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# MELSEC MX Controller (MX-R/MX-F Model)

## Add-on CC-Link IE Field Basic Manager Station Function

## User's Manual

CC-Link IE Field Basic

# SAFETY PRECAUTIONS

This Manager Station Function add-on does not implement any safety function of its own. Safety-related circuits and functions (such as emergency stop, STO, and protective interlocks) must be implemented independently of this add-on, in accordance with the user's manual for the target model listed in Section 1.1, "Product Overview," and the manuals for the connected devices. The cautions below concern only the correct configuration and use of this Manager Station Function.

- Before changing any settings, confirm that the target equipment is stopped. Changing settings during operation may cause communication failures or unexpected malfunctions, which could lead to personal injury or equipment damage.
- Setting incorrect values (such as duplicate station numbers or out-of-range values) may prevent communication from being established, or may cause communication with an unintended station. After configuration, always check the communication status by following the procedures in Chapter 6, "Operation," of this manual.
- Do not perform operations not described in this manual, or change settings that are outside the scope of this manual.
- Installation, configuration, and maintenance work must be performed by personnel with sufficient knowledge of industrial networks and handling of the target models.

# CONDITIONS OF USE FOR THE PRODUCT

(1) The MELSEC programmable controller may only be used under the following conditions:

i) The programmable controller is used in applications where malfunction or failure of the programmable controller will not result in a serious accident.

ii) Backup or fail-safe functions are systematically provided outside the programmable controller in case of malfunction or failure of the programmable controller.

(2) MELSEC programmable controllers are designed and manufactured as general-purpose products for use in general industrial applications. Therefore, Mitsubishi Electric Europe B.V. prohibits using MELSEC programmable controllers for special applications, including those listed below. MITSUBISHI ELECTRIC EUROPE B.V. SHALL NOT BE LIABLE FOR ANY DAMAGES ARISING FROM THE USE OF MELSEC PROGRAMMABLE CONTROLLERS IN ANY APPLICATION PROHIBITED BY MITSUBISHI ELECTRIC EUROPE B.V., WHETHER BASED ON BREACH OF CONTRACT OR WARRANTY, TORT, PRODUCT LIABILITY, OR OTHERWISE.

- Equipment and systems for power plants, including nuclear power plants
- Equipment and systems that require special quality assurance for use in public services
- Equipment and systems that could significantly impact life, physical well-being, or property (e.g., aerospace, medical, railway, combustion and fuel, passenger vehicle, manned transportation, amusement, and safety equipment)

Please note that even if the intended use falls within the above applications, Mitsubishi Electric Europe B.V. will evaluate the applicability of MELSEC programmable controllers on a case-by-case basis according to the specific usage and conditions. Contact your local Mitsubishi Electric Europe B.V. representative for details.

(3) Mitsubishi Electric Europe B.V. shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by denial-of-service attacks, unauthorized access, computer viruses, and other cyberattacks.

(4) It cannot be guaranteed that this add-on will not affect other add-on functions in all combinations. Using multiple add-ons simultaneously may result in unexpected behavior or outcomes. If you plan to use this add-on with others, conduct thorough testing in advance to ensure that there are no issues.

# INTRODUCTION

Thank you for purchasing the Mitsubishi Electric programmable automation controller MELSEC MX Controller.

This manual describes the CC-Link IE Field Basic Manager Station Function add-on for the target models listed below. To use the product correctly, please read this manual and the relevant manuals carefully, and familiarize yourself with the functions and performance of the add-on before use. The intended audience of this manual is facility engineers who design and configure equipment using the target models, and maintenance personnel who operate and maintain the equipment after installation.

| Name | Model | Version |
|---|---|---|
| MX-F | MXF100-8-N32, MXF100-8-P32, MXF100-16-N32, MXF100-16-P32 | 109 or later |
| MX-F (with Safety Functions) | MXF100S-N32, MXF100S-P32, MXF100S-8-N32, MXF100S-8-P32, MXF100S-16-N32, MXF100S-16-P32 | 101 or later |
| MX-F (Support EtherCAT) | MXF100-8-N32-EC, MXF100-16-N32-EC | 103 or later |
| MXR300 | MXR300-16, MXR300-32, MXR300-64 | 06 or later |
| MXR500 | MXR500-128, MXR500-256 | 06 or later |

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# RELEVANT MANUALS

This manual must be used together with the following manuals. In particular, physical and electrical safety precautions (such as emergency stop circuits, STO, and protective interlocks) are defined exclusively in the user's manual for the target model; this manual does not repeat or replace them.

| Manual Name | Manual Number | Content |
|---|---|---|
| MELSEC MX Controller (MX-R Model) User's Manual | [SH-082641ENG] | Installation, wiring, power supply, safety precautions (including emergency stop, STO, and protective interlocks), and other hardware-level specifications of the controller |
| MELSEC MX Controller (MX-R Model) Programming Manual | [SH-082644ENG] | Programming language specifications, controller instructions, and standard functions/function block specifications |
| MELSEC MX Controller (MX-F Model) User's Manual | [SH-082634ENG] | Installation, wiring, power supply, safety precautions (including emergency stop, STO, and protective interlocks), and other hardware-level specifications of the controller |
| MELSEC MX Controller (MX-F Model) (with Safety Functions) User's Manual | [SH-082728ENG] | Installation, wiring, power supply, safety precautions, and other hardware-level specifications specific to MX-F (with Safety Functions) |
| MELSEC MX Controller (MX-F Model) (Support EtherCAT) User's Manual | [SH-082746ENG] | Installation, wiring, power supply, safety precautions, and other hardware-level specifications specific to MX-F (Support EtherCAT), including port configuration differences |
| MELSEC MX Controller (MX-F Model) Programming Manual | [SH-082691ENG] | Programming language specifications, controller instructions, and standard functions/function block specifications |
| CC-Link IE Field Network Basic Reference Manual | [SH-081684ENG] | General CC-Link IE Field Basic communication protocol specifications (network configuration, communication specifications, parameter settings, etc.) |
| GX Works3 Operating Manual | [SH-081215ENG] | General GX Works3 operation (project creation, parameter (label) configuration, device monitor, module diagnostics) that is not specific to this add-on |

# TERMS

Unless otherwise specified, this manual uses the following terms.

| Term | Description |
|---|---|
| Add-on | Software installed on the controller or GX Works3 to extend its functionality. |

# GENERIC TERMS AND ABBREVIATIONS

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

| Term | Description |
|---|---|
| Controller | A collective term for the target models listed in "INTRODUCTION." |
| Engineering tool | A tool used for configuring, programming, debugging, and maintaining the controller (GX Works3). |

# 1 OVERVIEW

## 1.1 Product Overview

This manual describes the following Manager Station Function add-ons.

| Add-on File Name | Content |
|---|---|
| CCIEF_Basic_16_m.apk, CCIEF_Basic_16_s.apk | A Manager Station Function add-on that executes the CC-Link IE Field Basic manager-station communication function. Installed on the controller. The two files are used together. |
| CCIEF_Basic_16_m.gx3apk | An add-on that provides the parameter (label) definitions corresponding to this add-on. Installed on GX Works3. |

This manual covers the following tasks performed using GX Works3:

- Installing (registering) the Manager Station Function
- Parameter (label) configuration (network, station, group, device mapping)
- Checking and monitoring the communication status during operation
- Troubleshooting when a failure occurs

This manual does not cover content that cannot be directly confirmed from the GX Works3 operation screens, such as the internal processing methods of the Manager Station Function, the source code structure, or the details of the CC-Link IE Field Basic communication protocol.

The add-on covered by this manual is the Manager Station Function add-on (in .apk format) installed on the controller. Add-ons that require separate registration and configuration on the GX Works3 side, such as a separate add-on for supplying parameters as GX Works3 labels, are out of scope for this manual; refer to the manual supplied with that add-on.

## 1.2 Version History

This section lists the version history for each deliverable (the controller add-on and the GX Works3 add-on).

**Controller Add-on (CCIEF_Basic_16_m.apk, CCIEF_Basic_16_s.apk)**

| Version | Description |
|---|---|
| 1.001 | First version |

**GX Works3 Add-on (CCIEF_Basic_16_m.gx3apk)**

| Version | Description |
|---|---|
| 1.001 | First version |

## 1.3 Features

Using this add-on, the MX Controller alone can operate as a CC-Link IE Field Basic manager station without adding a dedicated communication unit. The network, station, group, and device mapping can be configured using only GX Works3 labels (parameters), and cyclic transmission with up to 16 remote stations is supported.

## 1.4 Notation Conventions

This manual uses the following notation conventions.

| Notation | Meaning |
|---|---|
| **Caution** | Content that, if a setting or operation is performed incorrectly, may lead to communication failure or malfunction |
| **Reference** | Supplementary information that may help with understanding |
| Monospace notation such as SM1536 or U3E0\G1024 | PLC device names (special relays/special registers, etc.) |

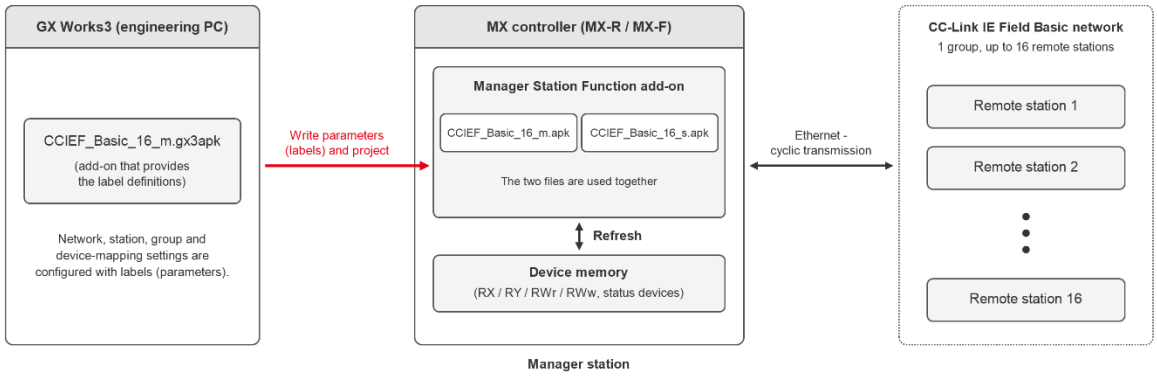
**Caution** This is how such content is noted.

**Reference** This is how such content is noted.

# 2 SYSTEM CONFIGURATION

## 2.1 Overall Configuration

This add-on is installed on both the controller and GX Works3. The Manager Station Function add-on (in .apk format) is installed on the controller, and the corresponding add-on that provides the label definitions (CCIEF_Basic_16_m.gx3apk) is installed on GX Works3. Only when both are installed together can you configure settings using labels (parameters) in GX Works3 and run the Manager Station Function on the controller.




## 2.2 Package Configuration

This add-on is provided in the following folder structure.

| Folder Name (example) | Content |
|---|---|
| GX_Works3_Add-on_<Model>_v<Version> | Contains the label (parameter)-definition add-on (in .gx3apk format) installed on GX Works3. |
| CPU_Module_Add-on_<Model>_v<Version> | Contains the Manager Station Function add-on (in .apk format) installed on the controller. |
| Diagnosis_Web_Server_v<Version> | Contains the full and light version archives (Full version.zip, Light version.zip) of the Web server for checking this add-on's communication status from a Web browser. Select one at installation time (see Section 6.6, "Web Server"). This folder is not included in the MXF100S delivery package. |

<Model> in the folder name is the target model name, and <Version> is the version number of the deliverable contained in that folder (e.g., GX_Works3_Add-on_MXF100_v1001, CPU_Module_Add-on_MXF100_v1001, Diagnosis_Web_Server_v100). For Diagnosis_Web_Server, <Version> is the Web server's own version number, which is distinct from this add-on's version number. The set of folders included in the delivery package varies by target model.

## 2.3 Applicable Software

The following software can be used.

| Item | Function | Application | Version |
|---|---|---|---|
| GX Works3 | Software used for the design, programming, debugging, and maintenance of programmable controllers. | Used to configure controller settings. | 1.128J or later |

# 3 INSTALLATION

## 3.1 Installation

### Installation operation

Install the Manager Station Function add-on (CCIEF_Basic_16_m.apk, CCIEF_Basic_16_s.apk) on the controller using GX Works3. Refer to the GX Works3 Operating Manual for detailed installation instructions.

Install the add-on (CCIEF_Basic_16_m.gx3apk) on GX Works3. After installation, enable the add-on using the Add-on Enable/Disable Setting. Refer to the GX Works3 Operating Manual for detailed installation instructions.

**Caution** Do not change the file name of the add-on files. Operation is not guaranteed if the files are renamed and installed. For errors caused by an incorrect registration name, see Chapter 7, "Troubleshooting."

### Environment after installation

Enabling the add-on (CCIEF_Basic_16_m.gx3apk) adds the parameter (label) definitions necessary to configure the network, station, group, and device mapping. For details on configuring parameters (labels), see Chapter 5, "Configuration."

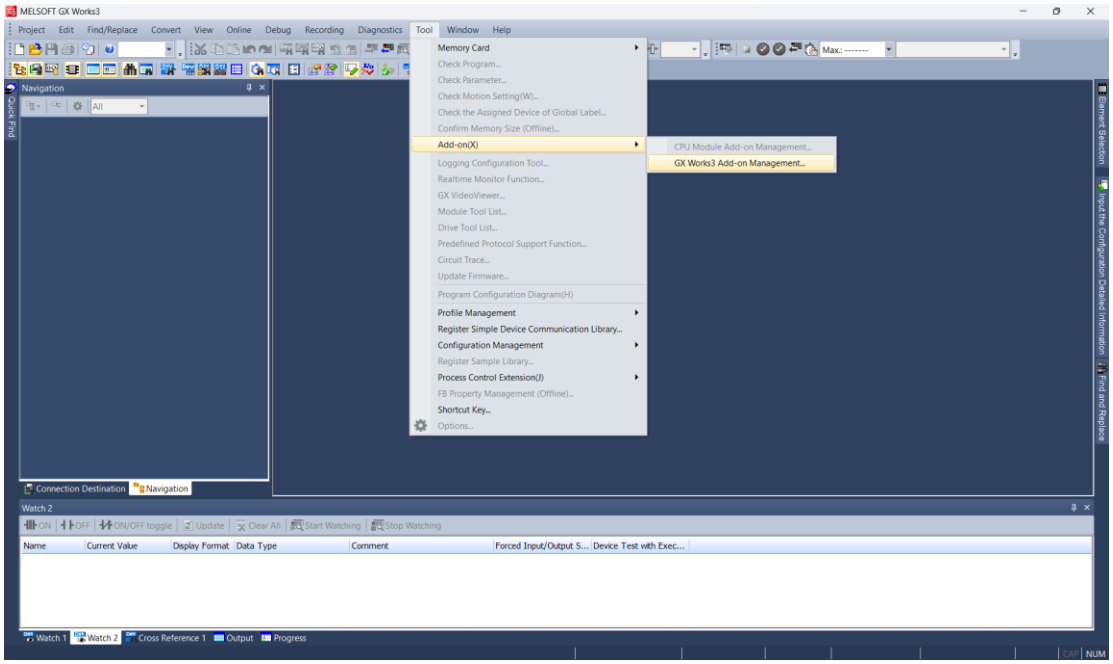
### Reference: GX Works3 Operation Procedures

**Reference** The following are example screen operation procedures in GX Works3. The actual screen layout and displayed content may differ depending on the GX Works3 version. Refer to the GX Works3 Operating Manual for detailed instructions.

