MITSUBISHI ELECTRIC

Energy Measuring Unit Control Unit

Remote Monitoring Tool

User's Manual

- Before operating the instrument, you should first read thoroughly this operation manual for safe operation and optimized performance of the product.
  Deliver this user's manual to the end user.

Table of Contents

1   Introduction

MITSUBISHI Energy Measuring Unit EcoMonitorPlus Control Unit Remote Monitoring Tool is software for monitoring control status and manually controlling the Control Unit connected to MITSUBISHI Energy Saving Data Collecting Server (EcoWebServer III) via EcoWebServer III.
This manual describes operation of Remote Monitoring Tool.
Please read this manual carefully and thoroughly to ensure correct use.

1.1 Disclaimer

- Please confirm "Software License Agreement" in the end of this book thoroughly when you use the software.
- Our company shall not take any responsibilities for any damages that are received by any troubles in the system, legal troubles, use mistakes of the software, breakdowns or any other failures during its use caused by customers or any other third parties while using it.
- Since the software monitors and manually controls via EcoWebServer III, there may be a time lag or communication error depending on the network conditions. Mind not using it for urgent purposes.
- When performing manual control, make sure that the equipment to be controlled and the surrounding environment are sufficiently safe before performing it carefully.
- Ensure to start the software each time you need it, and close it when desired operation is completed. Do not use it for a long-term continuous monitoring.
- Make sure that communication connectivity between PC running the software and EcoWebServer III and between EcoWebServer III and the control unit is ensured.
- Screen images and operational procedures that have been described in this manual may be different according to the version of Microsoft Windows.

1.2 Trademarks

- Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and other countries.
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- Ethernet is a trademark of Fuji Xerox Co., Ltd.
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1.3 Support model

Item	Model
EcoWebServer III	MES3-255C-EN
	MES3-255C-DM-EN
Control Unit	EMU4-CNT-MB

1.4 Related materials

Ref. No.	Title	Model
IB63E91	Energy Measuring Unit Control Unit Control Unit Engineering Tool User's Manual (Details)	EMU4-CNT-MB EMU4-KNET
IB63652	Energy Saving Data Collecting Server EcoWebServer III User's Manual (Hardware)	MES3-255C-EN
IB63895	Energy Saving Data Collecting Server EcoWebServer III User's Manual (Hardware)	MES3-255C-DM-EN
IB63918	Energy Saving Data Collecting Server EcoWebServer III User's Manual (Operating)	MES3-255C-EN MES3-255C-DM-EN
IB63919	Energy Saving Data Collecting Server EcoWebServer III User's Manual (Setting)	MES3-255C-EN MES3-255C-DM-EN

1.5 Features

- You can monitor output status of Control Unit connected to EcoWebServer III.
  Even if there is no LAN wiring to installation sites of the Control Unit, you can check the output status of the Control Unit from a remote location via EcoWebServer III.
- Manual control of contact output and analog output is also possible.

1.6 System configuration

PC

EcoWebServer III

LAN

CC-Link

Monitor output status
Manual control

Ethernet
(MODBUS TCP)

Control Unit
(Parent terminal)
Terminal ID:1

MODBUS TCP<->RTU
Converter

RS-485 (MODBUS RTU)

RS-485
(MODBUS RTU)

