Field Network master station are assigned. ( Page 46 Parameter Settings for CC-Link IE Field Network)

Remote input signals sent to CC-Link IE TSN (RX0 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote input signal (RX) is the area to write remote input signals sent to the CC-Link IE TSN master station. The value written in this area is sent to the CC-Link IE TSN master station. ( Page 70 Communications using RX, RY, RWr, and RWw)

Device No.	Description
RX0	Remote input signals sent to the CC-Link IE TSN master station (1st station)
RX1	
⋮	
$RX\Box_{(1)}$	
$RX(\Box_{(1)} + 1)$	Remote input signals sent to the CC-Link IE TSN master station (2nd station)
$RX(\Box_{(1)} + 2)$	
⋮	
$RX\Box_{(2)}$	
⋮	Remote input signals sent to the CC-Link IE TSN master station (m-th station)
$RX(\Box_{(m-1)} + 1)$	
$RX(\Box_{(m-1)} + 2)$	
⋮	
$RX\Box_{(m)}$	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

$\Box_{(1)}$: The value obtained after deducting 1 from the "RX/RX points" of CC-Link IE Field Network device stations (1st station).

$\Box_{(2)}$: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st and 2nd stations).

$\Box_{(m-1)}$: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

$\Box_{(m)}$: The value obtained after deducting 1 from the total number of "RX/RX points" of CC-Link IE Field Network device stations (1st to m-th station).

Ex.

When the "RX/RX points" is set to 16 points for the first CC-Link IE Field Network device station and 32 points for the second in the module parameter of the NZ2GN-GFB

CC-Link IE Field Network device station	Device No.
1st station	RX0
	RX1
	⋮
	RXF
2nd station	RX10
	RX11
	⋮
	RX2F

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote input signal (RX) is the area to write remote input signals sent to the CC-Link IE TSN master station. The value written in this area is sent to the CC-Link IE TSN master station. ( Page 70 Communications using RX, RY, RWr, and RWw)

The points set for "RX points" in the NZ2GN-GFB under the network configuration settings of the CC-Link IE TSN master station are assigned. ( Page 44 Network Configuration Settings)

Remote output signals received from CC-Link IE TSN (RY0 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote output signal (RY) is the area that stores remote output signals received from the CC-Link IE TSN master station.

( Page 70 Communications using RX, RY, RWr, and RWw)

Device No.	Description
RY0	Remote output signals received from the CC-Link IE TSN master station (1st station)
RY1	
⋮	
RY□ ₍₁₎	
RY (□ ₍₁₎ + 1)	Remote output signals received from the CC-Link IE TSN master station (2nd station)
RY (□ ₍₁₎ + 2)	
⋮	
RY□ ₍₂₎	
⋮	Remote output signals received from the CC-Link IE TSN master station (m-th station)
RY (□ _(m-1) + 1)	
RY (□ _(m-1) + 2)	
⋮	
RY□ _(m)	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

□₍₁₎: The value obtained after deducting 1 from the "RX/Ry points" of CC-Link IE Field Network device stations (1st station).

□₍₂₎: The value obtained after deducting 1 from the total number of "RX/Ry points" of CC-Link IE Field Network device stations (1st and 2nd stations).

□_(m-1): The value obtained after deducting 1 from the total number of "RX/Ry points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

□_(m): The value obtained after deducting 1 from the total number of "RX/Ry points" of CC-Link IE Field Network device stations (1st to m-th station).

Ex.

When the "RX/Ry points" is set to 16 points for the first CC-Link IE Field Network device station and 32 points for the second in the module parameter of the NZ2GN-GFB

CC-Link IE Field Network device station	Device No.
1st station	RY0
	RY1
	⋮
	RYF
2nd station	RY10
	RY11
	⋮
	RY2F

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote output signal (RY) is the area that stores remote output signals received from the CC-Link IE TSN master station.

( Page 70 Communications using RX, RY, RWr, and RWw)

The points set for "RY points" in the NZ2GN-GFB under the network configuration settings of the CC-Link IE TSN master station are assigned. ( Page 44 Network Configuration Settings)

Appendix 2 Remote Register

Lists of remote register areas

This section lists remote registers of the NZ2GN-GFB. The remote registers shown are examples with the start of remote registers of the NZ2GN-GFB assigned to the device number of RWr0 and RWw0.



- The use of remote registers that are not assigned to a link device is prohibited for the number of RWr/RWw points of the NZ2GN-GFB set in the CC-Link IE TSN master station.
- Using remote registers that are prohibited may result in an accident due to an incorrect output or malfunction.
- The CC-Link IE Field Network device station (excluding local stations) only receives registers that it has assigned.

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

■Remote registers for the CC-Link IE TSN master station (RWr)

NZ2GN-GFB (RWr) → CC-Link IE TSN master station		CC-Link IE TSN master station → NZ2GN-GFB (RWw)	
Device No.	Name	Device No.	Name
RWr0	Bridge module status area (Page 185 Bridge module status area (RWr0))	RWw0	Bridge module operation area (Page 192 Bridge module operation area (RWw0))
RWr1	Error code (Page 186 Error code (RWr1))	RWw1 to RWw1F	Use prohibited
RWr2	CC-Link IE TSN function selection status area (Page 187 CC-Link IE TSN function selection status area (RWr2))		
RWr3 to RWr5	Use prohibited		
RWr6 to RWr7	CC-Link IE Field Network operating status (Page 188 CC-Link IE Field Network operating status (RWr6 to RWr7))		
RWr8 to RWrF	Use prohibited		
RWr10 to RWr17	Baton pass status of each station of CC-Link IE Field Network (Page 189 Baton pass status of each station of CC-Link IE Field Network (RWr10 to RWr17))		
RWr18 to RWr1F	Data link status of each station on CC-Link IE Field Network (Page 190 Data link status of each station on CC-Link IE Field Network (RWr18 to RWr1F))		
RWr20 to RWr□ ^{*1}	Remote registers received from CC-Link IE Field Network (Page 191 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)	RWw20 to RWw□ ^{*1}	Remote registers sent to CC-Link IE Field Network (Page 193 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)

*1 The value obtained after deducting 1 from the total "RWw/RWr points" set in the module parameter of the NZ2GN-GFB. (Page 48 Module Parameter Setting)

■Remote registers for CC-Link IE Field Network device stations (RWr)

CC-Link IE Field Network device station → NZ2GN-GFB (RWr)		NZ2GN-GFB (RWw) → CC-Link IE Field Network device station	
Device No.	Name	Device No.	Name
RWr0 to RWr□ ^{*1}	Remote registers sent to CC-Link IE TSN (Page 194 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)	RWw0 to RWw□ ^{*1}	Remote registers received from CC-Link IE TSN (Page 195 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station)

*1 The value obtained after deducting 1 from the total "RWw/RWr points" set in the module parameter of the NZ2GN-GFB. (Page 48 Module Parameter Setting)

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

■ Remote registers for the CC-Link IE TSN master station (RWr)

NZ2GN-GFB (RWr) → CC-Link IE TSN master station		CC-Link IE TSN master station → NZ2GN-GFB (RWw)	
Device No.	Name	Device No.	Name
RWr0	Bridge module status area ( Page 185 Bridge module status area (RWr0))	RWw0	Bridge module operation area ( Page 192 Bridge module operation area (RWw0))
RWr1	Error code ( Page 186 Error code (RWr1))	RWw1 to RWw1F	Use prohibited
RWr2	CC-Link IE TSN function selection status area ( Page 187 CC-Link IE TSN function selection status area (RWr2))		
RWr3 to RWr5	Use prohibited		
RWr6 to RWr7	CC-Link IE Field Network operating status ( Page 188 CC-Link IE Field Network operating status (RWr6 to RWr7))		
RWr8 to RWr1F	Use prohibited	RWw20 to RWw□ ^{*1}	Remote registers sent to CC-Link IE Field Network ( Page 193 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)
RWr20 to RWr□ ^{*1}	Remote registers received from CC-Link IE Field Network ( Page 191 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)		

*1 The value obtained after deducting 1 from the "RWw/RWr Setting" set in the network configuration settings of the CC-Link IE Field Network master station. ( Page 46 Parameter Settings for CC-Link IE Field Network)

■ Remote registers for CC-Link IE Field Network device stations (RWw)

CC-Link IE Field Network device station → NZ2GN-GFB (RWw)		NZ2GN-GFB (RWw) → CC-Link IE Field Network device station	
Device No.	Name	Device No.	Name
RWr0 to RWr□ ^{*1}	Remote registers sent to CC-Link IE TSN ( Page 194 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)	RWw0 to RWw□ ^{*1}	Remote registers received from CC-Link IE TSN ( Page 195 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station)

*1 The value obtained after deducting 1 from the "RWw/RWr Setting" set in the network configuration settings of the CC-Link IE Field Network master station. ( Page 46 Parameter Settings for CC-Link IE Field Network)

Details of remote registers

Bridge module status area (RWr0)

This area is used to check the status of the NZ2GN-GFB.

RWr0	Name
b0 to b8	Use prohibited
b9	Operation condition setting completion flag
b10	Use prohibited
b11	Remote READY
b12 to b15	Use prohibited

■ Operation condition setting completion flag (RWr0.b9)

This flag is used to change the parameters of the NZ2GN-GFB using the program.

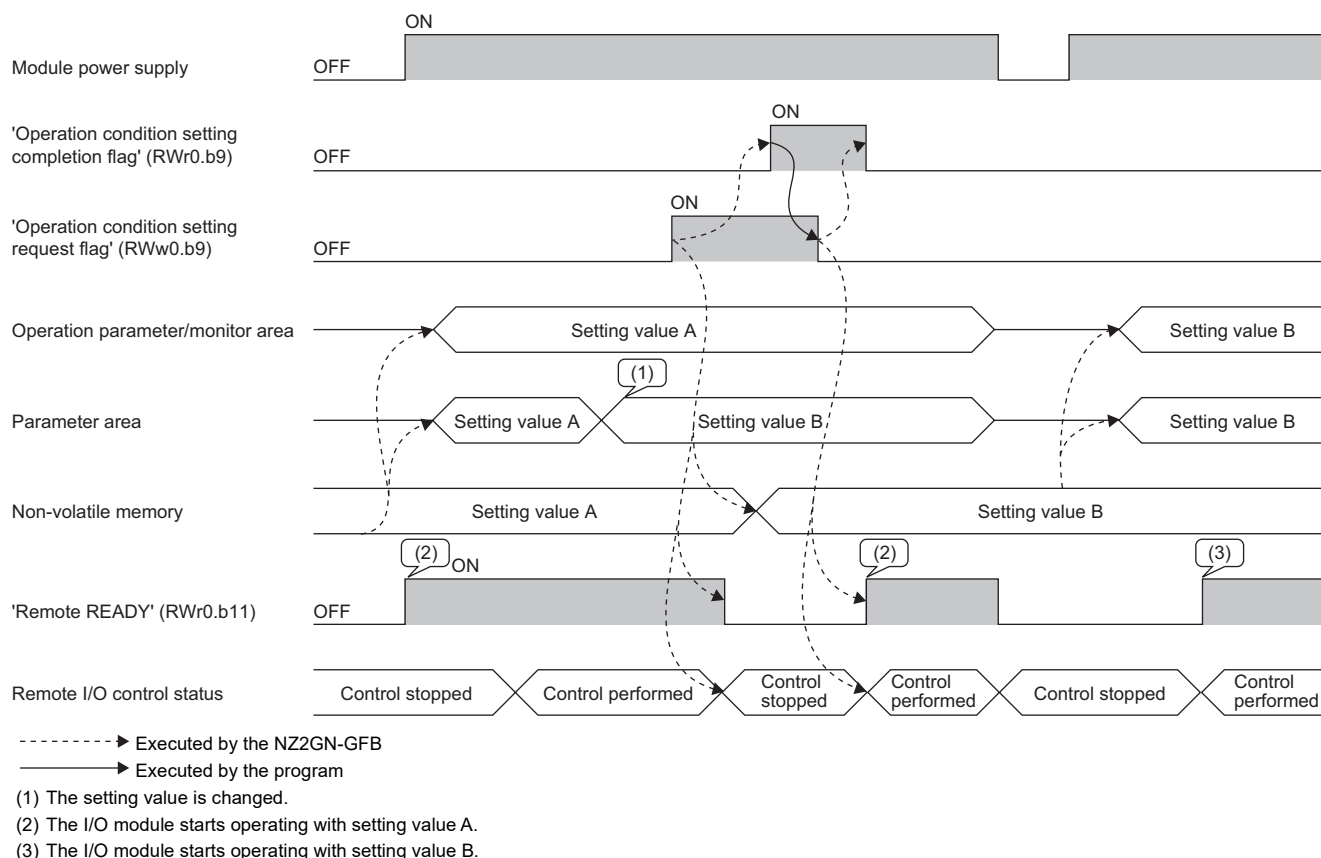
The parameter is saved to the non-volatile memory of NZ2GN-GFB by writing parameter data to the remote buffer memory with the program, and then turning on the 'Operation condition setting request flag' (RWw0.b9).

Once the parameter is saved, the flag changes from off to on.

The parameter saved to the non-volatile memory is reflected when the NZ2GN-GFB is restarted, so power off and on the system or reset it.

In addition, if the module is in error state, turning on the 'Operation condition setting request flag' (RWw0.b9) clears the error through the same process as when the 'Error clear request flag' (RWw0.b10) is turned on.

- For the case where data link is established at the turning on of the module power supply



A

■Remote READY (RWr0.b11)

This signal is used to check the operating status of the NZ2GN-GFB.

Use this flag to check whether the NZ2GN-GFB can perform remote I/O control using the program.

Status of 'Remote READY' (RWr0.b11)	Operating status of the module
Off	Remote I/O control stopped (RX and RY cleared)
On	Execute remote I/O control

This flag turns off when any of the following conditions is satisfied.

- The 'Operation condition setting request flag' (RWw0.b9) is on.
- A moderate error or major error has occurred.

Error code (RWr1)

Stores the error code of the NZ2GN-GFB. (📖 Page 160 Error Code List)

CC-Link IE TSN function selection status area (RWr2)

The following table lists the setting status of the functions of CC-Link IE TSN.

RWr2	Name
b0 to b7	Use prohibited
b8	Communication speed setting status
b9 to b10	Use prohibited
b11	CC-Link IE TSN Class setting status
b12 to b15	Use prohibited

■Communication speed setting status (RWr2.b8)

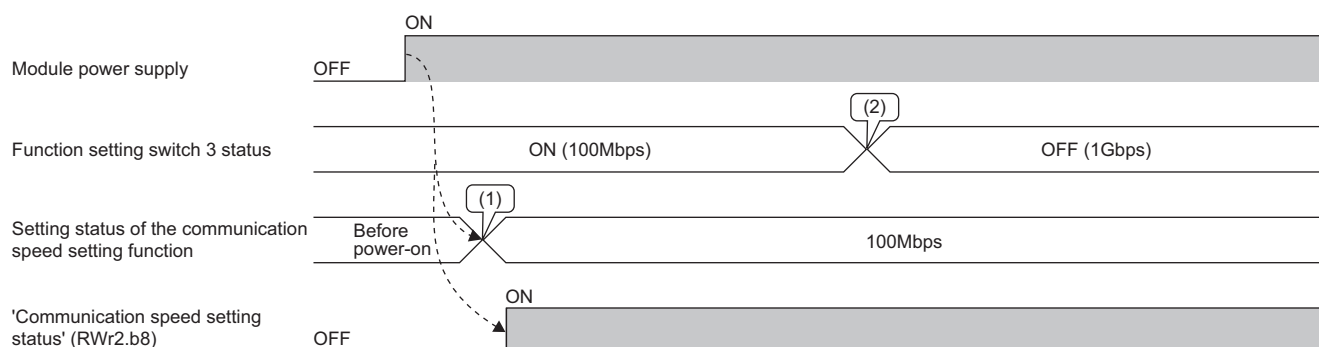
The following table lists the setting status of the communication speed of CC-Link IE TSN.

Status of 'Communication speed setting status' (RWr2.b8)	Description
Off	1Gbps
On	100Mbps

For details on the communication speed setting of CC-Link IE TSN, refer to the following.

☞ Page 94 Communication speed setting function

The value for 'Communication speed setting status' (RWr2.b8) is determined by the status of function setting switch 3 when the system starts.



(1) The setting status for the communication speed setting function is determined by the status of function setting switch 3 when the power is turned on.

(2) Even if the status of function setting switch 3 changes during operation, the setting status for the communication speed setting function does not change.

■CC-Link IE TSN Class setting status (RWr2.b11)

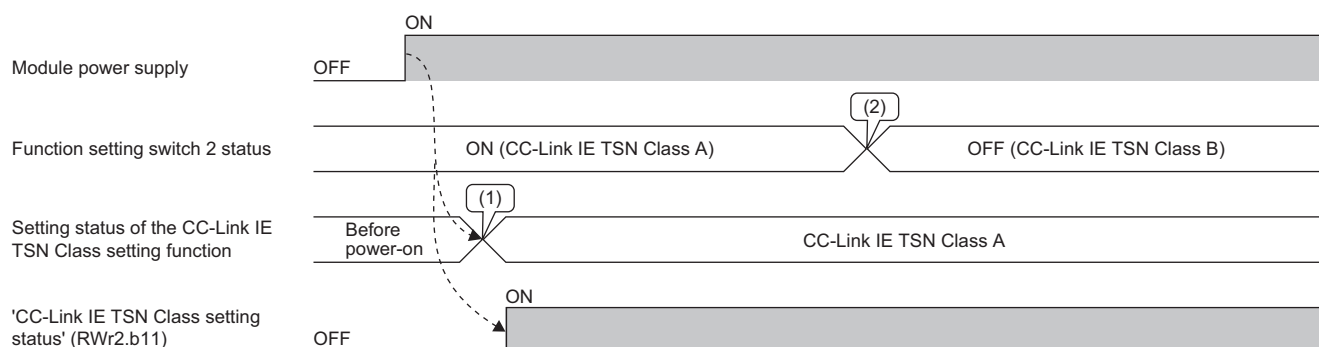
The following table lists the setting status of CC-Link IE TSN Class.

Status of 'CC-Link IE TSN Class setting status' (RWr2.b11)	Description
Off	CC-Link IE TSN Class B
On	CC-Link IE TSN Class A

For details on CC-Link IE TSN Class settings, refer to the following.

☞ Page 95 CC-Link IE TSN Class setting function

The value for 'CC-Link IE TSN Class setting status' (RWr2.b11) is determined by the status of function setting switch 2 when the system starts.



(1) The setting status for the CC-Link IE TSN Class setting function is determined by the status of function setting switch 2 when the power is turned on.

(2) Even if the status of function setting switch 2 changes during operation, the setting status for the CC-Link IE TSN Class setting function does not change.

CC-Link IE Field Network operating status (RWr6 to RWr7)

This area is used to check the operating status of CC-Link IE Field Network.

RWr6	Name
b0	Baton pass status of own station
b1 to b15	Use prohibited

RWr7	Name
b0	Data link error status of own station
b1 to b15	Use prohibited

■Baton pass status of own station (RWr6.b0)

The following table lists the baton pass status of CC-Link IE Field Network.

Status of 'Baton pass status of own station' (RWr6.b0)	Description
Off	Normal (transient transmission allowed)
On	Error ^{*1}

*1 The cause of an error can be checked with the following.

"CC-Link IE TSN/CC-Link IE Field Diagnostics" window ( Page 129 CC-Link IE Field Network diagnostics)

'Baton pass status of own station' (3047H) and 'Cause of baton pass interruption' (3048H) ( Page 250 Setting value, Page 250 Setting value)

■Data link error status of own station (RWr7.b0)

The following table lists the data link error status of CC-Link IE Field Network.

Status of 'Data link error status of own station' (RWr7.b0) ^{*1}	Description ^{*2}
Off	Normal
On	Error ^{*3}

*1 This register is enabled when 'Baton pass status of own station' (RWr6.b0) is off (normal). When it is turned on (faulty), the data prior to the error is retained.

*2 Depending on the update timing, the timing to retain and clear remote I/O signals from I/O maintenance settings may differ.

*3 The cause of an error can be checked with the following.

"CC-Link IE TSN/CC-Link IE Field Diagnostics" window ( Page 129 CC-Link IE Field Network diagnostics)

'Cause of data link stop' (3049H) ( Page 251 Setting value)

Baton pass status of each station of CC-Link IE Field Network (RWr10 to RWr17)

This area is used to check the baton pass status of each station of CC-Link IE Field Network.

Stores the baton pass status of each station in each bit.

- Off: Baton pass normal station
- On: Baton pass faulty station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
RWr10	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
RWr11	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
RWr12	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
RWr13	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
RWr14	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
RWr15	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
RWr16	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
RWr17	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

This flag is enabled when 'Baton pass status of own station' (RWr6.b0) is off (normal). When it is turned on (faulty), the data prior to the error is retained. ( Page 188 Baton pass status of own station (RWr6.b0))

Point

- If multiple stations change from faulty to normal, they are reconnected to the network one by one per link scan, so the time until the status changes to off (baton pass normal station) may vary by several seconds.
- If cables are connected/disconnected or the module is reset, the token may be lost or a reconstruction may occur, causing the baton pass status to detect an error in the first link scan.
- Reserved stations and stations higher than the maximum station number are ignored.

Data link status of each station on CC-Link IE Field Network (RWr18 to RWr1F)

This area is used to check the data link status of each station of CC-Link IE Field Network.

Stores the data link status of each station in each bit.

- Off: Data link normal station
- On: Data link faulty station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
RWr18	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
RWr19	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
RWr1A	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
RWr1B	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
RWr1C	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
RWr1D	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
RWr1E	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
RWr1F	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

This flag is enabled when 'Baton pass status of own station' (RWr6.b0) is off (normal). When it is turned on (faulty), the data prior to the error is retained. ( Page 188 Baton pass status of own station (RWr6.b0))

Point

- If multiple stations change from faulty to normal, they are reconnected to the network one by one per link scan, so the time until the status changes to off (data link normal station) may vary by several seconds.
- If no response is received for several link scans, the station is determined to be a data link faulty station.
- Reserved stations and stations higher than the maximum station number are ignored.
- Depending on the update timing, the timing to retain and clear remote I/O signals from I/O maintenance settings may differ.

Remote registers received from CC-Link IE Field Network (RWr20 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote registers received from CC-Link IE Field Network device stations are stored in this area.

For details on data communications using link devices (RWr), refer to the following.

☞ Page 71 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Device No.	Description
RWr20	Remote registers received from CC-Link IE Field Network device stations (1st station)
RWr21	
⋮	
$RWr(20 + \square_{(1)})$	
$RWr(20 + \square_{(1)} + 1)$	Remote registers received from CC-Link IE Field Network device stations (2nd station)
$RWr(20 + \square_{(1)} + 2)$	
⋮	
$RWr(20 + \square_{(2)})$	
⋮	Remote registers received from CC-Link IE Field Network device stations (m-th station)
$RWr(20 + \square_{(m-1)} + 1)$	
$RWr(20 + \square_{(m-1)} + 2)$	
⋮	
$RWr(20 + \square_{(m)})$	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. (☞ Page 48 Module Parameter Setting)

$\square_{(1)}$: The value obtained after deducting 1 from the "RWr/ RWw points" of CC-Link IE Field Network device stations (1st station).

$\square_{(2)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st and 2nd stations).

$\square_{(m-1)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

$\square_{(m)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m)-th station).

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote registers received from the CC-Link IE Field Network master station are stored in this area.

For details on data communications using link devices (RWr), refer to the following.

☞ Page 73 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

A

Bridge module operation area (RWw0)

This area is used to operate the NZ2GN-GFB.

RWw0	Name
b0 to b8	Use prohibited
b9	Operation condition setting request flag
b10	Error clear request flag
b11 to b15	Use prohibited

■Operation condition setting request flag (RWw0.b9)

This flag is used to change the parameters of the NZ2GN-GFB using the program.

