MITSUBISHI ELECTRIC

Edge Computing Software

iQ Edgecross

CC-Link IE Control Network Data Collector User's Manual

-SW1DNN-DCCCIEC-B

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

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

[Design Precautions]

⚠ CAUTION

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

[Security Precautions]

⚠️ WARNING

● To maintain the security (confidentiality, integrity, and availability) of this product 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.

CONDITIONS OF USE FOR THE PRODUCT

(1) This software shall be used under the following conditions;

   i) that any failure occurred in this software, if any, shall not lead to any serious accident.

   ii) that the backup and/or fail-safe functions are systematically performed outside the devices in the cases of any failure occurred in this software.

(2) Mitsubishi Electric assumes no responsibility and liability (including but not limited to, default liability, defect liability, quality assurance responsibility, tort liability, product liability) for the quality, performance, and safety of both this software and products using this software.

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

INTRODUCTION

Thank you for your patronage. We appreciate your purchase of CC-Link IE Control Network Data Collector.

This manual describes the specifications, procedures before operation, and troubleshooting of this product.

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

Please make sure that the end users read this manual.

CONTENTS

CONTENTS

5

RELEVANT MANUALS

Manual name [manual number]	Description	Available form
CC-Link IE Control Network Data Collector User's Manual [SH-082103ENG] (this manual)	Specifications, procedure before operation, and troubleshooting of CC-Link IE Control Network Data Collector	e-Manual PDF

> **Point**
>
> e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.
>
> e-Manual has the following features:
> - Required information can be cross-searched in multiple manuals.
> - Other manuals can be accessed from the links in the manual.
> - Hardware specifications of each part can be found from the product figures.
> - Pages that users often browse can be bookmarked.
> - Sample programs can be copied to an engineering tool.

TERMS

Unless otherwise specified, this manual uses the following terms.

Term	Description
Board	An abbreviation for a CC-Link IE Controller Network interface board
CC IE Control utility	A tool for parameter settings and diagnosis of a CC-Link IE Controller Network interface board
Cyclic transmission	A function that exchanges data periodically between stations on a network by using link devices
Data model management	A function that abstracts devices, equipment, and lines in the production site and hierarchically manages them
Edge computing	An information processing method and area, for not only collecting and analyzing data in production sites in real-time, and feed backing the data, but summarizing the production site data and sharing information with IT systems efficiently with the hardware and software in production sites
Edgecross	A software platform that implements specifications and concepts for realizing manufacturing solutions by the FA-IT collaboration centering on the edge computing
Edgecross Basic Software	The name of the software product that implements the Edgecross function
Industrial PC	A PC specialized for industrial use with features such as high reliability, environmental resistance, and long-term supply
Link device	A device (LX, LY, LB, and LW) in modules on CC-Link IE Controller Network
Location	Device memory that can be accessed by CC-Link IE Control Network Data Collector
Location parameter	A parameter for setting the device memory that can be accessed by CC-Link IE Control Network Data Collector
Management Shell	The name of the Windows version product that implements the data model management function
Management Shell Explorer	Software that sets and references data models managed by Management Shell
Real-time data processing	A function that realizes the real-time diagnosis and feedback of the production site data
Real-time Flow Designer	The name of the software component that performs operation setting of Real-time Flow Manager
Real-time Flow Manager	The name of the Windows version software component that implements the real-time data processing

1 CC-Link IE Control Network Data Collector

CC-Link IE Control Network Data Collector is a software component that performs the data collection, data reading, and data writing functions in cyclic transmission via CC-Link IE Controller Network.

Data in a device can be collected and updated by using CC-Link IE Control Network Data Collector in combination with Edgecross Basic Software.

For details on Edgecross Basic Software, refer to the following manual.

📖Edgecross Basic Software for Windows User's Manual

> **Point**🔍
>
> CC-Link IE Control Network Data Collector is designed for the following boards.
> - Q80BD-J71GP21-SX[*1]
> - Q80BD-J71GP21S-SX[*1]
> - Q81BD-J71GP21-SX[*1]
> - Q81BD-J71GP21S-SX[*1]
>
> For each board, refer to the manual of the board to use.

[*1] The supported version of the software package (SW1DNC-MNETG-B) for boards is 1.26C or later.
The operations are not supported in the earlier versions before 1.26C.

MEMO

1 CC-Link IE Control Network Data Collector

2 SPECIFICATIONS

This chapter shows the functional specifications, operational specifications, and accessible devices (locations) and their ranges of CC-Link IE Control Network Data Collector.

2.1 Functional Specifications

This section shows the functional specifications of CC-Link IE Control Network Data Collector.

Item			Specification
Connectable route			CC-Link IE Control Network
Supported type by a data collector			• Data collection function • Data reading function/Data writing function
Data collection function	Maximum number of flow settings		No limitation for the data collector[1]
	Maximum number of units of data for one flow		256
	Maximum collectible size for one flow		8192 (word)
	Collection interval	Cyclic transmission	• 50 to 950 (ms) • 1 to 10 (s)
	Input data type[2]		• BOOL (Bit value) • INT (Signed 16-bit integer value) • UINT (Unsigned 16-bit integer value) • DINT (Signed 32-bit integer value) • UDINT (Unsigned 32-bit integer value) • LINT (Signed 64-bit integer value) • ULINT (Unsigned 64-bit integer value) • REAL (32-bit real number value) • LREAL (64-bit real number value) • STRING (Character string: UTF-8 (1 to 32 characters)) • WSTRING (Wide-character string: Unicode (UTF-16LE) (1 to 16 characters))
	Accessible device (location)	Cyclic transmission	LX, LY[3], LB, LW
Data reading function/ Data writing function	Maximum number of settings		No limitation for the data collector[1]
	Maximum number of units of data for one setting		256
	Maximum collectible size for one setting		8192 (word)
	Input and output data type[2]		• BOOL (Bit value) • INT (Signed 16-bit integer value) • UINT (Unsigned 16-bit integer value) • DINT (Signed 32-bit integer value) • UDINT (Unsigned 32-bit integer value) • LINT (Signed 64-bit integer value) • ULINT (Unsigned 64-bit integer value) • REAL (32-bit real number value) • LREAL (64-bit real number value) • STRING (Character string: UTF-8 (1 to 32 characters)) • WSTRING (Wide-character string: Unicode (UTF-16LE) (1 to 16 characters))
	Accessible device (location)	Cyclic transmission	LX, LY[4], LB, LW
Supported language[5]			Japanese, English

*1 For details, refer to the following:
📖 Edgecross Basic Software for Windows User's Manual
*2 For details on data types, refer to the following manual.
📖 Edgecross Basic Software for Windows User's Manual
*3 When the industrial PC is set as the control station, LY cannot be accessed.
*4 When the industrial PC is set as the control station and if the data reading function is performed, LY cannot be accessed.
*5 The display language of this product is English when a language other than Japanese has been set for the display language in Edgecross Basic Software.