Control Unit
Terminal ID:1

Control Unit
(Child terminal)
Terminal ID:2

Control Unit
(Child terminal)
Terminal ID:3

Up to 31 control units (children) per
control unit (parent)
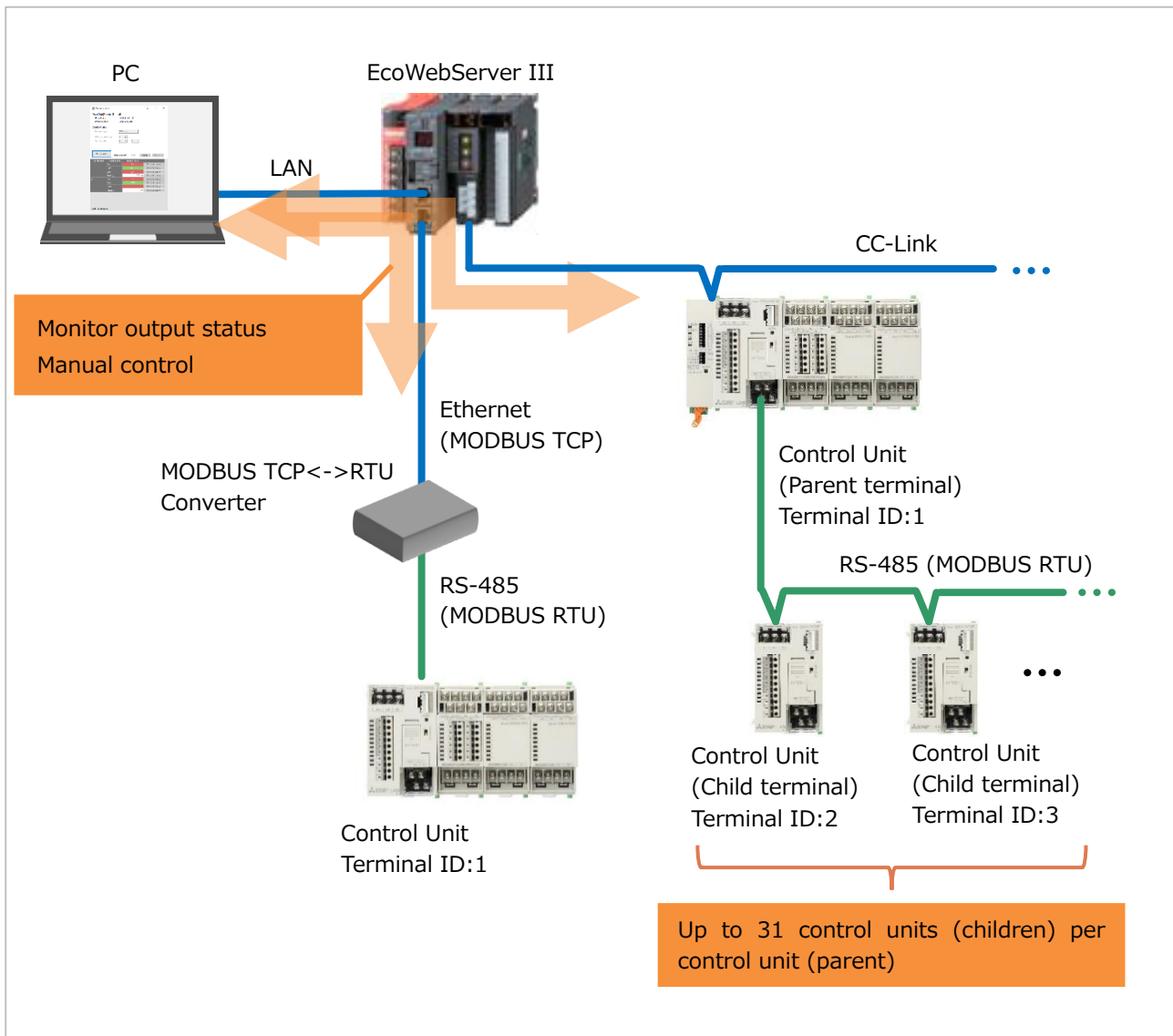
2 Preparation before use

This chapter describes confirmation such as system requirements before using Remote Monitoring Tool.

2.1 System requirement

The system requirement for Remote Monitoring Tool to be operated normally is described as follows.

Hardware	
Items	**Contents**
CPU	It conforms to the system requirement for OS.
Memory	It conforms to the system requirement for OS.
Hard disc	About 100MB free space is necessary for the software.
LAN port	100BASE-TX (For LAN connection with EcoWebServer III)
Display	High-resolution display with XGA or more (It shall display 65536 colors and 1024×768 dots or more.)
Input devices	Mouse and keyboard

Software	
Items	**Contents**
OS	Microsoft Windows 10 Pro (32bit/64bit)
.NET Framework	Microsoft .NET Framework 4.6.2

2 Preparation before use

## 2.2 Processes from download to installation

Remote Monitoring Tool can be downloaded from MITSUBISHI ELECTRIC global FA website.

It is possible to use it by unzipping downloaded compressed file and copying it onto an arbitrary place (C:¥Mitsubishi folder etc.).

Installation of Remote Monitoring Tool is unnecessary.

Folder composition

When copying it onto the C:¥Mitsubishi folder, compositions are as below.
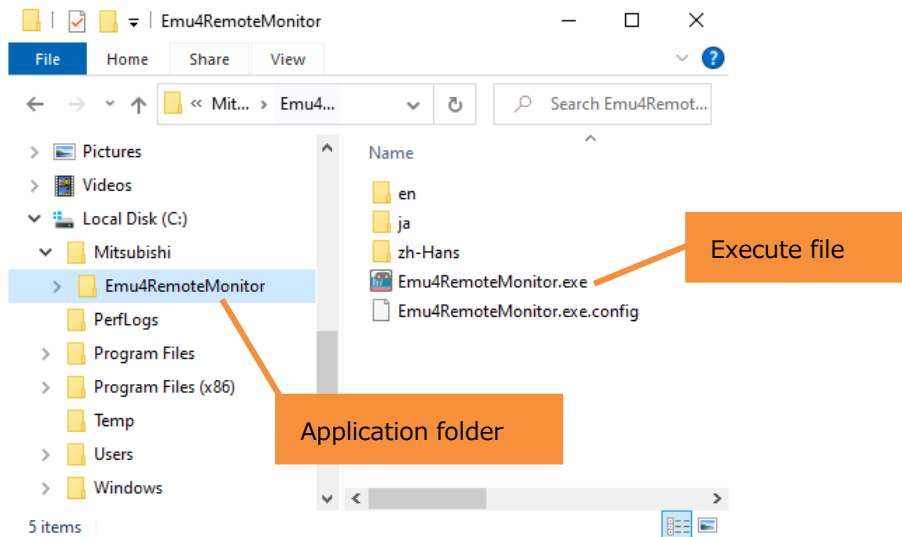
✓ Do NOT copy it onto the program folder (C:¥Program Files folder and C:¥Program Files(x86) folder). It may not operate normally.