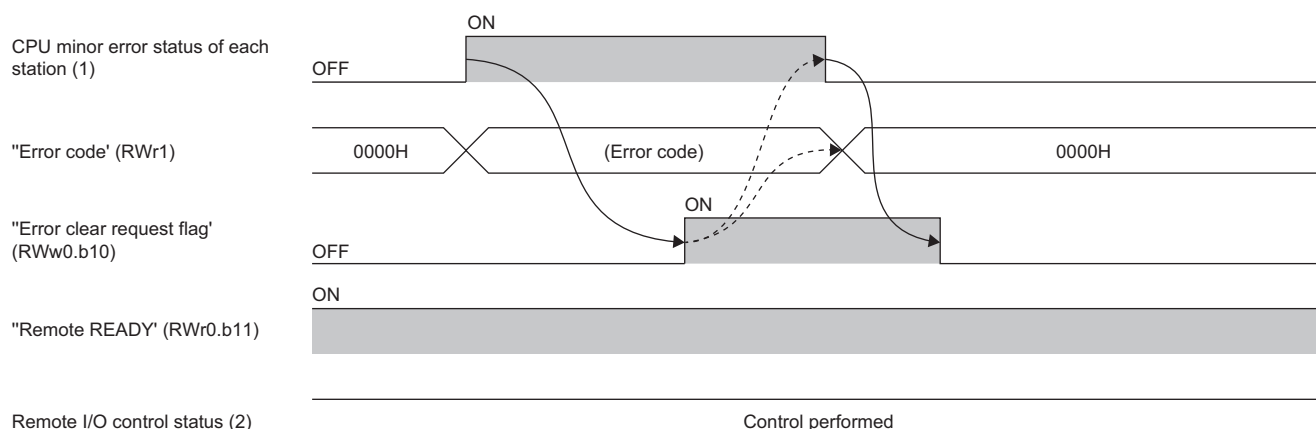
For the behavior of the 'Operation condition setting request flag' (RWw0.b9), refer to the following.

☞ Page 185 Operation condition setting completion flag (RWr0.b9)

■Error clear request flag (RWw0.b10)

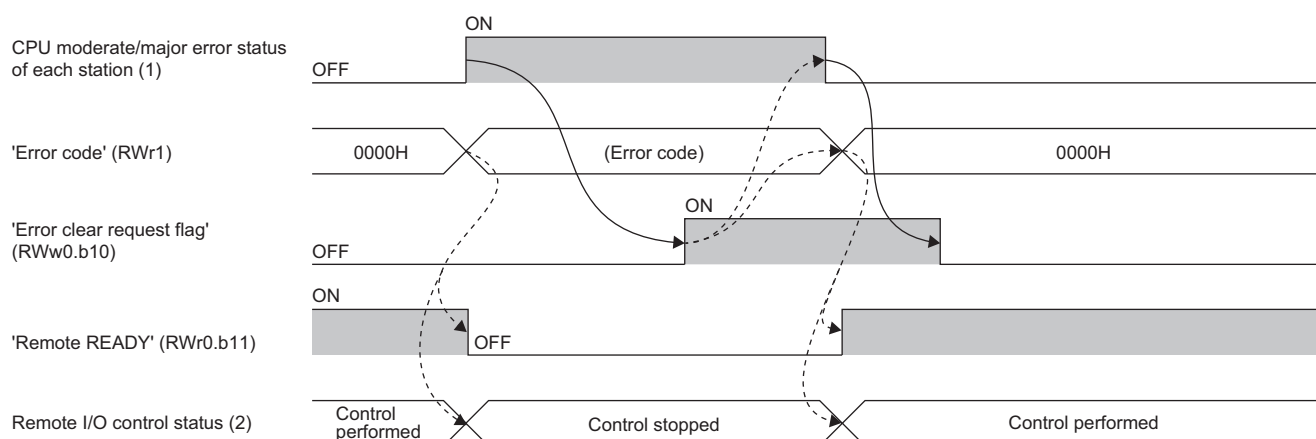
Turning on the 'Error clear request flag' (RWw0.b10) after eliminating the cause of the error changes the 'Error code' (RWr1) to 0. Some errors cannot be cleared with the 'Error clear request flag' (RWw0.b10) depending on the details.

- Operation in the event of a minor error



☞ Page 186 Remote READY (RWr0.b11)

- Operation in the event of a moderate error



☞ Page 186 Remote READY (RWr0.b11)

Remote registers sent to CC-Link IE Field Network (RWw20 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote registers sent to CC-Link IE Field Network device stations are written in this area.

The value written in this area is sent to CC-Link IE Field Network device stations.

For details on data communications using link devices (RWw), refer to the following.

☞ Page 71 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Device No.	Description
RWw20	Remote registers sent to CC-Link IE Field Network device stations (1st station)
RWw21	
⋮	
$RWw(20 + \square_{(1)})$	
$RWw(20 + \square_{(1)} + 1)$	Remote registers sent CC-Link IE Field Network device stations (2nd station)
$RWw(20 + \square_{(1)} + 2)$	
⋮	
$RWw(20 + \square_{(2)})$	
⋮	Remote registers sent to CC-Link IE Field Network device stations (m-th station)
$RWw(20 + \square_{(m-1)} + 1)$	
$RWw(20 + \square_{(m-1)} + 2)$	
⋮	
$RWw(20 + \square_{(m)})$	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. (☞ Page 48 Module Parameter Setting)

$\square_{(1)}$: The value obtained after deducting 1 from the "RWr/ RWw points" of CC-Link IE Field Network device stations (1st station).

$\square_{(2)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st and 2nd stations).

$\square_{(m-1)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

$\square_{(m)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m)-th station).

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote registers sent to the CC-Link IE Field Network master station are written in this area.

The value written in this area is sent to the CC-Link IE Field Network master station.

For details on data communications using link devices (RWw), refer to the following.

☞ Page 73 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

A

Remote registers sent to CC-Link IE TSN (RWr0 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote registers sent to the CC-Link IE TSN master station are written in this area.

The value written in this area is sent to the CC-Link IE TSN master station.

For details on data communications using link devices (RWr), refer to the following.

 Page 71 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Device No.	Description
RWr0	Remote registers sent to the CC-Link IE TSN master station (1st station)
RWr1	
⋮	
$RWr(\square_{(1)})$	
$RWr(\square_{(1)} + 1)$	Remote registers sent to the CC-Link IE TSN master station (2nd station)
$RWr(\square_{(1)} + 2)$	
⋮	
$RWr(\square_{(2)})$	
⋮	Remote registers sent to the CC-Link IE TSN master station (m-th station)
$RWr(\square_{(m-1)} + 1)$	
$RWr(\square_{(m-1)} + 2)$	
⋮	
$RWr(\square_{(m)})$	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. ( Page 48 Module Parameter Setting)

$\square_{(1)}$: The value obtained after deducting 1 from the "RWr/ RWw points" of CC-Link IE Field Network device stations (1st station).

$\square_{(2)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st and 2nd stations).

$\square_{(m-1)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

$\square_{(m)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m)-th station).

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote registers sent to the CC-Link IE TSN master station are written in this area.

The value written in this area is sent to the CC-Link IE TSN master station.

For details on data communications using link devices (RWr), refer to the following.

 Page 73 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote registers received from CC-Link IE TSN (RWw0 onwards)

■When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Remote registers received from the CC-Link IE TSN master station are stored in this area.

For details on data communications using link devices (RWw), refer to the following.

☞ Page 71 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station

Device No.	Description
RWw0	Remote registers received from the CC-Link IE TSN master station (1st station)
RWw1	
⋮	
$RWw(\square_{(1)})$	
$RWw(\square_{(1)} + 1)$	Remote registers received from the CC-Link IE TSN master station (2nd station)
$RWw(\square_{(1)} + 2)$	
⋮	
$RWw(\square_{(2)})$	
⋮	Remote registers received from the CC-Link IE TSN master station (m-th station)
$RWw(\square_{(m-1)} + 1)$	
$RWw(\square_{(m-1)} + 2)$	
⋮	
$RWw(\square_{(m)})$	

m: The "Total number of device stations" set in the module parameter of the NZ2GN-GFB. (☞ Page 48 Module Parameter Setting)

$\square_{(1)}$: The value obtained after deducting 1 from the "RWr/ RWw points" of CC-Link IE Field Network device stations (1st station).

$\square_{(2)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st and 2nd stations).

$\square_{(m-1)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m-1)-th station).

$\square_{(m)}$: The value obtained after deducting 1 from the total "RWr/ RWw points" of CC-Link IE Field Network device stations (1st to (m)-th station).

■When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

Remote registers received from the CC-Link IE TSN master station are stored in this area.

For details on data communications using link devices (RWw), refer to the following.

☞ Page 73 When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

A

Appendix 3 Remote Buffer Memory

This section describes the remote buffer memory of the NZ2GN-GFB.

The remote buffer memory is separated into the following areas depending on the address.

Address	Area name	Reference
0000H to 07FFH	Parameter area	Page 198 Parameter area
0800H to 0FFFH	Monitor area	Page 200 Monitor area
1000H to 10FFH	Control area	Page 202 Control area
1100H to 1FFFH	Use prohibited	—
2000H to 201FH	Link special relay (SB) area of CC-Link IE Field Network	Page 203 Link special relay (SB) area of CC-Link IE Field Network
2020H to 2FFFFH	Use prohibited	—
3000H to 31FFH	Link special register (SW) area of CC-Link IE Field Network	Page 206 Link special register (SW) area of CC-Link IE Field Network
3200H to FFFFH	Use prohibited	—
10000H to 1FFFFH	CC-Link IE Field Network control/monitor area	Page 208 CC-Link IE Field Network control/monitor area
20000H to FFFFFFFFH	Use prohibited	—

Data can be read or written from/to remote buffer memory areas by using SLMP commands, or dedicated instructions of the CC-Link IE TSN master station.

For SLMP commands, refer to the following.

 Page 87 Communications using the SLMP

The following instructions can be used as dedicated instructions.

Classification	Dedicated instruction	Reference
Write	REMT0	 User's manual for the CC-Link IE TSN master station used
	REMT0D	
	REMT0IP	
	REMT0DIP	
Read	REMFR	
	REMFRD	
	REMFRIP	
	REMFRDIP	

Accessing use prohibited areas or accessing one area from a different area by using dedicated instructions of the master module or SLMP commands of CC-Link IE TSN results in the following.

Read/Write method	Operation
Dedicated instruction	The dedicated instruction is completed with an error, and 4041H is stored in the REMFR/REMT0 instruction execution status of the link special register of the CC-Link IE TSN master station.
SLMP command	An abnormal response is returned, with C05CH stored in the end code of that message.

Restriction

- Do not execute multiple dedicated instructions at the same time for a single NZ2GN-GFB. If multiple dedicated instructions are executed at the same time, the NZ2GN-GFB may not be able to receive the dedicated instructions, and the dedicated instructions may time out.
- Do not read or write data from/to any "Use prohibited" remote buffer memory areas. Doing so may result in an accident due to an incorrect output or malfunction.

List of buffer memory addresses

This section lists the remote buffer memory of the NZ2GN-GFB.
The remote buffer memory areas of the NZ2GN-GFB are assigned as shown below.
○: Access permitted, —: Access not permitted

Address	Area name	Access method		
		CC-Link IE TSN configuration of the engineering tool ^{*1}	Dedicated instruction of the master module	SLMP command
0000H to 07FFH	Parameter area	○	○	○
0800H to 0FFFH	Monitor area	—	○	○
1000H to 10FFH	Control area	—	○	○
2000H to 201FH	Link special relay (SB) area of CC-Link IE Field Network	—	○	○
3000H to 31FFH	Link special register (SW) area of CC-Link IE Field Network	—	○	○
10000H to 1FFFFH	CC-Link IE Field Network control/monitor area	—	○	○

^{*1} For details, refer to the following.
 Page 48 Module Parameter Setting

Parameter area

This area is used to perform the parameter read or the parameter write with the program.

The parameters can also be set from the parameter setting window of the engineering tool.

The parameter data set by these methods is written to this area of the remote buffer memory.



Parameter data is not enabled simply by having it written to the parameter area. To enable the parameter data, the two following operations are required.

- Turn on the 'Operation condition setting request flag' (RWw0.b9).
- Power off and on the NZ2GN-GFB or reset it.

The parameter data is written to the non-volatile memory when the 'Operation condition setting request flag' (RWw0.b9) is turned on. The parameter in the non-volatile memory is reflected when the NZ2GN-GFB is restarted, so power off and on the NZ2GN-GFB or reset it.

■Basic settings (CC-Link IE TSN)

○: Applicable, ×: Not applicable

Address	Name	Read	Write
0000H	CC-Link IE TSN network No.	○	○
0001H	CC-Link IE TSN station No.	○	○
0002H to 0007H	Use prohibited	—	—

■Basic settings (CC-Link IE Field Network)

○: Applicable, ×: Not applicable

Address	Name	Read	Write
0008H	CC-Link IE Field Network station type	○	○
0009H	CC-Link IE Field Network Network No.	○	○
000AH	Total number of device stations* ¹	○	○
000BH to 000FH	Use prohibited	—	—
0010H	CC-Link IE Field Network device station setting 1st station* ¹	Station No.	○
0011H		Station type	○
0012H		RX/Ry points	○
0013H		RWw/RW _r points	○
0014H		Reserved/Error invalid station	○
0015H to 0017H	Use prohibited	—	—
0018H	CC-Link IE Field Network device station setting 2nd station* ¹	Station No.	○
0019H		Station type	○
001AH		RX/Ry points	○
001BH		RWw/RW _r points	○
001CH		Reserved/Error invalid station	○
001DH to 001FH	Use prohibited	—	—
⋮	⋮		
0108H	CC-Link IE Field Network device station setting 32nd station* ¹	Station No.	○
0109H		Station type	○
010AH		RX/Ry points	○
010BH		RWw/RW _r points	○
010CH		Reserved/Error invalid station	○
010DH to 0117H	Use prohibited	—	—

*¹ When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, the parameters are reflected for the system operation.

■Application settings (CC-Link IE Field Network)

○: Applicable, ×: Not applicable

Address	Name	Read	Write
0118H to 0119H	Use prohibited	—	—
011AH	Communication mode* ¹	○	○
011BH	Event Reception from Other Stations	○	○
011CH to 011FH	Use prohibited	—	—

*¹ When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, the parameters are reflected for the system operation.

■Application settings (common)

○: Applicable, ×: Not applicable

Address	Name	Read	Write
0120H	I/O maintenance settings	CC-Link IE TSN side data link error station setting	○
0121H		CC-Link IE Field Network side data link error station setting	○
0122H		CC-Link IE TSN Master station output Hold/Clear setting during CPU STOP* ¹	○
0123H		CC-Link IE TSN Master station output mode upon CPU error* ¹	○
0124H to 0127H	Use prohibited		—
0128H	Dynamic routing		○
0129H	Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"		○
012AH	Valid number of routing setting		○
012BH to 01FFH	Use prohibited		—
0200H	CC-Link IE TSN station No. <-> IP address conversion setting No.1	Station No.	○
0201H		IP address (upper)	○
0202H		IP address (lower)	○
0203H	CC-Link IE TSN station No. <-> IP address conversion setting No.2	Station No.	○
0204H		IP address (upper)	○
0205H		IP address (lower)	○
⋮	⋮		
0365H	CC-Link IE TSN station No. <-> IP address conversion setting No.120	Station No.	○
0366H		IP address (upper)	○
0367H		IP address (lower)	○
0368H to 04FFH	Use prohibited		—
0500H	Routing setting No.1	Relay station network No.	○
0501H		Relay station No.	○
0502H		Target station network No.	○
0503H	Routing setting No.2	Relay station network No.	○
0504H		Relay station No.	○
0505H		Target station network No.	○
⋮	⋮		
07C4H	Routing setting No.237	Relay station network No.	○
07C5H		Relay station No.	○
07C6H		Target station network No.	○
07C7H to 07FFH	Use prohibited		—

*¹ When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, the parameters are reflected for the system operation.

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Monitor area

This area is used to read the parameters that are currently running using the program. The setting value is the same as the parameter area.



The parameters currently used in the module are stored in the monitor area.

■Basic settings (CC-Link IE TSN)

○: Applicable, ×: Not applicable

Address	Name	Read	Write
0800H	Setting value of CC-Link IE TSN Network No.	○	×
0801H	Setting value of CC-Link IE TSN Station No.	○	×
0802H to 0807H	Use prohibited	—	—

■Basic settings (CC-Link IE Field Network)

○: Applicable, ×: Not applicable

Address	Name		Read	Write
0808H	Setting value of CC-Link IE Field Network station type		○	×
0809H	Setting value of CC-Link IE Field Network network No.		○	×
080AH	Setting value of the total number of device stations		○	×
080BH to 080FH	Use prohibited		—	—
0810H	CC-Link IE Field Network device station setting 1st station	Setting value of station No.	○	×
0811H		Setting value of station type	○	×
0812H		Setting value of RX/Ry points	○	×
0813H		Setting value of RWw/RWr points	○	×
0814H		Setting value of reserved/error invalid station	○	×
0815H to 0817H	Use prohibited		—	—
0818H	CC-Link IE Field Network device station setting 2nd station	Setting value of station No.	○	×
0819H		Setting value of station type	○	×
081AH		Setting value of RX/Ry points	○	×
081BH		Setting value of RWw/RWr points	○	×
081CH		Setting value of reserved/error invalid station	○	×
081DH to 081FH	Use prohibited		—	—
⋮	⋮			
0908H	CC-Link IE Field Network device station setting 32nd station	Setting value of station No.	○	×
0909H		Setting value of station type	○	×
090AH		Setting value of RX/Ry points	○	×
090BH		Setting value of RWw/RWr points	○	×
090CH		Setting value of reserved/error invalid station	○	×
090DH to 0917H	Use prohibited		—	—

■Application settings (CC-Link IE Field Network)

○: Applicable, ×: Not applicable

Address	Name	Read	Write
0918H to 0919H	Use prohibited	—	—
091AH	Setting value of communication mode	○	×
091BH	Setting value of event reception from other stations	○	×
091CH to 091FH	Use prohibited	—	—

■Application settings (common)

○: Applicable, ×: Not applicable

Address	Name		Read	Write
0920H	I/O maintenance settings	Setting value of CC-Link IE TSN side data link error station setting	○	×
0921H		Setting value of CC-Link IE Field Network side data link error station setting	○	×
0922H		Setting value of CC-Link IE TSN master station output hold/clear setting during CPU STOP	○	×
0923H		Setting value of CC-Link IE TSN master station output mode upon CPU error	○	×
0924H to 0927H	Use prohibited		—	—
0928H	Setting value of dynamic routing		○	×
0929H	Setting value of valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"		○	×
092AH	Setting value of valid number of routing setting		○	×
092BH to 09FFH	Use prohibited		—	—
0A00H	CC-Link IE TSN station No. <-> IP address conversion setting No.1	Station No.	○	×
0A01H		IP address (upper)	○	×
0A02H		IP address (lower)	○	×
0A03H	CC-Link IE TSN station No. <-> IP address conversion setting No.2	Station No.	○	×
0A04H		IP address (upper)	○	×
0A05H		IP address (lower)	○	×
⋮	⋮			
0B65H	CC-Link IE TSN station No. <-> IP address conversion setting No.120	Station No.	○	×
0B66H		IP address (upper)	○	×
0B67H		IP address (lower)	○	×
0B68H to 0CFFH	Use prohibited		—	—
0D00H	Routing setting No.1	Setting value of relay station network No.	○	×
0D01H		Setting value of relay station No.	○	×
0D02H		Setting value of target station network No.	○	×
0D03H	Routing setting No.2	Setting value of relay station network No.	○	×
0D04H		Setting value of relay station No.	○	×
0D05H		Setting value of target station network No.	○	×
⋮	⋮			
0FC4H	Routing setting No.237	Setting value of relay station network No.	○	×
0FC5H		Setting value of relay station No.	○	×
0FC6H		Setting value of target station network No.	○	×
0FC7H to 0FFFH	Use prohibited		—	—

Control area

This area is used to change the operating status of the NZ2GN-GFB using the program.

○: Applicable, ×: Not applicable

Address	Name	Read	Write
1000H to 1001H	Use prohibited	—	—
1002H	Parameter area initialization command	×	○
1003H	Parameter area initialization completed	○	×
1004H to 10FFH	Use prohibited	—	—

Link special relay (SB) area of CC-Link IE Field Network

The various factors that occur when CC-Link IE Field Network is in operation are retained as bit information. In the NZ2GN-GFB, this information can be checked in the remote buffer memory using the program.

Point

- This area contains information related to CC-Link IE Field Network. For the CC-Link IE TSN status, refer to the user's manual for the CC-Link IE TSN master station used.
- Do not turn on or off the use prohibited area or the read-only area. Doing so may cause the system to malfunction.

○: Applicable, ×: Not applicable

Address	Bit	Name	Read	Write
2000H	Bit 0	Link startup of own station	○	○
	Bit 1	Link stop of own station	○	○
	Bit 2	System link startup	○	○
	Bit 3	System link stop	○	○
	Bit 4 to 5	Use prohibited	—	—
	Bit 6	Clear communication error count	○	○
	Bit 7 to 14	Use prohibited	—	—
	Bit 15	Error clear	○	○
2001H	Bit 0	Temporary error invalid station setting request	○	○
	Bit 1	Temporary error invalid station setting cancel request	○	○
	Bit 2	Reserved station function disable request	○	○
	Bit 3	Reserved station specification enable request	○	○
	Bit 4 to 15	Use prohibited	—	—
2002H to 2003H	—	Use prohibited	—	—
2004H	Bit 0 to 3	Use prohibited	—	—
	Bit 4	Station setting 1 of own station	○	×
	Bit 5 to 6	Use prohibited	—	—
	Bit 7	Baton pass status of own station	○	×
	Bit 8	Use prohibited	—	—
	Bit 9	Data link error status of own station	○	×
	Bit 10 to 12	Use prohibited	—	—
	Bit 13	Received parameter error	○	×
	Bit 14 to 15	Use prohibited	—	—
2005H	Bit 0	Link startup request accept status of own station	○	×
	Bit 1	Link startup completion status of own station	○	×
	Bit 2	Link stop request accept status of own station	○	×
	Bit 3	Link stop completion status of own station	○	×
	Bit 4	System link startup request accept status	○	×
	Bit 5	System link startup completion status	○	×
	Bit 6	System link stop request accept status	○	×
	Bit 7	System link stop completion status	○	×
	Bit 8	Temporary error invalid station setting request accept status	○	×
	Bit 9	Temporary error invalid station setting request completion status	○	×
	Bit 10	Temporary error invalid station setting cancel request accept status	○	×
	Bit 11	Temporary error invalid station setting cancel completion status	○	×
	Bit 12	Reserved station function disable request accept status	○	×
	Bit 13	Reserved station function disable completion status	○	×
	Bit 14	Reserved station setting enable request accept status	○	×
	Bit 15	Reserved station setting enable completion status	○	×

Address	Bit	Name	Read	Write
2006H	Bit 0 to 9	Use prohibited	—	—
	Bit 10	PORT link-down status of own station	○	×
	Bit 11	Use prohibited	—	—
	Bit 12	PORT current error frame reception status of own station (1)	○	×
	Bit 13	Use prohibited	—	—
	Bit 14	PORT error frame reception detection status of own station (latch) (1)	○	×
	Bit 15	Use prohibited	—	—
2007H	Bit 0	Master station information	○	×
	Bit 1	Submaster station information	○	×
	Bit 2	Scan mode setting information	○	×
	Bit 3	Use prohibited	—	—
	Bit 4	Reserved station specification status	○	×
	Bit 5	Error invalid station setting status	○	×
	Bit 6	Use prohibited	—	—
	Bit 7	Parameter reception status	○	×
	Bit 8 to 10	Use prohibited	—	—
	Bit 11	Input data status of data link faulty station	○	×
	Bit 12 to 15	Use prohibited	—	—
2008H	Bit 0 to 11	Use prohibited	—	—
	Bit 12	PORT current error frame reception status of own station (2)	○	×
	Bit 13	Use prohibited	—	—
	Bit 14	PORT error frame reception detection status of own station (latch) (2)	○	×
	Bit 15	Use prohibited	—	—
2009H	Bit 0 to 7	Use prohibited	—	—
	Bit 8	Network configuration mismatch occurrence status	○	×
	Bit 9	Number of connected modules over occurrence status	○	×
	Bit 10 to 15	Use prohibited	—	—
200AH	Bit 0	Baton pass error status of each station	○	×
	Bit 1	Baton pass error status of master station	○	×
	Bit 2 to 14	Use prohibited	—	—
	Bit 15	Baton pass error status of station No.0	○	×
200BH	Bit 0	Data link error status of each station	○	×
	Bit 1	Data link error status of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	Network connection status of each station	○	×
	Bit 9 to 14	Use prohibited	—	—
	Bit 15	Data link error status of station No.0	○	×
200CH	Bit 0	Reserved station setting status	○	×
	Bit 1 to 15	Use prohibited	—	—
200DH	Bit 0	Error invalid station setting current status	○	×
	Bit 1 to 15	Use prohibited	—	—
200EH	Bit 0	Temporary error invalid station setting status	○	×
	Bit 1 to 7	Use prohibited	—	—
	Bit 8	Station type match status of each station	○	×
	Bit 9 to 15	Use prohibited	—	—
200FH	Bit 0	CPU operating status of each station	○	×
	Bit 1	CPU operating status of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	Network number match status	○	×
	Bit 9 to 14	Use prohibited	—	—
	Bit 15	CPU operating status of station No.0	○	×

Address	Bit	Name	Read	Write
2010H	Bit 0	CPU moderate/major error status of each station	○	×
	Bit 1	CPU moderate/major error status of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	Station number duplication occurrence status	○	×
	Bit 9 to 14	Use prohibited	—	—
	Bit 15	CPU moderate/major error status of station No.0	○	×
2011H	Bit 0	CPU minor error status of each station	○	×
	Bit 1	CPU minor error status of master station	○	×
	Bit 2 to 14	Use prohibited	—	—
	Bit 15	CPU minor error status of station No.0	○	×
2012H	Bit 0	PORT1 current error frame reception status (1)	○	×
	Bit 1	PORT1 current error frame reception status of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	PORT1 current error frame reception status (2)	○	×
	Bit 9	PORT1 current error frame reception status of station No.0 (2)	○	×
	Bit 10 to 14	Use prohibited	—	—
	Bit 15	PORT1 current error frame reception status of station No.0 (1)	○	×
2013H	Bit 0	PORT2 current error frame reception status (1)	○	×
	Bit 1	PORT2 current error frame reception status of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	PORT2 current error frame reception status (2)	○	×
	Bit 9	PORT2 current error frame reception status of station No.0 (2)	○	×
	Bit 10 to 14	Use prohibited	—	—
	Bit 15	PORT2 current error frame reception status of station No.0 (1)	○	×
2014H	Bit 0	PORT1 error frame reception detection status (1)	○	×
	Bit 1	PORT1 error frame detection of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	PORT1 error frame reception detection status (2)	○	×
	Bit 9	PORT1 error frame reception detection status of station No.0 (2)	○	×
	Bit 10 to 14	Use prohibited	—	—
	Bit 15	PORT1 error frame reception detection status of station No.0 (1)	○	×
2015H	Bit 0	PORT2 error frame reception detection status (1)	○	×
	Bit 1	PORT2 error frame detection of master station	○	×
	Bit 2 to 7	Use prohibited	—	—
	Bit 8	PORT2 error frame reception detection status (2)	○	×
	Bit 9	PORT2 error frame reception detection status of station No.0 (2)	○	×
	Bit 10 to 14	Use prohibited	—	—
	Bit 15	PORT2 error frame reception detection status of station No.0 (1)	○	×
2016H	—	Use prohibited	—	—
2017H	Bit 0	Parameter error status of each station	○	×
	Bit 1 to 15	Use prohibited	—	—
2018H	Bit 0	Reserved station function disable status	○	×
	Bit 1 to 15	Use prohibited	—	—
2019H to 201FH	—	Use prohibited	—	—

Link special register (SW) area of CC-Link IE Field Network

The various factors that occur when CC-Link IE Field Network is in operation are retained as word information.