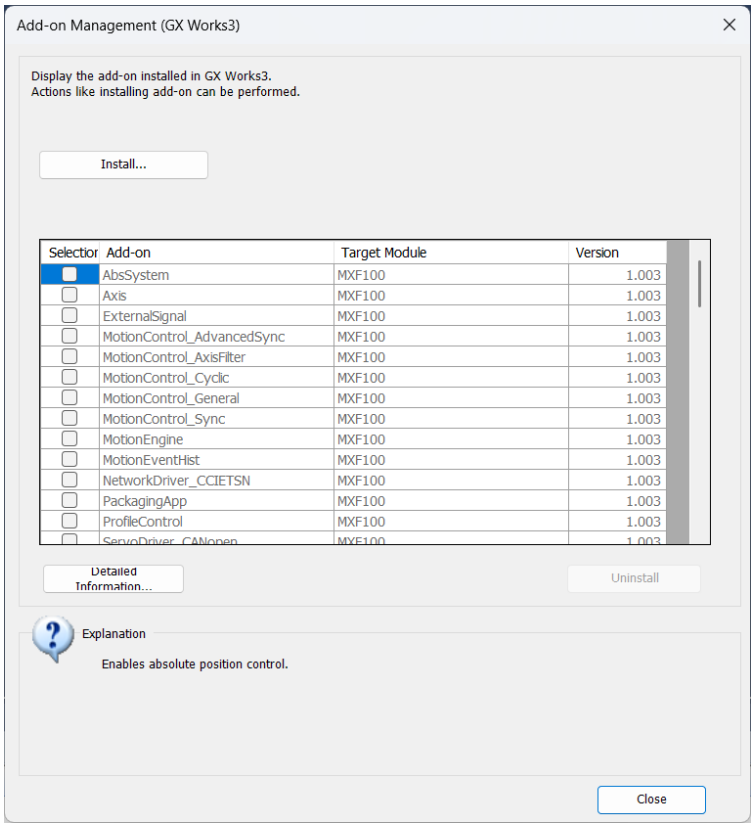
#### ■ Registration Procedure for the GX Works3 Add-on

Install the add-on into GX Works3 itself with GX Works3 running and no project open.

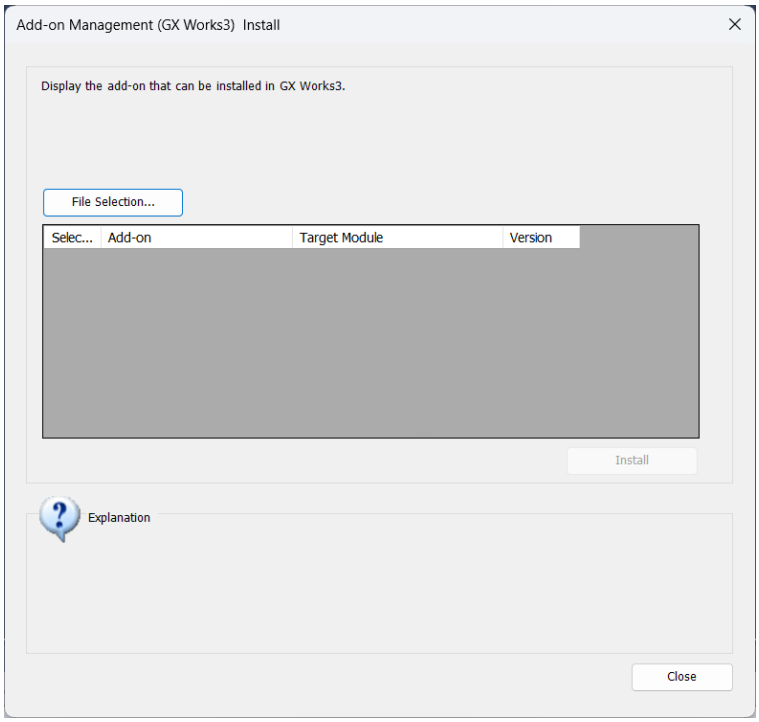
1. Start GX Works3 and close the project, leaving only the application open.
2. Select Tool → Add-on → GX Works3 Add-on Management....



3. In the Add-on Management (GX Works3) screen, select Install....

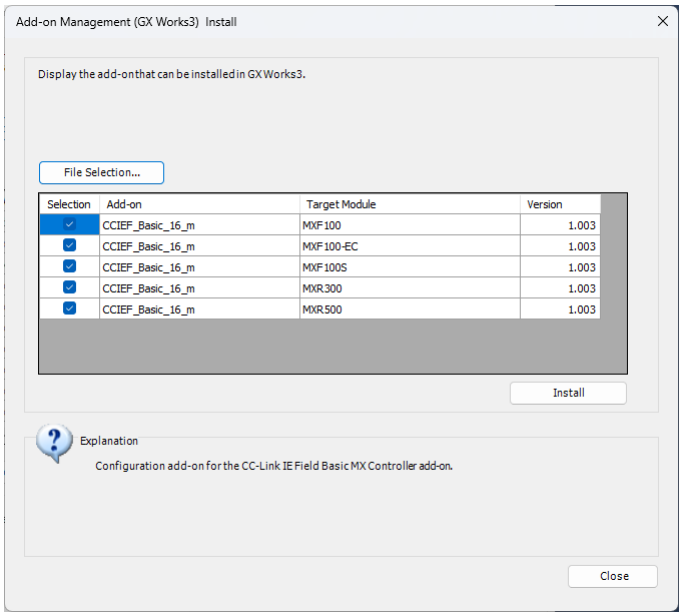



4. In the Add-on Management (GX Works3) Install screen, select File Selection....




5. Select the add-on file with the .gx3apk extension. The add-on is listed with its Selection box checked.

6. With the add-on selected, select Install.

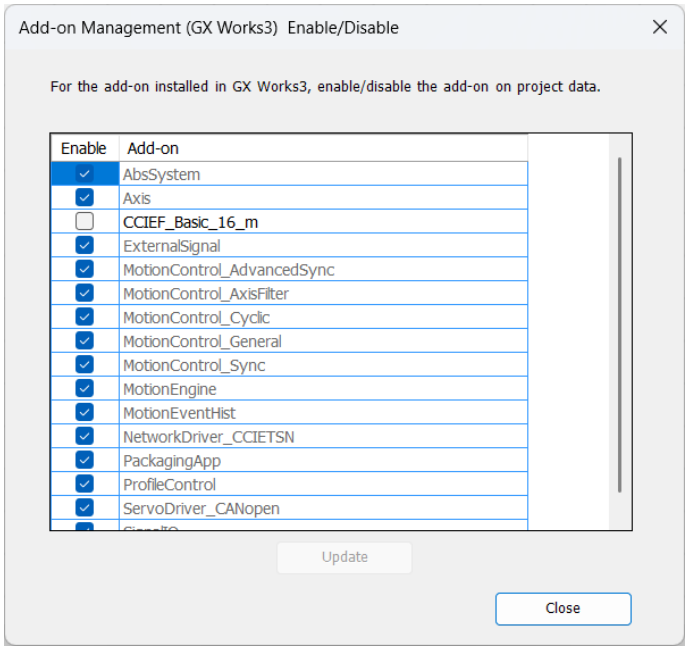



**Reference** CPU Module Add-on Management..., in the same menu, is the function used to install the add-on onto the controller (see the next section). It is not available while no project is connected. The add-on names, target modules, and versions in the screenshots above are examples and differ depending on the add-on being installed.

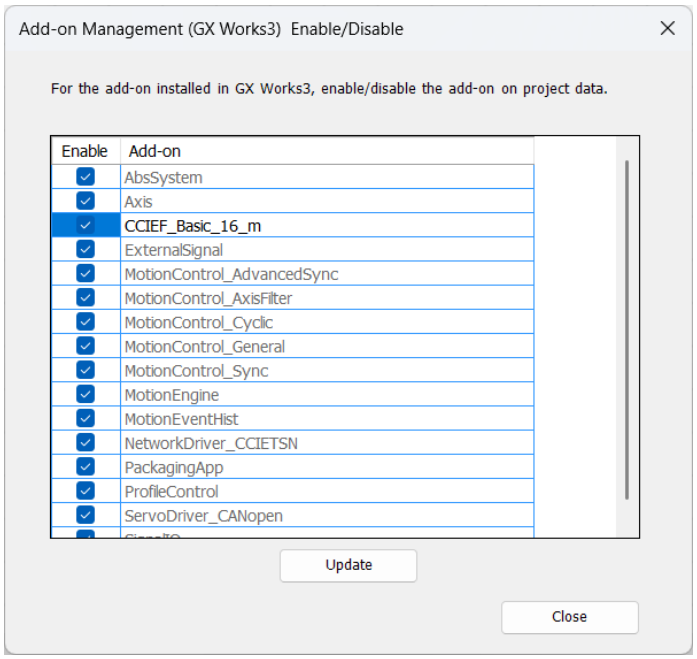
## ■ Enabling or Disabling the Add-on in a GX Works3 Project

After installing the add-on in GX Works3, enable it in each project where it will be used. This project setting is required in addition to installing the add-on in GX Works3.

1. Save the GX Works3 project.
2. Select Project → Add-on Enable/Disable Setting....
3. Select the checkbox in the Enable column for the add-on to enable in this project. Clear the checkbox to disable it in this project.



4. Select Update to apply the setting to the project data.



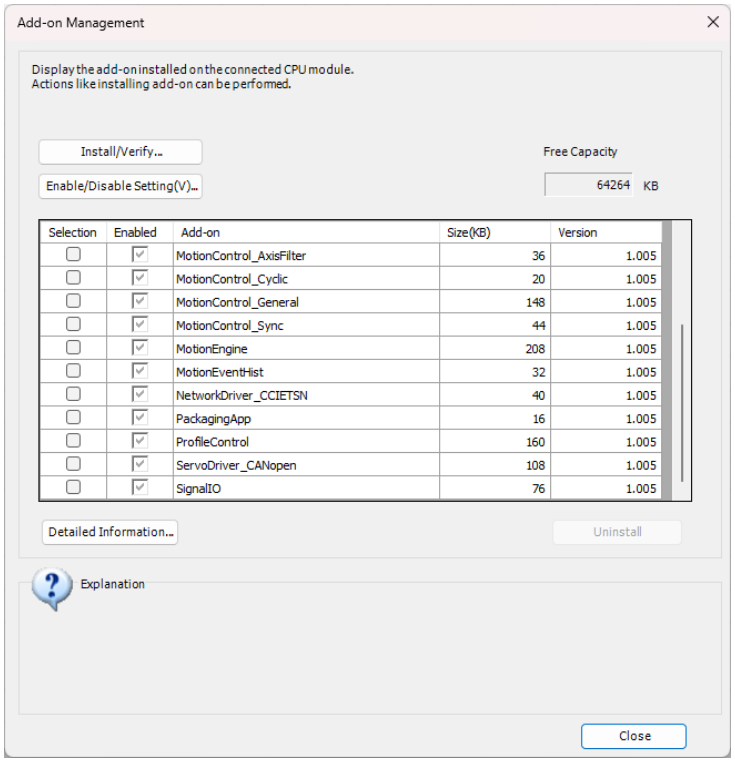

5. Save the project after updating the setting.

**Reference** This setting controls whether the add-on is enabled in the GX Works3 project. It is separate from the setting item described in Section 5.3.1, " CC-Link IE Field Basic General Setting."

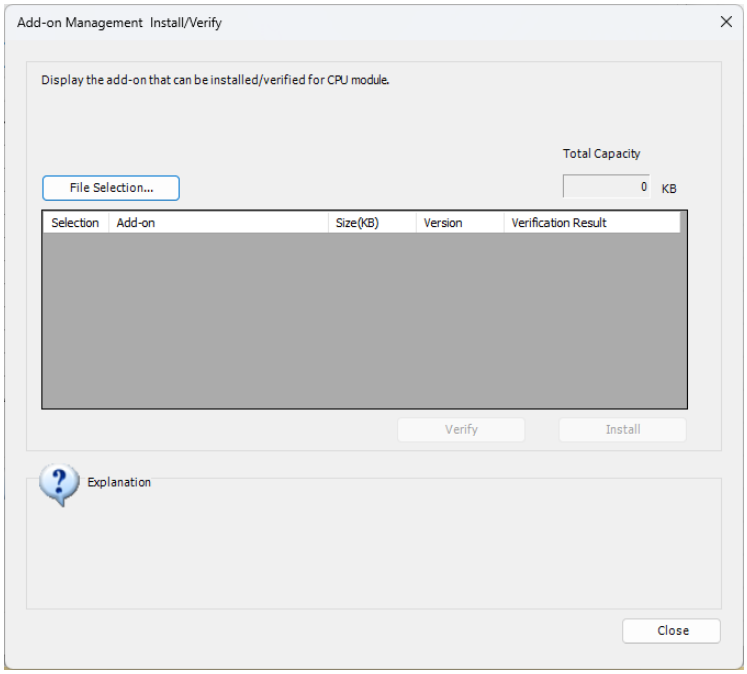
### ■ Registration Procedure for the CC-Link IE Field Basic Manager Station Function Add-on

Install the Manager Station Function add-on (in .apk format) on the controller using the following procedure.

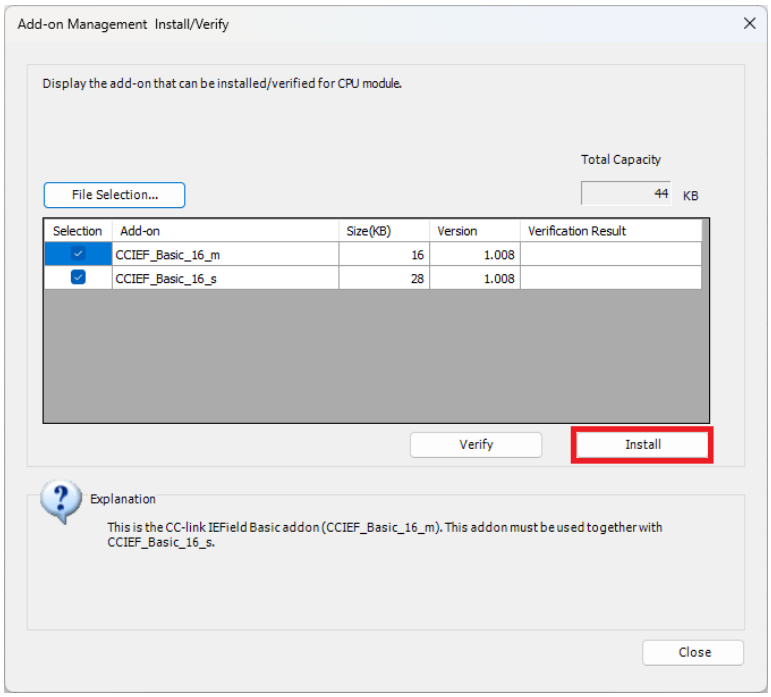
1. Turn on the power of the controller.
2. Launch GX Works3.
3. In Specify Connection Destination Connection, configure the connection method between the PC and the controller.
4. Select Tool → Add-on → CPU Module Add-on Management.
5. In the Add-on Management screen, select Install/Verify.