2.2   Operational Specifications

This section shows the operational specifications of CC-Link IE Control Network Data Collector.

Operating status

The status of CC-Link IE Control Network Data Collector varies for each access target and is determined according to the communication status with the targets.

The communication status with access targets can be checked in Edgecross Basic Software.

Status of CC-Link IE Control Network Data Collector	Description	Communication status with an access target
Data is being read from or written to an access target.	Data Collector and the access target are connected normally. (It will be in this state when the connection processing succeeds.)	Connected
Data is not being read from or written to an access target. (Reconnection is in progress.)	Data Collector and the access target are disconnected. (It will be in this state when the connection processing fails.)	Disconnected

Behavior when an error occurs

When CC-Link IE Control Network Data Collector detects an error, the following operations are performed according to the error type.

Error type	Status of CC-Link IE Control Network Data Collector	Operation of CC-Link IE Control Network Data Collector
Data collector operation stop error	• Operations according to the specifications cannot be guaranteed due to a hard disk error in an industrial PC of the installation destination or a failure of resource securing. • An error cannot be corrected even by changing the network configuration due to an incorrect parameter setting (device type out of range, for example).	• Discards collected data when this error occurs during data collection. • Stops the data collection, data reading, or data writing function and reports this error to Edgecross Basic Software.
Data collector operation continuation error	• Operations such as a program execution or data communication cannot be continued due to temporary network failure. • An error may be corrected by changing the network configuration even though there is no communication due to a mismatch between the parameter settings and the network configuration.	• Discards collected data when this error occurs during data collection. • Continues the data collection, data reading, or data writing function even after reporting this error to Edgecross Basic Software.

> **Point**
>
> The error types reported to Edgecross Basic Software are as follows:
> • Data collector operation stop error: Moderate error
> • Data collector operation continuation error: Minor error

2.3 Accessible Boards

The following table shows the boards usable for CC-Link IE Control Network Data Collector.

Board name
Q80BD-J71GP21-SX
Q80BD-J71GP21S-SX
Q81BD-J71GP21-SX
Q81BD-J71GP21S-SX

For each board, refer to the manual of the board to use.

2.4 Accessible Devices (Locations) and their Ranges

This section shows the accessible devices (locations) and their ranges.

Accessible devices (locations)

The following table shows the accessible devices (locations).

Cyclic transmission

Device name (device)	Range
Link input (LX)	0 to 1FFF
Link output (LY)	0 to 1FFF
Link relay (LB)	0 to 7FFF
Link register (LW)	0 to 1FFFF

3 PROCEDURE BEFORE OPERATION

This chapter shows the procedure from start-up to operation of CC-Link IE Control Network Data Collector.
Operate in accordance with the considerations described in the manual of the board to use.

Operating procedure

1. Install a board and configure the related settings.

2. Install a data collector.[*1]

*1 Before the installation, install Edgecross Basic Software.

3. Wire and connect the board and other devices.
📖Manuals of the connection target devices

4. Set the settings of CC-Link IE Field Network.

5. Set the parameters of Data Collector.
☞ Page 20 PARAMETER SETTING

Precautions

When running a data collector on an industrial PC where an antivirus software is installed, an exceeded collection cycle or
data missing may occur due to an operation of the antivirus software. Exclude the following folders from the monitoring targets
in the antivirus software settings. For the setting methods, refer to the manual for each antivirus software.
 • Data Collector installation destination folder
 • Following files and folders of Windows
Pagefile.sys
*.pst
%systemroot%\System32\Spool
%systemroot%\SoftwareDistribution\Datastore
%windir%\Security\Database
%allusersprofile%\NTUser.pol
%systemroot%\system32\GroupPolicy\Machine\registry.pol
%systemroot%\system32\GroupPolicy\User\registry.pol

MEMO

4 FUNCTIONS

This chapter shows the functions of CC-Link IE Control Network Data Collector.

4.1 Data Collection Function

This function collects data in the interval of the set collection cycle.

Data can be collected in the following transmission method:

• Cyclic transmission (☞ Page 14 Cyclic transmission)

Cyclic transmission

This is the method for collecting the link devices (LX, LY, LB, and LW) which are sent from a device connected via CC-Link IE Control Network in cyclic transmission.

The collection methods which can be set for the cyclic transmission are as follows:

Collection method	Overview	Reference
Collection at a time interval	This method is for collecting data by accessing link devices periodically every set interval. Data is collected at the specific intervals, so the collected data is suitable for waveform analysis.	☞ Page 15 Collection at a time interval

Collection at a time interval

This is the method for collecting data of link devices at the set interval.

Time information added to collected data is the time of the industrial PC when accessing to link devices.

Ex.

The following shows the timing of a data collection by collection at a time interval.

Time interval: 150 milliseconds
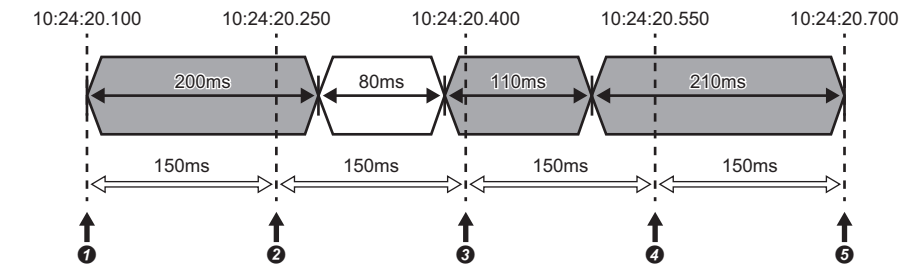
☐: Link scan in which data is collected

☐: Link scan in which data is not collected

↔: Link scan time

⟺: Collection interval

❶ Data is collected at 10:24:20.100.

❷ Data is collected at 10:24:20.250 - 150 milliseconds later.

❸ Data is collected at 10:24:20.400 - 150 milliseconds later.

❹ Data is collected at 10:24:20.550 - 150 milliseconds later.

❺ Data is collected at 10:24:20.700 - 150 milliseconds later.

■Data missing

If data collection is not started even after the allowable collection processing delay time (the set collection cycle × 2) elapses, an exceeded collection cycle is detected and the data for which data collection is not started will be missing.