In the NZ2GN-GFB, this information can be checked in the remote buffer memory using the program.

Point

- This area contains information related to CC-Link IE Field Network. For the CC-Link IE TSN status, refer to the user's manual for the CC-Link IE TSN master station used.
- Do not turn on or off the use prohibited area or the read-only area. Doing so may cause the system to malfunction.

○: Applicable, ×: Not applicable

Address	Name	Read	Write
3000H	Link startup/stop direction	○	○
3001H to 3008H	Link startup/stop station specification	○	○
3009H to 300FH	Use prohibited	—	—
3010H to 3017H	Reserved station function disable/temp error invalid station setting	○	○
3018H to 303FH	Use prohibited	—	—
3040H	Network number	○	×
3041H	Use prohibited	—	—
3042H	Station number	○	×
3043H	Mode status of own station	○	×
3044H to 3046H	Use prohibited	—	—
3047H	Baton pass status of own station	○	×
3048H	Cause of baton pass interruption	○	×
3049H	Cause of data link stop	○	×
304AH	Data link stop request station	○	×
304BH to 304FH	Use prohibited	—	—
3050H	Link startup result of own station	○	×
3051H	Link stop result of own station	○	×
3052H	System link startup result	○	×
3053H	System link stop result	○	×
3054H	Temporary error invalid station setting result	○	×
3055H	Temporary error invalid station setting cancel result	○	×
3056H	Result of reserved station function disable request	○	×
3057H	Result of reserved station function enable request	○	×
3058H	Setting value of total device stations	○	×
3059H	Present value of total device stations	○	×
305AH	Maximum baton pass station number	○	×
305BH	Maximum data link station number	○	×
305CH to 305FH	Use prohibited	—	—
3060H	Maximum link scan time	○	×
3061H	Minimum link scan time	○	×
3062H	Current link scan time	○	×
3063H	Constant link scan time setting value	○	×
3064H	Connection status of own station	○	×
3065H	Use prohibited	—	—
3066H to 3067H	Actual link scan time	○	×
3068H	PORT receive error occurrence rate of own station (max.)	○	×
3069H	PORT receive error occurrence rate of own station (present)	○	×
306AH to 306CH	Use prohibited	—	—
306DH	Master operating station number	○	×
306EH	Submaster operating station number	○	×
306FH to 3073H	Use prohibited	—	—

Address	Name	Read	Write
3074H	PORT cable disconnection detection count of own station	○	×
3075H	PORT receive error detection count of own station	○	×
3076H to 3077H	PORT total no. of receive data of own station	○	×
3078H to 309FH	Use prohibited	—	—
30A0H to 30A7H	Baton pass status of each station	○	×
30A8H to 30AFH	Use prohibited	—	—
30B0H to 30B7H	Data link status of each station	○	×
30B8H to 30BFH	Network connection status	○	×
30C0H to 30C7H	Reserved station setting status	○	×
30C8H to 30CFH	Parameter setting status	○	×
30D0H to 30D7H	Error invalid station setting status	○	×
30D8H to 30DFH	Use prohibited	—	—
30E0H to 30E7H	Temporary error invalid station setting status	○	×
30E8H to 30EFH	Station type match status	○	×
30F0H to 30F7H	CPU operating status of each station	○	×
30F8H to 30FFH	Network number match status	○	×
3100H to 3107H	CPU moderate/major error status of each station	○	×
3108H to 310FH	Station number duplication occurrence status	○	×
3110H to 3117H	CPU minor error status of each station	○	×
3118H to 311FH	Use prohibited	—	—
3120H to 3127H	PORT1 current error frame reception status of each station (1)	○	×
3128H to 312FH	PORT1 current error frame reception status of each station (2)	○	×
3130H to 3137H	PORT2 current error frame reception status of each station (1)	○	×
3138H to 313FH	PORT2 current error frame reception status of each station (2)	○	×
3140H to 3147H	PORT1 error frame reception detection status (1)	○	×
3148H to 314FH	PORT1 error frame reception detection status (2)	○	×
3150H to 3157H	PORT2 error frame reception detection status (1)	○	×
3158H to 315FH	PORT2 error frame reception detection status (2)	○	×
3160H to 316FH	Use prohibited	—	—
3170H to 3177H	Parameter error status of each station	○	×
3178H to 317FH	Use prohibited	—	—
3180H to 3187H	Reserved station cancel setting status	○	×
3188H to 31FFH	Use prohibited	—	—

CC-Link IE Field Network control/monitor area

This area is used to control CC-Link IE Field Network of the NZ2GN-GFB using the program.

○: Applicable, ×: Not applicable

Address	Name		Read	Write
10000H to 14BFFH	Use prohibited		—	—
14C00H to 14CF1H	RX offset/size information		○	×
14CF2H to 14CFFH	Use prohibited		—	—
14D00H to 14DF1H	RY offset/size information		○	×
14DF2H to 14DFFH	Use prohibited		—	—
14E00H to 14EF1H	RWw offset/size information		○	×
14EF2H to 14EFFH	Use prohibited		—	—
14F00H to 14FF1H	RWr offset/size information		○	×
14FF2H to 1501FH	Use prohibited		—	—
15020H to 15023H	Own station information	Network card information	○	×
15024H to 15027H		Use prohibited	—	—
15028H to 15038H		Controller information	○	×
15039H to 1503FH		Use prohibited	—	—
15040H to 15043H	Other station information (station No.1)	Network card information	○	×
15044H to 15047H		Use prohibited	—	—
15048H to 15058H		Controller information	○	×
15059H to 1505FH		Use prohibited	—	—
15060H to 15063H	Other station information (station No.2)	Network card information	○	×
15064H to 15067H		Use prohibited	—	—
15068H to 15078H		Controller information	○	×
15079H to 1507FH		Use prohibited	—	—
⋮	⋮			
15F20H to 15F23H	Other station information (station No.120)	Network card information	○	×
15F24H to 15F27H		Use prohibited	—	—
15F28H to 15F38H		Controller information	○	×
15F39H to 15F3FH		Use prohibited	—	—
15F40H to 15F43H	Other station information (station No.0)	Network card information	○	×
15F44H to 15F47H		Use prohibited	—	—
15F48H to 15F58H		Controller information	○	×
15F59H to 15F5FH		Use prohibited	—	—
15F60H to 15F9FH	Use prohibited		—	—
15FA0H	Communication path determination status	Network No.1 to 16	○	×
15FA1H to 15FAFH		Network No.17 to 239	○	×
15FB0H to 15FFFFH	Use prohibited		—	—
16000H to 163FFH	Transient transmission area with other station		○	○
16400H to 1750FH	Use prohibited		—	—
17510H to 1758FH	PORT1 line error occurrence rate (max.)		○	×
17590H to 1760FH	PORT1 line error occurrence rate (present)		○	×
17610H to 1768FH	PORT2 line error occurrence rate (max.)		○	×
17690H to 1770FH	PORT2 line error occurrence rate (present)		○	×
17710H to 1FFFFH	Use prohibited		—	—

Details of remote buffer memory (parameter area)

CC-Link IE TSN network No.

■Address

Item	Address
CC-Link IE TSN network No.	0000H

■Description

This address is used to set the network No. of CC-Link IE TSN of the NZ2GN-GFB.

Set the value configured for the CC-Link IE TSN master station to be connected.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}								Setting value							

*1 A value set in bit 8 to bit 15 is ignored.

Setting value	Network No.
0001H	1
0002H	2
⋮	⋮
00EFH	239

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

- If a different value from the CC-Link IE TSN master station setting is set, it may not be possible to perform transient transmission.
- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0280H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the CC-Link IE Field Network No. and the setting value overlap, an error (error code: 0290H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

A

CC-Link IE TSN station No.

■Address

Item	Address
CC-Link IE TSN station No.	0001H

■Description

This address is used to set the station number of CC-Link IE TSN of the NZ2GN-GFB.

Set the value configured for your own station under the network configuration settings of the CC-Link IE TSN master station to be connected.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}									Setting value						

*1 A value set in bit 7 to bit 15 is ignored.

Setting value	Station No.
0001H	1
0002H	2
⋮	⋮
0078H	120

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

- If a different value from the CC-Link IE TSN master station setting is set, it may not be possible to perform transient transmission.
- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0281H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

CC-Link IE Field Network station type

■Address

Item	Address
CC-Link IE Field Network station type	0008H

■Description

This address is used to set the station type of CC-Link IE Field Network of the NZ2GN-GFB.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}														Setting value	

*1 A value set in bit 1 to bit 15 is ignored.

- On: Local station
- Off: Master station

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

When a parameter is changed, change the CC-Link IE Field Network station number setting switch to match the new station type. ( Page 29 Settings for CC-Link IE Field Network station number setting switch)

CC-Link IE Field Network (network No.)

■Address

Item	Address
CC-Link IE Field Network network No.	0009H

■Description

This address is used to set the network No. of CC-Link IE Field Network of the NZ2GN-GFB.
Set a network No. that does not overlap with another, including CC-Link IE TSN.
When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, set the value configured for the CC-Link IE Field Network master station.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0*1								Setting value							

*1 A value set in bit 8 to bit 15 is ignored.

Setting value	Network No.
0001H	1
0002H	2
⋮	⋮
00EFH	239

To enable a set parameter, refer to the following.
📖 Page 192 Operation condition setting request flag (RWw0.b9)

**Point**

- If the parameter overlaps with other network numbers, transient transmissions may not be successful.
- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0282H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the CC-Link IE TSN network No. and the setting value overlap, an error (error code: 0290H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, setting a different value from the CC-Link IE Field Network master station to be connected will cause data link to fail on CC-Link IE Field Network.

Total number of device stations

■Address

Item	Address
Total number of device stations	000AH

■Description

This address is used to set the total number of device stations for CC-Link IE Field Network (number of modules connected to CC-Link IE Field Network device stations).

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}										Setting value					

*1 A value set in bit 6 to bit 15 is ignored.

Setting value	Total number of device stations
0001H	1
0002H	2
⋮	⋮
0020H	32

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0283H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Station number (CC-Link IE Field Network device station setting)

■Address

CC-Link IE Field Network device station	Address
1st station	0010H
2nd station	0018H
3rd station	0020H
⋮	⋮
32nd station	0108H

■Description

The CC-Link IE Field Network device station number is set in the unit of device station.

Set the number so that it does not overlap with other device stations.

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

If the set device station exceeds the number of stations set in the total number of device stations, the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0*1									Setting value						

*1 A value set in bit 7 to bit 15 is ignored.

Setting value	Station number
0001H	1
0002H	2
⋮	⋮
0078H	120

To enable a set parameter, refer to the following.

📖 Page 192 Operation condition setting request flag (RWw0.b9)

A

Point

- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0284H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the device station numbers overlap, an error (error code: 0291H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Station type (CC-Link IE Field Network device station setting)

■Address

CC-Link IE Field Network device station	Address
1st station	0011H
2nd station	0019H
3rd station	0021H
⋮	⋮
32nd station	0109H

■Description

The CC-Link IE Field Network device station type is set for each device station. Select the same station type as that of the module connected to the network.

For the station type that can be set to a connected device, refer to the manual for the connected device.

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

If the set device station exceeds the number of stations set in the total number of device stations, the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}														Setting value	

*1 A value set in bit 2 to bit 15 is ignored.

Setting value	Station type
0000H	Remote I/O station
0001H	Remote device station
0002H	Intelligent device station
0003H	Local station

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)



If the station type differs from that of the module connected to the network, data link cannot be performed for that module.

RX/RX points (CC-Link IE Field Network device station setting)

■Address

CC-Link IE Field Network device station	Address
1st station	0012H
2nd station	001AH
3rd station	0022H
⋮	⋮
32nd station	010AH

■Description

The assigned points for RX/RX of CC-Link IE Field Network device stations are set for each device station. (increments of 16)
The RX/RX points that can be set in this area differ depending on the connected device. For details, refer to the manual for the connected device.

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

If the set device station exceeds the number of stations set in the total number of device stations, the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}				Setting value											

*1 A value set in bit 12 to bit 15 is ignored.

Set the value for each range corresponding to the following station types in increments of 16.

Set the RX/RX points of device stations so that the total does not exceed the maximum number of link points (1 network) of CC-Link IE Field Network.

CC-Link IE Field Network device station type	Setting range
Remote I/O station	0000H to 0040H (0 to 64)
Remote device station	0000H to 0080H (0 to 128)
Intelligent device station	0000H to 0800H (0 to 2048)
Local station	

To enable a set parameter, refer to the following.

☞ Page 192 Operation condition setting request flag (RWw0.b9)

A

Point

- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0285H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the RX/RX points are not set in increments of 16, an error (error code: 0294H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the total number of RX/RX points exceeds the maximum number of link points (1 network) of CC-Link IE Field Network, an error (error code: 0292H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value. (☞ Page 16 Performance Specifications)
- If the CC-Link IE TSN Class setting is set to A, set the values so that the total number of "RX/RX points" and "RWw/RWw points" does not exceed 2048 bytes. (☞ Page 95 CC-Link IE TSN Class setting function)

RWw/ RWr points (CC-Link IE Field Network device station setting)

■Address

CC-Link IE Field Network device station	Address
1st station	0013H
2nd station	001BH
3rd station	0023H
⋮	⋮
32nd station	010BH

■Description

The assigned points for RWw/RWr of CC-Link IE Field Network device stations are set for each device station. (increments of 4)

The RWw/RWr points that can be set in this area differ depending on the connected device. For details, refer to the manual for the connected device.

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

If the set device station exceeds the number of stations set in the total number of device stations, the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}					Setting value										

*1 A value set in bit 11 to bit 15 is ignored.

CC-Link IE Field Network device station type	Communication mode	Setting range
Remote I/O station	Normal/High-speed	Fixed to 0000H (fixed to 0)
Remote device station	Normal/High-speed	0000H to 0040H (0 to 64)
Intelligent device station	Normal/High-speed	0000H to 0400H (0 to 1024)
Local station	Normal	0000H to 0400H (0 to 1024)
	High-speed	0000H to 0100H (0 to 256)

Set the value for each range corresponding to the above station types and communication modes in increments of 4.

Set the RWw/RWr points of device stations so that the total does not exceed the maximum number of link points (1 network) of CC-Link IE Field Network.

To enable a set parameter, refer to the following.

☞ Page 192 Operation condition setting request flag (RWw0.b9)

Point

- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0286H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the RWw/RWr points are not set in increments of 4, an error (error code: 0295H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the total number of RWw/RWr points exceeds the maximum number of link points (1 network) of CC-Link IE Field Network, an error (error code: 0293H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value. (☞ Page 16 Performance Specifications)
- If the CC-Link IE TSN Class setting is set to A, set the values so that the total number of "RX/Ry points" and "RWw/RWr points" does not exceed 2048 bytes. (☞ Page 95 CC-Link IE TSN Class setting function)

Reserved/error invalid station (CC-Link IE Field Network device station setting)

■Address

CC-Link IE Field Network device station	Address
1st station	0014H
2nd station	001CH
3rd station	0024H
⋮	⋮
32nd station	010CH

■Description

This address is used to set a CC-Link IE Field Network device station as a reserved station or an error invalid station.

For details, refer to the following.

☞ Page 98 Reserved station setting, Page 99 Error invalid station setting

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

If the set device station exceeds the number of stations set in the total number of device stations, the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}														Setting value	

*1 A value set in bit 2 to bit 15 is ignored.

- 0000H: No setting
- 0001H: Reserved station
- 0002H: Error invalid station

To enable a set parameter, refer to the following.

☞ Page 192 Operation condition setting request flag (RWw0.b9)

A

Point

If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0287H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Communication mode

■Address

Item	Address
Communication mode	011AH

■Description

This address is used to set the communication mode of own station of CC-Link IE Field Network.

For details, refer to the following.

☞ Page 280 Differences in Cyclic Transmission Modes

Set this area if the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

It does not need to be configured if NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Any value set is ignored.)

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}															Setting value

*1 A value set in bit 1 to bit 15 is ignored.

- On: High-speed
- Off: Normal

To enable a set parameter, refer to the following.

☞ Page 192 Operation condition setting request flag (RWw0.b9)

Event Reception from Other Stations

■Address

Item	Address
Event Reception from Other Stations	011BH

■Description

This address is used to set whether to enable the acquisition of events that occur in other stations of CC-Link IE Field Network.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}															Setting value

*1 A value set in bit 1 to bit 15 is ignored.

- On: Enable
- Off: Disable

To enable a set parameter, refer to the following.

☞ Page 192 Operation condition setting request flag (RWw0.b9)

I/O maintenance settings

■Address

Item	Address
CC-Link IE TSN side data link error station setting	0120H
CC-Link IE Field Network side data link error station setting	0121H
CC-Link IE TSN Master station output Hold/Clear setting during CPU STOP	0122H
CC-Link IE TSN master station output mode upon CPU error	0123H

■Description

This address is used to set whether to hold or clear the NZ2GN-GFB data to be transmitted when certain conditions are met. For details, refer to the following.

📖 Page 75 I/O maintenance settings

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, 'Output hold/clear setting during CC-Link IE TSN master station CPU STOP' (0122H) and 'Output mode setting during CC-Link IE TSN master station CPU error' (0123H) do not need to be set. (Any value set is ignored.)

While 'CC-Link IE TSN master station output mode upon CPU error' (0123H) is set to 0 (Off), cyclic transmission to CC-Link IE Field Network device stations stops if a stop error occurs in the CC-Link IE TSN master station CPU module. While 1 (On) is set, cyclic transmission continues.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0**															Setting value

*1 A value set in bit 1 to bit 15 is ignored.

- On: Hold
- Off: Clear

To enable a set parameter, refer to the following.

📖 Page 192 Operation condition setting request flag (RWw0.b9)

Dynamic routing

■Address

Item	Address
Dynamic routing	0128H

■Description

Select whether to enable the auto generation of communication paths using dynamic routing (dynamic routing function) on the NZ2GN-GFB.

If a routing setting has already been configured, the routing setting that is configured first is applied.

For details, refer to the following.

📖 Page 88 Communications using the engineering tool

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0**															Setting value

*1 A value set in bit 1 to bit 15 is ignored.

- On: Enable
- Off: Disable

To enable a set parameter, refer to the following.

📖 Page 192 Operation condition setting request flag (RWw0.b9)

Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"

■Address

Item	Address
Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"	0129H

■Description

This address is used to set the number of CC-Link IE TSN station No. <-> IP address conversion setting to enable.

The CC-Link IE TSN station No. <-> IP address conversion setting needs to be set when communicating between different networks with the NZ2GN-GFB as a relay station and the other station on CC-Link IE TSN is a request station, relay station, or destination station.

For details, refer to the following.

 Page 56 CC-Link IE TSN station No. <-> IP address conversion setting

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}									Setting value						

*1 A value set in bit 7 to bit 15 is ignored.

- 0000H: Not set
- 0001H to 0078H: 1 to 120 (unit)

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 028AH) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Valid number of routing setting

■Address

Item	Address
Valid number of routing setting	012AH

■Description

This address is used to set the number of routing setting to enable.

The routing setting is used when the system has network modules that do not support dynamic routing, and when setting clear communication paths.

For details, refer to the following.

 Page 88 Communications using the engineering tool

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}								Setting value							

- ^{*1} A value set in bit 8 to bit 15 is ignored.
- 0000H: Not set
 - 0001H to 00EDH: 1 to 237 (unit)
- To enable a set parameter, refer to the following.
-  Page 192 Operation condition setting request flag (RWw0.b9)

Point

If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 028BH) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Station No. (CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120)

■Address

CC-Link IE TSN station No. <-> IP address conversion setting No.	Address
No.1	0200H
No.2	0203H
No.3	0206H
⋮	⋮
No.120	0365H

■Description

This address is used to set the station number of the other station on CC-Link IE TSN that is a request station, relay station, or destination station when communicating between different networks with the NZ2GN-GFB as a relay station.

For details, refer to the following.

 Page 56 CC-Link IE TSN station No. <-> IP address conversion setting

If the setting No. used for setting the station No. exceeds the number of units set in "Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting" (0129H), the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0*1									Setting value						

*1 A value set in bit 7 to bit 15 is ignored.

Setting value	Station No.
0000H	0
0001H	1
⋮	⋮
0078H	120

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 028CH) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the station numbers overlap, an error (error code: 0296H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

IP address (CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120)

■Address

CC-Link IE TSN station No. <-> IP address conversion setting No.	Address	
	IP address (upper)	IP address (lower)
No.1	0201H	0202H
No.2	0204H	0205H
No.3	0207H	0208H
⋮	⋮	⋮
No.120	0366H	0367H

■Description

This address is used to set the IP address of the other station on CC-Link IE TSN that is a request station, relay station, or destination station when communicating between different networks with the NZ2GN-GFB as a relay station.

For details, refer to the following.

☞ Page 56 CC-Link IE TSN station No. <-> IP address conversion setting

If the setting No. used for setting the IP address exceeds the number of units set in "Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting" (0129H), the set value is not reflected and ignored.

■Setting value

IP address (upper)															
b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
IP address (2nd octet)								IP address (1st octet)							
IP address (lower)															
b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
IP address (4th octet)								IP address (3rd octet)							

- First octet of the IP address: 00H to DFH (0 to 223)
- Second octet of the IP address: 00H to FFH (0 to 255)
- Third octet of the IP address: 00H to FFH (0 to 255)
- Fourth octet of the IP address: 00H to FFH (0 to 255)

To enable a set parameter, refer to the following.

☞ Page 192 Operation condition setting request flag (RWw0.b9)

A



- If station number 0 is not set, it is converted using the IP address of the CC-Link IE TSN master station.
- If a value outside the configurable range (other than 0.0.0.1 to 223.255.255.254) is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 0299H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If IP addresses overlap, an error (error code: 0297H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Relay station network No. (Routing setting No.1 to 237)

■Address

Routing setting No.	Address
Routing setting No.1	0500H
Routing setting No.2	0503H
Routing setting No.3	0506H
⋮	⋮
Routing setting No.237	07C4H

■Description

This address is used to set the network No. of the first relay station that will be passed to reach the network No. of the destination station in the NZ2GN-GFB.