6. Select File Selection and choose the add-on file (.apk) to install.



7. Select Install.




8. After the installation is complete, reset the controller or turn the power off and on again.

**Reference** The screenshots above are examples provided for illustration of the screen layout. The add-on name, size, and version displayed on your screen differ depending on the add-on being installed.

**Caution** Do not change the file name of the add-on file to be installed. If it is installed with a changed name, an add-on load error may be recorded in the event history at startup.

# 3.2 Uninstallation

## Uninstallation operation

Uninstall the Manager Station Function add-on (CCIEF_Basic_16_m.apk, CCIEF_Basic_16_s.apk) from the controller using GX Works3. Refer to the GX Works3 Operating Manual for detailed uninstallation instructions.

Uninstall the add-on (CCIEF_Basic_16_m.gx3apk) from GX Works3. Refer to the GX Works3 Operating Manual for detailed uninstallation instructions.

## Environment after uninstallation

Uninstalling the add-on (CCIEF_Basic_16_m.gx3apk) deletes the label (parameter) definitions that were added during installation.

## Reference: GX Works3 Operation Procedures

**Reference** The following are example screen operation procedures in GX Works3. The actual screen layout and displayed content may differ depending on the GX Works3 version. Refer to the GX Works3 Operating Manual for detailed instructions.

### ■ Uninstallation Procedure Using a Project

To remove the Manager Station Function add-on, follow the procedure below.

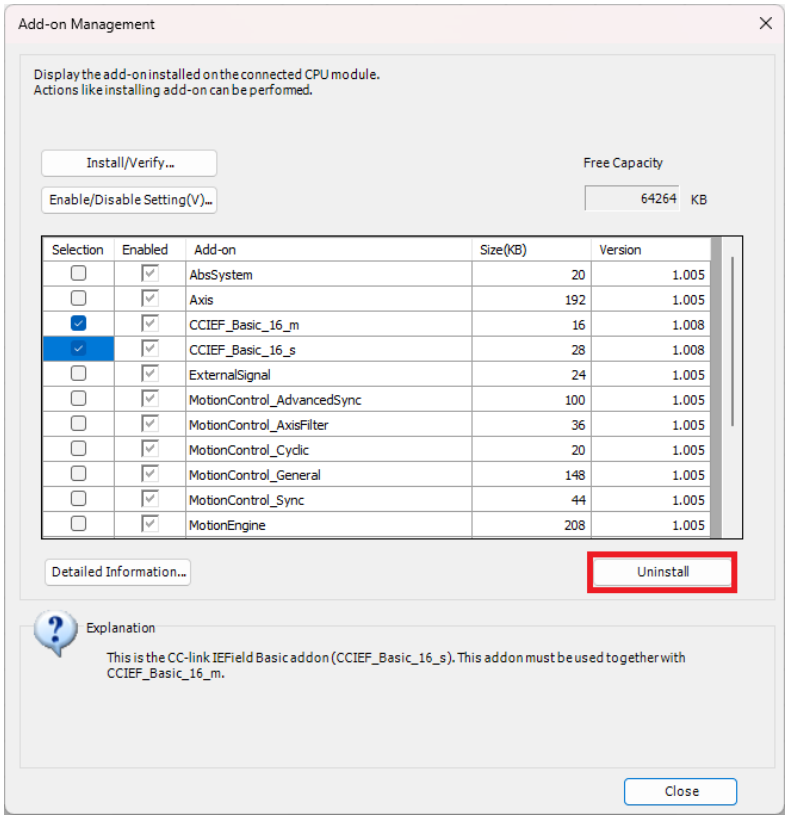
1. Open the target project in GX Works3.
2. Open the add-on registration screen, select the registered Manager Station Function add-on, and delete it.
3. After deletion, write the project to the controller.
4. Reset the controller and verify the add-on status. When only one of the two add-on files is deleted, the deleted add-on's RAM usage becomes 0. Verify this after the reset, not immediately after deletion.

**Reference** With both add-on files registered, RAM usage remains stable regardless of CPU RUN/STOP. When only one is deleted, its RAM usage becomes 0 after reset and communication stops. H2885 is subsequently reported for the remaining add-on. When both add-ons are deleted, no RAM usage is displayed and no initial error occurs.

### ■ Uninstallation Procedure on the Controller

The add-on can also be uninstalled directly from the controller using the Add-on Management screen.

1. Turn on the power of the controller.
2. Launch GX Works3 and configure the connection method between the PC and the controller in Specify Connection Destination Connection.
3. Select Tool → Add-on → CPU Module Add-on Management.
4. In the Add-on Management screen, check the Selection box of the add-on to uninstall, and then select Uninstall.




5. After the uninstallation is complete, reset the controller or turn the power off and on again.

## 3.3 Procedures Before Operation

This section outlines the steps to take before executing the Manager Station Function of this add-on.

| Step | Description |
|---|---|
| 1. Install the add-on (controller) | Install the Manager Station Function add-on on the controller using GX Works3 (*1) |
| 2. Install the add-on (GX Works3) | Install the add-on on GX Works3 |
| 3. Configure parameters | Configure the network, station, group, and device mapping parameters using GX Works3 (see Chapter 5, "Configuration") |
| 4. Write the parameters to the controller | Write the parameters (labels) and project configured with GX Works3 to the controller |
| 5. Trial operation | Confirm that the Manager Station Function has started normally and the communication status is normal |

*1: Ensure that the Manager Station Function add-on files (CCIEF_Basic_16_m.apk, CCIEF_Basic_16_s.apk) are the same version.

# 4 SPECIFICATIONS

## 4.1 General Specifications

The following describes the general specifications of the add-on.

| Item | Specification |
|---|---|
| File size | 44 KB total |
| RAM usage | 1536 KB total |
| Backup RAM usage | 0 KB total |

## 4.2 Physical Port Specifications

The CC-Link IE Field Basic Manager Station Function of this add-on can only be used on an Ethernet port of the controller that is functioning as a general-purpose Ethernet port. The usable port and the condition for using it differ by model, as described below for each model.

### MX-R

P3 is a fixed Ethernet port and is usable by this Manager Station Function with no additional condition. P1 and P2 are fixed CC-Link IE TSN ports and are not usable by this Manager Station Function.

### MX-F, MX-F (with Safety Functions)

The function of P1 and P2 is not fixed; it is determined by the GX Works3 project's "Built-in Network Type" setting. P2 is usable by this Manager Station Function only when this setting is Ethernet+CC-Link IE TSN. P1 is always a CC-Link IE TSN port regardless of the setting, and is not usable by this Manager Station Function.

**Caution** If "Built-in Network Type" is set to CC-Link IE TSN, both P1 and P2 become CC-Link IE TSN ports, and no port remains usable by this Manager Station Function. To use this

Manager Station Function, always set "Built-in Network Type" to Ethernet+CC-Link IE TSN so that P2 functions as an Ethernet port.

**MX-F (Support EtherCAT)**

P2 is a fixed Ethernet port and is usable by this Manager Station Function with no additional condition. P1 is a fixed EtherCAT port and is not usable by this Manager Station Function.

## 4.3 Network Communication Specifications

The following describes the network communication specifications of this add-on. This add-on (Manager Station Function add-on) supports a configuration of 1 group and up to 16 stations.

| Item | Specification |
|---|---|
| Number of connectable modules per network (manager station) | 1 |
| Number of connectable modules per network (remote station) | 16 |
| Number of stations occupied by a remote station | 1 to 4 |
| Maximum number of link points per network (RX) | 1024 |
| Maximum number of link points per network (RY) | 1024 |
| Maximum number of link points per network (RWr) | 512 |
| Maximum number of link points per network (RWw) | 512 |
| Maximum number of link points per station (manager station, RX) | 1024 |
| Maximum number of link points per station (manager station, RY) | 1024 |
| Maximum number of link points per station (manager station, RWr) | 512 |
| Maximum number of link points per station (manager station, RWw) | 512 |
| Maximum number of link points per station (remote station, RX) | 64 (1 station occupied), 128 (2 stations occupied), 192 (3 stations occupied), 256 (4 stations occupied) |
| Maximum number of link points per station (remote station, RY) | 64 (1 station occupied), 128 (2 stations occupied), 192 (3 stations occupied), 256 (4 stations occupied) |
| Maximum number of link points per station (remote station, RWr) | 32 (1 station occupied), 64 (2 stations occupied), 96 (3 stations occupied), 128 (4 stations occupied) |
| Maximum number of link points per station (remote station, RWw) | 32 (1 station occupied), 64 (2 stations occupied), 96 (3 stations occupied), 128 (4 stations occupied) |
| UDP port number used in the cyclic transmission | 61450 |
| UDP port number used in the automatic detection of connected device | (Reserved) Manager station: An unused port number is assigned automatically. Remote station: 61451 |
| Transmission specifications (data transmission speed) | 100Mbps |

| | |
|---|---|
| Transmission specifications (number of cascade connections) | 100BASE-TX: For the number of connectable stages when using a switching hub, check with the manufacturer of the switching hub used |
| Network topology | Star topology, line topology (a mixed network topology of star and line can also be configured) |
| Connection cable | Ethernet cable compliant with the 100BASE-TX standard |
| Maximum station-to-station distance | 100m (ANSI/TIA/EIA-568-B (Category 5e) compliant) |
| Overall cable distance | Depends on the system configuration |

**Caution** The access range of this add-on is within the same network address of Ethernet. A device connected beyond a router is not accessible. Install the manager station and remote stations within the same network address.

# 4.4 Abnormal I/O Hold Specification

This section describes the input status from a station in data link error, and the output status of cyclic data when an error occurs in the CPU unit.

| Status | Operation |
|---|---|
| Input status from a station in data link error (RX/RWr) | Held at the value from before the error occurred. |
| Output status to a station in data link error (RY/RWw) | Held at the last value transmitted before the error, while the other stations continue to receive updated data. The hold is released automatically when the error clears. |
| Cyclic data output when a CPU unit stop error occurs (RY/RWw) | Held. |

## Output Status for CPU STOP

Cyclic data output is also held when the CPU unit is placed in the STOP state.

**Reference** A CPU unit stop error or continuation error (e.g. annunciator ON) does not raise any entry in this add-on's own event history (such as the H2885 add-on individual error), even when it occurs. Check the CPU unit's own self-diagnostic information instead (SM0, SM1, SD0, etc., also visible via GX Works3 module diagnostics). This add-on applies the output hold above only when the error reported by the CPU unit actually stops the CPU; communication continues either way. For a continuation error, no hold is applied and operation continues normally.

**Caution** RX/RWr are **not** automatically cleared to 0/OFF when a data link error occurs; they are held at their last value as described above. This differs from the behavior of some genuine CC-Link IE Field Basic manager station modules, which clear this data to 0/OFF on a data link error. Do not use an RX/RWr value change to detect that a station has disconnected; always use U3E0\SD1540 to U3E0\SD1543 (see Section 6.2, "Status Check During Normal Operation") instead. This caution describes correct use of this Manager Station Function's data only; it does not replace any safety circuit or function.

# 5 CONFIGURATION

## 5.1 Applying Configuration Changes

If you change a setting, apply it using the following procedure.

1. Write the modified project to the controller.
2. Reset the controller or power-cycle it.
3. Follow the procedure in Section 6.2, "Status Check During Normal Operation," to confirm that communication is established normally with the new settings.

**Caution** This add-on reads the setting items (label settings) described in this chapter only once, during add-on startup (initialization), and never re-reads them while running (during cyclic transmission). Therefore, writing the project to the controller CPU via an online change while it is in RUN state does not by itself apply changes to the network settings (station, group, refresh, IP address, etc.). To apply a configuration change, you must reset or power-cycle the controller as described above. In addition, if you change any setting item (label settings), rebuild the project (Convert > Rebuild All) before writing it to the controller.

## 5.2 IP Address Configuration for the General Ethernet Port

Configure the following items in the MX controller settings. The item names and content conform to the description of the IP address configuration (Required Settings) for the general Ethernet port in the target model's User's Manual (see "RELEVANT MANUALS").

| Item | Description | Setting range |
|---|---|---|
| IP Address | Set the IP address of the own station (the controller itself; the manager station in the context of this Manager Station Function). Set the IP address class within the range of classes A, B, and C. Set external devices (remote stations) to the same class and subnet address as the own station. When the parameters are written without setting the IP address, the address 192.168.3.39 is set. | Blank, or 0.0.0.1 to 223.255.255.254 (Default: Blank) |
| Subnet Mask | Set the subnet mask pattern of the default gateway when setting its IP address and communicating with an external device on another network via a router. All devices on a subnetwork must have the same subnet mask. This setting is not required when communicating on a single network. | Blank, or 0.0.0.1 to 255.255.255.255 (Default: Blank) |
| Default Gateway | Set the IP address of the default gateway (the device which the own station passes through to access a device on another network). | Blank, or 0.0.0.1 to 223.255.255.254 (Default: Blank) |

**Caution** Set the IP address, subnet mask, and default gateway according to the configuration of the network to which the target controller is connected. If incorrect values are set, communication cannot be established.

## 5.3 CC-Link IE Field Basic Add-on Settings

The CC-Link IE Field Basic-related settings (Station Setting, Group Setting, and Refresh Setting) are configured by opening Parameter → target model name → Add-on Parameter → CCIEF_Basic_16_m Setting in the GX Works3 navigation window, and then configuring each of the following setting items (Section 5.3.2, "Refresh Setting," Section 5.3.3, "Group Setting," and Section 5.3.4, "Station Setting," are also configured from this same screen).

For settings for each remote station to be communicated with, see Section 5.3.4, "Station Setting."

### 5.3.1 CC-Link IE Field Basic General Setting

This add-on provides a setting item, in the configuration screen provided by the GX Works3 add-on, that controls whether to use the CC-Link IE Field Basic Manager Station Function.

| Setting Item | Content |
|---|---|
| To Use or Not to Use CC-Link IEF Basic | Sets whether to use (Use) or not use (Not to Use) the Manager Station Function. |

When set to Not to Use, this add-on does not start any communication, and does not write to device memory at all (including the diagnostic data valid flag U3E0\G1052). Setting it to Not to Use is not recorded in the event history. This is intentional, so that a GX Works3 project in which this setting item has not yet been configured is not treated as a fault.

### 5.3.2 Refresh Setting

Configure where in the PLC device memory the data (RX/RY/RWr/RWw) sent to and received from remote stations is mapped. A Device Name and Device Start Address must be set for each of RX, RY, RWr, and RWw. Enter the Device Start Address value in hexadecimal notation regardless of device type (for example, to specify address M1000, enter 3E8).

