

**FA-M3 Programming Tool  
WideField3  
(Online)**

IM 34M06Q16-03E

**Applicable Modules:**

| Model Code | Model Name                        |
|------------|-----------------------------------|
| SF630-MCW  | FA-M3 Programming Tool WideField3 |



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# Applicable Product

- **Range-free Controller FA-M3**

- Model : SF630-MCW
- Name : FA-M3 Programming Tool WideField3

The document number for this manual is given below.

Refer to the document number in all communications, including when purchasing additional copies of this manual.

- Document No.: IM 34M06Q16-03E

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# Precautions

## ■ About This Manual

- This Manual should be passed on to the end user.
- This manual is an essential part of the product; keep it in a safe place for future reference.
- This product is designed to be used by a person with specialized knowledge.
- Before using the product, read this manual thoroughly to have a clear understanding of the product.
- This manual explains the functions of this product, but there is no guarantee that they will suit the particular purpose of the user.
- Under absolutely no circumstances may the contents of this manual be transcribed or copied, in part or in whole, without permission.
- The contents of this manual are subject to change without prior notice.
- Every effort has been made to ensure accuracy in the preparation of this manual. However, should any errors or omissions come to the attention of the user, please contact the nearest Yokogawa Electric representative or sales office.

## ■ Safety Symbols



- **"Handle with care."** This symbol on the product indicates that the operator must follow the instructions laid out in this user's manual to avoid the risk of personnel injuries, fatalities, or damage to the instrument.



- **Protective Conductor Terminal**

This terminal is to prevent electric shock. Before using the instrument, connect to the Protective earth (Comply with the regulation of each country.), and route the line through the shortest path possible.



- **Functional Earth Terminal**

This terminal is for stable operation. Before using the instrument, be sure to ground this terminal.



- **Alternating current.** Indicates alternating current.



- **Direct current.** Indicates direct current.

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The following symbols are used only in the user's manual.

**WARNING**

- Draws attention to information essential to prevent electrical shock or other dangers that may result in injury or the loss of life.

**CAUTION**

- Draws attention to information essential to prevent hardware damage, software damage or system failure.

**NOTE**

- Draws attention to information essential to the understanding of operation and functions.

**■ Safety Precautions when Using/Maintaining the Product**

- For the protection and safe use of the product and the system controlled by it, be sure to follow the instructions and precautions on safety stated in this manual whenever handling the product. Take special note that if you handle the product in a manner other than prescribed in these instructions, the protection feature of the product may be damaged or impaired. In such cases, Yokogawa cannot guarantee the quality, performance, function and safety of the product.
- When installing protection and/or safety circuits such as lightning protection devices and equipment for the product and control system as well as designing or installing separate protection and/or safety circuits for fool-proof design and fail-safe design of processes and lines using the product and the system controlled by it, the user should implement it using devices and equipment, additional to this product.
- If component parts or consumable are to be replaced, be sure to use parts specified by the company.
- This product is not designed or manufactured to be used in critical applications which directly affect or threaten human lives and safety — such as nuclear power equipment, devices using radioactivity, railway facilities, aviation equipment, shipboard equipment, aviation facilities or medical equipment. If so used, it is the user's responsibility to include in the system additional equipment and devices that ensure personnel safety.
- Do not attempt to modify the product.
- To avoid electrical shock, turn off the power before wiring.
- This product is classified as Class A for use in industrial environments. If used in a residential environment, it may cause electromagnetic interference (EMI).  
In such situations, it is the user's responsibility to adopt the necessary measures against EMI.

**■ Exemption from Responsibility**

- Yokogawa Electric Corporation (hereinafter simply referred to as Yokogawa Electric) makes no warranties regarding the product except those stated in the WARRANTY that is provided separately.
- Yokogawa Electric assumes no liability to any party for any loss or damage, direct or indirect, caused by the use or any unpredictable defect of the product.

## ■ Software Supplied by the Company

- Yokogawa Electric makes no other warranties expressed or implied except as provided in its warranty clause for software supplied by the company.
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- Copying the software for any purposes other than backup is strictly prohibited.
- Store the original media that contain the software in a safe place.
- Reverse engineering, such as decompiling of the software, is strictly prohibited.
- Under absolutely no circumstances may the software supplied by Yokogawa Electric be transferred, exchanged, or sublet or leased, in part or as a whole, for use by any third party without prior permission by Yokogawa Electric.

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## ■ General Requirements for Using the FA-M3 / e-RT3 Controller

### ● Set the product in a location that fulfills the following requirements:

- INDOOR USE ONLY
- This product is an open equipment. The product must be installed in a metallic panel enclosure with an impact rating IK08 or more.
- Where the product will not be exposed to direct sunlight, and where the operating surrounding air temperature is from 0°C to 55°C (32°F to 131°F).  
There are modules that must be used in an environment where the operating surrounding air temperature is in a range smaller than 0°C to 55°C (32°F to 131°F). Refer to "Hardware Manual" (IM 34M06C11-01E) or the applicable user's manual. In case of attaching such a module, the entire system's operating surrounding air temperature is limited to the module's individual operating surrounding air temperature.
- Where the relative humidity is from 10 to 90%.  
In places where there is a chance of condensation, use a space heater or the like to constantly keep the product warm and prevent condensation.
- For use in Pollution Degree 2 Environment.
- Where there are no corrosive or flammable gases.
- Where the product will not be exposed to mechanical vibration or shock that exceed specifications.
- Where there is no chance the product may be exposed to radioactivity.

### ● Use the correct types of wire for external wiring:

- USE COPPER CONDUCTORS ONLY.
- Use conductors with temperature rating above 75°C.

### ● Securely tighten screws:

- Securely tighten module mounting screws and terminal screws to avoid problems such as faulty operation.
- Tighten terminal block screws with the correct tightening torque as given in this manual. Refer to the "Hardware Manual" (IM 34M06C11-01E) or the applicable user's manual for the appropriate tightening torque.

### ● Securely lock connecting cables:

- Securely lock the connectors of cables, and check them thoroughly before turning on the power.

### ● Interlock with emergency-stop circuitry using external relays:

- Equipment incorporating the FA-M3 / e-RT3 controller must be furnished with emergency-stop circuitry that uses external relays. This circuitry should be set up to interlock correctly with controller status (stop/run).

### ● Ground for low impedance:

- For safety reasons, connect the [FG] grounding terminal to a protective earth (Comply with the regulation of each country.). For compliance to CE Marking, use braided or other wires that can ensure low impedance even at high frequencies for grounding.

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- **Configure and route cables with noise control considerations:**

- Perform installation and wiring that segregates system parts that may likely become noise sources and system parts that are susceptible to noise. Segregation can be achieved by measures such as segregating by distance, installing a filter or segregating the grounding system.

- **Configure for CE Marking Conformance:**

- For compliance to CE Marking, perform installation and cable routing according to the description on compliance to CE Marking in the “Hardware Manual” (IM 34M06C11-01E).
- The list of CE conforming models is available in Appendix A2. of “Hardware Manual”.

- **Keep spare parts on hand:**

- We recommend that you stock up on maintenance parts, including spare modules, in advance.
- Preventive maintenance (replacement of the module) is required for using the module beyond 10 years.

- **Discharge static electricity before touching the system:**

- Because static charge can accumulate in dry conditions, first touch grounded metal to discharge any static electricity before touching the system.

- **Wipe off dirt with a soft cloth:**

- Gently wipe off dirt on the product's surfaces with a soft cloth.
- If you soak the cloth in water or a neutral detergent, tightly wring it out before wiping the product. Letting water enter the module interior can cause malfunctions.
- Do not use volatile solvents such as benzene or paint thinner or chemicals for cleaning, as they may cause deformity, discoloration, or malfunctioning.

- **Avoid storing the FA-M3 /e-RT3 controller in places with high temperature or humidity:**

- Since the CPU module has a built-in battery, avoid storage in places with high temperature or humidity.
- Since the service life of the battery is drastically reduced by exposure to high temperatures, take special care (storage surrounding air temperature should be from -20°C to 75°C).
- There is a built-in lithium battery in a Sequence CPU module which serves as backup power supply for programs, device information and configuration information.

The service life of this battery is more than 10 years in standby mode at room temperature. Take note that the service life of the battery may be shortened when installed or stored at locations of extreme low or high temperatures. Therefore, we recommend that modules with built-in batteries be stored at room temperature.

- **Always turn off the power before installing or removing modules:**

- Failing to turn off the power supply when installing or removing modules, may result in damage.

- **Do not touch components in the module:**

- In some modules you can remove the right-side cover and install ROM packs or change switch settings. While doing this, do not touch any components on the printed-circuit board, otherwise components may be damaged and modules may fail to work.

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- **Do not use unused terminals:**
    - Do not connect wires to unused terminals on a terminal block or in a connector. Doing so may adversely affect the functions of the module.
  - **Use the following power source:**
    - Use only F3PU□□-□□ as the power supply module.
    - If using this product as a UL-approved product, for the external power supply, use a limited voltage / current circuit power source or a Class 2 power source.
    - If using this product as a CE-complied product, for the external power supply, use a SELV and limited-energy circuit separated by reinforced insulation or double insulation from hazardous voltage.
  - **Refer to the user's manual before connecting wires:**
    - Refer to the “Hardware Manual” (IM 34M06C11-01E) or the applicable user’s manual for the external wiring drawing.
    - Refer to “A3.6.5 Connecting Output Devices” in the “Hardware Manual” before connecting the wiring for the output signal.
    - Refer to “A3.5.4 Grounding Procedure” in the “Hardware Manual” for attaching the grounding wiring.
  - **Authorized Representative in the EEA:**
    - The Authorized Representative for this product in the EEA is:  
**Yokogawa Europe B. V.**  
Euroweg 2, 3825 HD Amersfoort, The Netherlands
  - **In relation to UKCA marking, the importer for this product into Great Britain market via the YOKOGAWA sales channel is:**
    - **Yokogawa United Kingdom Limited**, Stuart Road Manor Park Runcorn, WA7 1TR, United Kingdom.

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## ■ General Requirements for Using the FA-M3 Slave Units (TAH Series)

### ● Connect YHLS cable to SHIELD terminal:

- Connect the DRAIN line of the YHLS cable to the SHIELD terminal of the YHLS master module securely. Failing to do so may affect the performance of the YHLS system.

### ● Do not touch components in the unit:

- Do not remove the back cover of the unit. Doing so may cause a failure.

## ■ Waste Electrical and Electronic Equipment (WEEE)



Waste Electrical and Electronic Equipment (WEEE)

(Only valid in the EEA for EU WEEE Directive and in the UK for UK WEEE Regulation)



This product complies with the WEEE marking requirement.

This marking indicates that you must not discard this electrical/electronic product in domestic household waste.

When disposing of products in the EEA and UK, contact your local Yokogawa office in the EEA and/or UK respectively.

## ■ How to dispose the batteries

(Only valid in the EEA for EU Battery Directive/Regulation and in the UK for UK Battery Regulation)

Batteries are included in some modules of this product.

This marking indicates they shall be sorted out and collected as ordained in the EU battery Directive/Regulation and UK battery Regulation.

The procedure is different when the user can remove or cannot remove.

### ① Batteries the user can remove

The battery of F3RP6□, F3RP7□ and F3NP5□ can be removed by yourself.

When you remove the battery from F3RP6□, F3RP7□ and F3NP5□ dispose it, discard them in accordance with domestic law concerning disposal. See the User's Manual of F3RP6□, F3RP7□ and F3NP5□ for the removal procedure.

If you don't remove the battery from this product, please see ②.

### ② Batteries the user cannot remove

Dispose the battery together with this product.

When you dispose this product in the EEA and UK, contact your local Yokogawa office in the EEA and/or UK respectively.

Do not dispose them as domestic household waste.

Battery category: Lithium battery



# Introduction

## ■ About This Manual

The WideField3 manual set consists of the following four volumes.

Table 1 Manual List

| Volume                           | Document No.    |
|----------------------------------|-----------------|
| Introduction and Troubleshooting | IM 34M06Q16-01E |
| Offline                          | IM 34M06Q16-02E |
| Online                           | IM 34M06Q16-03E |
| Script                           | IM 34M06Q16-04E |
| Trace Function                   | IM 34M06Q50-21E |

This manual is the operation manual, Online, for the Range-free Multi-controller FA-M3 Programming Tool (known as WideField3 in this manual).

## ■ Overview of This Manual

This manual describes procedures for connections between WideField3 and sequence CPU, and the action monitor and the debugging functions.

For enquiries, please contact the store where you purchased the product or the nearest Yokogawa sales office listed at the back of this manual.

We recommend using this manual together with the operation manuals of your computer or printer, as required.

## ■ Structure of the Manual

This manual consists of 3 parts: H, J and K.

PART H describes procedures for connections between WideField3 and sequence CPU, as well as project downloading and uploading.

PART J describes the monitor functions.

PART K describes the debugging functions.

## PART H Connection Manual

### H1. Overview of Online Functions

Describes how to connect to the CPU online and gives an overview of the online functions.

### H2. Downloading

Describes how to transfer an executable program from a personal computer to the CPU.

### H3. Uploading

Describes how to transfer a project, blocks, macros or tag name definitions from the CPU to a personal computer.

### H4. Comparing File and CPU

Describes the comparison of programs stored in the CPU to programs stored in the personal computer.

**H5. CPU Properties**

Describes how to set up CPU properties.

**H6. Using the ROM**

Describes ROM management, including how to transfer a created program to the ROM pack and how to clear the ROM pack.

**H7. I/O Module Setup**

Describes how to setup the advanced function I/O module.

**H8. Device Manager**

Describes how to upload device data in the CPU and store it to files, as well as how to edit, download and compare device data.

**H9. Storing Comments and Tag Name Definitions**

Describes how to store edited circuit comments, subcomments and tag name definitions in the CPU of the FA-M3.

**H10. Using Remote OME**

Describes how to monitor and maintain a remote instrument via a remote line (remote OME).

**H11. FA-M3 Defender (User Authentication and Operation Protection)**

Describes FA-M3 Defender user authentication and operation protection functions.

**H12. FA-M3 Communication Server**

Describes FA-M3 Communication Server for communication between WideField3 and FA-M3.

**H13. Structures**

Describes the functions for monitoring in monitor windows, transferring, editing in online and debugging structures.

**H14. Macros**

Describes how to transfer macros by downloading and the functions for debugging macros.

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## **PART J Monitor Manual**

### **J1. Setting Operating Mode and Monitoring Operation Status**

Describes how to set up the operating mode and monitor operation status of the CPU.

### **J2. Program Monitor**

Describes how to display the contents of blocks as ladder programs using a program monitor.

### **J3. Device Monitor**

Describes how to monitor devices defined with tag name definitions.

### **J4. Tag Name Definition Monitor**

Describes how to monitor devices defined with tag name definitions.

### **J5. Registered Device Monitor**

Describes how to specify and monitor various devices (relays or registers) using a registered device monitor.

## **PART K Debugging Manual**

### **K1. Using the Debugging Functions**

Describes functions available for debugging.

### **K2. Online Edit**

Describes how to use online editing to directly modify programs downloaded to the CPU.

### **K3. Logs and Alarms**

Describes maintenance functions for monitoring the operating status of the FA-M3 and errors.

### **K4. Sampling Trace Tool**

Describes how to specify devices to be sampled and store a history of their states and values in the CPU sampling trace buffer using the sampling trace tool.

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## ■ How to Read This Manual

Be sure to read the “Introduction” as well as “How to read this manual” before using WideField3.

PART H describes how to connect this application to the range-free multi-controller FA-M3, as well as how to download and upload projects and other items.

PART J describes the monitor functions of this application.

PART K describes the debugging functions of this application.

This manual is structured so that each chapter or section can be read independently for details on the specifications and individual functions of the application.

We have tried to make the user interface, operations and editing functions of the WideField3 application as similar as possible to other generally available Windows software. This manual does not contain information on general Windows editing operations, which are not specific to WideField3.

## ■ Notation

### ● Notation for Windows Screens and Operation

- Items in initial caps denote symbols, names and window names.  
Example: WideField3, Program Monitor dialog
- Bracketed items denote menu bar items, dialog box fields, commands, and buttons.  
Example: Select [File]–[New] from the menu bar.  
Click [OK].

### ● Representations in WideField3 Figures and Screens

Screen examples given in this manual assumes that the application is running under Windows XP operating system environment. Under Windows 10, Windows 11 operating systems, you may observe slight differences such as differences in icon names or application names.

Some figures in this manual may, for reasons of convenience, be emphasized or simplified, or parts of it may be omitted. Some screen images in this manual may differ from actual screens due to differences in the operating machine environment.

### ● Notation for Procedures

Procedure pages are laid out with the procedure steps on the left and the corresponding screen images on the right.

Procedure :User actions are displayed in bold.

Description of the results of user actions is provided after the ⇒ mark.

Screens :The procedure step(s) corresponding to a screen image is indicated by step numbers below the screen.

### ● Function Keys and Shortcut Keys

In addition to using a mouse, you can operate WideField3 menus using function keys and shortcut keys.

In general, this manual describes operations using a mouse, and does not include equivalent operations using function keys or short cut keys.

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## ■ Other User's Manuals

You should read the following user's manuals.

- FA-M3 Programming Tool WideField3 Read Me First (IM 34M06Q16-11E)
- FA-M3 Programming Tool WideField3 Introduction and Troubleshooting (IM 34M06Q16-01E)
- FA-M3 Programming Tool WideField3 Offline (IM 34M06Q16-02E)
- FA-M3 Programming Tool WideField3 Script (IM 34M06Q16-04E)
- FA-M3V Environment Tool Trace Function (IM 34M06Q50-21E)

For individual sequence CPU modules, please refer to the relevant user's manuals.

### ● F3SP71, 76

- Sequence CPU Instruction Manual – Functions (for F3SP71-4N/4S, F3SP76-7N/7S) (IM 34M06P15-01E)
- Sequence CPU – Network Functions (for F3SP71-4N/4S, F3SP76-7N/7S) (IM 34M06P15-02E)
- Sequence CPU Instruction Manual – Instructions (IM 34M06P12-03E)

### ● F3SP66, 67

- Sequence CPU – Functions (for F3SP66-4S, F3SP67-6S) (IM 34M06P14-01E)
- Sequence CPU – Network Functions (for F3SP66-4S, F3SP67-6S) (IM 34M06P14-02E)
- Sequence CPU Instruction Manual – Instructions (IM 34M06P12-03E)

### ● F3SP22, 28, 38, 53, 58, 59

- Sequence CPU Instruction Manual – Functions (for F3SP22-0S, F3SP28-3N/3S, F3SP38-6N/6S, F3SP53-4H/4S, F3SP58-6H/6S, F3SP59-7S) (IM 34M06P13-01E)
- Sequence CPU Instruction Manual – Instructions (IM 34M06P12-03E)

### ● F3SP05, 08, 21, 25, 35

- Sequence CPU – Functions (for F3SP21, F3SP25 and F3SP35) (IM 34M06P12-02E)
- Sequence CPU Instruction Manual – Instructions (IM 34M06P12-03E)

Refer to the following manuals as required.

- **Specifications and Layout\*<sup>1</sup> of the FA-M3, Mounting and Wiring, Testing, Maintenance and Inspection, and System-wide Restrictions for Mounting Modules**

\*<sup>1</sup>: See specific manuals for products other than the power module, base module, I/O module, cables, and terminal block units.

- Hardware Manual (IM 34M06C11-01E)

- **Fiber-optic FA-Bus Functions**

- Fiber-optic FA-bus Module and Fiber-optic FA-bus Type 2 Module, FA-bus Type 2 Module (IM 34M06H45-01E)

- **FA Link Functions**

- FA Link H Module, Fiber-optic FA Link H Module (IM 34M06H43-01E)
- FA Link H2 Module (IM 34M06H43-02E)

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## PART-H Connection Manual

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FA-M3  
Programming Tool WideField3  
Online  
PART-H Connection Manual

IM 34M06Q16-03E

This manual describes how to connect WideField3 to sequence CPU, and how to download and upload data.

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# H1. Overview of Online Functions

This chapter describes how to connect to an FA-M3 from a computer and gives an overview of the online functions. The online functions allow you to check the status of the sequence CPU by monitoring programs and devices, as well as displaying the system log, user log and operation log. Connection to the FA-M3 must be made from WideField3 before online functions can be used. This chapter describes procedures for connecting and disconnecting to an FA-M3, as well as limitations of online functions.

## ● Function Limitations for Each CPU Type

Table H1.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations  | SEE ALSO   |
|---|--|------------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | Functions related to CPU properties are not available.<br>The operation log function is not available. | H5<br>K3.4 |
| F3SP66-4S,<br>F3SP67-6S   | Functions related to ROM are not available.<br>The operation log function is not available.            | H6<br>K3.4 |
| F3SP71-4N,<br>F3SP76-7N   | Functions related to ROM are not available.<br>The partial download function is not available.         | H6<br>H2   |
| F3SP71-4S,<br>F3SP76-7S   | Functions related to ROM are not available.  | H6         |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

- For details on limitations for each CPU type, refer to the user's manual for each type.
- For details on communication media available to each CPU type, see Table H1.2.

## ● Available Communication Media

Table H1.2 lists the communication media with their availability for connection to different CPU types.

**Table H1.2 CPU Types and Available Communication Media**

| Communication Media | F3SP66-4S<br>F3SP67-6S<br>F3SP71-4N<br>F3SP76-7N<br>F3SP71-4S<br>F3SP76-7S | F3SP22-0S<br>F3SP28-3S<br>F3SP53-4S<br>F3SP38-6S<br>F3SP58-6S<br>F3SP59-7S | Other<br>CPU Types | Remarks  |
|---------------------|--|--|--------------------|--|
| USB                 | ✓  | ×  | ×                  | In a multi-CPU configuration, online connection can be made to all CPU modules via the port of any CPU that allows USB connection. |
| RS-232C             | ×  | ✓  | ✓                  | This includes connection via KM13 or a modem.  |
| Ethernet            | ✓  | ✓  | ✓                  | This includes connection via an Ethernet Internet Module or via the Ethernet port of a CPU module.                                 |
| FL-net              | ✓  | ✓  | ✓                  | This refers to connection via an FL-net (OPCN-2) Interface Module.   |



### CAUTION

- The program items that can be downloaded, the units for downloading or uploading, the ROM transfer mode, the program monitor format, and the availability of each online function depend on the type of the CPU to be connected.  
Online functions that are not available for a specific CPU type are disabled in the toolbar and menu bar and an error message will be displayed if you attempt to use any of the functions.
- If WideField3 is connected online to a CPU and a program is downloaded to the same CPU from another computer, WideField3 may fail to operate correctly. If a program is downloaded from another computer, select [Online]–[Disconnect] to disconnect from the CPU and then select [Online]–[Connect] from the menu bar to perform reconnection before using the online functions.
- If both WideField3 and ToolBox are used on the same computer, you cannot connect ToolBox online concurrently with WideField3 that is running with user privileges. Start WideField3 with administrator privileges, and make a connection.
- If both WideField3 and other FA-M3 applications such as ToolBox are connected online concurrently from the same PC, communication errors may occur when the following operations are performed from WideField3: download, clear program, clear CPU properties, reset start, temporarily change communication speed, ROM transfer (from PC to ROM), ROM copy (from RAM to ROM) and erase ROM. Before performing any of these operations from WideField3, disconnect the online connection from within the ToolBox application.
- The display of tag names and various comments during online connection can be configured using the [Program Monitor Setup] tab of the Set up Environment dialog box.
- When operation protection is set for a CPU, no more than 15 users can log in to the single CPU at any given time.

## H1.1 Connecting and Disconnecting

Online functions can only be used when the FA-M3 is connected. Use the **Communications Setup** tab on the **Set up Environment** dialog box to set the connection destination.

### Note

For details on communication setup, see Section D1.2.3, "Communication Setup" (Offline).

### H1.1.1 Direct Connection

Direct connection establishes an online connection between WideField3 and FA-M3.

#### ■ USB Connection

The table below shows the system requirements for establishing an online connection using USB.

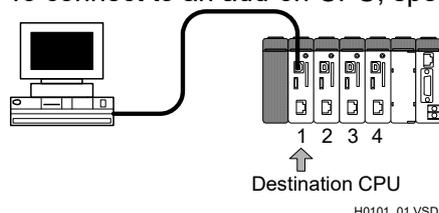
|                     |  |
|---------------------|--|
| Compatible CPU Type | F3SP66-4S/F3SP67-6S/F3SP71-4N/F3SP76-7N<br>F3SP71-4S/F3SP76-7S/F3SPV9-7S |
| Connection Cable    | USB1.1/2.0 compliant generic USB cable (maximum length of 5 m)           |

### Note

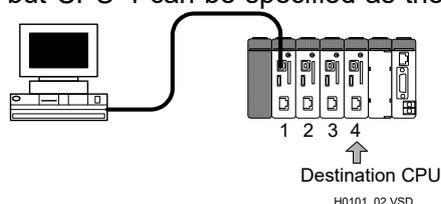
Depending on the chipset used by the PC running the WideField3 software, reliable USB connection is not always guaranteed.

The figures below show two possible configurations for USB connection.

- ◆ Connecting to a CPU using a USB cable attached to its USB port  
Connect a USB cable between the PC and the CPU module to be connected and initiate online connection, specifying the installation no. of the CPU module to be connected as the target CPU module.  
For the example configuration shown below, the CPU number can be specified as either 0 or 1. (Specifying "0" initiates connection to the CPU module attached with the USB cable.)  
To connect to an add-on CPU, specify CPU 2, 3 or 4.



- ◆ Connecting to a CPU via the USB Port of another CPU  
Connection can be made to a CPU not directly attached to a USB cable by going through another CPU attached with a USB cable.  
As shown in the example configuration below, the USB cable is attached to CPU 1 but CPU 4 can be specified as the destination when initiating an online connection.



The procedure for online connection using USB is described below.

The table below lists the setup required for USB connection.

| ◆ Items to be specified in [Set up Environment]-[Communications Setup] tab              |   |       |
|---|---|-------|
| Item  | Description   | Value |
| Communication Port No.  | Specify the port number to be connected to.   | 1-16  |
| ◆ Items to be specified in [Set up Environment]-[Setup]-Communications Setup dialog box |   |       |
| Item  | Description   | Value |
| Communication Media   | Select [USB].   |       |
| CPU Number  | Specify the installed slot number of the actual CPU module to be connected.<br>Note: Specifying 0 initiates connection attached with the USB cable. | 0-4   |

## ◆ Procedure ◆

### (1) Select [Online]-[Connect] from the menu bar.

⇒ A connection dialog box appears.

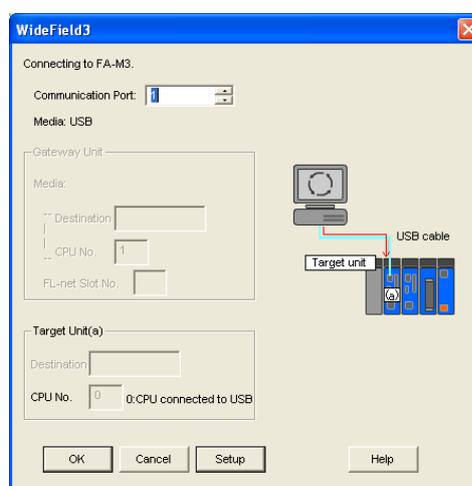
### (2) Enter the communication port number used for connection.

#### Note

If the required communication port settings have not been specified yet, click [Setup] and in the displayed Communications Setup dialog box, specify the communication settings.

#### Note

For details on communication settings in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).



Steps (1) to (3)

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### (3) Confirm that the communication media is shown as "USB", and click [OK].

#### Note

If the executable program downloaded in the CPU is protected, a dialog box is displayed to confirm the password. Enter the password and click [OK].

⇒ FA-M3 is connected. If the FA-M3 connects successfully, the Action Monitor displays the LEDs and a 'RUN' status. Information about the connection destination is also displayed in the status bar.

#### Note

CPUs to which operation protection has been set in FA-M3 Defender might require a user name and password when a connection attempt is made.

## Note

- Before initiating online connection using USB, USB driver software for FA-M3 must be installed on the personal computer. For more details on the installation, see Section A4.5, "Installing USB Driver" (Introduction and Troubleshooting).
- For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

## Note

If a USB connection is disconnected due to communication error, the USB driver may be in an unknown state. To rectify the problem, remove and re-attach the USB cable, or power off and then power on the FA-M3.

A USB connection may become unreliable or even disconnected due to noise. If this happens, remove and re-attach the USB cable to the PC.

## Note

If USB cables are connected from a single PC to multiple sequence CPUs, only the USB port of the first sequence CPU works. Make sure that you connect to a single sequence CPU.

In this multi-connection environment, USB drivers of the second and subsequent sequence CPUs are not appropriately recognized. To re-connect the cables properly, disconnect the cables and connect them again.

In addition, note that it is not possible to connect to multiple sequence CPUs concurrently from a single PC using a single USB cable.

## ■ RS-232C Connection

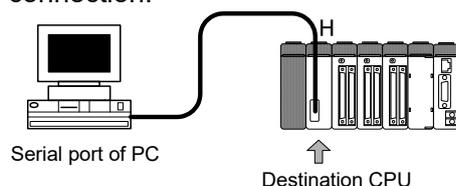
The table below shows the system requirements for establishing an online connection using RS-232C.

|                     |   |
|---------------------|---|
| Compatible CPU Type | F3SP22-0S/F3SP28-3S/F3SP53-4S/F3SP38-6S<br>/F3SP58-6S/F3SP59-7S<br>F3SP28-3N/F3SP53-4N/F3SP38-6N/F3SP58-6N<br>F3SP21-0N/F3SP25-2N/F3SP35-5N/F3FP36-3N<br>F3SP05-0P/F3SP08-0P/F3SP08-SP/F3SPV3-4H/F3SPV8-6H<br>F3SPV3-4S/F3SPV8-6S |
| Connection Cable    | Special (KM11-*T/KM13-1*) cable   |

The figures below show the possible configurations for RS-232C connection.

### ◆ Connecting Using Proprietary Cable / KM11-\*T

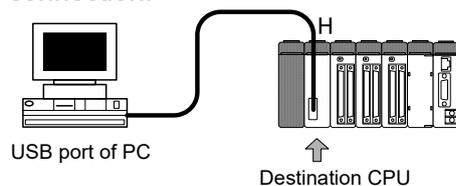
Connect a proprietary cable between the serial port of the PC and the PROGRAMMER port of the CPU module to be connected, and then initiate online connection.



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◆ Connecting Using Proprietary Cable / KM13-1\*

Connect a proprietary cable between the USB port of the PC and the PROGRAMMER port of the CPU module to be connected, and then initiate online connection.



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## Note

Before initiating online connection using KM13-1\*, proprietary driver software must be installed on the personal computer.

The installation instructions and the driver software itself are provided with the cable.

The procedure for establishing an online connection using RS-232C is described below. The table below lists the setup required for RS-232C connection.

| ◆ Items to be specified in [Set up Environment]-[Communications Setup] tab              |  |   |
|---|--|---|
| Item  | Description  | Value   |
| Communication Port No.  | Specify the port number to be connected to.  | 1-16  |
| Automatically Set Communication Speed to the Highest Speed                              | When the connection starts, specify whether to modify the highest communication speed for the PROGRAMMER port.   | ON/OFF  |
| ◆ Items to be specified in [Set up Environment]-[Setup]-Communications Setup dialog box |  |   |
| Item  | Description  | Value   |
| Communication Media   | Select [RS-232C].  |   |
| Connection Method   | Specify the transmission speed and parity defined for the PROGRAMMER port. If "Automatic Recognition" is selected, connection is established automatically using the defined values. | [Transmission speed]<br>9,600/19,200<br>38,400/57,600<br>115,200 bps<br>[Parity]<br>Even/None |
| Communication Timeout   | Specify the interval for timeout during communications.<br>Note: For normal use, the default values can be used and no setup is required.  | 1-100 [s]   |
| Number of Retries   | Specify the number of retries in the event of communication failure.<br>Note: For normal use, the default values can be used and no setup is required.                               | 1-100 [attempts]  |
| COM Port Number   | Specify the serial port number on the PC.  | COM1-COM100   |

## ◆ Procedure ◆

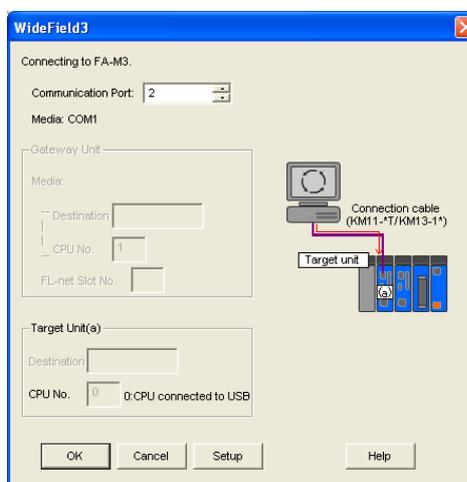
(1) Select [Online]–[Connect] from the menu bar.

⇒ A connection dialog box is displayed.

(2) Enter the communication port number used for connection.

## Note

If the required communication port settings have not been specified yet, click [Setup] and in the displayed Communications Setup dialog box, specify the communication settings.



Steps (1) to (3)

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## Note

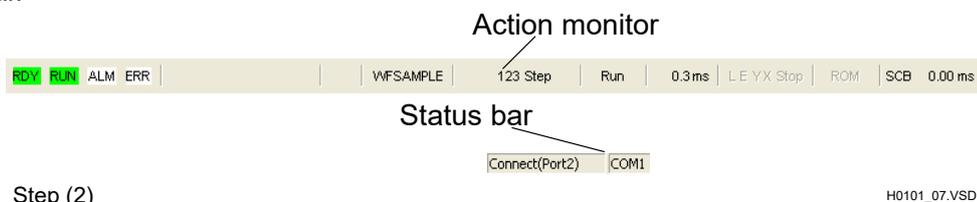
For details on communication settings in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).

- (3) Confirm that the communication media is shown as "COMx" (where x is the COM port number), and click [OK].

## Note

If the executable program downloaded in the CPU is protected, a dialog box is displayed to confirm the password. Enter the password and click [OK].

- ⇒ FA-M3 is connected. If the FA-M3 connects successfully, the Action Monitor displays the LEDs and a 'RUN' status. Information about the connection destination is displayed in the status bar.



## Note

CPUs to which operation protection has been set in FA-M3 Defender might require a user name and password when a connection attempt is made.

## Note

It may take a longer time to establish an RS-232C online communication in the following situations:

- When the [Connection Method] is set to [Automatic Recognition] on the [Communications Setup] tab - Communications Setup dialog box of the Set up Environment dialog box.  
It takes time to search for a viable transmission rate among approximately 10 options. WideField3 remembers the transmission rate for a previous connection, so subsequent connections will be faster.
- When local devices are used with a CPU type other than F3SP22/28/38/53/58/59/66/67. The more blocks, the longer the time required to establish connection due to the time taken to read local devices.

## Note

- For details on how to open and use the Set up Environment dialog box, see Section D1.2.1, "Basic Operations with the Set up Environment Dialog Box" (Offline).
- For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

## ■ Ethernet Connection

The table below shows the system requirements for establishing an online connection using Ethernet.

|                      |   |
|----------------------|---|
| Compatible CPU Types | F3SP66-4S/F3SP67-6S/F3SP71-4N/F3SP76-7N<br>F3SP71-4S/F3SP76-7S *1<br>F3SP22-0S/F3SP28-3S/F3SP53-4S/F3SP38-6S/F3SP58-6S/F3SP59-7S<br>F3SP28-3N/F3SP53-4N/F3SP38-6N/F3SP58-6N<br>F3SP21-0N/F3SP25-2N/F3SP35-5N/F3FP36-3N<br>F3SP05-0P/F3SP08-0P/F3SP08-SP/F3SPV3-4H/F3SPV8-6HS<br>F3SPV3-4S/F3SPV8-6S/F3SPV9-7S |
| Connection Cable     | Generic LAN cable<br><br>Note: Select either a cross cable or a straight cable, depending on the configuration.   |

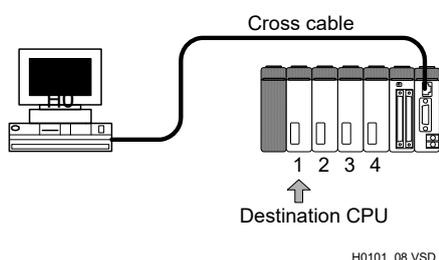
\*1: For F3SP66-4S/F3SP67-6S/F3SP71-4N/F3SP76-7N/F3SP71-4S/F3SP76-7S CPU modules, connection can be made using the Ethernet port on the CPU module or via an Ethernet Interface Module. In both cases, the procedure for connection from WideField3 is identical.

The description in this chapter assumes connection via an Ethernet Interface Module for purpose of explanation.

The figures below show two possible configurations for Ethernet connection.

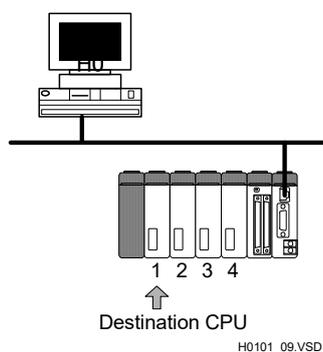
### ◆ Direct Connection

Connect a cross cable between the LAN port of the PC and the Ethernet Interface Module of the FA-M3 unit (or the Ethernet port of the CPU module if present). Even in the case of direct connection, network setup is required to identify the destination CPU.



### ◆ Connecting to FA-M3 over a Network

When connecting to FA-M3 on a network configured using Ethernet, the network setup of the PC must match the FA-M3 network.



The procedure for online connection using Ethernet is described below.

The table below lists the setup required for Ethernet connection.

| ◆ Items to be specified in [Set up Environment]-[Communications Setup] tab              |  |         |
|---|--|---------|
| Item  | Description  | Value   |
| Communication Port No.  | Specify the port number to be connected to.  | 1-16    |
| ◆ Items to be specified in [Set up Environment]-[Setup]-Communications Setup dialog box |  |         |
| Item  | Description  | Value   |
| Communication Media   | Select [Ethernet].   |         |
| Destination IP Address  | Specify the network IP address or hostname defined in the Ethernet interface.  | —       |
| Connection Timeout  | Specify a timeout interval for bad connection during communications.   | 1-120 s |
| Refer to Host Name  | Specify the IP address or hostname defined in the network Ethernet interface.<br>By default, the window displays the value defined in the environment setup or specified for the most recent connection. | —       |
| CPU Number  | Specify the installed slot number of the actual CPU module to be connected.  | 1-4     |

## ◆ Procedure ◆

(1) Select [Online]–[Connect] from the menu bar.

⇒ A connection dialog box appears.

(2) Enter the communication port number used for connection.

### Note

If the required communication port settings have not been specified yet, click [Setup] and in the displayed Communications Setup dialog box, specify the communication settings.

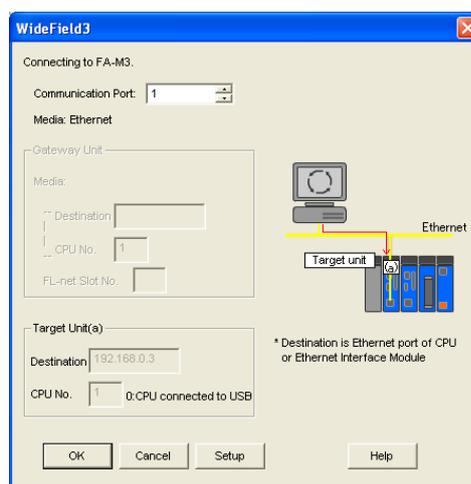
### Note

For details on communication settings in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).

(3) Confirm that the communication media is shown as "Ethernet", and click [OK].

### Note

For details on how to set up items in the Set up Environment dialog box, see Section D1.2.1, "Basic Operations with the Set up Environment Dialog Box" (Offline).



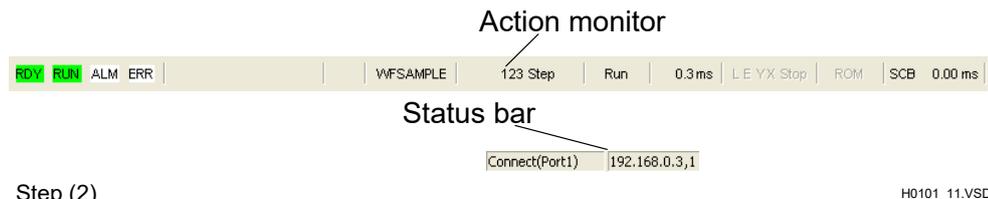
Steps (1) to (3)

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## Note

If the executable program downloaded in the CPU is protected, a dialog box is displayed to confirm the password. Enter the password and click [OK].

- ⇒ FA-M3 is connected. If the FA-M3 connects successfully, the Action Monitor displays the LEDs and a 'RUN' status. Information about the connection destination is also displayed in the status bar.



Step (2)

## Note

CPUs to which operation protection has been set in FA-M3 Defender might require a user name and password when a connection attempt is made.

## Note

- For details on how to open and use the Set up Environment dialog box, see Section D1.2.1, "Basic Operations with the Set up Environment Dialog Box" (Offline).
- For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

## ■ FL-net Connection

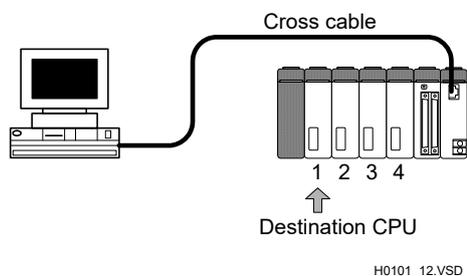
The table below shows the system requirements for establishing an online connection using FL-net.

|                      |   |
|----------------------|---|
| Compatible CPU Types | F3SP66-4S/F3SP67-6S/F3SP71-4N/F3SP76-7N<br>F3SP71-4S/F3SP76-7S<br>F3SP22-0S/F3SP28-3S/F3SP53-4S/F3SP38-6S/F3SP58-6S/F3SP59-7S<br>F3SP28-3N/F3SP53-4N/F3SP38-6N/F3SP58-6N<br>F3FP36-3N<br>F3SPV3-4H/F3SPV8-6H<br>F3SPV3-4S/F3SPV8-6S/F3SPV9-7S |
| Connection Cable     | Generic LAN cable<br>Note: Select either a cross cable or a straight cable, depending on the configuration.   |

The figures below show two possible configurations for FL-net connection.

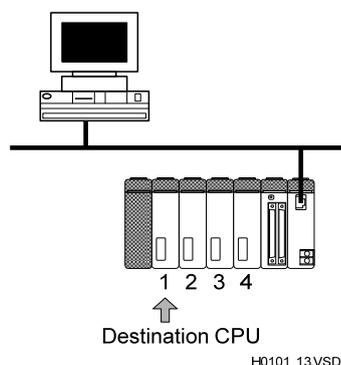
### ◆ Direct Connection

Connect a cross cable between the LAN port of the PC and the FL-net Interface Module of the FA-M3 unit. Even in the case of direction connection, network setup is required to identify the connection destination.



### ◆ Connecting to FA-M3 over a Network

When connecting to an FA-M3 network configured using FL-net, the network setup on the PC must match the FA-M3 network.



## Note

When making a connection using FL-net, only one FA-M3 can be connected from a single PC. However, using communication media other than FL-net enables concurrent connection to multiple FA-M3s. For example, you can use both FL-net and Ethernet as communication media to connect to separate FA-M3s at the same time.

The FL-net connection function makes use of the vendor-specific message request and vendor-specific message response features of the message transmission and receiving functions of FL-net, and does not require any special setup if WideField3 is used.

Observe the following precautions and restrictions of the FL-net connection function.

(1) Compatible sequence CPU modules

FL-net connection is not available with the following CPU modules: F3SP05/08/21/25/35. Connection to sequencers from other suppliers is also not allowed.

(2) Accessing the same sequence CPU concurrently from multiple PCs

Using FL-net (OPCN-2) Interface Module enables concurrent access to the same sequence CPU module from up to 2 PCs.

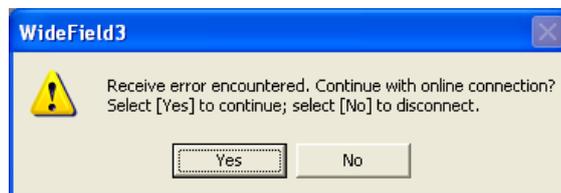
(3) Performance of remote maintenance

Due to the use of FL-net message transmission and receiving functions, the response speed for remote maintenance may deteriorate under the following conditions:

- Large common memory size
- Large number of nodes
- Frequent message communication among nodes

(4) Detaching the communication cable during online connection

Do not detach the communication cable between the PC and FA-M3 when the PC is connected to the FL-net. If you remove the communication cable, the following error message may be displayed on the PC. Click [No] to disconnect and reconnect.



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**Figure H1.1 Error Message**

## (5) List of FL-net connection error messages

The following table lists the error messages that may be displayed when the PC is connected to the FL-net.

**Table H1.3 List of FL-net Connection Error Messages**

| Message                              | Cause   | Troubleshooting   |
|--------------------------------------|---|---|
| Communication error.(FFFF-0007)      | Invalid network card specified in the local node setup of the environment setup.                            | Check the network card specified in the local node setup.   |
|                                      | Communication cable is detached.  | Check the communication cable.  |
| Error in sending /Error in receiving | The specified destination node is not an FA-M3 node.  | Check the value specified for destination node.   |
|                                      | The specified destination node is not participating in the network, or the communication cable is detached. | - Check the node number of the IP address of the specified destination.<br>- Check the communication cable. |
|                                      | Invalid network card specified in the local node setup in the environment setup.                            | Check the network card specified in the local node setup.   |
|                                      | Invalid node number specified in the local node setup in the environment setup.                             | Check the node number specified in the local node setup.  |

Note: For an IP address used in FL-net, the three high bytes denote the network address, while the least significant byte denotes the host address (node number).

**Note**

To connect to FL-net using F3LX02-1N, REV 01:00 or later is required.

## (6) Exclusive access

Exclusive access control is not available to PCs connected via FL-net.

The procedure for online connection using FL-net is described below.

The table below lists the setup required for FL-net connection.

| ◆ Items to be specified in [Set up Environment]-[Communications Setup] tab              |   |       |
|---|---|-------|
| Item  | Description   | Value |
| Communication Port No.  | Specify the port number to be connected to.                                 | 1-16  |
| ◆ Items to be specified in [Set up Environment]-[Setup]-Communications Setup dialog box |   |       |
| Item  | Description   | Value |
| Communication Media   | Select [FL-net].  |       |
| Node Number   | Specify the node name defined in the FL-net interface of the network.       | 1-254 |
| Set up Local Node   | This setup identifies the local node (PC) as a node on the FL-net.          | —     |
| CPU Number  | Specify the installed slot number of the actual CPU module to be connected. | 1-4   |

## ◆ Procedure ◆

### (1) Select [Online]–[Connect] from the menu bar.

⇒ A connection dialog box appears.

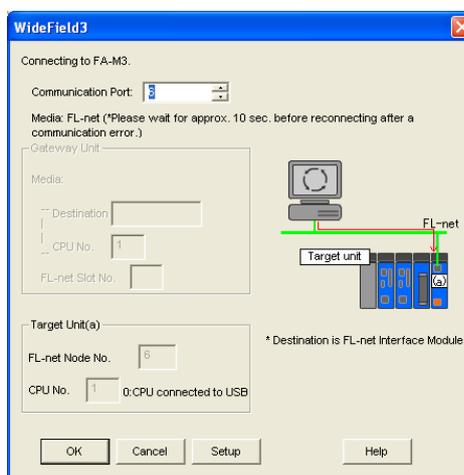
### (2) Enter the communication port number used for connection.

#### Note

If the required communication port settings have not been specified yet, click [Setup] and in the displayed Communications Setup dialog box, specify the communication settings.

#### Note

For details on communication settings in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).



Steps (1) to (3)

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### (3) Confirm that the communication media is shown as "FL-net". Enter the FL-net node number of the unit installed with the destination CPU and the slot no. of the destination CPU and click [OK].

#### Note

For details on how to set up items in the Set up Environment dialog box, see Section D1.2.1, "Basic Operations with the Set up Environment Dialog Box" (Offline).

#### Note

If the executable program downloaded in the CPU is protected, a dialog box is displayed to confirm the password. Enter the password and click [OK].

⇒ FA-M3 is connected. If the FA-M3 connects successfully, the Action Monitor displays the LEDs and a 'RUN' status. Information about the connection destination is also displayed in the status bar.

### **Note**

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CPUs to which operation protection has been set in FA-M3 Defender might require a user name and password when a connection attempt is made.

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### **Note**

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- For details on how to open and use the Set up Environment dialog box, see Section D1.2.1, "Basic Operations with the Set up Environment Dialog Box" (Offline).
  - For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."
-

## ■ RS-232C Connection Via Modem

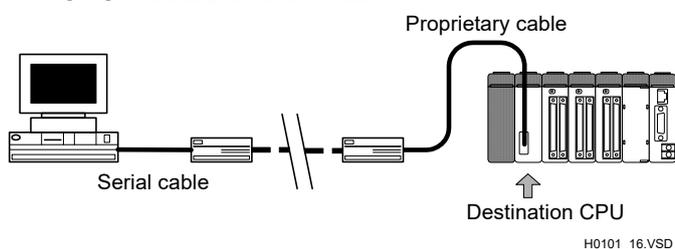
The table below shows the system requirements for establishing an online connection using RS-232C via a modem.

|                      |   |
|----------------------|---|
| Compatible CPU Types | F3SP28-3S/F3SP53-4S/F3SP38-6S/F3SP58-6S/F3SP59-7S<br>F3SP28-3N/F3SP53-4N/F3SP38-6N/F3SP58-6N<br>F3SP21-0N/F3SP25-2N/F3SP35-5N/F3FP36-3N<br>F3SP05-0P/F3SP08-0P/F3SP08-SP/F3SPV3-4H/F3SPV8-6H<br>F3SPV3-4S/F3SPV8-6S |
| Connection Equipment | Generic modem   |
| Connection Cable     | Proprietary (KM11-*T) cable, serial cable (straight cable)  |

The figure below shows the configuration for RS-232C connection via a modem.

### ◆ Basic Configuration for Connection Using a Modem and KM11-\*T Cable

Connect a serial cable (straight cable) between the serial port of the PC and a modem, and connect a proprietary cable between the PROGRAMMER port of the CPU module and a modem.



The procedure for establishing an online connection using RS-232C via a modem is described below.

The table below lists the setup required for RS-232C connection via a modem.

| ◆ Items to be specified in [Set up Environment]-[Communications Setup] tab              |  |   |
|---|--|---|
| Item  | Description  | Value   |
| Communication Port No.  | Specify the port number to be connected to.  | 1-16  |
| ◆ Items to be specified in [Set up Environment]-[Setup]-Communications Setup dialog box |  |   |
| Communication Media   | Select [RS-232C via Modem].  |   |
| Connection Method   | Specify the transmission speed and parity defined for the PROGRAMMER port. If "Automatic Recognition" is selected, connection is established automatically using the defined values. | [Transmission Speed]<br>9,600/19,200<br>38,400/57,600<br>115,200 bps<br>[Parity]<br>Even/None |
| Communication Timeout   | Specify the interval for timeout during communications.  | 1-100 [s]   |
| Number of Retries   | Specify the number of retries in the event of communication failure.   | 1-100 (attempts)  |
| COM Port Number   | Specify the serial port number on the PC.  | COM1-COM100   |
| Phone Number  | Specify the telephone number for modem dialing.  |   |

## ◆ Procedure ◆

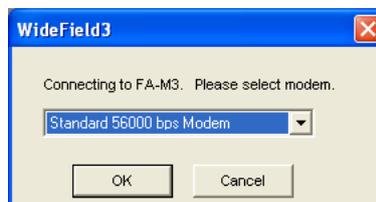
(1) Select [Online]-[Connect] from the menu bar.

⇒ A confirmation dialog box is displayed.

(2) Select a modem from the modem drivers installed in the personal computer. Click [OK].

### Note

Set up the modem by selecting [Control Panel]-[Modem] in Windows.  
Specify the phone number for connection in the Select Dial-up dialog box.



Step (2)

H0101\_17.VSD

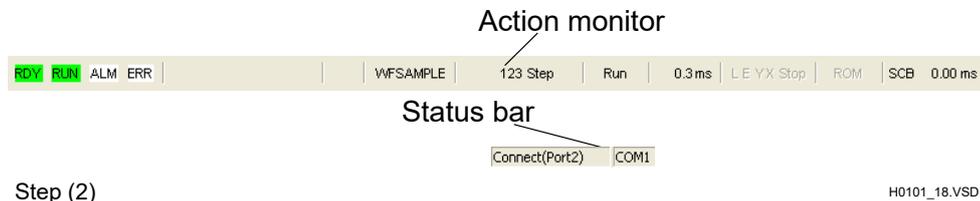
### Note

For details on setting items in the Select Dial-up dialog box, see Section D1.2.3, "Communication Setup" (Offline).

### Note

If the executable program downloaded in the CPU is protected, a dialog box is displayed to confirm the password. Enter the password and click [OK].

⇒ Use a public line to connect to FA-M3. If the FA-M3 connects successfully, the Action Monitor displays the LEDs and a 'RUN' status. Information about the connection destination is also displayed in the status bar.



## Note

CPUs to which operation protection has been set in FA-M3 Defender might require a user name and password when a connection attempt is made.

## Note

- For details on how to open and use the Set up Environment dialog box, see Section D1.2.1, "Basic Operations with the Set up Environment Dialog Box" (Offline).
- For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

## ■ Connecting When Another Application is Already Connected

It is possible to initiate a connection to the CPU from WideField3 when ToolBox or another application is already connected to the CPU.

### **Note**

---

If both WideField3 and ToolBox are used on the same computer, you cannot connect ToolBox online concurrently with WideField3 that is running with user privileges. Start WideField3 with administrator privileges, and make a connection.

---

## H1.1.2 Using Connection History

When initiating a connection to FA-M3, the destination can be specified by selecting from a connection history of past destinations maintained by the software to facilitate data entry. A separate connection history is maintained for each communications medium and can be displayed in the Communications Setup dialog box.

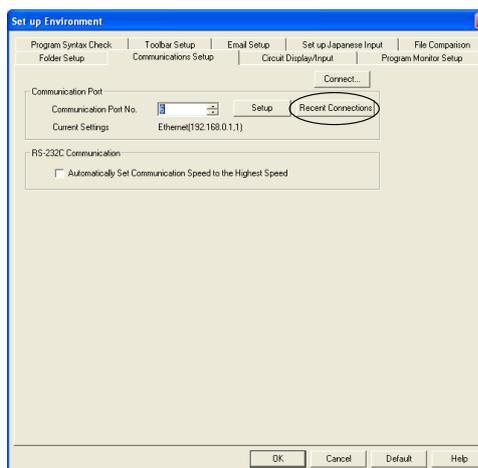
### ◆ Procedure ◆

**(1) Select [Tools]–[Set up Environment] from the menu bar.**

⇒ The Set up Environment dialog box appears.

**(2) Click the [Communications Setup] tab.**

⇒ The [Communications Setup] tab is displayed.



Steps (2) and (3)

H0101\_20.VSD

### Note

For details on communication settings in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).

**(3) Click [Recent Connections].**

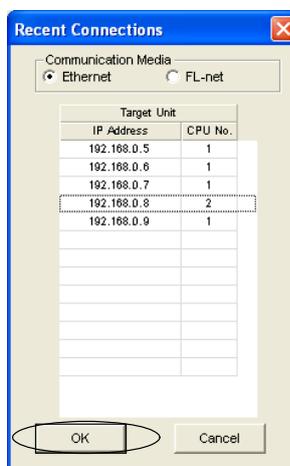
⇒ The Recent Connections dialog box is displayed.

**(4) Select a destination from the connection history and click OK.**

⇒ The selected destination information is copied to the communication port number, and the [Communications Setup] tab is displayed.

**(5) Click [Connect].**

⇒ The selected destination information is copied to and displayed in the connection dialog box.



Step (4)

H0101\_21.VSD

## H1.1.3 Disconnecting

To disconnect WideField3 from FA-M3, use the following procedure.

### ◆ Procedure ◆

(1) Select [Online]–[Disconnect] from the menu bar.

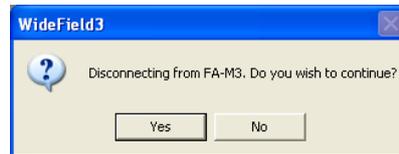
⇒ A confirmation dialog box appears.

(2) Click [Yes].

⇒ All online operation windows close.

### Note

For CPU types that can store balloons in the CPU, if online balloons have not been applied to the CPU yet, a message is displayed to prompt if you want to disconnect without reflecting the online balloons. To store the balloons in the CPU, click [No] to cancel the disconnection, and store the balloons in the CPU.

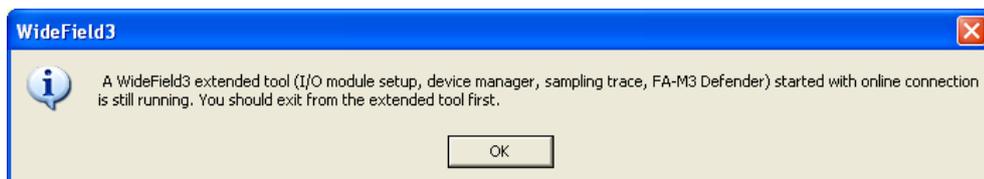


Step (2)

H0101\_22.VSD

### Note

- When a line is disconnected, all online operation windows that are opened will be closed. Disconnecting is not allowed while online editing is being carried out on a window. Exit online editing before disconnecting.
- If an extended tool with online functions has been started from WideField3 (I/O module setup, device manager or sampling trace) and is still running, any attempt to disconnect from FA-M3 will display the following dialog box and abort the disconnection process.