✓ Do NOT rename or delete the folders or files. It shall not operate normally.
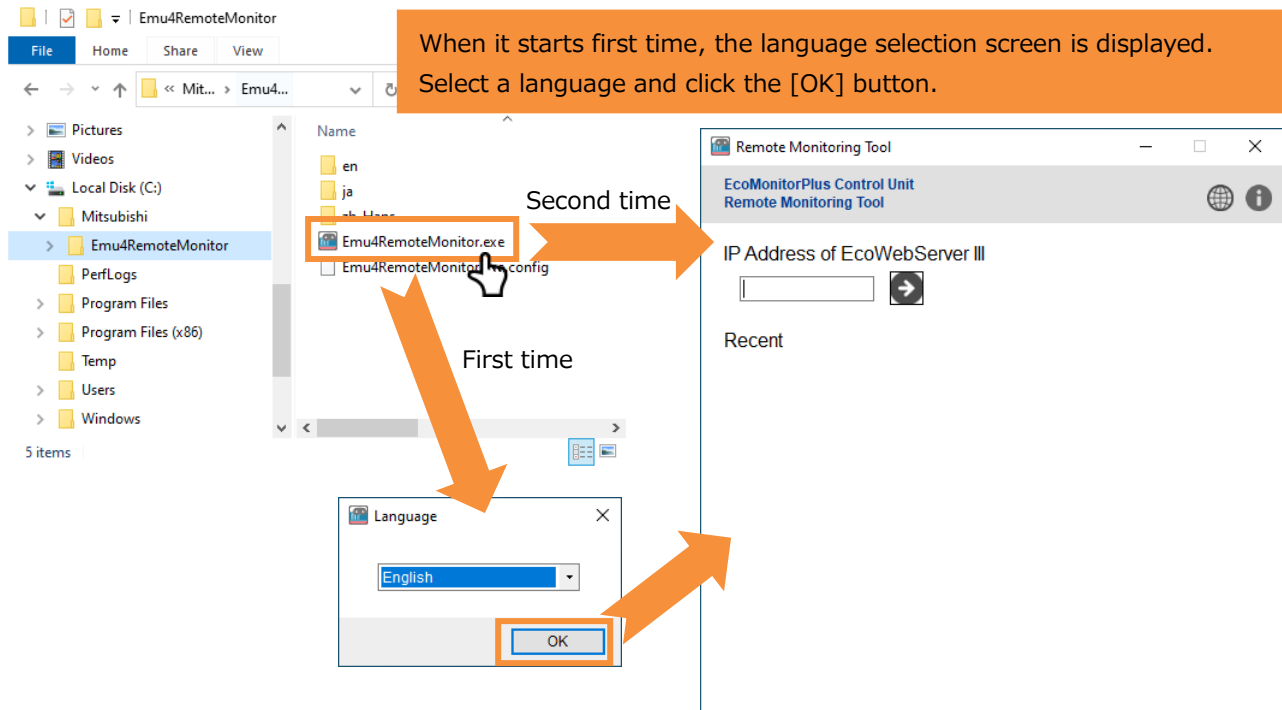
2.3 Uninstallation

Please delete copied application folder ("Emu4RemoteMonitor" folder) when Remote Monitoring Tool becomes unnecessary.