■Effects of time change

When changing the time of an industrial PC, collection time interval added to collected data is not fixed.

Even when changing the time of an industrial PC, the collection cycle is fixed.

Collection processing time report

When an enabled data collection setting is included in Edgecross Basic Software and the operating status of the software switches from RUN to STOP, the maximum and minimum collection processing times in the RUN state are reported to the software.

The collection processing time is reported as follows:

- Unit: 50 ms
- Range: 0 to 4294967250

> **Point**
>
> - The collection processing time is rounded down to 50 milliseconds.
> - The collection processing time less than 50 milliseconds is regarded as 50 milliseconds.
> - When no data is collected while Edgecross Basic Software is in the RUN state, the maximum and minimum collection processing times are reported as '0'.

Precautions

The operations when collecting WSTRING type data are as follows:

- For non-surrogate characters, one word is collected from a target device.
- For surrogate characters, two words are collected from a target device.

Ex.
Setting of data to be collected
WSTRING type data [Number of characters = 4] (D0-D7)
Setting of a value to be collected
D0: 'A'
D1: 'B'
D2-D3: '□'
D4:'C'
D5:'D'
D6:'E'
D7:'F'
Collection result
"AB□C"
□ indicates a surrogate character.

Considerations

The following shows the considerations for the data collection function in cyclic transmission.

■Data transmission delay

Transmission delay occurs in cyclic transmission, so the collected values are ones that has been sent from the collection destination before the collection time added in the collected data.

■Data inconsistency

In cyclic transmission, it is guaranteed by CC-Link IE Controller Network that data inconsistency will not occur in 32-bit data. However, data inconsistency may occur in collected data exceeding 32-bits if a link scan occurs during data copy.

By using the data inconsistency prevention function, it is possible to prevent the inconsistency of the data of the collection devices for which the same device type is set in cyclic transmission.

For using the function, the following settings are required.

- Enable the setting of the block data assurance per station in the control station. (Refer to the manual of a device used as a master station.)
- Set the collection target to devices for which the same device type is set in the data collection setting of Edgecross Basic Software.

📖Edgecross Basic Software for Windows User's Manual

■Setting change during data collection

When the collection setting is changed and updated from Edgecross Basic Software during data collection, the data collection being performed is stopped and it is restarted according to the new setting.

4.2 Data Reading Function

This function sends a data reading request to a device according to a request from Edgecross Basic Software and reads data.

Cyclic transmission

It reads data of link devices according to a request from Edgecross Basic Software.

Read processing time report

When reconnecting to an access target device in Edgecross Basic Software, the maximum and minimum read processing times during the operation are reported to the software.

- Unit: Millisecond
- Range: 0 to 4294967295

Point

- When no data is read during the operation, the maximum and minimum read processing times are reported as '0'.

Precautions

The operations when reading WSTRING type data are as follows:

- For non-surrogate characters, one word is read from a target device.
- For surrogate characters, two words are read from a target device.

Ex.

Setting of data to be read

WSTRING type data [Number of characters = 4] (D0-D7)

Setting of a value to be read

D0: 'A'

D1: 'B'

D2-D3: '□'

D4:'C'

D5:'D'

D6:'E'

D7:'F'

Reading result

"AB□C"

□ indicates a surrogate character.

4.3 Data Writing Function

This function sends a data writing request to a device according to a request from Edgecross Basic Software and writes data.

Cyclic transmission

It writes data to link devices according to a request from Edgecross Basic Software.

Precautions

The operations when writing WSTRING type data are as follows:
- For non-surrogate characters, one word is written to a target device.
- For surrogate characters, two words are written to a target device.

Ex.

Setting of data to be written

WSTRING type data [number of characters = 4] (LW0-LW7)

Setting of a value to be written

ABC□

□ indicates a surrogate character.

Writing result

LW0: 'A'

LW1: 'B'

LW2: 'C'

LW3-LW4: '□'

LW5-LW7: '\0'

4.4 Considerations

The following shows the considerations for the functions of CC-Link IE Control Network Data Collector.

Operation when a data link error occurs in the own station

The following table shows the operations when a data link error occurs in the own station on CC-Link IE Control Network during the data collection, reading, or writing.

Function	Station type	Data collection/reading/writing	Error registration
Data collection	Control/normal station	No operation	The error code '2C0AH' is registered in Edgecross Basic Software.
Data reading	Control/normal station	No operation	The error code '2C0AH' is registered in Edgecross Basic Software.
Data writing	Control/normal station	No operation	The error code '2C0BH' is registered in Edgecross Basic Software.

5 PARAMETER SETTING

This chapter shows the parameters of CC-Link IE Control Network Data Collector that can be set in Edgecross Basic Software.

For the display of the setting screens for each parameter, refer to Edgecross Basic Software User's Manual.

📖Edgecross Basic Software for Windows User's Manual

5.1 Communication Parameter

This section shows the screen for setting on the connection between CC-Link IE Control Network Data Collector and a device.

Window

- The "Target Device Setting" screen of Real-time Flow Designer
- The "Target Device Setting" screen of Management Shell Explorer
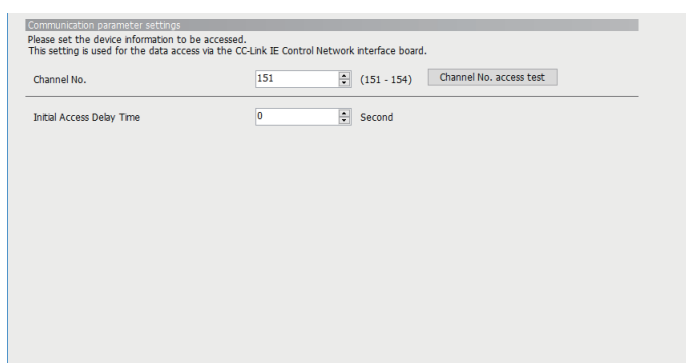
Displayed items

Item	Description
Channel No.	Set a channel number (151 to 154).[*1]
Channel No. access test	Click this to perform an access test for the board to which the specified channel number is assigned.
Initial Access Delay Time	Set the waiting time from when the initialization processing of an access target device is completed until data collection can be performed (0 to 255 seconds).

*1 Check the channel number which is set for the target board by using the CC IE Control utility or LED display of the board.
For the method for checking the channel number, refer to the manual of the board to use.

Precautions

Do not change the channel number while a data collector is in operation.

Perform the following operations to change the channel number.