**Caution** For X, Y, B, and W devices, the address value is natively expressed in hexadecimal by the device specification. For M, L, D, R, ZR, and RD devices, the address value is natively expressed in decimal by the device specification. Because the Device Start Address is always entered in hexadecimal notation regardless of device type, when specifying a decimal-notation device such as M, L, D, R, ZR, or RD, convert the decimal address number to hexadecimal before entering it.

| Setting Item | Content |
|---|---|
| RX Device Name / Device Start Address | The type and start address of the PLC device to which the input bit data (RX) from remote stations is mapped |
| RY Device Name / Device Start Address | The type and start address of the PLC device to which the output bit data (RY) from the PLC to remote stations is mapped |
| RWr Device Name / Device Start Address | The type and start address of the PLC device to which the input word data (RWr) from remote stations is mapped |
| RWw Device Name / Device Start Address | The type and start address of the PLC device to which the output word data (RWw) from the PLC to remote stations is mapped |

**Caution** The mapped range of each device occupies a size corresponding to the number of stations set in Section 5.3.4, "Station Setting" (see Section 5.3.5, "Value Limits and Constraints"). Configure these so they do not overlap with device ranges used for other purposes (other functions or a separate PLC program), or with each other among RX/RY/RWr/RWw.

### 5.3.3 Group Setting

The following items must be set for Group No. 1 (since this add-on has the total number of groups fixed at 1, only Group No. 1 needs to be configured).

| Setting Item | Content |
|---|---|
| Cyclic Transmission Timeout | The timeout period (in milliseconds, 10 to 65535) for cyclic transmission with remote stations |

| | |
|---|---|
| Cyclic Transmission Timeout Count | The number of detections (3, 5, or 10) until a timeout is determined to be a communication disconnection |

### 5.3.4 Station Setting

The following items must be set for each remote station to be communicated with.

| Setting Item | Content |
|---|---|
| Station IP address | The IP address of the target remote station. Set it to the same class and subnet address as the manager station (the IP Address in Section 5.2, "IP Address Configuration for the General Ethernet Port"). |
| Occupy number | The number of stations occupied by the target remote station (1 to 4) |
| Group number | The number of the group to which the target remote station belongs.**With this add-on, this is always fixed at 1.** |
| Reserved station | The setting for whether to treat the target station as a reserved station. A reserved station must still have its IP address set. For checking the status of reserved stations, see Section 6.3, "Reserved Station Status Check." |

**Caution** Configure station numbers and IP addresses so they do not overlap with other stations. If there is overlap, communication may not be established, or communication may occur with an unintended station.

**Caution** Configure station numbers **consecutively** starting from Station01, with no gaps, and set an IP address for every station, including reserved stations. If a station number is left unconfigured, or a station's IP address is left empty, scanning stops at that station number, and every station after it is **silently ignored without any error** (e.g., if Station03 is left with no IP address while only Station05 is configured, Station04 and Station05 are not recognized). This condition is not recorded in the event history or as an error detail code, so after configuring, always verify in Section 6.2, "Status Check During Normal Operation," that U3E0\G1024 (total number of stations) matches the number of stations you intended to configure.

### 5.3.5 Value Limits and Constraints

When configuring settings, do not exceed the following limits and constraints.

| Item | Limit/Constraint |
|---|---|
| Maximum number of stations (total of the Occupy numbers of all configured stations) | 16 stations |
| Input/output bit data (RX/RY) size per station | 8 bytes (64 bits) |
| Input/output word data (RWr/RWw) size per station | 64 bytes (32 words) |
| Occupy number per station | 1 to 4 |
| Cyclic Transmission Timeout | 10 to 65535 ms |
| Cyclic Transmission Timeout Count | 3, 5, or 10 |

If any of the above limits or constraints are exceeded, the add-on will not start communication. For the detail codes reported when a violation occurs and how to resolve them, see Section 7.4, "List of Error Detail Codes and Remedies." The data sizes per station are fixed and cannot be changed.

# 6 OPERATION

## 6.1 Physically Connecting the MX Controller and Remote Stations

Before starting communication, physically connect the MX controller and the remote stations.

1. Identify the port that can be used as a general-purpose Ethernet port for the target model (see Section 4.2, "Physical Port Specifications"). If you use P2 as the Ethernet port on an MX-F model, first set the GX Works3 project's "Built-in Network Type" setting to Ethernet+CC-Link IE TSN.
2. Connect the identified port to each remote station using an Ethernet cable. For the connection cable, network topology, station-to-station distance, and other specifications, see Section 4.3, "Network Communication Specifications."
3. Confirm that the manager station (the MX controller) and all remote stations are installed within the same network address (see Section 4.3, "Network Communication Specifications").

After connecting, write the project and reset or power-cycle the controller to start communication. For how to confirm that communication is established normally, see Section 6.2, "Status Check During Normal Operation."

**Caution** CC-Link IE Field Network Basic uses the same Ethernet line for cyclic transmission. Therefore, if a device performing communication other than CC-Link IE Field Network Basic is present on the network connecting the manager station and remote stations, or if you use the target model's built-in Ethernet functions such as FTP, socket communications, or SLMP communications, cyclic transmission and these other communications may affect each other, causing effects such as an extended link scan time. If the effect is significant, consider measures such as separating the network.

## 6.2 Status Check During Normal Operation

The communication status can be checked by monitoring the following devices in the GX Works3 device monitor.

| Device | Content |
|---|---|
| SM1536 | Cyclic transmission status. Set to 1 while cyclic transmission is running. |
| SM1540 | Data link status. When 1, a data link error has occurred at one or more stations (0 means all stations are normal). |
| SD1536 | Cyclic transmission status per station (Cyclic transmission status of each station, bitmap). When the bit corresponding to station number N (bit(N-1)) is 1, that station is in cyclic transmission. |
| SD1540 | Data link status per station (Data link status of each station, bitmap). When the bit corresponding to station number N (bit(N-1)) is 1, that station is in a data link error (disconnected) state. |
| U3E0\G1024 | Total number of stations (Total number of connected stations). This is the number of stations configured in Section 5.3.4, not the total of their Occupy numbers |

The check procedure is as follows.

1. Open the device monitor in GX Works3 and register the above devices.
2. Check SM1540 to determine the overall status.

3. If SM1540 is 1 (abnormal), check each bit of SD1540 to identify which station has a data link error.
4. For the affected station, follow the procedures in Chapter 7, "Troubleshooting."

**Reference** Each bit of SD1536 and SD1540 corresponds to station number N at bit (N-1) (station number 1 is bit 0, station number 16 is bit 15). Since this add-on supports a maximum of 16 stations, only the 16 bits of SD1536 and SD1540 are used (SD1537 to SD1539 and SD1541 to SD1543 are always 0).

**Caution** As described in Section 4.4, "Abnormal I/O Hold Specification," RX/RWr from a disconnected station are held, not cleared to 0. SD1540-SD1543 are therefore the only reliable way to detect a data link error for a given station; do not use an RX/RWr value change for this purpose, especially in interlock or safety-relevant logic.

## 6.3 Reserved Station Status Check

The status of stations configured as reserved stations can be checked using the following devices.

| Device | Content |
|---|---|
| U3E0\G1025 | Reserved station specification status. Indicates whether one or more reserved stations are configured (1: configured, 0: not configured). |
| U3E0\G1026 | Reserved station specification status of each station (bitmap). When the bit corresponding to station number N (bit(N-1)) is 1, that station is configured as a reserved station. |

The check procedure is as follows.

1. Open the device monitor in GX Works3 and register U3E0\G1025 and U3E0\G1026.
2. Check U3E0\G1025 to see whether any reserved station is configured, and identify the target station(s) using each bit of U3E0\G1026.
3. If a station is unintentionally configured as a reserved station, review the Reserved station setting in Section 5.3.4, "Station Setting."

**Reference** Since this add-on supports a maximum of 16 stations, only the 16 bits of U3E0\G1026 are used (U3E0\G1027 to 1029 are always 0).

## 6.4 Link Scan Time Check

The link scan time for Group No. 1 can be checked using the following devices.

| Device | Content |
|---|---|
| U3E0\G1030 | Group No. 1 maximum link scan time (in milliseconds) |
| U3E0\G1031 | Group No. 1 minimum link scan time (in milliseconds) |
| U3E0\G1032 | Group No. 1 current link scan time (in milliseconds) |
| U3E0\G1033 | (Reserved) |

**Caution** Since this add-on has the total number of groups fixed at 1, only the above 4 words (U3E0\G1030 to 1033) are valid. U3E0\G1034 to G1045 are reserved for future group expansion and are always 0.

## 6.5 Using the Diagnostic Function

Detailed diagnostic information for each station can be obtained using a request/response procedure with the following devices.

| Device | Content |
|---|---|
| U3E0\G1050 | Diagnostic request flag (Diagnostic information display request). Write 1 to request diagnosis; the Manager Station Function clears it to 0 when it acknowledges the request. |
| U3E0\G1051 | Station number to be diagnosed (Diagnostic request information). Write a value from 1 to 16. |
| U3E0\G1052 | Diagnostic data valid flag (Diagnostic information status flag). Written by the Manager Station Function (read only; 1: valid data available, 0: no valid data or request still being processed). |
| U3E0\G1053 to 1077 | Diagnostic data for each station (Diagnostic information 1 and 2, 25 words) |

The content of U3E0\G1053 to 1077 is as follows.

| Device | Content |
|---|---|
| U3E0\G1053 | Occupy number |
| U3E0\G1054 | Assigned group number (starting from 1) |
| U3E0\G1055 to 1056 | IP address (lower 16 bits / upper 16 bits) |
| U3E0\G1057 to 1062 | (Reserved) |
| U3E0\G1063 | Accumulated number of timeout events |
| U3E0\G1064 | Accumulated number of disconnection detections |
| U3E0\G1065 to 1067 | (Reserved) |
| U3E0\G1068 | Vendor code |
| U3E0\G1069 | (Reserved) |
| U3E0\G1070 to 1071 | Model code (lower 16 bits / upper 16 bits) |
| U3E0\G1072 | Device version |
| U3E0\G1073 | (Reserved) |
| U3E0\G1074 | Unit information |
| U3E0\G1075 | Error code |
| U3E0\G1076 to 1077 | Unit data (lower 16 bits / upper 16 bits) |

The diagnostic procedure is as follows.

1. Write the station number to be diagnosed to U3E0\G1051, then write 1 to U3E0\G1050.
2. Confirm that U3E0\G1050 has returned to 0 (this indicates the request has been acknowledged).
3. Read U3E0\G1052 (diagnostic data valid flag) and U3E0\G1053 to 1077 (diagnostic data).

**Diagnostic limitation** U3E0\G1052 is written by the Manager Station Function and must not be written by a host tool. The interface has no separate busy, completion, or request sequence indicator. While a request is being processed, U3E0\G1052 may still contain the previous result, including 1; 0 can mean either an invalid result or a request still in progress. Therefore, a host tool cannot reliably determine whether U3E0\G1052 and the diagnostic data belong to the latest request. Do not use this interface alone for safety-related or

automatic decisions, and do not treat U3E0\G1050 returning to 0 as proof that the result is ready.

## 6.6 Web Server

This add-on's communication status can also be checked from a Web browser by using the Web server program (hereinafter, "Web server") developed by Mitsubishi Electric Europe B.V. (interface version v1.0.0). The Web server is intended for operators and authorized maintenance personnel. It is optional; checking the status during normal operation and troubleshooting are both possible using only the GX Works3 device monitor described in Sections 6.1-6.5.

The Web server is provided in two versions. The full version, which provides general diagnostics and per-station diagnostics, is described in this section. The light version, a read-only network monitor with a station list, is described briefly at the end of this section. Only one version can be installed on a controller at a time; see "Choosing the Version: Light or Full" to select the version suited to your use case.

**Note** Web server support varies by MX-F variant. MX-F (plain) is supported with firmware version 110 or later combined with GX Works3 version 1.130L or later. MX-F (Support EtherCAT) is supported with firmware version 104 or later combined with the same GX Works3 version. MX-F (with Safety Functions) is not yet supported at firmware version 101; support is planned for a future release.

| Item | Description |
|---|---|
| Type | User Web Page of the Web server function provided by the MX controller. It is not a System Web Page. |
| Displayed information | Network status, number of transmitting and non-transmitting stations, cycle time, DataLink error count, link scan time of each group, trend of the last 30 samples, and per-station diagnostic information. |
| Refresh | The data is updated automatically in both versions. There are no manual refresh, interval, or auto-refresh controls. |
| Operation | General data is read-only. The per-station diagnostics send a diagnostic request to this add-on (see Section 6.5). |
| Other functions | Communication event log and export to a JSON file. |
| Related devices | The displayed values come from the status devices and buffer memory of this add-on (see Sections 6.2, 6.3, and 6.5 for their meaning). |

**Caution** The Web server is a diagnostic aid, not a safety device. A normal status in the browser does not certify correct physical network operation or that this add-on is updating its data.

### Prerequisites

- A MELSEC MX-R controller with the Web server function, and a compatible firmware and GX Works3 version.
- This add-on installed, configured, and running. Enabling the Web server alone does not generate the status data.
- An SD memory card (required for the User Web Page).
- Ethernet connection between the browser and the controller, with JavaScript and cookies enabled in the browser.

- A Web server account with access to the User Web Page and, for the automatic per-station scan, **Write Device = Enable** permission.

**Caution** The per-station diagnostics are not read-only. In the full version, the diagnostic requests are sent automatically once the diagnostic page has valid general data, even while **General diagnostics** is displayed. Use only one diagnostic client at a time, including other browser tabs, GX Works3, or other tools using the diagnostic function in Section 6.5.

## Configuring the Web Server in GX Works3

Write the parameters and reset or restart the controller only under the prescribed safe conditions of the machine.