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3 Basic operation

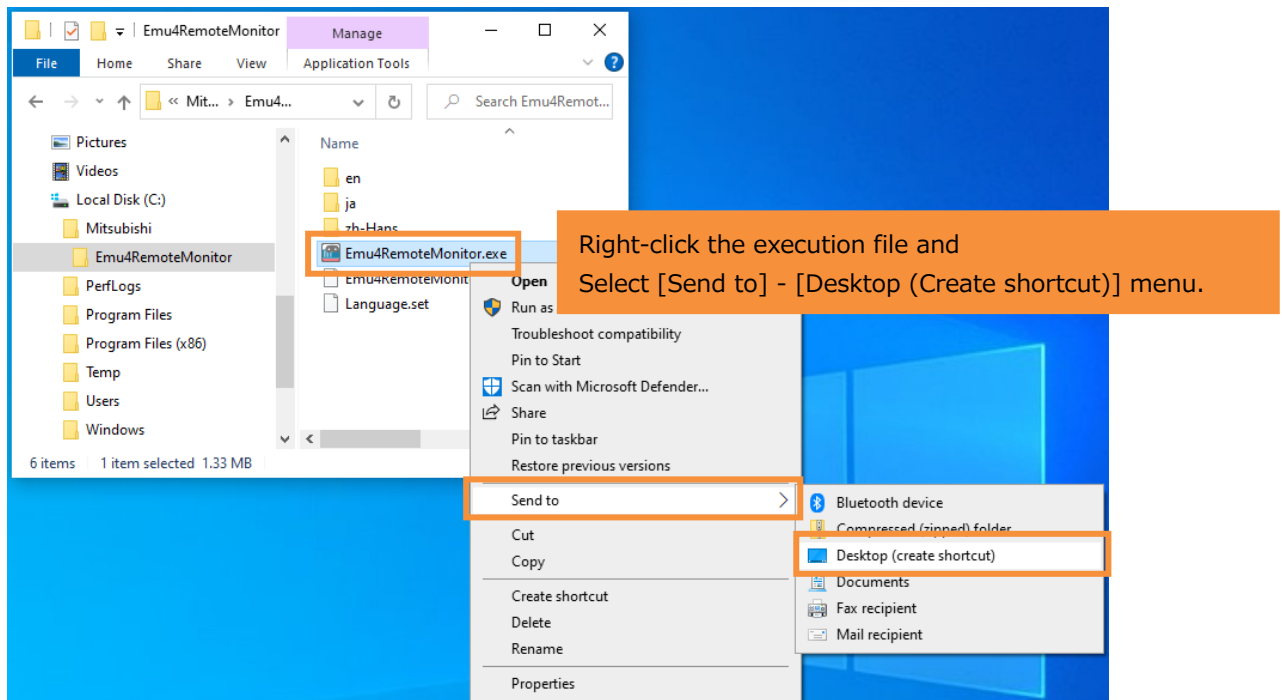This chapter explains a basic operation of Remote Monitoring Tool.

3.1 Start

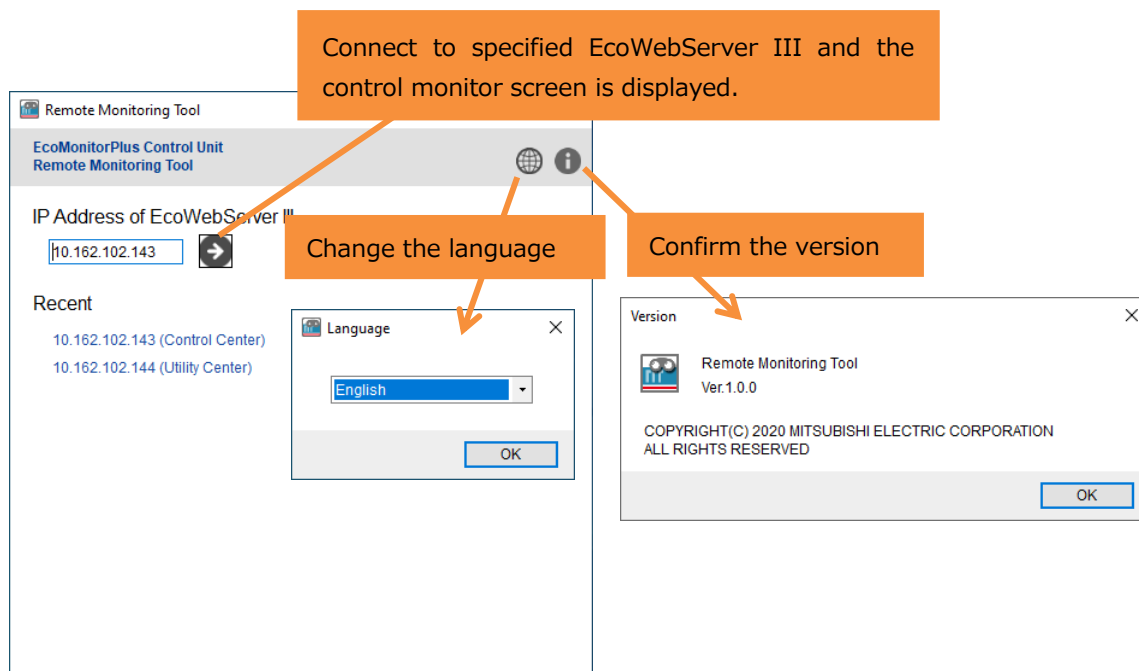Double-click the execution file of Remote Monitoring Tool (Emu4RemoteMonitor.exe).