■For Real-time Flow Manager

1. Switch the operation status of Real-time Flow Manager to STOP in Real-time Flow Designer.

2. Change the channel number.[*1]

*1 Change the channel number in the "Parameter setting" screen which is displayed by clicking the [Setting] button in the CC IE Control utility.

3. Switch the operation status of Real-time Flow Manager to RUN in Real-time Flow Designer.

■For Management Shell

1. Switch Management Shell to the stop state in Management Shell Explorer.

2. Change the channel number.[*1]

*1 Change the channel number in the "Parameter setting" screen which is displayed by clicking the [Setting] button in the CC IE Control utility.

3. Switch Management Shell to the operation state in Management Shell Explorer.

5.2 Collection Parameter

This section shows the screen for setting on data collection in CC-Link IE Control Network Data Collector.

Window

- The [Collection Option] tab in the "Data Collection Setting" screen of Real-time Flow Designer
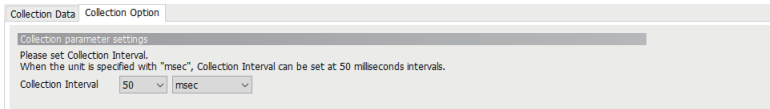
Displayed items

Item	Description
Collection Interval	Set an interval and the unit for collecting data.

5.3 Location Parameter

This section shows the screens for setting target devices for CC-Link IE Control Network Data Collector.

Real-time Flow Designer

Data collection function

Window

The [Collection Data] tab in the "Data Collection Setting" screen of Real-time Flow Designer

No.	Data Name	Constant	Location (top)		Location (end)	Data Type	Length	Setting Value	
▶ 1		☐		...					
2		☐		...					
3		☐		...					
4		☐		...					
5		☐		...					
6		☐		...					
7		☐		...					
8		☐		...					
9		☐		...					
10		☐		...					
11		☐		...					
12		☐		...					

Collection Data Setting
Please set collection data.

Displayed items

Item	Description
Data Name	Set a data name (up to 32 characters).
Constant	Select the checkbox to add a constant value or fixed character string to collection data.
Location (top)	Set an access target device memory.
Location (end)	It is automatically set according to the settings in "Location (top)" and "Data Type." When selecting "STRING" or "WSTRING" for "Data Type," it is also affected by a value set in "Length."
Data Type	Select the data type of a location to access.
Length	Set the number of characters within the following ranges when selecting "STRING" or "WSTRING" for "Data Type." • STRING: 1 to 32 • WSTRING: 1 to 16
Setting Value	Set a constant value or fixed character string to add to collection data.

■**Location setting**

In CC-Link IE Control Network Data Collector, a screen for setting location parameters is not included.

Enter an accessible device (location) directly.

Ex.

When setting LX0 as the BOOL type

Collection Data Setting
Please set collection data.

No.	Data Name	Constant	Location (top)		Location (end)	Data Type	Length	Setting Value	
1	LX0	☐	LX0	...	LX0	BOOL			

For accessible devices (locations), refer to the following:

☞ Page 11 Accessible devices (locations)

Data writing function

Window

The [Instruction Target data] tab in the "Instruction Feedback Setting" screen of Real-time Flow Designer

Displayed items

Item	Description
Data Name	Set a data name (up to 32 characters).
Location (top)	Set an access target device memory.
Location (end)	It is automatically set according to the settings in "Location (top)" and "Data Type." When selecting "STRING" or "WSTRING" for "Data Type," it is also affected by a value set in "Length."
Data Type	Select the data type of a location to access.
Length	Set the number of characters within the following ranges when selecting "STRING" or "WSTRING" for "Data Type." • STRING: 1 to 32 • WSTRING: 1 to 16
Setting Value	Set a value to substitute for an access target location.

■Location setting

In CC-Link IE Control Network Data Collector, a screen for setting location parameters is not included.

Enter an accessible device (location) directly.

Ex.

When setting the integer value '0' for LX0 as the BOOL type

For accessible devices (locations), refer to the following:

☞ Page 11 Accessible devices (locations)

Management Shell

The "Add External Data Tag Resource" or "Edit External Data Tag Resource" screen of Management Shell Explorer

Displayed items

Item	Description
Data Tag Resource Name	Set the name of an external data tag resource (up to 32 characters).
Resource Display Name	Set the display name of an external data tag resource (up to 64 characters).
Target Device	Select an access target device for an external data tag resource.
Location	Set an access target device memory.
Data Type	Select the data type of a location to access.
Number of Characters	Set the number of characters within the following ranges when selecting "STRING" or "WSTRING" for "Data Type." • STRING: 1 to 32 • WSTRING: 1 to 16

Location setting

In CC-Link IE Control Network Data Collector, a screen for setting location parameters is not included.

Enter an accessible device (location) directly.

Ex.
When setting LX0 as the BOOL type
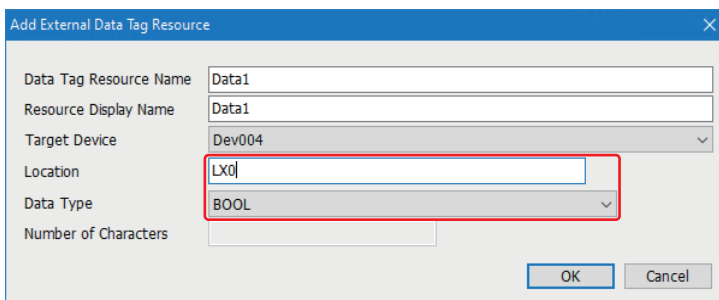
For accessible devices (locations), refer to the following:

☞ Page 11 Accessible devices (locations)

6 TROUBLESHOOTING

This chapter explains the errors which may occur when using CC-Link IE Control Network Data Collector and the troubleshooting.

6.1 Checking Method for Error Descriptions

The following are the methods for checking error descriptions.

Checking method	Details
Real-time Flow Designer	Error codes can be checked in the "Real-time Flow Manager Diagnostics" screen of Real-time Flow Designer. For details, refer to the following: 📖 Edgecross Basic Software for Windows User's Manual
Management Shell Explorer	Error codes can be checked in the "Error Information List" screen of Management Shell Explorer. For details, refer to the following: 📖 Edgecross Basic Software for Windows User's Manual

Error type

There are two types of errors for CC-Link IE Control Network Data Collector: moderate error and minor error.

6.2 Troubleshooting by Symptom

If a function of CC-Link IE Control Network Data Collector does not perform properly, check the applicable items in the following and troubleshoot the error.

For the troubleshooting by symptom for a board, refer to the manual of the board to use.

Troubleshooting on the CC-Link IE Control Network Data Collector startup

The data collector is not recognized at the Edgecross Basic Software start.