For the relay station, set the station of CC-Link IE TSN or CC-Link IE Field Network to which your own station is connected. If the routing setting No. that has been set exceeds the number of units set in 'Valid number of routing setting' (012AH), the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}								Setting value							

*1 A value set in bit 8 to bit 15 is ignored.

- 0001H to 00EFH: Network No.1 to 239

To enable a set parameter, refer to the following.

📖 Page 192 Operation condition setting request flag (RWw0.b9)



If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 028DH) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Relay station No. (Routing setting No.1 to 237)

■Address

Routing setting No.	Address
Routing setting No.1	0501H
Routing setting No.2	0504H
Routing setting No.3	0507H
⋮	⋮
Routing setting No.237	07C5H

■Description

This address is used to set the station No. of the first relay station that will be passed to reach the network No. of the destination station in the NZ2GN-GFB.

For the relay station, set the station of CC-Link IE TSN or CC-Link IE Field Network to which your own station is connected. If the routing setting No. that has been set exceeds the number of units set in 'Valid number of routing setting' (012AH), the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}									Setting value						

*1 A value set in bit 7 to bit 15 is ignored.

- 0000H to 0078H: Station number 0 to 120

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)



If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 028EH) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

A

Target station network No. (Routing setting No.1 to 237)

■Address

Routing setting No.	Address
Routing setting No.1	0502H
Routing setting No.2	0505H
Routing setting No.3	0508H
⋮	⋮
Routing setting No.237	07C6H

■Description

This address is used to set the network No. of the final arrival station in the NZ2GN-GFB.

Set a network No. for the destination station that does not overlap with any others. ( Page 88 Communications using the engineering tool)

If the routing setting No. that has been set exceeds the number of units set in 'Valid number of routing setting' (012AH), the set value is not reflected and ignored.

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}								Setting value							

*1 A value set in bit 8 to bit 15 is ignored.

- 0001H to 00EFH: Network No.1 to 239

To enable a set parameter, refer to the following.

 Page 192 Operation condition setting request flag (RWw0.b9)

Point

- If a value outside the configurable range is written and the 'Operating condition setting request flag' (RWw0.b9) is turned on, an error (error code: 028FH) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.
- If the network No. of the destination station overlaps with another, an error (error code: 0298H) occurs and all parameters are not saved in the non-volatile memory of the NZ2GN-GFB. Set it again after correcting the value.

Details of remote buffer memory (monitor area)

This area is used to read the NZ2GN-GFB module parameters that are currently running using the program.
The monitor area is the same as the parameter area of the remote buffer memory.
For details, refer to the following.

Basic settings (CC-Link IE TSN)

Address	Name	Reference
0800H	Setting value of CC-Link IE TSN network No.	Page 209 CC-Link IE TSN network No.
0801H	Setting value of CC-Link IE TSN station No.	Page 210 CC-Link IE TSN station No.

Basic settings (CC-Link IE Field Network)

Address	Name	Reference
0808H	Setting value of CC-Link IE Field Network station type	Page 210 CC-Link IE Field Network station type
0809H	Setting value of CC-Link IE Field Network network No.	Page 211 CC-Link IE Field Network (network No.)
080AH	Setting value of the total number of device stations	Page 212 Total number of device stations
0810H onwards	CC-Link IE Field Network device station setting 1st to 32nd stations	Setting value of station No. Page 213 Station number (CC-Link IE Field Network device station setting)
0811H onwards		Setting value of station type Page 214 Station type (CC-Link IE Field Network device station setting)
0812H onwards		Setting value of RX/Ry points Page 215 RX/Ry points (CC-Link IE Field Network device station setting)
0813H onwards		Setting value of RWw/RWr points Page 216 RWw/ RWr points (CC-Link IE Field Network device station setting)
0814H onwards		Setting value of reserved/error invalid station Page 217 Reserved/error invalid station (CC-Link IE Field Network device station setting)

Application settings (CC-Link IE Field Network)

Address	Name	Reference
091AH	Setting value of communication mode	Page 218 Communication mode
091BH	Setting value of event reception from other stations	Page 218 Event Reception from Other Stations

Application settings (common)

Address	Name		Reference
0920H	I/O maintenance settings	Setting value of CC-Link IE TSN side data link error station setting	Page 219 I/O maintenance settings
0921H		Setting value of CC-Link IE Field Network side data link error station setting	
0922H		Setting value of CC-Link IE TSN master station output hold/clear setting during CPU STOP	
0923H		Setting value of CC-Link IE TSN master station output mode upon CPU error	
0928H	Setting value of dynamic routing		Page 219 Dynamic routing
0929H	Setting value of valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"		Page 220 Valid number of "CC-Link IE TSN station No. <-> IP address conversion setting"
092AH	Setting value of valid number of routing setting		Page 221 Valid number of routing setting
0A00H onwards	CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120	Station No.	Page 222 Station No. (CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120)
0A01H onwards		IP address (upper)	Page 223 IP address (CC-Link IE TSN station No. <-> IP address conversion setting No.1 to 120)
0A02H onwards		IP address (lower)	
0D00H onwards	Routing setting No.1 to 238	Setting value of relay station network No.	Page 224 Relay station network No. (Routing setting No.1 to 237)
0D01H onwards		Setting value of relay station No.	Page 225 Relay station No. (Routing setting No.1 to 237)
0D02H onwards		Setting value of target station network No.	Page 226 Target station network No. (Routing setting No.1 to 237)

Details of remote buffer memory (control area)

Parameter area initialization command

■Address

Item	Address
Parameter area initialization command	1002H

■Description

When this command is turned on, parameters saved in the non-volatile memory in the NZ2GN-GFB are set as default values. Once the parameters have been set as default values, 'Parameter area initialization completed' (1003H) is turned on.

■Setting value

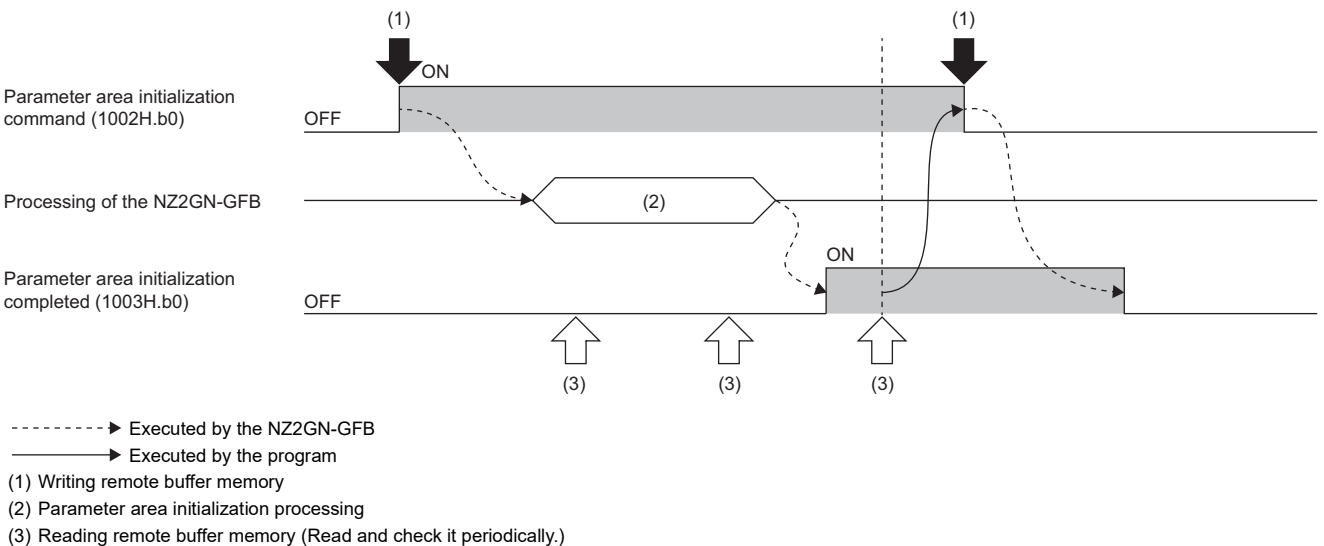
b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0*1															Setting value

*1 A value set in bit 1 to bit 15 is ignored.

- On: The command is set.
- Off: The command is not set.

■Operation of parameter clear

After parameter initialization, turn off and on the NZ2GN-GFB for normal operation of the system.



Point

- When this command is turned on, parameters saved in the non-volatile memory in the NZ2GN-GFB are set as default values, but parameters that are in operation are not changed.
- If a non-volatile memory error (error code: 0108H) occurs, use this command to clear the NZ2GN-GFB error.

Parameter area initialization completed

■Address

Item	Address
Parameter area initialization completed	1003H

■Description

This command is turned on once parameters saved in the non-volatile memory in the NZ2GN-GFB are set as default values using 'Parameter area initialization command' (1002H).

■Setting value

b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
Fixed to 0 ^{*1}															Setting value

^{*1} A value set in bit 1 to bit 15 is ignored.

- On: Initialization completed
- Off: Not implemented yet

For operation of the parameter clear, refer to the following.

 Page 229 Parameter area initialization command

Details of remote buffer memory (Link special relay (SB) area of CC-Link IE Field Network)

Link startup of own station (2000H.b0)

Starts data link (cyclic transmission) of own station.

- Off: Startup not requested
- On: Startup requested (valid at rising edge)

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off.
- Enabled when one of 'Link startup of own station' (2000H.b0), 'Link stop of own station' (2000H.b1), 'System link startup' (2000H.b2), or 'System link stop' (2000H.b3) is on.

Link stop of own station (2000H.b1)

Stops data link (cyclic transmission) of own station.

- Off: Stop not requested
- On: Stop requested (valid at rising edge)

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off.
- Enabled when one of 'Link startup of own station' (2000H.b0), 'Link stop of own station' (2000H.b1), 'System link startup' (2000H.b2), or 'System link stop' (2000H.b3) is on.

System link startup (2000H.b2)

Request to start data link (cyclic transmission) of the entire system when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

The station where cyclic transmission is started is specified in 'Link startup/stop direction' (3000H) and 'Link startup/stop station specification' (3001H to 3008H).

- Off: Startup not requested
- On: Startup requested (valid at rising edge)

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off.
- Enabled when one of 'Link startup of own station' (2000H.b0), 'Link stop of own station' (2000H.b1), 'System link startup' (2000H.b2), or 'System link stop' (2000H.b3) is on.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

System link stop (2000H.b3)

Request to stop the data link (cyclic transmission) of the entire system when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

The station where cyclic transmission is stopped is specified in 'Link startup/stop direction' (3000H) and 'Link startup/stop station specification' (3001H to 3008H).

- Off: Stop not requested
- On: Stop requested (valid at rising edge)

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off.
- Enabled when one of 'Link startup of own station' (2000H.b0), 'Link stop of own station' (2000H.b1), 'System link startup' (2000H.b2), or 'System link stop' (2000H.b3) is on.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Clear communication error count (2000H.b6)

Request to clear the remote buffer memory related to communication error (3068H to 3069H, 3074H to 3077H, 3120H to 315FH) to 0.

- Off: Clear not requested
- On: Clear requested (valid while on)

Error clear (2000H.b15)

Request the device station to clear the error when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: No request
- On: Request issued

Condition

Only applies to device stations that are compatible with the error clear function (special relay (SB)).

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting request (2001H.b0)

Request to set the station specified in 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H) as a temporary error invalid station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: No request
- On: Request issued

Turning it off clears the error definition stored in 'Temporary error invalid station setting result' (3054H).

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting clear request (2001H.b1)

Request to clear the station specified in 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H) as a temporary error invalid station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: No request
- On: Request issued

Turning it off clears the error definition stored in 'Temporary error invalid station setting clear result' (3055H).

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station function disable request (2001H.b2)

Request to temporarily clear the station specified in 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H) as a reserved station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: No request
- On: Request issued

Turning it off clears the error definition stored in 'Result of reserved station function disable request' (3056H).

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station function enable request (2001H.b3)

Request to set the station specified in 'Reserved station function disable/temp error invalid station setting' (3010H to 3017H) as a reserved station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. (This can only be requested for stations whose reserved station setting is temporarily canceled)

- Off: No request
- On: Request issued

Turning it off clears the error definition stored in 'Result of reserved station function enable request' (3057H).

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Station setting 1 of own station (2004H.b4)

Stores the station type of own station.

- Off: Local station
- On: Master station

Baton pass status of own station (2004H.b7)

Stores the baton pass status (transient transmission availability) of own station.

- Off: Normal
- On: Error

When there is an error, the cause can be checked with 'Baton pass status of own station' (3047H) and 'Cause of baton pass interruption' (3048H).

Depending on the update timing, 'Baton pass status of own station' (3047H) and 'Cause of baton pass interruption' (3048H) may not be updated immediately.

Data link error status of own station (2004H.b9)

Stores the data link error status of own station.

- Off: Normal
- On: Error

When there is an error, the cause can be checked with 'Cause of data link stop' (3049H).

Depending on the update timing, 'Cause of data link stop' (3049H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Received parameter error (2004H.b13)

Stores the status of received parameter. (For the master station, its own parameter status is stored.)

- Off: Normal
- On: Error

Link startup request accept status of own station (2005H.b0)

Stores the acceptance status of 'Link startup of own station' (2000H.b0).

- Off: Not accepted ('Link startup of own station' (2000H.b0) is off.)
- On: Accepted ('Link startup of own station' (2000H.b0) is on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Link startup completion status of own station (2005H.b1)

Stores the status of link startup processing requested with 'Link startup of own station' (2000H.b0).

- Off: Link startup not completed ('Link startup of own station' (2000H.b0) and 'Link startup request accept status of own station' (2005H.b0) are off.)
- On: Link startup not completed ('Link startup of own station' (2000H.b0) and 'Link startup request accept status of own station' (2005H.b0) are on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Link stop request accept status of own station (2005H.b2)

Stores the acceptance status of 'Automatic link stop' (2000H.b1).

- Off: Not accepted ('Automatic link stop' (2000H.b1) is off.)
- On: Accepted ('Automatic link stop' (2000H.b1) is on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Link stop completion status of own station (2005H.b3)

Stores the link stop processing status requested with 'Automatic link stop' (2000H.b1).

- Off: Not completed ('Automatic link stop' (2000H.b1) and 'Link stop request accept status of own station' (2005H.b2) are off.)
- On: Completed ('Automatic link stop' (2000H.b1) and 'Link stop request accept status of own station' (2005H.b2) are on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

System link startup request accept status (2005H.b4)

Stores the acceptance status of 'System link startup' (2000H.b2) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not accepted ('System link startup' (2000H.b2) is off.)
- On: Accepted ('System link startup' (2000H.b2) is on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

System link startup completion status (2005H.b5)

Stores the link startup processing status of 'System link startup' (2000H.b2) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not completed ('System link startup' (2000H.b2) and 'System link startup request accept status' (2005H.b4) are off.)
- On: Completed ('System link startup' (2000H.b2) and 'System link startup request accept status' (2005H.b4) are on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

System link stop request accept status (2005H.b6)

Stores the acceptance status of 'System link stop' (2000H.b3) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not accepted ('System link stop' (2000H.b3) is off.)
- On: Accepted ('System link stop' (2000H.b3) is on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

System link stop completion status (2005H.b7)

Stores the link stop processing status of 'System link stop' (2000H.b3) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not completed ('System link stop' (2000H.b3) and 'System link stop request accept status' (2005H.b6) are off.)
- On: Completed ('System link stop' (2000H.b3) and 'System link stop request accept status' (2005H.b6) are on.)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting request accept status (2005H.b8)

Stores the acceptance status of 'Temporary error invalid station setting request' (2001H.b0) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not accepted ('Temporary error invalid station setting request' (2001H.b0) is off.)
- On: Accepted ('Temporary error invalid station setting request' (2001H.b0) is on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting request completion status (2005H.b9)

Stores the temporary error invalid station setting processing status of 'Temporary error invalid station setting request' (2001H.b0) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not completed ('Temporary error invalid station setting request' (2001H.b0) and 'Temporary error invalid station setting request accept status' (2005H.b8) are off.)
- On: Completed successfully or with an error ('Temporary error invalid station setting request' (2001H.b0) and 'Temporary error invalid station setting request accept status' (2005H.b8) are on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting cancel request accept status (2005H.b10)

Stores the acceptance status of 'Temporary error invalid station setting cancel request' (2001H.b1) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not accepted ('Temporary error invalid station setting cancel request' (2001H.b1) is off.)
- On: Accepted ('Temporary error invalid station setting cancel request' (2001H.b1) is on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting cancel completion status (2005H.b11)

Stores the temporary error invalid station setting cancel processing status of 'Temporary error invalid station setting cancel request' (2001H.b1) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not completed ('Temporary error invalid station setting cancel request' (2001H.b1) and 'Temporary error invalid station setting cancel request accept status' (2005H.b10) are off.)
- On: Completed successfully or with an error ('Temporary error invalid station setting cancel request' (2001H.b1) and 'Temporary error invalid station setting cancel request accept status' (2005H.b10) are on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station function disable request accept status (2005H.b12)

Stores the acceptance status of 'Reserved station function disable request' (2001H.b2) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not accepted ('Reserved station function disable request' (2001H.b2) is off.)
- On: Accepted ('Reserved station function disable request' (2001H.b2) is on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station function disable completion status (2005H.b13)

Stores the reserved station function disable processing status of 'Reserved station function disable request' (2001H.b2) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not completed ('Reserved station function disable request' (2001H.b2) and 'Reserved station function disable request accept status' (2005H.b12) are off.)
- On: Completed successfully or with an error ('Reserved station function disable request' (2001H.b2) and 'Reserved station function disable request accept status' (2005H.b12) are on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station setting enable request accept status (2005H.b14)

Stores the acceptance status of 'Reserved station function enable request' (2001H.b3) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not accepted ('Reserved station function enable request' (2001H.b3) is off.)
- On: Accepted ('Reserved station function enable request' (2001H.b3) is on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station setting enable completion status (2005H.b15)

Stores the reserved station function disable processing status of 'Reserved station function enable request' (2001H.b3) when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Not completed ('Reserved station function enable request' (2001H.b3) and 'Reserved station function enable request accept status' (2005H.b14) are off.)
- On: Completed successfully or with an error ('Reserved station function enable request' (2001H.b3) and 'Reserved station function enable request accept status' (2005H.b14) are on.)

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

PORT link-down status of own station (2006H.b10)

Stores the PORT link-down status of own station.

- Off: Link-up
- On: Link-down

The time it takes for link-up to start after turning on the power or connecting the Ethernet cable may vary.

Normally, it takes a few seconds to link-up, but depending on the device status on the line, link-up processing may be repeated, which may increase the time.

PORT current error frame reception status of own station (1) (2006H.b12)

Indicates if there is a receive frame error line status caution level for the current status in the PORT of own station.

- Off: There is no receive frame error line status caution level.
- On: There is a receive frame error line status caution level.

PORT error frame reception detection status of own station (latch) (1) (2006H.b14)

Indicates if there was a receive frame error line status caution level in the PORT of own station since turning on the power.

- Off: There is no receive frame error line status caution level.
- On: There was a receive frame error line status caution level.

Master station information (2007H.b0)

Stores the data link status when using the submaster function and the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Data link by the master station
- On: Data link by the submaster station

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Submaster station information (2007H.b1)

Stores the information of whether a submaster station exists when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: No submaster station
- On: Submaster station exists

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Scan mode setting information (2007H.b2)

Stores the link scan mode setting status when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Asynchronous with sequence scan or constant link scan
- On: Synchronous with sequence scan

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Reserved station specification status (2007H.b4)

Stores the status of reserved station specification by parameter. The station number of the station set as a reserved station can be checked with 'Reserved station setting status' (30C0H to 30C7H).

- Off: Not specified
- On: Specified

Error invalid station setting status (2007H.b5)

Stores the status of error invalid station setting by parameter. The station number of the station set as an error invalid station can be checked with 'Error invalid station setting status' (30D0H to 30D7H).

- Off: Not specified
- On: Specified

Parameter reception status (2007H.b7)

Stores the parameter reception status from the master station when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Reception completed
- On: Reception not completed

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Input data status of data link faulty station (2007H.b11)

Stores the "CC-Link IE Field Network data link faulty station setting" status.

- Off: Clear
- On: Hold

PORT current error frame reception status of own station (2) (2008H.b12)

Indicates if there is a receive frame error line status warning level for the current status in the PORT of own station.

- Off: There is no receive frame error line status warning level.
- On: There is a receive frame error line status warning level.

PORT error frame reception detection status of own station (latch) (2) (2008H.b14)

Indicates if there was a receive frame error line status warning level in the PORT of own station since turning on the power.

- Off: There is no receive frame error line status warning level.
- On: There was a receive frame error line status warning level.

Network configuration mismatch occurrence status (2009H.b8)

Stores the match or mismatch status of the actual network configuration and the network map of the CC-Link IE Field Network diagnostics when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- Off: Match
- On: Mismatch

After the return of the device station, it may be turned on regardless of the actual match/mismatch status.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Number of connected modules over occurrence status (2009H.b9)

Indicates if the number of device stations connected to the master station is 32 or less, or 33 or more when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

The number of connected modules is the total of device stations that are currently connected and those that were previously connected.

- Off: 32 or less
- On: 33 or more

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Baton pass error status of each station (200AH.b0)

Stores the baton pass status of each station.

- Off: All stations normal
- On: Faulty station exists

When there is a faulty station, the status of each station can be checked with 'Baton pass status of each station' (30A0H to 30A7H).

Depending on the update timing, 'Baton pass status of each station' (30A0H to 30A7H) may not be updated immediately.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Reserved stations and stations higher than the maximum station number are ignored.

Baton pass error status of master station (200AH.b1)

Stores the baton pass status of the master station (master operating station).

- Off: Normal
- On: Error

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Baton pass error status of station No.0 (200AH.b15)

Stores the baton pass status of station No.0.

- Off: Normal
- On: Error

Data link error status of each station (200BH.b0)

Stores the data link status of each station.

- Off: All stations normal
- On: Faulty station exists

When this relay is turned on, the status of each station can be checked with 'Data link status of each station' (30B0H to 30B7H).

Depending on the update timing, 'Data link status of each station' (30B0H to 30B7H) may not be updated immediately.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Reserved stations and stations higher than the maximum station number are ignored.

Data link error status of master station (200BH.b1)

Stores the data link status of the master station (master operating station).

- Off: Normal
- On: Error

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Network connection status of each station (200BH.b8)

Indicates whether a network connected station exists.

- Off: No network connected station
- On: Network connected station exists

When there is a network connection station, the status of each station can be checked with 'Network connection status' (30B8H to 30BFH).

Depending on the update timing, 'Network connection status' (30B8H to 30BFH) may not be updated immediately.

Data link error status of station No.0 (200BH.b15)

Stores the data link status of station No.0.

- Off: Normal
- On: Error

Reserved station setting status (200CH.b0)

Stores whether a reserved station is set.

- Off: No setting
- On: Set

When this relay is turned on, the status of each station can be checked with 'Reserved station setting status' (30C0H to 30C7H).

Depending on the update timing, 'Reserved station setting status' (30C0H to 30C7H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Error invalid station setting current status (200DH.b0)

Sets whether an error invalid station is set.

- Off: No setting
- On: Set

When this relay is turned on, the status of each station can be checked with 'Error invalid station setting status' (30D0H to 30D7H).

Depending on the update timing, 'Error invalid station setting status' (30D0H to 30D7H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Temporary error invalid station setting status (200EH.b0)

Stores whether a temporary error invalid station is set.

- Off: No setting
- On: Set

When this relay is turned on, the status of each station can be checked with 'Temporary error invalid station setting status' (30E0H to 30E7H).

Depending on the update timing, 'Temporary error invalid station setting status' (30E0H to 30E7H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Station type match status of each station (200EH.b8)

Indicates the station type match status of each station.

- Off: Station type match in all stations
- On: Station with a station type mismatch exists

When this relay is turned on, the status of each station can be checked with 'Station type match status' (30E8H to 30EFH).

Depending on the update timing, 'Station type match station' (30E8H to 30EFH) may not be updated immediately.

CPU operating status of each station (200FH.b0)

Stores the operating status of the CPU module on each station.

- Off: All stations are at RUN state
- On: Station at STOP or PAUSE state, or station with a moderate/major error exists.

When this relay is turned on, the status of each station can be checked with 'CPU operating status of each station' (30F0H to 30F7H).