When it starts first time, the language selection screen is displayed.
Select a language and click the [OK] button.

Second time

First time

Create shortcut

It is convenient to create a shortcut of the execution file.

Right-click the execution file and
Select [Send to] - [Desktop (Create shortcut)] menu.

3.2 Execute each function

Connect to specified EcoWebServer III and the control monitor screen is displayed.

Change the language

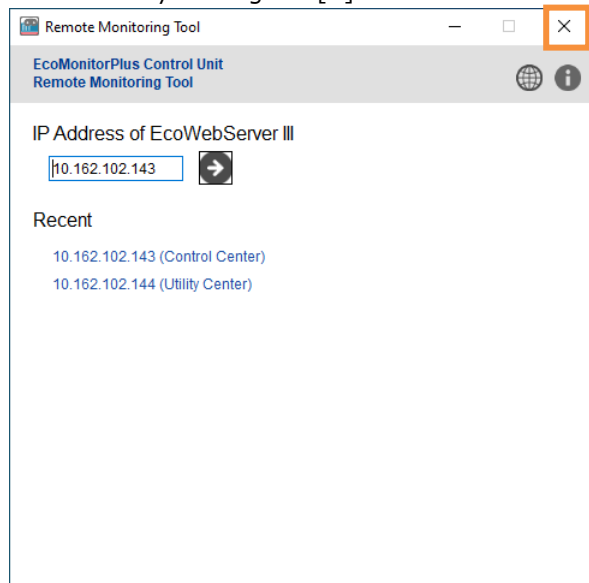Confirm the version

3.3 Exit

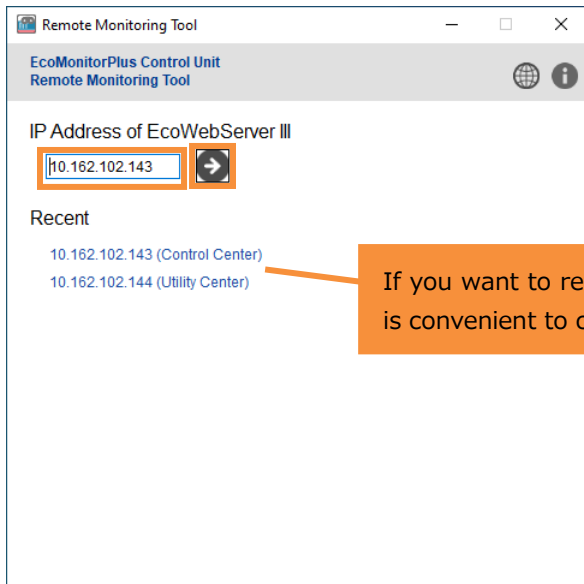Please exit by clicking the [X] button in the window.

4 Control Monitoring

This chapter describes procedures for monitoring control status of the Control Unit and also procedures for manual control.