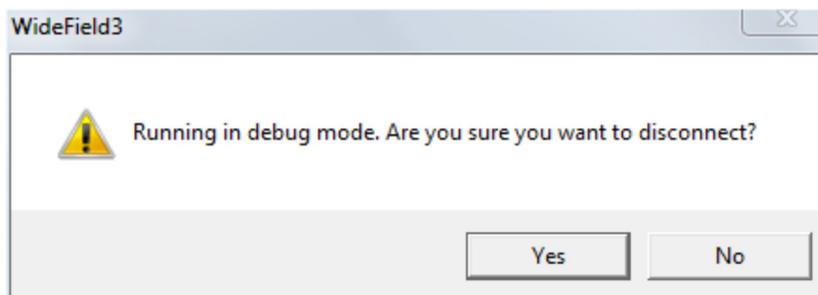


H0101\_23.VSD

Figure H1.2 Confirmation Dialog Box

You must exit from all extended tools before you can disconnect from FA-M3.

- If you try to disconnect in debug mode, the following dialog box is displayed.



H0101\_24.VSD

Figure H1.3 Confirmation Dialog Box

If you are sure you want to disconnect, click [Yes]. If you do not want to disconnect, click [No].

---

**Note**

---

For details on online editing, see Chapter K2, "Online Edit."

---

## H1.1.4 Making Multiple Connections

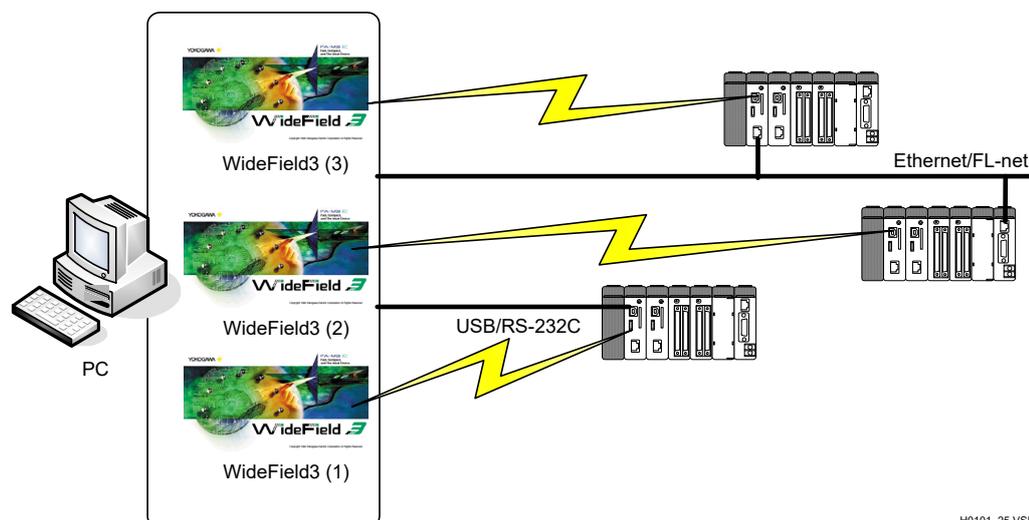
You can run multiple WideField3 applications on a single PC to make them connect to separate CPU modules.

Through this multi-connection, a single PC can concurrently monitor multiple CPU modules and perform online editing of them.

### ● Connecting to Multiple CPU Modules

You can make a single PC connect to multiple FA-M3s.

This requires a communication port to be set up for each destination.



### Note

For details on communication port settings, see Section D1.2.3, "Communication Setup" (Offline).

### Note

- Up to 16 communication ports can be set up in WideField3.
- Up to four ports can be concurrently connected from WideField3.
- On a single PC, different instances of the same application cannot both use a single communication port. They must use different ports.
- On a single PC, different applications can connect to the FA-M3 using the same communication port.
- When making a connection using FL-net, only one FA-M3 can be connected from a single PC. However, using communication media other than FL-net enables concurrent connection to multiple FA-M3s. For example, you can use both FL-net and Ethernet as communication media to connect to separate FA-M3s at the same time.
- When operation protection is set for a CPU, no more than 15 users can log in to the single CPU at any given time.

### Note

- For details on FA-M3 Communication Server, see Chapter H12, "FA-M3 Communication Server."
- For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

---

## H1.2 Limitations of Online Operations

When the FA-M3 is connected, you can use monitoring and debugging functions but while a connection is established, the following limitations apply.

### H1.2.1 Limitations in Operating Mode

The CPU has 4 operating modes, namely, Run mode, Debug mode, Stop mode and ROM Writer mode.

Debugging functions such as Forced Set/Reset and Online Edit are not available in Run mode.

The Debug mode allows you to use debugging functions.

The ROM Writer mode must be used to read or remove data from the ROM.

The Change Operating Mode and Debug functions are not available in the ROM writer mode. Monitoring is also suspended.

#### Note

- 
- For details on Debug mode, see "Sequence CPU – Functions."
  - For details on ROM Writer mode, see Chapter H6, "Using the ROM."
- 

### H1.2.2 Limitations with Multi-Window Operation

Monitors can be used on multiple windows, but all monitoring is suspended during uploading, comparing and online editing.

When uploading, comparing or online editing ends, the monitor reopens automatically.

For RS-232C communication, the refresh period of a monitor becomes longer as the number of open windows increases. We recommend that you display no more than 3 windows concurrently.

### H1.2.3 Project Limitations

The Online functions can be used regardless of whether a project is open.

However, downloading (including transferring from files to ROM), comparing files with the CPU (including comparing files with ROM), and monitoring tag name definitions can only be performed if a project is open. Furthermore, the CPU type for the connection destination must match that of the open project.

If a project downloaded in the sequence CPU is not open, tag names and the I/O comments are not displayed. Only addresses are displayed.

## H1.2.4 Limitations with Individual CPU Types

The program items that can be downloaded, the units for downloading and uploading, the ROM transfer mode, the program monitor format, and the availability of each online function depend on the CPU type to be connected.

Online functions that are not available for a particular CPU type are disabled in the toolbar and menu bar and an error message will be displayed if you attempt to use any of the functions.

### Note

For details on limitations due to CPU types, see Table H1.1, "Function Limitations for Each CPU Type."

## H1.2.5 Limitations with Other Applications

Do not run an MS-DOS program while using WideField3 online functions. Otherwise, communications with WideField3 may fail.

You cannot connect ToolBox online concurrently with WideField3 that is running with user privileges. Start WideField3 with administrator privileges, and make a connection.

## H1.2.6 Limitations with the Personal Computer

When WideField3 is used with RS-232C communication, a communications error may occur because of a setup problem on the personal computer. To troubleshoot such errors, configure the power options of your computer so that it does not poll power status, then exit setup and restart Windows.

## H1.2.7 Concurrent Access from Multiple PCs

The following restrictions for individual communications media apply when accessing the same sequence CPU module from multiple PCs via a network.

**Table H1.4 Concurrent Access from Multiple PCs**

| Communications Medium and Access Method | Maximum Connections | TIP  |
|---|---------------------|--|
| Ethernet Interface Module               | 1                   | Connection using other communications medium is allowed. |
| Ethernet port of CPU Module             | 2                   | Connection using other communications medium is allowed. |
| FL-net Interface Module                 | 2                   | Connection using other communications medium is allowed. |

### Note

When writing from multiple PCs, it is recommended that exclusive access be obtained before writing for security reasons.



### CAUTION

Concurrent access beyond the above limits has been found to work temporarily but continued use may result in incorrect operation.

## H1.3 Displaying Program Information

This section describes how to display detailed information of a project downloaded in the CPU.

### ■ Displayed Contents of Program Information.

The following table lists the items displayed in the CPU Program Information dialog box.

**Table H1.5 Project Information**

| Items                                   |                               | Contents Displayed   | Remark |
|---|-------------------------------|--|--------|
| (Name of Executable Program)            |                               | Displays the executable program name.  |        |
| Step Count                              |                               | Displays the number of steps in the program.   |        |
| Tag Name/Constant Definition Step Count |                               | Displays the number of steps of tag name definition and constant definition.   | *2     |
| Available Program Capacity              |                               | Displays the number of empty step count of the program.  |        |
| Location of Tag Name Definition         |                               | Displays where the tag name definition is downloaded.<br>CPU: Downloaded to the CPU-RAM<br>ROM: Downloaded to the ROM.<br>Blank: Not downloaded.       | *1     |
| Common Tag Name Definition              |                               | Displays common tag name definition step count.  | *1     |
| Configuration                           |                               | Displays whether configuration data is downloaded in the CPU.  |        |
| User Log                                |                               | Displays whether the user log is downloaded in the CPU.  |        |
| Blocks and Macros                       | Block Name /Macro Name        | Displays names of all blocks and macros.<br>Names are displayed in the order that the components are downloaded to the CPU (program components order). |        |
|   | Steps                         | Displays steps for each block or macro.  | *1     |
|   | Steps in Tag Name Definitions | Displays steps in tag name definitions for each block or macro.  | *1     |
|   | Comments                      | Displays the download setup for circuits and subcomments.<br>Displays an "*" mark if comments are downloaded to the CPU.                               |        |

\*1: This item is only displayed for F3SP28-3S/SP38-6S/SP53-4S/SP58-6S/SP59-7S/SP66-4S/SP67-6S/SP71-4N/SP76-7N/SP71-4S/SP76-7S CPUs.

\*2: The length of the executable program name affects the number of steps of tag name definition and constant definition. Even when definitions are the same, a longer executable program name would result in more steps required.

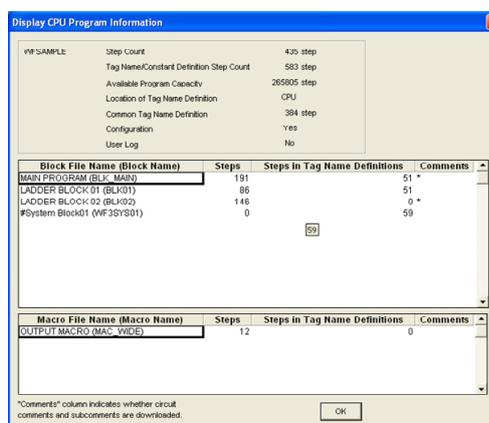
To display program information, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

(2) Select [Online]–[CPU Program Information] from the menu bar.

⇒ The Display CPU Program Information dialog box opens.



Step (2)

H0103\_01.VSD

## H2. Downloading

Downloading transfers an executable program from the personal computer to the FA-M3. WideField3 provides two download functions: project download which downloads a project and block/macro download which downloads blocks and macros. You can also download tag name definitions together with a project, a block or a macro.

For F3SP71-4S/SP76-7S R3 or later, tag name definitions can also be downloaded during RUN. Note that downloading tag name definitions during RUN only replaces the existing tag name definitions, which means tag name definitions must have been stored in the CPU.

Table H2.1 Comparing Project Download and Block/Macro Download

| Download Menu                         |                            | Project  | Blocks and Macros   |
|---------------------------------------|----------------------------|--|---|
| Item Compared                         |                            |  |   |
| Downloading in project unit           |                            | ✓  | ×   |
| Downloading in block and macro unit   |                            | ×  | ✓<br>Multiple blocks and macros can be selected.<br>The downloaded constant definition is used. |
| Downloading configuration             |                            | ✓  | ×   |
| Syntax check during downloading       |                            | ✓<br>Executed using configuration of project opened in WideField3. | ✓ *1<br>Executed using configuration and constant definition saved in the CPU.                  |
| Downloading to other CPU types        |                            | ×  | ✓   |
| Downloading tag name definition       | Common tag name definition | ✓ *2   | ×   |
|                                       | Block tag name definition  | ✓ *2   | ✓ *2  |
| Downloading structure type definition |                            | ✓ *3   | ×   |
| Circuit comment/sub-comment           |                            | ✓ *2   | ✓ *2  |
| Constant definition                   |                            | ✓ *4   | ×   |
| Balloon comment                       |                            | ✓  | ×   |

\*1: You can even download programs containing errors by performing download without syntax checking.

\*2: These items can be downloaded only if their respective store-to-CPU options are selected in the Common Tag Name Definitions/Local Device screen or the Local Device/Properties dialog box of the Project Settings/Configuration window.

\*3: Structure type definitions are downloaded only when tag name definitions are downloaded. Only structure type definitions declared in the tag name definition are downloaded.

\*4: Constant definition is always downloaded for CPU type that supports constant definition.

### Note

- For details on how to perform setup to download tag name definitions and comments using project download, see Section H2.1.2, "Setup for Various Tag Name Definitions and Comment Types."
- For details on how to perform syntax check, download tag name definitions and comments using block/macro download, see Section H2.2.2, "Setup for Tag Name Definition and Various Comment Types."
- For details on how to store comments and tag name definitions, see Chapter H9, "Storing Comments and Tag Name Definitions."
- For details on configuration, see Section D3.1, "Building a Project" (Offline)



## CAUTION

- The availability of the various download functions depends on CPU type connected. Functions that are not available for a particular CPU are disabled in the toolbar and menu bar and an error message will be displayed if you attempt to use any of the functions.
- You cannot perform downloading from WideField3 while both WideField3 and other applications such as ToolBox are connected online concurrently to FA-M3 from the same PC. Disconnect ToolBox and the other applications before initiating downloading from WideField3.

## Note

- For details on restrictions with specific CPUs, see Chapter H1, "Overview of Online Functions."
- For details on downloading of CPU properties, see Chapter H5, "CPU Properties."

## ● Function Limitations for Each CPU Type

**Table H2.2 Function Limitations for Each CPU Type**

| CPU Type  | Limitations   | SEE ALSO     |
|---|---|--------------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The constant definition function is not available.<br>Balloon comments cannot be stored in the CPU.<br>The tag name definition download function during RUN is not available. | H2<br>H2.3   |
| F3SP66-4S,<br>F3SP67-6S   | Balloon comments cannot be stored in the CPU.<br>The tag name definition download function during RUN is not available.   | -            |
| F3SP71-4N,<br>F3SP76-7N   | The block/macro download function is not available.<br>The tag name definition download function during RUN is not available.   | H2.2<br>H2.3 |
| F3SP71-4S,<br>F3SP76-7S   | The block/macro download function is not available.<br>The tag name definition download function during RUN is not available (for R2 or earlier).                             | H2.2<br>H2.3 |

## Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

## Note

For details on limitations for each CPU type, refer to the user's manual for each type.

## Note

To identify the type and Rev of the CPU connected from WideField3, check the information displayed on Status Bar.

## Note

For details on Status Bar, see Section A3.1, "Screen Layout" (Introduction and Troubleshooting).

---

## H2.1 Downloading a Project

The **Download Project** function downloads data components defined in the **Project Settings/Configuration** window, including configuration data and blocks and macros. The function also performs program syntax checking at the same time.

### Note

---

- For details on the Project Settings/Configuration window, see Section D3.1, "Building a Project" (Offline).
  - For details on configuration, see Section D3.1, "Building a Project" (Offline).
- 

### H2.1.1 Restrictions when Downloading a Project

Downloading cannot be done in the following cases:

- No project is open. Or, the CPU type defined in an open project differs from the type of the CPU actually connected.
- The program contains errors. (Errors are detected during syntax checking.)
- A ROM pack is installed on the CPU. Or, the CPU operating mode is set to ROM Writer mode.
- Another personal computer has exclusive access control.



### CAUTION

---

- If you select [Cancel] to cancel downloading, the program being downloaded is removed from the CPU.
  - If you select [Cancel] during syntax checking or cancel downloading after a warning is detected, the program transferred to the CPU remains.
  - CPU optimization may take some time, depending on the size of the executable program.
  - At downloading, all online windows are automatically closed.
  - When downloading via an RS-232C connection, the communications mode may be changed at the end of downloading. (When the communications mode setting in the Built-in Functions Setup screen of the Project Settings/Configuration window before and after downloading are different).
  - If the communications mode changes after downloading, the downloading operation may take a longer time to end.
  - For F3SP66-4S, F3SP67-6S, F3SP71-4N, F3SP76-7N, F3SP71-4S and F3SP76-7S CPU modules, data is written to the built-in flash ROM immediately after downloading. Do not turn off the power while the "[Writing]" status display is blinking on the Action Monitor bar.
  - When one or more in-CPU names are different from the corresponding on-PC name or names, the system block "#System Block01 (WF3SYS01)" used for the in-CPU names file is downloaded, and the system block uses a block area. Thus, if the maximum number of blocks available in a CPU has already been registered in the component definitions, an error occurs during syntax checking.
- 

### Note

---

For details on the system block, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

---

---

## H2.1.2 Setup for Various Tag Name Definitions and Comment Types

This section describes how to perform setup to store the common tag name definition, block and macro tag name definitions, as well as circuit comments and sub-comments for project download.

Downloading of a structure type definition depends on whether the tag name definition where the structure type is defined is downloaded.

### Note

---

- You must specify these items as download targets when performing a download operation.
  - Download of balloon comments does not require any settings prior to the download. You only have to specify them as download targets when performing a download operation.
- 

### Note

---

Constant definition is always downloaded during project download.

---

## ■ Collective Setup for Storing Common/Block Tag Name Definitions and Comments

Setup to store the common tag name definition, block/macro tag name definition, and comments for project download can all be specified in a single screen according to the following procedure.

### ◆ Procedure ◆

(1) Open the project.

#### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) You can double-click [Project Settings/Configuration] in the project window. Alternatively, you can select [Project]-[Project Settings] from the menu bar.

⇒ The [Project Settings/Configuration] window opens.

(3) In the [Project Settings] tree, select [Executable Program Settings]-[Common Tag Name Definitions/Local Device].

⇒ The Common Tag Name Definitions/Local Device screen appears.

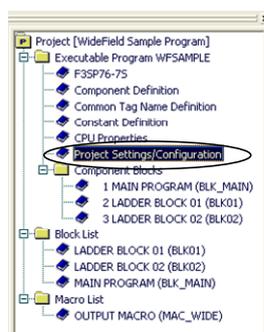
(4) In the [Entire Project] group box, select [Yes] or [No] from the [Common Tag Name Def.] pull-down menu in the [CPU Storage] column.

(5) In the [Executable Program] group box, select [Yes] or [No] from the [Tag Name Def.] or [Comment] pull-down menu in the [CPU Storage] column.

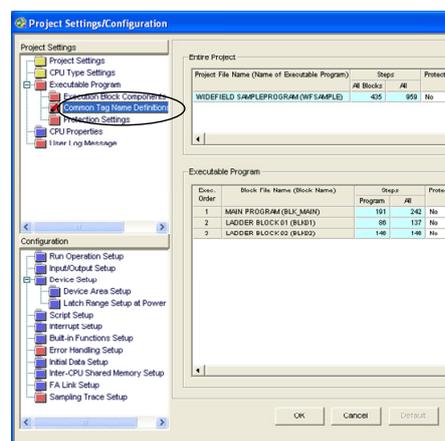
(6) Click [OK].

#### Note

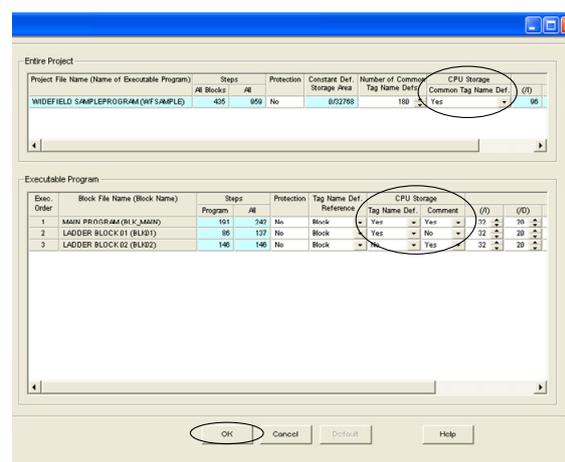
For details on project setup, see Chapter D3, "Building and Managing a Project" (Offline).



Step (2) H0201\_01.VSD



Step (3) H0201\_02.VSD



Steps (4) to (6)

H0201\_03.VSD

## ■ Setup for Storing Block Tag Name Definitions and Comments in Block Properties

You can also configure settings for storing block/macro tag name definitions and comments in block/macro properties according to the following procedure.

### ◆ Procedure ◆

(1) Open a project.

#### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

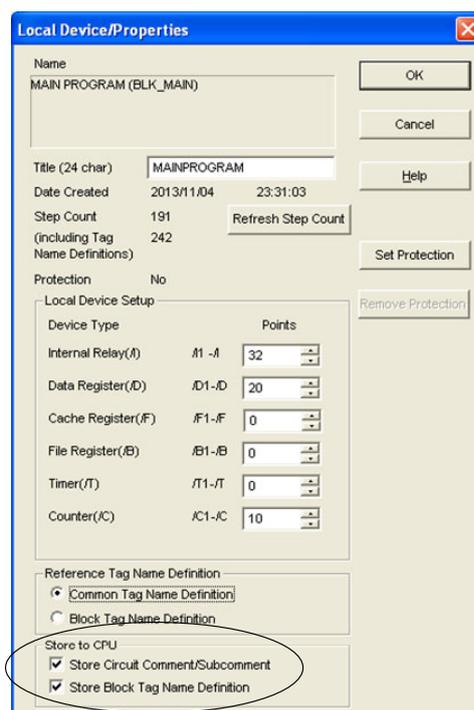
(2) You can double-click a block or macro in the project window. Alternatively, you can select [File]–[Open]–[Block/Macro] from the menu bar, select a block or macro, and click [Open].

⇒ The selected block or macro selected is opened.

(3) Select [Edit]–[Local Device/Properties] from the menu bar.

⇒ The Local Device/Properties dialog box opens.

(4) Turn on the [Store Circuit Comment/Subcomment] checkbox and the [Store Block Tag Name Definition] checkbox in the [Store to CPU] group box, and click [OK].



Step (4)

H0201\_04.VSD

#### Note

For WideField3 R2.04 or later, initial values for a new project are set as follows:

- Common tag name definitions are stored to the CPU. ([Store to CPU] is turned on.)
- Circuit comments/subcomments for new blocks/macros and block tag name definitions are stored to the CPU. ([Store to CPU] is turned on.)

## H2.1.3 Procedure for Downloading a Project

This section describes how to download a project.

The actual download settings and displayed message are dependent on the CPU type and CPU status. We describe the basic operations with the following procedure.

### ◆ Procedure ◆

- (1) Check that WideField3 is connected online, a project is open and the CPU types of the project and the connected CPU are the same.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

- (2) Select [Online]–[Download[PC->CPU]] –[Project] from the menu bar.

⇒ If the CPU type allows you to select items to be transferred, a Download dialog box will open.

- (3) Turn on the checkbox for items to be downloaded in the [Items to be Transferred] group box, and click [OK].

#### Note

Simply selecting comment types or tag name definition as items to be transferred as described above is insufficient to ensure downloading. You must have also performed setup to store the item earlier.

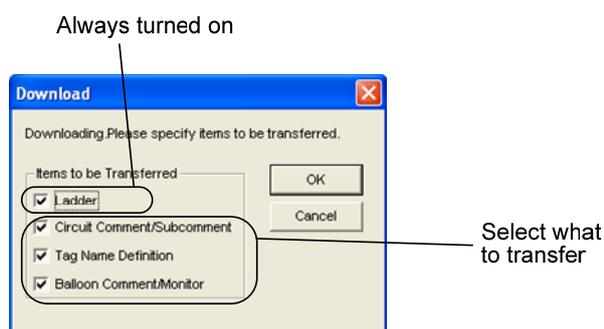
#### Note

For details on how to perform setup to store various comment types and tag name definitions, see Section H2.1.2, "Setup for Various Tag Name Definitions and Comment Types."

#### Note

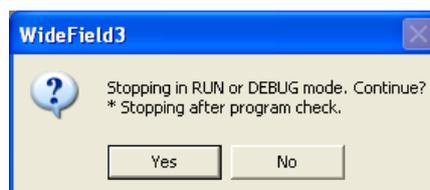
If you initiate downloading with a ladder program edit window (tag name definition window) open after having made changes in the window, a confirmation dialog box will be displayed.

If the CPU is in Run mode, a dialog box is displayed to confirm whether to switch to Stop mode. To proceed with downloading, click [Yes].



Step (3)

H0201\_05.VSD



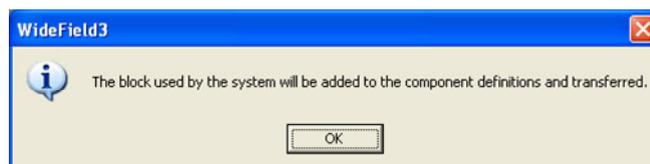
Step (3)

H0201\_06.VSD

⇒ Program syntax checking begins.

### Note

When one or more in-CPU names are different from the corresponding on-PC name or names, a block used by the system is added to the component definitions. When the block is downloaded for the first time, a confirmation dialog box is displayed. Click [OK] on the dialog box.



Step (3)

H0201\_09.VSD

### Note

If a warning is detected, a dialog box is displayed to confirm whether to continue with downloading. To continue downloading, click [Yes].

If an error is detected, downloading is aborted.



Step (3)

H0201\_07.VSD

### Note

For details on in-CPU names and on-PC names, see Section A5.1, "On-PC Names and In-CPU Names" (Introduction and Troubleshooting).

⇒ Downloading is executed.

When downloading to the CPU completes, a dialog box is displayed to confirm whether to switch to Run mode.

**(4) Clicking [Yes] switches to Run mode.  
Clicking [No] remains in Stop mode**



Step (4)

H0201\_08.VSD

### Note

- For details on the Results of Program Syntax Checking dialog box, see Section D3.2.1, "Checking Programs" (Offline).
- For details on how to set up syntax checking items, see Section D1.2.6, "Program Syntax Check Setup" (Offline).

### Note

If a continuous-type application instruction is being executed when download ends, the CPU may remain in STOP mode without switching to RUN mode. If this happens, wait for the continuous-type application instruction to complete execution, and re-execute.

---

## H2.2 Downloading Blocks and Macros

For a project that has been opened in WideField3, downloading can be performed in units of blocks and macros.

- Downloading can be done even when the CPU type specified in the project is different from the type of the CPU connected.
- Multiple blocks and macros can be downloaded at once.
- You can perform setup to store circuit comments/sub-comments and block tag name definitions using the Local Device/Properties dialog box.
- Blocks and macros can be downloaded to a different project (provided the block and macro file names are identical.)
- You can specify to perform program syntax checking at the time of downloading. In this case, the downloading takes a longer time because it requires uploading from the CPU.

### Note

---

For details on how to perform setup to store various comment types and block tag name definitions, and to execute syntax checking, see Section H2.2.2, "Setup for Tag Name Definition and Various Comment Types."

---

### Note

---

Contents in balloon comments and balloon monitors are not downloaded during block/macro download.

---

### H2.2.1 Restrictions When Downloading Blocks and Macros

Downloading cannot be done in the following cases:

- No project is open.
- The program contains an error. (Errors are detected during syntax checking.)
- A ROM pack is mounted on the CPU. Or, the CPU operating mode is set to ROM Writer mode.
- Another personal computer has obtained exclusive access control.
- A block or macro to be downloaded is not found in the CPU.
- The local device settings are different.



### CAUTION

---

- If you select [Cancel] during download processing, the block being downloaded is removed from the CPU.
  - If an error is detected during partial downloading, the block with the error is removed from the CPU.
  - If you select [Cancel] during syntax checking or if cancel downloading after a warning is detected, the program transferred to the CPU remains.
  - CPU optimization may take some time, depending on the size of the executable program.
  - When downloading a block or macro, constant names coded in the block or macro will assume constant values defined by the constant definition stored in the CPU. Program syntax check is also based on the constant definition stored in the CPU.
  - For F3SP66-4S and F3SP67-6S CPU modules, data is written to the built-in flash ROM immediately after downloading. Do not turn off the power while the "[Writing]" status display is blinking on the Action Monitor bar.
  - For F3SP71-4N/76-7N/71-4S/76-7S, block/macro download cannot be performed.
-

## H2.2.2 Setup for Tag Name Definition and Various Comment Types

This section describes how to perform setup to store tag name definitions and various comment types for block or macro download.

### ■ Setup for Tag Name Definitions and Various Comment Types

To perform setup to store tag name definition and various comment types for block/macro download, use the following procedure.

#### ◆ Procedure ◆

(1) Check that the project is opened.

#### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

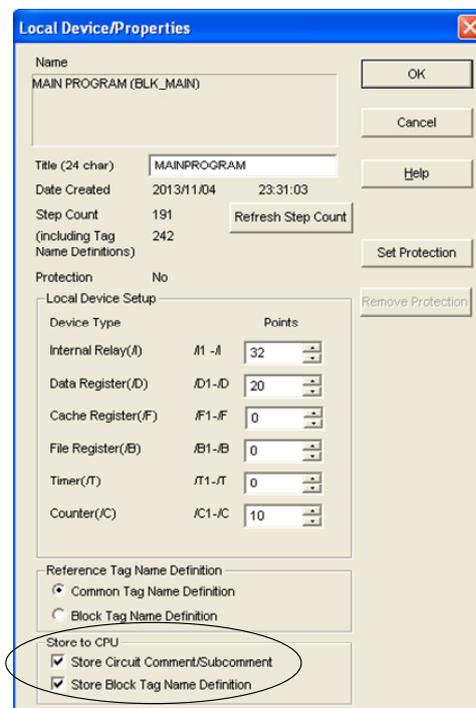
(2) Double-click a block or macro in the project window. Alternatively, select [File]–[Open]–[Block/Macro] from the menu bar, select a block or macro, and click [Open].

⇒ The selected block or macro is displayed.

(3) Select [Edit]–[Local Device/Properties] from the menu bar.

⇒ The Local Device/Properties dialog box opens.

(4) Turn on the [Store Circuit Comment/Subcomment] checkbox and the [Store Block Tag Name Definition] checkbox in the [Store to CPU] group box, and click [OK].



Step (4)

H0202\_01.VSD

#### Note

Besides performing the setup as described above to store an item, you must also select the item as an item to be transferred when you execute the download function.

#### Note

For details on how to perform downloading, see Section H2.2.3, "Procedure for Downloading Block and Macros."

## ■ Setup for Syntax Checking

You can perform setup to execute syntax checking of the entire project after downloaded blocks and macros are merged with the program stored in the CPU.

### **Note**

---

To perform syntax checking, you must turn on the [Perform syntax check during partial download] on the [Program Syntax Check] tab in the Set up Environment dialog box.

---

### **Note**

---

For details on the [Program Syntax Check] tab in the Set up Environment dialog box, see Section D1.2.6, "Program Syntax Check Setup" (Offline).

---

## H2.2.3 Procedure for Downloading Block and Macros

To download blocks and macros, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online, a project is open and the CPU types of the project and the connected CPU are the same.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

- (2) Select [Online]–[Download[PC->CPU]] –[Block/Macro] from the menu bar.

⇒ The Download dialog box opens.

- (3) In the [Items to be Transferred] group box, turn on the checkboxes for items to be transferred, and click [OK].

#### Note

Simply selecting circuit comments/sub-comments or tag name definitions as items to be transferred as described above is insufficient to ensure downloading. You must have also performed setup to store the item earlier.

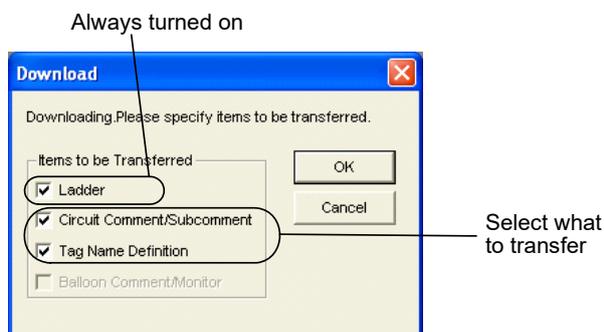
#### Note

For details on how to perform setup to store various comment types and tag name definitions, see Section H2.2.2, "Setup for Tag Name Definition and Various Comment Types."

#### Note

If the CPU is in Run mode, a dialog box is displayed to confirm whether to switch to Stop mode. To proceed with downloading, click [Yes].

⇒ The Select Block/Macro dialog box opens.



Step (3)

H0202\_02.VSD



Step (3)

H0202\_03.VSD

- (4) Specify the blocks and macros to be downloaded by turning on relevant checkboxes on the left, and click [OK].

### Note

The Select Block/Macros dialog box displays a list of blocks and macros stored in the CPU. Blocks and macros that are not found in the open project are displayed as disabled and cannot be selected. Only blocks and macros that are found in the CPU can be downloaded.

### Note

If you initiate downloading with an opened ladder program edit window (tag name definition window) for a block to be transferred after having made changes in the window, a confirmation dialog box will be displayed.

- ⇒ Program syntax checking begins.

### Note

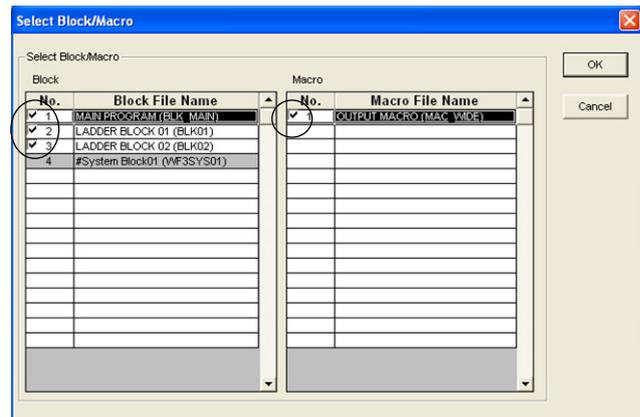
If a warning is detected, a dialog box is displayed to confirm whether to continue with downloading. To continue downloading, click [Yes].

If an error is detected, downloading is aborted.

- ⇒ Downloading begins.

When downloading to CPU completes, a dialog box is displayed to confirm whether to switch to Run mode.

- (5) Clicking [Yes] switches to Run mode. Clicking [No] remains in Stop mode



Step (4)

H0202\_04.VSD



Step (4)

H0202\_05.VSD



Step (5)

H0202\_06.VSD

### Note

- For details on the Results of Program Syntax Checking dialog box, see Section D3.2.1, "Checking Programs" (Offline).
- For details on how to set up syntax check items, see Section D1.2.6, "Program Syntax Check Setup" (Offline).

## H2.3 Downloading Tag Name Definitions During RUN

For F3SP71-4S/SP76-7S R3 or later, tag name definitions can be downloaded during RUN.

After a program and tag name definitions are transferred to the CPU during project downloading and then the tag name definitions are modified on the PC by online editing or by offline tag name definition editing, you can use this function to send back and store these tag name definitions to the CPU. Note that this function only replaces tag name definitions, which means tag name definitions must have been stored in the CPU.

To download tag name definitions during RUN, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that a project is open.

#### Note

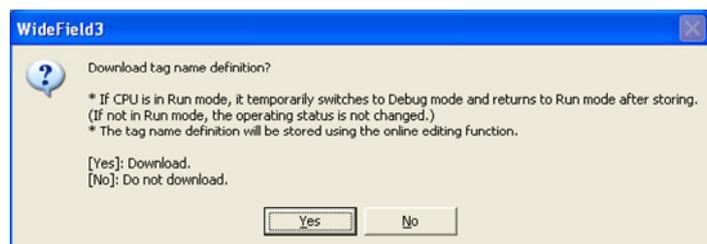
For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) Select [Online]-[Download[PC->CP]]-[Tag Name Definition] from the menu bar.

⇒ A confirmation message box appears.

#### Note

The tag name definition download function during RUN uses the online edit function. Therefore, if the CPU is in Run mode, it temporarily switches to Debug mode and returns to Run mode after the download is completed. If not in Run mode, the operating status is not changed.



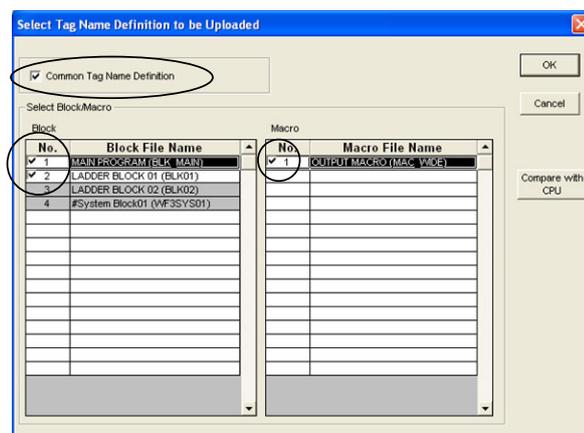
Step (2)

H0203\_01.VSD

(3) Click the [Yes] button.

⇒ The Select Tag Name Definition dialog box opens.

(4) To download a block or macro tag name definition, turn on the checkbox to the left of the block or macro. To download the common tag name definition, turn on the checkbox for common tag name definition. Only tag name definitions stored in the CPU can be selected.



Step (4)

H0203\_02.VSD

---

## Note

To compare tag name definitions stored in the CPU and those in the PC before performing a download, click the [Compare with CPU] button.

If the comparison finds that the tag name definitions do not match, the background color of the relevant tag name definition name changes. The background color also changes if no tag name definition is found on the PC.

---

### (5) Click the [OK] button.

⇒ A download of tag name definitions starts. When it is completed, a message box appears to report the completion of the operation.

---

## Note

Click [Abort] to abort a download of tag name definitions.

---

---

## Note

An error occurs if a download of tag name definitions causes the CPU memory capacity to be exceeded. You must delete unused tag name definitions and retry a download.

---



Step (5)

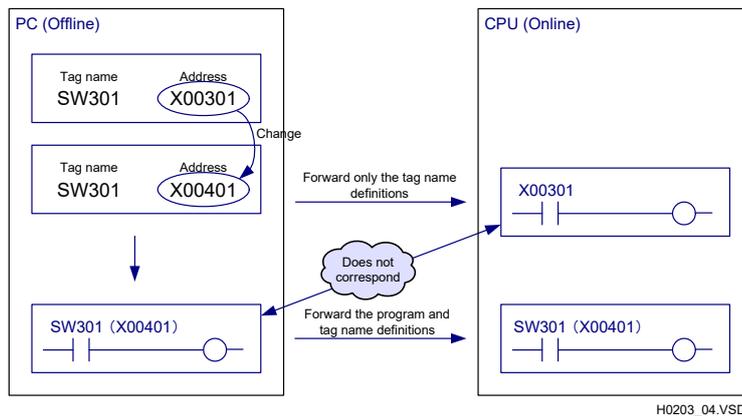
H0203\_03.VSD



**CAUTION**

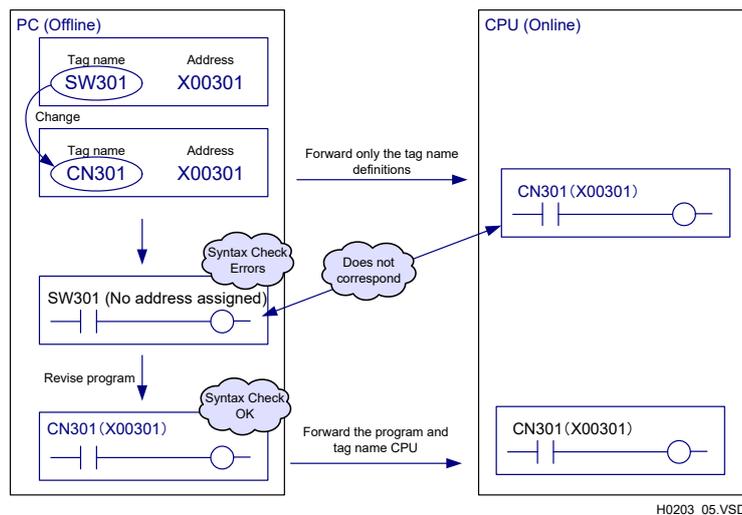
Downloading tag name definitions during RUN is a function that supports adding or changing the I/O comments. If changing address assignments or tag names in a program that uses tag names, be sure to download them with the program as well. If you only download the tag name definitions, the following situations will occur. In either case, you need to re-download both the program and the tag name definitions.

- If you downloaded after changing the address assignments of the tag name  
If you download only the tag name definitions, the changed tag names and addresses are displayed in the offline program, but the CPU program continues to use the previous addresses. Therefore, the PC and the CPU will not correspond.



**Figure H2.1 Downloading after changing the address assignments of the tag names**

- If you downloaded after changing the tag names  
If you only download the tag name definitions, the changed tag names and addresses will be in the CPU program, but the offline program will continue to display the unchanged tag names, without address assignments. Therefore, when you perform a syntax check, there will be an error that says “No address assigned to tag name.”



**Figure H2.2 Downloading after changing the tag names**

---

## H3. Uploading

Uploading transfers a project or blocks, macros, tag name definitions and constant definitions from the FA-M3 to a personal computer.

WideField3 provides three upload functions: the upload project function which uploads a project, the upload block/macro function which uploads blocks and macros and the upload tag name definition function which uploads tag name definitions.

### Note

---

- The availability of the various upload functions depends on the CPU type connected. Functions that are not available for a particular CPU are disabled in the toolbar and menu bar and an error message will be displayed if you attempt to use any of the functions.
  - If multiple PCs initiate uploading concurrently from the same CPU when connected via FL-net, the following error message may be displayed: "Invalid communication number in command. Retry." If this happens, try to upload again from each PC in turn.
- 

### Note

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- For details on restrictions for specific CPUs, see Chapter H1, "Overview of Online Functions."
  - For details on FL-net connection, see Section H1.1, "Connecting and Disconnecting."
  - For details on uploading of CPU properties, see Chapter H5, "CPU Properties."
-

---

## ● Function Limitations for Each CPU Type

**Table H3.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations                                       | SEE ALSO |
|---|---|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The balloon upload function is not available.     | -        |
| F3SP66-4S,<br>F3SP67-6S   | The balloon upload function is not available.     | -        |
| F3SP71-4N,<br>F3SP76-7N   | The block/macro upload function is not available. | -        |
| F3SP71-4S,<br>F3SP76-7S   | The block/macro upload function is not available. | -        |

### Note

---

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

---

### Note

---

For details on limitations for each CPU type, refer to the user's manual for each type.

---

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## H3.1 Uploading a Project

The upload project function uploads configuration data, as well as blocks and macros defined in the Project Settings/Configuration window. Instruction macros, various types of comments, and various tag name definitions that are stored to the CPU are also uploaded.

In addition, you can upload structure type definition files for structure types declared in tag name definitions that have been downloaded.

You can even upload a project which is not open.

An uploaded project can be saved as a new project or overwrite an existing project.



---

### CAUTION

- At the time of uploading, block files are generated with tag names but the tag name definition file at the time of downloading is given precedence during the generation of the tag names.
  - Macros can only be uploaded to the project folder.  
The download function downloads macros in the project folder first.
  - Structure type definitions can only be uploaded to the common folder.  
Existing structure type definition with the same name in the common folder, if any, will be overwritten. Thus, beware when performing uploading.
  - When uploading a project, the in-CPU name of the project cannot be changed.
  - When uploading a project, the on-PC names and in-CPU names of blocks/macros cannot be changed.
- 

### Note

---

For details on on-PC names and in-CPU names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

---

### H3.1.1 Restrictions When Uploading a Project

Uploading cannot be done in the following cases.

- The CPU operating mode is set to ROM Writer mode.

## H3.1.2 Procedure for Uploading a Project

To upload a project, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Online]–[Upload[CPU->PC]]–[Project] from the menu bar. In the [Items to be Transferred] group box, turn on checkboxes for items to be transferred, and click [OK]. The program and circuit comments/subcomments are always uploaded. You can select tag name definitions and balloon comments/monitor.

⇒ The Select Project dialog box opens.

#### Note

For CPU types that can store balloons in the CPU, if online balloons have not been applied to the CPU yet, a message is displayed to prompt if you want to continue an upload without reflecting the online balloons. To store the balloons in the CPU, click [No] to cancel the upload, and store the balloons in the CPU.

- (3) To overwrite an existing project, select the project, and click [Select]. To save as a new project, enter a new project file name, and click [Select].

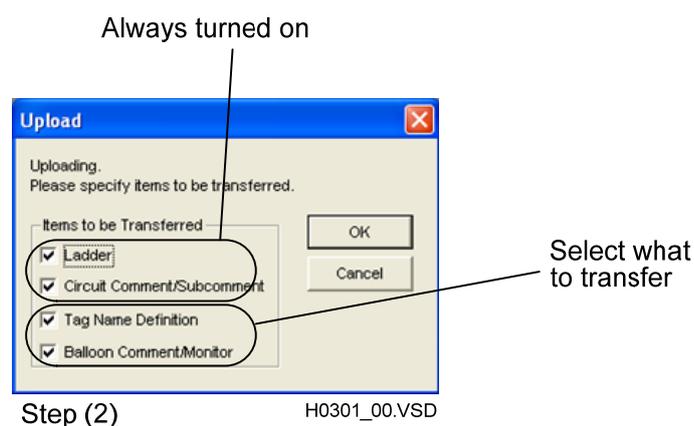
#### Note

The [Project File Name] text box displays the project file name on the CPU (the project file name if a project is open).

The Project Location drop-down list displays the location of the folder previously opened.

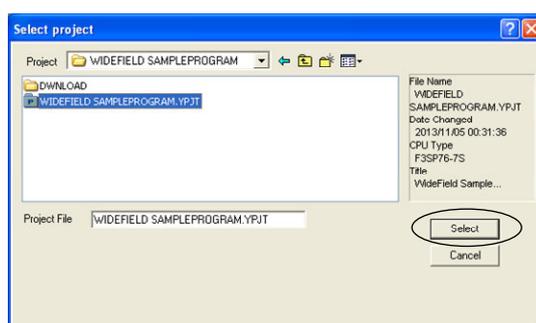
#### Note

In WideField3 R3 and later, an on-PC name different from the executable program name can be specified for the project file name.



Step (2)

H0301\_00.VSD



Step (3)

H0301\_01.VSD

## Note

- For details on on-PC names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).
- For details on how to set up the project location, see Section D1.2.2, "Folder Setup" (Offline).

⇒ Different confirmation dialog boxes are displayed for overwriting an existing project and for saving to a new project.

### (4) Click [Yes].

⇒ The uploaded project is saved, and a confirmation dialog box is displayed.

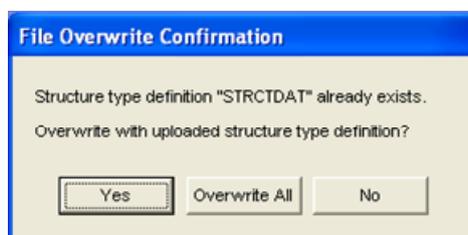
⇒ If a structure type definition was uploaded, a dialog box opens to confirm whether to save the structure type definition to the common folder and overwrite existing content.

**(5) To save only the corresponding structure type definition, click [Yes]. To save all structure type definitions, click [Overwrite All]. To cancel saving, click [No].**



Step (4)

H0301\_02.VSD



Step (5)

H0301\_03.VSD



## CAUTION

- If tag name definitions and comments are stored in the CPU, they are saved together in the destination project. If tag name definitions and comments are not stored in the CPU, the uploaded project will first refer to the tag name definitions and comments at the time of download. If any downloaded file is lost, the uploaded project will refer to tag name definitions and comments stored in the destination project.
- When overwriting a project on a personal computer by uploading a project, balloons in blocks with component definitions are overwritten with balloons stored in the CPU. Balloons in blocks without component definitions that only exist on a personal computer will not be overwritten, with no changes made.
- Online balloons are not reflected to macros in macro folders.

## H3.2 Uploading Blocks and Macros

The upload block/macro function transfers blocks and macros stored in the CPU to a personal computer.

Circuit comments, sub-comments and tag name definitions stored in the CPU are uploaded.

Uploaded blocks and macros can be saved.



### CAUTION

- If constant definition is stored in the CPU when blocks and macros are uploaded, the stored constant definition is uploaded and its data overwrites the constant definition of the active (currently open) project.
- When uploading blocks/macros, the on-PC names and in-CPU names of blocks/macros cannot be changed.

### Note

For details on on-PC names and in-CPU names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

### H3.2.1 Restrictions When Uploading Blocks and Macros

Uploading cannot be done in the following cases.

- The CPU operating mode is set to ROM Writer mode.

### H3.2.2 Procedure for Uploading Blocks and Macros

To upload blocks and macros, use the following procedure.

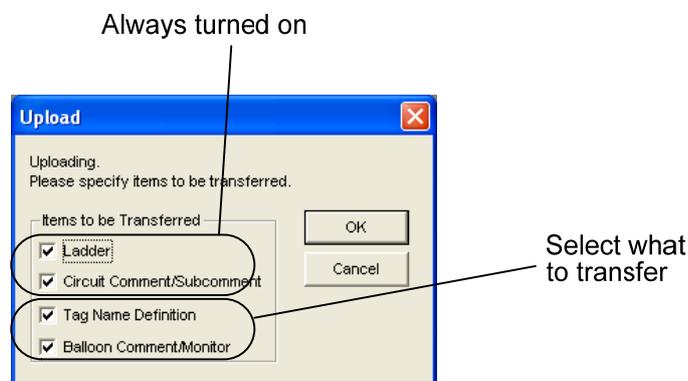
#### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Online]–[Upload[CPU->PC]]–[Block/ Macro] from the menu bar. In the [Items to be Transferred] group box, turn on checkboxes for items to be transferred, and click [OK]. The program and circuit comments/subcomments are always uploaded. You can select tag name definitions and balloon comments/monitor.

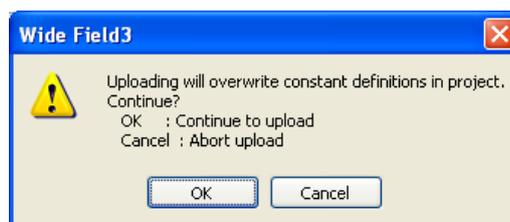


Step (2)

H0302\_00.VSD

(3) A message to confirm overwriting of constant definitions appears. To continue the upload operation, click [OK].

⇒ The Select Block/Macro dialog box opens.

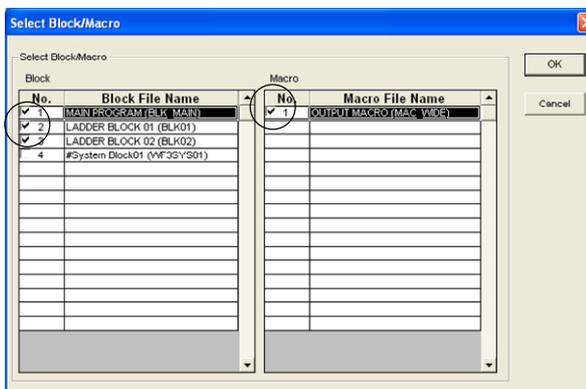


Step (3)

H0302\_01.VSD

(4) Specify blocks and macros to be uploaded by turning on relevant checkboxes on the left, and click [OK].

⇒ The Select Project dialog box opens.



Step (4)

H0302\_02.VSD

(5) Select the destination project, and click [Select].

### Note

The [Project File Name] text box displays the project file name on the CPU (or the file name of the open project if a project is open). The Project Location drop-down list displays the location of the folder previously opened.

### Note

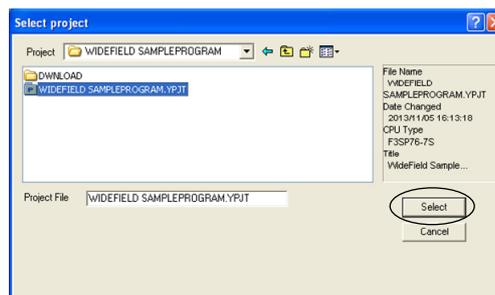
For details on how to set up the project location, see Section D1.2.2, "Folder Setup" (Offline).

⇒ Uploaded blocks and macros are saved in the destination project, and a confirmation dialog box opens.



### CAUTION

Uploaded blocks and macros will overwrite existing block and macro files in the destination project with the same names, if any.



Step (5)

H0302\_03.VSD

## H3.3 Uploading Tag Name Definitions

The upload tag name definition function transfers common tag name definitions, as well as block and macro tag name definitions stored in the CPU to a personal computer.

Uploaded tag name definitions will overwrite existing tag name definitions in the destination, if any.

To display Edit Block windows, Edit Macro windows and other windows using tag name definitions stored in the CPU, save the blocks and macros in the project folder and re-display the window.

### H3.3.1 Procedure for Uploading Tag Name Definitions

To upload tag name definition, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Online]–[Upload[CPU->PC]]–[Tag Name Definition] from the menu bar.

⇒ The Select Tag Name Definition dialog box opens.

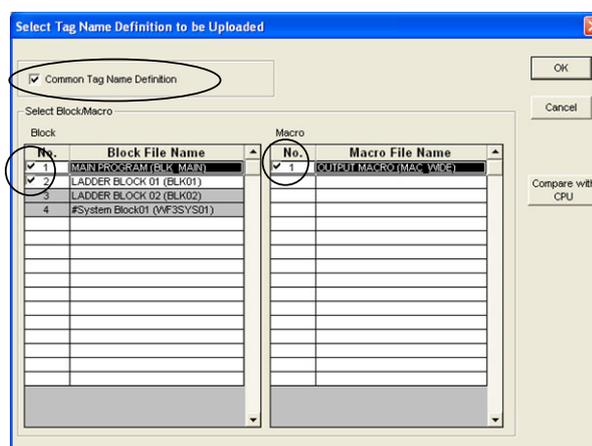
- (3) To upload a block or macro tag name definition, turn on the checkbox to the left of the block or macro. To upload the common tag name definition, turn on the checkbox for common tag name definition. Only tag name definitions stored in the CPU can be selected. Then click [OK].

⇒ The Select Project dialog box opens.

#### Note

To compare tag name definitions stored in the CPU and those in the PC before performing an upload, click the [Compare with CPU] button.

If the comparison finds that the tag name definitions do not match, the background color of the relevant tag name definition name changes. The background color also changes if no tag name definition is found on the PC.



Step (3)

H0303\_01.VSD

(4) Select the destination project and click [Select].

### Note

The [Project File Name] text box displays the project file name on the CPU (It displays the file name of the open project if a project is open.).

The Project Location drop-down list displays the location of the folder previously opened.

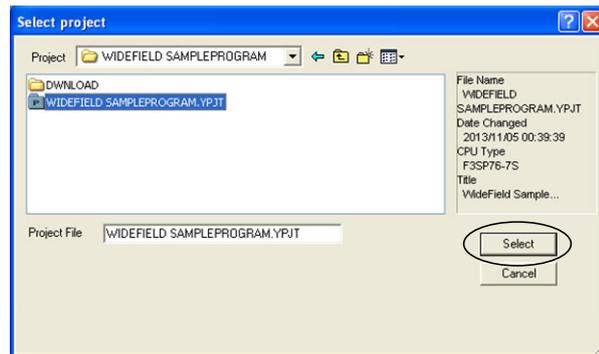
### Note

For details on how to set up the project location, see Section D1.2.2, "Folder Setup" (Offline).

⇒ Uploaded tag name definitions are saved to the project destination.

### Note

To display blocks and macros in the program monitor using the tag name definitions stored in the CPU, save the blocks or macros in the download folder in the project folder and redispays them.



Step (4)

H0303\_02.VSD

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## H4. Comparing File and CPU

You can compare a program (on project or block/macro basis) stored in the CPU with a program stored on a file in a personal computer. If tag name definitions are downloaded to the CPU, you can also compare tag name definitions and structure type definitions. If constant definitions are downloaded to the CPU, they are also compared.

Comparisons are available as project comparisons or block/macro comparisons. Block/macro comparison allows comparison of multiple blocks or macros at a time.

Comparison is not available if:

- No project is open.
- The type of the CPU as defined in an open project is different from the type of the CPU actually connected.
- The CPU is not connected online.
- A ROM pack is installed on the CPU.
- The CPU operating mode is set to ROM Writer mode.
- The CPU is executing a process of another computer.

### Note

- 
- What online functions can be used depends on the type of the connected CPU.
  - Online functions that are not available for a specific CPU are disabled in the toolbar and menu bar and an error message will be displayed if you attempt to use any of the functions.
-

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## ● Function Limitations for Each CPU Type

**Table H4.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations  | SEE ALSO |
|---|--|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | - The project comparison function cannot compare constant definitions. | H4.1     |
| F3SP66-4S,<br>F3SP67-6S   |  | -        |
| F3SP71-4N,<br>F3SP76-7N   | The block/macro comparison function is not available.                  | H4.2     |
| F3SP71-4S,<br>F3SP76-7S   | The block/macro comparison function is not available.                  | H4.2     |

### Note

---

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

---

### Note

---

For details on limitations for each CPU type, refer to the user's manual for each type.

---

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## H4.1 Comparing a Project

Project comparison compares not only executable program managed by a project currently open in WideField3 but also configuration contents, user log messages, and downloaded tag name definitions and structure type definitions.

### Note

---

When blocks or macros are referenced to the common library or another project, those blocks and macros, as well as their properties and tag name definitions, cannot be compared.

---

### H4.1.1 Items Compared in Project Comparison

The following items are compared in project comparison:

- **Executable program setup**  
Number of blocks, project file names, executable program names, and block names
- **Configuration information**  
Contents specified in Project Settings/Configuration
- **Program contents of each block/macro**  
Instructions, devices, and labels of each circuit. Block/macro file names.
- **Circuit comments and subcomments**  
Comparing if each comment is stored in the same position.
- **Tag name definitions**  
Tag name definitions and structure type definitions if tag name definitions are stored in the CPU
- **Constant definitions**  
Comparing if all constant definitions stored in the CPU are consistent.

### Note

---

For details on configuration, see D3.1, "Building a Project" (Offline).

---

## H4.1.2 Procedure for Comparing Projects

To perform project comparison, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online and the CPU type of the open project tallies with the connected CPU type.

#### Note

For details on how to perform online connection, see Section H1.1, "Connecting and Disconnecting."