Check point	Corrective action
Does a signed-in user who started Edgecross Basic Software have the access right to a folder in which CC-Link IE Control Network Data Collector is stored?	• Sign in as a user with the access right to the folder in which CC-Link IE Control Network Data Collector is stored, and start Edgecross Basic Software. • Grant the user access to the folder in which CC-Link IE Control Network Data Collector is stored.

Troubleshooting on data collection

Data collection cannot be performed.

Check point	Corrective action
Has a data link error occurred on CC-Link IE Controller Network?	Solve the data link error by performing a CC-Link IE Control diagnosis of the CC IE Control utility. (📖Manual of the board to use)

No change is detected in the collected data.

Check point	Corrective action
Has a data link error occurred on CC-Link IE Controller Network?	Solve the data link error by performing a CC-Link IE Control diagnosis of the CC IE Control utility. (📖Manual of the board to use)
Is a normal station on CC-Link IE Controller Network disconnected?	Restore the connection with the normal station on CC-Link IE Controller Network.

Data inconsistency occurs in collected data.

Check point	Corrective action
Is the checkbox of "Assure Block Data" under "Block Data Assurance per Station" in the network parameter of CC-Link IE Controller Network selected?	Change the network parameter of CC-Link IE Controller Network and select the checkbox of "Assure Block Data" under "Block Data Assurance per Station" in the CC IE Control utility. (☞ Page 17 Data inconsistency) (📖Manual of the board to use)

Unintended data is collected.

Check point	Corrective action
Is the same channel number set for both communication parameter and the board?	Set the same channel number for both the communication parameter and the board.
Has the channel number of the board been changed during the operation of the data collector?	■For Real-time Flow Manager • Switch the operating status of Real-time Flow Manager to STOP, then to RUN again in Real-time Flow Designer. ■For Management Shell • Switch Management Shell to the stop state, then back to operation state again in Management Shell Explorer.

Troubleshooting on data reading

Data cannot be read.

Check point	Corrective action
Is the initial access delay time set?	• Wait until the set initial access delay time elapses. • Set the initial access delay time shorter.

Troubleshooting on data writing

Data cannot be written.

Check point	Corrective action
Is the writing destination set to the LX device?	Write data to the LY, LB, or LW device.
Is the same channel number set for both communication parameter and the board?	Set the same channel number for both the communication parameter and the board.
Is the initial access delay time set?	• Wait until the set initial access delay time elapses. • Set the initial access delay time shorter.

Troubleshooting on Edgecross Basic Software

An error caused by this product has been detected in Edgecross Basic Software.

Check item	Corrective action
Has a data collector startup error been detected in Edgecross Basic Software?	Reinstall this product since the file may have been moved or deleted.

Troubleshooting on screens

Contents in the screen are not displayed properly.

Check item	Corrective action
Is a value other than 100% set for "Change the size of text, apps, and other items" in Windows?	• Change the value to 100% for "Change the size of text, apps, and other items". • For Windows 10 (version 1703 or later)[1], the display of a screen can be enlarged with high DPI scaling by using a Windows 10 function[2]. ❶ Select 'ProcessDesigner.exe'[3], then select [Properties] on the right-click menu. ❷ Select the checkbox of "Override high DPI scaling behavior. Scaling performed by:" in the [Compatibility] tab, then select "System" from the pull-down list. ❸ Click the [OK] button.

*1 The Windows version can be checked by the following procedure.
  ❶ Press Windows key + Ⓡ, or select [Windows System] ⇨ [Run] from Windows Start.
  ❷ Enter 'winver' in the "Run" screen.
  ❸ Check the version in the displayed screen.
*2 The display will be blurred by enlarging.
  The following lists the setting values for "Change the size of text, apps, and other items" and the recommended display resolution for each setting value in Windows 10.
  Setting value: 100%, display resolution: 1024 × 768 dots or more
  Setting value: 125%, display resolution: 1900 × 1200 dots or more
  Setting value: 150%, display resolution: 1900 × 1200 dots or more
  Setting value: 175%, display resolution: 2880 × 1620 dots or more
  Setting value: 200%, display resolution: 2880 × 1620 dots or more
  Setting value: 225%, display resolution: 3840 × 2160 dots or more
  Setting value: 250%, display resolution: 3840 × 2160 dots or more
*3 'ProcessDesigner.exe' is stored in the folder in which Edgecross Basic Software is installed.
  The following is an example of a storage location.
  (Example) When starting the operating system on the C drive and setting the installation destination folder as the default
  C:\Edgecross\Edgecross Basic Software\Real-timeFlowDesigner\ProcessDesigner.exe

6.3 Error Code List

This section shows the codes for errors that occur in CC-Link IE Control Network Data Collector.

Error code	Error name	Error description	Corrective action
2C00H	Communication parameter setting error	There is an error in the communication parameter.	Please review the communication parameter because there is an error.
2C01H	Collection parameter setting error	There is an error in the collection parameter.	Please review the collection parameter because there is an error.
2C02H	Location parameter setting error	There is an error in the location parameter.	Please review the location parameter because there is an error.
2C03H	Device memory No. error	A device memory No. which does not exist is specified.	Please review the device memory No. specified in the location parameter.
2C04H	Insufficient memory error	There is not enough memory available to execute this operation.	• Please restart the Industrial PC running this product. • Please close other applications.
2C05H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC running this product. • Please reinstall this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2C06H	Resource contention error	Resource contention has occurred between this product and other applications.	• Please restart the Industrial PC running this product. • Please close other applications.
2C07H	Abnormal termination of internal process of Data Collector	Operation of the internal process of the Data Collector has stopped.	• Please restart the Industrial PC running this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2C08H	Abnormal communication between internal processes of Data Collector	Operation of the internal process of the Data Collector has stopped.	• Please restart the Industrial PC running this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2C09H	Failed to start internal process	Failed to start the internal process.	• Please restart the Industrial PC running this product. • Please reinstall this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2C0AH	Data reading error	Reading of data failed because data link is stopped.	• Please check if there is any device which is disconnected from the CC-Link IE Control network. • Please check if there is any problem of the CC-Link IE Control network with the diagnosis function of the utility provided with the board (CC IE Control Utility). • Please review the network parameter of the CC-Link IE Control network.
2C0BH	Data writing error	Writing of data failed because data link is stopped.	• Please check if there is any device which is disconnected from the CC-Link IE Control network. • Please check if there is any problem of the CC-Link IE Control network with the diagnosis function of the utility provided with the board (CC IE Control Utility). • Please review the network parameter of the CC-Link IE Control network.
2C0CH	Unsupported board version	The version of the CC-Link IE controller network interface board is not supported.	• Please check if the version of the board is supported. • Please reinstall the software package of the latest board. • Please consult your local Mitsubishi representative if the same error occurs again.
2C0DH	Shared resource operation error	Failed to operate the shared resource.	• Please restart the Industrial PC running this product. • Please close other applications. • Please consult your local Mitsubishi representative if the same error occurs again.