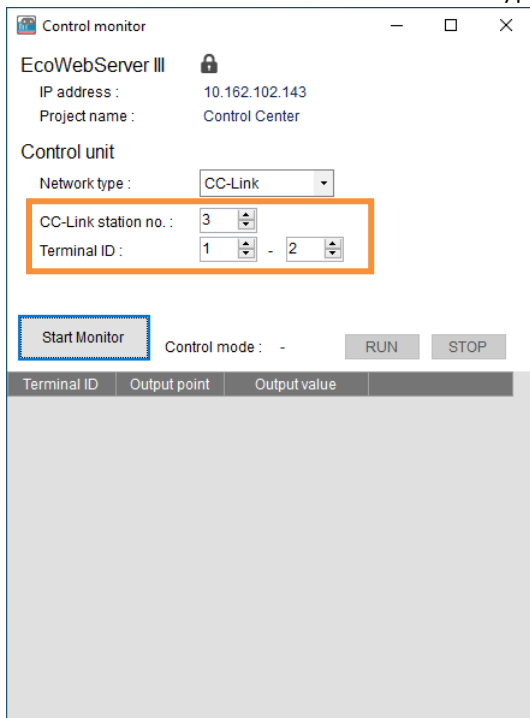## 4.1 Monitor control status

1. Enter an IP address of EcoWebServer III and click the [➡] button.

> If you want to reuse EcoWebServer III that you used in the past, it is convenient to click the link.
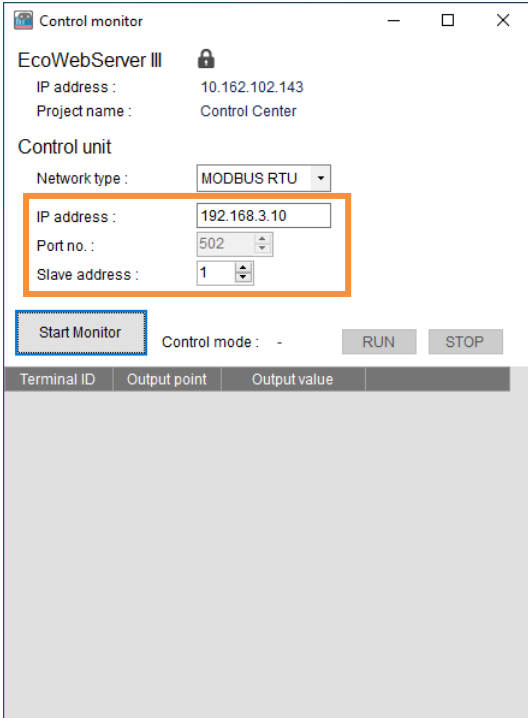
2. Enter control conditions and click the [Start Monitor] button.
   ■ When CC-Link is selected as a network type

| Items	Contents
CC-Link station no.	Specify a CC-Link Station No. of the Control Unit.
Terminal ID	Specify the range of terminal IDs to monitor. ✓ The terminal ID is set in the control unit engineering tool.

■ When MODBUS RTU is selected as a network type

Items	Contents
IP address	Enter an IP address of the MODBUS TCP<->RTU converter.
Port no.	Fixed 502.
Slave address	Specify a slave address of the Control Unit.

3. The control status is displayed.

The control status is automatically updated every 10 seconds.
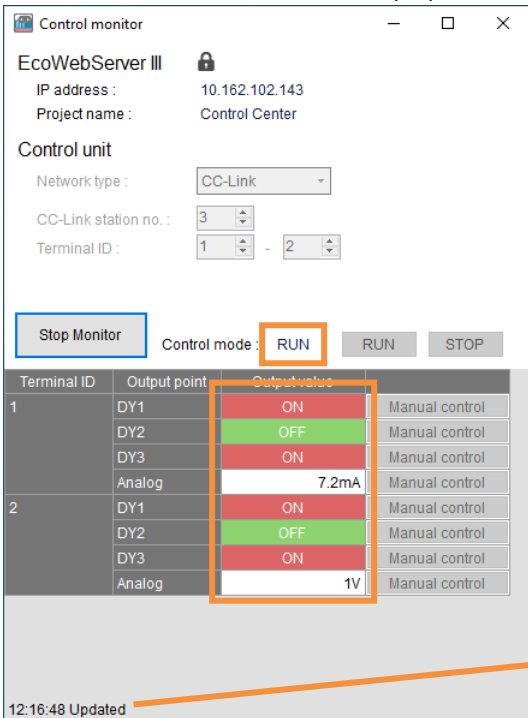
Update time (hours: minutes: seconds) is displayed at the bottom left on the screen.
If an error occurs, notation will come up as follows.
HH:MM:SS Error (xxx)   *xxx is an error code.
For details on the error code, refer to "5.4Error code".

✓ If you specify a terminal ID that is not actually connected, the display will be as follows.

For terminals that are not connected, DY1 to 3 will be "OFF" and analog will be "0" (no unit).

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4.2 Manually control the contact output

1. In the case of monitoring, click the [Stop Monitor] button.

2. Click the [Manual control] button for a row you want to control.

If the "Verify password" screen is displayed, enter the password for maintenance of EcoWebServer III and click the [OK] button.

3. The "Contact output – Manual control" screen is displayed.

Select an output value and click the [Execute] button.

4. If the control mode is RUN, the following confirmation message will be displayed.

Click the [Yes] button to set the control mode to STOP.

5. The output value is updated.

Indicates that the EcoWebServer III password has been authenticated.
You can skip entering the password until you close the screen.

4.3 Manually control the analog output

1. In the case of monitoring, click the [Stop Monitor] button.

2. Click the [Manual control] button for a row you want to control.

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3. If the "Verify password" screen is displayed, enter a password for maintenance of EcoWebServer III and click the [OK] button.
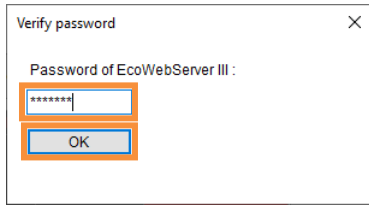
4. The "Analog output – Manual control" screen is displayed.
    Enter an output value and click the [Execute] button.
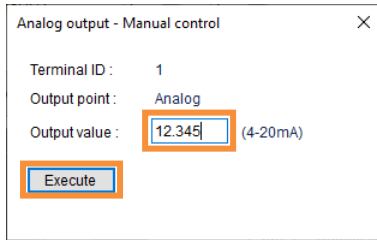
5. If the control mode is RUN, the following confirmation message will be displayed.
    Click the [Yes] button to set the control mode to STOP.