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

- (2) Select [Online]–[Compare File and CPU]–[Project] from the menu bar.

⇒ Comparison starts. If no discrepancy is found, a confirmation dialog box will appear. If discrepancies are found, a different confirmation dialog box will appear.

#### Note

Comparison is performed on saved blocks. If you initiate comparison with a ladder program edit window (tag name definition window) open after having made changes in the window, a confirmation dialog box will be displayed.

- (3) Click [OK].

⇒ If discrepancies are found, the Results of Comparison window is displayed.



Step (3) H0401\_01.VSD



Step (3) H0401\_02.VSD

- (4) If discrepancies are found, double-click an error or warning that you wish to display. Alternatively, move the cursor to the error or warning using the arrow keys, and press the [Enter] key.

⇒ The block containing the error or warning opens and the focus jumps to the beginning of the corresponding circuit.

 A screenshot of a window titled 'Results of Comparison'. It has a blue header bar with standard window controls (minimize, maximize, close) on the right. Below the header is a table with three columns: 'File Name', 'Inst. NO.', and 'Message'. The first row contains the following data: 'Error', 'LADDER BLOCK 01 (BLK01)', and '00034N Instruction or address differs.'. The rest of the table is empty.
 

|       | File Name               | Inst. NO. | Message                         |
|-------|-------------------------|-----------|---------------------------------|
| Error | LADDER BLOCK 01 (BLK01) | 00034N    | Instruction or address differs. |
|       |                         |           |                                 |
|       |                         |           |                                 |
|       |                         |           |                                 |

Step (4)

H0401\_03.VSD

(5) Select [File]–[Close] from the menu bar in the Results of Comparison window.

⇒ The Results of Comparison window closes.

### Note

---

To display the location of the error or warning without changing the window focus, press any of the following keys.

- [SPACE] key: Displays the location of the error or warning at the current cursor position.
- [F3] key: Displays the location of the next error or warning after the current cursor position.
- [Shift]+[F3] keys: Displays the location of the previous error or warning before the current cursor position

The Results of Comparison window remains as the topmost window if you use the above operations to display the error or warning location without changing the window focus.

---

---

## H4.2 Comparing Blocks and Macros

Block/macro comparison compares the program on a personal computer with that stored in the CPU for selected blocks and macros.

### Note

---

- Contents in balloon comments are not compared.
  - For F3SP71-4N/76-7N/71-4S/76-7S, block/macro comparison cannot be performed.
- 

### H4.2.1 Items Compared in Block and Macro Comparison

The following items are compared in block and macro comparison:

- **Program contents of each block and macro**  
Instructions, devices, and labels of each circuit. Block/macro names.
- **Local devices of each block and macro**  
Number of local devices that are set
- **Circuit comments and subcomments**  
Comparing if each comment is stored in the same position.

### H4.2.2 Procedure for Comparing Blocks and Macros

To perform block and macro comparison, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online, and a project is open.

#### Note

---

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

---

- (2) Select [Online]–[Compare File and CPU]–[Block/Macro] from the menu bar.

⇒ The Select Block/Macro dialog box will be displayed.

- (3) Specify the blocks and macros to be compared by turning on relevant checkboxes on the left, and click [OK].

### Note

You can select multiple blocks and macros.

Comparison is performed on saved blocks or macros. If you initiate comparison with a ladder program edit window (tag name definition window) open after having made changes in the window, a confirmation dialog box will be displayed.

- ⇒ Comparison begins. If no discrepancy is found, a confirmation dialog box will appear. If discrepancies are found, a different confirmation dialog box will appear.

- (4) Click [OK].

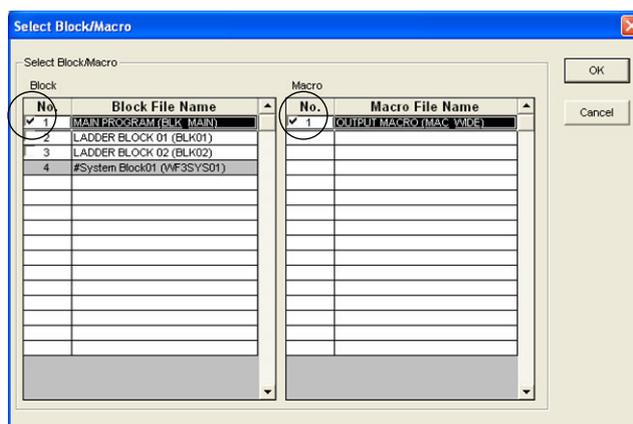
- ⇒ If discrepancies are found, the Results of Comparison window is displayed.

- (5) If discrepancies are found, double-click an error or warning that you wish to display. Alternatively, move the cursor to the error or warning using the arrow keys, and press the [Enter] key.

- ⇒ The block containing the error or warning opens and the focus jumps to the beginning of the corresponding circuit.

- (6) Select [File]–[Close] from the menu bar in the Results of Comparison window.

- ⇒ The Results of Comparison window Closes.



Step (3)

H0402\_01.VSD



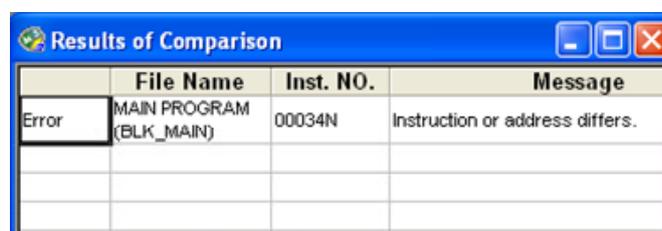
Step (4)

H0402\_02.VSD



Step (4)

H0402\_03.VSD



Step (5)

H0402\_04.VSD

### Note

To display the location of the error or warning without changing the window focus, press any of the following keys.

- [SPACE] key: Displays the location of the error or warning at the current cursor position.
- [F3] key: Displays the location of the next error or warning after the current cursor position.
- [Shift]+[F3] keys: Displays the location of the previous error or warning before the current cursor position

The Results of Comparison window remains as the topmost window if you use the above operations to display the error or warning location without changing the window focus.

## H4.3 Results of Comparison

The following messages may be displayed in the Results of Comparison window.

Table H4.2 List of Comparison Results

| Comparison Results   | Category | Description   |
|--|----------|---|
| Components of executable program differs.                        | Error    | Block configuration specified on [Executable Program Settings]-[Execution Block Components] in the Project Settings/Configuration window differs.   |
| Invalid device capacity setup in configuration.                  | Error    | [Device Area Setup] settings on the Project Settings/Configuration window differ.<br>Link device assignment settings on the [FA Link] tab in the Project Settings/Configuration window differ.<br>[Inter-CPU Shared Memory Setup] settings on the Project Settings/Configuration window differ. |
| Invalid local device/power failure latch setup in configuration. | Error    | [Latch Range Setup at Power Failure] settings or local device area settings on the [Device Area Setup] tab in the Project Settings/Configuration window differ.   |
| Invalid operation control setup in configuration.                | Error    | [Run Operation Setup] settings on the Project Settings/Configuration window differ.   |
| Invalid initial data setup in configuration.                     | Error    | Initial Data tab settings on the Project Settings/Configuration window differ.  |
| Invalid DIO setup in configuration.                              | Error    | [Input/Output Setup] settings on the Project Settings/Configuration window differ.  |
| Invalid FA link setup in configuration.                          | Error    | FA Link tab settings on the Project Settings/Configuration window differ.   |
| Invalid sampling trace setup in configuration.                   | Error    | [Sampling Trace Setup] settings on the Project Settings/Configuration window differ. Comparison is not performed when settings are made using a sampling trace setup file as with F3SP71/76.  |
| Invalid communications setup in configuration.                   | Error    | [Built-in Functions Setup] settings on the Project Settings/Configuration window differ.  |
| Invalid ROM setup in configuration.                              | Error    | [Built-in Functions Setup] settings on the Project Settings/Configuration window differ.  |
| Invalid interrupt setup in configuration.                        | Error    | [Interrupt Setup] settings on the Project Settings/Configuration window differ.   |
| Invalid script setup in configuration.                           | Error    | [Script Setup] settings on the Project Settings/Configuration window differ.  |
| Instruction or address differs.                                  | Error    | An instruction or an address used as a parameter of an instruction in a circuit differs.  |
| Block not found.   | Error    | The block is not found on the personal computer.  |
| Macro not found.   | Error    | The macro is not found on the personal computer.  |
| Structure type definition file not on the personal computer.     | Warning  | The common folder contains no structure type definition file.   |
| Structure type definitions differ.                               | Warning  | A member name, data type, or I/O comment of a structure type definition differs.  |
| Common tag name definition not in CPU.                           | Warning  | The project is configured to store common tag name definition to CPU but common tag name definition is not found in the CPU.  |
| Tag name definitions differ.                                     | Error    | Common tag name definitions or tag name definitions for a block differ.   |
| Macro language differs.  | Error    | Macro languages differ.   |
| Tag name definition file not on the personal computer.           | Error    | Tag name definition is not found for a block.   |
| Cannot create or access file.                                    | Error    | Unable to create or access a file on the personal computer.   |
| 'Subcomment/No subcomment' differs.                              | Warning  | Missing or extra subcomments  |
| 'Circuit comment/No circuit comment' differs.                    | Warning  | Missing or extra circuit comments   |
| Step counts differ.  | Warning  | Numbers of steps differ.  |
| Number of registered user log messages differs.                  | Warning  | Numbers of user log messages differ.  |
| String in user log message differs.                              | Warning  | Message strings of user log messages differ.  |
| Number of local devices differs.                                 | Warning  | Numbers of local devices as set in block properties differ.   |
| Constant definitions differ.                                     | Error    | Constant definition of project and constant definition stored in the CPU differ.  |
| Project name differs.  | Warning  | The project file name or executable program name differs.   |
| Block name differs.  | Error    | One or more block names differ.   |

---

**Note**

- If a discrepancy is found within a circuit, the first instruction number of that circuit is displayed. Only one comparison result is displayed for each circuit.
  - Program comparison is done on a circuit basis. If a circuit is added or deleted, all subsequent circuits are considered different.
  - Subcomment/circuit comment comparison does not compare comment strings.
  - Up to 256 discrepancies can be displayed. Any discrepancies beyond that number are not displayed.
  - Block comparison is not performed if the components of the executable programs are found to be different.
  - Constant definition comparison is terminated as and when any inconsistency is detected.
-

---

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## H5. CPU Properties

The CPU Properties function enables detailed configuration of FA-M3 sequence CPU modules.

This chapter describes how to edit and set up CPU properties using WideField3.

### Note

For more details on sequence CPUs modules that support CPU properties, as well as a functional overview and data of CPU properties, see: "Sequence CPU – Functions".

### ● Function Limitations for Each CPU Type

Table H5.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations  | SEE ALSO |
|---|--|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The CPU Property file cannot be edited.  |          |
| F3SP66-4S,<br>F3SP67-6S   | CPU Property values are written to the flash ROM immediately after downloading. For this reason, do not power off the FA-M3 while "Writing" status is flashing on the Action Monitor bar.<br>The automatic operation log output function is not available. | H5.2.5.  |
| F3SP71-4N,<br>F3SP76-7N   | CPU Property values are written to the flash ROM immediately after downloading. For this reason, do not power off the FA-M3 while "Writing" status is flashing on the Action Monitor bar.  | H5.2.5.  |
| F3SP71-4S,<br>F3SP76-7S   | CPU Property values are written to the flash ROM immediately after downloading. For this reason, do not power off the FA-M3 while "Writing" status is flashing on the Action Monitor bar.  | H5.2.5.  |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

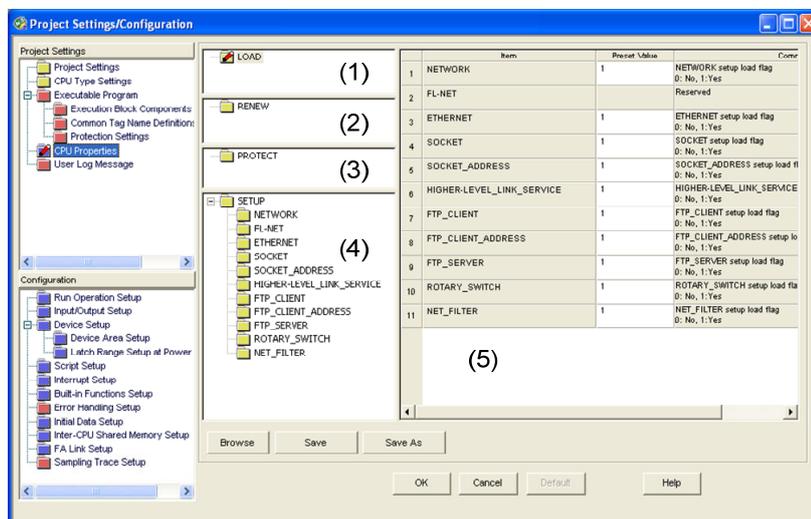
For details on limitations for each CPU type, refer to the user's manual for each type.

## H5.1 Fundamentals of CPU Properties

This section describes the basic structure and limitations of CPU properties.

### H5.1.1 Window Layout

The figure below shows the layout of the CPU properties edit window. The table below describes the window elements.



H0501\_01.VSD

Figure H5.1 CPU Properties Edit Window

Table H5.2 CPU Properties Edit Window

|     | Window Pane     | Description  |
|-----|-----------------|--|
| (1) | LOAD pane       | Displays LOAD section settings in the Settings window.   |
| (2) | RENEW pane      | Displays RENEW section settings in the Settings window.  |
| (3) | PROTECT pane    | Displays PROTECT section settings in the Settings window.<br>* This pane is hidden by default, and can be displayed by dragging the pane boundary.               |
| (4) | SETUP pane      | Selecting a section in this pane displays the properties of the section in the Settings window.  |
| (5) | Settings window | Displays settings belonging to the section selected in one of the left window panes. Of the displayed columns, only data in the Preset Value column is editable. |

## H5.1.2 Menu Layout

This subsection describes the CPU properties menu layout and functions, which are enabled in the CPU Properties edit window.

**Table H5.3 CPU Properties Related Menu Items**

| Menu Command |                                   | Function Description  |  |
|--------------|-----------------------------------|---|--|
| File         | Open                              | CPU Properties  | Opens a specified CPU Property file.   |
|              | Close                             |   | Closes the active window. If there are unsaved changes, displays a dialog to confirm whether to save changes.  |
|              | Close All                         |   | Closes all open windows. If there are unsaved changes, displays a dialog to confirm whether to save changes.   |
|              | Close All Except Frontmost Window |   | Closes all windows except for the topmost window. If there are unsaved changes, displays a dialog to confirm whether to save changes.                                    |
|              | Save                              |   | Saves CPU property values in the active window to file.  |
|              | Save As                           |   | Saves CPU property values in the active window with a different file name. After saving the file, either the original or saved file can be selected for further editing. |
| Edit         | Cut                               |   | Cuts the data at the cursor or the selected data and pastes it on the clipboard.   |
|              | Copy                              |   | Copies the data at the cursor or the selected data and pastes it on the clipboard.   |
|              | Paste                             |   | Pastes the contents of the clipboard at the cursor position.   |
|              | Delete                            |   | Deletes the data at the cursor or the selected data.   |
| Online       | Download                          | Project+CPU Properties  | Downloads both the open project and specified CPU properties to the CPU.   |
|              |                                   | CPU Properties  | Downloads only the specified CPU properties to the CPU.  |
|              | Upload                            | Project+CPU Properties  | Uploads both the open project and specified CPU properties to the CPU.   |
|              |                                   | CPU Properties  | Uploads only the specified CPU properties to the CPU.  |
|              | Extended Functions                | Clear CPU Properties  | Reverts CPU properties to their factory setting.   |
|              | Protection of CPU Properties      | Enables protection for the CPU properties defined in the CPU. |  |

**Table H5.4 CPU Properties Pop-up Menu**

| Pop-up Menu | Description  |
|-------------|--|
| Cut         | Cuts the data at the cursor or the selected data and pastes it on the clipboard.   |
| Copy        | Copies the data at the cursor or the selected data and pastes it on the clipboard. |
| Paste       | Pastes the contents of the clipboard at the cursor position.                       |
| Delete      | Deletes the data at the cursor or the selected data.                               |
| Save        | Saves CPU property values.   |
| Download    | Transfers current CPU property values to the CPU.                                  |

---

## H5.1.3 Creating CPU Property File

There are two ways to create a CPU Property file, which is editable on a PC.

- **Upload from CPU**

Select [Online]–[Upload[CPU->PC]]–[CPU Properties] from the menu, and specify a folder and filename for saving the CPU Property file.

- **Default File**

Select [File]–[Open]–[CPU Properties] from the menu, and select an appropriate file from the displayed files located in the folder named "CPUPROPERTY" to open it. (The CPUPROPERTY folder is located in the WideField3 installed folder.) Then, select [File]–[Save As] from the menu, and specify a folder and filename for saving the CPU Property file.

The "CPUPROPERTY" folder is located under the WideField3 data folder.

### **Note**

---

For details on WideField3 data folder, see Section D1.1, "WideField3 System Files and Generated Data" (Offline).

---

## H5.1.4 Limitations

The following limitations apply to the CPU Properties function.

- No validity checks are performed for specified CPU property values.
- Validity checks are performed only when CPU properties are downloaded to the CPU.
- Addition and deletion of CPU property items are not allowed.
- Do not use the CPU properties of a different CPU type.

---

## H5.2 CPU Properties Function

This subsection describes CPU Properties related functions.

### H5.2.1 Open

The Open command opens a user specified CPU Property file in a CPU Properties edit window.

#### ◆ Procedure ◆

(1) Select **[File]–[Open]–[CPU Properties]** from the menu bar, and from the displayed dialog, select a **CPU Property file to be edited.**

⇒ The CPU Properties edit screen of the Project Settings/Configuration window is displayed.

#### Note

---

You can access other CPU Property files from the CPU properties window.

To do this, click **[Browse]** in the CPU properties window and select a CPU Property file to be opened. Then, click **[Open]**.

---

### H5.2.2 Close

The Close command closes an open CPU Properties edit window.

#### ◆ Procedure ◆

(1) Select **[File]–[Close]** from the menu bar.

⇒ The Project Settings/Configuration window closes.

⇒ If there are unsaved edited changes, a dialog is displayed to confirm whether to save the changes.

## H5.2.3 Save

CPU properties can be saved in the following three ways.

- Save
- Save As
- Close

The procedures for [Save] and [Save As] are described here.

### ■ Save

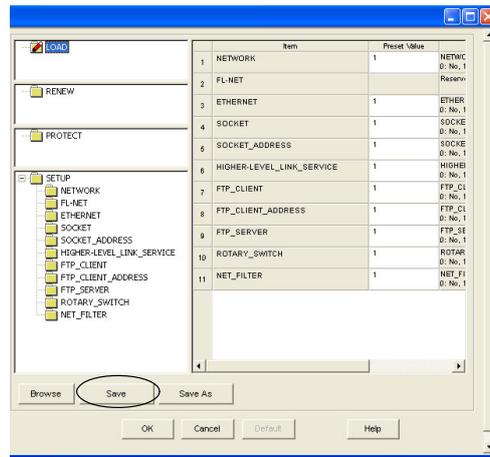
The Save command saves CPU Properties currently being edited to a file.

### ◆ Procedure ◆

(1) Ensure that the edit window for the CPU properties to be saved is active.

(2) Click [Save].

⇒ CPU property values are saved.



Step (2)

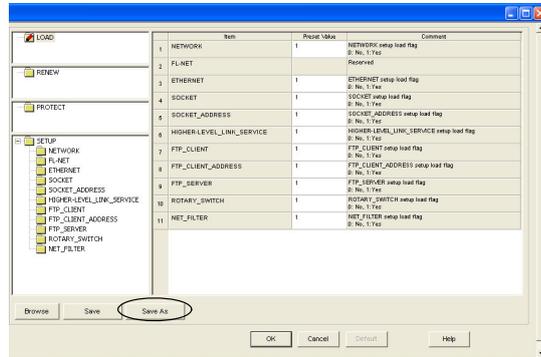
H0502\_01.VSD

## ■ Save As

The Save As command saves CPU Properties currently being edited to a file with a new name.

### ◆ Procedure ◆

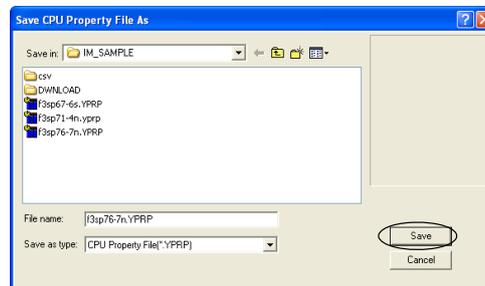
- (1) Ensure that the edit window for the CPU properties to be saved is active.
- (2) Click [Save As].



Step (2)

H0502\_02.VSD

- (3) In the displayed Save CPU Property File As dialog box, specify a destination folder and filename, and click [Save].



Step (3)

H0502\_03.VSD

⇒ A dialog is displayed to prompt you to select which file is to be opened after the save operation.

- (4) If you continue to further edit the saved file, select [Yes]. If you want to go back to the original file for editing, select [No].

⇒ CPU property values are saved.



Step (4)

H0502\_04.VSD

## H5.2.4 Edit

CPU Property values can be modified or deleted in a CPU Properties edit window. However, addition or deletion of CPU Property section and CPU property items are not allowed.

### ■ Basic Operations for Editing CPU Properties

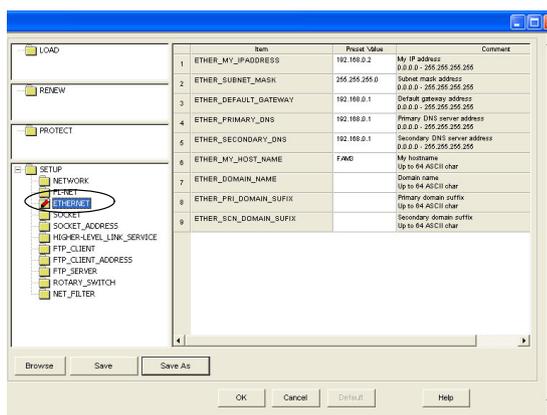
This subsection describes the procedure for editing CPU Property values.

#### ◆ Procedure ◆

(1) Ensure that the edit window for the CPU properties to be edited is active.

(2) Click one of the sections displayed in the SETUP pane.

⇒ The property items and values of the selected section are displayed in the right window.

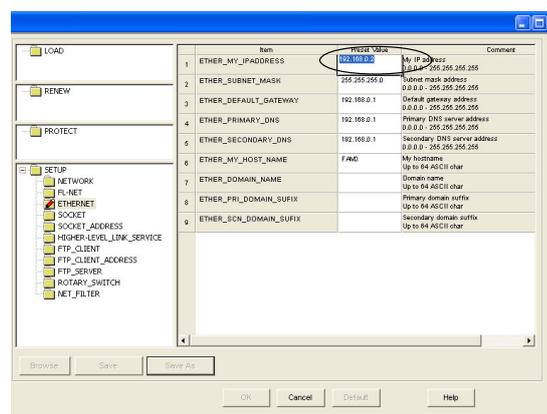


Step (2)

H0502\_05.VSD

(3) Click on or move the cursor to a property value to be edited.

(4) Enter the new value. To modify a value partially, double-click or press the [F2] key to switch to edit mode.



Steps (3) and (4)

H0502\_06.VSD

#### Note

No validity checks are performed for specified property values so exercise care when editing property values.

## H5.2.5 Download

CPU properties may be downloaded alone or together with the project. Furthermore, CPU properties may be downloaded directly from the CPU Properties edit window.

This subsection describes the procedure for downloading CPU properties only, as well as the procedure for downloading directly from a CPU Properties edit window.



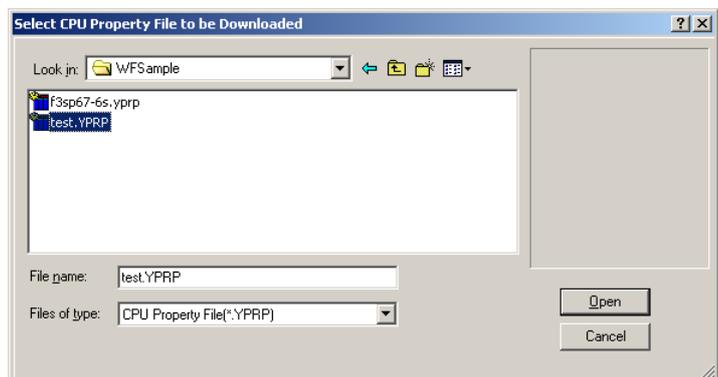
### CAUTION

- If download fails because of a coding error in a CPU Property file, the error line and property are displayed. (Information is not displayed for some errors). Some errors such as invalid section name or invalid string cannot be corrected using WideField3, and must be corrected by opening the CPU Property file using a generic text editor.
- For F3SP66-4S/67-6S/F3SP71-4N/F3SP76-7N/F3SP71-4S/F3SP76-7S CPU modules, CPU Property values are written to the flash ROM immediately after downloading. For this reason, do not power off the FA-M3 while "Writing" status is flashing on the Action Monitor bar.

## ■ Downloading CPU Properties Only

### ◆ Procedure ◆

- (1) Select [Online]–[Download[PC->CPU]]  
–[CPU Properties] from the menu bar.
- (2) Select the CPU Property file to be downloaded in the file selection dialog, and click [Open].
- (3) If a CPU Properties security keyword is defined, a CPU properties protection keyword input dialog is displayed.



Step (2)

H0502\_07.VSD

### Note

For details on how to set protection of CPU properties, see Section H5.2.7, "Protection of CPU Properties."

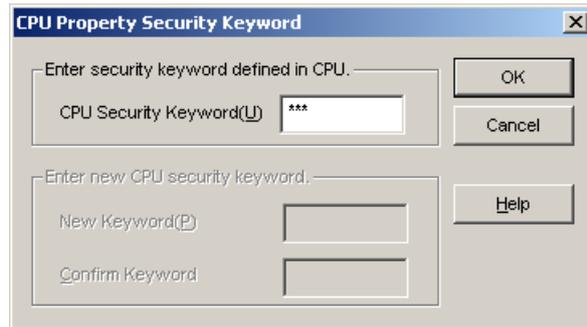
(4) Enter a valid keyword, and click [OK].

⇒ Download begins.

(5) After download is successfully completed, a message is displayed.

## Note

Entering an invalid security keyword generates a download error.

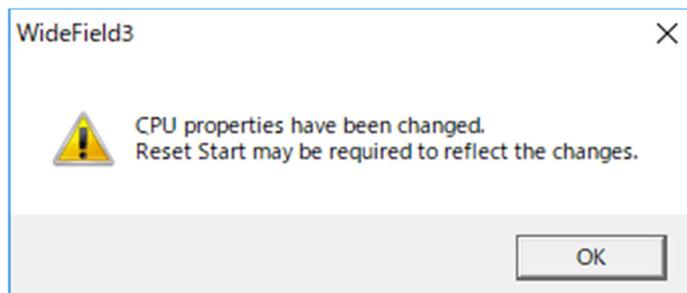


Step (4)

H0502\_08.VSD

## Note

The following dialog box is displayed when the CPU properties are downloaded completely.



H0502\_09.VSD

Figure H5.2 Confirmation Dialog Box

Reset start may be required depending on the changes to the CPU properties. If reset start is required, perform the reset start after the download is complete.

## Note

For details on the reset start, see Section J1.8, "Reset Start."

## ■ Downloading from CPU Properties Edit Window

Initiating download from a CPU Properties edit window downloads the latest CPU property values displayed in the window.

### ◆ Procedure ◆

- (1) Ensure that the window of the CPU Properties to be downloaded is active.
- (2) Click the right mouse button, and select [Download] from the pop-up menu.

- (3) If a CPU Properties security keyword is defined, a keyword input dialog is displayed.
- (4) Enter a valid keyword, and click [OK].  
⇒ Download begins.

## H5.2.6 Upload

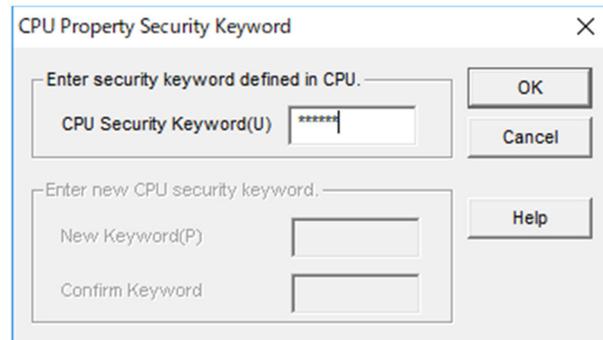
CPU properties may be uploaded alone or together with the project.

This subsection describes the procedure for uploading CPU properties only.

### ■ Uploading CPU Properties Only

#### ◆ Procedure ◆

- (1) Select [Online]–[Upload[CPU->PC]]–[CPU Properties] from the menu bar.
- (2) If a CPU Properties security keyword is defined, a keyword input dialog is displayed.
- (3) Enter a valid keyword, and click [OK].  
⇒ Upload begins.
- (4) After upload is successfully completed, the Save CPU Property File As dialog is displayed. Specify a destination folder and filename and click [Save].



Steps (2) and (3)

H0502\_10.VSD

## H5.2.7 Protection of CPU Properties

CPU properties can be protected by defining a security keyword up to 8 characters long. With protection enabled, downloading, uploading or initializing of CPU properties requires the entry of a valid security keyword.

This subsection described how to set and remove protection of CPU properties.

### ■ Set Protection

#### ◆ Procedure ◆

- (1) Select [Online]–[Extended Functions]–[Protection of CPU Properties]–[Set] from the menu bar.

⇒ A keyword input dialog is displayed.

- (2) Enter a valid keyword, and click [OK].
- (3) If the keyword is not correctly specified, an error message is displayed.

Keyword input is required only if protection is enabled for property values stored in the CPU.

Steps (2) and (3)

H0502\_11.VSD

### ■ Remove Protection

#### ◆ Procedure ◆

- (1) Select [Online]–[Extended Functions]–[Protection of CPU Properties]–[Remove] from the menu bar

⇒ A keyword input dialog is displayed.

- (2) Enter a keyword, and click [OK].
- (3) If the keyword is not correctly specified, an error message is displayed.

Steps (2) and (3)

H0502\_12.VSD

## H5.2.8 Clear CPU Properties

Clearing (initializing) CPU Properties reverts their values to their factory setting.

### ◆ Procedure ◆

- (1) Select [Online]–[Extended Functions]–[Clear CPU Properties] from the menu bar
  - (2) Click [Yes] on the displayed confirmation dialog.
  - (3) If protection is enabled, a keyword input dialog is displayed.
  - (4) Enter a valid keyword, and click [OK].
- ⇒ After CPU properties are successfully cleared, a completion message is displayed.

## H5.2.9 Online Display of CPU Properties

Displaying CPU properties when an online connection is active displays property values currently defined in the CPU.

### ◆ Procedure ◆

- (1) Select [Online]–[CPU Properties] from the menu bar.
- (2) If protection is enabled, a keyword input dialog is displayed.
- (3) Enter a valid keyword, and click [OK].  
⇒ CPU property values defined in the CPU are displayed.

### Note

---

CPU properties displayed by selecting [Online]–[CPU Properties] from the menu are saved in a work folder. If the data is subsequently edited and downloaded, it is necessary to save the changes to file.

---

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## H6. Using the ROM

You can attach a ROM pack to the CPU to store the program, tag name definitions, and partial device data. When power is switched on with the program or partial device data resident in the ROM, the CPU reads the program and device data from the ROM and begins program execution.

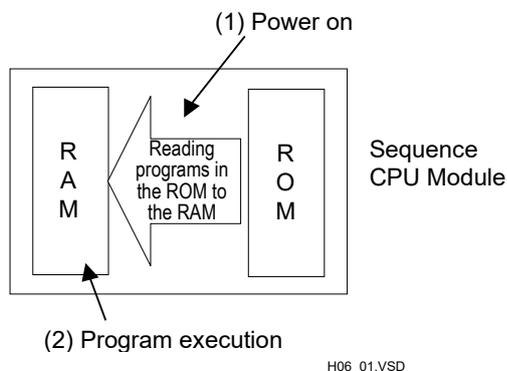


Figure H6.1 Regular ROM operation (when not in ROM Writer mode)

The CPU provides a ROM Writer mode for writing to and deleting from the ROM. Unlike regular CPU operating modes, in ROM writer mode, all sequence functions are disabled and the ROM Writer mode remains even when power is turned off and on again.

The following ROM management functions are available.

- Switching from ROM writer mode to CPU mode.
- Transferring programs from the computer to the ROM.
- Comparing programs in the computer and in the ROM.
- Transferring programs from the CPU RAM to the ROM.
- Erasing the ROM.

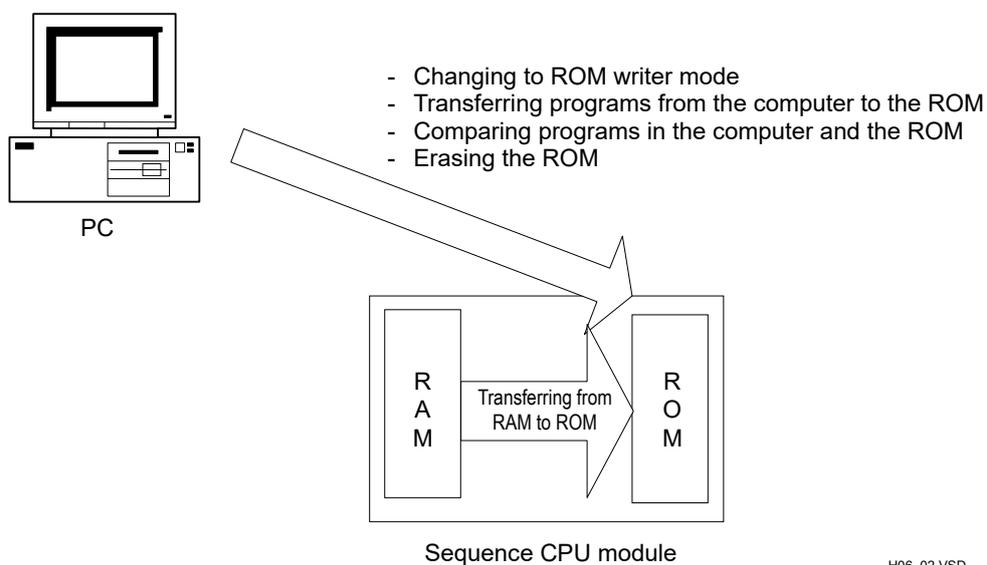


Figure H6.2 ROM Management Functions

ROM management functions are unavailable in the following situations:

- **When a sequence CPU module does not support ROM**  
ROM management functions cannot be executed on a sequence CPU module that does not allow ROM packs to be installed.  
When connected to a sequence CPU module that does not support ROMs, ROM management functions are either disabled in the menu or generate an error when executed.
- **When not in ROM writer mode**  
The CPU is not in ROM writer mode. Before managing a ROM, always switch to ROM Writer mode.
- **When another terminal has exclusive access control**  
Another terminal has exclusive access control. To manage the ROM, force a release of the exclusive access control.

## ● Function Limitations for Each CPU Type

Table H6.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations                 | SEE ALSO |
|---|-----------------------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A                         |          |
| F3SP66-4S,<br>F3SP67-6S   | ROM packs cannot be used.*1 |          |
| F3SP71-4N,<br>F3SP76-7N   | ROM packs cannot be used.*1 |          |
| F3SP71-4S,<br>F3SP76-7S   | ROM packs cannot be used.*1 |          |

\*1: Instead of ROM packs, SD memory cards are available.

### Note

For details on using SD memory cards, see "Sequence CPU Instruction Manual - Functions."

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

---

## H6.1 ROM Writer Mode

Use the ROM writer mode function to switch to and exit from ROM Writer mode. ROM management functions (ROM transfer, ROM copy, ROM erase, and ROM compare) can only be used in ROM Writer mode. Program execution, downloading, and comparison cannot be carried out in ROM Writer mode. After executing ROM management functions, cancel ROM writer mode.

### H6.1.1 Changing ROM Writer Mode

You must put the CPU in ROM Writer mode before using ROM management functions.

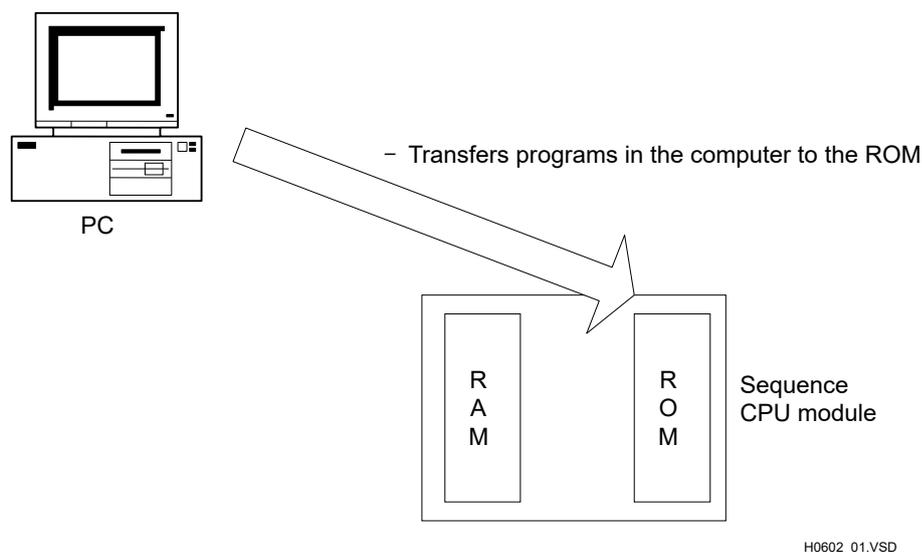
#### ■ Switching to and Exiting from ROM Writer Mode

To switch to ROM writer mode, select [Online]–[ROM Management]–[ROM Writer Mode ON] from the menu bar. A confirmation dialog box is displayed. Click appropriate buttons.

To cancel ROM writer mode, select [Online]–[ROM Management]–[ROM Writer Mode OFF] from the menu bar. A confirmation dialog box is displayed. Click appropriate buttons.

## H6.2 ROM Transfer (from Computer to ROM)

Transfers executable programs in an open project to the ROM.



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Figure H6.3 File to ROM Transfer

Use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is online and a project is open.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

- (2) Switch the CPU to the ROM writer mode.

#### Note

For details on how to switch to ROM Writer mode, see Section H6.1, "ROM Writer Mode."

- (3) Select [Online]–[ROM Management]–[File->ROM Transfer] from the menu bar.

⇒ The File->ROM Transfer dialog box opens.

(4) Select the items to be transferred, and click [OK].

### Note

If you initiate ROM transfer with a ladder program edit window (tag name definition window) open after having made changes in the window, a confirmation dialog box will be displayed.

### Note

For details on configuration, see Section D3.1, "Building a Project" (Offline).

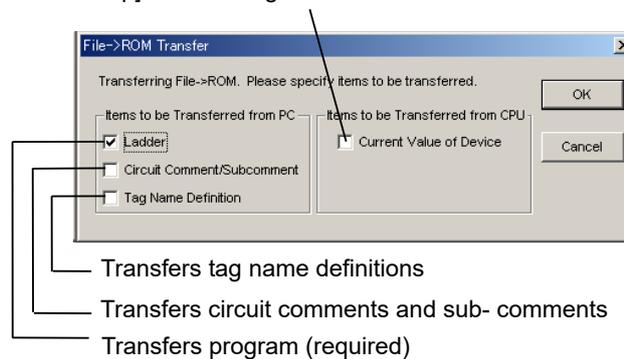
⇒ Program syntax checking is performed.

### Note

If warnings are detected, a dialog box is displayed to prompt whether to proceed with File to ROM transfer. To proceed, click [Yes]. If errors are detected, ROM transfer is aborted.

⇒ Transfer begins. When the transfer completes, a dialog box opens to inform that transfer has completed, and you are returned to WideField3.

Transfers current values of devices defined in [ROM Setup] in the configuration.



Step (4)

H0602\_02.VSD

### Note

If program syntax errors are detected during transfer, the transfer is terminated and the Results of Program Syntax Checking window opens.

|         | File Name               | Inst. NO. | Error Message          | Details |
|---------|-------------------------|-----------|------------------------|---------|
| Warning | LADDER BLOCK 01 (BLK01) | 00006N    | Duplicate use of coil. | CntRst  |

H0602\_03.VSD

Figure H6.4 Results of Program Syntax Checking window

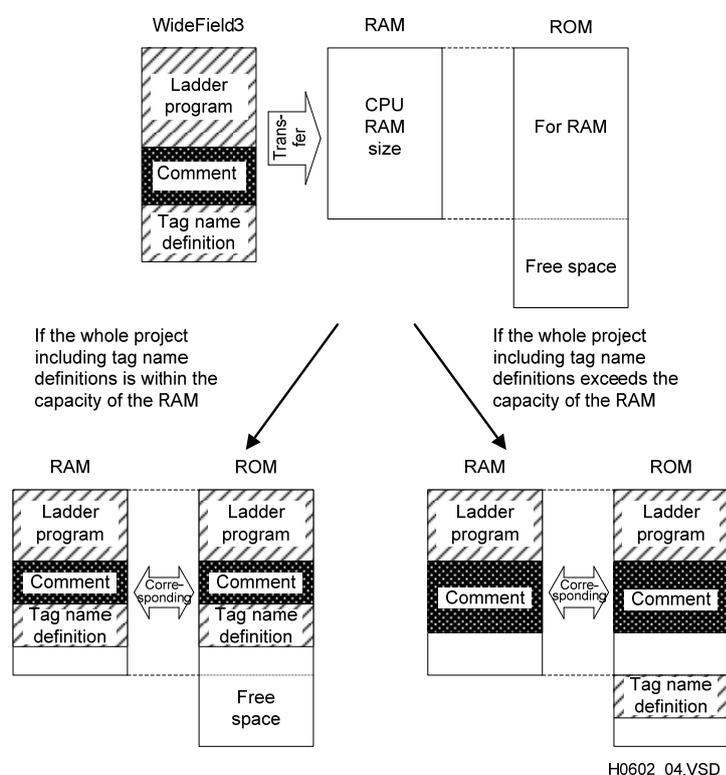


## CAUTION

- You cannot abort a write operation to the ROM before its completion.
- You can install a ROM pack whose capacity is larger than that of the CPU RAM. For ROM transfer with these CPU types, if the size of the transferred project exceeds the capacity of the RAM, tag name definitions are not stored in the RAM but automatically stored in the free area on the ROM.

When seen from WideField3 in this case, tag name definitions appears to be but is actually not stored in the RAM. The RAM stores the entire project excluding tag name definitions. If ROM copy is now executed, the tag name definitions will be lost. For this reason, we recommend that you use ROM transfer instead of ROM copy in such situations.

If the RAM capacity is large enough to store the entire project (including tag name definitions), the entire project will be stored in the RAM without potential ROM copy problems.



**Figure H6.5 Storing Tag Name Definitions According to RAM Capacity**

- If both WideField3 and other applications such as ToolBox are connected online concurrently from the same PC, you must first disconnect ToolBox and the other applications before you can perform ROM transfer.

## H6.3 ROM Compare (between Computer and ROM)

The ROM Compare function compares the executable program in the currently open project to the contents in the ROM. Upload the program to the CPU before performing the comparison procedure. The ROM comparison is executed with the CPU in ROM writer mode.

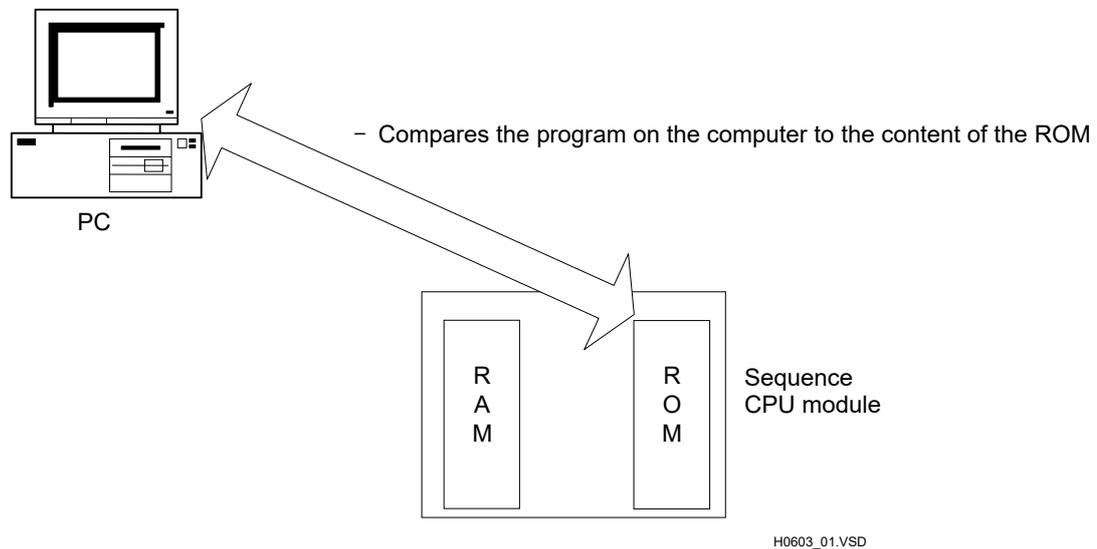


Figure H6.6 Comparison between File and ROM

### Note

- Contents in balloon comments are not compared when the file and the ROM are compared.
- When blocks or macros are referenced to the common library or another project, those blocks and macros, as well as their properties and tag name definitions, cannot be compared.

Use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is online and a project is open.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."  
For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

- (2) Switch the CPU to ROM writer mode.

#### Note

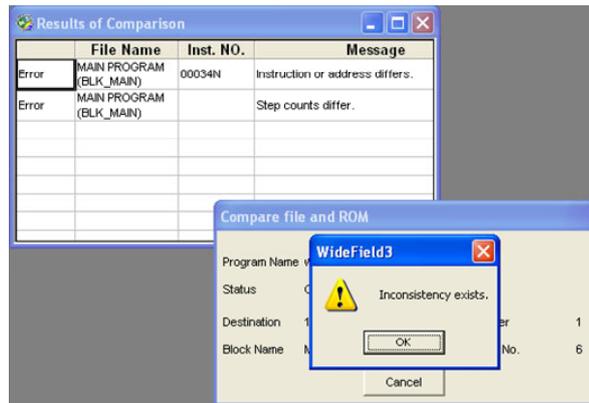
For details on how to switch to ROM writer mode, see Section H6.1, "ROM Writer Mode."

**(3) Select [Online]–[ROM Management]  
–[Compare File and ROM] from the  
menu bar.**

⇒ Comparison begins. When the comparison completes, a dialog box opens to confirm completion of the comparison. If an error is detected during comparison, the Results of Comparison window appears to inform about the error.

### Note

ROM comparison is performed on saved blocks. If you initiate ROM comparison with a ladder program edit window (tag name definition window) open after having made changes in the window, a confirmation dialog box will be displayed.



Step (3)

H0603\_02.VSD

**(4) If no discrepancies are found, close the dialog box notifying that comparison has completed. If discrepancies are detected, double-click an error or warning to be displayed or move the cursor to the error or warning using the arrow keys and press [Enter].**

⇒ The block containing the error or warning opens and the display jumps to the beginning of the corresponding circuit.

### Note

To display the location of the error or warning without changing the window focus, press any of the following keys.

- [SPACE] key: Displays the location of the error or warning at the current cursor position.
- [F3] key: Displays the location of the next error or warning after the current cursor position.
- [Shift]+[F3] keys: Displays the location of the previous error or warning before the current cursor position

The Results of Comparison window remains as the topmost window if you use the above operations to display the error or warning location without changing the window focus.

---

## ■ Errors and Warnings

The following errors and warnings may be displayed in the Results of Comparison window.

### ● Errors

- **Components of executable program differs.**  
The executable program configurations are different.
- **Invalid xxx in Project Settings.** (where xxx is a menu name in the Project Settings/Configuration window tree).  
The project settings are different.
- **Instruction or address differs.**  
Block contents (instructions, devices, labels) are different.
- **Tag name definition differs.**  
The tag name definitions are different.  
The structure type definitions are different.

### ● Warnings

- **String in user log message differs.**  
The contents of the user log messages are different.
- **Number of registered user log message differs.**  
The number of registered user log messages is different.
- **'Subcomment/No subcomment' differs**  
There are more or fewer sub-comments.
- **'Circuit comment/No circuit comment' differs**  
There are more or fewer circuit comments.

### Note

---

- The comparison result displays the first instruction number in each circuit containing a mismatch.
  - Inserting a circuit (except for inserting circuit comments) causes a mismatch in all subsequent circuits.
  - When comparing sub-comments and circuit comments, only the presence or absence of a comment is compared. Actual contents of the comments are not compared.
  - Up to 256 mismatches can be displayed.
- 

### Note

---

For details on configuration, see Section D3.1, "Building a Project" (Offline).

---

## H6.4 ROM Copy (from RAM to ROM)

The ROM Copy function copies the contents of the RAM (program memory) in the CPU to the ROM. This function is used for creating multiple ROMs from the same executable program.

You do not need to transfer executable programs between the computer and the CPU. You can write the executable program to the ROM by simply replacing the ROM pack. ROM copy can be carried out once a ROM transfer has been executed. ROM copy is only available in ROM writer mode.

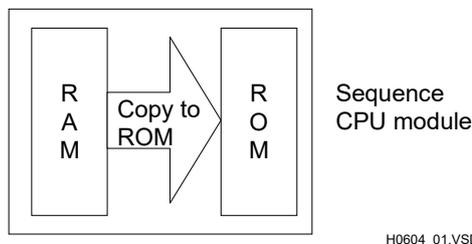


Figure H6.7 Transferring from the CPU to ROM

Use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

Download a project beforehand.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to download a project, see Section H2.1.3, "Procedure for Downloading a Project."

(2) Switch the CPU to ROM Writer mode.

#### Note

For details on how to switch to ROM writer mode, see Section H6.1, "ROM Writer Mode."

(3) Select [Online]—[ROM Management]  
—[CPU->ROM Transfer] from the menu  
bar.

⇒ The CPU->ROM Transfer dialog box  
opens.

**(4) Select the items to be copied, and click [OK].**

⇒ Copying begins. When the copy is completed, a dialog box opens to inform of the completion of the copy operation.

**(5) Click [OK].**

⇒ You are returned to WideField3.



Step (5)

H0604\_02.VSD

## ■ Copying to Multiple ROM Packs

To copy data to another ROM pack at the end of the above procedure, stay in ROM writer mode, switch off the FA-M3, replace the ROM pack, and switch on the FA-M3.

Next, select [Online]–[ROM Management]–[CPU->ROM Transfer] from the menu bar, and repeat the same procedure for normal ROM copy.

You must remain in ROM Writer mode until copying is completed for all ROM packs.



### CAUTION

- If tag name definitions are stored in the ROM, the content of the CPU RAM and that of the ROM may be different depending on the project size (If the size of the project including tag name definitions exceeds the CPU RAM capacity, tag name definitions are not stored in the CPU RAM, but are stored only in the ROM instead).

Executing a CPU-to-ROM transfer in this condition transfers only the content of the CPU RAM the ROM. No tag name definition will be transferred to the ROM.

Therefore, if the content of the CPU RAM and that of the ROM are different, you must upload a project from the ROM before executing CPU-to-ROM transfer.

- If both WideField3 and other applications such as ToolBox are connected online concurrently from the same PC, you must first disconnect ToolBox and the other applications before you can perform ROM copy.

## H6.5 ROM Erase

The ROM Erase function erases programs from the ROM.

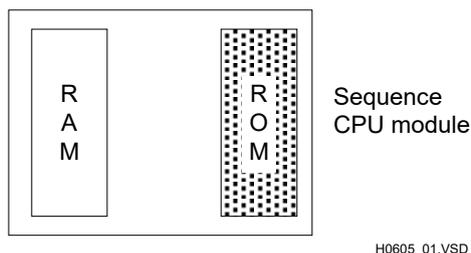


Figure H6.8 ROM Deletion

Use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Switch the CPU to ROM writer mode.

#### Note

For details on how to switch to ROM writer mode, see Section H6.1, "ROM Writer Mode."

(3) Select [Online]–[ROM Management]–[Erase ROM] from the menu bar.

⇒ A dialog box opens to confirm whether to erase the content of the ROM.

(4) Click [Yes].

⇒ Erasure begins. Upon completion, a dialog box opens to inform the completion of the erasure.

(5) Click [OK].

⇒ You are returned to WideField3.



Step (4)

H0605\_02.VSD



### CAUTION

- You cannot abort an erase operation before its completion.
- If both WideField3 and other applications such as ToolBox are connected online concurrently from the same PC, You must first disconnect ToolBox and the other applications before you can erase the ROM.

# H7. I/O Module Setup

This chapter describes how to perform setup for advanced I/O modules.

## ● Function Limitations for Each CPU Type

Table H7.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations                                       | SEE ALSO |
|---|---|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A   |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A   |          |
| F3SP71-4N,<br>F3SP76-7N   | The FA link refreshing function is not available. | H7.1     |
| F3SP71-4S,<br>F3SP76-7S   | N/A   |          |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

## H7.1 Station Assignment and Monitoring of FA Links

This section describes how to set up the FA link function, which makes use of FA link modules, FA link H modules and fiber-optic FA link H modules, as well as how to monitor the statuses of FA link modules.

### Note

- In this manual, "FA link" will be used to refer to the FA link, the FA link H, and the fiber-optic FA link H modules collectively unless otherwise specified.
- F3SP71-4N and 76-7N cannot use the FA link function.

### Note

FA link modules are used to establish a data link network between FA-M3 systems.

### Note

For details on the functions of the FA link, the FA link H, and the fiber-optic FA link H modules, see

"FA Link H Module, Fiber-optic FA Link H Module" (IM 34M06H43-01E).

Also see "Sequence CPU – Functions."

The FA link functions include assigning stations to the FA link and reading statuses of FA link modules.

- **Assigning stations to FA link**  
Assigns link relays.  
Assigns link registers.
- **Reading FA link module status**  
Checks the status of the local station.  
Checks the status of other stations.

All the above functions are performed with the "FA Link Tool."

### Note

For details on how to set up the mapping between FA link system numbers and slot numbers, see D3.1.14, "FA Link Setup" (Offline).

Table H7.2 Files Created in FA Link Setup

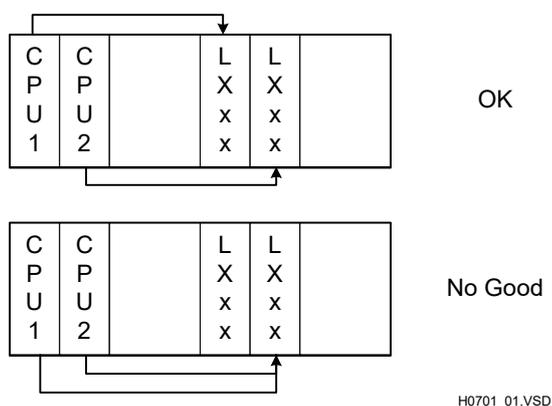
| Type               | Extension | Description                               | Tip |
|--------------------|-----------|---|-----|
| FA link setup file | .fai      | Stores FA link configuration information. |     |
|                    |           | File name                                 |     |

**CAUTION**

You can only read or register link information for an FA link module from the CPU using the FA link module.

Reading link information from or registering link information to an FA link module from multiple CPUs may cause subsequent reading or registration to fail.

If so, switch off the FA-M3 and turn it back on.



H0701\_01.VSD

**Figure H7.1 Reading and Registering Link Information**

## H7.1.1 Starting the FA Link Tool

The FA Link Tool is used for station assignment and monitoring.

Select [Tools]–[Set up I/O Module]–[FA Link] from the menu bar of WideField3 to start the FA Link Tool.

Before you can write to, read from, or check the status of an FA link module, you must first establish online connection to the FA-M3 using WideField3. If you are not connected online, you can only edit the FA link module setup file.

### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

### Note

The FA link module setup file contains configuration information to be set in an FA link module.

### Note

For details on configuration, see Section D3.1, "Building a Project" (Offline).

If you are not connected online, a dialog box will be displayed indicating that online functions are not available. Clicking [Yes] launches the FA Link Tool.

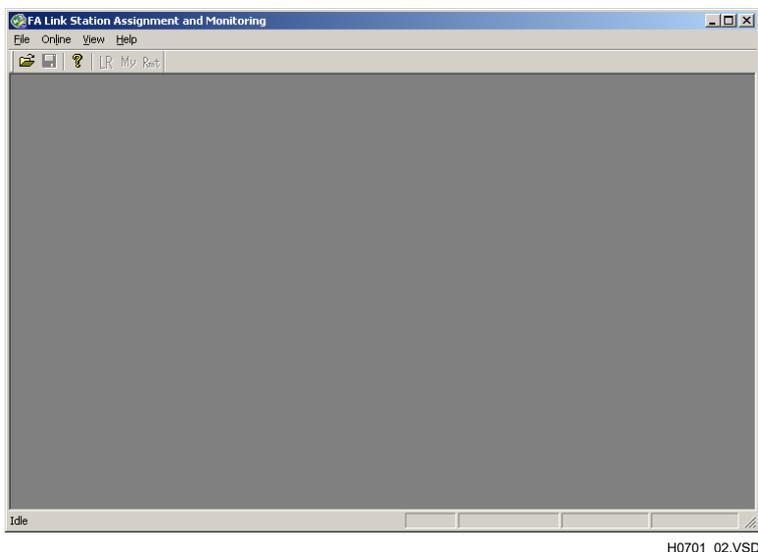


Figure H7.2 FA Link Tool

### Note

- If you initiate online connection from WideField3 after starting the FA Link Tool, reading of link data will fail. In this case, exit from the FA Link Tool, reinitiate online connection from WideField3, and restart the FA Link Tool.
- You cannot run multiple copies of the FA Link Tool concurrently.