1. In GX Works3, configure an IP address of the controller that can be reached from the device used to view the page.
2. Open **Navigation window > Parameter > Controller > Module Parameter (Port 3: Ethernet) > Module Parameter (Ethernet) > Application Settings > Web Server Settings**.
3. Configure the parameters as follows.

| GX Works3 parameter | Setting |
|---|---|
| To Use or Not to Use Web Server Settings | **Use** (default: Not Use). |
| To Use or Not to Use User Authentication | **Not Use** to use the Web server account settings below. If **Use** is selected, Account Settings are disabled and users are managed by the User Authentication function. |
| Protocol | **HTTPS** is preferable. HTTP does not encrypt communication. |
| Own station port number - HTTP / HTTPS | 80 / 443, unless the project specifies other port numbers. |

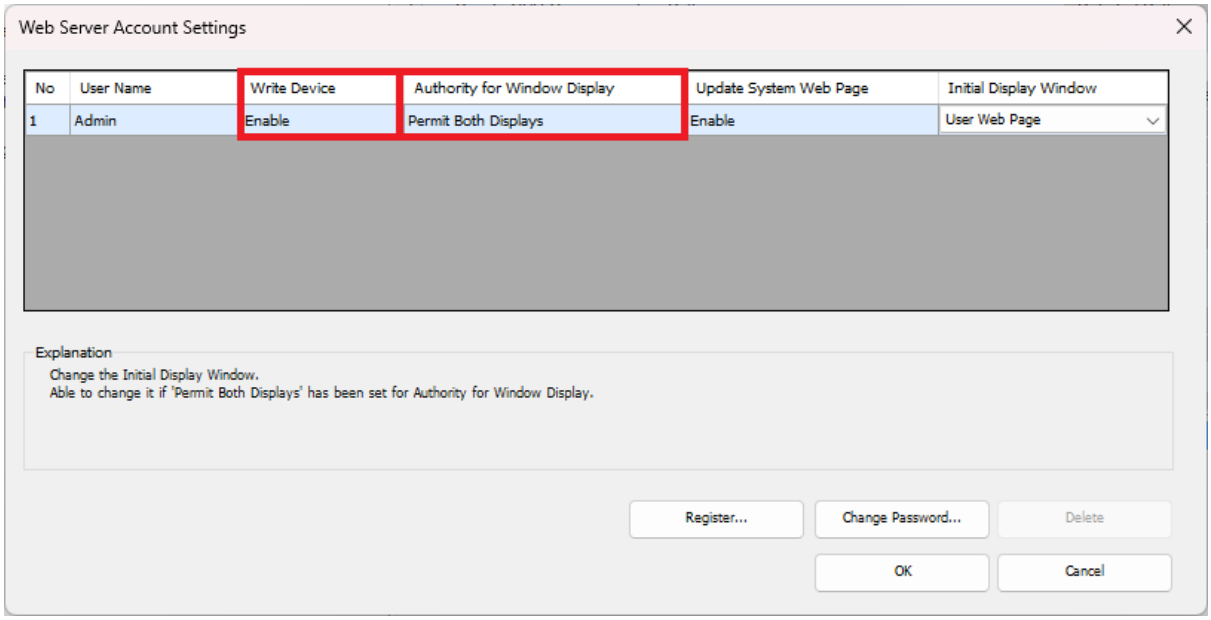
For the standard Web Server Settings dialog and the complete parameter definitions, refer to the manual in the "Reference" note at the end of this section (Chapter 56, section 56.3). The table above lists only the settings relevant to the Web server.

4. Open **Account Settings** under the same path and register the account to be used.

**Caution** For the full version, set **Write Device = Enable** and **Authority for Window Display = Permit Both Displays** or **User Web Page Only**. These are separate permissions: page access does not grant device-write access. **System Web Page Only** is not sufficient. With Write Device disabled, the general reads work but the station diagnostics stop with **PLC RET=0002** when the target station is written.

| Field | Setting |
|---|---|
| User Name / Password | Credentials according to the site policy (user name: 1 to 20 single-byte characters, password: 6 to 32 single-byte characters; both are case-sensitive). |
| Write Device | **Enable** for the automatic per-station diagnostics, which write the diagnostic request (default: Disable). |
| Authority for Window Display | **Permit Both Displays** if the system pages are also required, or at least **User Web Page Only**. **System Web Page Only** does not allow access to the Web server. |
| Update System Web Page | Normally **Disable** for operators. This is not a permission to update the Web server installed on the SD memory card. |

| | |
|---|---|
| Initial Display Window | **User Web Page**, so that logging in opens the page directly. |




**Note** The screenshot shows an example account; the red frames mark the two settings required by the Web server (full version). User Name and Update System Web Page follow the site policy.

5. Write the parameters to the controller, then power the controller off and on or reset it to apply them.

On first use, the controller also requires a compatible System Web Page library (cpu-system_web_mxr.zip, model CPU-SYSTEM_WEB_MXR, available from your Mitsubishi Electric representative). Do not confuse it with the User Web Page files. For the installation procedure of the library, refer to the manual in the "Reference" note at the end of this section.

When HTTPS is used, a server certificate must be created and enabled in advance. This procedure is not described in this manual.

## Choosing the Version: Light or Full

Only one version can be installed on a controller at a time, so select the version before installation. Use the following comparison and use cases as a guide.

| Function | Light version | Full version |
|---|---|---|
| Network status (online / fault) | Yes | Yes |
| Number of transmitting and non-transmitting stations | Yes | Yes |
| Status of each station | Compact list (Transmitting, Not transmitting, Reserved, Unknown) | Station Details table |
| Cycle time and DataLink error count | No | Yes |
| Link scan time of each group and trend | No | Yes |
| Per-station diagnostics (model, vendor, version, error code, counters) | No | Yes |

| | | |
|---|---|---|
| Communication events and JSON export | No | Yes |
| Application menu and login page | No | Yes |
| **Write Device** permission of the account | Not required | Required |
| Writes to the add-on (diagnostic request) | None | Yes (automatic) |

| Use case | Recommended version | Reason |
|---|---|---|
| An operator only needs to see, during normal production, whether the network is healthy and which stations are transmitting. | **Light** | A simple read-only overview. It sends nothing to the add-on. |
| The account used for monitoring must not be allowed to write to the controller (for example, a shared display or a visitor account). | **Light** | Only the display permission of the User Web Page is needed. |
| A station intermittently disconnects or times out and the cause must be investigated, or the system is being commissioned. | **Full** | Per-station diagnostics show the model, vendor, version, latest error, and the disconnection/timeout counters. |
| Maintenance needs the link scan times, the cycle time, the trend, the communication events, or a report to send to support. | **Full** | These views and the JSON export are not included in the light version. |

**Example (case study):** During commissioning, a maintenance engineer installs the full version and uses **Station diagnostics** to find that station 9 repeatedly shows a timeout and an error code. After the problem is solved and the machine goes into production, the full version is replaced by the light version (see "Installing the Web Server") and the operators' account is limited to User Web Page display without **Write Device**. If the problem reappears, the full version is installed again for the investigation.

**Caution** Choose the full version only when the diagnostic requests are authorized for the site and only one diagnostic client is used at a time. If the machine does not need per-station diagnostics, the light version is the safer choice because it never writes to the add-on.

## Installing the Web Server

Only one version (full or light) can be installed on a controller at a time: both use the same entry point, SD:/WWW/USER/index.html. Select one complete package; do not merge their files. To switch versions, back up the current user package and replace it with the other complete package, keeping the System Web Page library of the controller. Copy the selected USER folder from the WWW folder supplied with the Web server (see Section 2.2, "Package Configuration") to the SD memory card of the controller, preserving the file names and subfolders, so that the entry page is placed at the following path.

SD:/WWW/USER/index.html

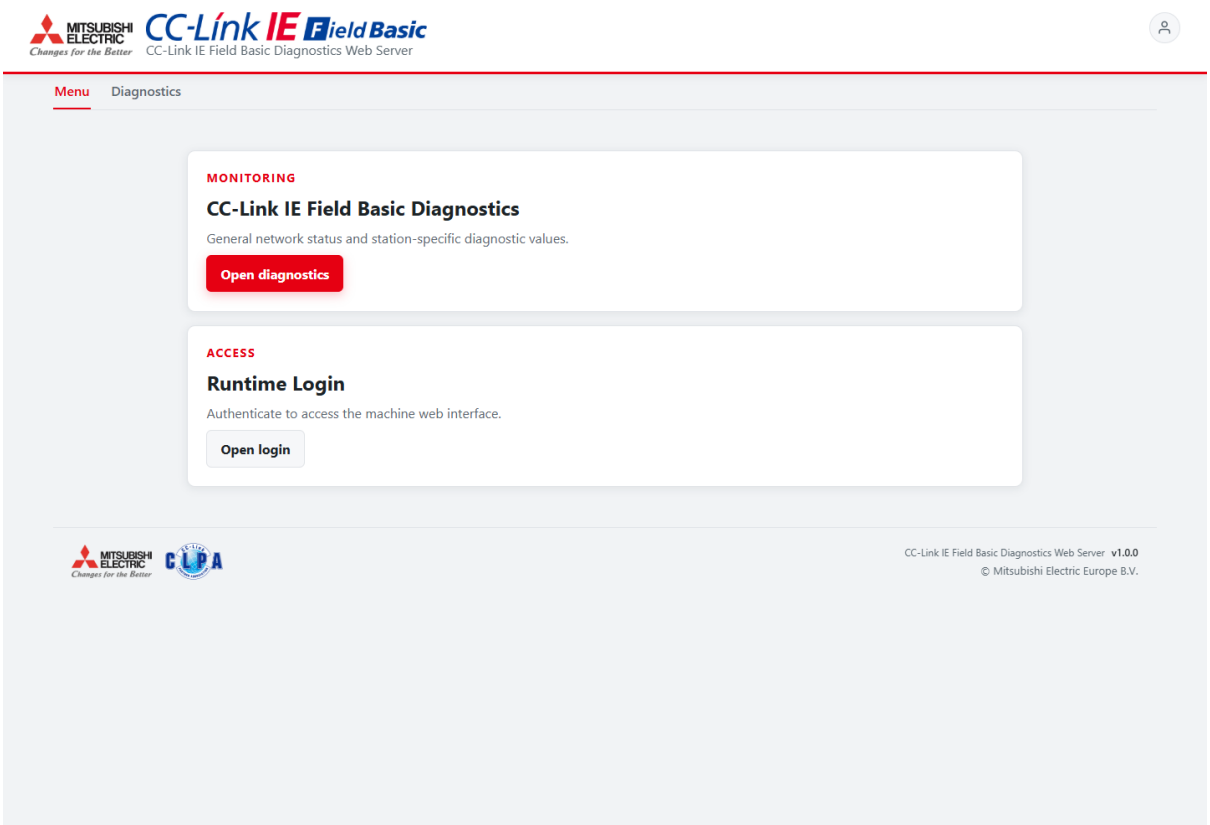
The full version includes the application menu, the diagnostic page, and the login page together with their supporting folders. Do not copy only the HTML file; all supplied files and folders are required for the page to display correctly. The path \WWW\USER\index.html is required for the **User Web Page** item to be available in the system menu of the controller.

## Updating an Existing Installation

Back up the deployed package before updating, and replace it with the complete package of the new version; do not mix files of different versions. After the transfer, follow the browser-cache precautions of the controller's User's Manual and reopen a single diagnostic session. Check that **PLC data** shows **Current** and that the station scan completes. A page reload does not cancel a diagnostic request already started in the controller; verify it before reopening the page.

## Accessing the Web Server

1. Open the Web server of the controller in a Web browser (for example https://192.168.3.39/; add :port if a non-default port is used).
2. Log in with the account configured above. With **Initial Display Window** set to **User Web Page**, the application menu opens. With **Permit Both Displays**, you can also select **User Web Page** in the system menu.
3. Select **Open diagnostics** in the application menu, or **Diagnostics** in the navigation bar.




**Note** The screenshots of the Web server in this section were taken from a simulator with test data, not from a real controller. The test scenario has 16 configured stations: station 5 is reserved, station 9 is not transmitting with an active DataLink error, and station 12 has recorded timeouts. Values, IP addresses (192.168.3.21 to 192.168.3.36), and times are examples.

**Caution** After logging in, do not enter the URL of an individual page directly in the browser. Use the navigation links.

**Runtime Login**, **Open login**, and the **Sign in** icon open the authentication page. They are not logoff commands.

## Reading the Communication Status

The status band at the top of the diagnostic page remains displayed while browsing and shows three kinds of information.

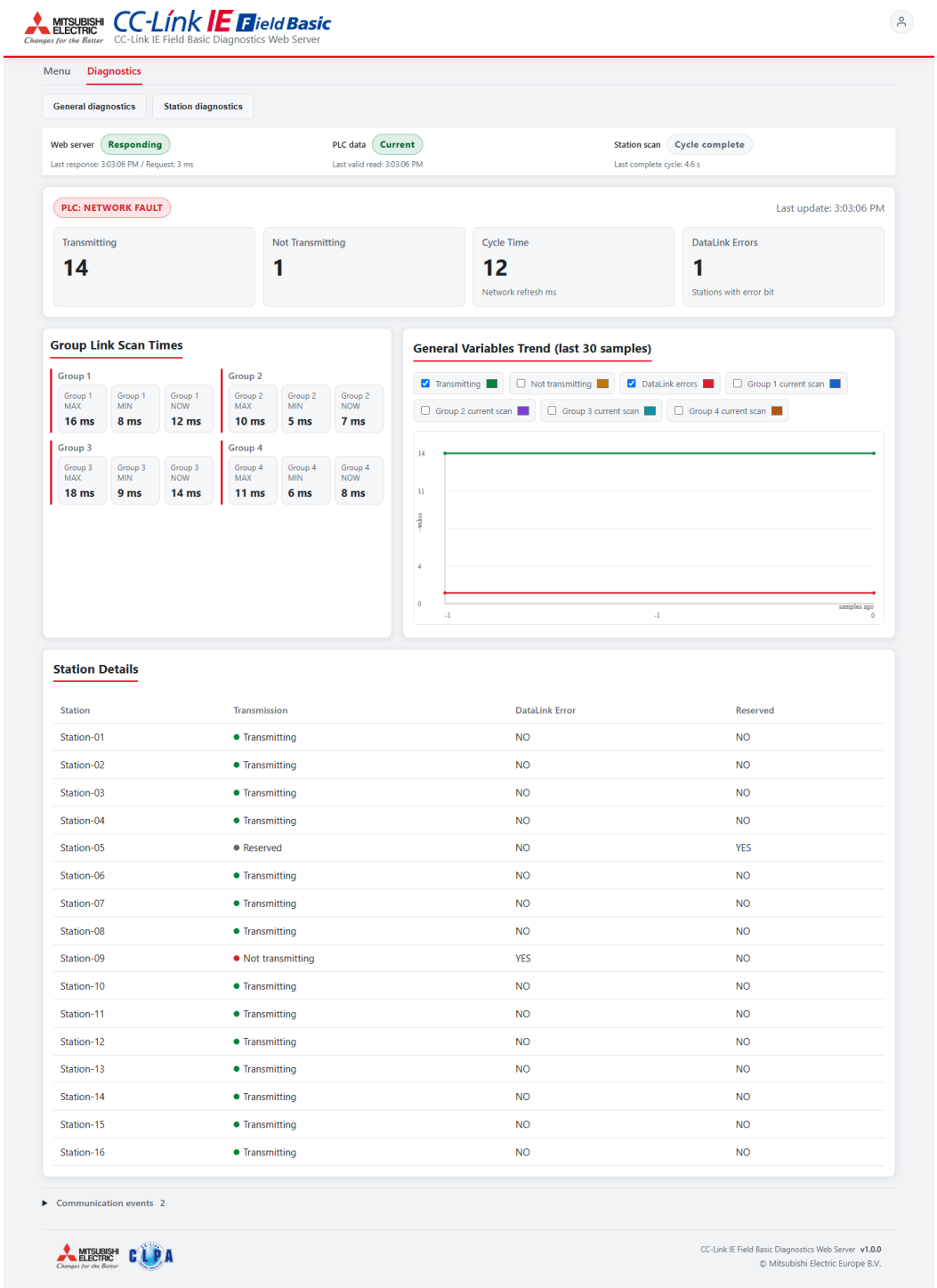
| Indicator | Meaning |
|---|---|
| Web server | Result of the communication between the browser and the controller. **Responding** does not guarantee valid PLC data. |
| PLC data | **Current** means that complete and recent data has been acquired from the PLC. **Waiting for data**, **Unavailable**, or **Not updated** require checking the communication and the time of the last valid read. |
| Station scan | Progress of the per-station scan, waiting for PLC data, cycle completion, or **Stopped at N** after a failure. **Read only** means that the per-station diagnostics are disabled (set by maintenance personnel). |

Open **Connection details** to check the last response, the last valid PLC read, and the last completed cycle.