6. The output value is updated.

Indicates that the EcoWebServer III password has been authenticated.
You can skip entering the password until you close the screen.
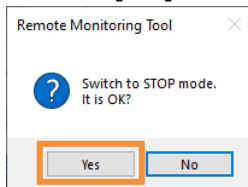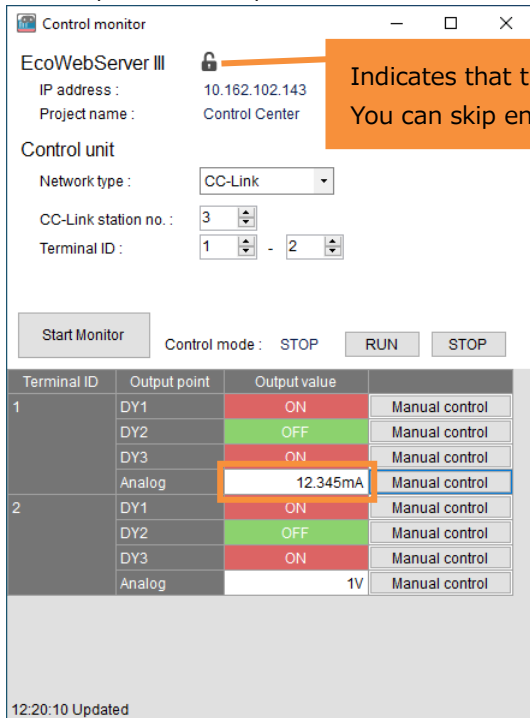
4.4 Change the control mode

1. In the case of monitoring, click the [Stop Monitor] button.

2. Click the [RUN] or [STOP] button.

3. The confirmation message will be displayed. Click the [Yes] button.

Remote Monitoring Tool

? Switch to RUN mode.
It is OK?

Yes   No

This is the message when the [RUN] button is clicked.

4. If the "Verify password" screen is displayed, enter the password for maintenance of EcoWebServer III and click the [OK] button.

Verify password ×

Password of EcoWebServer III :

****

OK
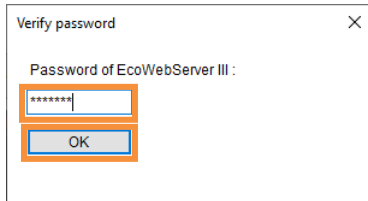
5. The control mode is updated.

Control monitor   — □ ×

EcoWebServer III 🔒
IP address :   10.162.102.143
Project name :   Control Center

Indicates that the EcoWebServer III password has been authenticated.
You can skip entering the password until you close the screen.

Control unit

Network type :   CC-Link ▾

CC-Link station no. :   3 ▾
Terminal ID :   1 ▾ - 2 ▾

Start Monitor   Control mode : RUN   RUN   STOP

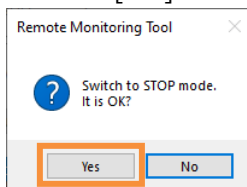| Terminal ID	Output point	Output value	
1	DY1	ON	Manual control
	DY2	OFF	Manual control
	DY3	ON	Manual control
	Analog	7.2mA	Manual control
2	DY1	ON	Manual control
	DY2	OFF	Manual control
	DY3	ON	Manual control
	Analog	1V	Manual control

12:22:39 Updated

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5 Appendix

5.1 Specifications

Items		Specifications
Languages		English, Japanese, Chinese (Simplified)
Monitor	Number of Control Units	Up to 32 units in the same system. (Up to 31 children per parent)
	Monitor contents	Control mode, Contact output value, Analog output value
	Automatic update interval	Approximately 10 seconds (after completing one monitor, approximately 10 seconds have passed before starting the next monitor)
Manual control	Control mode	Change to RUN or STOP.
	Contact output	Change to OFF or ON

	Analog output	Analog output specification = current:
		        Change in the range of 4 to 20mA.
		Analog output specification = voltage:
		        Change in the range of 0 to 5V.
		✓ Up to 3 digits after the decimal point

5.2 Control log file

When manual control is executed, the control contents are recorded in the log file.

Log file location	
Emu4RemoteMonitor¥	Application folder
Log¥	Log folder
10_162_102_143¥	IP address of EcoWebServer III
YYYY-MM.log	Log file (1 file per month) YYYY: Year, MM: Month

Log file contents

Examples)

2020/9/18 10:04:04	3				STOP
2020/9/18 10:04:05	3		1	DY1	OFF
2020/9/18 10:04:15	3		1	Analog	12.345
2020/9/18 10:04:19	3				RUN
2020/9/18 10:05:17	192.168.3.10	1			STOP
2020/9/18 10:05:17	192.168.3.10	1	1	DY2	ON
2020/9/18 10:05:21	192.168.3.10	1			RUN

The following items are output separated by tabs.