## H7.1.2 FA Link Station Assignment Setup for FA Link Stations (global)

To perform FA link station assignment, use the FA Link Station Assignment window. Link information may be read either from an FA link module or a file. You can create a link information file from setup data read from an FA link module.

### ■ Reading Link Information from a Module

Connect to the CPU using WideField3, and start the FA Link Tool. Use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

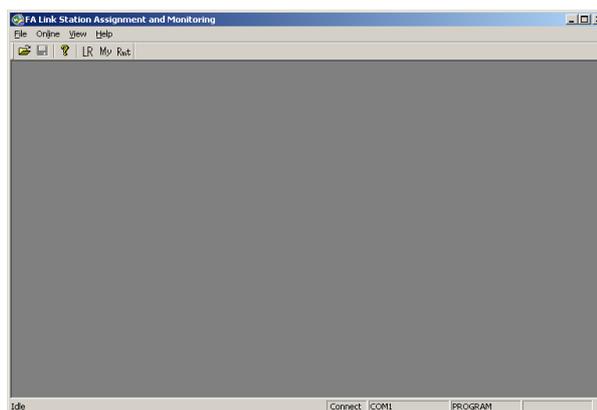
For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Tools]–[Set up I/O Module]–[FA Link] from the menu bar.

⇒ The FA Link Tool opens.

(3) Select [Online]–[Read Link Information] from the menu bar.

⇒ The Read FA Link Module/Link Information dialog box opens.



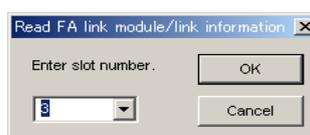
Step (2)

H0701\_03.VSD

(4) Select a slot number from the drop down list.

#### Note

A list of slot numbers with FA link modules mounted is displayed in the drop down list. You can also enter a slot number directly.

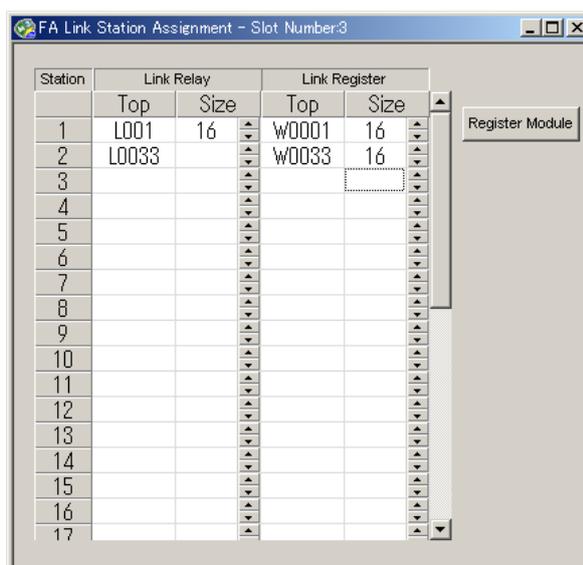


Steps (4) and (5)

H0701\_04.VSD

**(5) Click [OK].**

⇒ Setup data is read from the FA link module, and the FA Link Station Assignment window opens.



Step (5)

H0701\_05.VSD

## ■ Reading from a Link Information File

Using the FA Link Tool, you can also read FA link station assignment data from a file containing data saved previously. Use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the FA Link Tool is displayed.

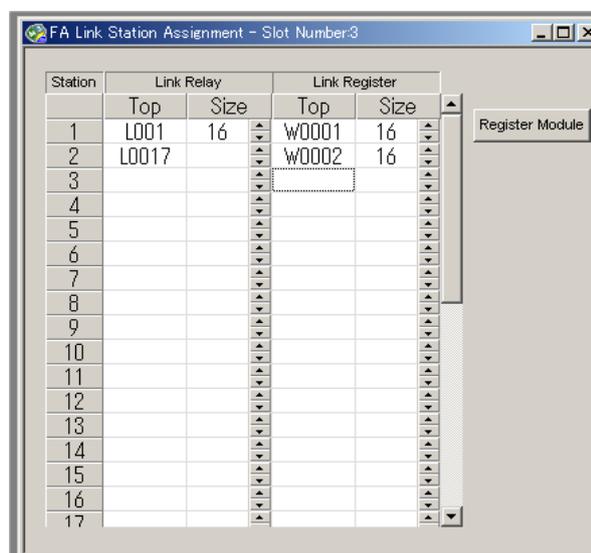
(2) Select [File]–[Open] from the menu bar.

⇒ The Open File dialog box opens.

(3) Select the desired FA link data file, and click [Open].

⇒ The FA Link Station Assignment window opens.

(4) Close the FA Link Station Assignment window.



Step (3)

H0701\_06.VSD

## ■ Editing Station Assignments

Enter information in the form of a table. Set the first address and size. The setting must be done in units of 16 for link relays and in units of 1 relay for link registers.

## ■ Saving a Link Information File

To save edited content to a file, select either [File]–[Save As] or [File]–[Save] from the menu bar.

- Selecting [File]–[Save As] displays the Save As dialog box. Enter a file name and click [Save] to save the file.
- Selecting [File]–[Save] overwrites the existing file.

### **Note**

---

If you select [Save] after reading data from the FA link module, the Save As dialog box is displayed.

---

## H7.1.3 Registering to the FA Link Module

There are two ways to register data to the FA link module: by batch or by station. Batch registration registers station assignment information to all FA link modules in the FA link network. Module registration registers station assignment information to a specified station.

### Note

The FA link network is a data link network connecting FA-M3 systems, using FA link, the FA link H, and the fiber-optic FA link H modules.

Use the following procedure.

### ◆ Procedure ◆

(1) Edit the FA link station assignments.

### Note

For details on how to edit FA link station assignments, see Section H7.1.2, "FA Link Station Assignment Setup for FA Link Stations (global)."

(2) In the FA Link Station Assignment window, click [Register Module].

⇒ The Register Link Information dialog box opens.

(3) Select a slot number from the drop down list.

### Note

A list of all slot numbers with FA link modules mounted is displayed in the drop down list. You can also enter a slot number directly.

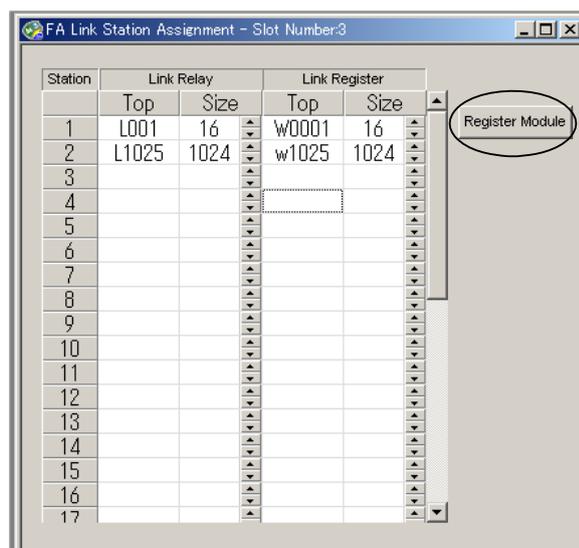
(4) Turn on the [Batch] or [Station] option button in the [Registration Mode] group box. If you have turned on the [Station] option button, select a station to be registered using the drop down list on the right.

(5) Click [OK].

⇒ A dialog box opens to confirm that registration has completed.

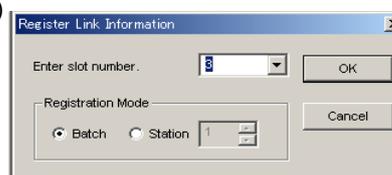
(6) Click [OK].

⇒ The FA Link Station Assignment window opens.



Step (2)

H0701\_07.VSD



Steps (3) to (5)

H0701\_08.VSD

## H7.1.4 Checking Statuses of FA Link Modules

This section describes how to check the statuses of FA link modules. You can check the status of the local station (the status of the local link module) or the statuses of other remote stations connected to the FA link.

### Note

- Before checking FA link module statuses, always connect WideField3 online first. If WideField3 is not connected online, FA link module status cannot be checked.
- F3SP71-4N and 76-7N cannot use the FA link refreshing function.

### ■ Displaying Status of Local Station

The table below lists the items displayed for the local station status, with the item descriptions. Except for the module operation status and refresh period items, a "●" will be displayed for the items listed in Table H7.2 if the corresponding error is detected.

**Table H7.3 Local Station Status Items and Descriptions**

| Item                                     | Description   |                          |
|--|---|--------------------------|
| Module operation status                  | ON LINE   | Communication is normal. |
|  | OFF LINE  | No communication         |
| Refresh period (ms)                      | Refresh period of the FA link   |                          |
| Station number error                     | Station number is incorrect (duplicate setting, etc.)                     |                          |
| Station assignment information undefined | Station assignment information has not been defined                       |                          |
| Duplicate device assignment              | Link relay or link register assignment is duplicated in a remote station. |                          |
| Communication I/F error                  | A communication I/F error has been detected.                              |                          |
| ROM error                                | A ROM check sum error has been detected.                                  |                          |
| RAM error                                | A RAM check sum error has been detected.                                  |                          |

### Note

The refresh period refers to the cyclic transmission period of the FA link.

To display local station status, use the following procedure.

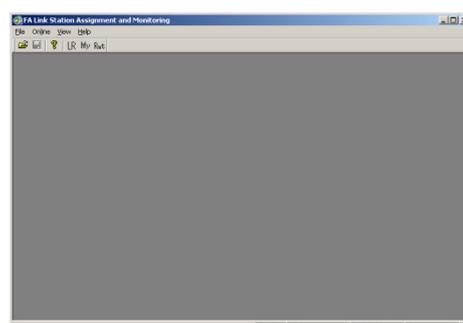
### ◆ Procedure ◆

- (1) Confirm that the FA Link Tool is displayed.
- (2) Select [Online]–[Status Monitor]–[Status of Local Station] from the menu bar.  
⇒ The "FA Link - Status of Local Station" dialog box opens.

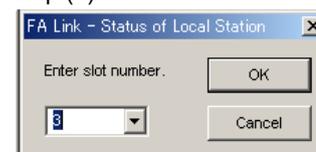
- (3) Select a slot number using the combo box.

### Note

A list of the slot numbers with FA link modules mounted is displayed in the drop down list. You can also enter a slot number directly.



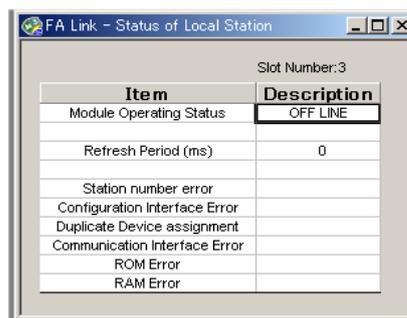
Step (1)



Steps (3) and (4)

**(4) Click [OK].**

⇒ The "FA Link - Status of Local Station" window opens.

**(5) Check the local station status, and close the "FA Link - Status of Local Station" window.**

Step (5)

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## ■ Displaying Statuses of Other Stations

This function displays the FA link module status of other stations (32 stations) on the same network as the specified FA link module.

The table below lists the items displayed for the statuses of other stations with the item descriptions.

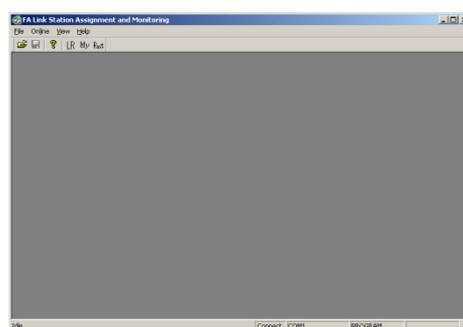
**Table H7.4 Other Station Status Items and Description**

| Status        | Description  |
|---------------|--|
| ON LINE       | Communication is normal.   |
| SEQ STOP      | Sequence program has stopped with error or is not executing.                         |
| CPU NOT READY | CPU is not operating normally.   |
| —             | Not communicating normally because station is not connected or setting error exists. |

To display the statuses of other stations, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the FA Link Tool is displayed.
- (2) Select [Online]–[Status Monitor]–[Status of Remote Stations] from the menu bar.  
⇒ The "FA Link - Status of Remote Stations" dialog box opens.



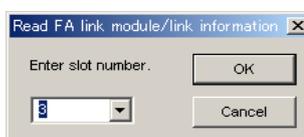
Step (1)

H0701\_12.VSD

- (3) Select a slot number using the combo box.

### Note

A list of all slot numbers with FA link modules mounted is displayed in the drop down list. You can also enter a slot number directly.



Steps (3) and (4)

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- (4) Click [OK].  
⇒ The "FA Link - Status of Remote Stations" window opens.
- (5) Check the status of the other stations and close the "FA Link - Status of Remote Stations" window.

| Station No. | Status   | Station No. | Status |
|-------------|----------|-------------|--------|
| 1           | ON LINE  | 17          | -      |
| 2           | SEQ STOP | 18          | -      |
| 3           | -        | 19          | -      |
| 4           | -        | 20          | -      |
| 5           | -        | 21          | -      |
| 6           | -        | 22          | -      |
| 7           | -        | 23          | -      |
| 8           | -        | 24          | -      |
| 9           | -        | 25          | -      |
| 10          | -        | 26          | -      |
| 11          | -        | 27          | -      |
| 12          | -        | 28          | -      |
| 13          | -        | 29          | -      |
| 14          | -        | 30          | -      |
| 15          | -        | 31          | -      |
| 16          | -        | 32          | -      |

Step (5)

H0701\_14.VSD

## H7.1.5 List of Error Messages for the FA Link Tool

The following table lists error messages for the FA Link Tool, along with possible causes and remedies.

### ■ List of Error Messages

**Table H7.5 List of Error Messages**

| Error Messages                       | Cause  | Troubleshooting  |
|--------------------------------------|--|--|
| Error reading link information.      | An error has occurred during communications with the CPU.  | Replace the computer cable.<br>Replace the computer.<br>Replace the sequence CPU module. |
| No FA link module in connected unit. | No FA link module is mounted.  | Attach the FA link module, and repeat the operation.                                     |
| Invalid data input                   | The specified value exceeds the range of the link relays and link registers or invalid data entered. | Specify a value within range.  |
| Data size exceeded upper limit.      | The total data size is out range.  | Specify a value within range.  |
| Duplicate data.                      | A duplicate link relay or link register has been specified.  | Set up the link relays and link registers without duplication.                           |
| Error in module specification.       | The slot number specified for a FA link module is incorrect.   | Specify a proper slot number.  |
| Error/Alarm in CPU. (XXXX-XXAA)      | An error has occurred while accessing the FA link module.  | For details, see Table H7.5, "Error Codes for Access Errors."                            |

### ■ Error Codes for Access Errors

**Table H7.6 Error Codes for Access Errors**

| Error Code(AA)       | Cause   | Troubleshooting                                     |
|----------------------|---|---|
| 26                   | Offline error:<br>Assignment was made to an offline station, or the local station is offline. | Assign to an online station.<br>Correct the wiring. |
| 83                   | Parameter error:<br>Assignment address or size is invalid.                                    | Assign the correct address and size.                |
| E2<br>D5<br>C1<br>BF | Communications error:<br>Noise, hardware failure, etc.  | Remove noise.<br>Replace the module.                |

## H7.2 FL-net Setup and Monitoring

This section describes how to perform FL-net set up and monitor the status of nodes on an FL-net for a module with FL-net (OPCN-2) interface.

The FL-net setup functions allocate devices (link relays and link registers), set up token watchdog time and assign names to each FL-net node.

The FL-net monitoring functions display statuses of each node on the FL-net and network information. You can use the FL-net Tool to perform these setup and monitoring functions.

The FL-net Tool can be used with the following module with FL-net (OPCN-2) interface:

- FL-net (OPCN-2) Interface Module (F3LX02-0N)

### Note

An FL-net is a data link network providing connection between FA-M3 systems, as well as connection between FA-M3 systems and FL-net compatible controllers from other suppliers. FL-net (OPCN-2) Interface Modules are used to configure an FL-net.

### Note

- For details on the FL-net (OPCN-2) Interface Module, see "FL-net (OPCN-2) Interface Module" (IM 34M06H32-□□E).
- For details on FL-net, see "Sequence CPU – Functions."



### CAUTION

You can only read link information from or register link information to an FL-net (OPCN-2) Interface Module from the CPU using the FL-net (OPCN-2) Interface Module.

Reading link information from or registering link information to an FL-net (OPCN-2) Interface Module from multiple CPUs may cause subsequent reading or registration to fail.

If so, switch off the FA-M3 and turn it back on.

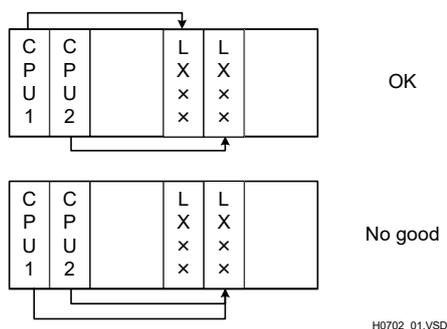


Figure H7.3 Reading and Registering Link Information

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## H7.2.1 Starting the FL-net Tool

The FL-net Tool can be used to perform FL-net setup and monitoring.

Select [Tools]–[Set up I/O Module]–[FL-net] from the menu bar of WideField3 to start the FL-net Tool.

Before you can write to, or read from an FL-net (OPCN-2) interface module using the FL-net Tool, you must first establish online connection to the FA-M3 using WideField3. If you are not connected online, you can only edit an FL-net setup file.

### Note

---

An FL-net setup file contains configuration information to be set up in the FL-net (OPCN-2) interface module.

---

### Note

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- For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."
  - For details on configuration, see Section D3.1, "Building a Project" (Offline).
- 

If you are not connected online, a dialog box will be displayed indicating that online functions are not available. Clicking [Yes] launches the FL-net Tool.

### Note

---

- The FL-net (OPCN-2) interface module cannot be accessed if you connect WideField3 online after starting the FL-net Tool. To fix the problem, restart the FL-net Tool.
  - You cannot run multiple copies of the FL-net Tool concurrently.
-

## H7.2.2 Menu Layout and Description

This section lists and describes the menu items of the FL-net Tool.

**Table H7.7 Menu Layout of the FL-net Tool**

| File    | Setup                           | Network                     | View                | Help               |
|---------|---------------------------------|-----------------------------|---------------------|--------------------|
| New     | FL-net All Nodes Status Display | Display Network Information | Toolbar             | FL-net Help        |
| Open    | Slot of FL-net Module           |                             | Status Bar          | Contents and Index |
| Close   |                                 |                             | Decimal Display     | About FL-net       |
| Save    |                                 |                             | Hexadecimal Display |                    |
| Save As |                                 |                             |                     |                    |
| Exit    |                                 |                             |                     |                    |

**Table H7.8 Menu Description for the FL-net Tool**

|   | Menu Name                          | Icon | Short-cut | Description   |
|---|------------------------------------|------|-----------|---|
| ■ | File                               |      |           |   |
|   | New                                | ✓    | Ctrl+N    | Creates a new file. The default file name is "Flnetini.csv."  |
|   | Open                               | ✓    | Ctrl+F    | Opens an existing FL-net setup file.  |
|   | Close                              |      |           | Closes the screen.  |
|   | Save                               | ✓    | Ctrl+S    | Saves the file being edited, overwriting existing content.  |
|   | Save As                            |      |           | Saves the file being edited with a different file name.   |
|   | Exit                               |      |           | Exits from the FL-net Tool.   |
| ■ | Setup                              |      |           |   |
|   | FL-net All Nodes Status Display *1 | ✓    | Ctrl+R    | Shows which nodes are participating in the network and displays information on device allocation, etc.              |
|   | Slot of FL-net Module *1           |      |           | Designates a target FL-net (OPCN-2) interface module when multiple FL-net (OPCN-2) interface modules are installed. |
| ■ | Network                            |      |           |   |
|   | Display Network Information *1     | ✓    | Ctrl+W    | Displays network information.   |
| ■ | View                               |      |           |   |
|   | Toolbar                            |      |           | Hides or shows the toolbar.   |
|   | Status Bar                         |      |           | Hides or shows the status bar.  |
|   | Decimal Display                    | ✓    |           | Displays device allocation in decimal notation.   |
|   | Hexadecimal Display                | ✓    |           | Displays device allocation in hexadecimal notation.   |
| ■ | Help                               |      |           |   |
|   | FL-net Help                        | ✓    |           | Displays help information.  |
|   | Contents and Index                 |      |           | Displays contents and index for topic search.   |
|   | About FL-net                       |      |           | Displays version information.   |

\*1 Functions available only when connected to FA-M3.

## H7.2.3 All Nodes Status Display Window Layout

To set up FL-net nodes, use the All Nodes Status Display window shown below. You can allocate common data (link relays and link registers), as well as specify token watchdog time and node names in this window.

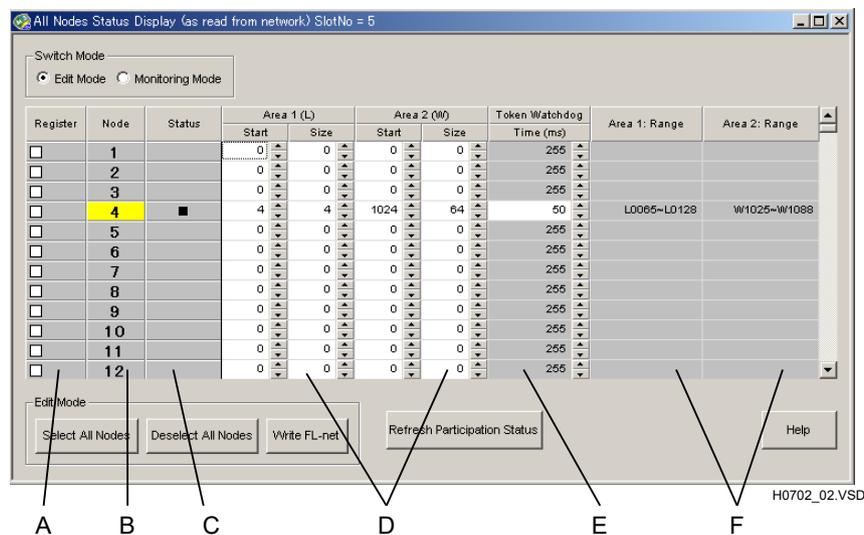


Figure H7.4 All Nodes Status Display Window

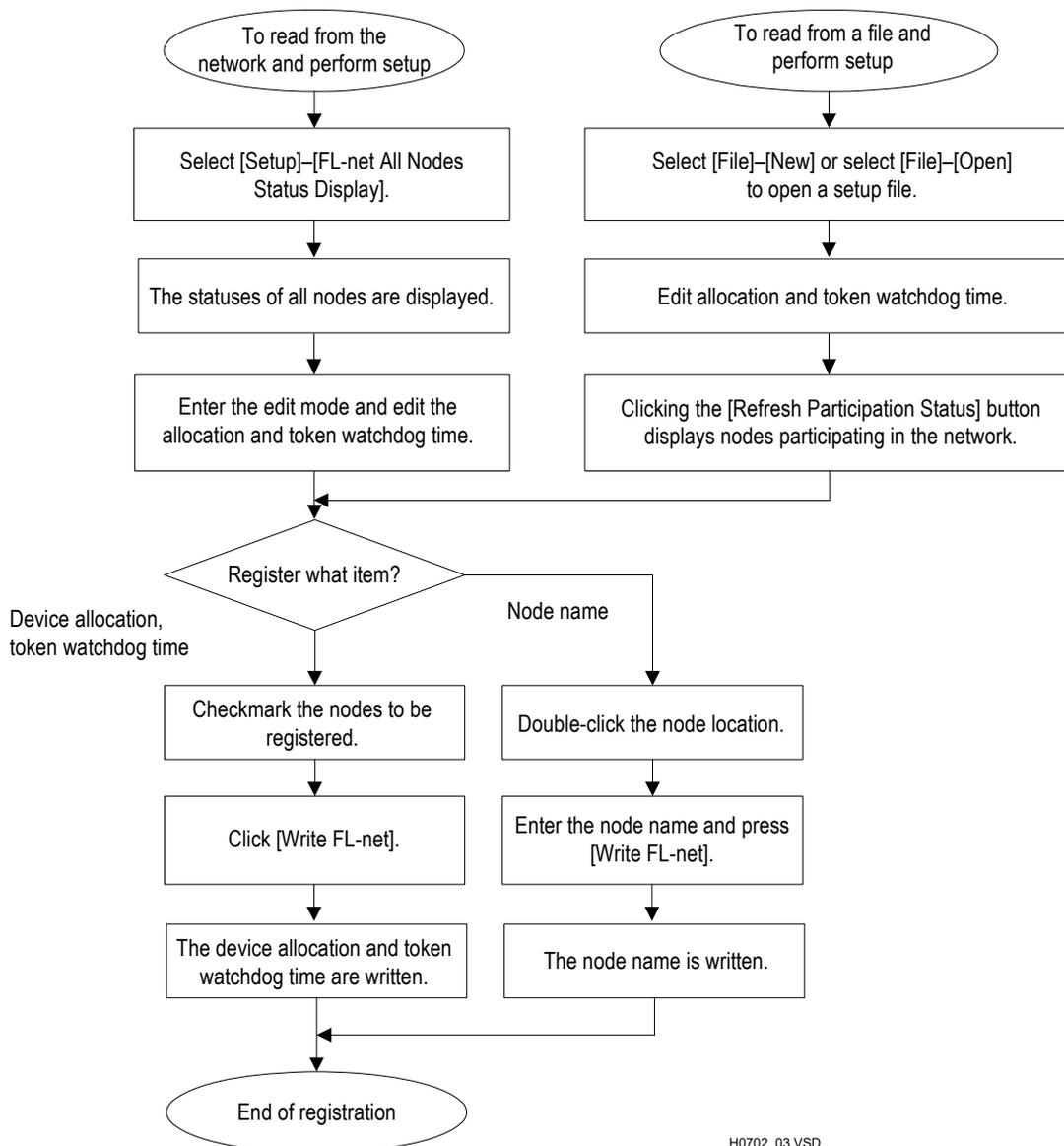
- A Register checkbox area  
Specifies whether information for individual nodes is to be written to the FL-net (OPCN-2) interface module.
- B Node number area  
Displays node numbers. The local node is displayed with a yellow background.
- C Participation Status area  
Displays the ■ symbol for nodes participating in the network.
- D Device allocation setup area  
Used for editing the allocation of link relays (in area 1) and link registers (in area 2) to individual nodes.
- E Token watchdog time setup area  
Specifies the token watchdog time.
- F Device range display area  
Displays the range of link devices allocated according to the common data allocation setup information.

## H7.2.4 Nodes Setup

To set up FL-net nodes, use the All Nodes Status Display window. The All Nodes Status Display window may be displayed by reading data either from a module with an FL-net (OPCN-2) interface or a file.

You can create a data file by creating a new file or by reading information from a module with an FL-net (OPCN-2) interface and saving it to a file.

### ■ FL-net Nodes Setup Procedure



H0702\_03.VSD

Figure H7.5 FL-net Node Setup Flowchart

## ■ Opening the All Nodes Status Display Window

### (1) Reading the status of all nodes from the network

To read the status of all nodes from the network, use the following procedure.

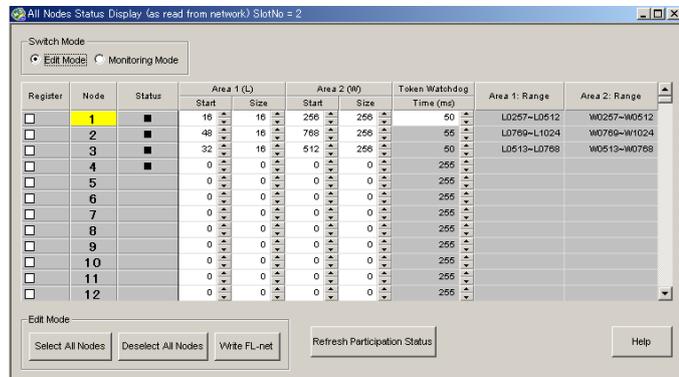
#### ◆ Procedure ◆

(1) Confirm that the FL-net Tool is displayed.

(2) Select [Setup]–[FL-net All Nodes Status Display] from the menu bar.

⇒ The All Nodes Status Display window opens. The node number of the local node is displayed with a yellow background. Nodes participating in the network are displayed with a “■” symbol.

(3) Close the All Nodes Status Display window.



Step (2)

H0702\_04.VSD

#### Note

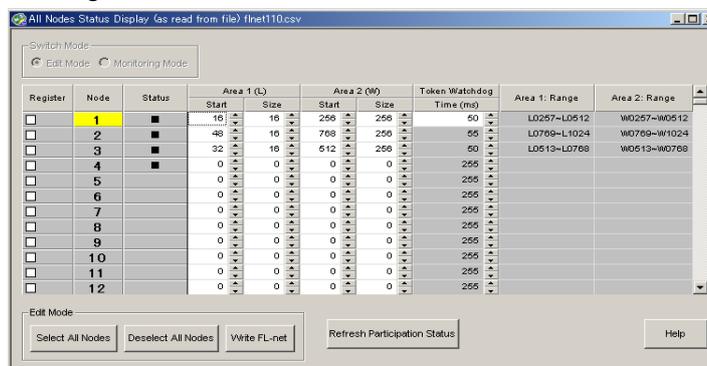
- The All Nodes Status Display window does not show detailed node information. To display detailed node information, use the Node Status Display window.
- If multiple modules with FL-net (OPCN-2) interface are installed within the same unit, the node that has read the link information will be displayed with a yellow background.

#### Note

For details on the Node Status Display window, see Section H7.2.5, "Displaying Node Status and Network Information"

### (2) Reading the status of all nodes from a file

Open the [FL-net All Nodes Status Display] window by selecting [File]–[New] from the menu bar to create a new file or by selecting [File]–[Open] from the menu bar to open an existing file.



H0702\_05.VSD

Figure H7.6 All Nodes Status Display Window after Reading from a File

## ■ Editing and Registering Common Data Allocation Information and Token Watchdog Time

We describe here how to edit common data allocation information and token watchdog time and finally register the entered data.

The following table lists the data range for the setup parameters.

**Table H7.9 Data Range for Setup Parameters**

| Item                 | Range       |
|----------------------|-------------|
| Area 1 start address | 0 to \$1FF  |
| Area 1 size          | 0 to \$200  |
| Area 2 start address | 0 to \$1FFF |
| Area 2 size          | 0 to \$2000 |
| Token watchdog time  | 1-255 (ms)  |

The relevant procedure is given below.

### ◆ Procedure ◆

- (1) Confirm that the All Nodes Status Display window is open.
- (2) If the status for all nodes was read from the network earlier, turn on the [Edit Mode] option button.

#### Note

If the status for all nodes was read from a file earlier, the [Edit Mode] option button is automatically turned on.

- (3) Enter a start address and a size for areas 1 and 2, and enter a token watchdog time.

#### Note

Start addresses and sizes must be entered on word basis. The start address begins with 0. Token watchdog times are entered in units of 1 ms.

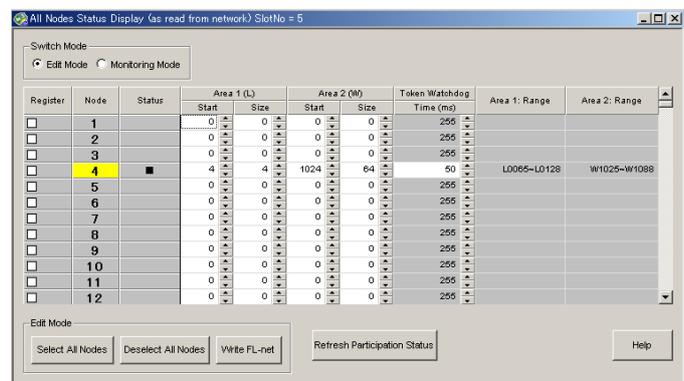
#### Note

Start addresses and sizes may be displayed in decimal or hexadecimal. Select [View]-[Specify Display Mode]-[Display Format]-[Decimal Display] or [View]-[Hexadecimal Display] from the menu bar accordingly. A hexadecimal number is prefixed by a dollar sign (\$). To enter a hexadecimal number, enter a dollar sign (\$) followed by the number in hexadecimal notation.

- (4) Specify the nodes to be written by turning on the corresponding checkboxes in the [Register] checkbox area.

#### Note

Clicking [Select All Nodes] turns on the checkboxes for all nodes available for writing. Clicking [Deselect All Nodes] clears the checkboxes for all nodes.

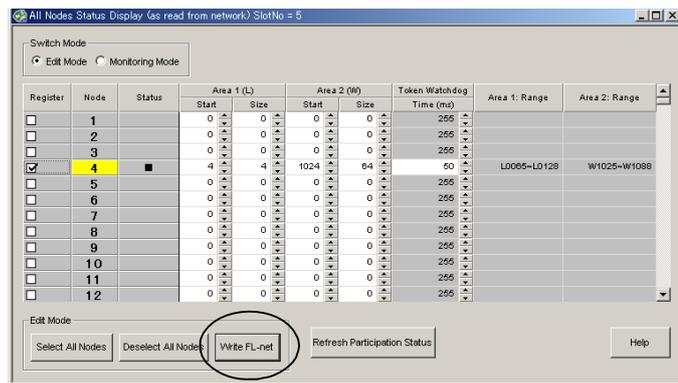


Steps (1) to (4)

H0702\_06.VSD

**(5) Click [Write FL-net]**

⇒ A dialog box opens to confirm writing.



Step (5)

H0702\_07.VSD

**(6) Click [Yes].**

⇒ Writing begins. When writing is completed, a dialog box opens to confirm the completion of writing.

**Note**

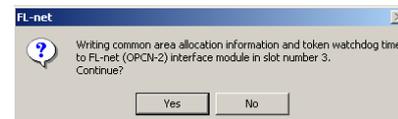
The status bar shows execution progress during writing.

**CAUTION**

- Before writing to the FL-net, you should disconnect all existing online connections to the FA-M3 from ToolBox on the local PC, as well as, from WideField3 and FA-M3 applications from other PCs.
- Do not perform setup for PCs or sequencers that do not support writing of network parameters.
- An error may be generated during writing because a node has withdrawn temporarily from the network. If this happens, a dialog box appears to prompt whether to continue with the write operation. Clicking [Retry] attempts writing to the error node again; clicking [Next Node] skips to the next node; clicking [Abort] aborts the write operation.
- Writing proceeds in ascending order of the node numbers. During the write operation, overlapping common memory allocation may be detected for some nodes. If this happens, the common memory allocation information will be cleared before network participation. At the end of the write operation, a dialog box will be displayed. You can select to retry writing, or you may choose to update the setup information by turning off and again turning on the power supply to the FA-M3.

**(7) Click [OK].**

⇒ Control returns to the All Nodes Status Display window. In the [Register] column, checkboxes are automatically turned off for nodes whose information has been written successfully, but left on for error nodes.



Step (6)

H0702\_08.VSD



Step (6)

H0702\_09.VSD

## ■ Registering Node Names

You can edit node names, and write the edited names to the FL-net (OPCN-2) interface module. Use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the All Nodes Status Display window is open.
- (2) If the status for all nodes was read from the network earlier, turn on the [Edit Mode] option button.

#### Note

If the status for all nodes was read from a file earlier, the [Edit Mode] option button is automatically turned on.

- (3) Double click in the Node column the number for the node whose name is to be edited.

⇒ The Write Node Name dialog box opens for you to edit the node name.

- (4) Edit the node name in the [Node Name] text box.

#### Note

A node name can contain up to 10 ASCII characters.  
Clicking [Read FL-net] reads the node name from a module with FL-net (OPCN-2) interface.

- (5) Click [Write FL-net].

⇒ A dialog box opens to confirm the write operation.

#### Note

Before writing to the FL-net, you should disconnect all existing online connections to the FA-M3 from ToolBox running on the local PC, as well as, from WideField3 and FA-M3 applications running on other PCs.

- (6) Click [Yes].

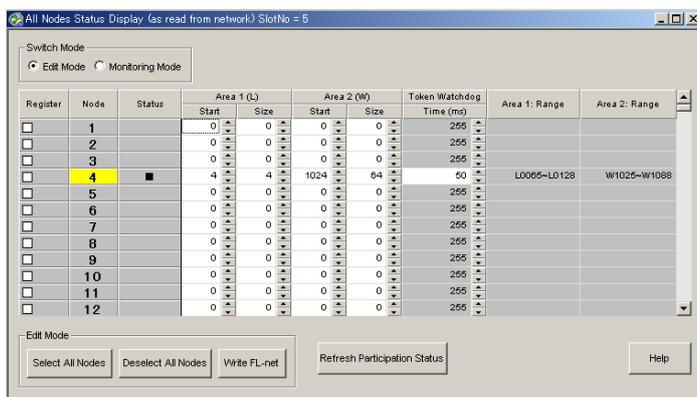
⇒ Writing begins. When writing completes, a dialog box opens to notify completion of the write operation.

- (7) Click [OK].

⇒ Control returns to the Write Node Name dialog box.

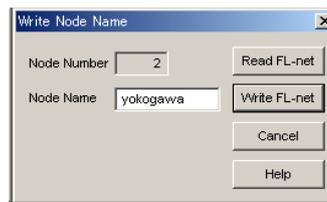
- (8) Click [Cancel].

⇒ Control returns to the All Nodes Status Display window.



Steps (1) to (3)

H0702\_10.VSD



Steps (4) and (5)

H0702\_11.VSD

## ■ Saving Node Setup Information to a File

You can save device allocation and token watchdog time data to a file. Data is saved in CSV format.

To save edited data to a file, select [File]–[Save As] from the menu bar.

If the status for all nodes was read from a file earlier, you can save edited data back to the same file by selecting [File]–[Save].

- Selecting [Save As] displays the Save As dialog box. Enter a file name and click [Save] to save the data to the file.
- Selecting [Save] saves data to the original file, overwriting existing content.

### **Note**

---

For a file name, enter a string of up to eight alphanumeric characters starting with a letter.

---

### **Note**

---

- If the status for all nodes was read from the network earlier, selecting [Save] opens the Save As dialog box, instead of the Save dialog box.
  - Node names cannot be saved to a file.
-

## H7.2.5 Displaying Node Status and Network Information

The FL-net monitoring function displays detailed status and network information of individual nodes.

### ■ Displaying Detailed Status of Individual Nodes

This function displays detailed status of individual nodes.

#### Note

For details on the monitored items, see “FL-net (OPCN-2) Interface Module” (IM 34M06H32-□□E).

To display detailed status information for a node, use the following procedure.

### ◆ Procedure ◆

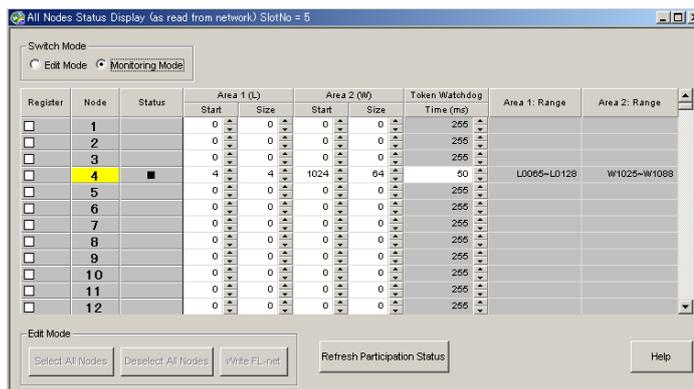
(1) Confirm that the FL-net Tool is open.

(2) Select [Setup]–[FL-net All Nodes Status Display] from the menu bar.

⇒ Statuses of all nodes are read from the network and displayed in the All Nodes Status Display window.

(3) Turn on the [Monitoring Mode] option button.

(4) Double click in the Node column the number of the node whose detailed status is to be displayed.



Steps (3) and (4)

H0702\_12.VSD

⇒ The Node Status Display window opens.

#### Note

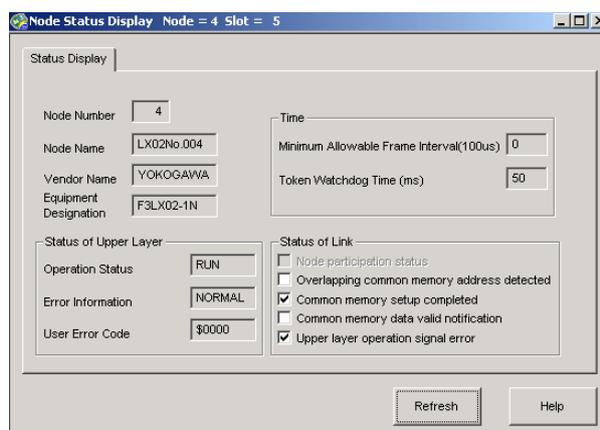
Clicking [Refresh] reads and redisplay the latest status information.

(5) Close the Node Status Display window.

⇒ Control returns to the All Nodes Status Display window.

(6) Close the All Nodes Status Display window.

⇒ Control returns to the FL-net Tool.



Step (4)

H0702\_13.VSD

## Note

The table below lists the items displayed in the Node Status Display window along with their descriptions.

**Table H7.10 Node Status Display Window Items and Description**

| Category              | Item                                       | Description  |
|-----------------------|--|--|
| Time                  | Minimum allowable frame interval           | Displays the preset value for the minimum allowable frame interval on the FL-net.                              |
|                       | Token watchdog time                        | Displays the token watchdog time.  |
| Status of Upper Layer | Operation Status                           | Displays operation information for the upper layer of the FL-net.  |
|                       | Error Information                          | Displays error status (error codes) for the upper layer of the FL-net.   |
|                       | User error code                            | Displays user error code returned from the upper layer.  |
| Status of link        | Node participation status                  | One bit is stored for each node indicating whether the node is participating in the network.                   |
|                       | Overlapping common memory address detected | Displays whether any overlapping common memory address setup has been detected.                                |
|                       | Common memory setup completed              | One bit is stored for each node indicating whether common memory address setup is completed.                   |
|                       | Common memory data valid notification      | One bit is stored for each node indicating whether common memory data is valid.                                |
|                       | Upper layer operation signal error         | One bit is stored for each participating node indicating the operation signal error status of the upper layer. |

## ■ Displaying Network Information

This function displays network information.

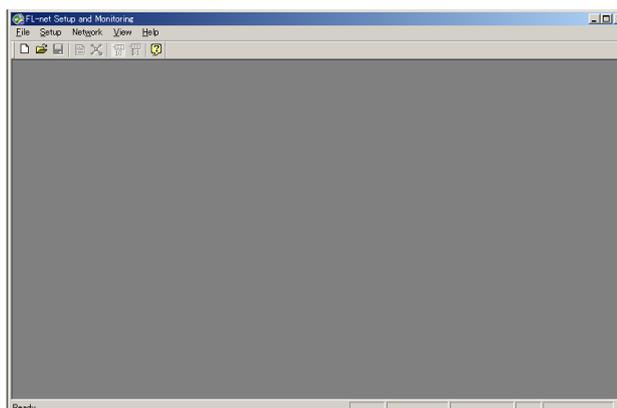
### Note

For details on the monitored items, see “FL-net (OPCN-2) Interface Module” (IM 34M06H32-□□E).

To display network information, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the FL-net Tool is open.
- (2) Select [Network]–[Display Network Information] from the menu bar.



Step (1)

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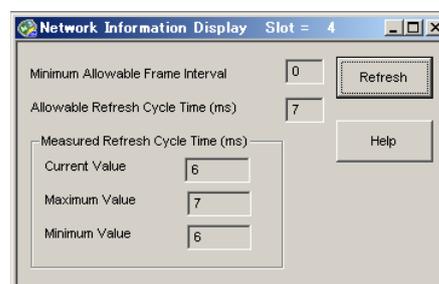
⇒ The Network Information Display window opens.

### Note

Clicking [Refresh] reads and redisplay the latest status information.

- (3) Close the Network Information Display window.

⇒ Control returns to the FL-net Tool.



Step (2)

H0702\_15.VSD

### Note

The Network Information Display window displays the following information.

**Table H7.11 Network Information Display Items and Description**

| Items                            | Description  |
|----------------------------------|--|
| Minimum allowable frame interval | Displays the preset value of the minimum allowable frame interval on the FL-net.       |
| Allowable refresh cycle time     | Displays the preset value of the refresh cycle allowable time.                         |
| Measured refresh cycle time      | Displays the current, maximum, and minimum measured values for the refresh cycle time. |

## H7.2.6 Designating FL-net Slot Numbers

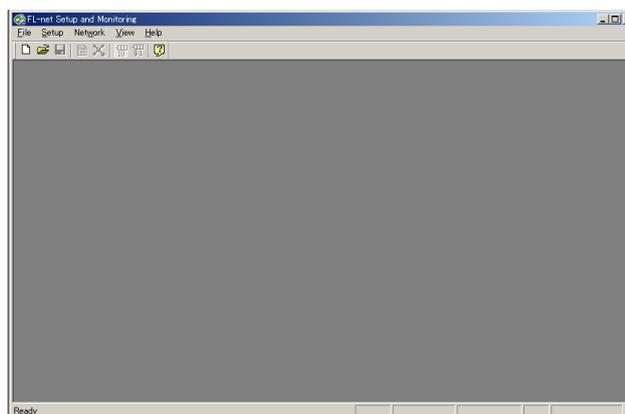
Up to two modules with FL-net (OPCN-2) interface can be mounted on one FA-M3 unit.

When two modules with FL-net (OPCN-2) interface are mounted, you must designate one of them as the target module. If no target module is specified, system defaults to the module with the smaller slot number. To specify the slot number for the target module, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the FL-net Tool is open.
- (2) Select [Setup]–[Slot of FL-net Module] from the menu bar.

⇒ A dialog box opens for you to specify a slot number.

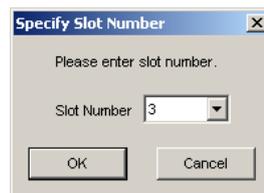


Step (1)

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- (3) Select from the [Slot Number] drop down list the slot number where the target module is installed, and click [OK].

⇒ Control returns to the FL-net Tool.



Step (3)

H0702\_17.VSD

### Note

The slot number setup becomes invalid when you exit from the FL-net Tool.

## H7.2.7 Error Messages

The table below lists error messages that may appear in the FL-net Tool window, along with their probable causes and troubleshooting suggestions.

**Table H7.12 List of Error Messages**

| Messages  | Cause  | Troubleshooting  |
|---|--|--|
| Up to 10 screens may be opened concurrently.                  | You have attempted to open more than 10 screens concurrently.  | Close screens that are no longer required.   |
| FL-net (OPCN-2) interface module not found on connected unit. | No FL-net (OPCN-2) interface module is installed.  | Install a module with FL-net (OPCN-2) interface.   |
| No node selected for writing.                                 | You have not selected a node for writing common data and token watchdog time.  | Select a node and reinitiate the write operation.  |
| Invalid file name   | The file name given to save a file is too long or contains invalid characters.   | Correct the file name.   |
| File not found.   | The specified file does not exist.   | Select an existing file.   |
| Could not save.   | The file could not be saved because of insufficient disk capacity or other reasons.  | Increase the disk capacity.  |
| Invalid data entered.   | The entered common data, token watchdog time, or node name value is out of range.  | Enter a valid value.   |
| Error encountered while reading data for all nodes.           | System has encountered a communications error while reading information for all nodes from the network.  | Check and if necessary, replace the cable and hardware.  |
| Error encountered while reading data for participating nodes. | System has encountered a communications error while reading information for participating nodes from the network.  | Check and if necessary, replace the cable and hardware.  |
| Failed to get status data for specified node.                 | System has encountered a communication error while reading information for a specified node from the network.  | Check and if necessary, replace the cable and hardware.  |
| Failed to get network information data.                       | System has encountered a communications error while reading network information  | Check and if necessary, replace the cable or hardware.   |
| Failed to read node name.                                     | System has encountered a communications error while reading a node name from the network.  | Check and if necessary, replace the cable or hardware.   |
| Failed to write node name.                                    | System has encountered a communications error while writing a node name to the network.  | Check and if necessary, replace the cable or hardware.   |
| Error/alarm in CPU (error code)                               | Error code=0000-E6 indicates that timeout has occurred while writing to a node.<br>Error code=0000-82 indicates that an attempt has been made to set up a PC or sequencer that does not support writing of network parameters. | If error code=0000-E6, retry after verifying that the node exists.<br>If error code=0000-82, do not try to set up a PC or sequencer that does not support writing of network parameters. |

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## H8. Device Manager

The device manager tool allows you to upload CPU device data to a personal computer and save the data to a file. Using the file, you can then edit, download, and compare device data.

You can also specify a range of devices to be uploaded or downloaded.

Devices that can be saved to a file include:

- Internal relay (I)
- Shared relay or extended shared relay (E)
- Link relay (L)
- Timer relay (current value) (T)
- Counter relay (current value) (C)
- Data register (D)
- Shared register or extended shared register (R)
- Link register (W)
- Index register (V)
- File register (B)
- Cache register (F)

Devices that cannot be saved to a file are:

- Input/output relay (X, Y)
- Timer and counter preset value
- Pointer (P)
- Macro relay (H)
- Macro register (A)
- Macro index register (U)
- Structure pointer (Q)

### Note

- 
- The device manager is a WideField3 extended tool and cannot run as a standalone application.
  - Online functions of the device manager are available only when WideField3 is connected online.
  - Before using the online functions of the device manager, you must connect online using WideField3. If you start the device manager and then connect online using WideField3, you will not be able to use the online functions. To fix the problem, restart the device manager.
-

## ● Function Limitations for Each CPU Type

**Table H8.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

**Table H8.2 Files Created by the Device Manager**

| Type                   | Extension | Description   |
|------------------------|-----------|---|
| Device management file | .ydvf     | Stores device data.<br>You can use up to 254 characters for the file name with an absolute path within the range of the Windows specifications.   |
|                        | .ydvf2    | Has an extended format of .ydvf and stores device data, including I/O data.<br>You can use up to 254 characters for the file name with an absolute path within the range of the Windows specifications. |
|                        | .ymdf     | Stores device data in the format suitable for the email functions.<br>You can use up to 254 characters for the file name with an absolute path within the range of the Windows specifications.          |

## H8.1 Device Manager Window Layout and Startup

This section describes the layout of the device manager window and explains how to start the device manager.

### H8.1.1 Device Manager Window

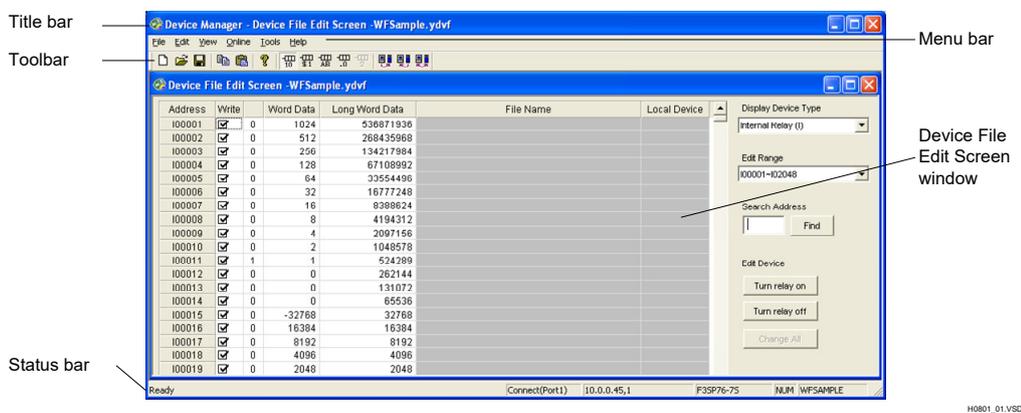


Figure H8.1 Device Manager Window

### H8.1.2 Device Manager Window Layout

#### ■ Title Bar

The title bar is displayed at the top of the device manager screen. It shows the application name and the name of the device file currently opened. The title bar displays only the application name, "Device Manager", immediately after startup.

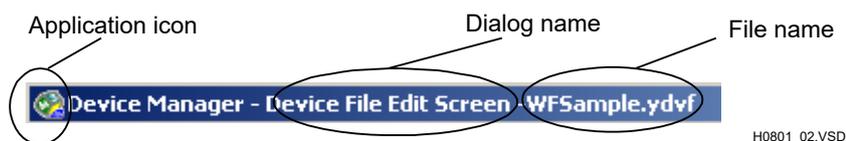


Figure H8.2 Title Bar

#### ■ Menu Bar and Toolbar

##### ● Menu Bar

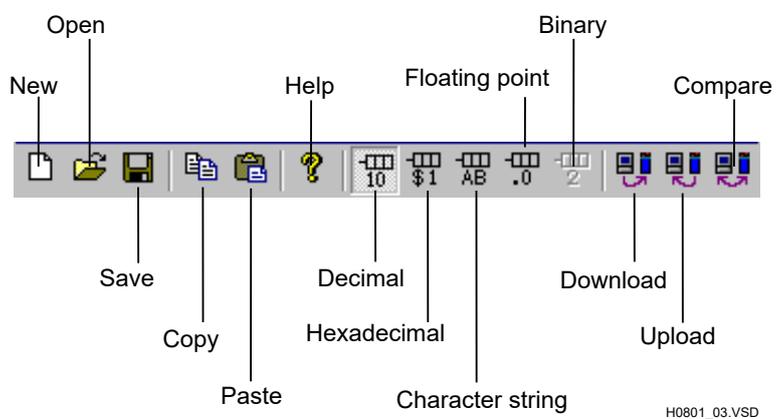
The menu bar is displayed at the top of the device manager work area. Device manager functions are accessible as commands from the menu bar. The table below lists the menus on the menu bar. To select a menu command, point the mouse at the menu you want to select, and click the mouse button, just as with other Windows application programs.

Table H8.3 List of Menu Commands

| Menu          | Menu Commands                            |                         | Descriptions  |
|---------------|--|-------------------------|---|
| File          | New                                      |                         | Creates a new device file.  |
|               | Open                                     |                         | Opens an existing device file.  |
|               | Close                                    |                         | Closes a currently open device file.  |
|               | Save                                     |                         | Saves an open device file, overwriting existing content on disk.  |
|               | Save As                                  |                         | Saves an open device file with a new name.  |
|               | Open WideField/CADM3 Device File         |                         | Open a device file created using device manager of WideField/CADM3.                                       |
|               | Convert Reproduction Data to Device Data |                         | Converts a reproduction data file created by the Virtual-M3 one-touch playback function into device data. |
|               | Compare Files                            |                         | Compares two sets of device data.   |
|               | Recent Files                             |                         | Lists up to 8 most recently used device files.  |
|               | Exit                                     |                         | Exits the application.  |
| Edit          | Copy                                     |                         | Copies a specified range.   |
|               | Paste                                    |                         | Pastes the copied content to a specified location.  |
| Search        | Cross-Reference Search                   |                         | Finds the device name selected in the Comparison Results window with a cross-reference search.            |
|               | Find                                     |                         | Searches for device names, tag names, and I/O comments in the Comparison Results window.                  |
|               | Next Search                              | Find Previous           | Moves the selected current position up one row when more than one result was hit in the search.           |
|               |  | Find Next               | Moves the selected current position down one row when more than one result was hit in the search.         |
| View          | Toolbar                                  |                         | Shows or hides the toolbar.   |
|               | Status Bar                               |                         | Shows or hides the status bar.  |
|               | Display Format                           | Decimal                 | Changes display format to decimal.  |
|               |  | Hexadecimal             | Changes display format to hexadecimal.  |
|               |  | Character String        | Changes display format to character string.   |
|               |  | Floating Point          | Changes display format to floating point.   |
| Binary        | Changes display format to binary.        |                         |   |
| Local Devices |  | Displays local devices. |   |
| Online        | Download                                 |                         | Transfers device data from the personal computer to the CPU.  |
|               | Upload                                   |                         | Transfers device data from the CPU to the personal computer.  |
|               | Compare File and CPU                     |                         | Compares device data in device file and CPU.  |
| Tools         | Export                                   |                         | Exports displayed comparison results and device edit data in CSV format.                                  |
| Help          | Device Manager Help                      |                         | Displays device manager help.   |
|               | Contents and Index                       |                         | Searches by keyword and displays help contents.   |
|               | About Device Manager                     |                         | Displays the version number of the device manager software.   |

## ● Toolbar

The toolbar of the device manager displays icons for frequently used menu commands of the menu bar. Selecting [View]–[Toolbar] from the menu bar toggles between showing and hiding the toolbar.



**Figure H8.3** Layout of Toolbar

## ■ Status Bar

The status bar displays the status and related information of the device manager.

Selecting [View]–[Status Bar] from the menu bar toggles between showing and hiding the status bar.

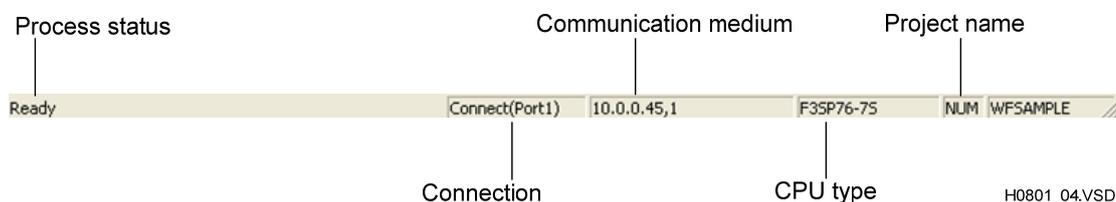


Figure H8.4 Layout of Status Bar

## ■ Device File Edit Screen Window

The Device File Edit Screen window allows you to edit relay and word device values.

You can also use it to view uploaded device values.

The Device File Edit Screen window automatically opens when you open an existing device file.