If the data cannot be read or becomes too old, the network state and the transmission state of the stations become **Unknown**, and the main values (**Transmitting**, **Not Transmitting**, **Cycle Time**, and **DataLink Errors**) are displayed as --. The link scan times of the groups and the trend keep their last values; do not regard them as current while **PLC data** is not **Current**.

## General Diagnostics

Open **General diagnostics** for a network overview.




| Item | Description |
|---|---|
| Network status, Last update | Network state read from the PLC devices (**PLC: NETWORK ONLINE** when SM1536 is 1 and SM1540 is 0, otherwise **PLC: NETWORK FAULT**; **NETWORK STATE UNKNOWN** when the data is not current) and the time of the acquisition. |
| Transmitting | Number of non-reserved stations whose cyclic transmission status bit (SD1536-SD1539) is 1. |

| | |
|---|---|
| Not Transmitting | Number of non-reserved stations whose cyclic transmission status bit is 0. This does not by itself prove a disconnected cable. |
| Cycle Time | Link scan time of group 1 in ms. It is not the page loading time. |
| DataLink Errors | Total number of set bits in SD1540-SD1543. All 64 bit positions are counted, including reserved stations and positions beyond the configured station count. |
| Group Link Scan Times | MAX / MIN / NOW link scan time of each group. |
| General Variables Trend | Last 30 samples acquired in the session. It is not a permanent history. |
| Station Details | Transmission status, DataLink error, and reserved station of each station (Station-01, Station-02, ...). Select a row to open the details of the station in **Station diagnostics**. |

Reserved stations are displayed as such and are excluded from the Transmitting / Not Transmitting counts. Historical timeout and disconnection counters do not determine the current transmission status.

### ■ Refreshing the General Data

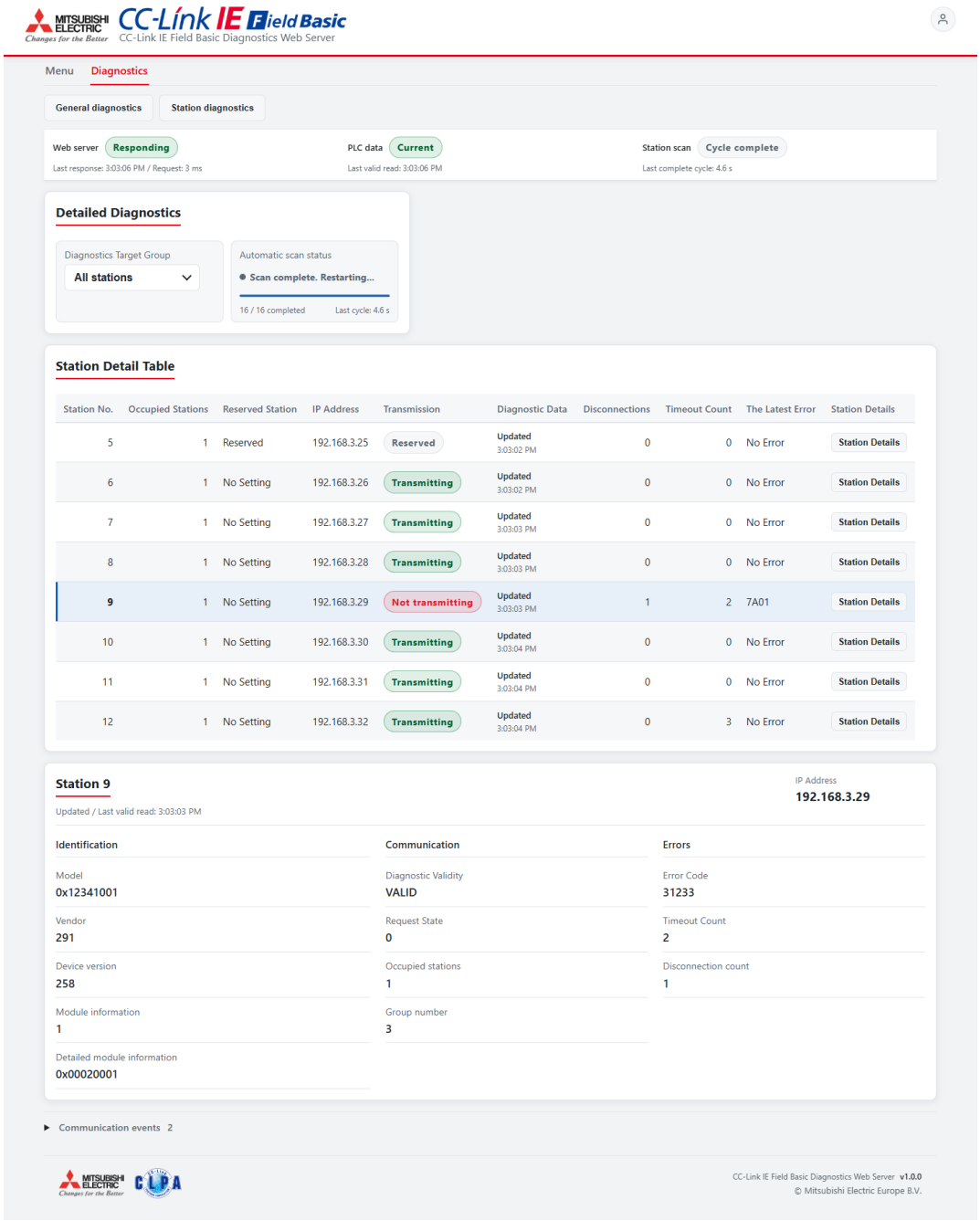
The general data is updated automatically while the diagnostic page is open. There are no manual refresh, interval, or auto-refresh controls. The update continues while the station scan is stopped. Check **Last update** and **PLC data** to judge how recent the displayed values are.

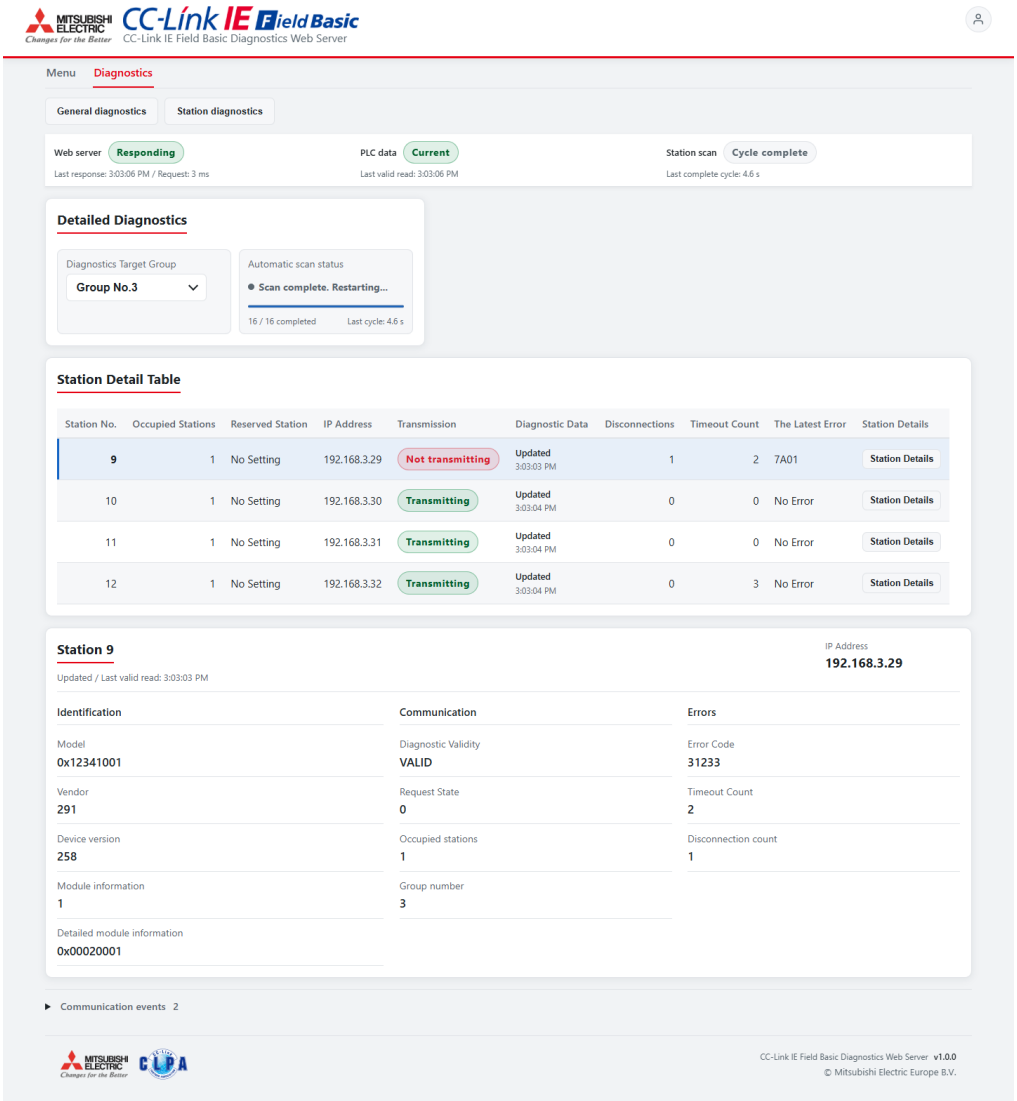
**Note** A **Current** status proves that the page acquired values from the PLC, not that this add-on has newly published them. The displayed values are not real-time guarantees and are not the CC-Link IE Field Basic cycle time.

## Station Diagnostics

Open **Station diagnostics** to check the result of the automatic background scan. When the general data is valid, the Web server requests the diagnostic information of the configured stations in sequence (see Section 6.5) and keeps the last valid result of each station. The scan starts automatically on the diagnostic page and continues in either view.

1. Use **Diagnostics Target Group** to display all stations or the stations of a specific group. The filter changes only the display, not the scan range.
2. Check **Automatic scan status**, the progress bar, and **Last cycle**. The count is the number of validated reads in the current cycle.
3. In the desktop **Station Detail Table**, select the **Station Details** button. Clicking elsewhere in a table row does not select or open a station. The page moves to the heading of the station and displays the latest available information in the detail panel. This does not start a new read.


MITSUBISHI ELECTRIC
Changes for the Better
CC-Link IE Field Basic
CC-Link IE Field Basic Diagnostics Web Server
Menu
Diagnostics
General diagnostics
Station diagnostics
Web server
Responding
Last response: 3:03:06 PM / Request: 3 ms
PLC data
Current
Last valid read: 3:03:06 PM
Station scan
Cycle complete
Last complete cycle: 4.6 s
Detailed Diagnostics
Diagnostics Target Group
All stations
Automatic scan status
Scan complete. Restarting...
16 / 16 completed
Last cycle: 4.6 s
Station Detail Table
Station No. | Occupied Stations | Reserved Station | IP Address | Transmission | Diagnostic Data | Disconnections | Timeout Count | The Latest Error | Station Details
5 | 1 | Reserved | 192.168.3.25 | Reserved | Updated 3:03:02 PM | 0 | 0 | No Error | Station Details
6 | 1 | No Setting | 192.168.3.26 | Transmitting | Updated 3:03:02 PM | 0 | 0 | No Error | Station Details
7 | 1 | No Setting | 192.168.3.27 | Transmitting | Updated 3:03:03 PM | 0 | 0 | No Error | Station Details
8 | 1 | No Setting | 192.168.3.28 | Transmitting | Updated 3:03:03 PM | 0 | 0 | No Error | Station Details
9 | 1 | No Setting | 192.168.3.29 | Not transmitting | Updated 3:03:03 PM | 1 | 2 | 7A01 | Station Details
10 | 1 | No Setting | 192.168.3.30 | Transmitting | Updated 3:03:04 PM | 0 | 0 | No Error | Station Details
11 | 1 | No Setting | 192.168.3.31 | Transmitting | Updated 3:03:04 PM | 0 | 0 | No Error | Station Details
12 | 1 | No Setting | 192.168.3.32 | Transmitting | Updated 3:03:04 PM | 0 | 3 | No Error | Station Details
Station 9
Updated / Last valid read: 3:03:03 PM
IP Address
192.168.3.29
Identification
Model
0x12341001
Vendor
291
Device version
258
Module information
1
Detailed module information
0x00020001
Communication
Diagnostic Validity
VALID
Request State
0
Occupied stations
1
Group number
3
Errors
Error Code
31233
Timeout Count
2
Disconnection count
1
Communication events 2
CC-Link IE Field Basic Diagnostics Web Server v1.0.0
© Mitsubishi Electric Europe B.V.




**Note** In the second screenshot, the group filter is set to **Group No.3**; only the stations whose group information has already been acquired are listed. The dark label near **Error Code** is the PLC variable tooltip displayed when the value is hovered over or focused with the keyboard.

The table shows the station number, occupied stations, reserved station, IP address, PLC transmission status, diagnostic data quality, disconnections, timeouts, and the latest error. The panel of the selected station is divided into the following groups.

- **Identification**: model, vendor, version, and module information.
- **Communication**: diagnostic validity, request state, occupied stations, and group.
- **Errors**: error code and timeout/disconnection counters.

**The Latest Error** in the table is displayed in hexadecimal (or **No Error** for 0), whereas **Error Code** in the panel of the selected station is displayed in decimal. For example, the table code 7A01 and the panel value 31233 are the same error.

The Web server can also be displayed on a narrow screen (for example a smartphone), where the station table is replaced by a station list with the same detail panel.

**Figure: Mobile station diagnostics with station list and selected-station details**
*Source image: webserver_diag_mobile.png*

On a narrow screen, select a station in the list to move to its detail panel (unlike the desktop table row, the mobile list entry is itself selectable). **Back to stations** returns to that station's list entry. Desktop **Station Details** gives the same navigation. Neither action restarts a stopped scan; the group filter only changes the displayed stations.

### ■ Diagnostic Data Quality and Scan Stop

| Diagnostic Data | Meaning |
|---|---|
| Not read | No valid information has been acquired for the station yet. This does not mean that the station has failed. |
| Updated | The latest valid information is recent. Check the time of the read as well. |
| Not updated | The retained information is old or the scan has stopped. Do not use it to confirm the current state. |

### ■ Recovering a Stopped Scan

**Figure: Station scan stopped after a simulated RET=0002 rejection, with Resume scan and Not updated cached details**
*Source image: webserver_diag_recovery.png*

**Note** The screenshot shows a simulated **RET=0002** rejection at station 1: general PLC data remain **Current**, the retained details are **Not updated**, and **Resume scan** is available after the cause is corrected. No real PLC write failed during the capture.