Error code	Error name	Error description	Corrective action
2D00H	Board connection error	Failed to connect to the CC-Link IE controller network interface board.	• Please check if the board is mounted on the Industrial PC. • Please check if the driver (MELSEC CC-Link IE Control Controller under MELSEC CC-Link IE Control Driver) has started with the device manager on Windows. • Please review the target device setting so that the channel number of the communication parameter matches the one set with the utility provided with the board (CC IE Control Utility). • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D01H	Board response error	Response from the CC-Link IE controller network interface board has timed out.	• Please check if the board is mounted on the Industrial PC. • Please check if there is any problem of the CC-Link IE Control network with the diagnosis function of the utility provided with the board (CC IE Control Utility). • Please review the network parameter of the CC-Link IE Control network. • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D02H	Memory reservation error/Insufficient resource memory error	There is not enough memory available to execute this operation.	• Please restart the Industrial PC running this product. • Please close other applications. • Please consult your local Mitsubishi representative if the same error occurs again.
2D03H	Board H/W resource busy	The next processing cannot be executed because of the insufficient resource on the board.	• Please restart the Industrial PC running this product. • Please close other applications. • Please consult your local Mitsubishi representative if the same error occurs again.
2D04H	Routing error	The routing parameter is not set correctly.	• Please review the routing parameter setting with the utility provided with the board (CC IE Control Utility). • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D05H	Board driver I/F error	Failed to send request data to the board driver.	• Please check if Windows is operating normally with the function such as event log. • Please restart the Industrial PC running this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2D06H	Board driver I/F error	Failed to receive response data from the board driver.	• Please check if Windows is operating normally with the function such as event log. • Please restart the Industrial PC running this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2D07H	Board parameter error	A parameter set on the board is incorrect.	• Please reset the board with the utility provided with the board (CC IE Control Utility). • Please correct the parameter setting of the board with the utility provided with the board (CC IE Control Utility). • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D08H	Board driver access error	Failed to access the board driver.	• Please restart the Industrial PC running this product. • Please reinstall this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2D09H	Channel number error	The channel number is invalid.	• Please review the target device setting so that the channel number of the communication parameter matches the one set with the utility provided with the board (CC IE Control Utility). • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D0AH	Board driver DLL load error	Failed to load DLL required to execute the function.	• Please reinstall the software package of the board. • For details, please refer to the user's manual of the CC-Link IE Control network interface board. • Please consult your local Mitsubishi representative if the same error occurs again.

6

Error code	Error name	Error description	Corrective action
2D0BH	Resource time-out error	The process was forcibly terminated.	• Please restart the Industrial PC running this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2D0CH	Board registry access error	Failed to access the registry of the board.	• Please reinstall the software package of the board. • For details, please refer to the user's manual of the CC-Link IE Control network interface board. • Please consult your local Mitsubishi representative if the same error occurs again.
2D0DH	Board communication initialization setting error	Failed to set the initial setting for communication.	• Please restart the Industrial PC running this product. • Please close other applications. • Please reinstall this product. • Please consult your local Mitsubishi representative if the same error occurs again.
2D0EH	Errors detected in the CC-Link IE controller network system	Errors occurred in the CC-Link IE controller network system.	Please check the error shown on the error code of the Target Device in the user's manual of the CC-Link IE Control network interface board and the reference manual of the CC-Link IE Control network.
2D0FH	Link refresh error	Link refresh processing did not operate normally.	• Please reset the board with the utility provided with the board (CC IE Control Utility). • Please close the unnecessary Windows applications and lower the load on the Industrial PC. • Please restart the Industrial PC running this product. • Please check if the board is mounted on the Industrial PC. • For details, please refer to the user's manual of the CC-Link IE Control network interface board. • Please consult your local Mitsubishi representative if the same error occurs again.
2D10H	System sleep error	Entering sleep mode, hibernation mode, or fast startup was detected.	• Please change the setting of the power option on Windows to prevent the system from entering the sleep mode, hibernation mode, or performing fast startup. • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D11H	Hardware self-diagnosis error	An error was detected by the hardware self-diagnosis.	• Please check the system log of the event viewer on Windows, and take a corrective action on the registered error. • Please restart the Industrial PC running this product. • Please take anti-noise measures for the Industrial PC running this product. • Please check if the board is mounted on the Industrial PC. • For details, please refer to the user's manual of the CC-Link IE Control network interface board. • Please consult your local Mitsubishi representative if the same error occurs again.
2D12H	Data link disconnected station device access error	An access was attempted to the device ranges of own station devices LX, LY, LB, LW which are assigned to the data link disconnected station or the reserved station.	• Check the specified device start number and size, or the device range of the parameter on the management station. (The data write/read function can be performed even when this error occurs, but the function of the data security is not guaranteed.) • For details, please refer to the user's manual of the CC-Link IE Control network interface board.
2D13H	Abnormal data reception error	Abnormal response data was received.	Please check the network status by referring to the manuals of each connected product.

Error code	Error name	Error description	Corrective action
2D14H	Board driver WDT error	A board driver WDT error is occurring.	• Please reset the board with the utility provided with the board (CC IE Control Utility). • Please close the unnecessary Windows applications and lower the load on the Industrial PC. • Please restart the Industrial PC running this product. • Please clear "Use driver WDT function" in the driver setting of the utility provided with the board (CC IE Control Utility) to disable WDT. • Please extend the driver WDT monitoring time in the driver setting of the utility provided with the board (CC IE Control Utility). • For details, please refer to the user's manual of the CC-Link IE Control network interface board. • Please consult your local Mitsubishi representative if the same error occurs again.
F001H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F002H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F003H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F004H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F005H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F006H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F007H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F008H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F009H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F00AH	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F00BH	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F00CH	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.