Depending on the update timing, 'CPU operating status of each station' (30F0H to 30F7H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

CPU operating status of master station (200FH.b1)

Stores the operating status of the CPU module on the master station (master operating station).^{*1}

- Off: RUN state
- On: STOP state, PAUSE state, or moderate/major error

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

^{*1} Stores the moderate/major error occurrence status when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Network No. match status (200FH.b8)

Indicates the network No. match status of each station.

- Off: Network No. match in all stations
- On: Network No. mismatch station exists

When this relay is turned, the status of each station can be checked with 'Network No. match status' (30F8H to 30FFH). Depending on the update timing, 'Network No. match status' (30F8H to 30FFH) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off.

CPU operating status of station No.0 (200FH.b15)

Stores the operating status of the CPU module on station No.0.*1

- Off: RUN state
- On: STOP state, PAUSE state, or moderate/major error

*1 Stores the moderate/major error occurrence status when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

CPU moderate/major error status of each station (2010H.b0)

Stores the moderate/major error or stop error occurrence status of each station.*1

Stores the moderate/major error occurrence status of the module when the target station is the NZ2GN-GFB.

- Off: No moderate/major error (stop error)
- On: Station with a moderate/major error (stop 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' (3100H to 3107H).

Depending on the update timing, 'CPU moderate/major error status of each station' (3100H to 3107H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

*1 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, this relay area is also turned on when the CPU module of the CC-Link IE TSN master station has a moderate/major error.

CPU moderate/major error status of master station (2010H.b1)

Stores the moderate/major error occurrence status of the CPU module on the master station (master operation station).*1

- Off: No moderate/major error
- On: Moderate/major error

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

*1 When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, this relay area is also turned on when the CPU module of the NZ2GN-GFB or CC-Link IE TSN master station has a moderate/major error.

Station number duplication occurrence status (2010H.b8)

Indicates the station number duplication occurrence status of each station.

- Off: Station number not duplicated
- On: Station number duplicated

When this relay is turned on, the status of each station can be checked with 'Station number duplication occurrence status' (3108H to 310FH).

Depending on the update timing, 'Station number duplication occurrence station' (3108H to 310FH) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off.

CPU moderate/major error status of station No.0 (2010H.b15)

Stores the moderate/major error occurrence status of the CPU module on station No.0.*1

- Off: No moderate/major error
- On: Moderate/major error

*1 If the station No.0 is the NZ2GN-GFB, this relay area is also turned on when the CPU module of the NZ2GN-GFB or CC-Link IE TSN master station has a moderate/major error.

CPU minor error status of each station (2011H.b0)

Stores the minor error or continuation error occurrence status of each station.

Stores the minor error occurrence status of the module when the target station is the NZ2GN-GFB.

- Off: All stations normal or station with a moderate/major error (stop error) exists.
- On: Station with a minor error (continuation error) exists.

When this relay is turned on, the status of each station can be checked with 'CPU minor error status of each station' (3110H to 3117H).

Depending on the update timing, 'CPU minor error status of each station' (3110H to 3117H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

CPU minor error status of master station (2011H.b1)

Stores the minor error occurrence status of the CPU module on the master station (master operating station).*1

- Off: No minor errors, or a moderate/major error being occurred
- On: Minor error

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

*1 Stores the minor error occurrence status when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

CPU minor error status of station No.0 (2011H.b15)

Stores the minor error occurrence status of the CPU module on station No.0.*1

- Off: No minor errors, or a moderate/major error being occurred
- On: Minor error

*1 Stores the minor error occurrence status when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT1 current error frame reception status (1) (2012H.b0)

Indicates whether a receive frame error line status caution level is currently occurring in the PORT1 side of each station.

- Off: There is no receive frame error line status caution level in any station.
- On: There is at least one station with a receive frame error line status caution level.

If a receive frame error line status caution level is occurring, the status of each station can be checked with 'PORT1 current error frame reception status of each station (1)' (3120H to 3127H).

Depending on the update timing, 'PORT1 current error frame reception status of each station (1)' (3120H to 3127H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

PORT1 current error frame reception status of master station (2012H.b1)

Stores whether the error frame is currently received at the PORT1 side of the master station (master operating station).

- Off: Not received
- On: Currently receiving

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

PORT1 current error frame reception status (2) (2012H.b8)

Indicates whether a receive frame error line status warning level is currently occurring in the PORT1 side of each station.

- Off: There is no receive frame error line status warning level in any station.
- On: There is at least one station with a receive frame error line status warning level.

If a receive frame error line status warning level is occurring, the status of each station can be checked with 'PORT1 current error frame reception status of each station (2)' (3128H to 312FH).

Depending on the update timing, 'PORT1 current error frame reception status of each station (2)' (3128H to 312FH) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off.

PORT1 current error frame reception status of station No.0 (2) (2012H.b9)

Indicates whether a receive frame error line status warning level is currently occurring in the PORT1 side of station No.0 when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: There is no receive frame error line status warning level.
- On: There is a receive frame error line status warning level.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT1 current error frame reception status of station No.0 (1) (2012H.b15)

Indicates whether a receive frame error line status caution level is currently occurring in the PORT1 side of station No.0 when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: There is no receive frame error line status caution level.
- On: There is a receive frame error line status caution level.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT2 current error frame reception status (1) (2013H.b0)

Indicates whether a receive frame error line status caution level is currently occurring in the PORT2 side of each station.

- Off: There is no receive frame error line status caution level in any station.
- On: There is at least one station with a receive frame error line status caution level.

If a receive frame error line status caution level is occurring, the status of each station can be checked with 'PORT2 current error frame reception status of each station (1)' (3130H to 3137H).

Depending on the update timing, 'PORT2 current error frame reception status of each station (1)' (3130H to 3137H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

PORT2 current error frame reception status of master station (2013H.b1)

Stores whether the error frame is currently received at the PORT2 side of the master station (master operating station) when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Not received
- On: Currently receiving

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT2 current error frame reception status (2) (2013H.b8)

Indicates whether a receive frame error line status warning level is currently occurring in the PORT2 side of each station.

- Off: There is no receive frame error line status warning level in any station.
- On: There is at least one station with a receive frame error line status warning level.

If a receive frame error line status warning level is occurring, the status of each station can be checked with 'PORT2 current error frame reception status of each station (2)' (3138H to 313FH).

Depending on the update timing, 'PORT2 current error frame reception status of each station (2)' (3138H to 313FH) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off.

PORT2 current error frame reception status of station No.0 (2) (2013H.b9)

Indicates whether a receive frame error line status warning level is currently occurring in the PORT2 side of station No.0 when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: There is no receive frame error line status warning level.
- On: There is a receive frame error line status warning level.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT2 current error frame reception status of station No.0 (1) (2013H.b15)

Indicates whether a receive frame error line status caution level is currently occurring in the PORT2 side of station No.0 when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: There is no receive frame error line status caution level.
- On: There is a receive frame error line status caution level.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT1 error frame reception detection status (1) (2014H.b0)

Indicates whether a receive frame error line status caution level is occurring in the PORT1 side of each station from power-on.

- Off: There is no receive frame error line status caution level in any station.
- On: There was at least one station with a receive frame error line status caution level.

If a receive frame error line status caution level has occurred, the status of each station can be checked with 'PORT1 error frame reception detection status (1)' (3140H to 3147H).

Depending on the update timing, 'PORT1 error frame reception detection status (1)' (3140H to 3147H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

PORT1 error frame detection of master station (2014H.b1)

Stores whether the error frame was received at the PORT1 side of the master station (master operating station) from power-on to the present.

- Off: Not received
- On: Received

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

PORT1 error frame reception detection status (2) (2014H.b8)

Indicates whether a receive frame error line status warning level is occurring in the PORT1 side of each station from power-on.

- Off: There is no receive frame error line status warning level in any station.
- On: There was at least one station with a receive frame error line status warning level.

If a receive frame error line status warning level has occurred, the status of each station can be checked with 'PORT1 error frame reception detection status (2)' (3148H to 314FH).

Depending on the update timing, 'PORT1 error frame reception detection status (2)' (3148H to 314FH) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off.

PORT1 error frame reception detection status of station No.0 (2) (2014H.b9)

Indicates whether a receive frame error line status warning level is occurring in the PORT1 side of station No.0 from power-on when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Receive frame error line status warning level not detected.
- On: Receive frame error line status warning level detected at least once.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT1 error frame reception detection status of station No.0 (1) (2014H.b15)

Indicates whether a receive frame error line status caution level is occurring in the PORT1 side of station No.0 from power-on when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Receive frame error line status caution level not detected.
- On: Receive frame error line status caution level detected at least once.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT2 error frame reception detection status (1) (2015H.b0)

Indicates whether a receive frame error line status caution level is occurring in the PORT2 side of each station from power-on.

- Off: There is no receive frame error line status caution level in any station.
- On: There was at least one station with a receive frame error line status caution level.

If a receive frame error line status caution level has occurred, the status of each station can be checked with 'PORT2 error frame reception detection status (1)' (3150H to 3157H).

Depending on the update timing, 'PORT2 error frame reception detection status (1)' (3150H to 3157H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

PORT2 error frame detection of master station (2015H.b1)

Stores whether the error frame has been received at the PORT2 side of the master station (master operating station) when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Not received
- On: Received

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT2 error frame reception detection status (2) (2015H.b8)

Indicates whether a receive frame error line status warning level is occurring in the PORT2 side of each station from power-on.

- Off: There is no receive frame error line status warning level in any station.
- On: There was at least one station with a receive frame error line status warning level.

If a receive frame error line status warning level has occurred, the status of each station can be checked with 'PORT2 error frame reception detection status (2)' (3158H to 315FH).

Depending on the update timing, 'PORT2 error frame reception detection status (2)' (3158H to 315FH) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off.

PORT2 error frame reception detection status of station No.0 (2) (2015H.b9)

Indicates whether a receive frame error line status warning level is occurring in the PORT2 side of station No.0 from power-on when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Receive frame error line status warning level not detected.
- On: Receive frame error line status warning level detected at least once.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT2 error frame reception detection status of station No.0 (1) (2015H.b15)

Indicates whether a receive frame error line status caution level is occurring in the PORT2 side of station No.0 from power-on when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- Off: Receive frame error line status caution level not detected.
- On: Receive frame error line status caution level detected at least once.

Condition

Enabled when the submaster function is used.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Parameter error status of each station (2017H.b0)

Stores the parameter error status of each station.

- Off: All stations normal
- On: Faulty station exists

If this relay is turned on, the status of each station can be checked with 'Parameter error status of each station' (3170H to 3177H).

Depending on the update timing, 'Parameter error status of each station' (3170H to 3177H) may not be updated immediately.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Reserved stations and stations higher than the maximum station number are ignored.

Reserved station function disable status (2018H.b0)

Stores whether there is a station whose reserved station setting is temporarily canceled.

- Off: Not exist
- On: Exists

If this relay is turned on, the status of each station can be checked with 'Reserved station function disable status' (3180H to 3187H).

Depending on the update timing, 'Reserved station function disable status' (3180H to 3187H) may not be updated immediately.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Details of remote buffer memory (Link special register (SW) area of CC-Link IE Field Network)

Link startup/stop direction (3000H)

Sets details of data link startup/stop when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- 00H: Own station
- 01H: All stations
- 02H: Specified stations
- 80H: Own station enforced (enabled only for data link startup)
- 81H: All stations enforced (enabled only for data link startup)
- 82H: Specified stations enforced (enabled only for data link startup)

Data link startup/stop is performed by 'System link startup' (2000H.b2) or 'System link stop' (2000H.b3).

When 02H (specified station) or 82H (specified station enforced) is selected, own station is not included.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Link startup/stop station specification (3001H to 3008H)

Sets the station number to start or stop data link when the NZ2GN-GFB is used as the CC-Link IE Field Network master station and 02H (specified station) or 82H (specified station enforced) is set in 'Link startup/stop direction' (3000H).

- 0: Startup or stop not requested
- 1: Startup or stop requested

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3001H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3002H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3003H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3004H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3005H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3006H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3007H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3008H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Reserved station function disable/temp error invalid station setting (3010H to 3017H)

Sets the device station to enable/disable a reserved station or a temporary error invalid station when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- 0: No setting
- 1: Set

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3010H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3011H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3012H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3013H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3014H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3015H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3016H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3017H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.
— is fixed to 0.

Condition

- For some stations, reserved station setting cannot be temporarily disabled/canceled and temporary error invalid station setting cannot be set/canceled. (☞ Page 98 Reserved station setting, ☞ Page 99 Error invalid station setting)
- Stations higher than the maximum station number are ignored.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Network No. (3040H)

Stores the network number of the own station.

- 01H to EFH: Network No.1 to 239

Station number (3042H)

Stores the station number of the own station.

- 01H to 78H: Station 1 to 120
- 7DH: Station No.125 (master station)

Mode status of own station (3043H)

Stores the communication mode of own station.

- 00H: Normal
- 01H: High-speed

Baton pass status of own station (3047H)

Stores the baton pass status (transient transmission availability) of own station.

- 00H: Data link in progress
- 02H: Baton pass in progress
- 03H: Baton pass being terminated

Cause of baton pass interruption (3048H)

Stores the cause of interruption in the communication (baton pass) of the own station.

- 00H: At normal communication or power-on
- 30H: Cable disconnection
- 33H: Disconnection or return in progress

Cause of data link stop (3049H)

Stores the factor(s) that stopped the data link of own station.

- 00H: At normal communication or power-on
- 01H: Stop direction
- 02H: Monitoring time timeout
- 05H: No device station (master station only)
- 10H: Parameter not received (local station only)
- 11H: Outside the range of own station numbers (local station only)
- 12H: Reserved station setting of the own station
- 13H: Own station number duplication
- 14H: Master station duplication/submaster station duplication
- 18H: Parameter error
- 19H: Parameter communication in progress
- 1AH: Station type mismatch (local station only)
- 1BH: Parameter mismatch
- 20H: Moderate/major error in CPU module of CC-Link IE TSN master station
- 60H: Illegal ring connection (master station only)

Data link stop request station (304AH)

Stores the station number of the station that performed the data link stop request for the own station.

- 01H to 78H: Station 1 to 120
- 7DH: Station No.125 (master station)

The data link stop request is performed by 'System link stop' (2000H.b3).

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Link startup result of own station (3050H)

Stores the results when data link is started by 'Link startup of own station' (2000H.b0).

- 00H: Normal
- 01H onwards: Error definition (error code)

When 'Link startup of own station' (2000H.b0) is turned off, the stored error definition is cleared.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Link stop result of own station (3051H)

Stores the results when data link is stopped by 'Link stop of own station' (2000H.b1).

- 00H: Normal
- 01H onwards: Error definition (error code)

When 'Link stop of own station' (2000H.b1) is turned off, the stored error definition is cleared.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

System link startup result (3052H)

Stores the results when data link is started by 'System link startup' (2000H.b2) and the NZ2GN-GFB is used as CC-Link IE Field Network master station.

- 00H: Normal
- 01H onwards: Error definition of own station (error code)

When 'System link startup' (2000H.b2) is turned off, the stored error definition is cleared.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

System link stop result (3053H)

Stores the results when data link is stopped by 'System link stop' (2000H.b3) and the NZ2GN-GFB is used as CC-Link IE Field Network master station.

- 00H: Normal
- 01H onwards: Error definition of own station (error code)

When 'System link stop' (2000H.b3) is turned off, the stored error definition is cleared.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting result (3054H)

Stores the results when requesting temporary error invalid station setting by 'Temporary error invalid station setting request' (2001H.b0) and the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- 00H: Normal
- 01H onwards: Error definition (error code)

When 'Temporary error invalid station setting request' (2001H.b0) is turned off, the stored error definition is cleared.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Temporary error invalid station setting cancel result (3055H)

Stores the results when canceling temporary error invalid station setting by 'Temporary error invalid station setting cancel request' (2001H.b1) and the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

- 00H: Normal
- 01H onwards: Error definition (error code)

When 'Temporary error invalid station setting cancel request' (2001H.b1) is turned off, the stored error definition is cleared.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Result of reserved station function disable request (3056H)

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, the results of disabling the reserved station function using 'Reserved station function disable request' (2001H.b2) are stored.

- 00H: Normal
- 01H onwards: Error definition (error code)

When 'Reserved station function disable request' (2001H.b2) is turned off, the stored error definition is cleared.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Result of reserved station function enable request (3057H)

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station, the results of canceling the reserved station function disable request using 'Reserved station enable request' (2001H.b3) are stored.

- 00H: Normal
- 01H onwards: Error definition (error code)

When 'Reserved station function enable request' (2001H.b3) is turned off, the stored error definition is cleared.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

Setting value of total device stations (3058H)

Stores the total number of device stations that are set by the parameters.

Condition	Stored value
When the NZ2GN-GFB is used as the CC-Link IE Field Network local station	01H to 78H (1 to 120 stations)
When the NZ2GN-GFB is used as the CC-Link IE Field Network master station	01H to 20H (1 to 32 stations)

Present value of total device stations (3059H)

Stores the total number of device stations that are actually connected by data link.

Condition	Stored value
When the NZ2GN-GFB is used as the CC-Link IE Field Network local station	<ul style="list-style-type: none">• 00H (0 stations (when own station is disconnected))• 01H to 78H (1 to 120 stations)
When the NZ2GN-GFB is used as the CC-Link IE Field Network master station	<ul style="list-style-type: none">• 00H (0 stations (when own station is disconnected))• 01H to 20H (1 to 32 stations)

Maximum baton pass station number (305AH)

Stores the largest station number of stations where baton pass has been performed successfully.

- 00H: Station No.0 (when own station is disconnected)
- 01H to 78H: Station 1 to 120

Condition
Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Maximum data link station number (305BH)

Stores the largest station number of stations where data link has been performed successfully.

- 00H: Station No.0 (when own station is disconnected)
- 01H to 78H: Station 1 to 120

Condition
Enabled when 'Data link stop status of own station' (2004H.b9) is off.

Maximum link scan time (3060H)

Stores the maximum value of the link scan time during cyclic transmission. (Unit: ms)

Condition
Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Minimum link scan time (3061H)

Stores the minimum value of the link scan time during cyclic transmission. (Unit: ms)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Current link scan time (3062H)

Stores the present value of the link scan time during cyclic transmission. (Unit: ms)

The stored value contains a maximum error of 1ms.

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Constant link scan time setting value (3063H)

Stores the constant link scan time setting value set by parameters when the NZ2GN-GFB is used as the CC-Link IE Field Network local station. (Unit: ms)

- 00H: No setting
- 01H to C8H: 1 to 200 (Constant link scan time the setting value)

Condition

Enabled when 'Data link stop status of own station' (2004H.b9) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Connection status of own station (3064H)

Stores the connection status of the own station.

- 01H: Normal (communication in progress)
- 04H: Normal (loopback communication in progress) (only for local stations)
- 11H: Disconnected (cable disconnection)
- 21H: Disconnected (establishing line)

Actual link scan time (3066H to 3067H)

Stores the link scan time during cyclic transmission. (Unit: μ s)

Address	Description
3066H	Lower 1 word
3067H	Upper 1 word

PORT receive error occurrence rate of own station (max.) (3068H)

Stores the occurrence rate (maximum value) of received error frames at the PORT of own station. (Unit: %)

When 'Clear communication error count' (2000H.b6) is turned on, the stored value for the occurrence rate is cleared.

PORT receive error occurrence rate of own station (present) (3069H)

Stores the occurrence rate (present value) of received error frames at the PORT of own station. (Unit: %)

When 'Clear communication error count' (2000H.b6) is turned on, the stored value for the occurrence rate is cleared.

Master operating station number (306DH)

Stores the master operating station number when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- 00H: No submaster function setting
- 01H to 78H: Station No.1 to 120 of submaster stations (master operating stations)
- 7DH: Master station (master operating station)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

Submaster operating station number (306EH)

Stores the submaster operating station number when the NZ2GN-GFB is used as the CC-Link IE Field Network local station.

- 00H: No submaster function setting
- 01H to 78H: Station No.1 to 120 of submaster stations (master operating stations)
- 7DH: Master station (master operating station)

Condition

Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.

Usage is prohibited when the NZ2GN-GFB is used as the CC-Link IE Field Network master station.

PORT cable disconnection detection count of own station (3074H)

Stores the cumulative count that was detected for cable disconnections at the PORT of own station.

When 'Clear communication error count' (2000H.b6) is turned on, the stored count is cleared.

When FFFFH (maximum value 65535) is counted, the value returns to 0 and the module continues to count.

PORT receive error detection count of own station (3075H)

Stores the cumulative count of received error data at the PORT of own station. The count stores only error data that is not transmitted to all stations.

When 'Clear communication error count' (2000H.b6) is turned on, the stored count is cleared.

When FFFFH (maximum value 65535) is counted, counting stops.

PORT total number of receive data of own station (3076H to 3077H)

Stores the cumulative count of received data at the PORT of own station.

When 'Clear communication error count' (2000H.b6) is turned on, the stored count is cleared.

When FFFFFFFFH (maximum value 4294967295) is counted, counting stops.

Address	Description
3076H	Lower 1 word
3077H	Upper 1 word

Baton pass status of each station (30A0H to 30A7H)

Stores the baton pass status of each station.

- 0: Baton pass normal station
- 1: Baton pass faulty station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30A0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30A1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30A2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30A3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30A4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30A5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30A6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30A7H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

If multiple stations change from faulty to normal, they are reconnected to the network one by one per link scan, so the time until the status changes to 0 (Baton pass normal station) may vary by several seconds.

If cables are connected/disconnected or the module is reset in line and ring topologies, the token may be lost or a reconstruction may occur, causing the baton pass status to detect an error in the first link scan.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Reserved stations and stations higher than the maximum station number are ignored.

Data link status (each station) (30B0H to 30B7H)

Stores the data link status of each station.

- 0: Data link normal station
- 1: Data link faulty station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30B0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30B1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30B2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30B3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30B4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30B5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30B6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30B7H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

If multiple stations change from faulty to normal, they are reconnected to the network one by one per link scan, so the time until the status changes to 0 (Data link normal station) may vary by several seconds.

If no response is received for several link scans, the station is determined to be a data link faulty station.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Reserved stations and stations higher than the maximum station number are ignored.

Network connection status (30B8H to 30BFH)

Stores the network connection status.

- 0: Station not connected to network
- 1: Station connected to network

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30B8H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30B9H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30BAH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30BBH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30BCH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30BDH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30BEH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30BFH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Regardless of the 'Baton pass status of each station' (30A0H to 30A7H) and 'Data link status' (each station) (30B0H to 30B7H), only the connection status is displayed.

This register is enabled only for the station that has the same network No. as a master operating station.

Reserved station setting status (30C0H to 30C7H)

Stores the reserved station setting status of each station.

- 0: Station other than a reserved station (including reserved stations that have been temporarily canceled)
- 1: Reserved station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30C0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30C1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30C2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30C3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30C4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30C5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30C6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30C7H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).
- Stations higher than the maximum station number are ignored.

Parameter setting status (30C8H to 30CFH)

Stores the status of parameter settings.

- 0: Station with no parameters set
- 1: Station with parameters set

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30C8H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30C9H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30CAH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30CBH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30CCH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30CDH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30CEH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30CFH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Stations higher than the maximum station number are ignored.

Error invalid station setting status (30D0H to 30D7H)

Stores the error invalid station setting status of each station.

- 0: Station other than an error invalid station
- 1: Error invalid station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30D0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30D1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30D2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30D3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30D4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30D5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30D6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30D7H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Stations higher than the maximum station number are ignored.

Temporary error invalid station setting status (30E0H to 30E7H)

Stores the temporary error invalid station setting status of each station.

- 0: Station other than an error invalid station
- 1: Error invalid station

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30E0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30E1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30E2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30E3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30E4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30E5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30E6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30E7H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).
- Reserved stations and stations higher than the maximum station number are ignored.

Station type match status (30E8H to 30EFH)

Stores the match status between the station type set in the master station and that of the device station. (Enabled only for the number of connected modules)

- 0: Station type match
- 1: Station type mismatch

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30E8H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30E9H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30EAH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30EBH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30ECH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30EDH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30EEH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30EFH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

CPU operating status of each station (30F0H to 30F7H)

Stores the CPU operating status of each station.

- 0: RUN
- 1: STOP, PAUSE, or a moderate or serious error occurring

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30F0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30F1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30F2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30F3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30F4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30F5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30F6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30F7H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

Network No. match status (30F8H to 30FFH)

Stores the match status between the network No. of the master station and that of the device station.

- 0: Network No. match
- 1: Network No. mismatch

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
30F8H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
30F9H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
30FAH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
30FBH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
30FCH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
30FDH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
30FEH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
30FFH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off.

CPU moderate/major error status of each station (3100H to 3107H)

Stores the moderate/major error or stop error occurrence status of each station.