A temporary read failure or a busy request permits automatic recovery checks, which do not write to the PLC. The scan resumes by itself only when current PLC data is available and the diagnostic request state is consistent. The page never forces the request flag to 0.

| Stop condition | Operator action |
|---|---|
| Temporary read/communication failure or busy request | Wait; the scan resumes automatically when the checks pass. |
| Write permission rejected (RET=0002) | Enable **Write Device** for the account actually logged on, apply the GX Works3 settings safely, and log on again if necessary. Then select **Resume scan**. |
| Explicit PLC rejection or changed target | Correct the reported cause, check that no second diagnostic client is active, then select **Resume scan**. |
| Unconfirmed write (timeout, abort, network failure, or malformed response) | **Resume scan** is not accepted. Have maintenance personnel verify the outcome and completion of the command externally (for example in GX Works3) before reloading. |

**Resume scan** under **Automatic scan status** checks the current state without writing, then starts a new full scan. The retained station data remain **Not updated** until each station is acquired again. The station error banner clears only after a new valid station result; the communication events keep the error and recovery history.

An acquisition error during the station scan (for example, a failed request, an incomplete or invalid response, or a changed diagnostic target) stops the current scan and follows the

rules above. A nonzero error code of a station is diagnostic content and does not stop the scan by itself. The information already acquired remains displayed but is marked **Not updated**. The general data continues to be updated, but this alone does not clear the scan error.

**Caution** An unconfirmed write remains blocked even after **Resume scan**, because the browser cannot prove whether the command was executed. Before reloading the page, export the data, identify the cause, and verify that the diagnostic request has finished. Reloading does not cancel an operation already started in the controller. Do not clear U3E0\G1050 manually to bypass the stop, and do not open a second diagnostic client.

Maintenance personnel can also configure the Web server so that no station requests are sent (**Read only** in the status band); this is not an operator command.

## Events and Export

Open **Communication events** to display the recent communication events with their time and, where available, duration and station number. The events are kept only while the page is open. These events are not the Event History of the controller.

Press **Export JSON** to download a CCLIEFB-diagnostics-<timestamp>.json file containing the version, the acquisition status, the last general data, the cached station information, and the events. Export the data before reloading or closing the page, because the events are not retained. The file may contain IP addresses and operating data of the machine; handle it according to the site policy.

## Troubleshooting the Web Server

| Symptom | Check item / Countermeasure |
|---|---|
| The System Web Page reports that the system library is missing or unavailable | Install the compatible System Web Page library (cpu-system_web_mxr.zip, model CPU-SYSTEM_WEB_MXR, available from your Mitsubishi Electric representative) by following the installation procedure of the controller's User's Manual. Copying the USER folder alone does not install it. |
| The normal System Web Page opens instead of the Web server | Select **User Web Page** in the system menu, or set **Initial Display Window** of the account to **User Web Page**. If **User Web Page** is not available, see the next row. A normal system menu alone does not mean that the system library is missing. |
| The User Web Page cannot be opened | Check the SD memory card, the path \WWW\USER\index.html, and that **Authority for Window Display** is not set to **System Web Page Only**. |
| The page is displayed without styling or images | Check that all files and folders of the WWW folder were copied. |
| The web server responds but **PLC data** is not **Current** | Read the error banner and the communication events. Check that this add-on is installed, enabled, and running. |
| **Not Transmitting** is displayed with **PLC data Current** | Compare the station bits with the GX Works3 device monitor (Sections 6.2 and 6.3) and check the device and the network. A historical counter does not prove a current fault. |
| NETWORK FAULT (light version) or **PLC: NETWORK FAULT** (full version) is displayed | Compare with the GX Works3 device monitor (Sections 6.1 and 6.2) and check the network. |

| | |
|---|---|
| Unknown or -- is displayed | The data is invalid or no longer recent. Check the last valid read, the network, and the error banner. Do not treat historical values as current. |
| Details are missing or the scan has stopped | Check **Write Device** of the account, the request state, and that this add-on is running. Follow "Recovering a Stopped Scan" and use **Resume scan** only after correcting the cause. An uncertain write requires external verification. Export the events before reloading. |
| No station is displayed under a group filter | Return to all stations and check that the group information has been acquired. |
| No station is configured | Check that U3E0\G1024 (total number of stations) is not 0, and the station settings (Section 5.3.4, "Station Setting"). |
| Access is denied or the session has expired | Log in again and check the account permissions. |

When requesting support, provide the exported JSON file, the time of the problem, the affected station, and the complete error message. Compare with the GX Works3 device monitor to distinguish a browser problem from outdated PLC data or a physical fault.

## Ending a Session and Security

- A Web server session should be ended with **Log off** (or **Logout**) of the Web server function, not by simply closing the browser. A closed browser may leave the session occupied for some time.
- Up to 8 users can be logged on simultaneously, and up to 4 Web server accounts can be registered (see the notes on the User Authentication function in the manual in the "Reference" note). The session is logged off automatically after five minutes without communication; do not use this as the normal way to end the session.
- Use HTTP only in a closed factory LAN. Do not expose the controller directly to the Internet. Apply HTTPS, access control, and IP filtering according to the site policy. The Web server authentication does not replace other security measures.

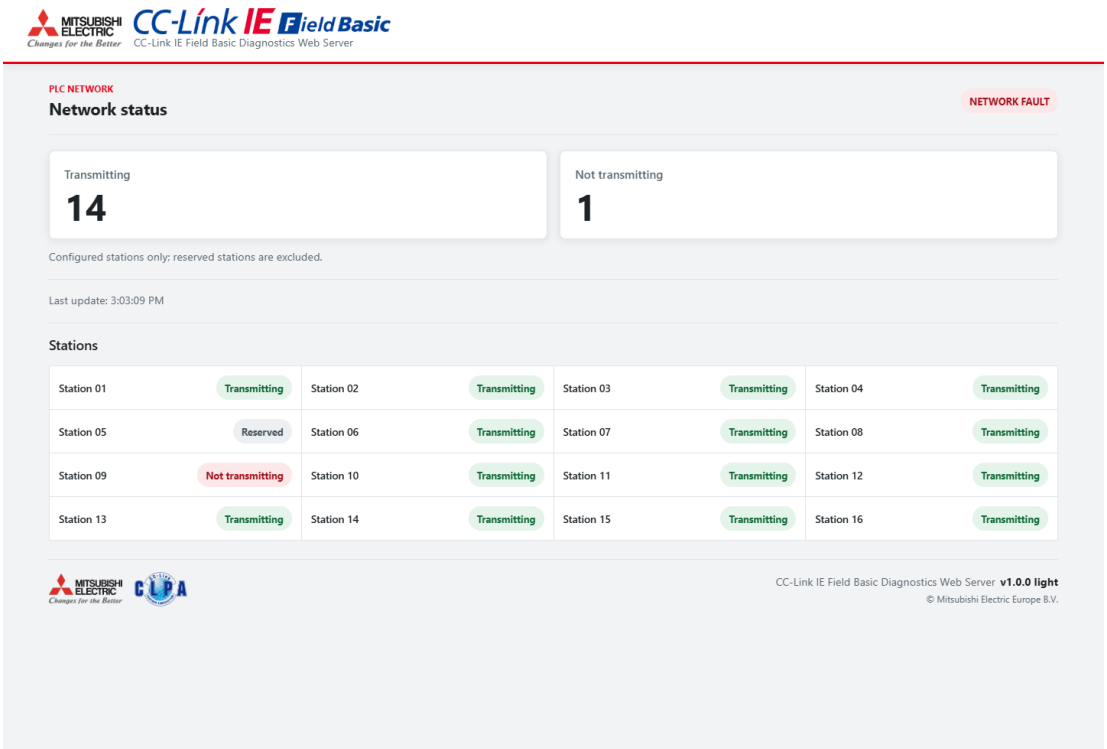
**Caution** The menu and the diagnostic page of the Web server v1.0.0 do not have a logoff button. The **Sign in** link does not log off. Use the logoff of the system page if it can be reached through the authorized navigation path; otherwise, ask the person in charge of the integration for a logoff method before operational use.

## Web Server (Light Version)

The light version is a read-only network monitor that opens directly as the User Web Page. Its appearance follows the full version. To decide between the light and the full version, see "Choosing the Version: Light or Full." It displays the network status (NETWORK ONLINE, NETWORK FAULT, or STATUS UNKNOWN), the number of transmitting and non-transmitting stations (reserved stations are excluded), a compact list of the station states, and the time of the last update. The station states are Transmitting, Not transmitting, Reserved, or Unknown (when the data is invalid or no longer recent); the list is informational and not clickable. It does not write any device, so **Write Device** is not required (display permission is). The application menu, login page, per-station diagnostics, link scan times, trend, event log, and export are not included. The installation and the GX Works3 settings are the same as for the full version.

The light version has no **Refresh now** button, interval input, or **Auto refresh** switch; the display is updated automatically. If the data cannot be read completely, the status becomes STATUS UNKNOWN, both counters are displayed as --, the station states become Unknown, and an error is shown. The display is restored automatically when the data can be

read again. No station is reported as disconnected merely because the data could not be read.




When the data cannot be read or becomes too old, **Last update** keeps the time of the previous complete acquisition with (not updated); it is historical and is not proof of current data.

**Caution** Like the full version, the light version cannot establish whether this add-on has freshly published otherwise valid PLC memory values.

## Reference: Controller User's Manual

| Topic | Section (SH-082641ENG, Chapter 56) |
|---|---|
| Specifications and verified browsers | 56.1 |
| Enabling the function and applying parameters, accounts, system library installation, access, login, and logoff | 56.3 |
| Update of the library and the display update interval of the system pages | 56.4 |
| Requirements, installation, and access of the User Web Page | 56.5 |
| Standard messages of the User Web Page | 56.6 |
| Limits, performance, and security | 56.7 |

**Reference** For the details of the Web server function (Web server settings, accounts, installation and operation of the User Web Page, and precautions), refer to the dedicated manual for the Web server function: "WEB SERVER FUNCTION" (Chapter 56) of the MELSEC MX Controller (MX-R Model) User's Manual [SH-082641ENG].

# 7 TROUBLESHOOTING

## 7.1 Troubleshooting Procedure

Troubleshoot this add-on using the following procedure.

- If the controller has detected an error, check the detail code in the GX Works3 event history (Section 7.2, "Checking via the GX Works3 Event History"), then follow Section 7.4, "Error Detail Code List and Countermeasures."
- If no error has been recorded but the Manager Station Function is not working correctly, see Section 7.3, "Troubleshooting by Symptom."

**Caution** Add-on initialization at startup can take up to approximately 60 seconds. After powering on or resetting the controller, wait for this duration to elapse before checking the event history or the communication status.

## 7.2 Checking via the GX Works3 Event History

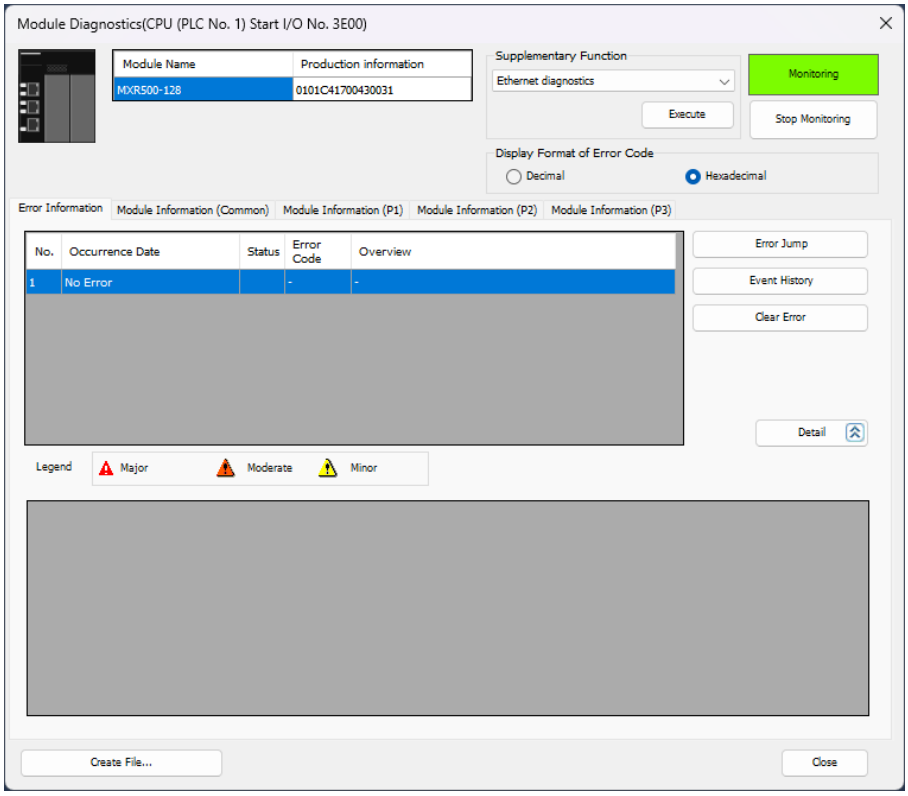
If an abnormality occurs in the Manager Station Function, a record is left in the GX Works3 module diagnostics/event history. Check it using the following procedure.

1. Connect the target project online in GX Works3.
2. Open the module diagnostics screen and display the event history for the target model.
3. Check the severity (Warning/Error) and the date/time of occurrence of the event.
4. Check the detail code of the relevant event, and identify the cause and countermeasure by referring to Section 7.4, "Error Detail Code List and Countermeasures."

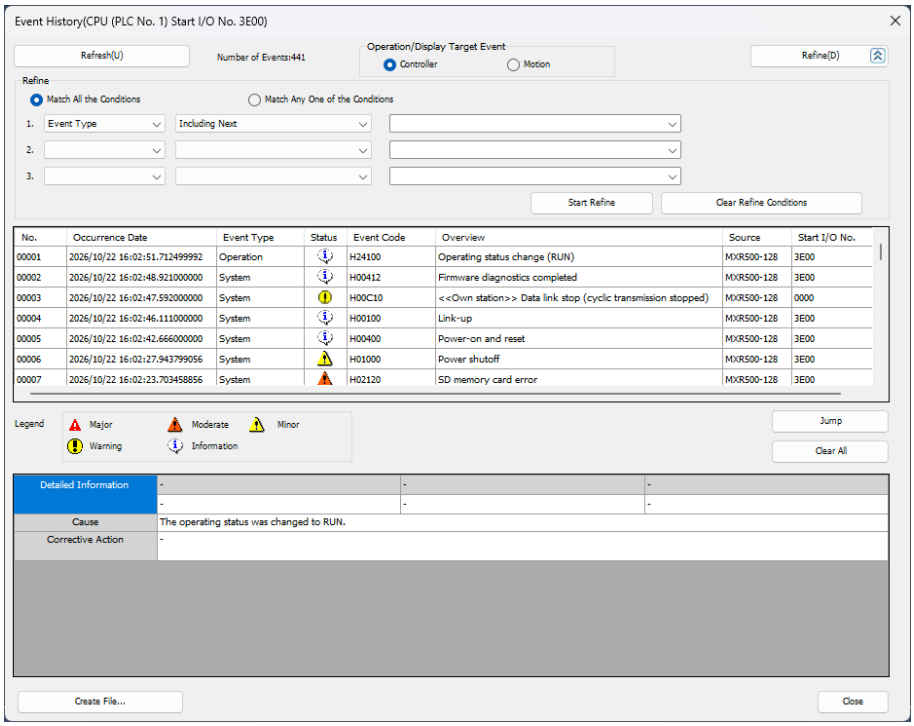
**Reference** Fault-state detail codes are recorded when the Manager Station Function first enters its fault state and are not repeated for that same fault.