6

Error code	Error name	Error description	Corrective action
F00DH	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F00EH	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F00FH	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Carry out review to lower the load caused by collection cycle, number of collections, and contents of processing. • Lower the load on Windows by closing other applications or by other means. • Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F010H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F011H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F012H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F013H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F100H	Error in the initialization process of Data Collector	An error occurred in the initialization process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F104H	Error in the initialization process of Data Collector	An error occurred in the initialization process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F105H	Error in the initialization process of Data Collector	An error occurred in the initialization process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F106H	Error in the collection process of Data Collector	An error occurred in the collection process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F107H	Error in the read process of Data Collector	An error occurred in the read process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F108H	Error in the write process of Data Collector	An error occurred in the write process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F109H	Error in the read process of Data Collector	An error occurred in the read process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F10AH	Error in the write process of Data Collector	An error occurred in the write process.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.

Error code	Error name	Error description	Corrective action
F200H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F205H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F207H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F20AH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F20BH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F20CH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F20DH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F20EH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F20FH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F212H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F217H	Error in module reference	An error occurred when the module (JSON parser) was referenced.	• Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F218H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F219H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F21AH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F21BH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F21CH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.

Error code	Error name	Error description	Corrective action
F21EH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F221H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F223H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F227H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F228H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F229H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F22AH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F22BH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F22DH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F22FH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F232H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F233H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F234H	Data Collector I/F error	An error occurred during the access to Edgecross Basic Software.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F240H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F242H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F244H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.

Error code	Error name	Error description	Corrective action
F245H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F247H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F248H	Data reference error in Data Collector	An error occurred when the argument of the communication parameter acquisition was referenced.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F249H	Data reference error in Data Collector	An error occurred when the argument of the collection parameter acquisition was referenced.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F24AH	Data reference error in Data Collector	An error occurred when the argument of the data parameter acquisition was referenced.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F24CH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F24DH	Process data buffer overflow in Data Collector	Data buffering has overflowed.	• Carry out review to lower the load caused by collection cycle, number of collections, and contents of processing. • Lower the load on Windows by closing other applications or by other means.
F24EH	Process data buffer overflow in Data Collector	Data buffering has overflowed.	• Carry out review to lower the load caused by collection cycle, number of collections, and contents of processing. • Lower the load on Windows by closing other applications or by other means.
F260H	Error: Character is out of range	The character string acquired from the Data Collector contains characters out of range.	Please do not set characters out of range to collected STRING type character string.
F261H	Error: Character is out of range	The character string acquired from the Data Collector contains characters out of range.	Please do not set characters out of range to read STRING type character string.
F262H	Error: Number of characters exceeded	It exceeds the maximum number of character string acquired from the Data Collector.	• Please review the location parameter so that the number of characters in the collected STRING type character string does not exceed the maximum number. • Please review the target device value so that the number of characters in the collected STRING type character STRING does not exceed the maximum number.
F263H	Error: Number of characters exceeded	It exceeds the maximum number of character string acquired from the Data Collector.	• Please review the location parameter so that the number of characters in the read STRING type character string does not exceed the maximum number. • Please review the target device value so that the number of characters in the read STRING type character STRING does not exceed the maximum number.
F264H	Error: Character is out of range	The character string acquired from the Data Collector contains characters out of range.	Please do not set characters out of range to collected WSTRING type character string.
F265H	Error: Character is out of range	The character string acquired from the Data Collector contains characters out of range.	Please do not set characters out of range to read WSTRING type character string.

6

Error code	Error name	Error description	Corrective action
F266H	Error: Number of characters exceeded	It exceeds the maximum number of character string acquired from the Data Collector.	• Please review the location parameter so that the number of characters in the collected WSTRING type character string does not exceed the maximum number. • Please review the target device value so that the number of characters in the collected WSTRING type character STRING does not exceed the maximum number.
F267H	Error: Number of characters exceeded	It exceeds the maximum number of character string acquired from the Data Collector.	• Please review the location parameter so that the number of characters in the read WSTRING type character string does not exceed the maximum number. • Please review the target device value so that the number of characters in the read WSTRING type character STRING does not exceed the maximum number.
F268H	Invalid real number data	The real number acquired from the Data Collector is invalid(NaN, $\pm\infty$).	Please do not set invalid value(NaN, $\pm\infty$) to read REAL type real number.
F269H	Invalid real number data	The real number acquired from the Data Collector is invalid(NaN, $\pm\infty$).	Please do not set invalid value(NaN, $\pm\infty$) to read LREAL type real number.
F280H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F281H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F282H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F283H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F284H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F2C5H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F2C6H	Process data buffer overflow in Data Collector	Data buffering has overflowed.	• Carry out review to lower the load caused by collection cycle, number of collections, and contents of processing. • Lower the load on Windows by closing other applications or by other means.
F300H	Error: Not enough memory	There is not enough memory available to execute this operation.	• Please close other applications. • Please restart the Industrial PC.
F303H	Error: Not enough memory	There is not enough memory available to execute this operation.	• Please close other applications. • Please restart the Industrial PC.
F306H	Error: Not enough memory	There is not enough memory available to execute this operation.	• Please close other applications. • Please restart the Industrial PC.
F30EH	Error: Not enough memory	There is not enough memory available to execute this operation.	• Please close other applications. • Please restart the Industrial PC.
F380H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.

Error code	Error name	Error description	Corrective action
F382H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F383H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F386H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F387H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F388H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F389H	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F38AH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F38BH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F38DH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.
F38FH	Data Collector internal error	An unexpected error occurred inside this product.	• Please restart the Industrial PC. • Please reinstall Data Collector. • Please consult your local Mitsubishi representative if the same error occurs again.

6.4 Event Code List

This section shows the codes for events that occur in CC-Link IE Control Network Data Collector.

Event code	Event status	Event name	Event description
9C00H	Information	Collection processing time	Measurement of collection processing time has been completed.
9C01H	Information	Read processing time	Measurement of Read processing time has been completed.
F800H	Warning	Exceeded collection cycle	Collection process was not completed within the collection cycle.

APPENDIX

Appendix 1 Processing Performance and Processing Time

This section shows the processing performance and processing time in data collection or data reading by cyclic transmission of CC-Link IE Control Network Data Collector.

The processing performance refers the performance that can be collected all data at the set collection cycle.

> **Point**
> - The processing performance is the same regardless of the station type (control station or normal station).
> - The processing performance is the same regardless of the network type (CC IE Control (control station), CC IE Control (normal station), CC IE Control extended mode (control station), or CC IE Control extended mode (normal station)).

Processing performance in data collection

Measurement conditions

■Industrial PC

Item		Description
CPU		Intel®Core™i3CPU 1.90GHz
RAM		8.0 GB
OS		Windows® 10 IoT Enterprise 2016 LTSB (64 bit)
Board	Interface	Q81BD-J71GP21-SX (half size)

■Parameters of a data collector

The following table shows the setting values of parameters affecting to the processing performance among the parameters of a data collector used for measurement.