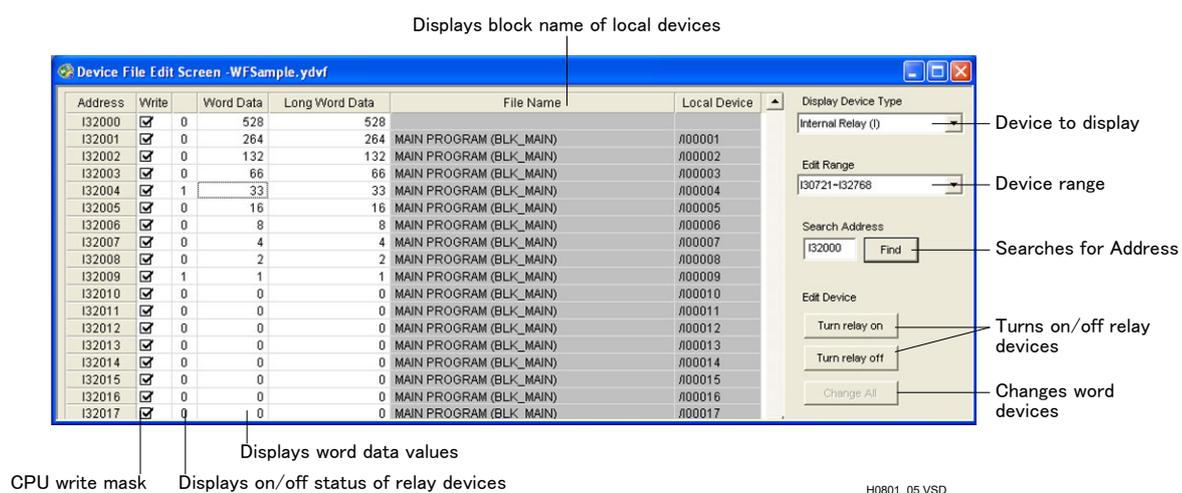
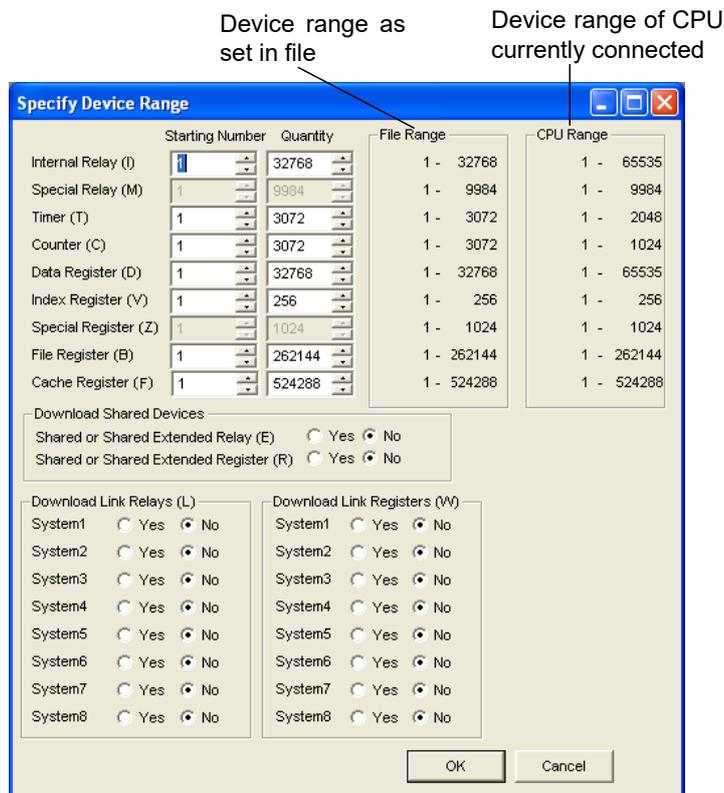


Figure H8.5 Device File Edit Screen Window Layout

## ■ [Specify Device Range] Dialog Box

The Specify Device Range dialog box is displayed when you use any of the following functions: download, upload, compare and new. The dialog box display varies with the function used.



H0801\_06.VSD

Figure H8.6 Specify Device Range Dialog Box (for downloading)

## H8.1.3 Starting Device Manager

To start the device manager, use the following procedure.

### ◆ Procedure ◆

(1) Select [Tools]–[Device Management]

from the menu bar.

⇒ The device manager starts.

### Note

You cannot run multiple copies of the Device Manager concurrently.

## H8.2 Creating a New Device File

To create a new device file, use the following procedure.

### ◆ Procedure ◆

(1) Select [Tools]–[Device Management] from the WideField3 menu bar.

⇒ The device manager starts.

(2) Select [File]–[New] from the menu bar.

⇒ The Specify Device Range dialog box is displayed.

(3) Specify the range of devices to be created, and click [OK].

⇒ The Device File Edit Screen window is displayed.

|                      | Starting Number | Quantity | Maximum Range |
|----------------------|-----------------|----------|---------------|
| Internal Relay (I)   | 0               | 0        | 1 - 65535     |
| Special Relay (M)    | 0               | 0        | 1 - 9984      |
| Timer (T)            | 0               | 0        | 1 - 3072      |
| Counter (C)          | 0               | 0        | 1 - 3072      |
| Data Register (D)    | 0               | 0        | 1 - 65535     |
| Index Register (V)   | 0               | 0        | 1 - 256       |
| Special Register (Z) | 0               | 0        | 1 - 1024      |
| File Register (B)    | 0               | 0        | 1 - 262144    |
| Cache Register (F)   | 0               | 0        | 1 - 524288    |

Refer to CPU

--- Edit Shared Devices ---  
 Shared or Shared Extended Relay (E)  Yes  No  
 Shared or Shared Extended Register (R)  Yes  No

--- Edit Link Relays (L) ---  
 System1  Yes  No  
 System2  Yes  No  
 System3  Yes  No  
 System4  Yes  No  
 System5  Yes  No  
 System6  Yes  No  
 System7  Yes  No  
 System8  Yes  No

--- Edit Link Registers (W) ---  
 System1  Yes  No  
 System2  Yes  No  
 System3  Yes  No  
 System4  Yes  No  
 System5  Yes  No  
 System6  Yes  No  
 System7  Yes  No  
 System8  Yes  No

OK Cancel

Step (3)

H0802\_01.VSD

(4) Edit devices.

(5) Select [File]–[Save As] from the menu bar.

⇒ The Save As dialog box is displayed.

(6) Enter a new file name in the [File name] text box, and click [Save].

### Note

You can use a device file saved earlier for downloading, comparison, or importing/exporting to MS-Excel.

⇒ Control returns to the Device File Edit Screen window.

## H8.3 Uploading Device Data

This section describes how to upload device data.

### Note

Before using the online functions of the device manager, you must first connect online using WideField3.

To upload device data, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Tools]–[Device Management] from the menu bar.

⇒ The device manager opens.

- (3) Select [Online]–[Upload[CPU->PC]] from the menu bar of the device manager.

⇒ The Save As dialog box is displayed.

- (4) Enter a new file name, and click [Save].

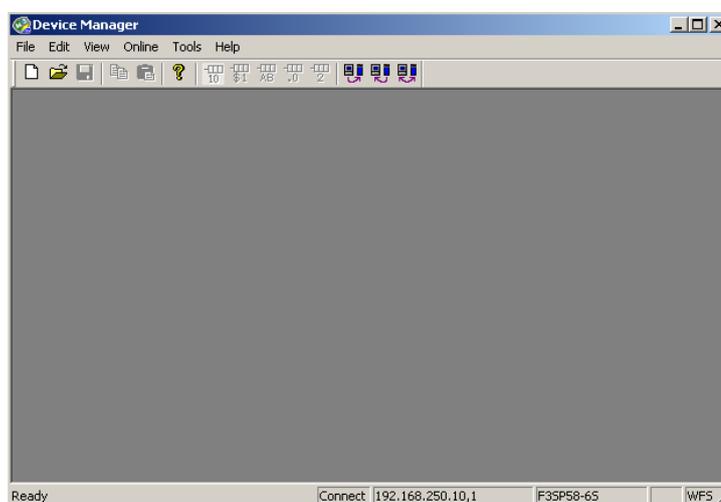
⇒ The Specify Device Range dialog box opens.

- (5) Specify the range of devices you want to upload, and click [OK].

⇒ Uploading starts. When uploading is completed, "End of uploading" is displayed.

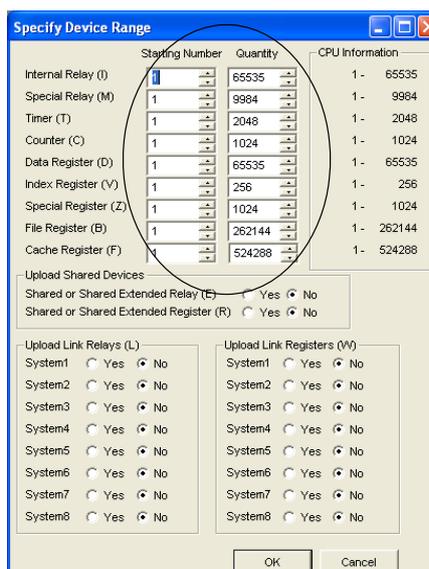
### Note

An Uploading dialog box is displayed during uploading.



Step (2)

H0803\_01.VSD



Step (5)

H0803\_02.VSD

(6) Click [OK].

(7) Select [File]–[Open] from the menu bar.

⇒ The Open dialog box is displayed.

(8) Enter the name of the uploaded file in the [File name] text box, and click [Open].

⇒ The Device File Edit Screen window is displayed.

### Note

The uploaded device data may also be saved as a device file.

### Note

- The number of devices to be uploaded is specified in units of different sizes for different device types.
- If uploading is aborted, uploaded device data is discarded.

**Table H8.4 Units for Number of Device in Device Manager**

| Device               | Unit for Number of Devices |
|----------------------|----------------------------|
| Internal relay (I)   | 32                         |
| Special relay (M)    | 32                         |
| Shared relay (E)     | 32                         |
| Link relay (L)       | 16                         |
| Timer (T)            | 1                          |
| Counter (C)          | 1                          |
| Data register (D)    | 2                          |
| Shared register (R)  | 2                          |
| Link register (W)    | 16                         |
| Index register (V)   | 2                          |
| Special register (Z) | 2                          |
| File register (B)    | 2                          |
| Cache register (F)   | 2                          |

## H8.4 Downloading Device Data

This section describes how to download device data.

### Note

Before using the online functions of the device manager, you must first connect online using WideField3.

To download device data, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Tools]–[Device Management] from the menu bar.

⇒ The device manager is displayed.

- (3) Select [Online]–[Download] from the menu bar of the device manager.

⇒ The [Open] dialog box is displayed.

- (4) Enter the name of the file you want to download in the File Name text box, and click [Open].

⇒ The Specify Device Range dialog box is displayed.

- (5) Specify the range of devices you want to download, and click [OK].

⇒ Downloading starts. When downloading is completed, "End of downloading" is displayed.

### Note

The Downloading dialog box is displayed during downloading.

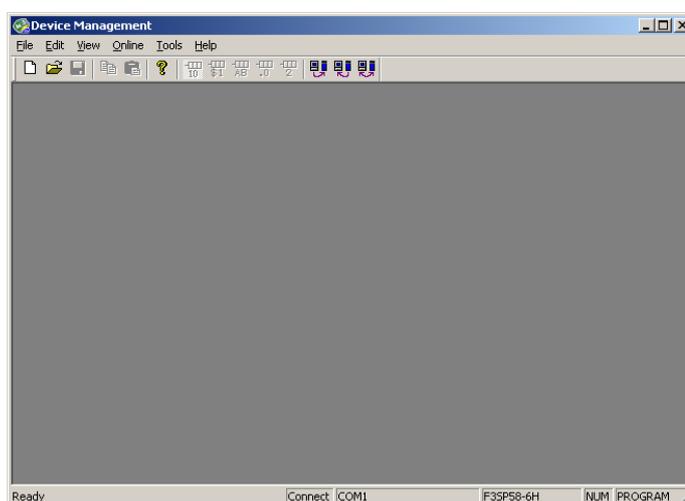


### CAUTION

If downloading is aborted, the device data in the CPU is partially overwritten. To fix the problem, download with valid device data again.

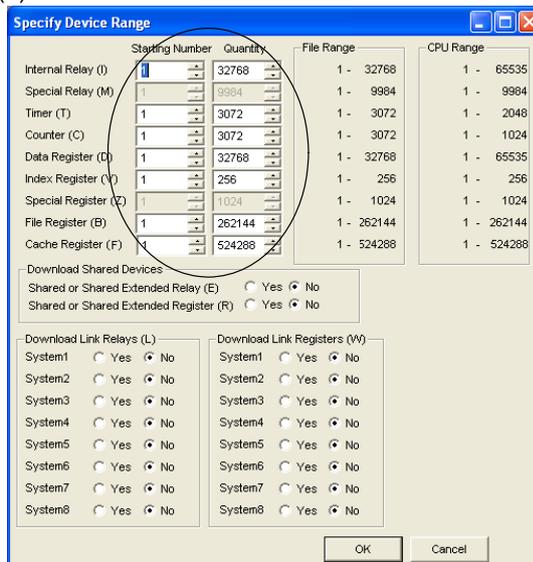
- (6) Click [OK].

⇒ Control returns to the device manager.



Step (2)

H0804\_01.VSD



Step (5)

H0804\_02.VSD

## H8.5 Editing Device Data

This section describes how to edit device data.

### H8.5.1 Switching Display Formats

You can switch between display formats by using [View]–[Display Format] from the menu bar before displaying and editing device data.

For this purpose, you can use the buttons on the toolbar as illustrated below.

You can also change the display format for relay devices.

The diagram shows a toolbar with five buttons: **10**, **\$1**, **AB**, **.0**, and **2**. Arrows point from these buttons to labels: **Decimal**, **Hexadecimal**, **Binary**, **Floating point**, and **Character string**.

**Enter a decimal number.**

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 0         | 65536          |
| D00002  | <input checked="" type="checkbox"/> | 1         | 1              |
| D00003  | <input checked="" type="checkbox"/> | 0         | 0              |
| D00004  | <input checked="" type="checkbox"/> | 0         | 0              |

**Enter "\$" and a hexadecimal number**

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | \$0000    | \$0001 0000    |
| D00002  | <input checked="" type="checkbox"/> | \$0001    | \$00000001     |
| D00003  | <input checked="" type="checkbox"/> | \$0000    | \$00000000     |
| D00004  | <input checked="" type="checkbox"/> | \$0000    | \$00000000     |

**Enter a binary number.**

| Address | Write                               | Word Data           | Long Word Data |
|---------|-------------------------------------|---------------------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 0000 0000 0000 0000 |                |
| D00002  | <input checked="" type="checkbox"/> | 0000 0000 0000 0001 |                |
| D00003  | <input checked="" type="checkbox"/> | 0000 0000 0000 0000 |                |
| D00004  | <input checked="" type="checkbox"/> | 0000 0000 0000 0000 |                |

**Enter a floating-point number.**

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> |           | %5.920432E+020 |
| D00002  | <input checked="" type="checkbox"/> |           | %3.515578E-041 |
| D00003  | <input checked="" type="checkbox"/> |           | %0.000000E+000 |
| D00004  | <input checked="" type="checkbox"/> |           | %0.000000E+000 |

**Enter a character string enclosed within double-quotes**

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | "a"       | "ab"           |
| D00002  | <input checked="" type="checkbox"/> | "b"       | "b"            |
| D00003  | <input checked="" type="checkbox"/> | ""        | ""             |
| D00004  | <input checked="" type="checkbox"/> | ""        | ""             |

H0805\_01.VSD

Figure H8.7 Switching Display Formats

## H8.5.2 Changing Relay Data

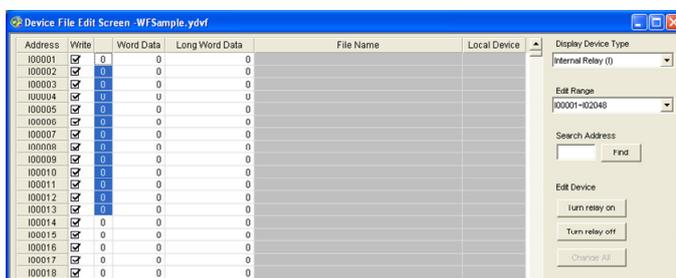
You can change the data of a single relay device or a selected range of relays. Data for the following relay devices can be changed:

- Internal relay (I)
- Special relay (M)
- Shared relay (E)
- Link relay (L)
- Timer relay (T)
- Counter relay (C)

To change relay devices, use the following procedure.

### ◆ Procedure ◆

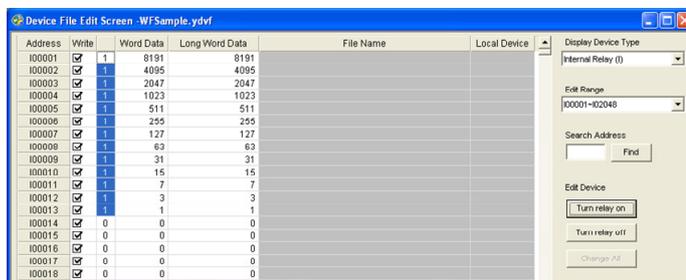
- (1) Display the Device File Edit Screen window of the device manager.
- (2) Select a device or a range of devices to be changed.
- (3) Click [Turn relay on] or [Turn relay off].



Steps (2) and (3)

H0805\_02.VSD

⇒ The selected relays are turned on or off accordingly.



Step (3)

H0805\_03.VSD

## H8.5.3 Changing Word Data

You can change word data for one device or for a selected range of devices. To change a single device, directly overwrite it with a new value. To change word data for multiple devices, use the Change All dialog box.

### Note

If you want to change the display format, do so before changing data.

### Note

You cannot select multiple devices when changing long data.

To change word data for multiple devices, use the following procedure.

### ◆ Procedure ◆

(1) Display the Device File Edit Screen

window of the device manager.

(2) Select a range of devices to be changed.

(3) Click [Change All].

⇒ The Change All dialog box is displayed.

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 3377      | 3377           |
| D00002  | <input checked="" type="checkbox"/> | 0         | 65536          |
| D00003  | <input checked="" type="checkbox"/> | 1         | 1              |
| D00004  | <input checked="" type="checkbox"/> | 0         | 65536          |
| D00005  | <input checked="" type="checkbox"/> | 1         | 65537          |
| D00006  | <input checked="" type="checkbox"/> | 1         | 1              |

Step (2)

H0805\_04.VSD

(4) Enter a new value in the text box, and click [OK].

The dialog box titled "Change All" contains the text "Please enter new value." followed by a text input field containing the number "123". There are two buttons: "OK" and "Cancel".

Step (4)

H0805\_05.VSD

⇒ Control returns to the Device File Edit Screen window with the new data displayed.

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 3377      | 8064305        |
| D00002  | <input checked="" type="checkbox"/> | 123       | 8061051        |
| D00003  | <input checked="" type="checkbox"/> | 123       | 8061051        |
| D00004  | <input checked="" type="checkbox"/> | 123       | 8061051        |
| D00005  | <input checked="" type="checkbox"/> | 123       | 65659          |
| D00006  | <input checked="" type="checkbox"/> | 1         | 1              |

Step (4)

H0805\_06.VSD

### Note

When you select a long word cell and change data, 2 words of data are changed: data for the selected address and the next higher address.

## H8.5.4 Copying and Pasting

To copy and paste device data, use the following procedure.

### ◆ Procedure ◆

**(1) Select a range of cells to be copied.**

⇒ The selected cells are highlighted.

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 1         | 131073         |
| D00002  | <input checked="" type="checkbox"/> | 2         | 196610         |
| D00003  | <input checked="" type="checkbox"/> | 3         | 262147         |
| D00004  | <input checked="" type="checkbox"/> | 4         | 327684         |
| D00005  | <input checked="" type="checkbox"/> | 5         | 393221         |
| D00006  | <input checked="" type="checkbox"/> | 6         | 6              |

Step (1)

H0805\_07.VSD

**(2) Select [Edit]–[Copy] from the menu bar.**

**(3) Move the position cursor to the data position of the first device where data is to be pasted.**

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 1         | 131073         |
| D00002  | <input checked="" type="checkbox"/> | 2         | 196610         |
| D00003  | <input checked="" type="checkbox"/> | 3         | 262147         |
| D00004  | <input checked="" type="checkbox"/> | 4         | 327684         |
| D00005  | <input checked="" type="checkbox"/> | 5         | 393221         |
| D00006  | <input checked="" type="checkbox"/> | 6         | 6              |

Step (3)

H0805\_08.VSD

**(4) Select [Edit]–[Paste] from the menu bar.**

⇒ The copied cells are pasted.

| Address | Write                               | Word Data | Long Word Data |
|---------|-------------------------------------|-----------|----------------|
| D00001  | <input checked="" type="checkbox"/> | 4         | 327684         |
| D00002  | <input checked="" type="checkbox"/> | 5         | 393221         |
| D00003  | <input checked="" type="checkbox"/> | 6         | 262150         |
| D00004  | <input checked="" type="checkbox"/> | 4         | 327684         |
| D00005  | <input checked="" type="checkbox"/> | 5         | 393221         |
| D00006  | <input checked="" type="checkbox"/> | 6         | 6              |

Step (4)

H0805\_09.VSD

## H8.5.5 Displaying Local Devices

The Display Local Device function can be used to display devices used as local devices in a project.

### Note

This function does not display tag names.

### Note

Local devices, as a unique feature of WideField3, can only be used in a particular block. Local devices are automatically allocated according to the project setup of WideField3. Using the Display Local Devices function, you can display devices automatically allocated as local devices of each block.

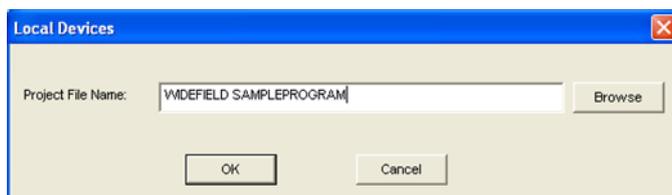
### Note

For details on local devices, see Chapter F2, "Using Local Devices" (Offline).

To do this, use the following procedure.

### ◆ Procedure ◆

- (1) Open the Device File Edit Screen window of the device manager.
- (2) Select [View]–[Local Devices] from the menu bar.
  - ⇒ The Local Devices dialog box is displayed.
- (3) Enter a project file name in the [Project File Name] text box, and click [OK].



Step (3)

H0805\_10.VSD

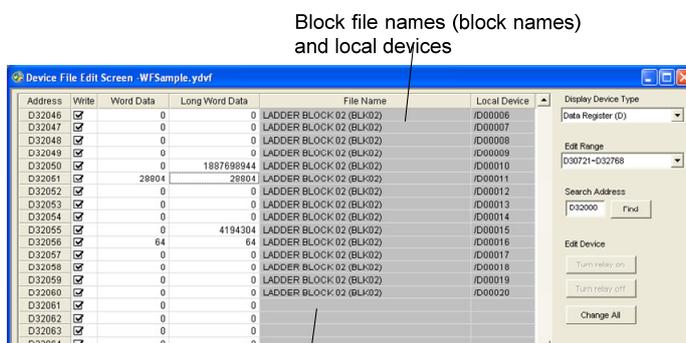
### Note

Clicking [Browse] displays a list of projects for selection.

- ⇒ The local devices used in the selected project are displayed.

### Note

If a project is not downloaded or does not have a download folder, for local devices used in a macro, "macro name (macro name)" is displayed instead of the macro file name in the [File Name] column.



Step (3)

H0805\_11.VSD

Global devices are not shown.

## H8.5.6 E-mail-Related Device Manager Functions

This section describes device management files for use with E-mail and how to set up CPU write-masks.

### ■ Types of Device Management Files

A user can create two types of device management files: general device management file to be used by the device manager and device management file for E-mail to be used with E-mail functions.

Device management files for E-mail include CPU write mask setup information but general device management files do not.

**Table H8.5 Comparing General Device Management File and E-mail Device Management Files**

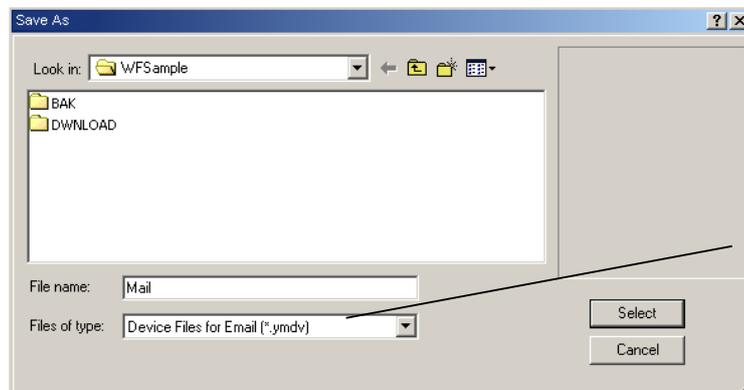
|                              | Device Management File for E-mail | General Device Management File |
|------------------------------|-----------------------------------|--------------------------------|
| File name extension          | .YMDV                             | .YDVF                          |
| CPU write mask information   | Included                          | Not included                   |
| Edit or save                 | Allowed                           | Allowed                        |
| Download from device manager | Not allowed                       | Allowed                        |
| Use with E-mail function     | Allowed                           | Not allowed                    |

### ■ Creating a Device Management File for E-mail

You can edit a device management file for E-mail the same way you edit a general device management file. To create a device management file for E-mail, change the file type when you save the device management file.

#### Note

To save a file as a device management file for E-mail, select "Device File for Email (\*.ymdv)" from the File Type drop down list of the Save As dialog box.



Select "Device Files for Email" as file type.

**Figure H8.8 Save As Dialog Box**

H0805\_12.VSD

## ■ CPU Write Mask

The CPU Write Mask is used to specify devices for which data is to be downloaded.

In the Write column on the device manager Device File Edit Screen window, turn on checkboxes for devices for which data is to be download. If the checkbox of a device is turned off, data for the device will not be downloaded.

Downloading device data using the E-mail function will only download device values of devices whose CPU Write mask is turned on.

The CPU Write mask can be specified for each device.

To set up the CPU Write mask, use the Device File Edit Screen window of the device manager and follow the procedure given below.

## ◆ Procedure ◆

- (1) Display the Device File Edit Screen window of the device manager.
- (2) Select a range of cells in the Write column whose CPU write mask setting is to be changed.

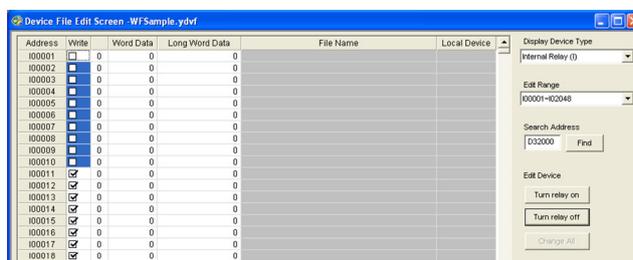


Step (2)

H0805\_13.VSD

- (3) Press the [SPACE] key.

⇒ This toggles the on/off state of the checkboxes.



Step (3)

H0805\_14.VSD

## Note

You can also toggle a checkbox in the Write column by clicking on it.

## H8.6 Comparing Device Data

You can compare the contents of a device file against CPU device values. Up to 10,000 sets of inconsistent values can be displayed. Beyond this, any further discrepancies detected are ignored. To compare device data, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the device manager is open.

(2) Select [Online]–[Compare File and CPU] from the menu bar.

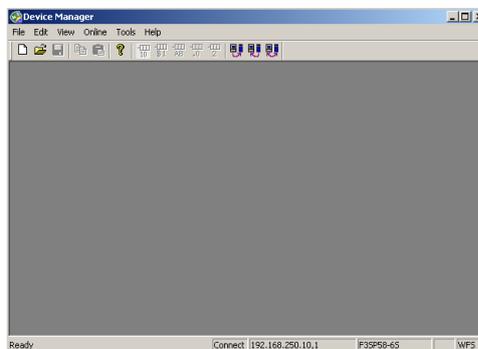
⇒ The Open dialog box is displayed.

(3) Enter the name of a file to be compared in the [File name] text box, and click [Open].

⇒ The Specify Device Range dialog box is displayed.

### Note

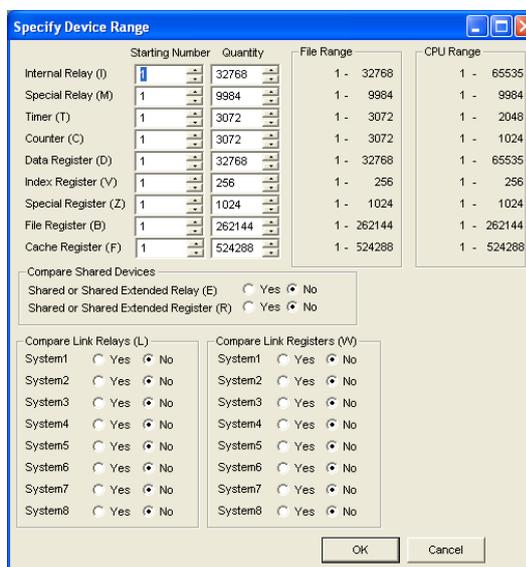
File extensions compared to the CPU are .ydvf and .csv.



Step (1)

H0806\_01.VSD

(4) Specify a device type and a range of devices to be compared, and click [OK].



Step (4)

H0806\_02.VSD

⇒ Comparison begins. The Comparison Results window will be displayed when the comparison is completed.

**Note**

While comparison is in progress, the Comparing dialog box is displayed.

**Note**

Content displayed in the Comparison Results window can be exported in CSV file format. To do this, select [Tools]-[Export] from the menu bar, and in the displayed Save As dialog box, enter a filename and click [Save].

**Note**

You can find device names in the Comparison Results window with a cross-reference search. To do this, double-click the row of a device name, or select [Tools]-[Cross-Reference Search] from the menu bar.

|    | Device Name | FA-M3  | File  | Tag Name      | I/O Comment                    |
|----|-------------|--------|-------|---------------|--------------------------------|
| 1  | D00001      | 3      | 7     | Sec1ClkCount  | 1 s clock count up value       |
| 2  | D00002      | 7777   | 0     |               |                                |
| 3  | D01001      | 17408  | 17664 | LedOutCharact | The character displayed on LED |
| 4  | D01002      | -24832 | -256  | LedValue1     | LED output value 1 - 16        |
| 5  | D01003      | 105    | 153   | LedValue2     | LED output value 17 - 32       |
| 6  | D02001      | 5656   | 13764 | SawtoothWave  | Sawtooth wave data             |
| 7  | D02002      | -1006  | 1417  | SineWave      | Sine wave data                 |
| 8  | D02011      | -29940 | 6882  |               |                                |
| 9  | D02012      | 367    | 354   |               |                                |
| 10 | D10001      | 3      | 7     |               |                                |
| 11 | M00229      | 1      | 0     |               |                                |
| 12 | M00230      | 1      | 0     |               |                                |
| 13 | M00769      | 0      | 1     |               |                                |
| 14 | M00785      | 0      | 1     |               |                                |
| 15 | Z00010      | 43     | 42    |               |                                |
| 16 | Z00012      | 51     | 53    |               |                                |

Step (4)

Devices with inconsistent values    Device values in the CPU    Device values in the device file

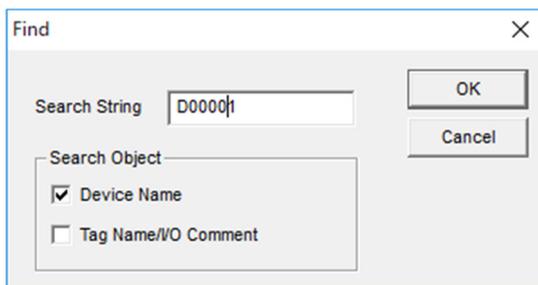
H0806\_03.VSD

**(5) Close the Comparison Results window.**

⇒ Control returns to the device manager.

**Note**

If you search for a device name or a tag name and I/O comment in the Comparison Results window, select [Search]-[Find] from the menu bar. When the Find dialog box is displayed, select a search object, enter a string you want to search for in [Search String], and then click [OK].



H0806\_04.VSD

Figure H8.9 Find Dialog Box

**Note**

- If you have not opened a project offline, the tag names and I/O comments are not displayed.
- When you select a range of data displayed in the Comparison Results window and select [Edit]-[Copy] from the menu bar, the values in the selected range are saved to the clipboard in text format.

## H8.7 Importing/Exporting and Printing Device Files

You can import and export data from and to MS-Excel.

Device data exported to MS-Excel can be printed or plotted in graphs using functions in MS-Excel. Device data is exported in CSV file format.

In addition, exported device data can be edited in MS-Excel and saved in CSV file format, which can then be imported back again.

## H8.7.1 Exporting and Printing Device Files

You can export device data to MS-Excel.

Device data exported to MS-Excel can be printed or plotted in graphs using functions in MS-Excel. Device data is exported in CSV file format. The specifications of MS-Excel dictate the number of device data that can be exported.

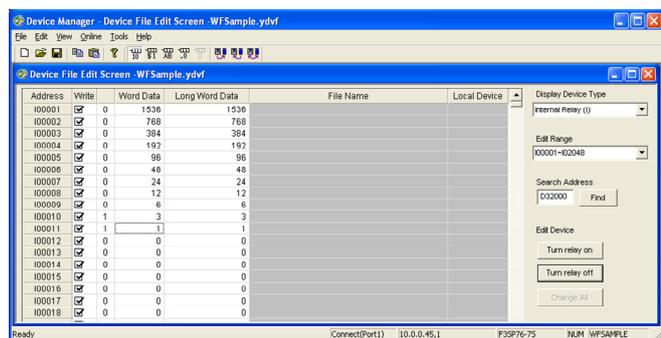
### Note

Before exporting and printing device data with MS-Excel, you must ensure that MS-Excel is installed in the personal computer.

To export to MS-Excel, use the following procedure.

### ◆ Procedure ◆

- (1) Open the Device File Edit Screen window of the device manager.
- (2) Select [Tools]–[Export] from the menu bar.  
⇒ The Save As dialog box is displayed.
- (3) Confirm that "csv file (\*.csv)" is selected in the Save as type drop down list, enter a file name, and click [Save].



Step (1)

- (4) Run MS-Excel and open the saved file.
- (5) Print or create graphs for the device data with MS-Excel.

### Note

Use MS-Excel to configure print settings such as the page range. For details on how to use MS-Excel, see the manuals or help information for MS-Excel.

| Device | On/Off | Word Data | Long Word Data | Block Name | Local Device |
|--------|--------|-----------|----------------|------------|--------------|
| 100001 | 1      | 1536      | 1536           |            |              |
| 100002 | 0      | 768       | 768            |            |              |
| 100003 | 0      | 384       | 384            |            |              |
| 100004 | 0      | 192       | 192            |            |              |
| 100005 | 0      | 96        | 96             |            |              |
| 100006 | 0      | 48        | 48             |            |              |
| 100007 | 0      | 24        | 24             |            |              |
| 100008 | 0      | 12        | 12             |            |              |
| 100009 | 0      | 6         | 6              |            |              |
| 100010 | 1      | 3         | 3              |            |              |
| 100011 | 1      | 1         | 1              |            |              |
| 100012 | 0      | 0         | 0              |            |              |
| 100013 | 0      | 0         | 0              |            |              |
| 100014 | 0      | 0         | 0              |            |              |
| 100015 | 0      | 0         | 0              |            |              |
| 100016 | 0      | 0         | 0              |            |              |
| 100017 | 0      | 0         | 0              |            |              |
| 100018 | 0      | 0         | 0              |            |              |

Step (4)

## H8.7.2 Importing Device Files

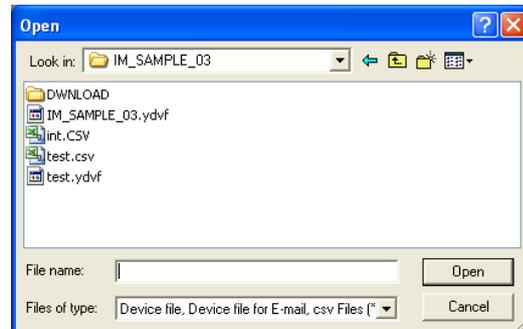
Exported device data can be imported back when the data is saved in CSV file format.  
The required procedure is given below.

### ◆ Procedure ◆

(1) Open the Device File Edit Screen of the device manager.

(2) Select [File]–[Open] from the menu bar.

⇒ The Open dialog box is displayed.



Step (2)

H0807\_03.VSD

(3) Select a file and click [Open].

⇒ The Device File Edit Screen is displayed.

### Note

Export files of file comparison results cannot be imported into the Device File Edit Screen.

## H8.8 Opening Device Files Created Using WideField or CADM3

You can use WideField3 to read device files created using WideField or CADM3.

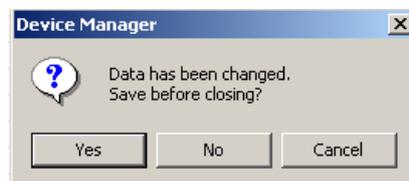
### Note

WideField3 can read device files created using WideField2 without additional operations as these files are in the same format as WideField3 files.

The required procedure is given below.

### ◆ Procedure ◆

- (1) Confirm that the device manager screen is open.
  - (2) Select [File]–[Open WideField/ CADM3 Device File] from the menu bar.
- ⇒ If the Device File Edit screen is open, it closes.



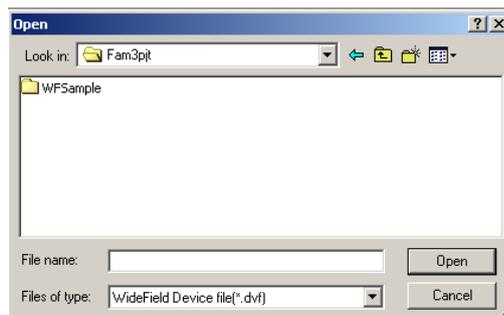
Step(2)

H0808\_01.VSD

### Note

If you have made changes to the data, a dialog box is displayed to confirm whether to save the changes. Clicking [Yes] saves the changes; Clicking [No] closes the window without saving the changes; Clicking [Cancel] aborts file opening.

- ⇒ The Open dialog box is displayed.
- (3) Select the device file to be opened and click [Open].



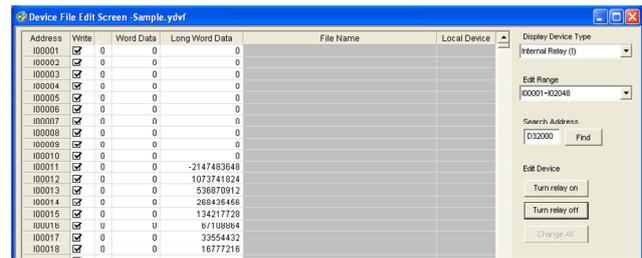
Step (3)

H0808\_02.VSD

⇒ The WideField/CADM3 device file is converted into a WideField3 device file and displayed in the Device File Edit screen.

## Note

The converted file will be created in the same folder storing the original WideField/CADM3 device file with the new file name extension of “.ydvf”. If a file name with the same name already exists, a dialog box is displayed to confirm whether to overwrite the existing file. The original WideField/CADM3 remains intact.



Step (3)

H808\_03.VSD

## H8.9 Converting Reproduction Data into Device Data

You can convert a device file (\*.ydvf), reproduction data collection command file (\*.BAT), or device file 2 file (\*.ydvf2) into a device file format or device file 2 format.

### Note

- The reproduction data collection command file (\*.BAT) is a command file used when you collect reproduction data with the Virtual-M3 one-touch playback function. Data files collected with reproduction data collection command files must be located at the same layer as the reproduction data collection command files.
- The device file 2 (\*.ydvf2) format is an extension of the device file (\*.ydvf) format and can hold I/O data to handle data used by the one-touch playback function.
- The Virtual-M3 one-touch playback function supports Virtual-M3 R1.02 or later versions.

The required procedure is given below.

### ◆ Procedure ◆

(1) Confirm that the device manager screen is open.

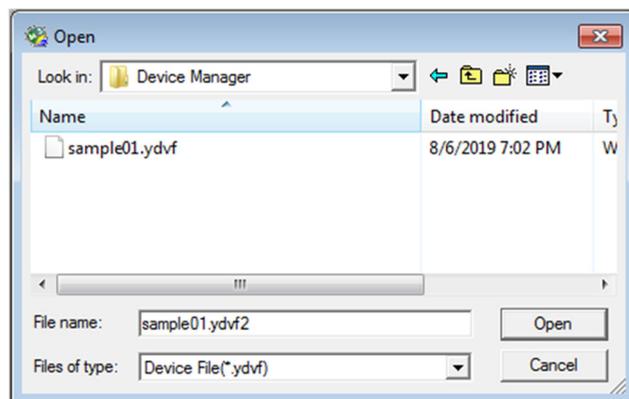
(2) Select [File]–[Convert Reproduction Data to Device Data] from the menu bar.

⇒ The Open dialog box is displayed.

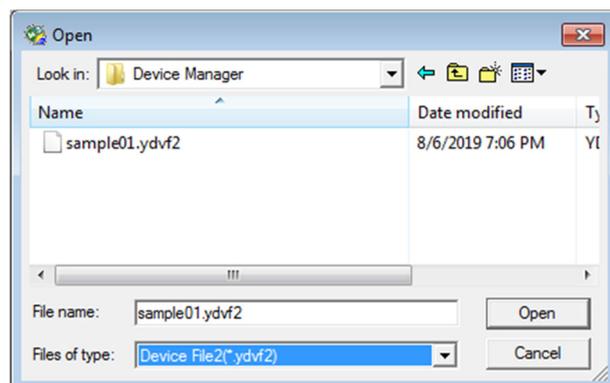
(3) Select the format of the conversion source device data in [Files of type], select a device file you want to convert, and then click [Open].

⇒ The Save As dialog box is displayed.

(4) Select the format of the conversion destination device data in [Files of type], enter the name of the file you want to save the data to, and then click [Open].



H0809\_01.VSD



H0809\_02.VSD

## H8.10 Comparing Files

You can compare two device files. Up to 10,000 sets of inconsistent values can be displayed. Beyond this, any further discrepancies detected are ignored. To compare device data, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the device manager screen is open.

(2) Select [File]–[Compare Files] from the menu bar.

⇒ The Open dialog box is displayed.

(3) Select the format of the comparison source device data in [Files of type], select a device file you want to compare, and then click [Open].

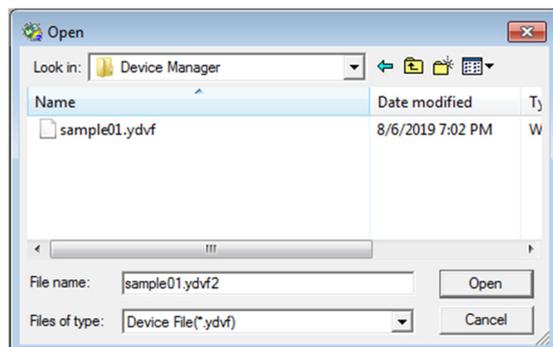
⇒ The Open dialog box is displayed.

(4) Select the format of the comparison destination device data in [Files of type], select a device file you want to compare against, and then click [Open].

⇒ Comparison begins. The Comparison Results window will be displayed when the comparison is completed.



H0810\_01.VSD



H0810\_02.VSD

|    | Device Name | File 1 | File 2 | Tag Name      | I/O Comment                     |
|----|-------------|--------|--------|---------------|---------------------------------|
| 1  | I15873      | 0      | 1      |               |                                 |
| 2  | I15874      | 0      | 1      |               |                                 |
| 3  | D00001      | 3      | 8      | Sec1ClkCount  | 1 s clock count up value        |
| 4  | D01001      | 17408  | 19456  | LedOutCharact | The character displayed on LED  |
| 5  | D01002      | -24832 | -28928 | LedValue1     | LED output value 1 - 16         |
| 6  | D01003      | 105    | 136    | LedValue2     | LED output value 17 - 32        |
| 7  | D02001      | 5656   | -10996 | SawtoothWave  | Sawtooth wave data              |
| 8  | D02002      | -1006  | 16225  | SineWave      | Sine wave data                  |
| 9  | D02011      | -29940 | 27270  |               |                                 |
| 10 | D02012      | 367    | 368    |               |                                 |
| 11 | D10001      | 3      | 9      |               |                                 |
| 12 | M00001      | 0      | 1      |               |                                 |
| 13 | M00002      | 0      | 1      |               |                                 |
| 14 | M00003      | 0      | 1      |               |                                 |
| 15 | M00035      | 1      | 0      |               | Enable 1 scan at operation star |
| 16 | M00115      | 0      | 1      |               |                                 |

H0810\_03.VSD

### Note

- For details on the Comparison Results window, refer to “H8.6 Comparing Device Data”.
- For details on the types of device files, refer to “H8.9 Converting Reproduction Data into Device Data”.
- If you have not opened a project offline, the tag names and I/O comments are not displayed.
- When you select a range of data displayed in the Comparison Results window and select [Edit]–[Copy] from the menu bar, the values in the selected range are saved to the clipboard in text format.

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## H9. Storing Comments and Tag Name Definitions

Circuit comments, subcomments, tag name definitions, and balloon comments you have edited with WideField3 can be stored to the CPU of the FA-M3.



### CAUTION

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- Storing circuit comments, subcomments, and tag name definitions is only available with certain CPU types (F3SP□□-□S, F3SP71-4N/76-7N/71-4S/76-7S).
  - Storing balloon comments to FA-M3 is only available with F3SP71-4N/76-7N/71-4S/76-7S.
  - If the CPU is installed with a ROM pack with larger capacity than the CPU RAM and a project is too large to be stored in the RAM, the tag name definitions are automatically transferred to the ROM. In this case, the RAM will store the project less the tag name definitions. While, as seen from WideField3, the whole project can be handled as if it is stored normally, you must be careful when you manipulate the RAM directly.
- 

### Note

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- For details on how to use the ROM, see Chapter H6, "Using the ROM."
  - For details on how to store structure information to the CPU, see Section H13.2, "Transferring Structure Definitions."
-

## ● Function Limitations for Each CPU Type

**Table H9.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations  | SEE ALSO |
|---|--|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | When circuit comments, subcomments and tag name definitions are stored in the CPU, the number of steps will increase according to the number of the comments and tag name definitions.<br><br>Balloons cannot be stored. | H9.1     |
| F3SP66-4S,<br>F3SP67-6S   | When circuit comments, subcomments and tag name definitions are stored in the CPU, the number of steps will increase according to the number of the comments and tag name definitions.<br><br>Balloons cannot be stored. | H9.1     |
| F3SP71-4N,<br>F3SP76-7N   | When circuit comments, subcomments and tag name definitions are stored in the CPU, the number of steps will increase according to the number of the comments and tag name definitions.                                   | H9.1     |
| F3SP71-4S,<br>F3SP76-7S   | When circuit comments, subcomments and tag name definitions are stored in the CPU, the number of steps will increase according to the number of the comments and tag name definitions.                                   | H9.1     |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

## H9.1 Setup for Storing Comments

### H9.1.1 Setup for Circuit Comments, Subcomments, and Block Tag Name Definitions

You can select whether to store the circuit comments, subcomments, and block tag name definitions of an individual block to the CPU. To do this, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that the Edit Block window is open.

#### Note

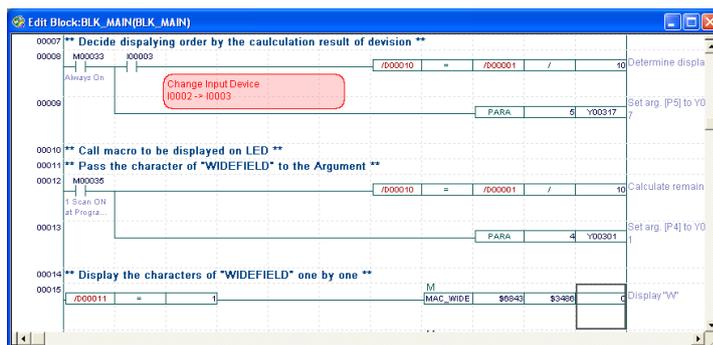
For details on how to open the Edit Block window, see Chapter D4, "Creating and Managing Blocks and Macros" (Offline).

- (2) Select [Edit]--[Local Device/Properties] from the menu bar.

⇒ The Local Device/Properties window is displayed.

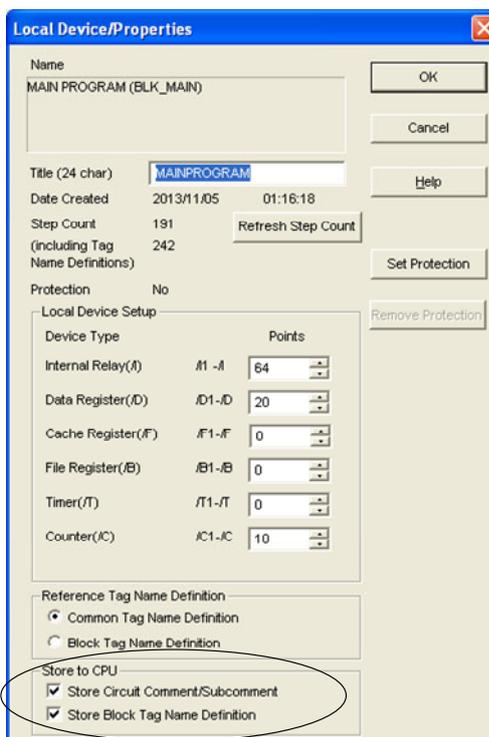
- (3) Turn on checkboxes in the Store to CPU group box for categories to be stored to the CPU, and click [OK].

⇒ The Local Device/Properties window closes.



Step (1)

H0901\_01.VSD



Step (3)

H0901\_02.VSD

---

## Note

If you set in the Local Device/Properties window to store comments and tag name definitions of a block to the CPU, the total step count for all blocks will also change.

To check the current step count, click [Refresh Step Count].

The number of steps as displayed is calculated as follows:

- Step count = number of ladder steps + number of comment steps
- (Including Tag Name Definitions) = number of ladder steps + number of comment steps + number of tag name definitions



You can setup the items to be stored to the CPU for each block.

If the CPU selected in the project is not capable of storing comments or block tag name definitions, the Store to CPU group box appears as follows:



**Figure H9.2 When Comments and Block Tag Name Definitions cannot be stored to CPU**

---

## H9.1.2 Setup for Common Tag Name Definitions

You can collectively change the "Store to CPU" settings for the common tag name definitions of a project as well as the block tag name definitions and comments registered to executable programs. To do this, use the following procedure.

### ◆ Procedure ◆

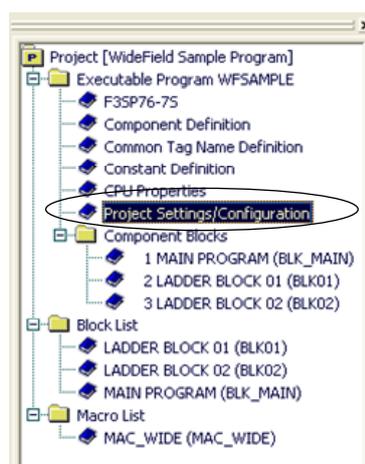
(1) Confirm that a project is open.

#### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) You can double-click [Project Settings/Configuration] in the project window. Alternatively, you can select [Project]-[Project Settings] from the menu bar.

⇒ The Project Settings/Configuration window appears.

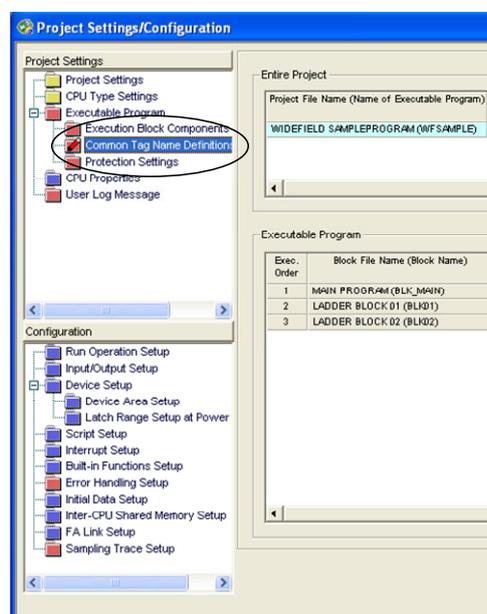


Step (2)

H0901\_05.VSD

(3) In the [Project Settings] tree, select [Executable Program Settings] - [Common Tag Name Definitions/Local Device].

⇒ The [Common Tag Name Definitions/Local Device] screen appears.

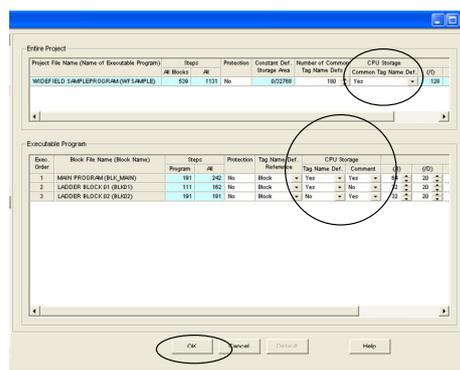


Step (3)

H0901\_06.VSD

(4) In the [Entire Project] group box, select [Yes] or [No] from the [Common Tag Name Def.] drop-down list in the [CPU Storage] column.

(5) In the [Executable Program] group box, select [Yes] or [No] from the [Tag Name Def.] or [Comment] drop-down list in the [CPU Storage] column.



Steps (4) to (6) H0901\_07.VSD

(6) Click [OK].

**Note**

For details on project setup, see Chapter D3, "Building and Managing a Project" (Offline).

**Note**

If you set to store the common tag name definitions to the CPU, the total step count for all blocks will increase.

You can check the current step count in the [Common Tag Name Definitions/Local Device] screen.

The number of steps as displayed is calculated as follows:

- All Blocks = number of ladder steps of component blocks/macros + number of comment steps
- All = number of ladder steps + number of comment steps + number of tag name definition steps + number of constant definition steps

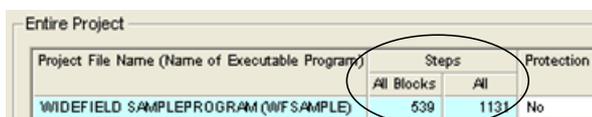


Figure H9.3 Step Count Calculation H0901\_08.VSD

The number of constant definition steps is the size of used constant definition data after compression, and varies with the actual definitions.

**Note**

When comments and tag name definitions are stored to the CPU, the total step count will change accordingly. Therefore, when you store comments and tag name definitions to the CPU, pay attention to the maximum number of steps allowed for each CPU type.

Table H9.2 Step Count Calculation

| Categories          | Step count calculation (in units of steps)             |
|---------------------|--|
| Circuit comment     | When stored to CPU: 1 + Number of valid bytes/4        |
|                     | When not stored to CPU: 1                              |
| Subcomment          | When stored to CPU: 1 + Number of valid bytes/4        |
|                     | When not stored to CPU: 1                              |
| Tag name definition | When stored to CPU: 0 + Byte size of compressed data/4 |
|                     | When not stored to CPU: 0                              |

Note: Number of valid bytes refers to the number of bytes for the characters of a comment.

**Note**

For a CPU module that supports constant definition, an empty area of about 31 steps is reserved even no constant definition is used within a project.

---

### H9.1.3 Storing Balloon Comments

Balloon comments and balloon monitor data can be stored in the CPU.

No setup is required before storing the data.

**Note**

To apply online balloon comment and monitor data to the CPU by online editing, balloon comment and monitor data must have been stored in the CPU. When balloon(s) are stored in the CPU, the top tree name on the [online] tab of the [Balloon Comment List] window shows "(CPU)". If not, it shows "(When Downloaded)".

---

**Note**

For details on online operations for balloon comments, see Section H9.3, "Online Operation of Balloon Comments".

---

## H9.2 Online Operations

Online operations allow you to download and upload comments and tag name definitions (stored in the CPU of FA-M3) just like ordinary ladder programs.

### Note

For details on project online functions, see Chapter H2, "Downloading;" Chapter H3, "Uploading;" and Chapter H4, "Comparing File and CPU."

### Note

- If the CPU type specified for a project does not support storage of comments or block tag name definitions, these online operations cannot be used.
- If the CPU type does not support storage of balloons, you can create, delete, edit, and move balloons but cannot perform downloading and other online operations.

### H9.2.1 Downloading

To download comments, tag name definitions, and balloon comments to the CPU, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that a project is open.

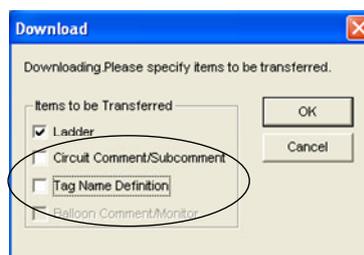
### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) Select [Online]–[Download[PC->CPU]] –[Project], or [Online]–[Download[PC->CPU]]–[Block/Macro] from the menu bar.

⇒ The Download dialog box is displayed.

(3) In the [Items to be Transferred] group box, turn on checkboxes for items to be transferred, and click [OK].



Step (3)

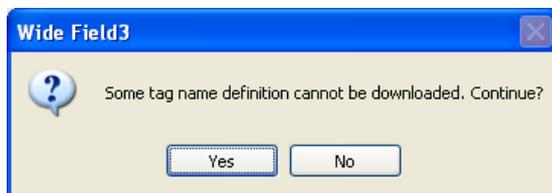
H0902\_01.VSD

---

## Note

If you have selected [Download[PC->CPU]–[Block/Macro] earlier from the menu bar and the destination for downloaded block/macro tag name definitions is set in the ROM, the following dialog box is displayed.

This dialog box is not displayed if you have selected [Download[PC->CPU]]–[Project] earlier.