Column	Items	Contents
1	Date and time	Date and time of your PC.
2	CC-Link station no. MODBUS IP address	Value specified on the control monitor screen.
3	MODBUS slave address	Value specified on the control monitor screen.
4	Terminal ID	Value specified on the control monitor screen.

Column	Items	Contents
5	Output point	DY1, DY2, DY3, Analog
6	Output value	Control mode : STOP, RUN DY1-3 : Value selected on the contact output screen. Analog : Value entered on the analog output screen.

5.3 Error message and remedies

Top screen

Messages	Remedies
Enter an IP address.	Please enter an IP address.
IP address is invalid.	Please correct the IP address. [Example] 192.168.10.1 10.162.102.143
Failed to read data from EcoWebServer III.	Check if the IP address is correct. Make sure that you have a LAN connection with EcoWebServer III.
Unsupported model.	Enter the IP address of EcoWebServer III.

Control monitor screen

Messages	Remedies
Failed to read data. (Error code)	Make sure that you have a LAN connection with EcoWebServer III. Please refer to "5.4 Error code" to check the error details.
Failed to write data. (Error code)	Make sure that you have a LAN connection with EcoWebServer III. Please refer to "5.4 Error code" to check the error details.
Failed to write the control log.	If the target control log file is open in another application, close it. Make sure that the target control log file is not read-only.

Contact output – manual control screen

Messages	Remedies
Failed to read data. (Error code)	Make sure that you have a LAN connection with EcoWebServer III. Please refer to "5.4 Error code" to check the error details.
Failed to write data. (Error code)	Make sure that you have a LAN connection with EcoWebServer III. Please refer to "5.4 Error code" to check the error details.
Failed to write the control log.	If the target control log file is open in another application, close it. Make sure that the target control log file is not read-only.

Analog output – manual control screen

Messages	Remedies
Input an output value.	Please input an output value.
output value is invalid.	Please correct the output value.
Output value is out of range.	Please correct the output value. Please keep the number of digits after the decimal point within 3 digits.
Failed to read data. (Error code)	Make sure that you have a LAN connection with EcoWebServer III. Please refer to "5.4 Error code" to check the error details.
Failed to write data.	Make sure that you have a LAN connection with EcoWebServer III.

Messages	Remedies
(Error code)	Please refer to "5.4 Error code" to check the error details.
Failed to write the control log.	If the target control log file is open in another application, close it. Make sure that the target control log file is not read-only.

Verify password screen

Messages	Remedies
Enter a password.	Please enter a password.
Password is incorrect.	Please enter the correct password
Failed to verify password. (Error code)	Make sure that you have a LAN connection with EcoWebServer III. Please refer to "5.4 Error code" to check the error details.

✓ The "(Error code)" in the message will display a detailed message instead of the error code if you cannot connect to EcoWebServer III.

(Ex.) Error message when not connected to EcoWebServer III via LAN
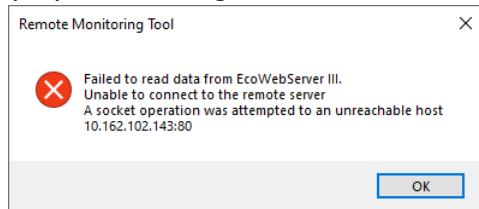
5.4 Error code

EcoWebServer III

Error codes	Contents
-1702、-1703、-1704、-1800、-2001	EcoWebServer III is starting or resetting.

CC-Link

Error codes	Contents
-4	The terminal with the specified station no. is not connected.
4162	The terminal with the specified station no. is not the control unit.
4113	An attempt was made to change the contact output value or analog output value of a terminal ID that does not exist.

MODBUS RTU

Error codes	Contents
11	The terminal with the specified slave address is not connected.
2	The terminal with the specified slave address is not the control unit.
4737	The specified IP address is not connected.

5.5 Q&A

Q	The "manual control" button, "RUN" button, and "STOP" button are not enabled on the control monitor screen.
A	The "manual control" button, "RUN" button, and "STOP" button are disabled during monitoring. Operate after stopping the monitor. ✓ Even when the monitor is stopped, changing the monitor conditions disables them.

5.6 Release notes

Version	Contents
1.0.0	The first release version.

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Energy Measuring Unit Control Unit
Remote Monitoring Tool

■Service Network

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Bangladesh	PROGRESSIVE TRADING CORPORATION	HAQUE TOWER,2ND FLOOR,610/11,JUBILEE ROAD, CHITTAGONG, BANGLADESH	+880-31-624307
Bangladesh	ELECTRO MECH AUTOMATION& ENGINEERING LTD.	SHATABDI CENTER, 12TH FLOOR, SUITES:12-B, 292, INNER CIRCULAR ROAD, FAKIRA POOL, MOTIJHEEL, DHAKA-1000, BANGLADESH	+88-02-7192826
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