Setting item	Setting content
Collection cycle	100 ms
Initial access delay time of an access target device	0
Device to be collected	Device point according to the number of word device collection points Example: When the number of word device collection points is '128', the value is calculated in 'Word [Signed] device ×128 data'.

■Connection destination device

Item	Description
Connection destination device	R16CPU
	RJ71GP21-SX
Connection method	CC-Link IE Controller Network

■Parameters of an RCPU

The parameters are set to their defaults.

> **Point**
> - In RCPUs, the performance in the environment where is no error is measured.
> - As the constant scan is not set and a scan program is not included in the CPU parameter, the sequence scan time is less than 1 millisecond.

■Network parameters of a CC-Link IE Controller Network module

Setting item	Setting content
CC-Link IE Controller Network module parameter	Normal station

A

Processing performance

The following table shows the processing performance capable of collecting all data in a specified cycle per collection processing time (single collection cycle).

Number of word device collection points	Performance value [ms]
16	50
32	50
64	50
128	50
256	50
512	50
1024	50
2048	50

Precautions

- Processing of CC-Link IE Control Network Data Collector may be delayed if interrupted by processing of other software or an operating system of Windows.
- Processing of CC-Link IE Control Network Data Collector may be delayed if the driver of a board operates and the load of the CPU is increased.

Processing performance in read processing

Measurement conditions

■Industrial PC

Item		Description
CPU		Intel®Core™i3CPU 1.90GHz
RAM		8.0 GB
OS		Windows® 10 IoT Enterprise 2016 LTSB (64 bit)
Board	Interface	Q81BD-J71GP21-SX (half size)

■Parameters of Management Shell

Setting item	Setting content
Collection cycle	1 second
Initial access delay time of an access target device	0
Registration target for data tag resource monitoring	Device setting according to the number of word device read points (all INT type)

■Parameters of an RCPU

The parameters are set to their defaults.

> **Point**
> - In RCPUs, the performance in the environment where is no error is measured.
> - As the constant scan is not set and a scan program is not included in the CPU parameter, the sequence scan time is less than 1 millisecond.

■Network parameters of a CC-Link IE Controller Network module

Setting item	Setting content
CC-Link IE Controller Network module parameter	Normal station

A

Processing performance

The following table shows the read processing performance of CC-Link IE Control Network Data Collector.

Number of word device collection points	Performance value [ms]
256	31
512	47
1024	62
2560	187
5120	250

Appendix 2 Data Assignment

This section shows the assignment availability and the number of points for data assignment.

Data assignment availability

The following table shows the assignment availability of data for each data type.

○: Available, ×: Not available

Setting value	Data type										
	BOOL	UINT	UDINT	ULINT	INT	DINT	LINT	REAL	LREAL	STRING	WSTRING
Bit device	○	×	×	×	×	×	×	×	×	×	×
Word device	×	○	○	○	○	○	○	○	○	○	○

Number of points for data assignment

The following table shows the number of points for data assignment for each data type.

Number: Fixed number of points for data assignment, ○: calculation formula, × Not available

Setting value	Data type										
	1 bit	16 bit		32 bit			64 bit			Character string	
	BOOL	UINT	INT	UDINT	DINT	REAL	ULINT	LINT	LREAL	STRING	WSTRING
Bit device	1	×	×	×	×	×	×	×	×	×	×
Word device	×	1	1	2	2	2	4	4	4	○ (Number of characters ÷ 2)[1]	○ ((Number of characters × 4) ÷ 2)[1]

[1] Round up digits after a decimal points of a value obtained by division.

A

Appendix 3 Software Licenses

This software consists of multiple software components. Each of them is copyrighted by Mitsubishi Electric and/or third parties.

The following types of software are contained:

● Software copyrighted by third parties and distributed as free software

Source codes are not distributed for the software that Mitsubishi and/or third parties have copyrights to.

Please refrain from inquiring about the source codes of this open source.

Software information

This product contains the following software:

❶RapidJSON(☞ Page 44 RapidJSON)

❷msinttypes(☞ Page 45 msinttypes)

RapidJSON

This product uses RapidJSON licensed under the MIT License.

The copyright and permission notices of RapidJSON are described below.

Tencent is pleased to support the open source community by making RapidJSON available.

Copyright (C) 2015 THL A29 Limited, a Tencent company, and Milo Yip. All rights reserved.

If you have downloaded a copy of the RapidJSON binary from Tencent, please note that the RapidJSON binary is licensed under the MIT License.

If you have downloaded a copy of the RapidJSON source code from Tencent, please note that RapidJSON source code is licensed under the MIT License, except for the third-party components listed below which are subject to different license terms. Your integration of RapidJSON into your own projects may require compliance with the MIT License, as well as the other licenses applicable to the third-party components included within RapidJSON. To avoid the problematic JSON license in your own projects, it's sufficient to exclude the bin/jsonchecker/ directory, as it's the only code under the JSON license.

A copy of the MIT License is included in this file.

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

msinttypes

This product uses msinttypes licensed under the BSD License.

The copyright and permission notices of msinttypes are described below.

The msinttypes r29

Copyright (c) 2006-2013 Alexander Chemeris

All rights reserved.

Redistribution and use in source and binary forms, with or without

modification, are permitted provided that the following conditions are met:

* Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.

* Neither the name of copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS AND CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

A

Appendix 4 Supported Edgecross Basic Software Version

The following table shows the version of Edgecross Basic Software supported by CC-Link IE Control Network Data Collector.

CC-Link IE Control Network Data Collector version[*1]	Data collector version[*2]	Data collector specifications version[*2]	Supported Edgecross Basic Software version[*2]
1.00A	1	1.00	1.00 or later
1.01B or later	2		

*1 Can be checked in the screen displayed by selecting [Windows System] ⇨ [Control Panel] ⇨ [Programs] ⇨ [Programs and Features] from Windows Start.
*2 For the checking method, refer to the following:
📖Edgecross Basic Software for Windows User's Manual

INDEX

I

MEMO

MEMO

MEMO

REVISIONS

TRADEMARK

Intel is either registered trademarks or trademarks of Intel Corporation in the United States and/or other countries.

Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

The company names, system names and product names mentioned in this manual are either registered trademarks or trademarks of their respective companies.

In some cases, trademark symbols such as '™' or '®' are not specified in this manual.

SH(NA)-082103ENG-D(2111)
MODEL: SW1DNN-DCCCIEC-U-E

MITSUBISHI ELECTRIC CORPORATION

When exported from Japan, this manual does not require application to the
Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.