**Figure H9.4 Partial Download Confirmation Dialog Box**

Clicking [Yes] starts the downloading process.

Clicking [No] displays the Select Block/Macro dialog box.

---

## H9.2.2 Uploading

If comments, tag name definitions, and balloon comments are stored in the CPU, they are also uploaded automatically together with the adder programs.

## H9.2.3 Comparing

You can compare the comments and tag name definitions stored in a CPU with the comments and tag name definitions set in the project currently open in WideField3.

## Note

Tag name definition comparison is performed only for tag name definitions stored in the CPU.

---

## H9.2.4 Online Editing

If the Local Device/Properties dialog box has been set to store comments or tag name definitions to the CPU, you can edit circuit comments and subcomments online.

You can edit balloon comments online, regardless of whether they are stored in the CPU.

## Note

- Selecting [Edit]–[Convert] from the menu bar reflects program modifications on the CPU.
  - When online balloon comment and monitor data refers to the CPU, the data is reflected to the CPU along with online circuit modifications.
  - The top tree name on the [online] tab of the [Balloon Comment List] window shows whether online balloon comment and monitor data refers to the CPU or the data at the time of download.
-

## H9.3 Online Operation of Balloon Comments

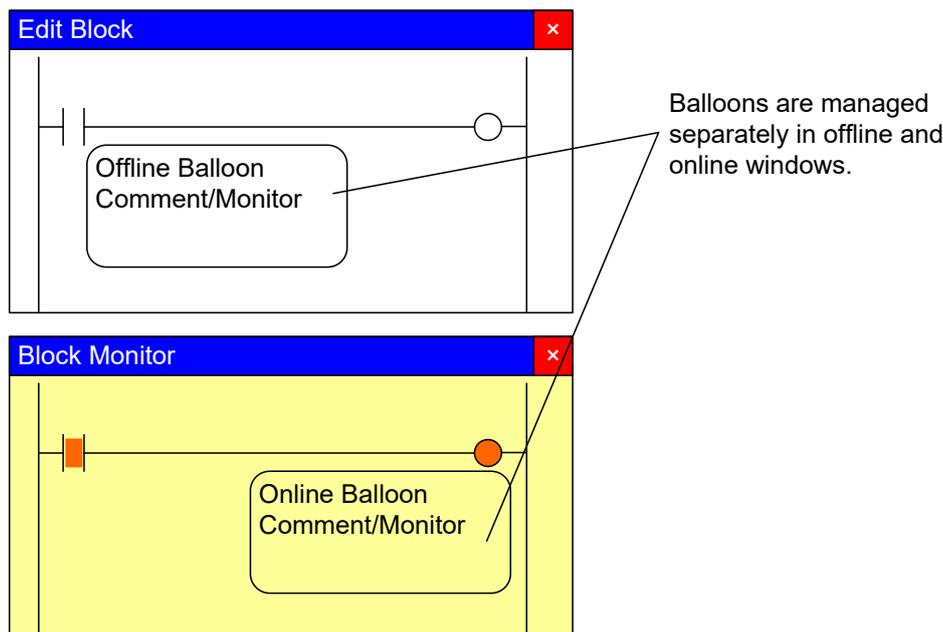
This section describes online operation of balloon comments.

### H9.3.1 Overview of Online Operation of Balloon Comments

Unlike ladders, you can create, delete, edit, and move balloon comments and monitors in the program monitor window even not during online editing.

Balloon comments of an offline Edit Block or Edit Macro window and those of an online program monitor window refer to different targets. This means balloon modifications made in an offline screen are not applied to balloons in an online screen. Conversely, balloons in an offline window are not updated with modifications in an online window.

A balloon in an offline Edit Block or Edit Macro window is called an "offline balloon comment/monitor". A balloon in an online program monitor window (including one for online editing) is called an "online balloon comment/monitor".



H0903\_01.VSD

**Figure H9.5 Offline and Online Balloons**

The target referred to by balloon comment/monitor data in online windows differs depending on whether the CPU stores the balloons.

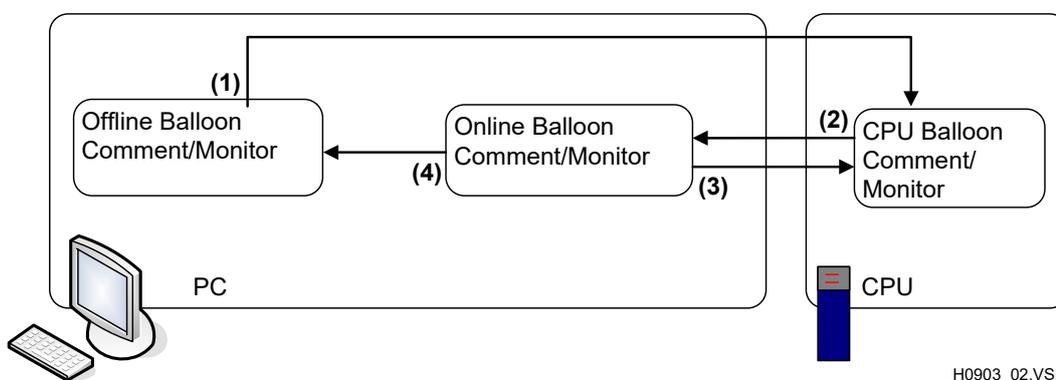
**Table H9.3 Reference of Balloon Comment/Monitor Data**

| Window  | Stored to CPU? | Reference of Balloon Comment/Monitor Data                   | Description  |
|---|----------------|---|--|
| Offline Edit Block or Edit Macro window                   | Yes            | Balloon for offline project                                 | Regardless of whether balloons are stored in the CPU, balloons for an offline project are referred to in an offline Edit Block or Edit Macro window. |
|   | No             |   |  |
| Program Monitor window (including one for online editing) | Yes            | CPU   | Balloons stored in the CPU are referred to.  |
|   | No             | Balloon for offline project at the time of program download | Balloons for an offline project at the time of the program download are copied to be referred to as balloons for an online window.                   |

## Note

- The top tree name on the [online] tab of the [Balloon Comment List] window shows whether online balloon comment/monitor data refers to the CPU or the data at the time of program download.
- If the CPU does not store balloons, offline balloon comment/monitor data at the time of the download is referred to as online balloon comment/monitor data immediately after the program is downloaded. If the reference is "(When Downloaded)", online balloon information is retained when the connection is disconnected. Therefore, for the second and subsequent connections, the program monitor shows the online balloon comment/monitor data at the time when the last connection was disconnected.

The following shows how various online operations for balloon comments are performed on balloon comment/monitor data.



H0903\_02.VSD

Figure H9.6 Reference of Balloon Comments

Table H9.4 Online Operation of Balloon Comments

| Number | Operation   |
|--------|---|
| (1)    | [Online]-[Download[PC->CPU]-[Offline Balloon Comment/Monitor]                                       |
|        | Project download (with [Balloon Comment/Monitor] turned on)   |
| (2)    | [Online]-[Connect]  |
|        | [Online]-[Online Balloon Comment/Monitor]-[Read CPU Balloon Comment/Monitor]                        |
| (3)    | [Online]-[Online Balloon Comment/Monitor]-[Store Online Balloon Comment/Monitor to CPU]             |
|        | Online edit   |
| (4)    | [Online]-[Online Balloon Comment/Monitor]-[Apply Online Balloon Comment/Monitor to Offline Project] |

## H9.3.2 Downloading Offline Balloon Comment/Monitor

There are two ways to download offline balloon comment/monitor data to the CPU.

- Downloading only offline balloon comment/monitor data
- Downloading an entire project

### Note

- For details on offline balloon comments, see Section H9.3.1, "Overview of Online Operation of Balloon Comments".
- For details on how to download an entire project, see Section H2.1, "Downloading a Project".

To download only offline balloon comment/monitor data to the CPU, use the following procedure.

### ◆ Procedure ◆

(1) Check that the project is opened.

#### Note

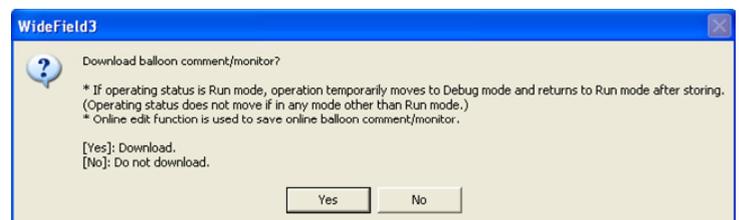
For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) Select [Online]-[Download[PC->CPU]]-[Offline Balloon Comment/Monitor] from the menu bar.

⇒ A confirmation dialog box appears.

#### Note

Download of offline balloon comment/monitor uses the online edit function. Therefore, if operation is in Run mode, the CPU temporarily enters Debug mode and then returns to Run mode when the download is completed. If operation is in any other mode than Run mode, the operation mode does not change.



Step (2)

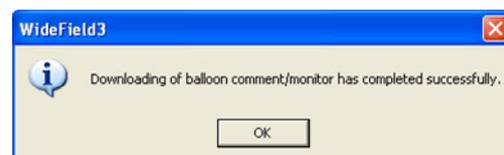
H0903\_03.VSD

(3) Click [Yes].

⇒ Download of offline balloon comment/monitor starts. When the operation is completed, a completion message box is displayed.

#### Note

You can abort a download operation of offline balloon comment/monitor by clicking [Cancel].



Step (3)

H0903\_04.VSD

**(4) Click [OK].**

⇒ The download completion message box closes.

**Note**

---

Download of offline balloon comment/monitor uses the online edit function. If operation is in Run mode when the download starts, the CPU temporarily enters Debug mode and then returns to Run mode when balloons are successfully stored. Therefore, the switching of operation modes is written to operation logs. However, this change does not cause circuit modifications and thus no log for the above operation is written to online edit logs.

---

**Note**

---

- For details on operation logs, see Section K3.4, "Operation Log".
  - For details on online editing, see Chapter K2, "Online Edit".
-

### H9.3.3 Reading CPU Balloon Comment/Monitor

There are two ways to read CPU balloon comment/monitor data and update online balloon comment/monitor with the data.

- Reading CPU balloon comment/monitor data
- Connecting to the CPU

#### Note

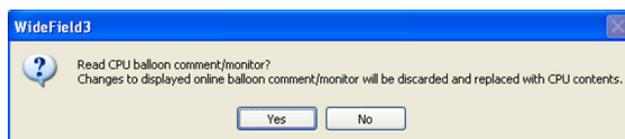
- For details on CPU balloon comments, see Section H9.3.1, "Overview of Online Operation of Balloon Comments".
- For details on how to connect to the CPU, see Section H1.1, "Connecting and Disconnecting".

To read CPU balloon comment/monitor data, use the following procedure.

#### ◆ Procedure ◆

- (1) Select [Online]-[Online Balloon Comment/Monitor]-[Read CPU Balloon Comment/Monitor] from the menu bar.

⇒ A confirmation dialog box appears.

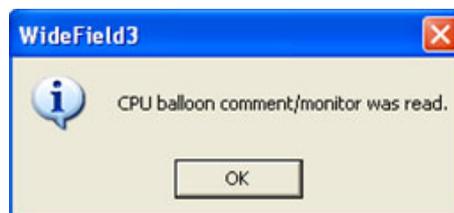


Step (1)

H0903\_05.VSD

- (2) Click [Yes].

⇒ Reading of CPU balloon comment/monitor data starts. When the operation is completed, a completion message box is displayed.



Step (2)

H0903\_06.VSD

- (3) Click [OK].

⇒ The reading completion message box closes.



#### CAUTION

When CPU balloon comment/monitor is read, the data overwrites online balloon comment/monitor data. Therefore, this will cause any additions and modifications that have been made on the online balloon comment/monitor data to be discarded.

## H9.3.4 Storing Online Balloon Comment/Monitor in the CPU

There are two ways to store online balloon comment/monitor data in the CPU.

- Storing online balloon comment/monitor data in the CPU
- Performing online editing

### Note

- For details on online balloon comments, see Section H9.3.1, "Overview of Online Operation of Balloon Comments".
- When balloon(s) are stored in the CPU, the top tree name on the [online] tab of the [Balloon Comment List] window shows "(CPU)".

### Note

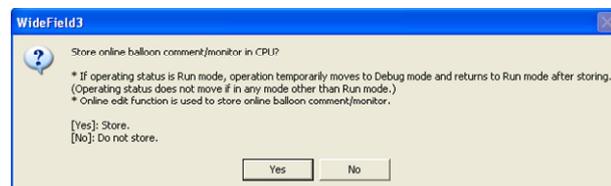
For details on online editing, see Chapter K2, "Online Edit".

To store online balloon comment/monitor data in the CPU, use the following procedure.

### ◆ Procedure ◆

- (1) Select [Online]-[Online Balloon Comment/Monitor]-[Store Online Balloon Comment/Monitor to CPU] from the menu bar.

⇒ A confirmation dialog box appears.

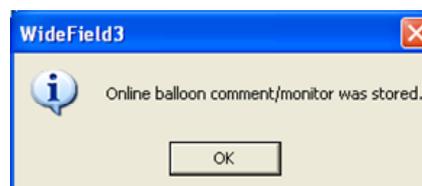


Step (1)

H0903\_07.VSD

- (2) Click [Yes].

⇒ Storage of online balloon comment/monitor data in the CPU starts. When the operation is completed, a completion message box is displayed.



Step (2)

H0903\_08.VSD

- (3) Click [OK].

⇒ The storage completion message box closes.

### Note

When this operation is completed, a message box appears, prompting whether to apply the online balloon comment/monitor to the offline project. To apply the online balloon comment/monitor data to the offline balloon comment/monitor, click [Yes].

**CAUTION**

- Online balloon comment/monitor data is also downloaded when you perform any of the online edit operations [Convert], [Delete Lines], [Cut] in line units, or [Delete] in line units and when the data is written to the CPU at the end of online editing.
- Download of online balloon comment/monitor uses the online edit function. If operation is in Run mode when the download starts, the CPU temporarily enters Debug mode and then returns to Run mode when balloons are successfully stored. Therefore, the switching of operation modes is written to operation logs. However, this change does not cause circuit modifications and thus no log for the above operation is written to online edit logs.
- Even when all the online balloon comment and monitor data are deleted, the [online] tab of the [Balloon Comment List] window still shows that the CPU is referred to.

## H9.3.5 Reflecting Online Balloon Comment/Monitor to Offline Project

To reflect online balloon comment/monitor data to the offline balloon comment/monitor of an offline project, use the following procedure.

### ◆ Procedure ◆

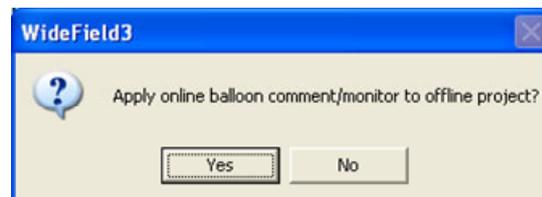
(1) Check that the project is opened.

#### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) Select [Online]-[Online Balloon Comment/Monitor]-[Apply Online Balloon Comment/Monitor to Offline Project] from the menu bar.

⇒ A confirmation dialog box appears.

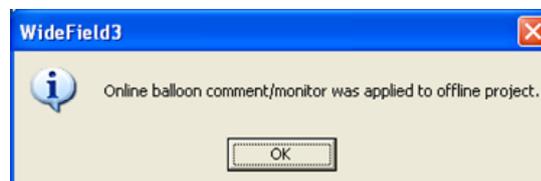


Step (2)

H0903\_10.VSD

(3) Click [Yes].

⇒ The online balloon comment/monitor data is reflected to the offline project. When the operation is completed, a completion message box is displayed.



Step (3)

H0903\_11.VSD

(4) Click [OK].

⇒ The reflection completion message box closes.



### CAUTION

- When online balloon comment/monitor is reflected to an offline project, balloons in the online blocks will overwrite the offline balloons in the block with the same name. Therefore, this will cause any balloons existing only in such offline blocks to be deleted completely.
- No change will be made on balloons in blocks existing only in offline projects but not in the CPU.
- Online balloons are not reflected to macros in macro folders.

### H9.3.6 Restrictions on Online Balloon Comments and Monitors

The following restrictions are applied to online balloon comments and monitors.

- When a project does not store any balloons in the CPU and also does not have any balloons at the time of download, online balloons cannot be newly created or edited unless an offline project is open with the same name as the executable program in the CPU.
- The display positions of the online balloon comment/monitor data are based on the line numbers in the program monitor. Therefore, if modifications of a circuit or online editing results in any difference between offline and online circuits within a block with the same name, the same balloons within the circuit are shown at difference locations between the offline and online display even when you download the balloons or reflect online balloon comments and monitor data to the offline project.
- When downloading a program created with WideField3 R1.01 or earlier (including R1.01) to the CPU, you cannot download only balloons to the CPU.

## H10. Using Remote OME

Remote OME is the abbreviation for remote Operation, Maintenance & Engineering of equipment as proposed by Yokogawa Electric Corporation. It allows users to tune and maintain a remote instrument off-site via a remote communications line.

WideField3 supports three remote operating environments for remote OME: dedicated line connection, dialup connection via a modem, and E-mail via the Internet.

### Note

Remote OME cannot be used to obtain operation logs.

### Note

For details on operation logs, see Section K3.4, "Operation Log."

### ● Function Limitations for Each CPU Type

Table H10.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations   | SEE ALSO |
|---|---|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A   |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A   |          |
| F3SP71-4N,<br>F3SP76-7N   | The sampling trace settings cannot be configured.<br>Sampling trace results cannot be uploaded. | H10.4.2  |
| F3SP71-4S,<br>F3SP76-7S   | The sampling trace settings cannot be configured.<br>Sampling trace results cannot be uploaded. | H10.4.2  |

### Note

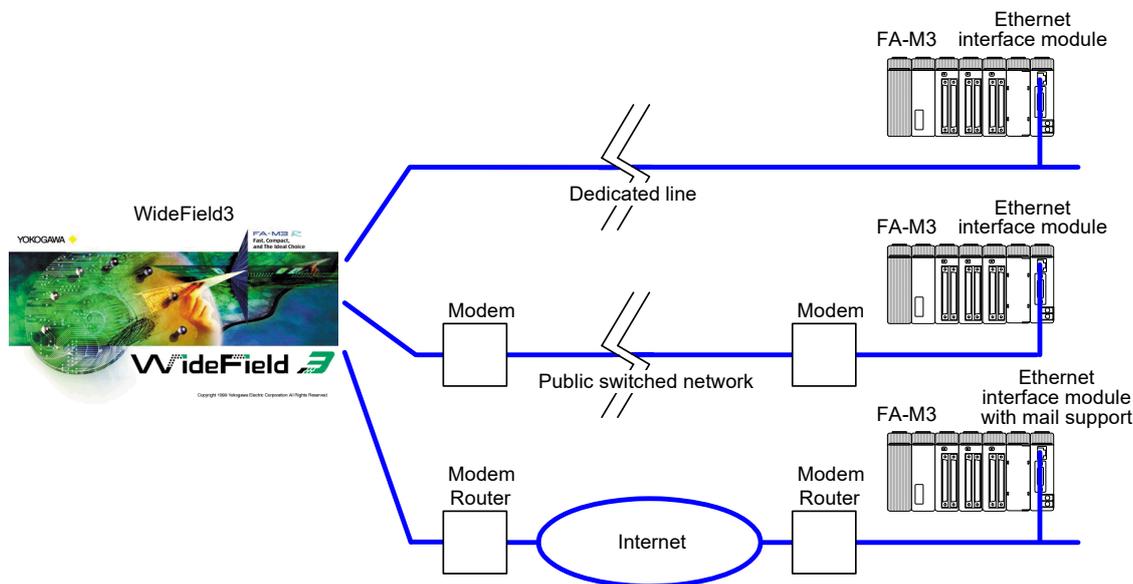
This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

## H10.1 Means for Using Remote OME

The remote OME function is available when a personal computer running the WideField3 software is connected to a remote FA-M3 through one of the following communication means.



H1001\_01.VSD

Figure H10.1 Means for Using Remote OME

### ■ Using a Dedicated Line

Remote OME can be implemented in a local network using a dedicated line. Such local networks include intranets, in-house LANs, and PLC dedicated networks.

You can access the FA-M3 online, just like in normal Ethernet connection, by using its IP address set with an Ethernet interface module.

When connected online through a dedicated line, you can use all the normal WideField3 online functions.

#### Note

For details on online connections, see Chapter H1, "Overview of Online Functions."

For details on the online functions, see explanation in each chapter of Online User's Manual.

## ■ Using a Public Switched Network

You can connect WideField3 to a remote FA-M3 by dialing up from a personal computer through a modem.

When connected through dial-up line (with no Internet connection), you can use all the normal WideField3 online functions.

### **Note**

---

For details on dialup connection, see Section H10.2, "Dialup Connection."

For details on online connections, see Chapter H1 "Overview of Online Functions."

For details on the online functions, see explanation in each chapter of Online User's Manual.

---

## ■ Using the Internet

You can also use Remote OME via the Internet through a modem, dialup router, or other means.

Communications between networks on the Internet is normally protected by firewalls, which do not allow direct online connections. Thus, WideField3 uses Email as a communications medium to access an FA-M3 through the Internet. This allows a user to send and receive data and perform Remote OME.

### **Note**

---

For details on dialup connections, Section H10.2, "Dialup Connection."

For details on online connections, see Chapter H1, "Overview of Online Functions."

For details on the online functions, see explanation in each chapter of Online User's Manual.

---

## H10.2 Dialup Connection

Before you can use the Remote OME over a public switched network (including the Internet), you must first establish a dialup connection from your personal computer.

### Note

The procedures for establishing and terminating a dialup connection and the corresponding screen display depend on the operating system running on the personal computer.

### Note

For details on the procedures for establishing and terminating a dialup connection and the corresponding screen display, see the user's manual for the operating system of the personal computer.

### H10.2.1 Establishing a Dialup Connection

You can establish a dialup connection from a personal computer to a public switched network using a modem.

### Note

If you use dial-up connection to access the Internet, and if the [Dialup] option of the Email Setup tab of the Set up Environment dialog box is selected, you must establish a dialup connection before initiating any operation that accesses the receive and send mail servers. If your personal computer is not connected when you attempt to execute such operations, a dialog box will open requesting you to establish a dialup connection.

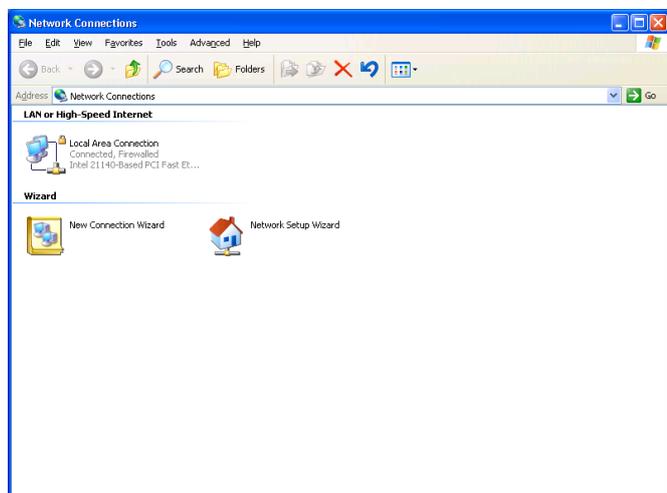
### Note

For details on the Email Setup tab of the Set up Environment dialog box, see Section H10.4.1, "Email Environment Setup."

To establish a dialup connection, use the following procedure.

#### ◆ Procedure ◆

- (1) Right-click the [My Network] icon on the Windows desktop, and select [Properties] from the displayed popup menu.
- ⇒ The Network Connections window opens.



Step (1)

H1002\_01.VSD

**(2) Click the [Create a new connection] icon.**

⇒ The New Connection Wizard dialog box is displayed.

**(3) Click [Next].**

⇒ The Network Connection Type dialog box is displayed.

**(4) Select [Connect to the Internet], and click [Next].**

⇒ The Getting Ready dialog box is displayed.

**(5) Select [Set up my connection manually], and click [Next].**

⇒ The Connection Name dialog box is displayed.

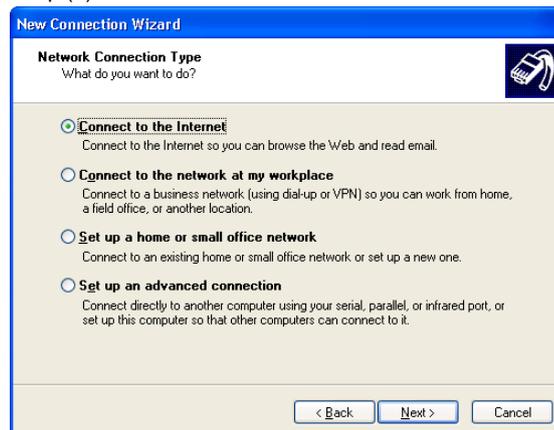
**(6) Enter a service name in the [ISP Name], and click [Next].**

⇒ The Phone Number to Dial dialog box is displayed.



Step (3)

H1002\_02.VSD



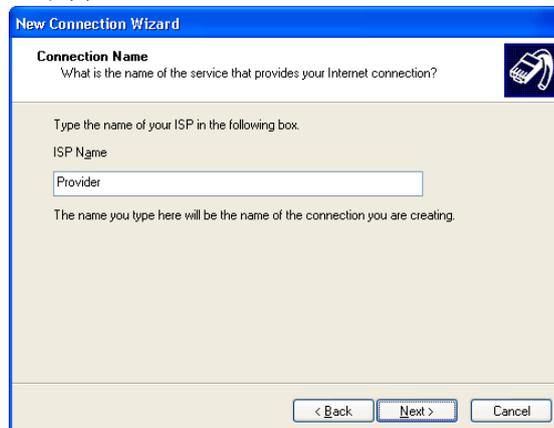
Step (4)

H1002\_03.VSD



Step (5)

H1002\_04.VSD



Step (6)

H1002\_05.VSD

**(7) Enter a phone number to call in the [Phone number], and click [Next].**

⇒ The Connection Availability dialog box is displayed.

### Note

If you use Internet connection, ask your ISP or network administrator for help on the required setup to establish a dialup connection.

### Note

If you use a modem to access a public switched network other than the Internet, append "##3" to the phone number. This suffix is the command for PIAFS transmission. Do not use the suffix for Internet connections.

**(8) Select a connection availability, and [Next].**

⇒ The Internet Account Information dialog box is displayed.

**(9) Enter a user name and a password, and click [Next].**

⇒ The Completing the New Connection Wizard dialog box is displayed.

Step (7)

H1002\_06.VSD

Step (8)

H1002\_07.VSD

Step (9)

H1002\_08.VSD

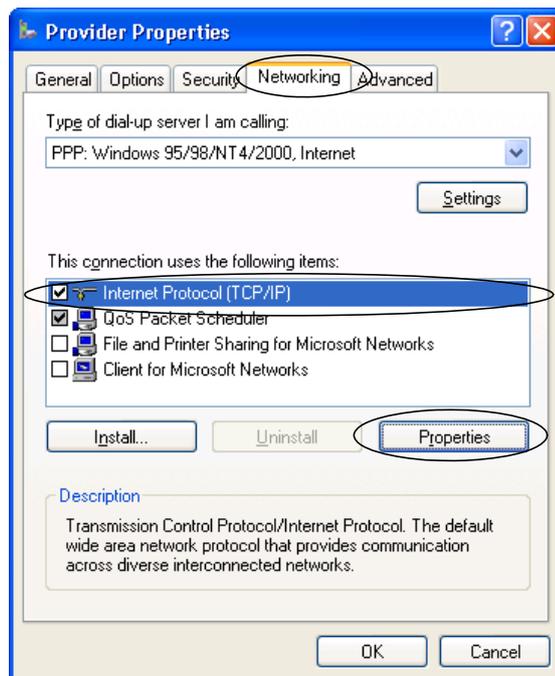
Step (9)

H1002\_09.VSD

(10) Next, open the settings under [My Network], and open the Properties for dialup connection.

(11) Select [Networking] tab, and turn on the [Internet Protocol (TCP/IP)] checkbox. Then, click [Properties].

⇒ The Internet Protocol (TCP/IP) Properties dialog box is displayed.



Step (10)

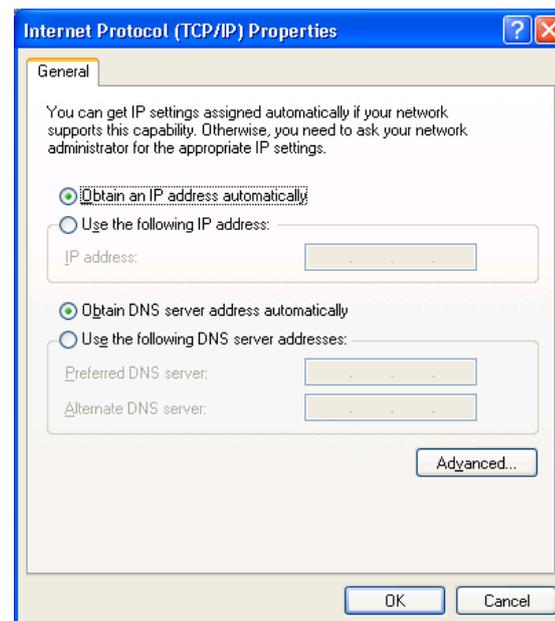
H1002\_10.VSD

(12) Turn on the [Use the following IP address] option button, enter the IP address in the [IP address] text box. Then, click [OK].

⇒ The dialog box closes, and control returns to the Properties dialog box for dialup connection.

### Note

The IP address setup is required if you are using a public switched network via a modem. If you use the Internet, the IP address setting depends on the ISP and the connection method to be used. For further information, consult your ISP or network administrator.



Step (11)

H1002\_11.VSD

(13) Click [OK].

⇒ The Properties dialog box for dialup connection closes, and control returns to the Network Connections window.

**(14) Double-click the dialup connection icon ([Provider] in this example).**

⇒ The Connect Provider dialog box is displayed.

**(15) Enter a user name, and click [Dial].**

⇒ The dialup connection is made. If the connection is successful, a network icon is displayed at the right end of the task bar.



Step (14)

H1002\_12.VSD

## Note

If you are establishing connection through a public switched network via a modem, you can check whether the personal computer is successfully connected to the remote network.

To do this, open the Windows Command Prompt window, type "Ping xxx.xxx.xxx.xxx", where "xxx.xxx.xxx.xxx" is the destination IP address, and press the [Enter] key.

If connection is successful, the following messages will be displayed:

Reply from XXX.XXX.XXX.XXX: byte=32 time=999ms TTL=999

(where "XXX.XXX.XXX.XXX" is the destination IP address, and "999" is a number)

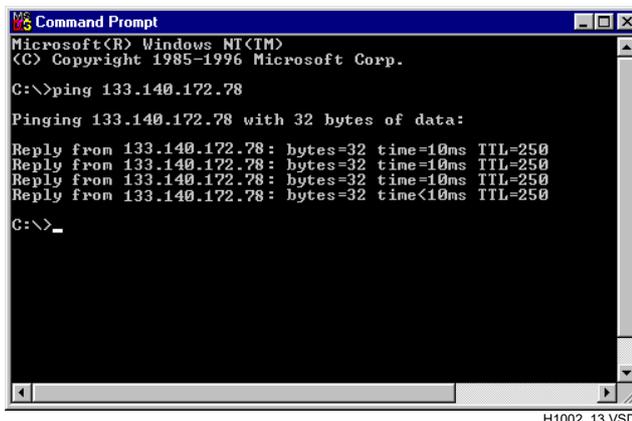


Figure H10.2 Command Prompt Window

H1002\_13.VSD

## H10.2.2 Terminating a Dialup Connection

To terminate a dialup connection to the Internet, use the following procedure.

### ◆ Procedure ◆

- (1) Ensure that the Dial-Up Network dialog box is open.

#### Note

To open the Dial-Up Network dialog box, double-click the dialup connection icon in the task bar.

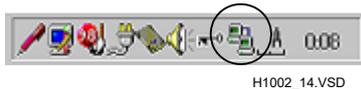
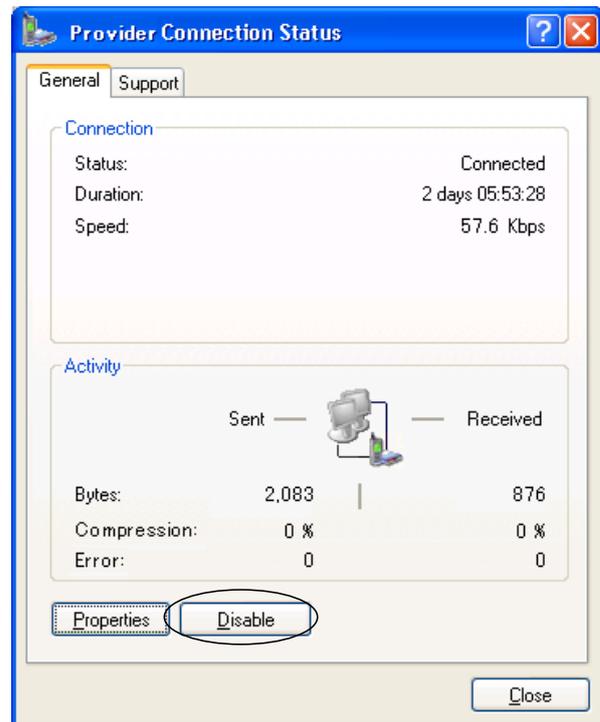


Figure H10.3 Dialup Connection Icon

Select [Status] in the displayed menu.

- (2) Click [Disconnect].

⇒ The personal computer is disconnected.



Step (2)

#### Note

You can also disconnect by clicking the dialup connection icon in the task bar of Windows and selecting [Disconnect] from the displayed menu.

#### Note

If you are connected via the Internet, and if the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, you can disconnect an Internet connection in WideField3. To do so, select [Tools]–[Mail]–[Disconnect] from the menu bar, or select [Disconnect] from the pop-up menu in the Received Mails window.

#### Note

For details on the Email Setup tab in the Set up Environment dialog box, see Section D1.2.8, "Email Setup" (Offline).

#### Note

An error is generated if a dialup connection is terminated while WideField3 is connected online. Never terminate a dialup connection while you are using an online function (e.g., online edit, download, upload, or send/receive mail).

---

## H10.3 Using WideField3 Online Functions

You can use all the WideField3 online functions through an Ethernet connection if you are connected via a dedicated line or a public switched network not going through the Internet.

### Note

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For details on dialup connection, see Section H10.2, "Dialup Connection."

For details on online connection, see Chapter H1, "Overview of Online Functions."

For details on the online functions, see explanation in each chapter of Online User's Manual.

---

### Note

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In Remote OME through the Internet, you cannot use the normal WideField3 online functions. Remote OME through the Internet is implemented by E-mails.

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### Note

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For details on Remote OME by Email, see Section H10.4, "Remote OME by Email."

---

# H10.4 Remote OME by Email

Communications between networks on the Internet is normally protected by firewalls, which do not allow direct online connections. To avoid passing through firewalls, WideField3 achieves Remote OME for remote maintenance by sending and receiving Emails over the Internet. The flowchart for conducting Remote OME by Email over the Internet is given below.

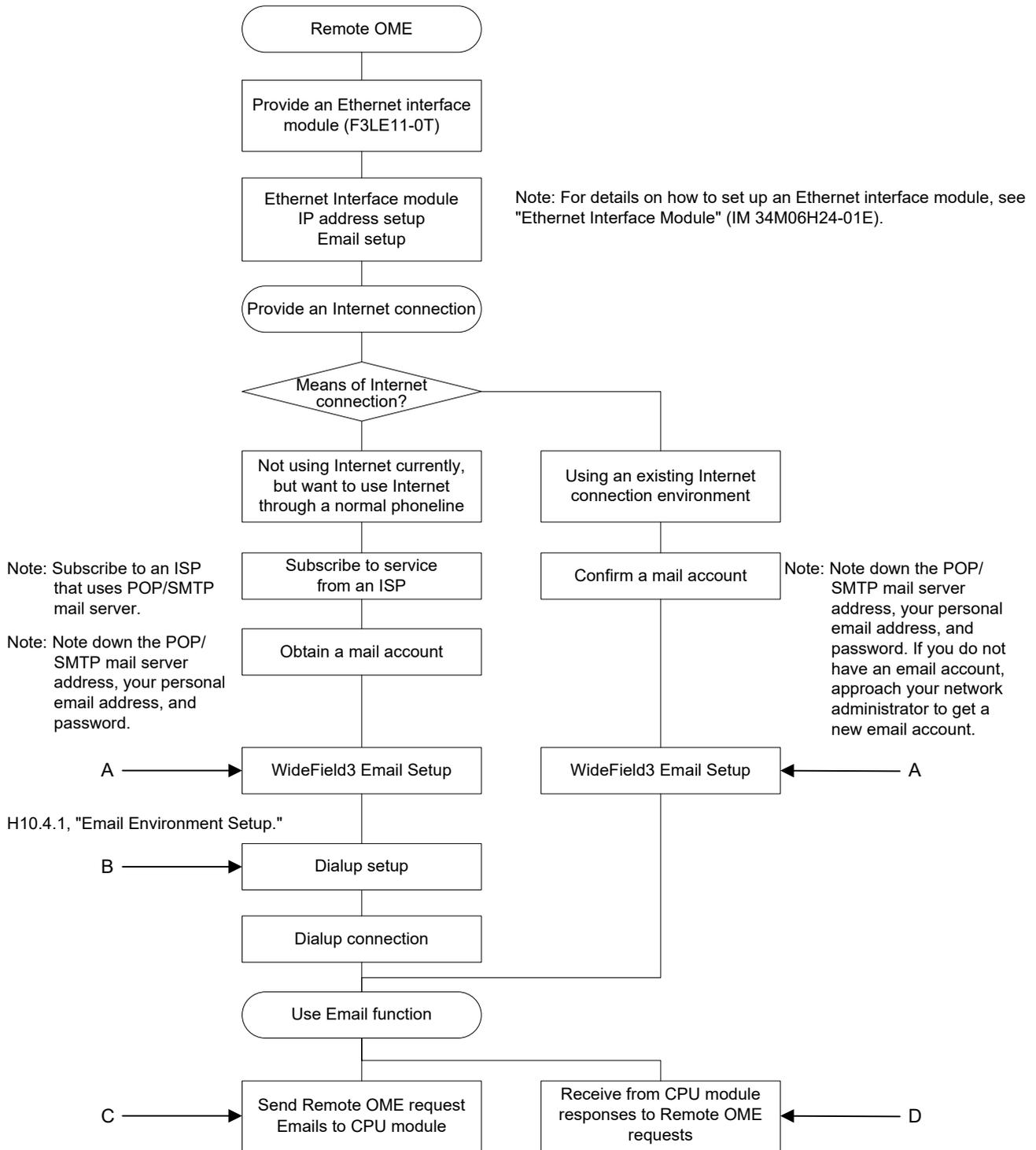


Figure H10.4 Flow of Remote OME using Email

H1004\_01.VSD

## Note

- A: See Section H10.4.1, "Email Environment Setup."
- B: See Section H10.2, "Dialup Connection."
- C: See Section H10.4.2, "Requests to CPU Module."
- D: See Section H10.4.3, "Receiving Emails."

## Note

The procedure for connecting to Internet depends on ISP and network environment settings. For details, consult your ISP or network administrator.

### H10.4.1 Email Environment Setup

To set up the WideFiled3 Email environment, use the following procedure.

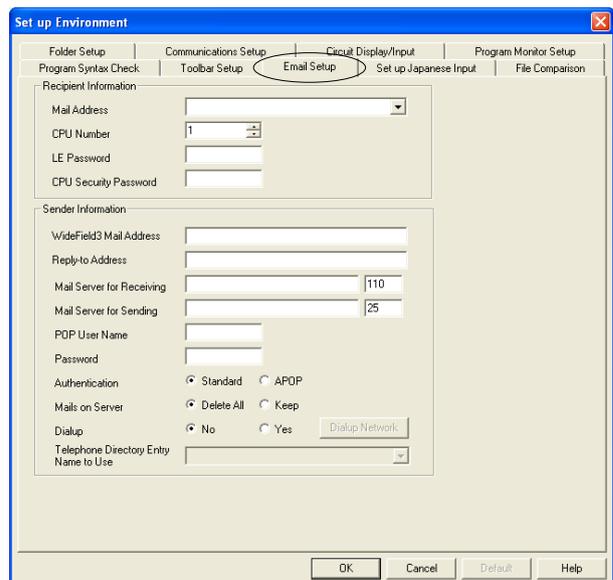
#### ◆ Procedure ◆

(1) Select [Tools]–[Set up Environment] from the menu bar.

⇒ The Set up Environment dialog box opens.

(2) Click the Email Setup tab.

(3) Enter the required Email settings, and click [OK].



Steps (2) and (3)

H1004\_02.VSD

The Email setup data you have to enter includes the following items.

### ● Recipient Information

The following table lists the setup items for the recipient (i.e., FA-M3).

**Table H10.2 Recipient Information Setting**

| Field Name            | Initial Value  | Valid Parameter Values   | Description   |
|-----------------------|--|--|---|
| Mail address          | Previous setting or blank  | A character string not longer than 256 characters and valid as email address(es) | Sets mail addresses assigned to CPUs as destinations for emails. You can enter multiple mail addresses using commas as delimiters. You can also select mail addresses from a list box containing up to 16 previous email address settings remembered by the system. |
| CPU number            | Previous setting or 1  | 1 to 4   | Sets the CPU number to connect to.  |
| LE password           | Previous setting or blank<br>(For a previous setting, the actual password is masked and displayed as asterisks ("**")) |  | Sets the password for the Ethernet module to connect to. The password defined here is stored in conjunction with the CPU mail address.  |
| CPU security password | Previous setting or blank  |  | Sets the password defined for the security function running on the CPU. The password defined here is stored in conjunction with the CPU mail address.   |

## ● Sender Information

The following table lists setup items for the sender (i.e., WideField3).

**Table H10.3 Sender Information Setting**

| Field Name                            | Initial Value                    | Valid Parameter Values   | Description   |
|---------------------------------------|----------------------------------|--|---|
| WideField3 mail address               | Previous setting or blank        | A character string not longer than 256 characters and valid as an email address        | Sets a mail address assigned to WideField3 (PC) to be used as the mail source.  |
| Reply-To address                      | Previous setting or blank        | A character string not longer than 256 characters and valid as an email address        | Sets the mail address to be used as the address for mails returned from a CPU. If the mail return address is the same as the address assigned to WideField3, this setting is optional.  |
| Mail server for receiving             | Previous setting or blank        | IP address<br>Character string, valid as a host name                                   | Sets the server to be used for receiving mails using either an IP address or a host name.   |
| Port number for receive mail server   | Previous setting or 110          | Numerical value  | Sets the port number assigned to the POP protocol for the receive mail server.  |
| Mail server for sending               | Previous setting or blank        | IP address<br>Character string, valid as a host name                                   | Sets the server to be used for sending mails using either an IP address or a host name.   |
| Port number for send mail server      | Previous setting or 25           | Numerical value  | Sets the port number assigned to the SMTP protocol for the send mail server used for sending.   |
| POP user name                         | Previous setting or blank        |  | Sets the user name to be used when connecting to the receive mail server.   |
| Password                              |                                  |  | Sets the password for the POP user name. This password is used when connecting to the receive mail server. If a password is not set here, the system displays a dialog to prompt for password entry when a connection is made to the receive mail server.   |
| Authentication                        | Previous setting or 'standard'   |  | Sets the user authentication method for the receive mail server.  |
| Mails on server                       | Previous setting or 'Delete All' |  | Specifies whether to delete received mails on the receive mail server.<br>Delete All:<br>Receives all mails stored on the receive mail server and at the same time, removes them from the mail server.<br>Keep:<br>Do not remove received mails from the receive mail server. Only receives all mails that have arrived since the last receive operation. |
| Dialup                                | Previous setting or 'no'         |  | Sets whether to perform dialup connection when connecting to the receive mail server or send mail server. Dialup connection cannot be selected if the dialup network function is not installed on the PC used.  |
| Telephone directory entry name to use | Previous setting or blank        | Entry name created as a telephone directory entry name in the dialup network function. | Selects a telephone directory entry name for performing dialup connection from a list of telephone directory entry names created. Telephone directory entries are created using the dialup network function.  |

### Note

For details on how to set up the mail server, contact your ISP or network administrator.

## Note

For details on how to set up a dialup connection, see Section H10.2, "Dialup Connection."

## H10.4.2 Requests to CPU Module

WideField3 controls a remote FA-M3 CPU module by sending email requests to the module and receiving email responses from the module.

FA-M3 automatically analyzes an email request from WideField3 and returns an email to WideField3 as its response.

This section describes the transmission of email requests for Remote OME functions from WideField3 to an FA-M3 CPU module.

The following types of Remote OME email requests are described in subsequent sections.

- A Download program
- B Upload program
- C Program file size
- D Set up sampling trace
- E Upload sampling trace results
- F Upload device data
- G Download device data
- H Device data mail size
- I Upload system log
- J Upload user log

## Note

For F3SP71-4N/76-7N/71-4S/76-7S, the sampling trace settings cannot be configured and sampling trace results cannot be uploaded.

## ■ A Download Program

The Download Program email requests to download a program from WideField3 and to store it in the CPU module. To send a Download Program request email, use the following procedure.

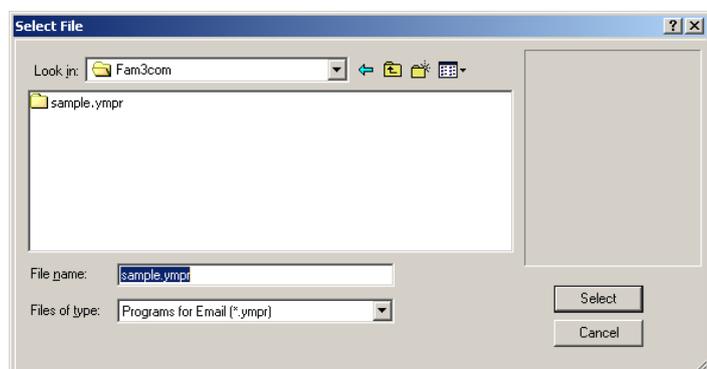
### ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[Download] from the menu bar.

⇒ The Select File dialog box opens.

(2) Select a program to be downloaded, and click [Select].

⇒ The Specify Operating Mode dialog box opens.



Step (2)

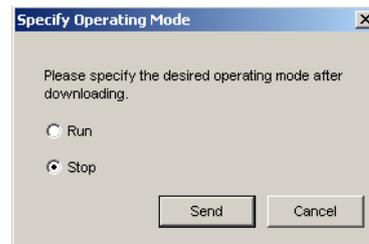
H1004\_03.VSD

(3) Turn on the [Run] or [Stop] option button, and click [Send].

### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not yet established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.



Step (3)

H1004\_04.VSD

⇒ The download request Email is sent to the CPU module, and the program is downloaded to the CPU.

### Note

You can check the response of the CPU module to the download request Email by reading the Email returned from the CPU module.

### Note

For details on receiving Emails, see Section H10.4.3, "Receiving Emails."



### CAUTION

- The only programs that can be downloaded are programs that have been previously uploaded by Email and saved in files.
- If you download a program to the CPU by Email while WideField3 is connected online to the same CPU, WideField3 may no longer operate normally. In this case, select [Online]–[Disconnect] from the menu bar to disconnect, and then select [Online]–[Connect] from the menu bar to reconnect before using the online functions.

## ■ B Upload Program

This email requests the CPU module to upload a program to WideField3. To send an upload program request email, use the following procedure.

**Table H10.4 Files Created for Remote OME**

| Type               | Extension | Description  |
|--------------------|-----------|--|
| Executable program | .ympr     | Stores a program uploaded through email.<br>You can use up to 254 characters for the file name with an absolute path within the range of the Windows specifications. |

### ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[Upload] from the menu bar.

⇒ A confirmation dialog box opens.

(2) Click [Yes].

#### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.



Step (2)

H1004\_05.VSD

⇒ The upload program request Email is sent to the CPU module

#### Note

You can check the response of the CPU module to the upload request Email by reading the Email returned from the CPU module. You can save the uploaded program by saving the received Email.

#### Note

For details on receiving emails, see Section H10.4.3, "Receiving Emails."

## ■ C Program File Size

The file size of an uploaded program increases in proportion to the number of steps in the program. The file size also depends on whether tag name definitions are included in the upload.

If tag name definitions are included in the uploaded program, the size of the created file also depends on the ratio of the number of tag name definitions to the number of steps.

The relationship between a file size and the number of steps is illustrated below.

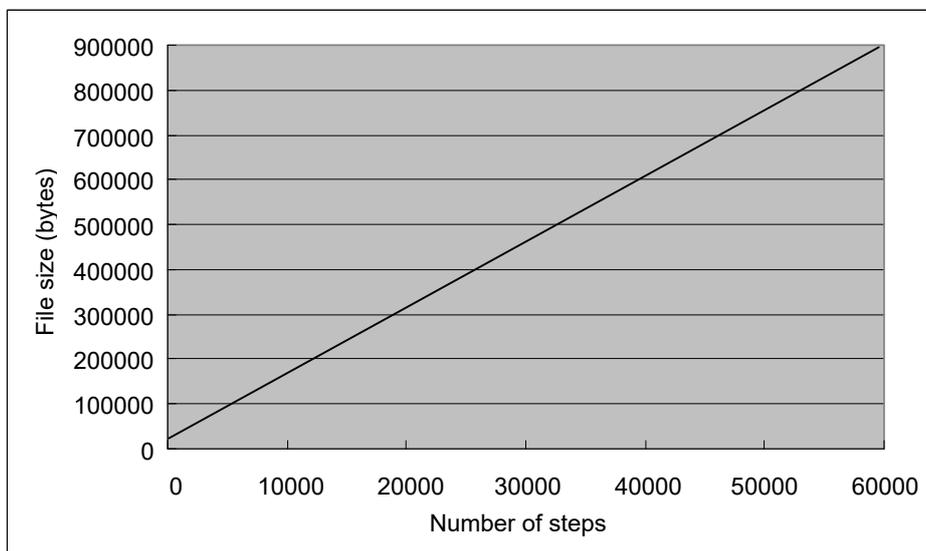


Figure H10.5 File Size of a Program with No Tag Name Definitions

H1004\_06.VSD

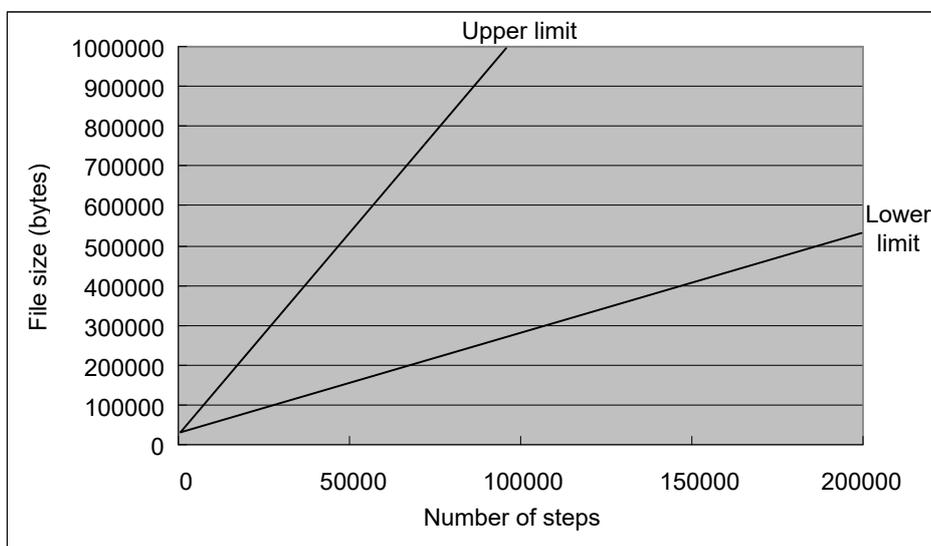


Figure H10.6 File Size of a Program with Tag Name Definitions

H1004\_07.VSD

## ■ D Set up Sampling Trace

This Email requests to transfer a sampling trace setup file from WideField3 to a CPU module.

### Note

For SP71-4N/76-7N/71-4S/76-7S, the sampling trace settings cannot be configured.

### Note

To create a sampling trace setup file, use the sampling trace tool. You can set up a sampling trace so that the CPU module will automatically return trace results at the end of the sampling trace. Use the Email receive function to receive sampling trace results, and save the data to a file.

To review saved sampling trace results, use the sampling trace tool.

### Note

For details on the sampling trace tool, see "FA-M3V Environment Tool Trace Function" (IM34M06Q50-21E).

To send a set up sampling trace request email, use the following procedure.

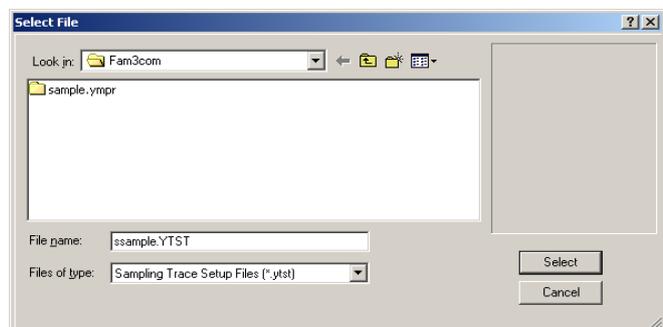
## ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[Sampling Trace]–[Setup] from the menu bar.

⇒ The Select File dialog box opens.

(2) Select a sampling trace setup file to be transferred to the CPU module, and click [Select].

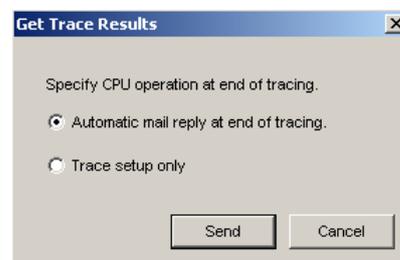
⇒ The Get Trace Results dialog box opens.



Step (2)

H1004\_08.VSD

(3) Specify how the CPU module should behave when tracing completes by turning on either the [Automatic mail reply at end of tracing] or [Trace setup only] option button, and click [Send].



Step (3)

H1004\_09.VSD

**Note**

---

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.

---

⇒ The set up sampling trace email is sent to the CPU module.

**Note**

---

If the [Automatic mail reply at end of tracing] option button is turned on in the Get Trace Results dialog box, sampling trace results are automatically returned to the sender of the request email by the CPU module. You can review the returned sampling trace results by reading the return Email.

You can check the response of the CPU module to the set up sampling trace request Email by reading the Email returned from the CPU module.

---

**Note**

---

For details on receiving Emails, see Section H10.4.3, "Receiving Emails."

---

## ■ E Upload Sampling Trace Result

This Email request obtains sampling trace results stored in the CPU module.

### Note

For SP71-4N/76-7N, sampling trace results cannot be uploaded.

### Note

The upload sampling trace result request Email sends only a request email, without sending a setup file. Sampling trace results are returned from the CPU module by Email.

You need not use the upload function if the [Automatic mail reply at end of tracing] option button in the Get Trace Results dialog box is turned on at the time when you send the set up sampling trace request Email.

Sampling trace results returned from the CPU module are saved in a format that can be reviewed using the sampling trace tool.

To send an upload sampling trace result request Email, use the following procedure.

## ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[Sampling Trace]–[Results] from the menu bar.

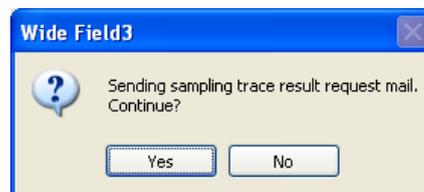
⇒ A confirmation dialog box opens.

(2) Click [Yes].

### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not yet established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.



Step (2)

H1004\_10.VSD

⇒ The upload sampling trace result request Email is sent to the CPU module.

### Note

You can check the response of the CPU module to the sampling trace result request Email by reading the Email returned from the CPU module. You can save the sampling trace results by saving the returned Email.

You can review the saved sampling trace results with the sampling trace tool.

### Note

For details on receiving Emails, see Section H.10.4.3, "Receiving Emails."

For details on the sampling trace tool, see "FA-M3V Environment Tool Trace Function" (IM34M06Q50-21E).

## ■ F Upload Device Data

This Email requests the CPU module to upload device data to WideField3.

### Note

The upload device data request email sends only a mail request. The uploaded data is transmitted from the CPU module by Email.

Device data returned from the CPU module is saved in a format that can be reviewed with the device manager.

To send an upload device data request Email, use the following procedure.

## ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[Device]–[Upload] from the menu bar.

⇒ The Set up Points to Upload dialog box opens.

(2) Set the range of FA-M3 device data to be uploaded, and click [Send].

### Note

Clicking [Refer to CPU] displays the complete range of devices for different CPU module types.

### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not yet established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.

⇒ The upload device data request Email is sent to the CPU module.