The following screens are examples. The displayed content differs depending on the device and the GX Works3 version.

The **Error Information** tab of the Module Diagnostics screen lists the errors currently held by the module. Select **Event History** to open the event history.




The Event History screen lists the occurrence date, event type, status (severity icon), event code, overview, and source of each event. Select an event to display its **Detailed Information**, **Cause**, and **Corrective Action** in the lower part of the screen.



## 7.3 Troubleshooting by Symptom

If the CPU unit has not detected an error but the Manager Station Function is not working correctly, check the following symptoms. If an error has been recorded, see Section 7.4, "Error Detail Code List and Countermeasures."

### Communication Does Not Start

| Check item | Countermeasure |
|---|---|
| Was the file name changed when installing the add-on? | Uninstall the add-on, then install it again using the file name as provided |
| Do each station's IP address and station number overlap with other stations? (Section 5.3.4, "Station Setting") | Resolve the overlap, then reset the controller |
| Does the target model/GX Works3 version match the combination in "INTRODUCTION" / Section 2.3, "Applicable Software"? | Check the target model and supported version, then redo the installation |

### Some Stations Are Not Recognized, or a Specific Station Does Not Respond

| Check item | Countermeasure |
|---|---|
| Are station numbers configured consecutively (with no gaps) starting from Station01? (Section 5.3.4, "Station Setting") | Reconfigure station numbers consecutively, and verify that U3E0\G1024 (total number of stations) matches the intended number of stations |
| Do the target station's or another station's IP address or station number overlap? (Section 5.3.4, "Station Setting") | Resolve the overlap |

### Device Values Differ From Expected, or Data for Another Use Is Affected

| Check item | Countermeasure |
|---|---|
| Do the device ranges mapped for RX/RY/RWr/RWw overlap with another use or with each other? (Section 5.3.2, "Refresh Setting") | Resolve the device range overlap |

### GX Works3 Event History Shows 0009, 0016, 0034, or 003F

These codes are displayed when there is a problem with the combination of the two add-on files.

| Check item | Countermeasure |
|---|---|
| Are both of the two add-on files (CCIEF_Basic_16_s.apk and CCIEF_Basic_16_m.apk) registered? (0009, 0034) | Check whether one of the two is missing or not registered, and register both |
| Is the combination of add-on files correct (a matching pair with an identical version)? (0016, 003F) | Reconfirm the combination, reinstall the add-on files, then reset the controller |

### Output (RY/RWw) Appears to Have Stopped Updating, but Nothing Is Recorded in the Event History

| Check item | Countermeasure |
|---|---|
| Has the CPU unit itself entered a stop error state? (This add-on's | Check the CPU unit's own self-diagnostic information (SM0/SM1/SD0, or the "Error" tab of the module |

| | |
|---|---|
| own event history does not record it, by design) | diagnostics screen) for a stop error, resolve the cause, then power-cycle the controller |

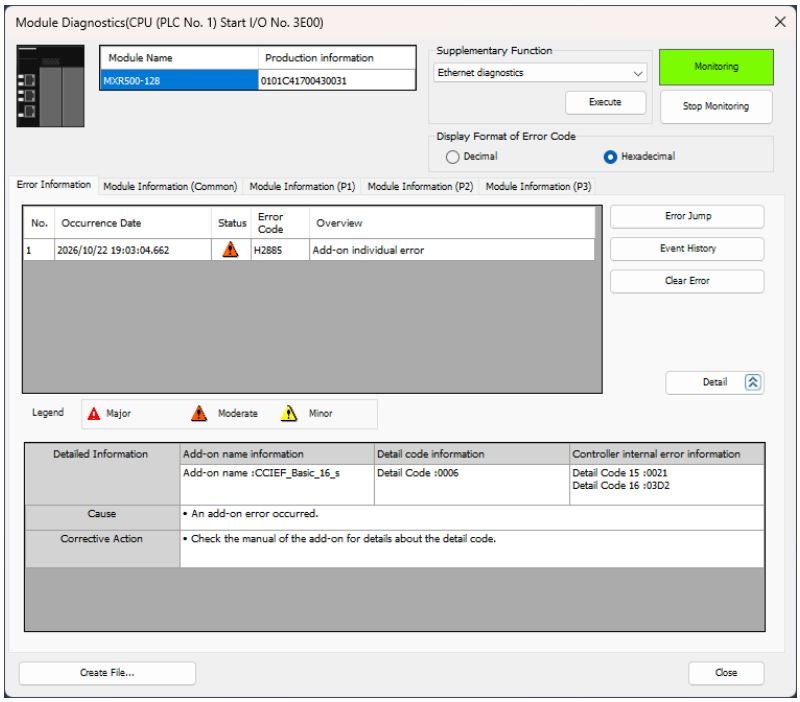
### Diagnostic Information for the Target Station Cannot Be Obtained

| Check item | Countermeasure |
|---|---|
| Is the diagnostic target specified within the range of configured station numbers? (Section 6.5, "Using the Diagnostic Function") | Specify a station number within the configured stations. A reserved station can be diagnosed only when its IP address is set |

## 7.4 Error Detail Code List and Countermeasures

If an abnormality occurs in this add-on's Manager Station Function, it is recorded in the GX Works3 event history as an add-on individual error (H2885). The "Detail code information" displayed at that time corresponds to the "Detail Code" column in the table below.

The screen below is an example of an add-on individual error (H2885) displayed in the Module Diagnostics screen. The **Detailed Information** area at the bottom shows the **Add-on name information** (the add-on that reported the error), the **Detail code information** (the value to look up in the "Detail Code" column of the table below; 0006 in this example), and the **Controller internal error information**. **Corrective Action** instructs you to check the manual of the add-on for details about the detail code; use the table below.




The following lists the detail codes for errors that this add-on can detect, along with their countermeasures.

| Detail Code | Severity | Content | Countermeasure |
|---|---|---|---|
| 0001 | Error | Failed to obtain network configuration information at startup | Check the settings in Section 5.2, "IP Address Configuration for the General Ethernet Port," and the network connection status of the controller |

| | | | |
|---|---|---|---|
| 0002 | Error | An initialization error occurred at startup | Reset the controller |
| 0003 | Error | Failed to read the Group Setting labels (parameters) | Check the settings in Section 5.3.3, "Group Setting" |
| 0004 | Error | Failed to read the Station Setting labels (parameters) | Check the settings in Section 5.3.4, "Station Setting" |
| 0005 | Error | The station IP address setting format is invalid | Check the IP address settings in Section 5.3.4, "Station Setting" |
| 0006 | Error | The occupied station count setting is invalid, or no stations are configured | Check the occupied-number settings in Section 5.3.4, "Station Setting," and verify that station numbers are configured consecutively |
| 0007 | Error | The total configured station count exceeds the limit | Reduce the number of configured stations to stay within the limit in Section 5.3.5, "Value Limits and Constraints" |
| 0008 | Error | An initialization error occurred at startup | Reset the controller |
| 0009 | Error | An initialization error occurred at startup | Check whether either add-on is missing or not registered |
| 000A | Error | An initialization error occurred at startup | Reset the controller |
| 000B | Error | An initialization error occurred at startup | Reset the controller |
| 000C | Error | An initialization error occurred at startup | Reset the controller |
| 000D | Error | The manager station number is duplicated on the CC-Link IE Field Basic network, or the manager station IP address is the same as a configured station | Check the manager station number settings of other devices on the same network, and the IP addresses in Section 5.2 and Section 5.3.4 |
| 000E | Error | A remote station number is duplicated on the CC-Link IE Field Basic network | Check the station number/IP address settings in Section 5.3.4, "Station Setting" |
| 000F | Error | Communication processing failed for a reason other than the above | Reset the controller |
| 0010 | Error | A fatal error occurred during CC-Link IE Field Basic communication | Reset the controller |
| 0011 | Error | A fatal error occurred during CC-Link IE Field Basic communication | Reset the controller |
| 0012 | Error | An initialization error occurred at startup | Reset the controller |
| 0013 | Error | For the MX-F model, the Port 2 network type could not be read, or Port 2 is not set to Ethernet | Review the Port 2 setting in the controller's configuration |
| 0014 | Error | The station IP address is in a reserved, loopback, or multicast range | Check the IP address settings in Section 5.3.4, "Station Setting" |
| 0015 | Error | The station IP address is outside the manager station's own subnet, or is that subnet's network or broadcast address | Check the manager station's IP address/subnet mask in Section 5.2 and the station IP address settings in Section 5.3.4, "Station Setting" |

| | | | |
|---|---|---|---|
| 0016 | Error | An initialization error occurred at startup | Check that the add-on files are a matching pair with an identical version |
| 0032 | Error | An initialization error occurred at startup | Reset the controller |
| 0033 | Error | An initialization error occurred at startup | Reset the controller |
| 0034 | Error | An initialization error occurred at startup | Check whether either add-on is missing or not registered |
| 0035 | Error | An initialization error occurred at startup | Reset the controller |
| 0036 | Error | An initialization error occurred at startup | Reset the controller |
| 0037 | Error | There is a problem with the configured station count | Check the station number settings in Section 5.3.4, "Station Setting," then reset the controller |
| 0038 | Error | The refresh setting device ranges (RX/RY/RWr/RWw) overlap with each other | Check the device ranges assigned in Section 5.3.2, "Refresh Setting," for overlap between RX/RY/RWr/RWw |
| 0039 | Error | There is a problem with the configured refresh setting device range | Check the device ranges assigned in Section 5.3.2, "Refresh Setting," for a range that cannot be accessed |
| 003A | Error | Failed to read/parse the GX Works3 refresh setting labels (parameters) within the startup time | Check the settings in Section 5.3.2, "Refresh Setting," for errors |
| 003B | Error | Failed to read/write PLC device memory during cyclic data exchange | Check whether the device range set in Section 5.3.2, "Refresh Setting," overlaps with another use |
| 003C | Error | A fatal error occurred during CC-Link IE Field Basic communication | Reset the controller |
| 003D | Error | An initialization error occurred at startup | Reset the controller |
| 003E | Error | An initialization error occurred at startup | Reset the controller |
| 003F | Error | An initialization error occurred at startup | Check that the add-on files are a matching pair with an identical version |

**Reference** If the message "An initialization error occurred at startup" is displayed, check that the GXW3 add-on and the Manager Station Function add-on versions correspond to each other.

## Controller Add-on Errors

The following event codes are reported by the controller itself when add-ons are installed or loaded. They are not reported by the Manager Station Function. For the detailed cause and countermeasure for each code, see the event list in the target model's User's Manual (see "RELEVANT MANUALS").

| Event code | Summary |
|---|---|
| H2880 | Add-on load error |
| H2881 | Insufficient total add-on system memory (RAM) |
| H2882 | Insufficient add-on system memory (RAM) |

## 7.5 If the Controller Fails to Start (Add-on Safe Mode)

If the controller does not start normally after an add-on is installed, the add-ons can be forcibly excluded by starting the controller in add-on safe mode. For the detailed operating procedure, see the "Add-on Function" chapter of the target model's User's Manual (see "RELEVANT MANUALS").

**Caution** SafeModeWithDelete deletes all installed add-ons, not only the Manager Station Function add-on. CC-Link IE Field Basic communication stops. Before performing this procedure, confirm that the target equipment is stopped, and use SafeMode first when you only need to check the cause.

# GLOSSARY

The terms used in this manual are summarized below. Only terms necessary for understanding GX Works3 operation, configuration, and monitoring are covered; terms related to internal processing are not included.

| Term | Description |
|---|---|
| CC-Link IE Field Basic | An Ethernet-based (standard protocol) field network communication standard. Periodic data exchange (cyclic transmission) is performed between the manager station and remote stations using link devices (RX, RY, RWr, RWw). Its specification is defined by the CC-Link Partner Association. |
| Manager station | A station that manages the entire CC-Link IE Field Basic network. Only one manager station can be used per network. Refers to the controller itself that runs the Manager Station Function covered by this manual. |
| Remote station | A CC-Link IE Field Basic-compatible device that performs cyclic transmission with the manager station. It exchanges bit-level input/output signals (RX, RY) and word-level input/output data (RWr, RWw). |
| Group | A classification used to group remote stations into cyclic transmission units. With this add-on, the total number of groups is fixed at 1 (Section 5.3, "CC-Link IE Field Basic Add-on Settings"). |
| Station number | A number that identifies a remote station. Set in Section 5.3.4, "Station Setting." |
| Occupy number | The number of stations occupied by a single remote station. This value determines the size of the input/output data (RX, RY, RWr, RWw) used by that remote station. Set in Section 5.3.4, "Station Setting." |
| Reserved station | A station reserved in advance for future network expansion. Even if it is not actually connected, it is treated as a connected station and does not cause a communication abnormality. See Section 5.3.4, "Station Setting," and Section 6.3, "Reserved Station Status Check." |
| Cyclic transmission | Data exchange performed periodically between the manager station and remote stations using link devices (RX, RY, RWr, RWw). |
| RX | Input bit data from a remote station to the manager station. |
| RY | Output bit data from the manager station to a remote station. |
| RWr | Input word data from a remote station to the manager station. |
| RWw | Output word data from the manager station to a remote station. |
| Data link error | A state in which a data link abnormality has occurred and communication with a remote station has stopped. See Section 6.2, "Status Check During Normal Operation." |
| Link scan time | The time required for one cycle of cyclic transmission, from when the manager station sends requests to all remote stations and finishes receiving responses from all of them, to when it starts sending the next requests. See Section 6.4, "Link Scan Time Check." |
| Diagnostic function | A request/response function from GX Works3 for obtaining detailed information for each station. See Section 6.5, "Using the Diagnostic Function." |
| Device memory | A general term for the data areas held by the PLC (X, Y, M, D, G, SM, SD, etc.). |
| Label | A character-string name that represents a device (X, Y, D, G, etc.). Used in GX Works3 to input and monitor setting values. |
| Event history | A record of abnormality occurrences that can be checked using the module diagnostics function in GX Works3. See Section 7.2, "Checking via the GX Works3 Event History." |
| Add-on | Software installed on the controller to extend its functions, provided as an .apk file. See Section 3.1, "Installation." |
| Add-on Parameter | The screen in the GX Works3 navigation window used to configure the Manager Station Function (CCIEF_Basic_16_m Setting). |

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| Add-on safe mode | A startup mode that prevents installed add-ons from being loaded. See Section 7.5, "If the Controller Fails to Start (Add-on Safe Mode)." |

# REVISIONS

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