Stores the moderate/major error occurrence status of the module when the target station is the NZ2GN-GFB.

- 0: No moderate/major error (stop error)
- 1: Moderate or major error (stop error) occurring

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3100H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3101H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3102H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3103H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3104H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3105H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3106H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3107H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

Station number duplication occurrence status (3108H to 310FH)

Indicates the occurrence of station number duplication.

- 0: Station number not duplicated
- 1: Station number duplicated

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3108H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3109H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
310AH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
310BH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
310CH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
310DH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
310EH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
310FH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off.

A

CPU minor error status of each station (3110H to 3117H)

Stores the minor error or continuation error occurrence status of each station.

Stores the minor error occurrence status of the module when the target station is the NZ2GN-GFB.

- 0: Normal operation, or a moderate or major error (stop error) occurring
- 1: Minor error (continuation error) occurring

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3110H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3111H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3112H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3113H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3114H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3115H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3116H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3117H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

PORT1 current error frame reception status of each status (1) (3120H to 3127H)

Indicates whether a receive frame error line status caution level is currently occurring in the PORT1 side of each station.

- 0: There is no receive frame error line status caution level.
- 1: There is a receive frame error line status caution level.

When 'Clear communication error count' (2000H.b6) is turned on, the stored status is cleared.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3120H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3121H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3122H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3123H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3124H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3125H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3126H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3127H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

PORT1 current error frame reception status of each status (2) (3128H to 312FH)

Indicates whether a receive frame error line status warning level is currently occurring in the PORT1 side of each station.

- 0: There is no receive frame error line status warning level.
- 1: There is a receive frame error line status warning level.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3128H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3129H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
312AH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
312BH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
312CH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
312DH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
312EH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
312FH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

PORT2 current error frame reception status of each status (1) (3130H to 3137H)

Indicates whether a receive frame error line status caution level is currently occurring in the PORT2 side of each station.

- 0: There is no receive frame error line status caution level.
- 1: There is a receive frame error line status caution level.

When 'Clear communication error count' (2000H.b6) is turned on, the stored status is cleared.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3130H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3131H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3132H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3133H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3134H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3135H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3136H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3137H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

PORT2 current error frame reception status of each status (2) (3138H to 313FH)

Indicates whether a receive frame error line status warning level is currently occurring in the PORT2 side of each station.

- 0: There is no receive frame error line status warning level.
- 1: There is a receive frame error line status warning level.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3138H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3139H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
313AH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
313BH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
313CH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
313DH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
313EH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
313FH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

PORT1 error frame reception detection status (1) (3140H to 3147H)

Indicates whether a receive frame error line status caution level is occurring in the PORT1 side from power-on until the present.

- 0: There is no receive frame error line status caution level.
- 1: There was a receive frame error line status caution level.

When 'Clear communication error count' (2000H.b6) is turned on, the stored status is cleared.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3140H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3141H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3142H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3143H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3144H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3145H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3146H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3147H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

PORT1 error frame reception detection status (2) (3148H to 314FH)

Indicates whether a receive frame error line status warning level is occurring in the PORT1 side from power-on until the present.

- 0: There is no receive frame error line status warning level.
- 1: There was a receive frame error line status warning level.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3148H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3149H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
314AH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
314BH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
314CH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
314DH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
314EH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
314FH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.
— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

PORT2 error frame reception detection status (1) (3150H to 3157H)

Indicates whether a receive frame error line status caution level is occurring in the PORT2 side from power-on until the present.

- 0: There is no receive frame error line status caution level.
- 1: There was a receive frame error line status caution level.

When 'Clear communication error count' (2000H.b6) is turned on, the stored status is cleared.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3150H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3151H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3152H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3153H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3154H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3155H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3156H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3157H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.
— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

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PORT2 error frame reception detection status (2) (3158H to 315FH)

Indicates whether a receive frame error line status warning level is occurring in the PORT2 side from power-on until the present.

- 0: There is no receive frame error line status warning level.
- 1: There was a receive frame error line status warning level.

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3158H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3159H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
315AH	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
315BH	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
315CH	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
315DH	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
315EH	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
315FH	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.
— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).

Parameter error status of each station (3170H to 3177H)

Stores the parameter error status of each station.

- 0: No error
- 1: Errors

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3170H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3171H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3172H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3173H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3174H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3175H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3176H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3177H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.
— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).
- Reserved stations and stations higher than the maximum station number are ignored.

Reserved station cancel setting status (3180H to 3187H)

Stores the reserved station cancel setting status of each station.

- 0: No temporary cancel of the reserved station setting
- 1: Temporary cancel of the reserved station setting

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
3180H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
3181H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
3182H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
3183H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
3184H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
3185H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
3186H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
3187H	—	—	—	—	—	—	—	—	120	119	118	117	116	115	114	113

Each number in the table represents a station number.

— is fixed to 0.

Condition

- Enabled when 'Baton pass status of own station' (2004H.b7) is off. When 'Baton pass status of own station' (2004H.b7) is turned on (error), data from immediately before the error is held.
- Enabled only for normal stations in 'Baton pass status of each station' (30A0H to 30A7H).
- Reserved stations and stations higher than the maximum station number are ignored.

Details of remote buffer memory (CC-Link IE Field Network control and monitor areas)

RX offset/size information (14C00H to 14CF1H)

The start number and the number of points of RX for each station are stored.

Address	Description
14C00H	Station No.1 RX offset
14C01H	Station No.1 RX size (in units of words)
14C02H	Station No.2 RX offset
14C03H	Station No.2 RX size (in units of words)
⋮	⋮
14CEEH	Station No.120 RX offset
14CEFH	Station No.120 RX size (in units of words)
14CF0H	Station No.0 RX offset
14CF1H	Station No.0 RX size (in units of words)

The address for the offset and size of each station number can be calculated using the following formulas: (except for station No.0):

- Offset buffer memory address = $14C00 + (\text{station No.} - 1) \times 2$
- Size buffer memory address = $14C01 + (\text{station No.} - 1) \times 2$

RY offset/size information (14D00H to 14DF1H)

The start number and the number of points of RY for each station are stored.

Address	Description
14D00H	Station No.1 RY offset
14D01H	Station No.1 RY size (in units of words)
14D02H	Station No.2 RY offset
14D03H	Station No.2 RY size (in units of words)
⋮	⋮
14DEEH	Station No.120 RY offset
14DEFH	Station No.120 RY size (in units of words)
14DF0H	Station No.0 RY offset
14DF1H	Station No.0 RY size (in units of words)

The address for the offset and size of each station number can be calculated using the following formulas: (except for station No.0):

- Offset buffer memory address = $14D00 + (\text{station No.} - 1) \times 2$
- Size buffer memory address = $14D01 + (\text{station No.} - 1) \times 2$

RWw offset/size information (14E00H to 14EF1H)

The start number and the number of points of RWw for each station are stored.

Address	Description
14E00H	Station No.1 RWw offset
14E01H	Station No.1 RWw size (in units of words)
14E02H	Station No.2 RWw offset
14E03H	Station No.2 RWw size (in units of words)
⋮	⋮
14EEEH	Station No.120 RWw offset
14EEFH	Station No.120 RWw size (in units of words)
14EF0H	Station No.0 RWw offset
14EF1H	Station No.0 RWw size (in units of words)

The address for the offset and size of each station number can be calculated using the following formulas: (except for station No.0):

- Offset buffer memory address = $14E00 + (\text{station No.} - 1) \times 2$
- Size buffer memory address = $14E01 + (\text{station No.} - 1) \times 2$

RWr offset/size information (14F00H to 14FF1H)

The start number and the number of points of RWr for each station are stored.

Address	Description
14F00H	Station No.1 RWr offset
14F01H	Station No.1 RWr size (in units of words)
14F02H	Station No.2 RWr offset
14F03H	Station No.2 RWr size (in units of words)
⋮	⋮
14FEEH	Station No.120 RWr offset
14FEFH	Station No.120 RWr size (in units of words)
14FF0H	Station No.0 RWr offset
14FF1H	Station No.0 RWr size (in units of words)

The address for the offset and size of each station number can be calculated using the following formulas: (except for station No.0):

- Offset buffer memory address = $14F00 + (\text{station No.} - 1) \times 2$
- Size buffer memory address = $14F01 + (\text{station No.} - 1) \times 2$

Own station information (15020H to 1503FH)

The information of the own station on the network is stored.

Classification	Address	Name	Description
Network card information	15020H	Manufacturer code	Stores the module information of own station.
	15021H	Model type	
	15022H	Model code	
	15023H	Version	
	15024H to 15027H	Use prohibited	—
Controller information	15028H	Controller information valid/invalid flag	Stores the information of whether the value stored in Own station (controller) information is valid or invalid. • 0: Invalid • 1: Valid
	15029H	Manufacturer code	Stores the module information of own station.
	1502AH	Model type	
	1502BH	Model code	
	1502CH	Version	
	1502DH to 15036H	Model name string	
	15037H to 15038H	Vendor-specific device information	
	15039H to 1503FH	Use prohibited	—

Other station information (station No.1) (15040H to 1505FH)

Stores the information of station No.1 related to the network.

Classification	Address	Name	Description
Network card information	15040H	Manufacturer code	Stores the information of the other station (station No.1).
	15041H	Model type	
	15042H	Model code	
	15043H	Version	
	15044H to 15047H	Use prohibited	—
Controller information	15048H	Controller information valid/invalid flag	Stores the information of whether the value stored in Other station (controller) information (station No.1) is valid or invalid. • 0: Invalid • 1: Valid
	15049H	Manufacturer code	Stores the information of the other station (station No.1).
	1504AH	Model type	
	1504BH	Model code	
	1504CH	Version	
	1504DH to 15056H	Model name string	
	15057H to 15058H	Vendor-specific device information	
	15059H to 1505FH	Use prohibited	—

Other station information (station No.2 to 120) (15060H to 15F3FH)

Stores the information on station number 2 to station number 120 in the same order as Other station information (station No.1).

Other station information (station No.0) (15F40H to 15F5FH)

Stores the information of station No.0 in the same order as Other station information (station No.1).

Communication path determination status (15FA0H to 15FAFH)

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

- 0: Path undetermined
- 1: Path determined

Address	b15	b14	b13	b12	b11	b10	b9	b8	b7	b6	b5	b4	b3	b2	b1	b0
15FA0H	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
15FA1H	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
15FA2H	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33
15FA3H	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49
15FA4H	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65
15FA5H	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81
15FA6H	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97
15FA7H	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113
15FA8H	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129
15FA9H	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145
15FAAH	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161
15FABH	192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177
15FACH	208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193
15FADH	224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209
15FAEH	—	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225
15FAFH	—															

The numbers in the table indicate network No.
 — is fixed to 0.

Transient transmission area with another station (16000H to 163FFH)

Reads and writes data in the specified target station of CC-Link IE Field Network by using this area through dedicated instructions from the CPU module connected to the CC-Link IE TSN master station.

For details, refer to the following.

 Page 82 Dedicated instructions that can be executing using the NZ2GN-GFB as a relay station

Address	Name	Description	Ranges	Update side
16000H	Handshake flag	Handshake for sending and receiving data. • 00H: Idle • 01H: Send request • 02H: Sending • 03H: Waiting reception • 04H: Reception request • FEH: Transmission completed with an error • FFH: Received successfully	00H to 04H, FEH, FFH	User/system
16001H	Completion status	Stores the execution result.	• 0: Completed successfully • Other than 0: Completed with an error ( Page 174 Error codes stored in 'Completion status' (16001H).)	System
16002H	Instruction specification	Sets the instructions to execute. • 01H: RIRD • 02H: RIWT • 03H: REMFR • 04H: REMFRD • 05H: REMTO • 06H: REMTOD	01H to 06H	User
16003H	Target station number	Sets the target station number.	1 to 120	User
16004H	Start I/O number of target station	Sets the start I/O number of the target station. Ignored even if a value is set for RIRD or RIWT.	■For RIRD or RIWT — ■For REMFR, REMFRD, REMTO, or REMTOD • For head module: 00H to FEH* ¹ • For other modules: 00H (fixed)	User
16005H	Access code and attribute code	Sets the type of buffer memory or device to be read or written. Ignored even if a value is set for REMFR, REMFRD, REMTO, or REMTOD. • b0 to b7: Attribute code • b8 to b15: Access code	■For RIRD or RIWT For details, refer to the manual of the target station. ■For REMFR, REMFRD, REMTO, or REMTOD —	User
16006H	Start address of the access destination (lower)	Sets the buffer memory start address or start device to be read or written. Set 16006H for RIRD or RIWT. 16007H is ignored even if it is specified. Set 16006H for lower and 16007H for upper for REMFR, REMFRD, REMTO, REMTOD.	■For RIRD or RIWT 0000H to FFFFH For details, refer to the manual of the target station. ■For REMFR, REMFRD, REMTO, or REMTOD 00000000H to FFFFFFFFH For details, refer to the manual of the target station.	User
16007H	Start address of the access destination (upper)			
16008H	Access points	Sets the read/write points in units of words.	■For RIRD or RIWT 1 to 480 ■For REMFR, REMFRD, REMTO, or REMTOD 1 to 240	User
16009H to 1601FH	Use prohibited	—	—	—
16020H to 161FFH	Write data storage buffer	Stores the data to be written in the target station.	—	User
16200H to 1621FH	Use prohibited	—	—	—
16220H to 163FFH	Read data storage buffer	Stores the data read from the target station.	—	System

*1 The first three digits when the start I/O number of the intelligent function module is expressed in four digits and hexadecimal.

PORT1 line error occurrence rate (max.) (17510H to 1758FH)

Stores the receive frame error occurrence rate (maximum value) on the PORT1 side.

Note that no value is stored in the area for the station number of the own station.

Address	Description
17510H	Stores the receive frame error occurrence rate (maximum value) of station No.1.
17511H	Stores the receive frame error occurrence rate (maximum value) of station No.2.
⋮	⋮
17587H	Stores the receive frame error occurrence rate (maximum value) of station No.120.
17588H	Stores the receive frame error occurrence rate (maximum value) of station No.0.
17589H to 1758FH	Use prohibited

PORT1 line error occurrence rate (present) (17590H to 1760FH)

Stores the receive frame error occurrence rate (present value) on the PORT1 side.

Note that no value is stored in the area for the station number of the own station.

Address	Description
17590H	Stores the receive frame error occurrence rate (present value) of station No.1.
17591H	Stores the receive frame error occurrence rate (present value) of station No.2.
⋮	⋮
17607H	Stores the receive frame error occurrence rate (present value) of station No.120.
17608H	Stores the receive frame error occurrence rate (present value) of station No.0.
17609H to 1760FH	Use prohibited

PORT2 line error occurrence rate (max.) (17610H to 1768FH)

Stores the receive frame error occurrence rate (maximum value) on the PORT2 side.

Note that no value is stored in the area for the station number of the own station.

Address	Description
17610H	Stores the receive frame error occurrence rate (maximum value) of station No.1.
17611H	Stores the receive frame error occurrence rate (maximum value) of station No.2.
⋮	⋮
17687H	Stores the receive frame error occurrence rate (maximum value) of station No.120.
17688H	Stores the receive frame error occurrence rate (maximum value) of station No.0.
17689H to 1768FH	Use prohibited

PORT2 line error occurrence rate (present) (17690H to 1770FH)

Stores the receive frame error occurrence rate (present value) on the PORT2 side.

Note that no value is stored in the area for the station number of the own station.

Address	Description
17690H	Stores the receive frame error occurrence rate (present value) of station No.1.
17691H	Stores the receive frame error occurrence rate (present value) of station No.2.
⋮	⋮
17707H	Stores the receive frame error occurrence rate (present value) of station No.120.
17708H	Stores the receive frame error occurrence rate (present value) of station No.0.
17709H to 1770FH	Use prohibited

Appendix 4 Processing Time

Device transfer time

The following table indicates the time (device transfer time) for CC-Link IE TSN and CC-Link IE Field Network to mutually transfer data in the NZ2GN-GFB.

Calculation formula

The following is the formula to calculate the device transfer time.

$$T_b = LS_field + T_p \text{ [ms]}$$

Item	Description
LS_field	CC-Link IE Field Network link scan time ( Page 274 Link scan time)
Tp	0.3

Link scan time

The following table indicates the link scan time when the NZ2GN-GFB is used as the CC-Link IE Field Network master station. When the NZ2GN-GFB is used as the CC-Link IE Field Network local station, refer to the user's manual for the CC-Link IE Field Network master station being used.

Calculation formula

The following table indicates the calculation formula for the link scan time of CC-Link IE Field Network.

$$LS = (N_p + (N_s \times K_a) + K_b + K_c + K_d) \div 1000 \text{ [ms]}$$

Item	Communication mode	
	Normal	High-speed
Np	((Total number of points of RX/Ry setting) $\div$ 4 + (Total number of points of RWr/RWw setting) $\times$ 4) $\times$ 0.08 ^{*1}	
Ns	Total number of actually connected CC-Link IE Field Network device stations	
Ka	25.8	<ul style="list-style-type: none">• When the "CC-Link IE Field Network side data link faulty station setting"^{*2} is "Clear": 18.5• When the "CC-Link IE Field Network side data link faulty station setting"^{*2} is "Hold": 9.75
Kb	<ul style="list-style-type: none">• Normal value: 655• Maximum value: 1100^{*4}	<ul style="list-style-type: none">• Normal value: 168• Maximum value: 650^{*4}
Kc (Maximum transient processing time)	160 + 60 $\times$ (Number of CC-Link IE Field Network device stations set in module parameter) ^{*3}	80 ^{*3}
Kd (Maximum data link processing time when the station is disconnected from or returned to the network)	Number of disconnected stations $\times$ 3500	

*1 This item is the total number of CC-Link IE Field Network device stations set in the module parameter of the NZ2GN-GFB.

*2 This parameter is set in the module parameter of the NZ2GN-GFB. ( Page 50 Parameter information)

*3 0 when transient transmission is not performed.

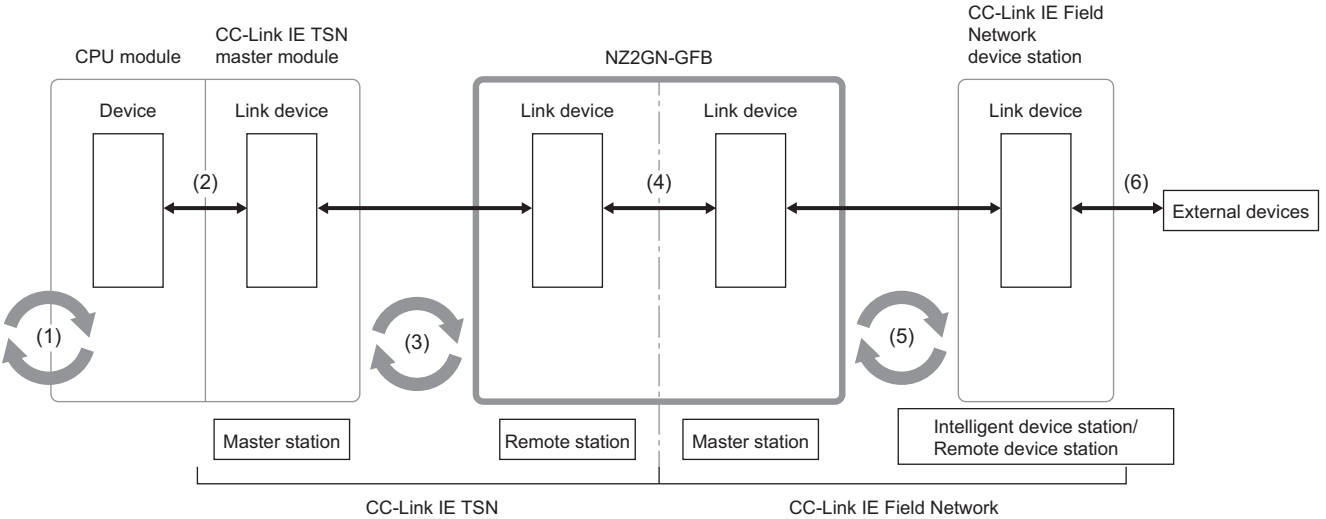
*4 Use the maximum value for the link scan time calculated using the formula for transmission delay time (maximum value).

Transmission delay time

This section describes the transmission delay time of the NZ2GN-GFB.

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station (1)

The following image indicates the transmission delay time for communication between the CC-Link IE TSN master station and CC-Link IE Field Network intelligent device stations/remote device stations.



The transmission delay time is the total of (1) to (6).

No.	Description	Reference
(1)	CC-Link IE TSN master station sequence scan time	📖 User's manual for the CPU module used
(2)	CC-Link IE TSN master station link refresh time	
(3)	CC-Link IE TSN cyclic data transfer processing time (communication cycle interval)	📖 User's manual for the CC-Link IE TSN master station used
(4)	NZ2GN-GFB device transfer time	📖 Page 274 Device transfer time
(5)	CC-Link IE Field Network link scan time	📖 Page 274 Link scan time
(6)	CC-Link IE Field Network intelligent device station/remote device station processing time	📖 User's Manual for the CC-Link IE Field Network intelligent device station/remote device station used

Point

For details on calculating (1) + (2) + (3), refer to the user's manual for the CC-Link IE TSN master station used.

The following shows the variables used to calculate the transmission delay time.

Variable	Description
Tb	NZ2GN-GFB device transfer time
LS_field	CC-Link IE Field Network link scan time
Rio_field	CC-Link IE Field Network intelligent device station/remote device station processing time

■NZ2GN-GFB (RX and RWr) ← CC-Link IE Field Network intelligent device station/remote device station (input)

The following table indicates the time it takes to turn on/off CC-Link IE TSN devices of the NZ2GN-GFB after the signal is input in CC-Link IE Field Network intelligent device stations/remote device stations.

Calculation value	Transmission delay time
Normal value	$Tb + (LS_field \times 1) + Rio_field$
Maximum value	$(Tb \times 2) + (LS_field \times 2) + Rio_field$

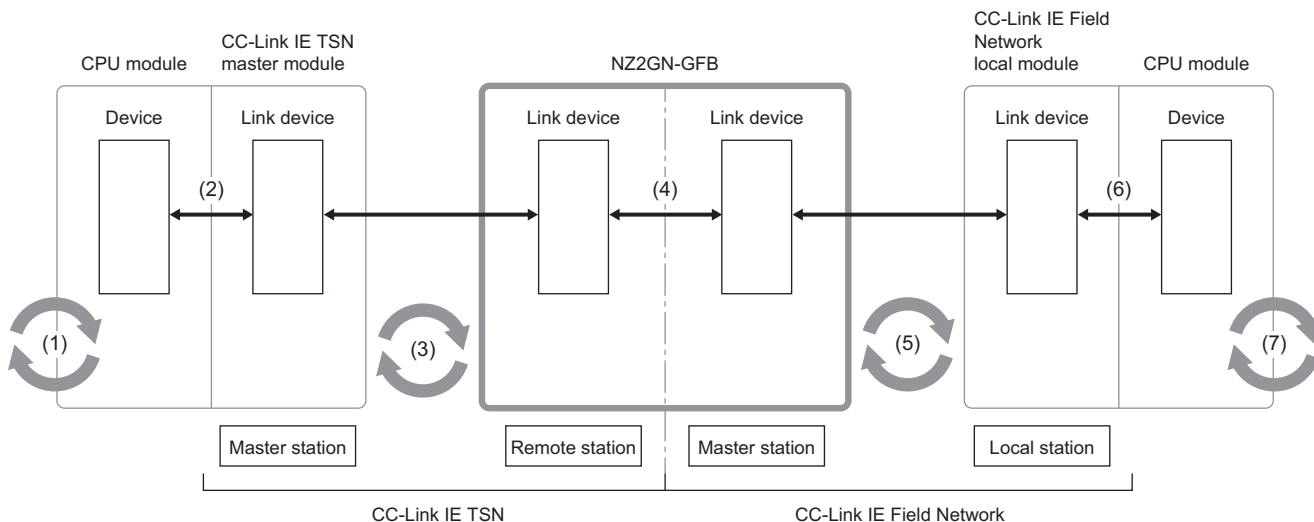
■NZ2GN-GFB (RY and RWw) → CC-Link IE Field Network intelligent device station/remote device station (output)

The following table indicates the time it takes to turn on/off the output of CC-Link IE Field Network intelligent device stations/remote device stations after turning on/off CC-Link IE TSN devices of the NZ2GN-GFB.

Calculation value	Transmission delay time
Normal value	$Tb + (LS_field \times 1) + Rio_field$
Maximum value	$(Tb \times 2) + (LS_field \times 2) + Rio_field$

When the NZ2GN-GFB is used as the CC-Link IE Field Network master station (2)

The following image indicates the transmission delay time for communication between CC-Link IE TSN master station and CC-Link IE Field Network local stations.