The screenshot shows the 'Set up Points to Upload' dialog box with the following sections:

- Internal Relay (I)**: Start No. 1, Quantity 0
- Special Relay (M)**: Start No. 1, Quantity 0
- Timer (T)**: Start No. 1, Quantity 0
- Counter (C)**: Start No. 1, Quantity 0
- Data Register (D)**: Start No. 1, Quantity 0
- Index Register (V)**: Start No. 1, Quantity 0
- Special Register (Z)**: Start No. 1, Quantity 0
- File Register (B)**: Start No. 1, Quantity 0
- Cache Register (F)**: Start No. 0, Quantity 0
- Upload Shared Devices**:
  - Shared Relay (E)**: Start No. 1, Quantity 0
  - Extended Shared Relay (E)**: Start No. 2049, Quantity 0
  - Shared Register (R)**: Start No. 1, Quantity 0
  - Extended Shared Register (R)**: Start No. 1025, Quantity 0
- Upload Link Relays (L)**:
 

| System   | Relay | Start No. | Quantity |
|----------|-------|-----------|----------|
| System 1 | L0    | 1         | 0        |
| System 2 | L1    | 1         | 0        |
| System 3 | L2    | 1         | 0        |
| System 4 | L3    | 1         | 0        |
| System 5 | L4    | 1         | 0        |
| System 6 | L5    | 1         | 0        |
| System 7 | L6    | 1         | 0        |
| System 8 | L7    | 1         | 0        |
- Upload Link Registers (W)**:
 

| System   | Register | Start No. | Quantity |
|----------|----------|-----------|----------|
| System 1 | W0       | 1         | 0        |
| System 2 | W1       | 1         | 0        |
| System 3 | W2       | 1         | 0        |
| System 4 | W3       | 1         | 0        |
| System 5 | W4       | 1         | 0        |
| System 6 | W5       | 1         | 0        |
| System 7 | W6       | 1         | 0        |
| System 8 | W7       | 1         | 0        |
- Maximum Range**:
 

|        |   |        |
|--------|---|--------|
| I00001 | - | I16384 |
| M00001 | - | M09984 |
| T00001 | - | T02048 |
| C00001 | - | C02048 |
| D00001 | - | D16384 |
| V00001 | - | V00256 |
| Z00001 | - | Z01024 |
| B00001 | - | B32768 |
| F00000 | - | F00000 |
| E00001 | - | E02048 |
| E02049 | - | E04096 |
| R00001 | - | R01024 |
| R01025 | - | R04096 |
| Ls0001 | - | Ls8192 |
| Ws0001 | - | Ws8192 |

Step (2)

H1004\_11.VSD

### Note

You can check the response of the CPU module to the upload device request Email by reading the Email returned from the CPU module. By saving the received mail, you can save the device data.

You can review the saved device data with the device manager.

### Note

For details on receiving Emails, see Section H10.4.3, "Receiving Emails."

For details on the device manager, see Chapter H8, "Device Manager."

## ■ G Download Device Data

This Email requests to download device data to the CPU module.

### Note

To create a device data file, use the device manager.

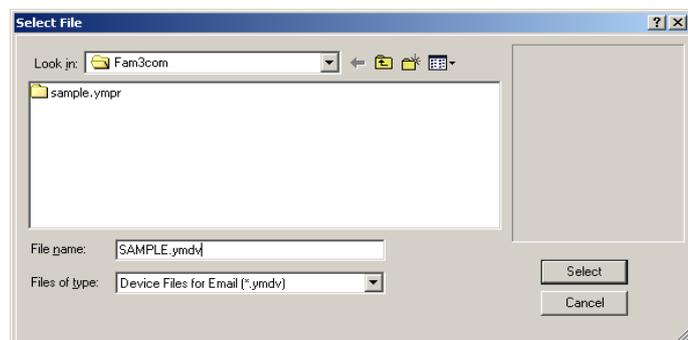
### Note

For details on the device manager, see Chapter H8, "Device Manager."

To send a download device data request Email, use the following procedure.

## ◆ Procedure ◆

- (1) Select [Tools]–[Mail]–[Device]–[Download] from the menu bar.  
⇒ The Select File dialog box opens.
- (2) Select a device data file to be downloaded to the CPU module, and click [Select].  
⇒ The Set up Points to Download dialog box opens.



Step (2)

H1004\_12.VSD

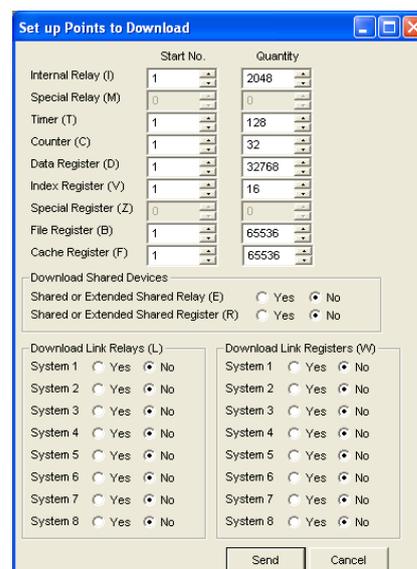
- (3) Confirm that the Set up Points to Download dialog box is open.
- (4) Set the range of devices to be downloaded to the FA-M3, and click [OK].

### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.

- ⇒ The download device data request Email is sent to the FA-M3.



Step (3)

H1004\_13.VSD

**Note**

You can check the response of the CPU module to the download device request Email by reading the Email returned from the CPU module.

---

**Note**

For details on receiving Emails, see Section H10.4.3, "Receiving Emails."

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**Note**

Only device data files with formats suitable for Email transfer (that is, device data files with filename extension of ".ymdv" can be downloaded). Device data files with filename extension ".ydvf" cannot be downloaded. Using the device manager, change the format of the device data files before saving.

---

**■ H Device Data Mail Size**

The mail sizes of device data sent or received differ for relay devices and register devices, and can be determined as follows:

- Relay devices : Number of device points x 5 (bytes)
- Register devices : Number of device points x 2 (bytes)

If both relay and register devices are transferred, calculate the mail sizes for relay and register devices separately and then sum the results.

The actual size is slightly larger than the calculated size because of the addition of a mail header and data on the number of points.

## ■ I Upload System Log

This Email requests the CPU module to upload a system data log to WideField3.

### Note

This upload system log request Email sends only a mail request. The system log is transmitted to WideField3 from the CPU module by Email.

The received system log is saved in a format readable in WideField3 when you save the received Email. To review the saved system log with WideField3, select [File]–[Open] from the menu bar.

To send an upload system log request Email, use the following procedure.

### ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[System Log] from the menu bar.

⇒ A confirmation dialog box opens.

(2) Click [Yes].

### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not yet established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.



Step (2)

H1004\_14.VSD

⇒ The load system log request Email is sent.

### Note

You can check the response of the CPU module to the upload system log request Email by reading the Email returned from the CPU module. By saving the received Email, you can save the returned data as system log data.

### Note

For details on receiving Emails, see Section H10.4.3, "Receiving Emails."

## ■ J Upload User Log

This Email requests the CPU module to upload a user log to WideField3.

### Note

This upload user log request Email sends only a request mail. The user log is transmitted to WideField3 from the CPU module by Email.

The received user log is saved in a format readable in WideField3 when you save the received Email. To review the saved user log in WideField3, select [File]–[Open] from the menu bar.

To send an upload user log request Email, use the following procedure.

### ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[User Log] from the menu bar.

⇒ A confirmation dialog box opens.

(2) Click [Yes].

### Note

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Transfer by Email is not available if a dialup connection is not established.



Step (2)

H1004\_15.VSD

⇒ The upload user log request Email is sent.

### Note

You can check the response of the CPU module to the upload user log request Email by reading the Email returned from the CPU module. By saving the received Email, you can save the returned data as user log data.

### Note

For details on receiving Emails, see Section H10.4.3, "Receiving Emails."

## H10.4.3 Receiving Emails

FA-M3 data transmitted in emails as responses to requests from WideField3 is stored in the mailbox of WideField3.

You can monitor the status and acquire data of the FA-M3 by opening and processing these Emails in WideField3.

### Note

For details on request Emails sent to an FA-M3 CPU module, see Section H10.4.2, "Requests to CPU Module."

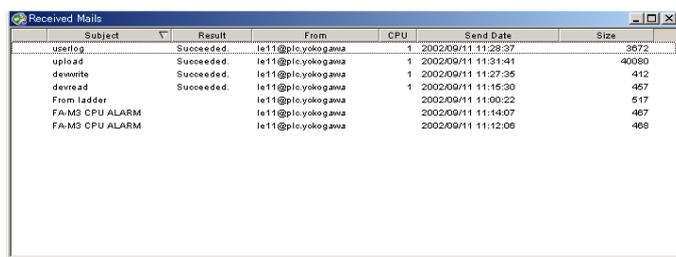
## ■ Displaying a List of Received Emails

To display a list of Emails received by WideField3, use the following procedure.

### ◆ Procedure ◆

(1) Select [Tools]–[Mail]–[Mailbox] from the menu bar.

⇒ The Received Mails window opens. All operations on received Emails can be carried out in this window.



| Subject         | Result    | From              | CPU | Send Date           | Size  |
|-----------------|-----------|-------------------|-----|---------------------|-------|
| userlog         | Succeeded | le11@plc.yokogawa | 1   | 2002/09/11 11:28:37 | 3672  |
| upload          | Succeeded | le11@plc.yokogawa | 1   | 2002/09/11 11:31:41 | 40080 |
| devwrite        | Succeeded | le11@plc.yokogawa | 1   | 2002/09/11 11:27:35 | 412   |
| devread         | Succeeded | le11@plc.yokogawa | 1   | 2002/09/11 11:15:30 | 457   |
| From ladder     |           | le11@plc.yokogawa |     | 2002/09/11 11:00:22 | 517   |
| FA-M3 CPU ALARM |           | le11@plc.yokogawa |     | 2002/09/11 11:14:07 | 467   |
| FA-M3 CPU ALARM |           | le11@plc.yokogawa |     | 2002/09/11 11:12:06 | 468   |

Step (1)

H1004\_16.VSD

The content of the Received Mails window is described in the following table.

**Table H10.5 Content of the Received Mails Window**

| Field Name  | Description  |
|-------------|--|
| (Blank/NEW) | Indicates the read/unread status of received mails.<br>NEW : Unread (not saved) mails<br>Blank : Read (saved or displayed) mails   |
| Subject     | Displays the subject of a received mail.<br>The subjects of response mails from FA-M3 are as follows:<br>upload : Upload program<br>download : Download program<br>trace : Set up sampling trace<br>trcread : Sampling trace results<br>devwrite : Download device data<br>devread : Upload device data<br>userlog : User log<br>syslog : System log |
| Result      | For mail responses from CPU modules to request mails from WideField3, displays one of the following response results.<br>Blank : This is not a response mail from a CPU module.<br>Succeeded : The request was successfully executed.<br>Failed : The request was not executed. The reason is indicated by the ErrorCode stored in the mail.         |
| From        | Identifies the sender of a mail.   |
| CPU         | For mail responses from CPU modules to request mails from WideField3, displays the CPU number (1-4) of the CPU that has executed the request.<br>Displays nothing for mails that are not response from CPU modules.  |
| Send Date   | Displays the date and time a mail was received.  |
| Size        | Displays in units of bytes the size of a received mail in the mailbox.   |

## Note

- By default, unread mails (labeled with "NEW") are listed in descending order of the time-stamp values before read (with no label) mails, which are also sorted similarly.
  - You can sort listed mails by clicking the heading row of the display field to be used as the sort key.
-

---

## ■ Displaying the Content of Received Emails in Text Format

To display the content of a received Email in text format, use the following procedure.

### ◆ Procedure ◆

- (1) In the Received Mails window, select a received mail you want to view in text format and press the [Enter] key, or simply double-click the mail.

⇒ The content of the selected mail is displayed in text format.

### Note

---

- When an unread mail in the Received Mails window is displayed in text format, its "New" label is removed to indicate that the mail has been read.
  - The content of a received mail (a text file) is displayed using the standard editor associated with the file name extension ".txt".
  - Text files are stored in Unix mailbox format. Therefore, some mails (for example mails in EUC code) may not be correctly displayed in the standard editor.
- 

## ■ Receiving Emails

Emails sent from FA-M3 are stored in the mail server on the Internet. Before you can use such Emails in WideField3, you must first read the mails from the mail server. To do this, use the following procedure.

### ◆ Procedure ◆

- (1) Select [Tools]–[Mail]–[Read Mail] from the menu bar.

### Note

---

If the [Dialup] option is selected in the Email Setup tab of the Set up Environment dialog box, but a dialup connection is not established, a dialup connection confirmation dialog box opens prompting you to establish a dialup connection.

Emails are not read if dialup connection is not established.

---

### Note

---

If the [Password] field of the [Sender Information] group box is empty in the Email Setup tab of the Set up Environment dialog box, a password input dialog box opens to prompt for a password.

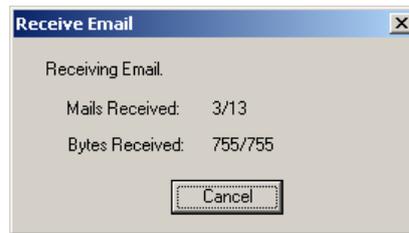
---

**(2) The mails stored in the receive mail server are transferred to WideField3.**

⇒ When all mails are transferred, the outcome of the transfer is displayed.

### Note

If you have established a dialup connection in the TIP section of step (1) above, the dialup connection is automatically disconnected.



Step (2)

H1004\_17.VSD



### CAUTION

If [Mails on Server] is set to [Delete All] in the Email Setup tab of the Set up Environment dialog box, all received mails are deleted from the receive mail server after they are transferred to WideField3. Since WideField3 transfers all mails from the mail server, mails irrelevant to WideField3 may be inadvertently deleted.

For mails that are irrelevant to WideField3, select [File]–[Save As] from the menu bar in the Received Mails window to save them as text files, and then move the text files to your standard mailer (Email software).

Note that If you click [Cancel] in the Receive Email dialog box to terminate an on-going Email transfer, mails already transferred are already deleted from the receive mail server.

### Note

If you change the [Mails on Server] settings from [Keep] to [Delete All] in the Email Setup tab of the Set up Environment dialog box, the mail you receive immediately after the change may be the same mail received right before the change.

## ■ Saving Received Emails

In the Received Mails window, you can save received mails so as to use them with other WideField3 functions later. You can save received mails in the following file formats:

**Table H10.6 Mail Saving Format**

| Sender | Mail Content                | Name of Saved File | How to Review   |
|--------|-----------------------------|--------------------|---|
| CPU    | Uploaded CPU module program | <file name>.YMPR   | Cannot be reviewed or modified with WideField3.   |
|        | Sampling trace results      | <file name>.YTRC   | Use the sampling trace tool.  |
|        | Uploaded device data        | <file name>.YMDV   | Use the device manager.   |
|        | System log                  | <file name>.YSLG   | Select [File]–[Open]–[Log File] from the menu bar.  |
|        | User log                    | <file name>.YULG   | Select [File]–[Open]–[Log File] from the menu bar.  |
|        | Error mail                  | <file name>.YTXT   | This is an error response from the CPU module to a request from WideField3.<br>Use a standard text editor or a separate mailer (Email software) to review it. |
| Others | User mail                   | <file name>.YTXT   | Use a separate mailer (Email software).   |

To save received mails, use the following procedure.

### ◆ Procedure ◆

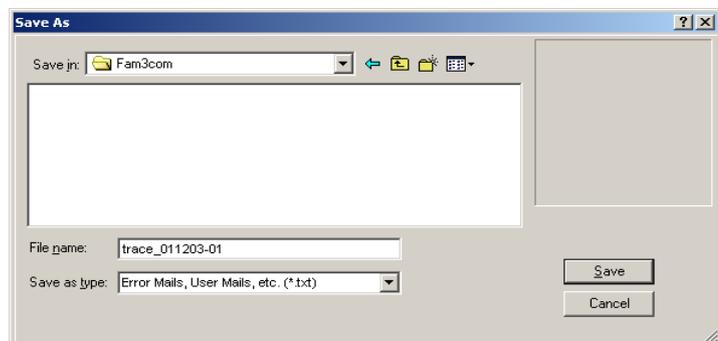
- (1) Confirm that the Received Mails window is open.
- (2) Select a mail to be saved, and select [File]–[Save As] from the menu bar.  
⇒ The Save As dialog box opens.
- (3) Enter a file name and click [Save].

#### Note

The file format used for saving a mail is automatically determined according to the content of the mail.

#### Note

If a project is open, received mails are saved in the project folder. Otherwise, they are saved in the WideField3 common folder (the default is the “Fam3com” folder in the folder where WideField3 is installed).



Step (3)

H1004\_18.VSD

---

**Note**

Programs uploaded and saved through Email cannot be viewed or modified using WideField3.

To view or modify such files, first download the program to the CPU. Next, connect to the CPU module using the Internet or other communications media and perform normal uploading.

---

**Note**

For details on how to download programs to the CPU module, see Section H10.4.2, "Requests to CPU Module."

---

**■ Changing the Read/Unread Status of Received Emails**

In the Received Mails window, new and unread mails are labeled as "NEW", and mails that have been read have no label.

To change the unread status of a new mail to read status, use the following procedure.

**◆ Procedure ◆**

- (1) Confirm that the Received Mails window is open.
- (2) Select a newly arrived mail whose unread status you want to change, and select [Edit]–[Change Processing Status] from the menu bar.

**Note**

To select multiple mails, select a range of mails, with the [Shift] key depressed.

---

⇒ The unread status of the selected mails is changed to the read status (a blank).

## ■ Deleting Received Emails

To delete received mails displayed in the Received Mails window, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Received Mails window is open.
- (2) Select a mail to be deleted, and select [Edit]–[Delete] from the menu bar.

### **Note**

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To select multiple mails, select a range of mails, with the [Shift] key depressed.

---

⇒ The selected mails are deleted.

---

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# H11. FA-M3 Defender (User Authentication and Operation Protection)

This chapter describes FA-M3 Defender user authentication and operation protection functions.

## ● Function Limitations for Each CPU Type

Table H11.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations  | SEE ALSO |
|---|--|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The user authentication and operation protection functions of FA-M3 Defender when logging in to the CPU are not available. | H11      |
| F3SP66-4S,<br>F3SP67-6S   | The user authentication and operation protection functions of FA-M3 Defender when logging in to the CPU are not available. | H11      |
| F3SP71-4N,<br>F3SP76-7N   | The virtual directory function is not available.   | H11.2    |
| F3SP71-4S,<br>F3SP76-7S   | N/A  |          |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

---

## H11.1 Fundamentals of FA-M3 Defender

FA-M3 Defender provides functions to ensure security of the CPU.

FA-M3 Defender offers the following functions.

- Operation protection
- User authentication

The operation protection function manages the level of authority given to users who perform operation on the CPU to impose appropriate restrictions on functions available to individual users, thereby preventing improper operations on the CPU. Operation protection settings are saved in operation protection settings files.

The user authentication function performs password authentication of users trying to access the CPU through various routes, based on the settings in the operation protection settings file. This function prevents unauthorized access to the CPU.

The operation log setup configures various settings for operation logs.

### Note

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The user authentication and operation protection functions of FA-M3 Defender are available to the CPU types F3SP71-4N, F3SP76-7N, F3SP71-4S, and F3SP76-7S.

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### Note

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For details on operation logs, see Section K3.4, "Operation Log."

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## H11.1.1 FA-M3 Defender: Main Dialog Box

This section describes the FA-M3 Defender: Main dialog box.

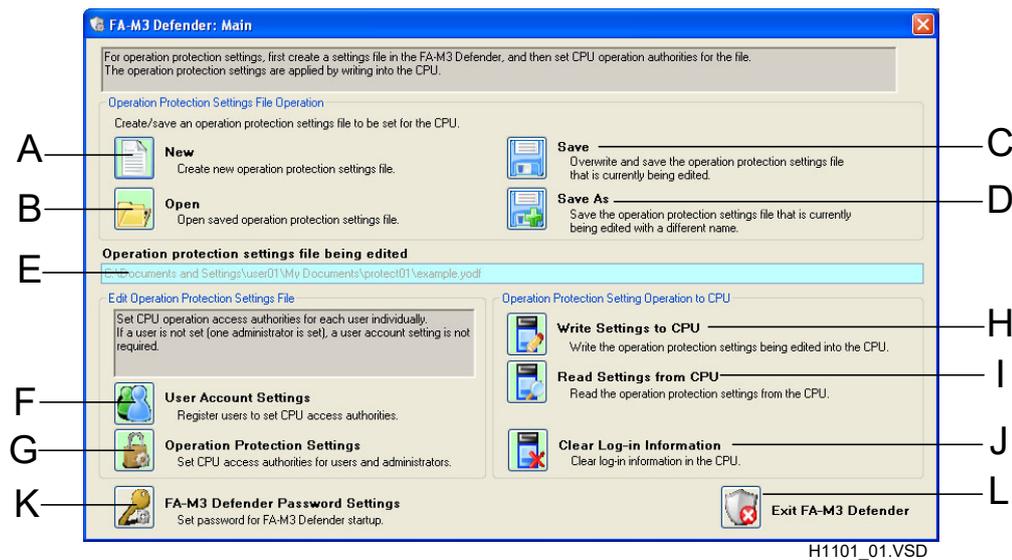


Figure H11.1 FA-M3 Defender: Main Dialog Box

- A New  
Creates a new set of operation protection settings.
- B Open  
Opens an operation protection settings file.
- C Save  
Saves the current operation protection settings into an operation protection settings file.
- D Save As  
Saves the current operation protection settings into an operation protection settings file with a new name.
- E Operation protection settings file being edited  
Displays the path to an operation protection settings file (if any) that is currently being edited. If no file is being edited, this field is left blank.
- F User Account Settings  
Opens the User Account Settings dialog box. In the User Account Settings dialog box, the CPU login user name, password and authority level can be set up.
- G Operation Protection Settings  
Opens the Operation Protection Settings dialog box. In the Operation Protection Settings dialog box, functional restrictions on the CPU for each user and function removal settings can be configured.
- H Write Settings to CPU  
Saves the operation protection settings into the CPU.
- I Read Settings from CPU  
Loads the saved operation protection settings from the CPU.
- J Clear Log-in Information  
Clears login information stored in the CPU. This operation forcibly logs out any user currently logged in to the CPU, whether the user is an administrator or general user. Only users with "administrator" authority can perform this operation.

- K FA-M3 Defender Password Settings  
Sets a password for starting FA-M3 Defender. When no password is set and the field is left blank, a password is not requested when FA-M3 Defender is started.
- L Exit FA-M3 Defender  
Exits FA-M3 Defender.

## H11.1.2 Operation Protection Settings File

This section describes operation protection settings files.

### ■ Operation Protection Settings File

Operation protection settings files store the following information.

- Operation protection settings
- User account settings

The file extension of operation protection settings file is ".yodf." This is automatically added to operation protection settings files when they are saved.

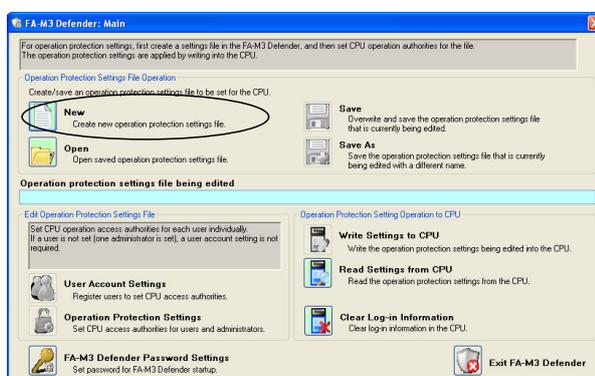
### ■ Creating a New Operation Protection Settings File

The procedure to create a new operation protection settings file is given below.

#### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [New].

⇒ The FA-M3 Defender: New dialog box appears.

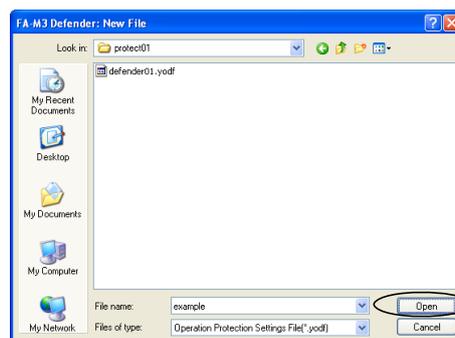


Step (1)

H1101\_02.VSD

(2) Enter the name of a new operation protection settings file, and click [Open].

⇒ A new operation protection settings file is created.



Step (2)

H1101\_03.VSD

(3) Configure operation protection and user account settings.

#### Note

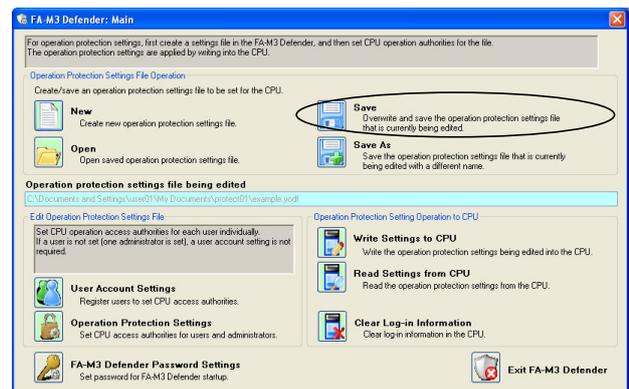
For details on operation protection settings, see Section H11.2, "Operation Protection."  
For details on user account settings, see Section H11.3.1, "User Account Settings."

**(4) Click [Save].**

⇒ A confirmation message box appears.

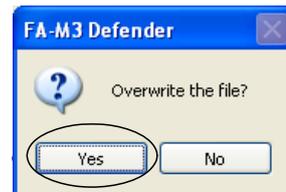
**(5) Click [Yes].**

⇒ The operation protection settings file is overwritten with the edited settings.



Step (4)

H1101\_04.VSD



Step (5)

H1101\_05.VSD

## ■ Opening an Operation Protection Settings File

The procedure to open an operation protection settings file is given below.

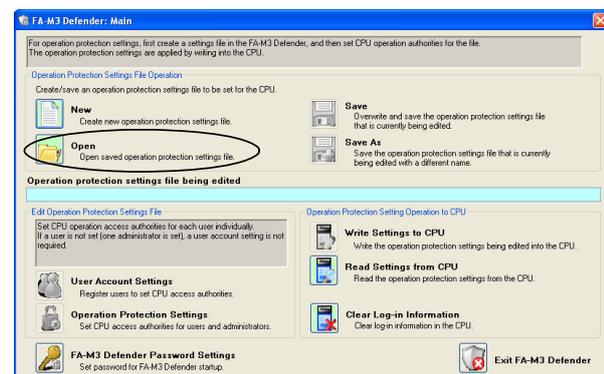
### ◆ Procedure ◆

**(1) In the FA-M3 Defender: Main dialog box, click [Open].**

⇒ The FA-M3 Defender: Open dialog box appears.

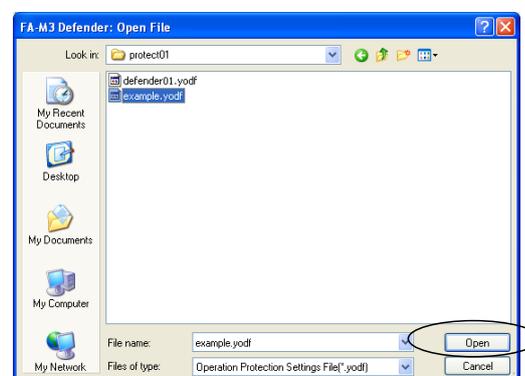
**(2) Select an operation protection settings file and click [Open].**

⇒ The operation protection settings file opens.



Step (1)

H1101\_06.VSD



Step (2)

H1101\_07.VSD

## ■ Saving an Operation Protection Settings File

This section describes how to save an operation protection settings file.

### ● Saving Newly Created Operation Protection Settings into a File

#### Note

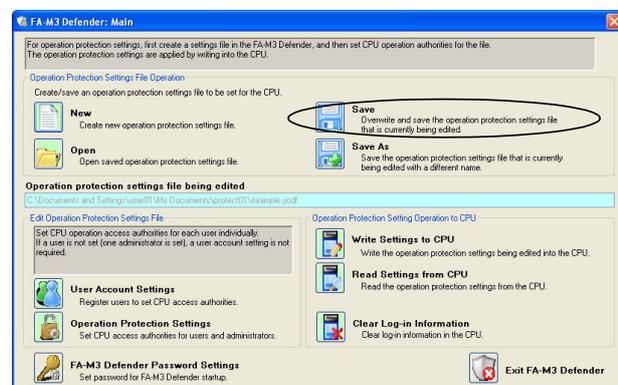
For details on how to save newly created operation protection settings into a file, see "Creating a New Operation Protection Settings File."

### ● Saving an Operation Protection Settings File Currently Being Edited

The procedure to save an operation protection settings file currently being edited is given below.

## ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [Save].

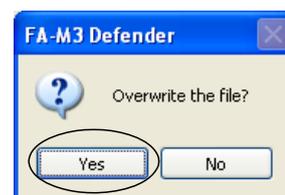


Step (1)

H1101\_08.VSD

⇒ A confirmation dialog box appears.

(2) Click [Yes].



Step (2)

H1101\_09.VSD

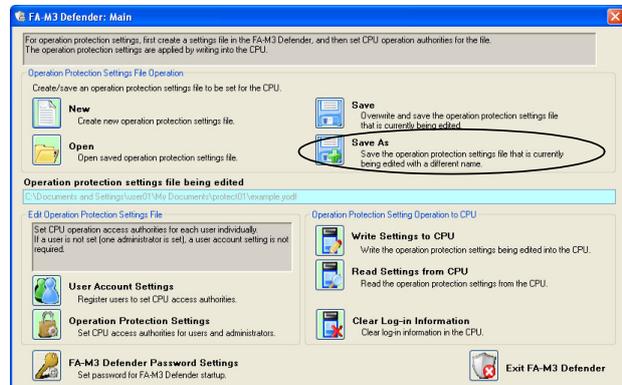
⇒ The operation protection settings are saved in the current operation protection settings file.

- **Saving an Operation Protection Settings File Currently Being Edited with a Different Name**

The procedure to save an operation protection settings file currently being edited with a different name is given below.

## ◆ Procedure ◆

- (1) In the FA-M3 Defender: Main dialog box, click [Save As].

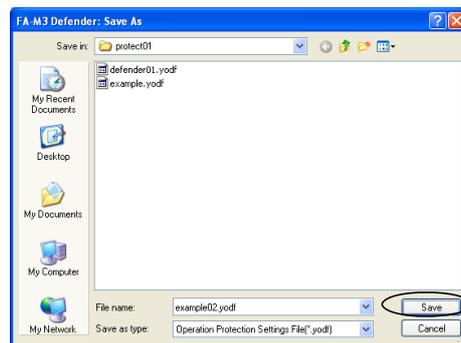


Step (1)

H1101\_10.VSD

⇒ The FA-M3 Defender: Save As dialog box appears.

- (2) Enter a file name and click [Save].



Step (2)

H1101\_11.VSD

⇒ The operation protection settings file is saved.

## H11.1.3 Starting and Closing FA-M3 Defender

This section describes how to start and close FA-M3 Defender.

### ■ Starting FA-M3 Defender

The procedure to start FA-M3 Defender is given below.

#### ◆ Procedure ◆

(1) Select [Tools]-[FA-M3 Defender] from the menu bar.

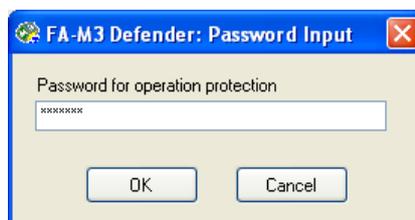
⇒ The FA-M3 Defender: Password Input dialog box opens.

#### Note

If no password has been set, this operation is skipped.

#### Note

For details on how to set a password, see Section H11.1.4, "Setting an FA-M3 Defender Startup Password."



Steps (1) and (2) H1101\_12.VSD

(2) Enter a password and click [OK].

⇒ The FA-M3 Defender: Main dialog box opens.

### ■ Closing FA-M3 Defender

To close FA-M3 Defender, in the FA-M3 Defender dialog box, click [Exit FA-M3 Defender] or the close button. Then, in the displayed confirmation message box, click [Yes] to close the program.

## H11.1.4 Setting an FA-M3 Defender Startup Password

You can set a startup password for FA-M3 Defender. This password needs to be entered to start FA-M3 Defender.

To set a password, use the FA-M3 Defender: Main dialog box. Perform the operation when the FA-M3 Defender: Main dialog box is open.



### CAUTION

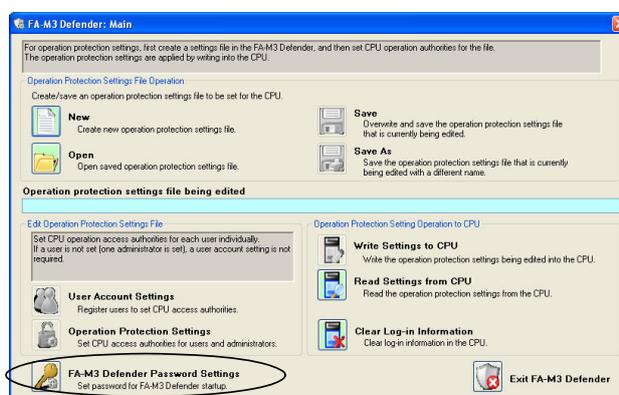
When setting a password, make sure to safely manage the password.

We cannot accept any request from any user, including persons responsible for setting passwords, to clear passwords that have been set.

The procedure to set a password to FA-M3 Defender is given below.

### ◆ Procedure ◆

- (1) In the FA-M3 Defender: Main dialog box, click [FA-M3 Defender Password Settings].



Step (1)

H1101\_13.VSD

- ⇒ The FA-M3 Defender Password Settings dialog box opens.



Step (1)

H1101\_14.VSD

- (2) In the [New password for operation protection] text box, enter a new password to be set.

### Note

You can enter a password of up to 32 alphanumeric characters.



Step (2)

H1101\_15.VSD

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**Note**

If you want to clear the current password or do not want to set any password, leave the text boxes for the current and new passwords empty.

---

- (3) In the [Re-enter password for operation protection] text box, re-enter the password to confirm it.



Step (3)

H1101\_16.VSD

- (4) Click [OK].

⇒ The new password is set to FA-M3 Defender.

---

**Note**

By default, no password is set.

---

## H11.2 Operation Protection

This section describes the operation protection functions of FA-M3 Defender. With the operation protection functions, you can impose restrictions on CPU operations available to users who connect with (log in to) the CPU via WideField3. In addition, you can set restrictions on operations performed directly (i.e., not through WideField3) to the CPU.

The operation protection functions also allow for configuring operation log settings.

The operation protection settings are saved in the operation protection settings file.

### Note

For details on viewing operation logs, see Section K3.4, "Operation Log."

**Table H11.2 Files Created for the Operation Protection Functions**

| Type                               | Extension | Description  |
|------------------------------------|-----------|--|
| Operation protection settings file | .yodf     | Stores setting information related to operation protection. You can use up to 254 characters for the file name with an absolute path within the range of the Windows specifications. |

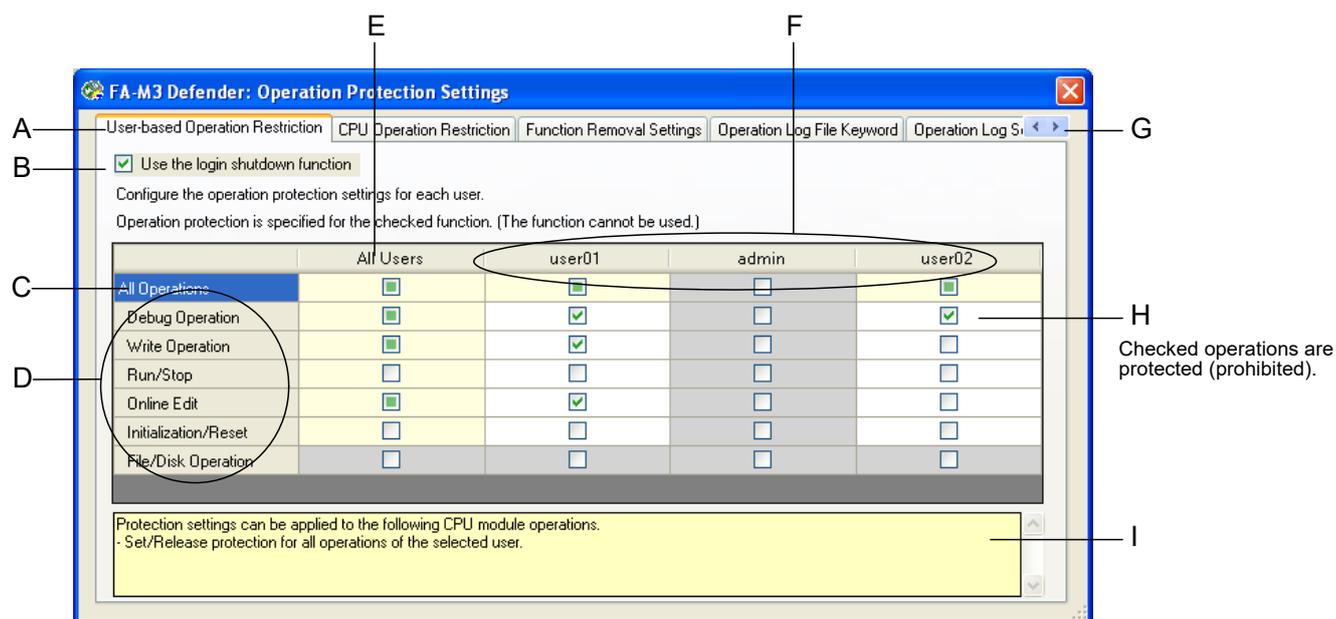
### H11.2.1 User-Specific Settings

You can allow or deny CPU operations for individual users.

To configure operation protection settings for a specific user, use the [User-based Operation Restriction] tab of the FA-M3 Defender: Operation Protection Settings dialog box.

#### ■ [User-based Operation Restriction] Tab

In the following example, the user name "admin" has administrator authority, and user names "user01" and "user02" have general user authority.



**Figure H11.2 [User-based Operation Restriction] Tab**

H1102\_01.VSD

- A This is the [User-based Operation Restriction] tab. Clicking this tab displays the screen for configuring user-specific protection settings.
- B Use the login shutdown function  
If attempts to log in to the CPU fail for ten consecutive times, logging in to the CPU is denied for any user, whether the user is registered or not, for a certain period of time (one hour). To use this login shutdown function, turn on this check box.

## Note

To clear the CPU login shutdown state immediately, a user with "administrator" authority must clear login information by using [Clear Log-in Information].

## Note

For details on [Clear Log-in Information], see Section H11.3.3, "Clearing Login Information."

- C All Operations  
Turn on this checkbox to set protection on all the displayed operations, including debugging and online editing. When any one of the operations is protected, this checkbox is marked with a green square.
- D Operation names  
These are names of the operations for which you can set protection. Users cannot use functions whose checkboxes are turned on. The following operations can be protected.

**Table H11.3 List of Operations that can be Protected**

| Operation Name       | Description  |
|----------------------|--|
| All Operations       | Includes all the operations shown below.   |
| Debug Operation      | Includes all the debug operations.<br>- Forced set/reset<br>- Canceling forced set/reset<br>- Canceling all forced set/reset<br>- Stopping/restarting refreshing<br>- Activating/inactivating blocks<br>- Transition to debug mode                                       |
| Write Operation      | Includes writing operations to the CPU.<br>- Writing the time<br>- Changing word/long-word data of devices<br>- Changing word/long-word data of I/O modules<br>- Changing the current value of timers and counters<br>- Changing the preset value of timers and counters |
| Run/Stop             | Includes operations of changing CPU operating mode.<br>- Switching to Run mode<br>- Switching to Stop mode   |
| Online Edit          | Includes the writing operation of online edited changes to the CPU.  |
| Initialization/Reset | Includes CPU initializing/resetting operations.<br>- Clearing the program<br>- Clearing devices<br>- Clearing CPU properties<br>- Clearing logs<br>- Resetting and starting  |
| File/Disk Operation  | No applicable operations   |

- E All Users  
Select or clear this checkbox to apply the same protection setting to all general users.
- F User names  
User names, added using the user account functions, are displayed.

- G Scroll buttons  
Use these buttons to move the displayed tab left and right.
- H Operation protection checkboxes  
Use these checkboxes to set operation protection. Turning on these checkboxes prevents the user from performing the corresponding operations. By default, all checkboxes are turned off. Checkboxes are in either of the following three states.

**Table H11.4 Display States of Checkboxes**

| Display State   | Description  |
|-----------------|--|
| Green checkmark | Indicates the logical AND of "on" states. This is displayed when all the operations are checked.   |
| Green square    | Indicates the logical OR of "on" states. This is displayed when at least one operation is checked. |
| None            | Indicates the logical AND of "off" states. This is displayed when no operation is checked.         |

- I Description of the operation is displayed.

## Note

Users with "administrator" authority cannot set protection on operations.

## Note

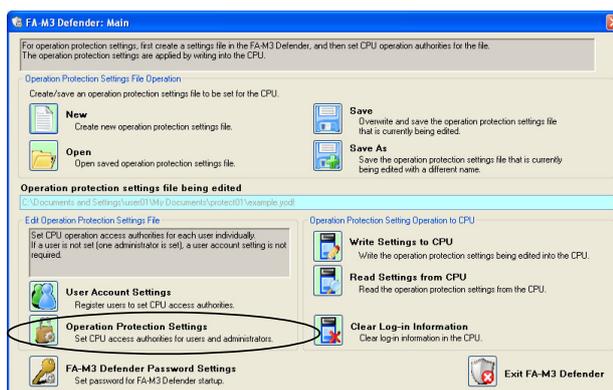
For details on authority levels, see Section H11.3.1, "User Account Settings."

## ■ Specifying User-Specific Protect Settings

The procedure to specify operation protection settings for individual users is given below.

### ◆ Procedure ◆

- (1) In the FA-M3 Defender: Main dialog box, click [Operation Protection Settings].



Step (1)

H1102\_02.VSD

- ⇒ The FA-M3 Defender: Operation Protection Settings dialog box opens.

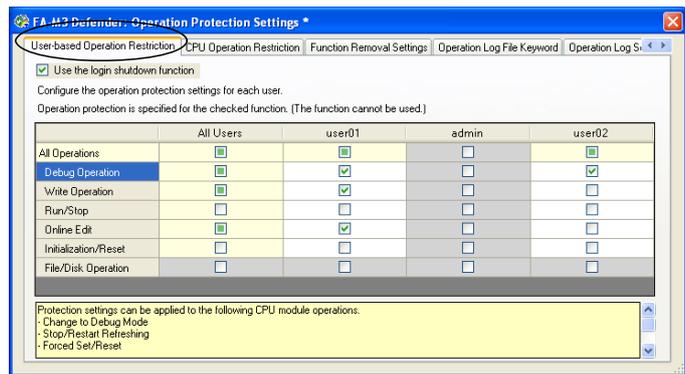
**(2) Click the [User-based Operation Restriction] tab.**

⇒ The [User-based Operation Restriction] tab opens.

**(3) Configure protection settings separately for individual users or collectively for all users. Turn off the checkbox of operations to be allowed, and turn on the checkbox of operations to be denied.**

**(4) Click the close button.**

⇒ The FA-M3 Defender: Operation Protection Settings dialog box closes.



Step (2)

H1102\_03.VSD

## H11.2.2 Settings for Non-Login Users

You can allow or deny CPU operations by non-login users.

A "non-login user" is a user not logged in to the CPU. Non-login users can perform operations via virtual directory command and higher-level link functions without having to log in to the CPU. To impose restrictions on CPU operations by these users, you can configure protect settings applied to non-login users.

To configure these settings, use the [CPU Operation Restriction] tab of the FA-M3 Defender: Operation Protection Settings dialog box.

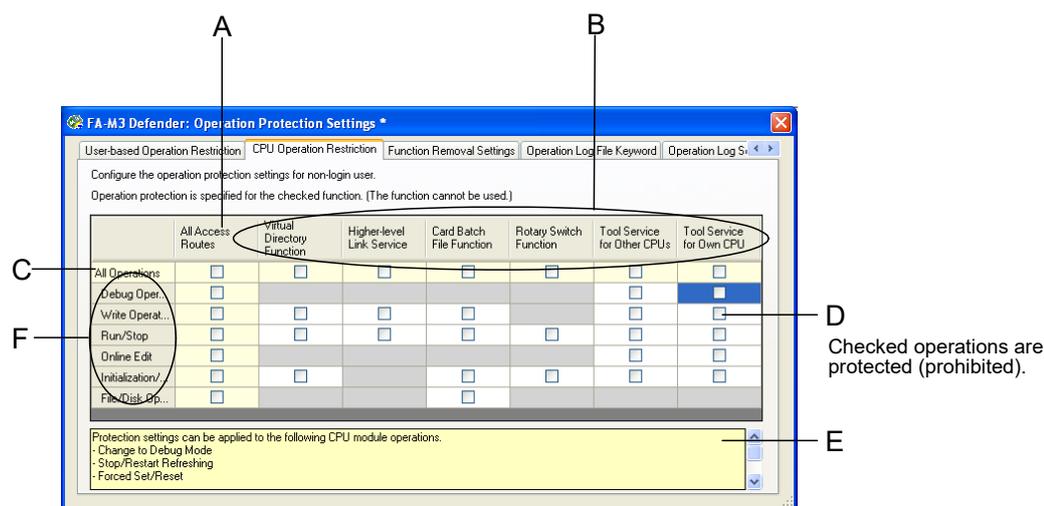
### Note

"Login" or "logging in" means that a user with user account settings not connected with the CPU establishes a connection with the CPU in WideField3. By logging in to the CPU, the user can use various online functions of WideField3.

### Note

F3SP71-4N and 76-7N cannot use the virtual directory function. Restrictions of virtual directory operations on these CPUs are disabled.

## ■ [CPU Operation Restriction] Tab



H1102\_04.VSD

Figure H11.3 [CPU Operation Restriction] Tab

- A All Access Routes  
 Select or clear this checkbox to apply the same protection setting to CPU access functions such as the virtual directory command and higher-level link functions.
- B CPU access functions  
 CPU access functions. You can set protection on operations by non-login users, separately for each type of access route.

**Table H11.5 List of Access Routes**

| Type of Access Route        | Description  |
|-----------------------------|--|
| Virtual Directory Function  | Performs operations such as writing/reading and maintaining device data, without any ladder program, by adding special commands to FTP "put" and "get" commands. |
| Higher-level Link Service   | Sends instructions to the CPU via personal computer link function.   |
| Card Batch File Function    | Operates the CPU by using a batch file stored in the memory card to execute a series of special commands.  |
| Rotary Switch Function      | Uses the rotary switch (Function name: MODE switch) and the press button (Function name: SET switch) on the front of the CPU to operate the CPU.                 |
| Tool Service for Other CPUs | Performs operations from the own CPU to other CPUs.  |
| Tool Service for Own CPU    | Performs operations to the own CPU through routes not mentioned above.   |

- C All Operations

Turn on this checkbox to set protection on all the applicable operations.

- D Operation protection checkboxes

Use these checkboxes to set operation protection. Turning on these checkboxes prevents the user from performing the corresponding operations. By default, all checkboxes are turned off. Checkboxes are in either of the following three states.

**Table H11.6 Display States of Checkboxes**

| Display State   | Description  |
|-----------------|--|
| Green checkmark | Indicates the logical AND of "on" states. This is displayed when all the operations are checked.   |
| Green square    | Indicates the logical OR of "on" states. This is displayed when at least one operation is checked. |
| None            | Indicates the logical AND of "off" states. This is displayed when no operation is checked.         |

- E Description of the operation is displayed.

- F Operation names

These are names of the operations for which you can set protection. Operations to be protected vary for each type of access function. For details on protect settings for each access type, see the explanation below.

## ● Virtual Directory Function

Protection can be set on the following virtual directory operations.

**Table H11.7 List of Virtual Directory Operations that can be Protected**

| Operation Name       | Description   |
|----------------------|---|
| Debug Operation      | No applicable operations  |
| Write Operation      | The following operations are prohibited.<br>- BWR: Writing data on a bit basis<br>- BFL: Writing the same data on a bit basis<br>- WWR: Writing data on a word basis<br>- WFL: Writing the same data on a word basis<br>- F2DCSV: Converting a CSV format file into device data<br>- F2DBIN: Converting a binary format file into device data |
| Run/Stop             | The following operations are prohibited.<br>- RUN: Switching to Run mode<br>- STOP: Switching to Stop mode<br>- ACT: Activating the specified block (including sensor CB)<br>- INACT: Inactivating the specified block (including sensor CB)  |
| Online Edit          | No applicable operations  |
| Initialization/Reset | The following operation is prohibited.<br>- CPURESET: CPU reset   |
| File/Disk Operation  | No applicable operations  |

## ● Higher-Level Link Service

Protection can be set on the following higher-level link service operations.

**Table H11.8 List of Higher-Level Link Service Operations that can be Protected**

| Operation Name       | Description  |
|----------------------|--|
| Debug Operation      | No applicable operations   |
| Write Operation      | The following operations are prohibited.<br>- BWR: Writing data on a bit basis<br>- BFL: Writing the same data on a bit basis<br>- BRW: Randomly writing data on a bit basis<br>- WWR: Writing data on a word basis<br>- WFL: Writing the same data on a word basis<br>- WRW: Randomly writing data on a word basis<br>- SWW: Writing data on a word basis to special modules<br>- SLW: Writing data on a long-word basis to special modules<br>- DTW: Writing the date and time |
| Run/Stop             | The following operations are prohibited.<br>- STA: Starting the program<br>- STP: Stopping the program   |
| Online Edit          | No applicable operations   |
| Initialization/Reset | No applicable operations   |
| File/Disk Operation  | No applicable operations   |

## ● Card Batch File Function

Protection can be set on the following card batch file function operations.

**Table H11.9 List of Card Batch File Function Operations that can be Protected**

| Operation Name       | Description   |
|----------------------|---|
| Debug Operation      | No applicable operations  |
| Write Operation      | The following operations are prohibited.<br>- F2DCSV: Converting a CSV format file into device data<br>- F2DBIN: Converting a binary format file into device data   |
| Run/Stop             | The following operations are prohibited.<br>- RUN: Switching to Run mode<br>- STOP: Switching to Stop mode<br>- ACT: Activating the specified block (including sensor CB)<br>- INACT: Inactivating the specified block (including sensor CB)  |
| Online Edit          | No applicable operations  |
| Initialization/Reset | The following operation is prohibited.<br>- CPURESET : CPU reset  |
| File/Disk Operation  | The following operations are prohibited.<br>- COPY: Copies one or more files.<br>- MOVE: Moves one or more files.<br>- DEL: Deletes one or more files.<br>- MKDIR: Creates a directory.<br>- RMDIR: Deletes a directory.<br>- REN: Renames a file or directory.<br>- STAT: Gets file status information (present or absent, etc.).<br>- CD: Changes the current directory.<br>- CAT: Concatenates two files.<br>- ATRW: Changes the attribute of a file or directory. |

## Note

When the CPU operation restriction function prohibits card batch file commands, the command execution results are logged as "SE21 SECURITY ERROR" in the standard output file of the card batch file function, indicating an error action during card batch file execution.

## ● Rotary Switch Function

Protection can be set on the following rotary switch function operations.

**Table H11.10 List of Rotary Switch Function Operations that can be Protected**

| Operation Name       | Description   |
|----------------------|---|
| Debug Operation      | No applicable operations  |
| Write Operation      | No applicable operations  |
| Run/Stop             | The following operation is prohibited.<br>- Press & release operation of MODE switch 1: Switching the operating mode  |
| Online Edit          | No applicable operations  |
| Initialization/Reset | The following operations are prohibited<br>- Press & hold operation of MODE switches 0 to 3: CPU reset<br>- Press & hold operation of MODE switch C: Restoring the factory default settings |
| File/Disk Operation  | No applicable operations  |

## ● Tool Service for Other CPUs

Protection can be set on the following operations of the tool service for other CPUs.

- Operations of other CPU modules connected via USB or Ethernet port on the front of the CPU module
- Personal computer link command operations of other CPU modules, using the higher-level link service function of the CPU modules

### Note

- When a connection is made via USB or Ethernet port on the front of the CPU module, operations that can be protected are the same as for the tool service for own CPU.
- When a connection is made via higher-level link service, operations that can be protected are the same as for the higher-level link service.

## ● Tool Service for Own CPU

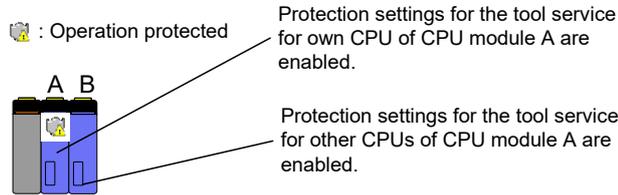
Protection can be set on the following operations of the tool service for own CPU.

**Table H11.11 List of Tool Service Operations for the Current CPU that can be Protected**

| Operation Name       | Description  |
|----------------------|--|
| Debug Operation      | Includes all the debug operations.<br>- Forced set/reset<br>- Canceling forced set/reset<br>- Canceling all forced set/reset<br>- Stopping/restarting refreshing<br>- Activating/inactivating blocks<br>- Transition to debug mode               |
| Write Operation      | Includes writing operations to the CPU.<br>- Writing the time<br>- Changing word/long-word data of devices<br>- Writing I/O modules<br>- Changing the current value of timers and counters<br>- Changing the preset value of timers and counters |
| Run/Stop             | Includes operations of changing CPU operating mode.<br>- Switching to Run mode<br>- Switching to Stop mode   |
| Online Edit          | Includes the writing operation of online edited changes to the CPU.  |
| Initialization/Reset | Includes CPU initializing/resetting operations.<br>- Clearing the program<br>- Clearing devices<br>- Clearing CPU properties<br>- Clearing logs<br>- Resetting and starting  |
| File/Disk Operation  | No applicable operations   |

**Note**

For the tool service for own CPU and the tool service for other CPUs, the CPU module on which operations are protected is regarded as the standard module. In the following figure, if operation protection is set for CPU module A, the operation protection settings for the tool service for own CPU are enabled for CPU module A, and the settings for the tool service for other CPUs are for CPU module B.

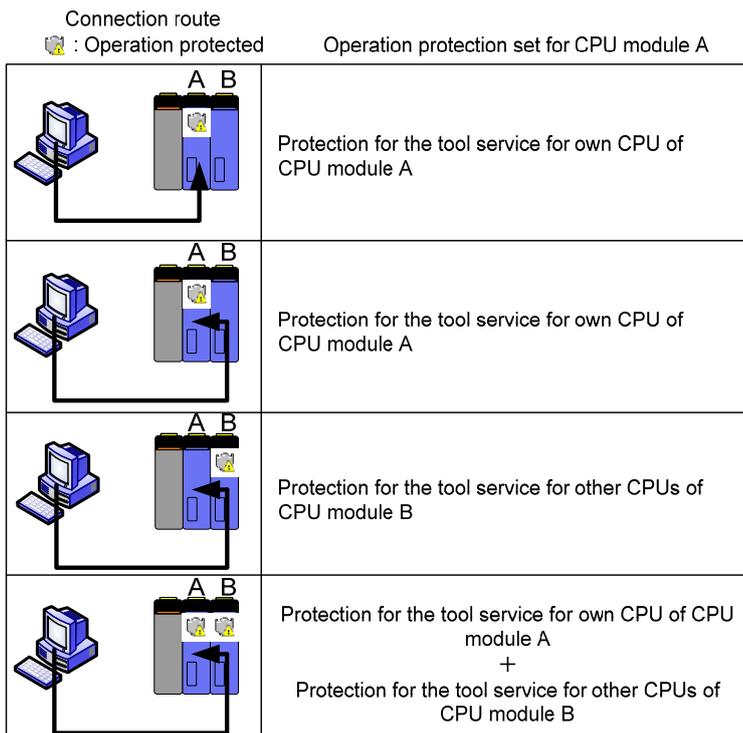


H1102\_05.VSD

**Figure H11.4 Tool Service for Own CPU/Tool Service for Other CPUs**

The figure below shows an example of operation protection for the tool service for own CPU and the tool service for other CPUs set for CPU module A connected through various routes. The operation protection set for CPU module A, which is the connection destination, is determined depending on the protection settings not only for CPU module A but also for other CPU modules.

If operation protection is set for both CPU module A and B, the logical OR of the tool service for own CPU set for CPU module A and the tool service for other CPUs set for CPU module B is enabled for CPU module A as the operation protection settings.



H1102\_06.VSD

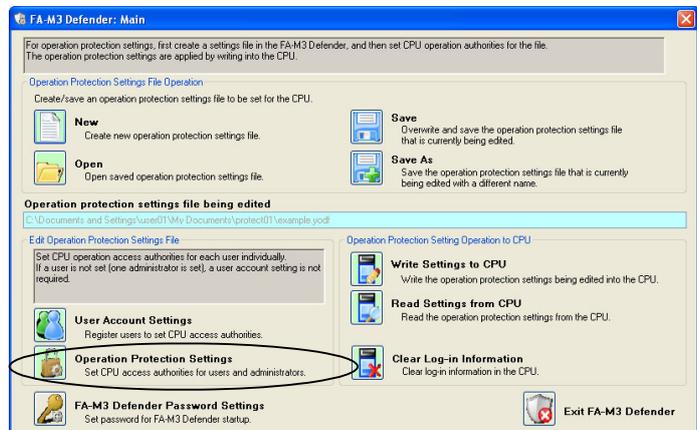
**Figure H11.5 Example of Operation Protection Settings for Tool Service for Own CPU/Tool Service for Other CPUs**

## ■ Configuring Protect Settings for Non-Login Users

The procedure to configure operation protection settings for non-login users is given below.

### ◆ Procedure ◆

- (1) In the FA-M3 Defender: Main dialog box, click [Operation Protection Settings].



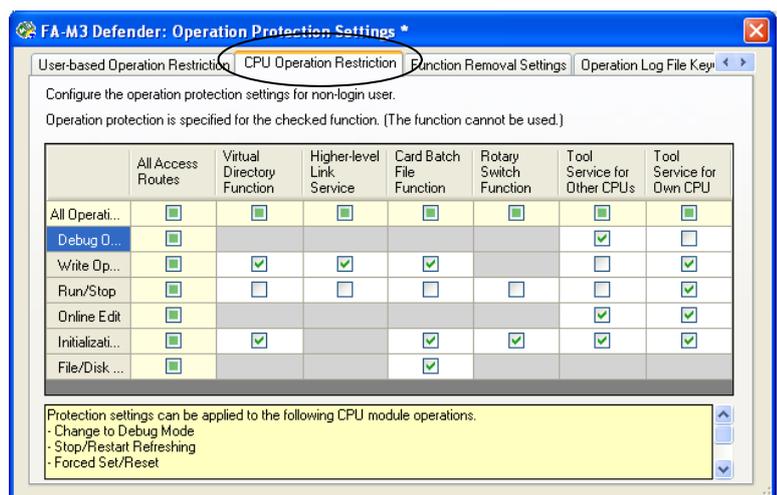
Step (1)

H1102\_02.VSD

⇒ The FA-M3 Defender: Operation Protection Settings dialog box opens.