The transmission delay time is the total of (1) to (7).

No.	Description	Reference
(1)	CC-Link IE TSN master station sequence scan time	📖 User's manual for the CPU module used
(2)	CC-Link IE TSN master station link refresh time	
(3)	CC-Link IE TSN cyclic data transfer processing time (communication cycle interval)	📖 User's manual for the CC-Link IE TSN master station used
(4)	NZ2GN-GFB device transfer time	📖 Page 274 Device transfer time
(5)	CC-Link IE Field Network link scan time	📖 Page 274 Link scan time
(6)	CC-Link IE Field Network local station link refresh time	📖 User's manual for the CPU module used
(7)	CC-Link IE Field Network local station sequence scan time	

A

Point

For details on calculating (1) + (2) + (3), refer to the user's manual for the CC-Link IE TSN master station used.

The following shows the variables used to calculate the transmission delay time.

Variable	Description
Tb	NZ2GN-GFB device transfer time
LS_field	CC-Link IE Field Network link scan time
SL_field	CC-Link IE Field Network local station sequence scan time (including link refresh time)
n_field	$(LS_field \times m_field) \div SL_field$ (round up the calculated value to the nearest integer)
n3_field	$(SL_field \div LS_field)$ (round up the calculated value to the nearest integer)
k_field	$(SL_field \div (LS_field \times m_field))$ (round up the calculated value to the nearest integer)
m_field	Constant value based on the number of RWw assignment points of CC-Link IE Field Network local stations <ul style="list-style-type: none"> • 0 to 256 words: 1 • 257 to 512 words: 2 • 513 to 768 words: 3 • 769 to 1024 words: 4

■NZ2GN-GFB(RX) ← CC-Link IE Field Network local station (RY)

The following table indicates the time it takes to turn on/off CC-Link IE TSN devices of the NZ2GN-GFB after turning on/off the CPU module devices of CC-Link IE Field Network local stations.

Constant	Calculation value	Transmission delay time
m_field = 1	Normal value	$Tb + (LS_field \times k_field) + (SL_field \times 1)$
	Maximum value	$(Tb \times 2) + (LS_field \times (k_field + 1)) + (SL_field \times 1)$
m_field = 2 to 4	Normal value	$Tb + (LS_field \times m_field \times k_field) + (SL_field \times n_field)$
	Maximum value	$(Tb \times 2) + (LS_field \times m_field \times (k_field + 1)) + (SL_field \times (n_field + 1))$

■NZ2GN-GFB (RY) → CC-Link IE Field Network local station (RX)

The following table indicates the time it takes to turn on/off the CPU module devices of CC-Link IE Field Network local stations after turning on/off CC-Link IE TSN devices of the NZ2GN-GFB.

Calculation value	Formula
Normal value	$Tb + (LS_field \times n3_field) + (SL_field \times 1)$
Maximum value	$(Tb \times 2) + (LS_field \times n3_field + 1)) + (SL_field \times 2)$

■NZ2GN-GFB (RWr) ← CC-Link IE Field Network local station (RWw)

The following table indicates the time it takes to store data on CC-Link IE TSN devices of the NZ2GN-GFB after setting the data on CPU module devices of the CC-Link IE Field Network master station.

Constant	Calculation value	Transmission delay time
m_field = 1	Normal value	$Tb + (LS_field \times k_field) + (SL_field \times 1)$
	Maximum value	$(Tb \times 2) + (LS_field \times (k_field + 1)) + (SL_field \times 1)$
m_field = 2 to 4	Normal value	$Tb + (LS_field \times m_field \times k_field) + (SL_field \times n_field)$
	Maximum value	$(Tb \times 2) + (LS_field \times m_field \times (k_field + 1)) + (SL_field \times (n_field + 1))$

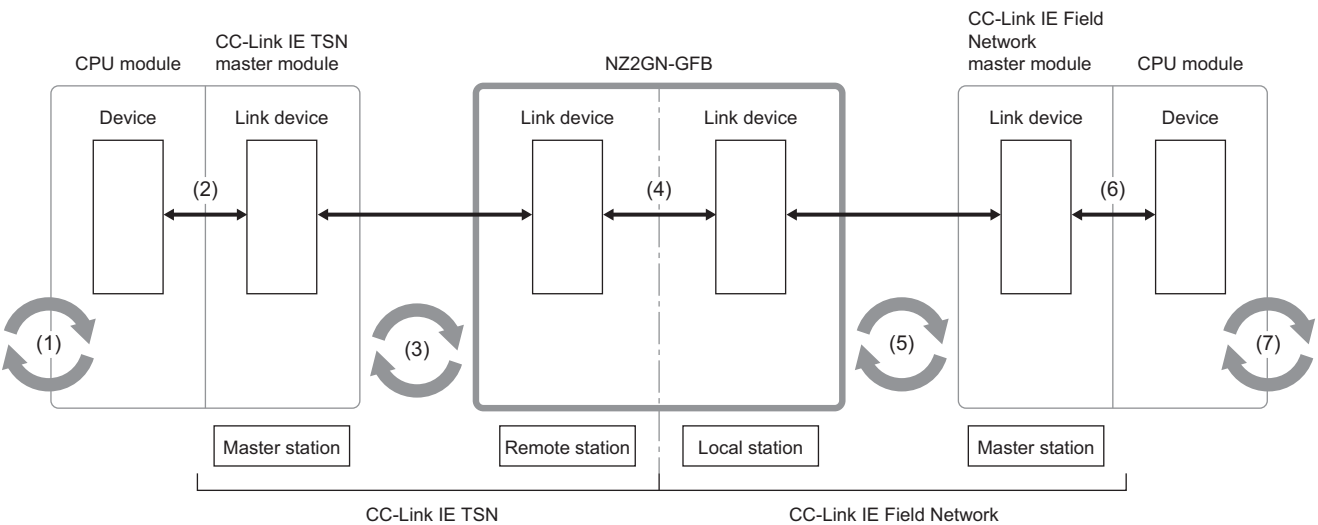
■NZ2GN-GFB (RWw) → CC-Link IE Field Network local station (RWr)

The following table indicates the time it takes to store data on CPU module devices of the CC-Link IE Field Network local stations after setting the data on CC-Link IE TSN devices of the NZ2GN-GFB.

Calculation value	Formula
Normal value	$Tb + (LS_field \times n3_field) + (SL_field \times 1)$
Maximum value	$(Tb \times 2) + (LS_field \times n3_field + 1)) + (SL_field \times 2)$

When the NZ2GN-GFB is used as the CC-Link IE Field Network local station

The following image indicates the transmission delay time for communication between CC-Link IE TSN master station and CC-Link IE Field Network master station.



The transmission delay time is the total of (1) to (7).

No.	Description	Reference
(1)	CC-Link IE TSN master station sequence scan time	📖 User's manual for the CPU module used
(2)	CC-Link IE TSN master station link refresh time	
(3)	CC-Link IE TSN cyclic data transfer processing time (communication cycle interval)	📖 User's manual for the CC-Link IE TSN master station used
(4)	NZ2GN-GFB device transfer time	📖 Page 274 Device transfer time
(5)	CC-Link IE Field Network link scan time	📖 User's manual for the CC-Link IE Field Network master station used
(6)	CC-Link IE Field Network Master station link refresh time	📖 User's manual for the CPU module used
(7)	CC-Link IE Field Network Master station sequence scan time	

A

Point

For details on calculating (1) + (2) + (3), refer to the user's manual for the CC-Link IE TSN master station used.

For details on calculating (5) + (6) + (7), refer to the user's manual for the CC-Link IE Field Network master station used. If the local station sequence scan time is needed for the calculation formula, use 0. However, if "Local station sequence scan time" is used for the calculation, use the variable of 1.

The following shows the variables used to calculate the transmission delay time.

Variable	Description
Tb	NZ2GN-GFB device transfer time

■Calculation value

The NZ2GN-GFB device transfer time is the following calculation value.

Calculation value	Formula
Normal value	Tb
Maximum value	Tb × 2

Appendix 5 Differences in Cyclic Transmission Modes

This chapter describes differences in cyclic transmission modes of CC-Link IE Field Network. Refer to the information of each mode to select the mode.

Description

■Normal mode

Cyclic and transient transmission are performed without losing their inherent speed performance.

This mode is suitable for a system that transmits large amounts of data for management, monitoring, and diagnostics by transient processing, along with regular I/O control or analog control.

Use this mode for general application.

■High-speed mode

Cyclic transmission has a priority over transient transmission.

This mode is suitable for applications requiring lower cycle times such as I/O control, analog control, and digital I/O.

In this mode, the priority of transient transmission is lower and its processing speed is slower than in normal mode.

Differences in performance specifications

The following table indicates the differences in performance specifications of each mode.

Item	Normal mode	High-speed mode
Maximum number of R/W send points per local station	1024 points (2048 bytes)	256 points (512 bytes)
Maximum number of transient transmissions per link scan	4 + CC-Link IE Field Network device station × 1.5	4

Setting method

The NZ2GN-GFB communication mode is set from the module parameter or remote buffer memory of NZ2GN-GFB.

■Setting using module parameters

Set from the "Communication mode" of Application settings (CC-Link IE Field Network). (☞ Page 50 Parameter information)

■Setting using remote buffer memory

Set from 'Communication mode' (011AH). (☞ Page 218 Communication mode)

Setting status

The setting status of the communication mode can be checked with 'Mode status of own station' (3043H) of the remote buffer memory. For details, refer to the following.

☞ Page 250 Setting value

Appendix 6 EMC and Low Voltage Directives

In each country, laws and regulations concerning electromagnetic compatibility (EMC) and electrical safety are enacted. For the products sold in the European countries, compliance with the EU's EMC Directive has been a legal obligation as EMC regulation since 1996, as well as the EU's Low Voltage Directive as electrical safety regulation since 1997.

Manufacturers who recognize their products are compliant with the EMC and Low Voltage Directives are required to attach a "CE marking" on their products in European countries.

In some other countries and regions, manufacturers are required to make their products compliant with applicable laws or regulations and attach a certification mark on the products as well (such as UK Conformity Assessed (UKCA) marking in the UK, and Korea Certification (KC) marking in South Korea).

Each country works to make their regulatory requirements consistent across countries based on international standards.

When the requirements are consistent, measures to comply with the EMC and electrical safety regulations become common across countries.

The UK and South Korea have enacted EMC regulations whose requirements are consistent with those of the EMC Directive. The UK has also enacted electrical safety regulations whose requirements are consistent with those of the Low Voltage Directive. In this section, the requirements of the EMC and Low Voltage Directives are described as examples of those of the EMC and electrical safety regulations.

Measures to comply with the EMC Directive

The EMC Directive specifies that "products placed on the market must be so constructed that they do not cause excessive electromagnetic interference (emissions) and are not unduly affected by electromagnetic interference (immunity)".

This section summarizes the precautions on compliance with the EMC Directive of the machinery constructed with the module.

These precautions are based on the requirements and the standards of the regulation, however, it does not guarantee that the entire machinery constructed according to the descriptions will comply with abovementioned directives.

The method and judgment for complying with the EMC Directive must be determined by the person who constructs the entire machinery.

A

EMC Directive related standards

■Emission requirements

Specifications	Test item	Test details	Standard value
EN 61131-2:2007	CISPR16-2-3 Radiated emission ^{*2}	Radio waves from the product are measured.	• 30M-230MHz QP: 40dB μ V/m (10m in measurement range) ^{*1} • 230M-1000MHz QP: 47dB μ V/m (10m in measurement range)
	CISPR16-2-1, CISPR16-1-2 Conducted emission ^{*2}	Noise from the product to the power line is measured.	• 150k-500kHz QP: 79dB, Mean: 66dB ^{*1} • 500k-30MHz QP: 73dB, Mean: 60dB

*1 QP: Quasi-peak value, Mean: Average value

*2 The module is an open type device (a device designed to be housed in other equipment) and must be installed inside a conductive control panel. The tests were conducted with the module installed in a control panel.

■Immunity requirements

Specifications	Test item	Test details	Standard value
EN 61131-2:2007	EN 61000-4-2 Electrostatic discharge immunity ^{*1}	Static electricity is applied to the cabinet of the equipment.	<ul style="list-style-type: none"> • 8kV Air discharge • 4kV Contact discharge
	EN 61000-4-3 Radiated, radio-frequency, electromagnetic field immunity ^{*1}	Electric fields are radiated to the product.	80% AM modulation@1kHz <ul style="list-style-type: none"> • 80M-1000MHz: 10V/m • 1.4G-2.0GHz: 3V/m • 2.0G-2.7GHz: 1V/m
	EN 61000-4-4 Electrical fast transient/burst immunity ^{*1}	Burst noise is applied to the power line and signal line.	<ul style="list-style-type: none"> • AC/DC main power, I/O power, AC I/O (unshielded): 2kV • DC I/O, analog, communication: 1kV
	EN 61000-4-5 Surge immunity ^{*1}	A lightning surge is applied to the power line and signal line.	<ul style="list-style-type: none"> • AC power line, AC I/O power, AC I/O (unshielded): 2kV CM, 1kV DM • DC power line, DC I/O power: 0.5kV CM, DM • DC I/O, AC I/O (shielded), analog^{*2}, communication: 1kV CM
	EN 61000-4-6 Conducted RF immunity ^{*1}	High frequency noise is applied to the power line and signal line.	0.15M-80MHz, 80% AM modulation @1kHz, 10Vrms
	EN 61000-4-8 Power-frequency magnetic field immunity ^{*1}	The product is installed in an inductive magnetic field.	50Hz/60Hz, 30A/m
	EN 61000-4-11 Voltage dips and interruption immunity ^{*1}	A momentary power failure is caused to the power supply voltage.	<ul style="list-style-type: none"> • Apply at 0%, 0.5 cycles and zero-cross point • 0%, 250/300 cycles (50/60Hz) • 40%, 10/12 cycles (50/60Hz) • 70%, 25/30 cycles (50/60Hz)

*1 The module is an open type device (a device designed to be housed in other equipment) and must be installed inside a conductive control panel. The tests were conducted with the module installed in a control panel.

*2 The accuracy of an analog-digital converter module may temporarily vary within $\pm 10\%$.

Installation in a control panel

The module is open type devices and must be installed inside a control panel.

This ensures safety as well as effective shielding of programmable controller-generated electromagnetic noise.

■Control panel

- Use a conductive control panel.
- When securing the top or bottom plate using bolts, cover the grounding part on the control panel so that the part will not be painted.
- To ensure electrical contact between the inner plate and control panel, take measures such as covering the bolts so that conductivity can be ensured in the largest possible area.
- Ground the control panel with a thick ground cable so that low impedance can be ensured even at high frequencies.
- Holes in the control panel must be 10cm diameter or less. If the holes are larger than 10cm in diameter, radio waves may leak. In addition, because radio waves leak through a clearance between the control panel and its door, reduce the clearance as much as possible. The leakage of radio waves can be suppressed by the direct application of an EMI gasket on the paint surface.

Our tests have been carried out on a control panel having the damping characteristics of 37dB (max.) and 30dB (mean) (measured by 3m method, 30 to 300MHz).

■Wiring of power cables and ground cables

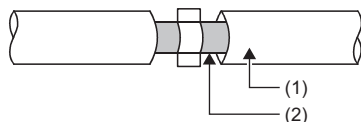
Near the power supply part, provide a ground point to the control panel. Ground the FG terminal with the thickest and shortest possible ground cable (30cm or shorter).

Cables

Use shielded cables for the cables which are connected to the module and run out from the control panel. If a shielded cable is not used or not grounded correctly, the noise immunity will not meet the specified value.

■Network cable

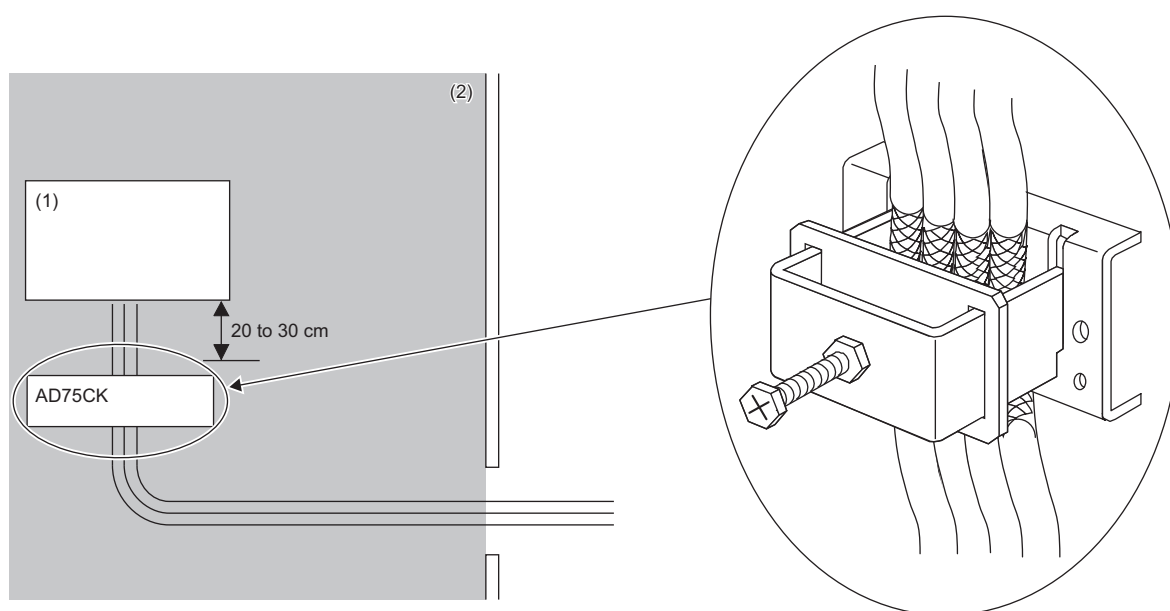
A shielded cable is used for the network cable. Strip a part of the jacket as shown below and ground the exposed shield in the largest possible area.



(1) Network cable
(2) Shield

■Grounding the cable clamp

Use shielded cables for external wiring and ground the shields of the external wiring cables to the control panel with the AD75CK-type cable clamp (Mitsubishi). (Ground the shield section 20 to 30cm away from the module.)



(1) Module
(2) Inside the control panel

For detail on AD75CK, refer to the following.

📖 AD75CK-type Cable Clamping Instruction Manual

External power supply

- Use a CE-marked product for an external power supply and always ground the FG terminal. (External power supply used for the tests conducted by Mitsubishi: TDK-Lambda DRJ100-24-1)
- Use a power cable of 10m or shorter when connecting it to the module power supply terminal.
- Use a power cable of 30m or shorter when connecting it to the external power supply for output part.
- Use a power cable of 3m or shorter when connecting it to the noise filter from the external power supply for output part.

Others

■Ferrite core

A ferrite core has the effect of reducing radiated noise in the 30MHz to 100MHz band.

It is recommended to attach ferrite cores if shielded cables coming out of the control panel do not provide sufficient shielding effects.

Note that the ferrite cores must be attached at the position closest to the cable hole inside the control panel. If attached at an improper position, the ferrite core will not produce any effect.

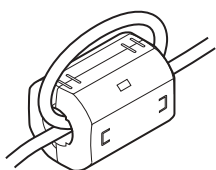
For Ethernet cables as well as terminals that are connected to the module power supply of the module and the external power supply, attach a ferrite core 4cm away from the NZ2GN-GFB.

The ferrite core has the effect of reducing externally conducted noise as well.

(Ferrite core used for the tests conducted by Mitsubishi: TOKIN Corporation ESD-SR-250, TDK Corporation ZCAT3035-1330)

Ex.

Ferrite core attachment example



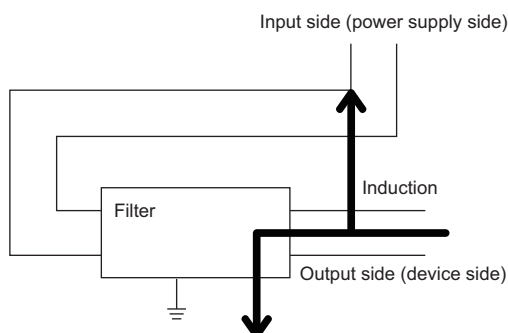
■Noise filter (power supply line filter)

A noise filter is a component which has an effect on conducted noise. Attaching the filter can suppress more noise. (The noise filter has the effect of reducing conducted noise of 10MHz or less.)

Connect a noise filter to the external power supply of the module. Use a noise filter with the damping characteristics equivalent to those of RSEN-2006 (manufactured by TDK-Lambda Corporation). Note that a noise filter is not required if the module is used in Zone A defined in EN61131-2.

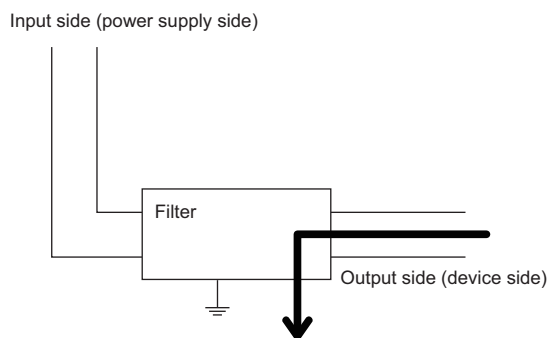
The precautions for attaching a noise filter are described below.

- Do not bundle the cables on the input side and output side of the noise filter. If bundled, the output side noise will be induced into the input side cables from which the noise was filtered.



- Problem example

Noise is induced when the input and output cables are bundled.



- Example of improvement

Install the input and output cables separately.

- Ground the noise filter grounding terminal to the control panel with the shortest cable possible (approx. 10cm).

Measures to comply with the Low Voltage Directive

The module operates at the rated voltage of 24VDC.

The Low Voltage Directive is not applied to modules that operate at a rated voltage of less than 24VDC.

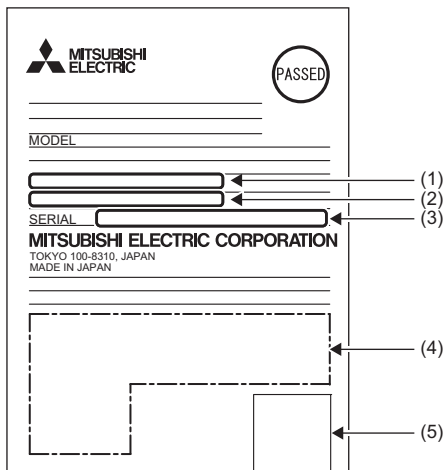
Appendix 7 Production Information and Firmware Version

Checking the production information

The production information of the NZ2GN-GFB can be checked with the following.

- Rating plate
- "CC-Link IE TSN/CC-Link IE Field Diagnostics" window

Checking on the rating plate



- (1) MAC address (CC-Link IE TSN)
- (2) MAC address (CC-Link IE Field Network)
- (3) Production information
- (4) Relevant standard symbol
- (5) QR code

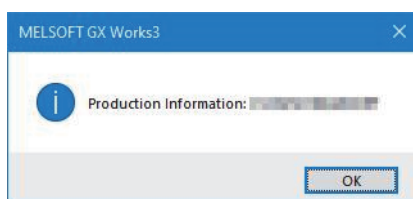
Checking by using the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window

To check the NZ2GN-GFB production information from the CC-Link IE Field Network master station or local stations, connect the master station or local station to the CC-Link IE TSN master station that is connected to the NZ2GN-GFB using "Other Station Setting" on the "Specify Connection Destination Connection" window. Then, start the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window.

■Checking by each module

Operating procedure

1. Connect the engineering tool to the CPU module.
2. Start the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window from the menu.
🔗 [Diagnostics] ⇄ [CC-Link IE TSN/CC-Link IE Field Diagnostics]
3. Right-click the device station whose production information you want to display, and select "Production Information".
4. The production information appears.



■Checking with the "Station Information List" window

📖 Page 128 Checking station information

Checking the firmware version

Check the firmware version of the NZ2GN-GFB with the following.

- "Station Information List" window of the "CC-Link IE TSN/CC-Link IE Field Diagnostics" window
- CC-Link IE TSN Firmware Update Tool

Point

For an I/O module on which a firmware update has not been performed yet, the firmware version can be checked with the production information. (The first two digits of production information show the firmware version.) ( Page 286 Checking the production information)

Checking with the "Station Information List" window

For how to check the firmware version, refer to the following.

 Page 128 Checking station information

Checking with the CC-Link IE TSN Firmware Update Tool

For how to check the firmware version, refer to the "Help" of CC-Link IE TSN Firmware Update Tool.

Appendix 8 Connecting with modules of the MELSEC-Q/L series

Follow the precautions below when connecting the NZ2GN-GFB as a CC-Link IE Field Network local station in a system where the CC-Link IE Field Network master station is MELSEC-Q/L series.

- Use any of the following modules for the master station.

Model name	First 5 digits of the serial number
QJ71GF11-T2	The first 5 digits of the serial number is "16012" or higher.
LJ71GF11-T2	

- If the first 5 digits of the serial number of the master station is smaller than the number shown above, set "RX/RX Setting" in "Network Configuration Settings" to any of the following.

Action

Set the largest end number in all stations to multiples of 32 - 1 by changing the number of cyclic assignment points or adding the reserved station.

Example

• Before change

	No.	Model Name	STA#	Station Type	RX/RX Setting		
					Points	Start	End
	0	Host Station	0	Master Station			
	1	General Local Station	1	Local Station	32	0000	001F
	2	NZ2GF2B1-16D	2	Remote Device Station	16	0020	002F
	3	NZ2GF2B1-16T	3	Remote Device Station	16	0030	003F
	4	NZ2GF2B-60AD4	4	Remote Device Station	16	0040	004F
	5	NZ2GF2B1-16T	5	Remote Device Station	16	0050	005F
	6	NZ2GF2B1-16T	6	Remote Device Station	16	0060	006F
	7	General Local Station	7	Local Station	32	0070	008F

• After change

	No.	Model Name	STA#	Station Type	RX/RX Setting		
					Points	Start	End
	0	Host Station	0	Master Station			
	1	General Local Station	1	Local Station	32	0000	001F
	2	NZ2GF2B1-16D	2	Remote Device Station	16	0020	002F
	3	NZ2GF2B1-16T	3	Remote Device Station	16	0030	003F
	4	NZ2GF2B-60AD4	4	Remote Device Station	16	0040	004F
	5	NZ2GF2B1-16T	5	Remote Device Station	16	0050	005F
	6	NZ2GF2B1-16T	6	Remote Device Station	16	0060	006F
	7	General Local Station	7	Local Station	48	0070	009F

Reduce the largest end number in all stations to 7FH or less.

• Before change

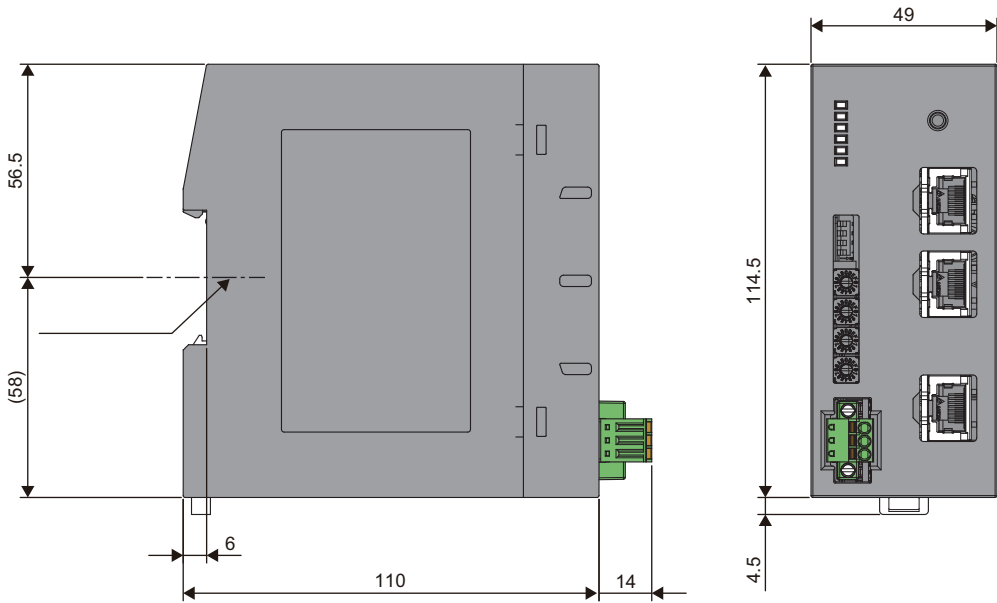
	No.	Model Name	STA#	Station Type	RX/RX Setting		
					Points	Start	End
	0	Host Station	0	Master Station			
	1	General Local Station	1	Local Station	32	0000	001F
	2	NZ2GF2B1-16D	2	Remote Device Station	16	0020	002F
	3	NZ2GF2B1-16T	3	Remote Device Station	16	0030	003F
	4	NZ2GF2B-60AD4	4	Remote Device Station	16	0040	004F
	5	NZ2GF2B1-16T	5	Remote Device Station	16	0050	005F
	6	NZ2GF2B1-16T	6	Remote Device Station	16	0060	006F
	7	General Local Station	7	Local Station	32	0070	008F

• After change

	No.	Model Name	STA#	Station Type	RX/RX Setting		
					Points	Start	End
	0	Host Station	0	Master Station			
	1	General Local Station	1	Local Station	32	0000	001F
	2	NZ2GF2B1-16D	2	Remote Device Station	16	0020	002F
	3	NZ2GF2B1-16T	3	Remote Device Station	16	0030	003F
	4	NZ2GF2B-60AD4	4	Remote Device Station	16	0040	004F
	5	NZ2GF2B1-16T	5	Remote Device Station	16	0050	005F
	6	NZ2GF2B1-16T	6	Remote Device Station	16	0060	006F
	7	General Local Station	7	Local Station	16	0070	007F

Appendix 9 External Dimensions

This chapter describes the external dimensions of the NZ2GN-GFB.



(Unit: mm)

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Appendix 10 Supported MIBs

This section lists the standard MIBs that are supported by the NZ2GN-GFB, and describes their details.

List of standard MIBs

○: Compatible, ×: Not compatible

Item	Compatibility
System group	○
Interface group	○
AddressTranslation group	○
IP group	○
ICMP group	○
TCP group	×
UDP group	○
EGP group	×
Transmission group	×
SNMP group	○

System group (1.3.6.1.2.1.1.)

R: Read, W: Write

Classification	Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
—	sysDescr	.1	DisplayString	R	Device information	"NZ2GN-GFB"
	—	.2	—	—	—	—
	sysUpTime	.3	TimeTicks	R	Time elapsed since the system starts (in units of 10ms)	Elapsed time
	sysContact	.4	DisplayString	R/W	Administrator contact	Set by the customer
	sysName	.5	DisplayString	R/W	Administrative name	Set by the customer
	sysLocation	.6	DisplayString	R/W	System installation location	Set by the customer
	sysServices	.7	INTEGER	R	Services provided by the system (OSI reference layer) • b7: Application layer • b6: Presentation layer • b5: Session layer • b4: Transport layer • b3: Network layer • b2: Data link layer • b1: Physical layer	78 (b2, b3, b4, b7 turned on)

Interface group (1.3.6.1.2.1.2.)

R: Read

Classification	Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
—	ifNumber	.1	INTEGER	R	Number of interfaces	1
ifTable	ifTable	.2	SEQUENCE OF IfEntry	—	Information table of each interface	—
ifTable	ifEntry	ifEntry	IfEntry	—	Entry of each interface	—
		ifIndex	INTEGER	R	Interface number	1
		ifDescr	DisplayString	R	Interface name	CC-Link IE TSN
		ifType	INTEGER	R	Interface type ( Page 297 List of interface types)	6: ethernet-csmacd
		ifMtu	INTEGER	R	Maximum length of an IP datagram that an interface can send or receive	1500
		ifSpeed	Gauge	R	Transfer speed	Communication speed setting
		ifPhysAddress	PhysAddress	R	Physical address	MAC address
		ifAdminStatus	INTEGER	R	Ideal interface status • 1: Communication enabled • 2: Communication disabled • 3: Test mode	1: Communication enabled
		ifOperStatus	INTEGER	R	Current interface status • 1: Communication enabled • 2: Communication disabled • 3: Test mode	1: Communication enabled
		ifLastChange	TimeTicks	R	The value of sysUpTime when the current operating status is entered	Fixed to 0
		ifInOctets	Counter	R	Total number of octets received through the interface	Counter value
		ifInUcastPkts	Counter	R	Number of subnet unicast packets delivered to the upper protocol	Counter value
		ifInNUcastPkts	Counter	R	Number of subnet broadcast or multicast packets delivered to the upper protocol	Counter value
		ifInDiscards	Counter	R	Number of received packets discarded due to factors such as resource limitation	Fixed to 0
		ifInErrors	Counter	R	Number of received packets that could not be delivered to the upper protocol due to an error	Fixed to 0
		ifInUnknownProt os	Counter	R	Number of received packets discarded due to an unknown or undefined protocol	Counter value
		ifOutOctets	Counter	R	Total number of octets sent from the interface	Counter value
		ifOutUcastPkts	Counter	R	Number of packets sent to the subnet unicast addresses requested by the upper protocol	Counter value
		ifOutNUcastPkts	Counter	R	Number of packets sent to the subnet broadcast or multicast addresses requested by the upper protocol	Counter value
		ifOutDiscards	Counter	R	Number of output packets discarded due to factors such as resource limitation	Counter value
		ifOutErrors	Counter	R	Number of received packets that could not be sent due to an error	Fixed to 0
		ifOutQLen	Gauge	R	Output packet queue length (in units of packets)	Counter value
		ifSpecific	OBJECTIDENTIFIER	R	MIB fixed pointer	Fixed to 0.0

A

AddressTranslation group (1.3.6.1.2.1.3.)

R: Read

Classification	Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
atTable	atTable	.1	SEQUENCE OF IfEntry	—	Information table for conversion information of each address	—
atTable	atEntry	atEntry	IfEntry	—	Entry for conversion information of each address	—
		atIfIndex	INTEGER	R	Network ID of the own station/communication destination	1
		atPhysAddress	PhysAddress	R	Physical address of the own station/communication destination	MAC address
		atNetAddress	IpAddress	R	IP address of the own station/communication destination	IP address

IP group (1.3.6.1.2.1.4.)

R: Read

Classification	Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
—	ipForwarding	.1	INTEGER	R	Whether to operate as an IP-forwarding gateway • 1: forwarding • 2: not-forwarding	2: not-forwarding
	ipDefaultTTL	.2	INTEGER	R	Default Time-To-Live value for IP packets	64
	ipInReceives	.3	Counter	R	Number of datagrams received from the interface	Counter value
	ipInHdrErrors	.4	Counter	R	Number of input datagrams discarded due to an IP header error	Counter value
	ipInAddrErrors	.5	Counter	R	Number of datagrams discarded due to misdelivery	Counter value
	ipForwDatagrams	.6	Counter	R	Number of input datagrams whose final IP transmission destination is not this entity	Counter value
	ipInUnknownProtos	.7	Counter	R	Number of datagrams discarded due to an unknown or undefined protocol	Counter value
	ipInDiscards	.8	Counter	R	Number of input datagrams discarded due to factors such as resource limitation	Fixed to 0
	ipInDelivers	.9	Counter	R	Number of input datagrams successfully delivered to IP user protocols	Counter value
	ipOutRequests	.10	Counter	R	Number of IP datagrams supplied by an IP user protocol	Counter value
	ipOutDiscards	.11	Counter	R	Number of output IP datagrams discarded due to factors such as resource limitation	Fixed to 0
	ipOutNoRoutes	.12	Counter	R	Number of IP datagrams discarded due to not finding the transfer route to the transmission destination	Counter value
	ipReasmTimeout	.13	INTEGER	R	Maximum number of seconds that an incoming fragment is held, waiting to be reassembled	64
	ipReasmReqds	.14	Counter	R	Number of IP fragments that require reassembly	Counter value
	ipReasmOKs	.15	Counter	R	Number of IP fragments successfully reassembled	Counter value
	ipReasmFails	.16	Counter	R	Number of failures detected during reassembly	Counter value
	ipFragOKs	.17	Counter	R	Number of IP datagrams successfully fragmented	Counter value
	ipFragFails	.18	Counter	R	Number of IP datagrams discarded because they could not be fragmented	Counter value
	ipFragCreates	.19	Counter	R	Number of IP datagram fragments generated by fragmentation	Counter value
ipAddrTable	ipAddrTable	.20	SEQUENCE OF IfEntry	—	Information table of each own station IP address	—

Classification		Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
ipAddrTable	ipAddrEntry	ipAddrEntry	.20.1	IpAddrEntry	—	Entry of each own station IP address	—
		ipAdEntAddr	.20.1.1	IpAddress	R	Own station IP address	IP address
		ipAdEntIfIndex	.20.1.2	INTEGER	R	ID of each ipAddrEntry	1
		ipAdEntNetMask	.20.1.3	IpAddress	R	Subnet mask corresponding to IP address	Subnet mask
		ipAdEntBcastAddr	.20.1.4	INTEGER	R	Value of the least significant bit in the IP broadcast address used to send through the interface where the IP address is assigned	1
		ipAdEntReasmMaxSize	.20.1.5	INTEGER	R	Maximum IP datagram length for received IP datagram fragments that can be reassembled	1500
ipRouteTable		ipRouteTable	.21	SEQUENCE OF IpRouteEntry	—	IP routing table for the own station IP address	—
ipRouteTable	ipRouteEntry	ipRouteEntry	.21.1	IpRouteEntry	—	Entry for routing information for each IP address	—
		ipRouteDest	.21.1.1	IpAddress	R	Destination IP address of this path	IP address
		ipRouteIfIndex	.21.1.2	INTEGER	R	ID of each ipRouteEntry	1
		ipRouteMetric1	.21.1.3	INTEGER	R	1st routing path for the destination IP address -1 when not used	0
		ipRouteMetric2	.21.1.4	INTEGER	R	2nd routing path for the destination IP address -1 when not used	-1
		ipRouteMetric3	.21.1.5	INTEGER	R	3rd routing path for the destination IP address -1 when not used	-1
		ipRouteMetric4	.21.1.6	INTEGER	R	4th routing path for the destination IP address -1 when not used	-1
		ipRouteNextHop	.21.1.7	IpAddress	R	Next relay IP address (if it does not exist, destination IP address)	IP address
		ipRouteType	.21.1.8	INTEGER	R	Route status • 1: Other than 2 to 4 (other) • 2: Disabled path (invalid) • 3: Direct routing (direct) • 4: Indirect routing (indirect)	3: Direct routing
		ipRouteProto	.21.1.9	INTEGER	R	Routing protocol to use ( Page 297 List of routing protocols)	2: local
		ipRouteAge	.21.1.10	INTEGER	R	Elapsed time since the route was last updated	Fixed to 0
		ipRouteMask	.21.1.11	IpAddress	R	Subnet mask for the destination IP address	Subnet mask
		ipRouteMetric5	.21.1.12	INTEGER	R	5th routing path for the destination IP address -1 when not used	-1
		ipRouteInfo	.21.1.13	OBJECT IDENTIFIER	R	Object ID that points to the MIB of the specified routing protocol	Fixed to 0.0
ipNetToMediaTable		ipNetToMediaTable	.22	SEQUENCE OF IpNetToMediaEntry	—	Routing table for each destination IP address	—
ipNetToMediaTable	ipNetToMediaEntry	ipNetToMediaEntry	.22.1	IpNetToMediaEntry	—	Entry of each destination IP address	—
		ipNetToMediaIfIndex	.22.1.1	INTEGER	R	Each IpNetToMediaEntry ID	1
		ipNetToMediaPhysAddress	.22.1.2	DisplayString	R	Destination MAC address	MAC address
		ipNetToMediaNetAddress	.22.1.3	IpAddress	R	Destination IP address	IP address
		ipNetToMediaType	.22.1.4	INTEGER	R	Mapping type • 1: Other than 2 to 4 (other) • 2: Disabled mapping (invalid) • 3: Dynamic mapping (dynamic) • 4: Static mapping (static)	For other stations, 3: Dynamic mapping For the own station, 4: Static mapping
—		ipRoutingDiscards	.23	Counter	R	Number of discarded routing entries	Fixed to 0

ICMP group (1.3.6.1.2.1.5.)

R: Read

Classification	Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
—	icmpInMsgs	.1	Counter	R	Total number of ICMP messages received	Counter value
	icmpInErrors	.2	Counter	R	Total number of ICMP error messages received	Counter value
	icmpInDestUnreachs	.3	Counter	R	Number of ICMP transmission destination unreachable messages received	Counter value
	icmpInTimeExcds	.4	Counter	R	Number of ICMP time exceeded messages received	Counter value
	icmpInParmProbs	.5	Counter	R	Number of ICMP parameter failure messages received	Counter value
	icmpInSrcQuenchs	.6	Counter	R	Number of ICMP Source Quench messages received	Counter value
	icmpInRedirects	.7	Counter	R	Number of ICMP redirect messages received	Counter value
	icmpInEchos	.8	Counter	R	Number of ICMP echo request messages received	Counter value
	icmpInEchoReps	.9	Counter	R	Number of ICMP echo response messages received	Counter value
	icmpInTimestamps	.10	Counter	R	Number of ICMP timestamp request messages received	Counter value
	icmpInTimestampReps	.11	Counter	R	Number of ICMP timestamp response messages received	Counter value
	icmpInAddrMasks	.12	Counter	R	Number of ICMP address mask request messages received	Counter value
	icmpInAddrMaskReps	.13	Counter	R	Number of ICMP address mask response messages received	Counter value
	icmpOutMsgs	.14	Counter	R	Total number of ICMP messages sent	Counter value
	icmpOutErrors	.15	Counter	R	Number of ICMP error messages sent	Fixed to 0
	icmpOutDestUnreachs	.16	Counter	R	Number of ICMP transmission destination unreachable messages sent	Counter value
	icmpOutTimeExcds	.17	Counter	R	Number of ICMP time exceeded messages sent	Counter value
	icmpOutParmProbs	.18	Counter	R	Number of ICMP parameter failure messages sent	Counter value
	icmpOutSrcQuenchs	.19	Counter	R	Number of ICMP Source Quench messages sent	Counter value
	icmpOutRedirects	.20	Counter	R	Number of ICMP redirect messages sent	Counter value
	icmpOutEchos	.21	Counter	R	Number of ICMP echo request messages sent	Counter value
	icmpOutEchoReps	.22	Counter	R	Number of ICMP echo response messages sent	Counter value
	icmpOutTimestamps	.23	Counter	R	Number of ICMP timestamp request messages sent	Counter value
	icmpOutTimestamp	.24	Counter	R	Number of ICMP timestamp response messages sent	Counter value
	icmpOutAddrMasks	.25	Counter	R	Number of ICMP address mask request messages sent	Counter value
	icmpOutAddrMask Reps	.26	Counter	R	Number of ICMP address mask response messages sent	Counter value

UDP group (1.3.6.1.2.1.7.)

R: Read

Classification		Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
—		udpInDatagrams	.1	Counter	R	Number of UDP datagrams delivered to UDP users	Counter value
		udpNoPorts	.2	Counter	R	Number of UDP datagrams with no application at the transmission destination port	Counter value
		udpInErrors	.3	Counter	R	Number of UDP datagrams not delivered for reasons other than having no application at the transmission destination port	Counter value
		udpOutDatagrams	.4	Counter	R	Number of UDP datagrams delivered	Counter value
udpTable		udpTable	.5	SEQUENCE OF UdpEntry	—	Information table for each UDP connection	—
udpTable	udpEntry	udpEntry	.5.1	UdpEntry	—	Entry for each UDP connection	—
		udpLocalAddress	.5.1.1	IpAddress	R	Local IP address of the UDP listener	IP address
		udpLocalPort	.5.1.2	INTEGER	R	Local port number of the UDP listener	Port number

SNMP group (1.3.6.1.2.1.11.)

R: Read

Classification	Name	OID (SubTree)	SYNTAX	ACCESS	Description	Specifications
—	snmplnPks	.1	Counter	R	Total number of SNMP messages received from TP (transport service)	Counter value
	snmpOutPkts	.2	Counter	R	Total number of SNMP messages sent to TP	Counter value
	snmplnBadVersions	.3	Counter	R	Number of received messages where an undefined protocol version was detected	Counter value
	snmplnBadCommunityNames	.4	Counter	R	Number of received SNMP messages where an unknown SNMP community name was detected	Counter value
	snmplnBadCommunityUses	.5	Counter	R	Number of received SNMP messages where an unauthorized SNMP community was detected	Counter value
	snmplnASNParseErrs	.6	Counter	R	Number of received SNMP messages that caused an ASN.1 parsing error	Counter value
	snmplnTooBigs	.8	Counter	R	Number of received SNMP messages with error-status 'tooBig'	Fixed to 0
	snmplnNoSuchNames	.9	Counter	R	Number of received SNMP messages with error-status 'noSuchName'	Fixed to 0
	snmplnBadValues	.10	Counter	R	Number of received SNMP messages with error-status 'BadValueno'	Fixed to 0
	snmplnReadOnlys	.11	Counter	R	Number of received SNMP messages with error-status 'ReadOnly'	Fixed to 0
	snmplnGenErrs	.12	Counter	R	Number of received SNMP messages with error-status 'GenErr'	Fixed to 0
	snmplnTotalReqVars	.13	Counter	R	Number of MIB variables in all received GetRequest-PDU and GetNextRequest-PDU	Counter value
	snmplnTotalSetVars	.14	Counter	R	Number of MIB variables in all received SetRequest-PDU	Counter value
	snmplnGetRequests	.15	Counter	R	Number of GetRequest-PDU received	Counter value
	snmplnGetNexts	.16	Counter	R	Number of GetNextRequest-PDU received	Counter value
	snmplnSetRequests	.17	Counter	R	Number of SetRequest-PDU received	Counter value
	snmplnGetResponses	.18	Counter	R	Number of GetResponse-PDU received	Fixed to 0
	snmplnTraps	.19	Counter	R	Number of Trap-PDU received	Fixed to 0
	snmpOutTooBigs	.20	Counter	R	Number of sent SNMP messages with error-status 'tooBig'	Counter value
	snmpOutNoSuchNames	.21	Counter	R	Number of sent SNMP messages with error-status 'noSuchName'	Counter value
	snmpOutBadValues	.22	Counter	R	Number of sent SNMP messages with error-status 'BadValueno'	Counter value
	snmpOutGenErrs	.24	Counter	R	Number of sent messages with error-status 'GenErr'	Counter value
	snmpOutGetRequests	.25	Counter	R	Number of GetRequest-PDU sent	Fixed to 0
	snmpOutGetNexts	.26	Counter	R	Number of GetNextRequest-PDU sent	Fixed to 0
	snmpOutSetRequests	.27	Counter	R	Number of SetRequest-PDU sent	Fixed to 0
	snmpOutGetResponses	.28	Counter	R	Number of GetResponse-PDU sent	Counter value
	snmpOutTraps	.29	Counter	R	Number of Trap-PDU sent	Counter value
	snmpEnableAuthenTraps	.30	INTEGER	R	Whether the SNMP agent can send authentication failure traps • 1: Enabled (enabled) • 2: Disabled (disabled)	2: Disabled

Reference information

■List of interface types

No.	Interface name	—			
1	other	2	regular1822	3	hdh1822
5	rfc877-x25	6	ethernet-csmacd	7	iso88023-csmacd
9	iso88025-tokenRing	10	iso88026-man	11	starLan
13	proteon-80Mbit	14	hyperchannel	15	fddi
17	sdlc	18	ds1	19	e1
21	primaryISDN	22	propPointToPointSerial	23	ppp
25	eon	26	ethernet-3Mbit	27	nsip
29	ultra	30	ds3	31	sip
				32	frame-relay

■List of routing protocols

No.	Protocol name	—			
1	other	2	local	3	netmgmt
5	egp	6	ggp	7	hello
9	is-is	10	es-is	11	cisco-lgrp
13	ospf	14	bgp	—	
4	icmp	8	rip		
				12	bbnSpflgp

■List of connection statuses

No.	Status name	—			
1	closed	2	listen	3	synSent
5	established	6	finWait1	7	finWait2
9	lastAck	10	closing	11	timeWait
				12	deleteTCB

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Appendix 12

Added and Enhanced Functions

The following table shows the added and enhanced function in the NZ2GN-GFB.

Added and enhanced function	Firmware version
SNMP agent compatibility	"03" or later



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REVISIONS

*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Description
June 2023	SH(NA)-082571ENG-A	First edition
October 2023	SH(NA)-082571ENG-B	■Added or modified part Section 6.4
April 2024	SH(NA)-082571ENG-C	■Added function Firmware update function ■Added or modified parts Section 2.4, 5.6, 7.4, 10.7, Appendix 7, 10
June 2025	SH(NA)-082571ENG-D	■Added or modified part Section 4.3
April 2026	SH(NA)-082571ENG-E	■Added function SNMP agent compatibility ■Added or modified parts Section 2.3, 2.4, 4.3, 6.3, 7.4, 10.5, Appendix 3, 10, 12

Japanese manual number: SH-082570-E

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