- (2) Click the [CPU Operation Restriction] tab.

⇒ The [CPU Operation Restriction] tab opens.



Step (2)

H1102\_07.VSD

- (3) Configure protection settings separately for individual access functions or collectively for all access functions. Turn off the checkbox of operations to be allowed, and turn on the checkbox of operations to be denied.

- (4) Click the close button.

⇒ The FA-M3 Defender: Operation Protection Settings dialog box closes.

## H11.2.3 Function Removal Setup

You can select whether to remove CPU built-in functions.

This restricts usage of CPU operations performed outside WideField3.

To configure function removal settings, use the [Function Removal Settings] tab of the FA-M3 Defender: Operation Protection Settings dialog box.

### ■ [Function Removal Settings] Tab

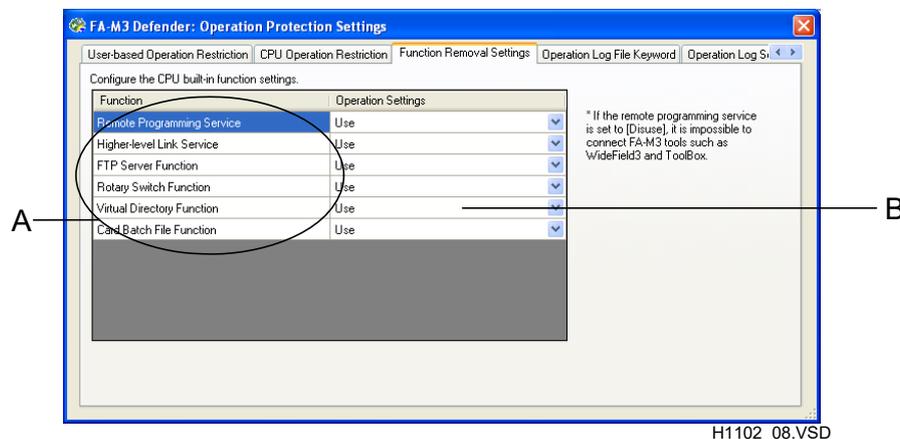


Figure H11.6 [Function Removal Settings] Tab

- A Functions  
CPU built-in functions. The following CPU built-in functions can be removed.

Table H11.12 List of Embedded Functions that can be Removed

| Embedded Function          | Description   |
|----------------------------|---|
| Remote Programming Service | Functions such as downloading and debugging the program through connection with WideField3  |
| Higher-level Link Service  | Function to send instructions to the CPU via personal computer link function  |
| FTP Server Function        | FTP server function that can respond to requests to send to and receive from FTP clients  |
| Rotary Switch Function     | Function to operate the CPU by using the rotary switch (Function name: MODE switch) and the press button (Function name: SET switch) on the front of the CPU. |
| Virtual Directory Function | Functions such as writing/reading and maintaining device data, without any ladder program, by adding special commands to FTP "put" and "get" commands.        |
| Card Batch File Function   | Function to operate the CPU by using a batch file stored in the memory card to execute a series of special commands   |



### CAUTION

The remote programming service is a tool command interface function provided by the CPU module. As WideField3 also uses this function, removing this function causes FA-M3 tools such as WideField3, Toolbox and FA-M3 Defender to fail to connect to the CPU.

- B Operation settings  
Select whether to use each of the CPU built-in functions.

### Note

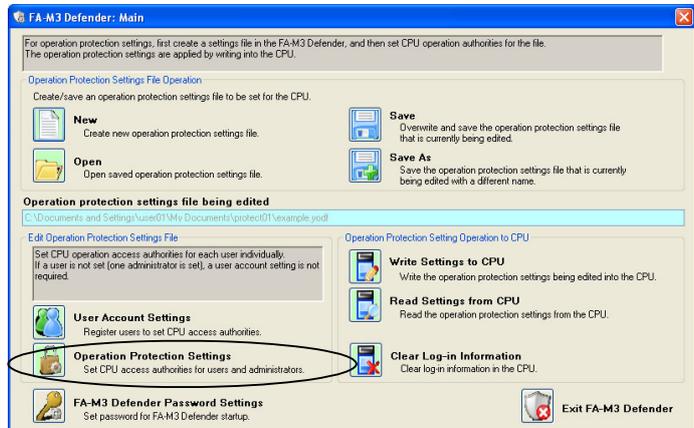
For details on CPU built-in functions, see "Sequence CPU – Functions."

## ■ Specifying Protect Settings by Removing Functions

The procedure to specify operation protection settings by removing functions is given below.

### ◆ Procedure ◆

- (1) In the FA-M3 Defender: Main dialog box, click [Operation Protection Settings].



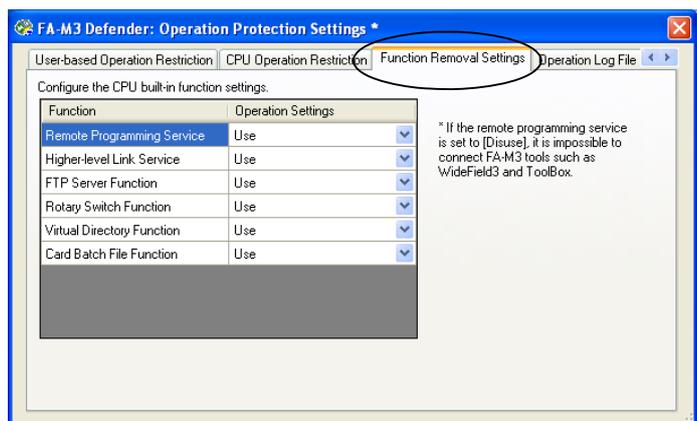
Step (1)

H1102\_02.VSD

⇒ The FA-M3 Defender: Operation Protection Settings dialog box opens.

- (2) Click the [Function Removal Settings] tab.

⇒ The [Function Removal Settings] tab opens.



Step (2)

H1102\_09.VSD

- (3) From the drop-down list, select whether to remove each function.

- (4) Click the close button.

⇒ The FA-M3 Defender: Operation Protection Settings dialog box closes.

## H11.2.4 Setting an Operation Log File Keyword

You can set a keyword to protect the operation log file.

The protection keyword can be up to 15 alphanumeric characters long.

To open a protected operation log file, the keyword must be entered.

The procedure to set a keyword to the operation log file is given below.



### CAUTION

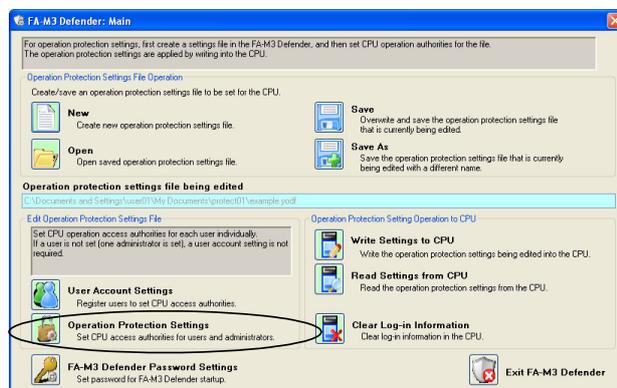
When setting a keyword, make sure to safely manage the keyword.

We cannot accept any request from any user, including persons responsible for setting keywords, to clear keywords that have been set.

### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [Operation Protection Settings].

⇒ The FA-M3 Defender: Operation Protection Settings dialog box opens.



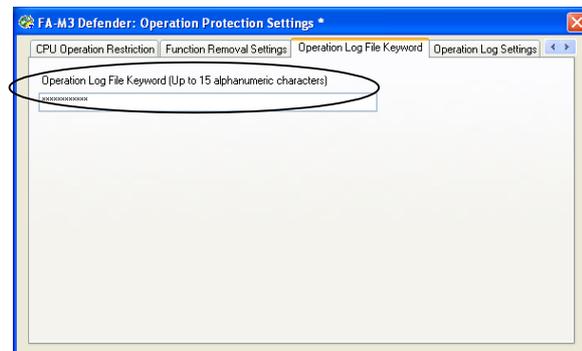
Step (1)

H1102\_02.VSD

(2) Click the [Operation Log File Keyword] tab.

⇒ The [Operation Log File Keyword] tab opens.

(3) Enter a keyword in the text box.



Step (3)

H1102\_11.VSD

(4) Click the close button to close the FA-M3 Defender: Operation Protection Settings dialog box.

⇒ The keyword is set to the operation log file.

### Note

To change an operation log file keyword, overwrite the current operation log keyword.

**Note**

---

For details on viewing operation logs, see Section K3.4, "Operation Log."

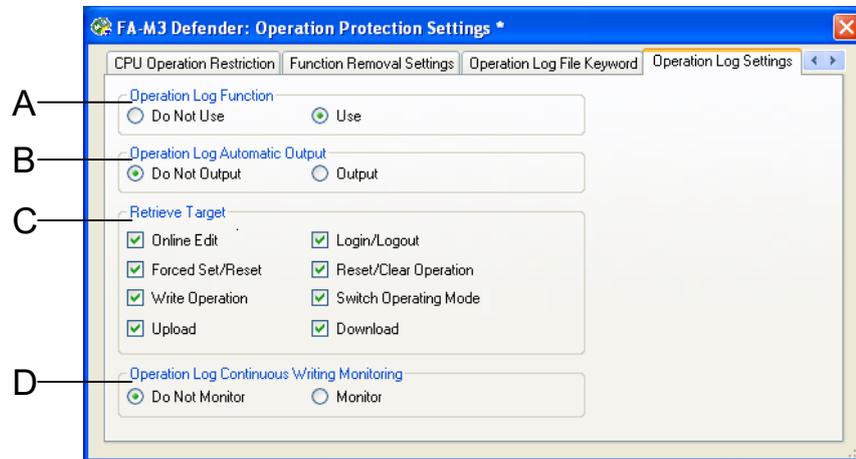
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## H11.2.5 Operation Log Settings

This section describes various operation log settings.

To configure operation log settings, use the [Operation Log Settings] tab of the FA-M3 Defender: Operation Protection Settings dialog box of FA-M3 Defender.

The following settings are available on the [Operation Log Settings] tab.



H1102\_12.VSD

**Figure H11.7 Operation Log Settings**

- A Operation Log Function  
Select the [Use] option button to use the operation log functions or the [Do Not Use] button not to use the functions.
- B Operation Log Automatic Output  
Select the [Output] option button to automatically output the operation logs to the SD card or the [Do Not Output] option button not to output the logs.
- C Retrieve Target  
Select operations for which operation logs are obtained.
- D Operation Log Continuous Writing Monitoring
- Select the [Monitor] option button to monitor successive operation logging or the [Do Not Monitor] option button not to monitor successive logging. With the [Monitor] option button selected, if an identical operation is repeated multiple times within a certain period of time, only the first of such operations is logged. The subsequent identical operations are not recorded in the operation log.

### Note

For details on viewing operation logs, see Section K3.4, "Operation Log."

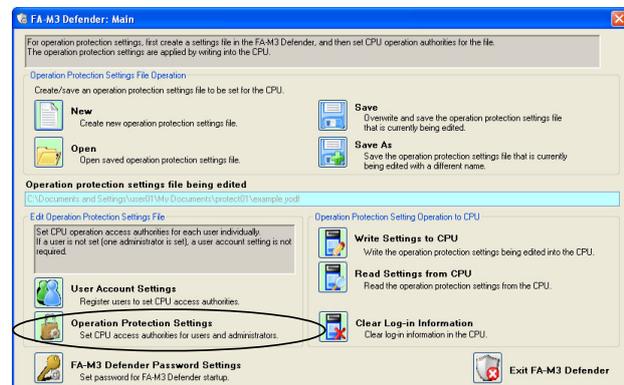
## ■ Editing the Operation Log Settings

The procedure to edit the operation log settings is given below.

### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [Operation Protection Settings].

⇒ The FA-M3 Defender: Operation Protection Settings dialog box opens.

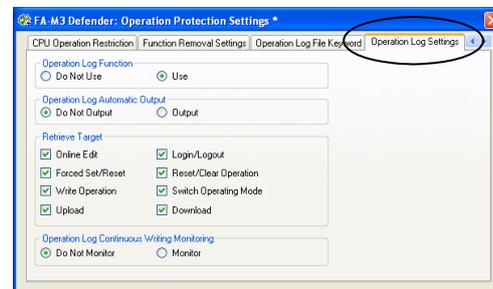


Step (1)

H1102\_02.VSD

(2) Click the [Operation Log Settings] tab.

⇒ The Operation Log Settings screen opens.



Step (2)

H1102\_14.VSD

(3) Edit the operation log settings.

(4) Click the close button.

⇒ The FA-M3 Defender: Operation Protection Settings dialog box closes.

---

## H11.3 User Authentication

This section describes the user authentication function of FA-M3 Defender. The user authentication function requires the user name and password when a user attempts to log in to the CPU, and is based on the user's account settings. User account settings are saved in operation protection settings files.

### Note

---

"Login" or "logging in" means that a user with user account settings not connected with the CPU establishes a connection with the CPU in WideField3. By logging in to the CPU, the user can use various online functions of WideField3.

---

### H11.3.1 User Account Settings

The following operations are possible in the user account setup.

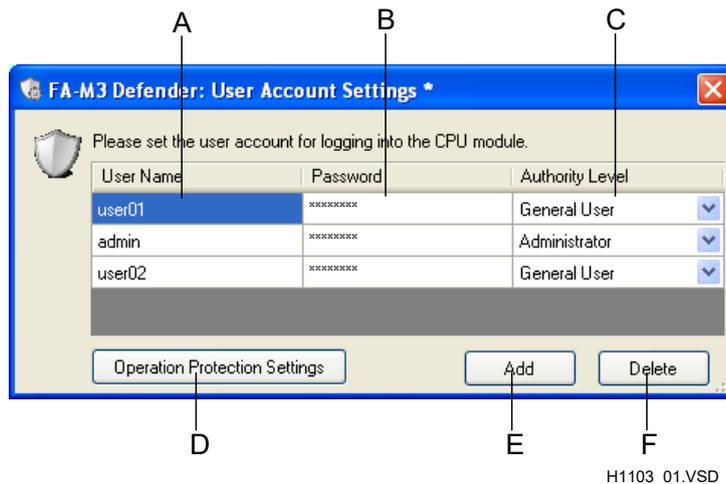
- Adding users
- Deleting users
- Renaming users
- Changing user passwords
- Changing user authority levels

To configure user account settings, use the FA-M3 Defender: User Account Settings dialog box.

### Note

- 
- When registering users, include at least one user with administrator authority.
  - You cannot register a user who has the same user name as an existing user name.
-

## ■ [FA-M3 Defender: User Account Settings] Dialog Box



**Figure H11.8 [FA-M3 Defender: User Account Settings] Dialog Box**

- **A User Name**  
This column displays user names. For a user name, enter a string of one to 16 alphanumeric characters.
- **B Password**  
Passwords are specified for users. The text boxes always show "\*\*\*\*\*", regardless of the length of passwords. For a password, enter up to 32 alphanumeric characters. Passwords can also be empty.
- **C Authority Level**  
Authority levels are specified for users. Select the administrator or general user from the drop-down list. These levels have different operational restrictions as shown below.

**Table H11.13 List of Authority Levels**

| Authority Level | Description                                    |
|-----------------|--|
| Administrator   | No restrictions on CPU operations.             |
| General User    | Restrictions can be imposed on CPU operations. |

- **D Operation Protection Settings**  
Opens the FA-M3 Defender: Operation Protection Settings dialog box.
- **E Add**  
Adds a new user. Up to 16 users can be registered in the user account setup.
- **F Delete**  
Deletes the user currently selected.

### Note

For details on restrictions on CPU operations and the FA-M3 Defender: Operation Protection Settings dialog box, see Section H11.2, "Operation Protection."

### Note

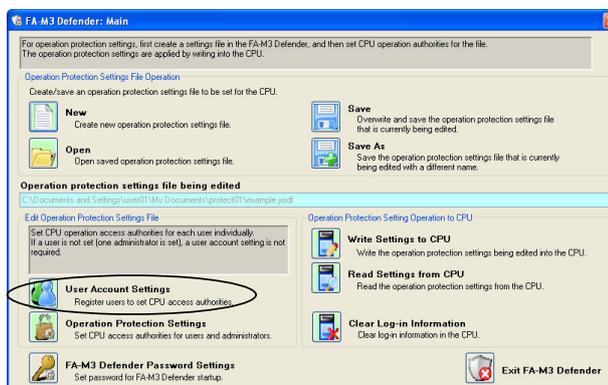
Up to 15 users can log in to the CPU at the same time.

## ■ Adding a User

The procedure to add a user is given below.

### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [User Account Settings].



Step (1)

H1103\_02.VSD

⇒ The FA-M3 Defender: User Account Settings dialog box opens.

(2) Click [Add].

### Note

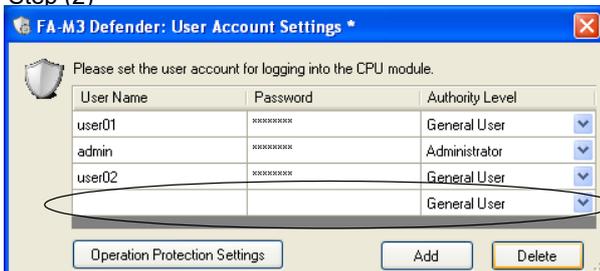
Up to 16 users can be registered.



Step (2)

H1103\_03.VSD

⇒ A line for the new user is added at the bottom of the user list.



Step (2)

H1103\_04.VSD

(3) Enter a user name and password, and select the authority level from the drop-down list.

(4) Click the close button.

⇒ The FA-M3 Defender: User Account Settings dialog box closes.



### CAUTION

When setting a password, make sure to safely manage the password.

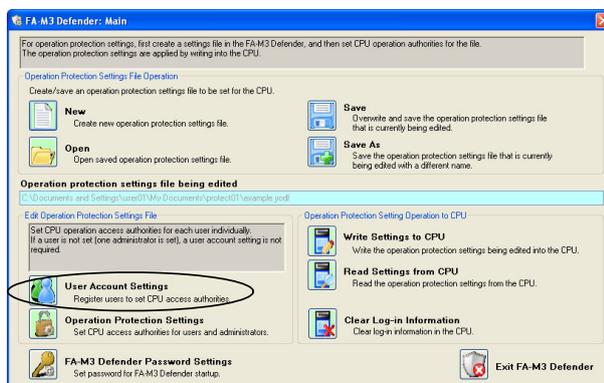
We cannot accept any request from any user, including persons responsible for setting passwords, to clear passwords that have been set.

## ■ Deleting a User

The procedure to delete a user is given below.

### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [User Account Settings].



Step (1)

H1103\_02.VSD

⇒ The FA-M3 Defender: User Account Settings dialog box opens.

(2) Select the line of the user to be deleted, and click [Delete].



Step (2)

H1103\_05.VSD

⇒ A confirmation dialog box appears.

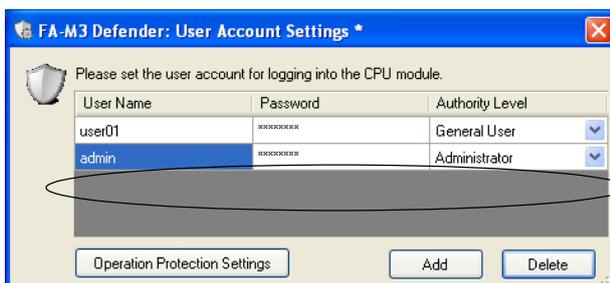


Step (2)

H1103\_06.VSD

(3) Click [Yes].

⇒ The user is deleted.



Step (3)

H1103\_07.VSD

## ■ Renaming a User

To rename a user, double-click the user name to switch to the edit mode, and change the user name. Then, press the [Enter] key.

## ■ Changing a Password

To change a password, double-click the password to switch to the edit mode, and change the password. Then, press the [Enter] key.

### **Note**

---

When a password is edited, the password you enter is masked by "\*".

---

## ■ Changing a User Authority Level

To change a user authority level, select authority level from the authority level drop-down list.

## H11.3.2 User Authentication at Login

When WideField3 tries to connect with the CPU to which operation protection settings have been downloaded (written), user authentication is performed to permit logging in to the CPU.

FA-M3 Defender authenticates the user trying to log in to the CPU by requesting the user to enter a user name and password.

### Note

- For details on user authentication, see "Sequence CPU Instruction Manual - Functions."
- For details on downloading (writing) operation protection settings, see Section H11.4.2, "Downloading (Writing) Operation Protection Settings."

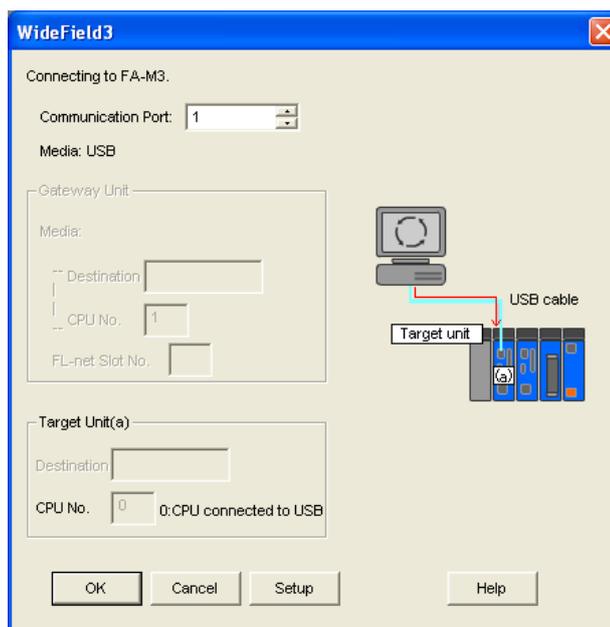
## ■ Logging in to the CPU on which Operations are Protected

The procedure to log in to the CPU on which operations are protected is given below.

### ◆ Procedure ◆

(1) Select [Online]–[Connect] from the menu bar.

⇒ A connection dialog box appears.

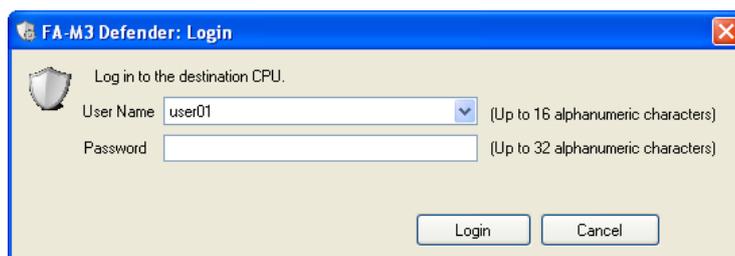


Steps (1) and (2)

H1103\_08.VSD

(2) Click [OK].

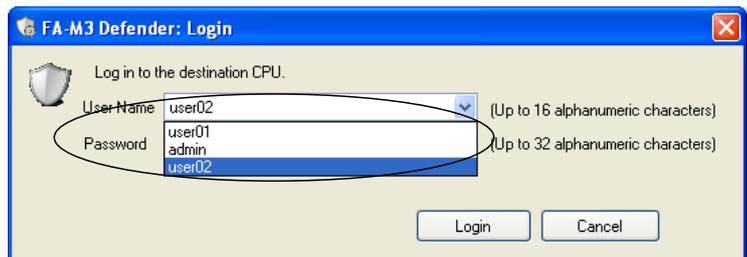
⇒ The FA-M3 Defender: Login dialog box appears.



Step (2)

H1103\_09.VSD

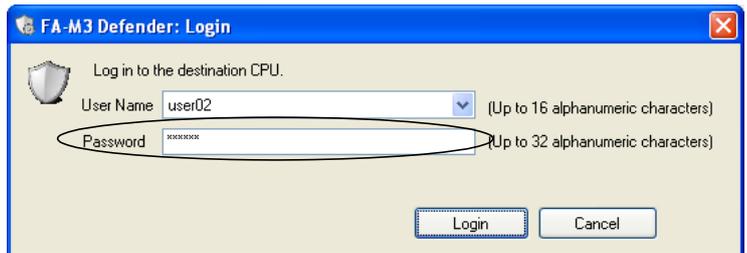
(3) Select a user name from the drop-down list.



Step (3)

H1103\_10.VSD

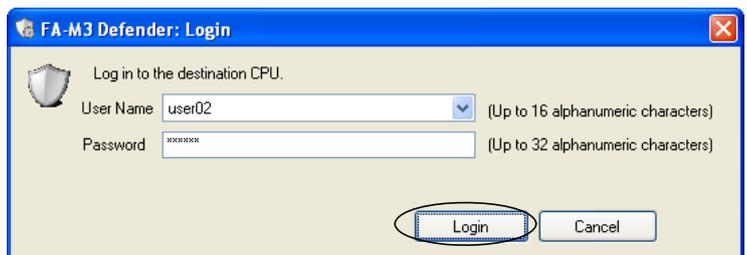
(4) Enter the password.



Step (4)

H1103\_11.VSD

(5) Click [Login].  
⇒ FA-M3 is connected.



Step (5)

H1103\_12.VSD

### H11.3.3 Clearing Login Information

You can clear the login information stored in the CPU.

This clears the following information in the CPU.

- Users currently logged in
- Login shutdown state



#### CAUTION

- Only users with "administrator" authority can clear login information.
- Clearing login information terminates the current WideField3 connection.

To clear login information, use the FA-M3 Defender: Main dialog box.

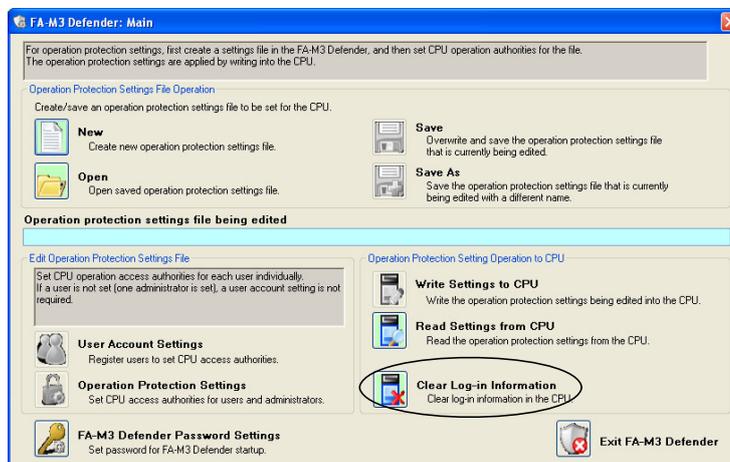
The procedure to clear login information is given below.

## ◆ Procedure ◆

(1) Select [Tools]-[FA-M3 Defender] from the menu bar.

⇒ The FA-M3 Defender: Main dialog box opens.

(2) In the FA-M3 Defender: Main dialog box, click [Clear Log-in Information].



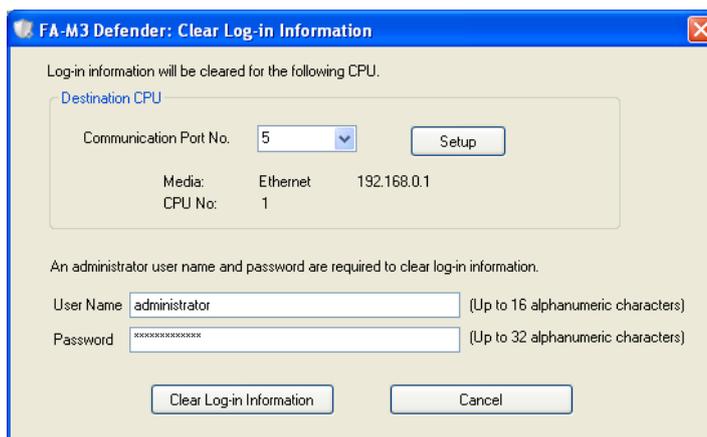
Step (2)

H1103\_13.VSD

⇒ The FA-M3 Defender: Clear Log-in Information dialog box opens.

(3) For the target CPU, specify the CPU in which login information will be cleared.

(4) Enter a user name who has administrator authority and it's the corresponding password, and click [Clear Log-in Information].



Steps (3) and (4)

H1103\_14.VSD

⇒ A confirmation message box opens.



Step (4)

H1103\_15.VSD

## H11.4 Uploading and Downloading Operation Protection Settings

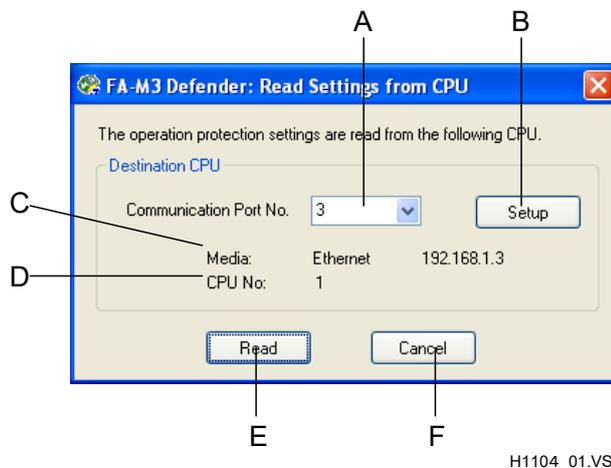
Operation protection settings can be uploaded from and downloaded to the CPU. When a user attempts to log in to the CPU, the user is authenticated based on the operation protection settings stored in the CPU.

### H11.4.1 Uploading (Reading) Operation Protection Settings

You can upload operation protection settings from the CPU to WideField3.

To upload the operation protection settings, use the FA-M3 Defender: Read Settings from CPU dialog box.

#### ■ [FA-M3 Defender: Read Settings from CPU] Dialog Box



H1104\_01.VSD

Figure H11.9 [FA-M3 Defender: Read Settings from CPU] Dialog Box

- A Communication Port No.  
Select a communication port number from the drop-down list.
- B Setup  
Opens the Communications Setup dialog box.
- C Media  
Displays communication media of the communication port currently selected.
- D CPU No  
Displays the number of the connected CPU.
- E Read  
Reads out the operation protection settings from the CPU.
- F Cancel  
Closes the FA-M3 Defender: Read Settings from CPU dialog box.

#### Note

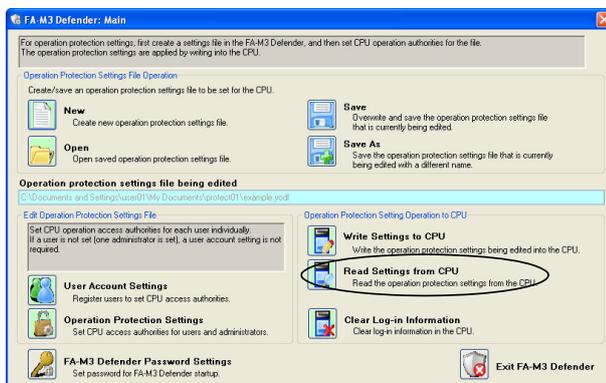
For details on communication setup, see Section D1.2.3, "Communication Setup" (Offline).

## ■ Uploading Operation Protection Settings

The procedure to upload operation protection settings is given below.

### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [Read Settings from CPU].

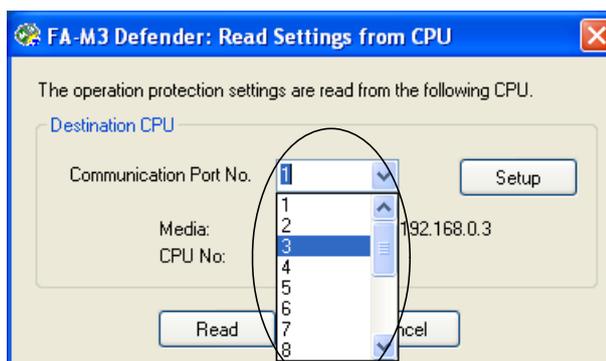


Step (1)

H1104\_02.VSD

⇒ The FA-M3 Defender: Read Settings from CPU dialog box opens.

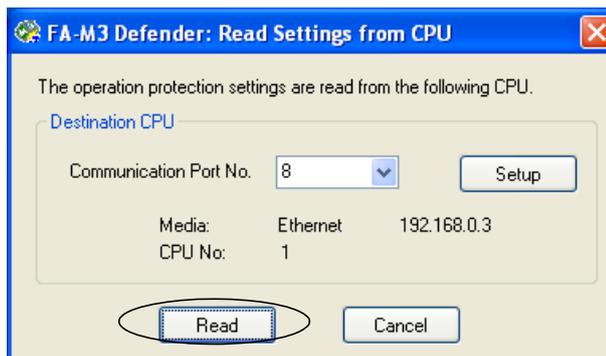
(2) Select a communication port number from the drop-down list.



Step (2)

H1104\_03.VSD

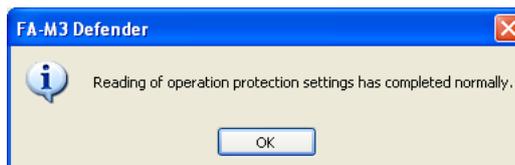
(3) Click [Read].



Step (3)

H1104\_04.VSD

⇒ A completion message box appears.



Step (3)

H1104\_05.VSD

---

## Note

If uploading of operation protection settings fails, the following message box appears. Confirm that the connection settings are correct.



H1104\_06.VSD

**Figure H11.10 Failure to Upload Operation Protection Settings**

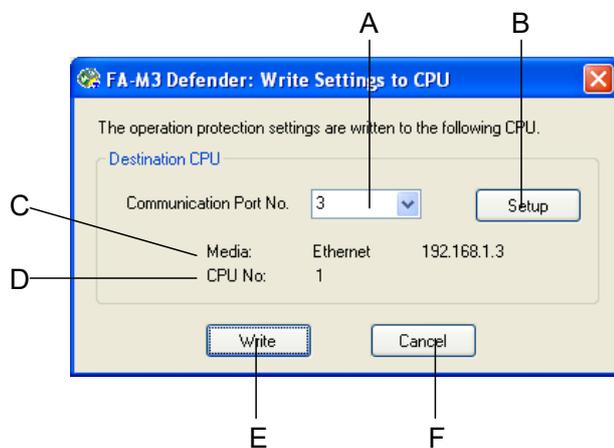
---

## H11.4.2 Downloading (Writing) Operation Protection Settings

You can download operation protection settings configured in WideField3 to the CPU.

To download the operation protection settings, use the FA-M3 Defender: Write Settings to CPU dialog box.

### ■ [FA-M3 Defender: Write Settings to CPU] Dialog Box



H1104\_07.VSD

Figure H11.11 [FA-M3 Defender: Write Settings to CPU] Dialog Box

- A Communication Port No.  
Select a communication port number from the drop-down list.
- B Setup  
Opens the Communications Setup dialog box.
- C Media  
Displays communication media of the communication port currently selected.
- D CPU No  
Displays the number of the connected CPU.
- E Write  
Writes the operation protection settings to the CPU.
- F Cancel  
Closes the FA-M3 Defender: Write Settings to CPU dialog box.

### Note

For details on communication setup, see Section D1.2.3, "Communication Setup" (Offline).

### Note

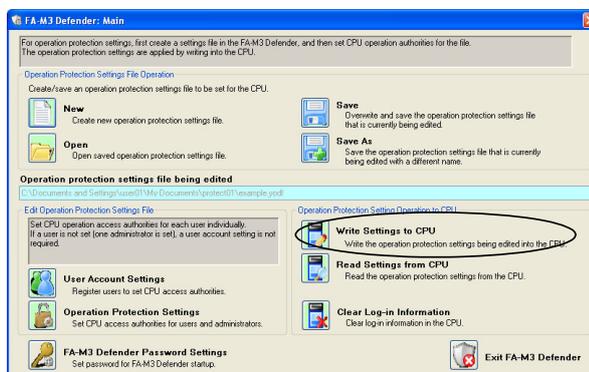
- Only users with "administrator" authority can download operation protection settings.
- Writing operation protection settings terminates the current WideField3 connection.

## ■ Downloading Operation Protection Settings

The procedure to download operation protection settings is given below.

### ◆ Procedure ◆

(1) In the FA-M3 Defender: Main dialog box, click [Write Settings to CPU].

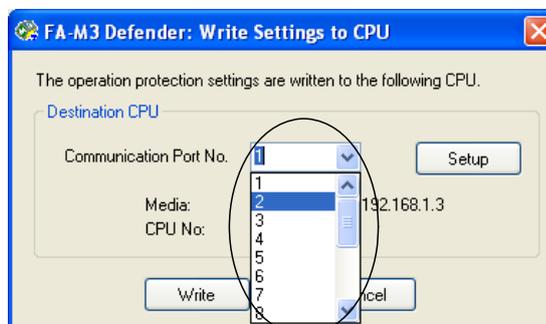


Step (1)

H1104\_08.VSD

⇒ The FA-M3 Defender: Write Settings to CPU dialog box opens.

(2) Select a communication port number from the drop-down list.



Step (2)

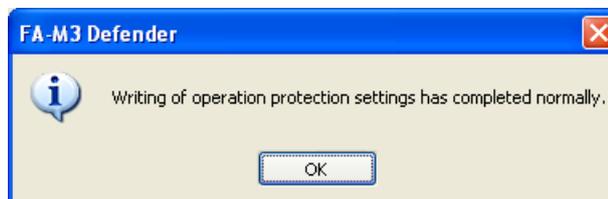
H1104\_09.VSD

(3) Click [Write].

⇒ A completion message box appears.

### Note

When the user is not connected with the CPU, the FA-M3 Defender: Login dialog box appears. Log in to the CPU as a user with "administrator" authority.



Step (3)

H1104\_10.VSD

### Note

- Operation protection settings can be written only when the user with "administrator" authority logs in to the CPU.
- Writing operation protection settings terminates the current WideField3 connection.

# H12. FA-M3 Communication Server

WideField3 and other FA-M3 applications use a dedicated communication application called FA-M3 Communication Server to exchange online information with FA-M3.

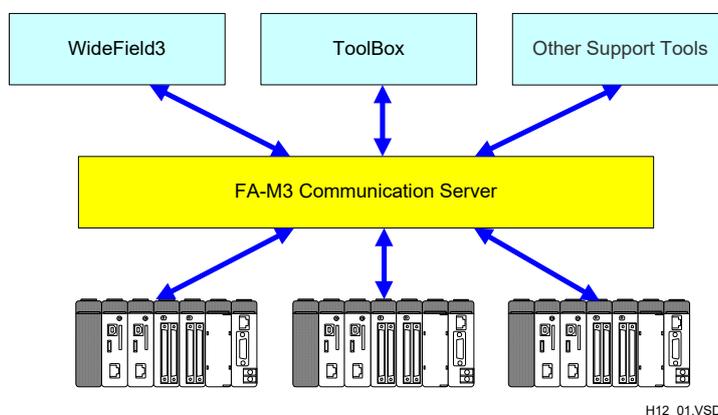


Figure H12.1 FA-M3 Communication Server

When an application is started, FA-M3 Communication Server automatically resides in the system and processes communication requests by the application. Usually, communication-related setting and processing are performed through applications that use FA-M3 Communication Server, and you don't need to operate FA-M3 Communication Server directly. But, you can access FA-M3 Communication Server resident in the system to utilize the functions for communicating with FA-M3.

This chapter describes the specifications and functions of FA-M3 Communication Server.

## ● Function Limitations for Each CPU Type

Table H12.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations   | SEE ALSO |
|---|---|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The user authentication and operation protection functions of FA-M3 Defender are not available. | H12.1    |
| F3SP66-4S,<br>F3SP67-6S   | The user authentication and operation protection functions of FA-M3 Defender are not available. | H12.1    |
| F3SP71-4N,<br>F3SP76-7N   | N/A   |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A   |          |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

- For details on limitations for each CPU type, refer to the user's manual for each type.
- For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

## H12.1 Fundamentals of FA-M3 Communication Server

This section describes the specifications of FA-M3 Communication Server as well as the system tray icon and its operations.

### H12.1.1 Specifications

This section describes the specifications of FA-M3 Communication Server.

Table H12.2 Specifications of FA-M3 Communication Server

| Item   | Specification  |
|--|--|
| Communication Port Number  | 16   |
| Number of Applications that can Simultaneously Connect to a Port | 4  |
| Compatible CPU Modules   | F3SP05-0P, F3SP08-0P, F3SP08-SP, F3SP21-0N, F3SP25-0N, F3SP35-5N, F3SP28-3N, F3SP38-6N, F3SP53-4H, F3SP58-6H, F3FP36-3N, F3SP22-0S, F3SP28-3S, F3SP38-6S, F3SP53-4S, F3SP58-6S, F3SP59-7S, F3SP66-4S, F3SP67-6S, F3SP71-4N, F3SP76-7N, F3SP71-4S, F3SP76-7S, F3SPV3-4H, F3SPV8-6H, F3SPV3-4S, F3SPV8-6S, F3SPV9-7S |
| Communication Media  | USB, RS-232C, RS-232C via Modem, Ethernet, BASE (OPCN-2 or later)  |
| Security Functions   | FA-M3 Defender is supported  |

#### Note

For details on FA-M3 Defender, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)."

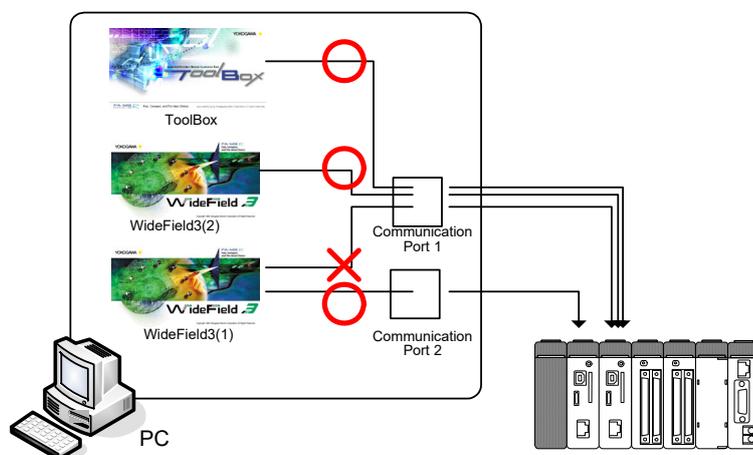
#### Note

FA-M3 Communication Server has the following limitations.

- On a single PC, different instances of the same application cannot both use a single communication port. They must use different ports.
- On a single PC, different applications can connect to the FA-M3 using the same communication port.

In the example shown in the figure below, when two instances of WideField3 are open, both WideField3 instances cannot use the same communication port (Port 1). Instead, if one instance uses Communication Port 1, the other instance can use Communication Port 2.

Note that different applications (WideField3 and ToolBox in the example below) can share the same communication port.



H1201\_01.VSD

## H12.1.2 System Tray Icon and Operations

When FA-M3 Communication Server is started, it resides in the system and its icon is displayed in the system tray as shown in the figure below.



H1201\_02.VSD

**Figure H12.2 System Tray Icon**

Right-clicking the icon in the system tray opens a popup menu. From this menu, you can select various functions of FA-M3 Communication Server.

The following table shows the functions available from the menu.

**Table H12.3 Functions of FA-M3 Communication Server**

| Menu Item            | Function  |
|----------------------|---|
| Server Details       | Displays an operation screen of FA-M3 Communication Server. On the operation screen, you can check the settings of all ports and also see the communication status. |
| Communications Setup | Allows you to select a port number and set up communications for the port.  |
| FA-M3 Defender       | Starts FA-M3 Defender and allows you to configure security settings for a CPU module that supports security functions.  |
| Force Exit           | Disables all ports currently connected and terminates FA-M3 Communication Server.   |

## H12.2 Setup of FA-M3 Communication Server

This section describes setup of FA-M3 Communication Server.

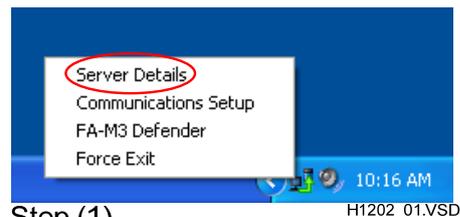
### H12.2.1 Detailed Setting Screen

The detailed setting screen allows you to check and configure all ports used from FA-M3 Communication Server and also to see the communication status of the ports.

To display the detailed setting screen, use the following procedure.

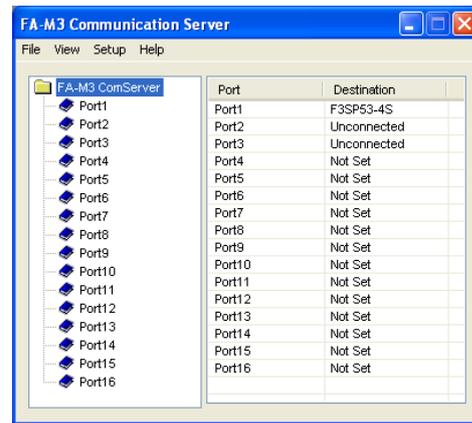
#### ◆ Procedure ◆

- (1) Right-click the FA-M3 Communication Server icon in the system tray, and select [Server Details] from the popup menu.



Step (1)

- ⇒ The FA-M3 Communication Server dialog box is displayed.

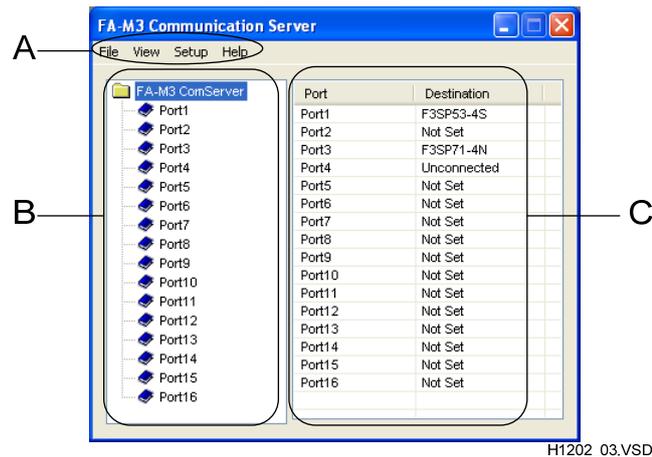


Step (1)

#### Note

Clicking the close button in the FA-M3 Communication Server dialog box places FA-M3 Communication Server in the task tray again.

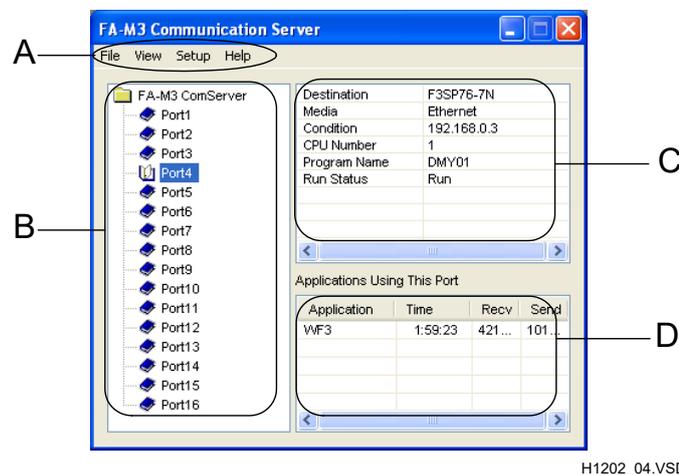
When [FA-M3 Com Server] is selected in the tree, the right pane displays the status of the CPU module to which each port is connected as shown in the figure below.



**Figure H12.3 Display Items and Functions of FA-M3 Communication Server**

- A Operation Menu  
Provides menu items for various functions of FA-M3 Communication Server.
- B Port List  
Displays a tree view of 16 communication ports.
- C Connection Status of Each Communication Port  
Displays the information of the CPU module to which each port is connected.  
[(CPU type)] The port is connected with the CPU module of the shown type.  
[Unconnected] The port is not connected to any CPU module.  
[Not Set] The port has no communication settings configured.

When a port is selected in the tree, the right pane displays the connection status of the online port as shown in the figure below.



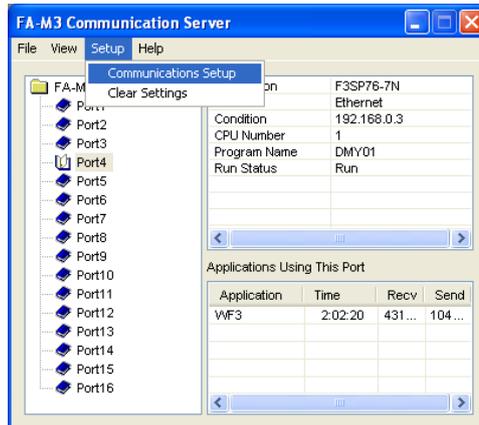
**Figure H12.4 Display Items and Functions of FA-M3 Communication Server**

- A Operation Menu  
Provides menu items for various functions of FA-M3 Communication Server.
- B Port List  
Displays a tree view of 16 communication ports.
- C Connection Status of the Selected Communication Port  
Displays the operation information of the CPU module to which the communication port selected from the port list is connected.

- D Information of the Application Currently Using the Port  
 Displays the list of applications that are using the communication port selected from the port list.  
 Monitors the connection elapsed time and the sending/receiving status of the application.

## Note

While a port is selected on the FA-M3 Communication Server dialog box, if you select [Communications Setup], the Communications Setup dialog box for the port is displayed.



H1202\_05.VSD

Figure H12.5 [Setup]–[Communications Setup]

## Note

For details on communications setup in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).

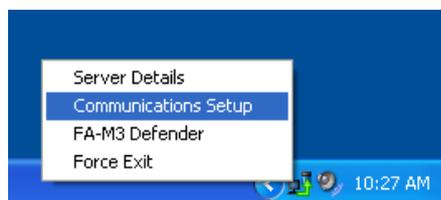
## H12.2.2 Communications Setup for Each Port

The detailed setting screen allows you to check and configure all ports used from FA-M3 Communication Server and also to see the communication status of the ports.

To display the detailed setting screen, use the following procedure.

### ◆ Procedure ◆

- (1) Right-click the FA-M3 Communication Server icon in the system tray, and select [Communications Setup] from the popup menu.



Step (1)

H1202\_06.VSD

⇒ The Select Port dialog box is displayed.

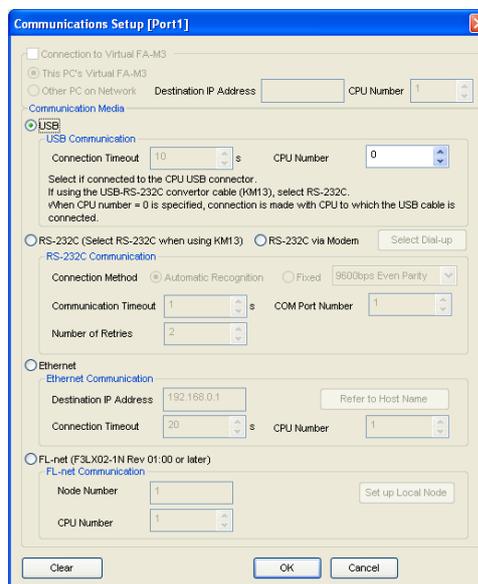


Step (1)

H1202\_07.VSD

- (2) Select a port for which the communications setup is performed, and click [OK].

⇒ The Communications Setup dialog box is displayed.



Step (2)

H1202\_08.VSD

### Note

For details on communications setup in the Communications Setup dialog box, see Section D1.2.3, "Communication Setup" (Offline).

---

## H12.3 Forced Termination of FA-M3 Communication Server

During communication processing between WideField3 and FA-M3, if an unexpected and unusual failure or problem occurs in the connection processing, FA-M3 Communication Server may become unstable.

When FA-M3 Communication Server is unstable, even if you try to make a reconnection through the same communication port, the online connection may not start correctly.

As a means of recovering from such a situation, FA-M3 Communication Server provides a function for performing a forced termination of a communication port or FA-M3 Communication Server itself.

After the forced termination, the communication processing can be started again from the initial state.

The following describes how to perform each type of forced termination.



### CAUTION

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Performing a forced termination terminates the ongoing communication processing of an application prematurely even if the processing is being processed properly.

If the application is performing an important online operation (e.g., for changing a program) related to the control of FA-M3, a forced termination may cause an unexpected result in FA-M3.

Do not perform a forced termination if normal communication processing is in progress in any application.

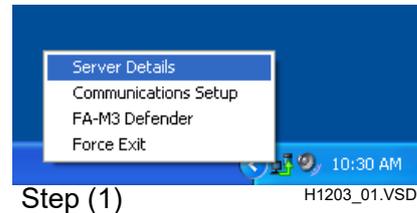
---

## H12.3.1 Forced Termination of a Port

To perform a forced termination of a specific port in use, use the following procedure.

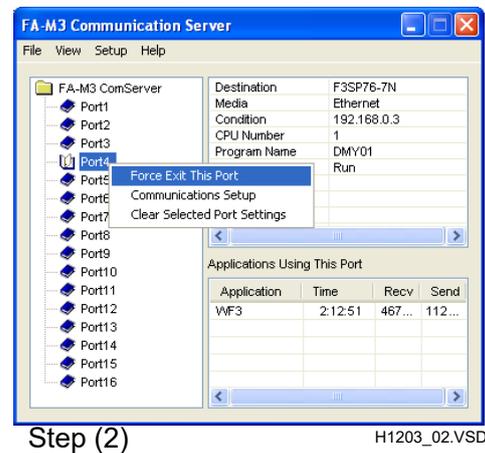
### ◆ Procedure ◆

- (1) Right-click the FA-M3 Communication Server icon in the system tray, and select [Server Details] from the displayed popup menu.



⇒ The FA-M3 Communication Server dialog box is displayed.

- (2) In the port list, right-click a port to be terminated, and select [Force Exit This Port] from the right-click menu.



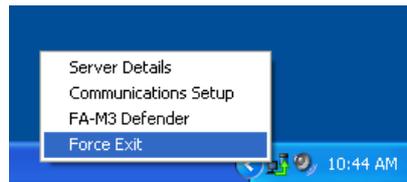
⇒ The selected port is terminated.

## H12.3.2 Forced Termination of FA-M3 Communication Server

To forcibly terminate all ports in use and FA-M3 Communication Server itself, use the following procedure.

### ◆ Procedure ◆

- (1) Right-click the FA-M3 Communication Server icon in the system tray, and select [Force Exit] from the popup menu.



Step (1)

⇒ FA-M3 Communication Server is terminated.

### Note

You can also perform a forced termination of FA-M3 Communication Server from the menu on the FA-M3 Communication Server dialog box.

# H13. Structures

This chapter describes WideField3 structures.

## Note

For the offline functions of structures, see Chapter F4, "Structures" (Offline).

### ● Function Limitations for Each CPU Type

Table H13.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A         |          |

## Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

## Note

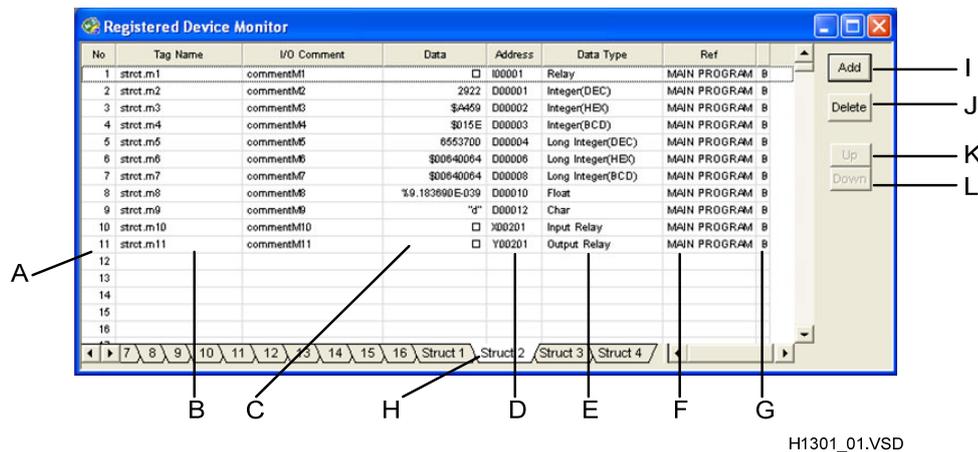
For details on limitations for each CPU type, refer to the user's manual for each type.

## H13.1 Monitoring Structures in a Registered Device Monitor

Structure members can be added to a registered device monitor by structure name (in the case of a structure array, one structure array element).

This section describes the specifications relating to registered device monitors for structures.

### ■ Screen Layout



H1301\_01.VSD

Figure H13.1 Registered Device Monitor for Structures

Table H13.2 Registered Device Monitor for Structures

| Symbol | Item           | Description   |
|--------|----------------|---|
| A      | No.            | Displays the line number within the registered device monitor.  |
| B      | Tag name       | Displays the tag name in the form "structure name member". Array index for a structure name is also displayed.  |
| C      | Data           | Displays member data. The display format is according to the data type specified in the structure type definition.  |
| D      | Address        | Displays the actual device allocated to a structure member.   |
| E      | Data type      | Displays the data type specified in the structure type definition.  |
| F      | Reference      | Displays the block where the structure object is defined. Displays the "common tag name definition" string for structure objects defined in the common tag name definition. |
| G      | Reference type | Displays the reference for tag name definitions.<br>B: Block tag name definition<br>M: Macro tag name definition<br>Blank: Common tag name definition                       |
| H      | Sheet          | 4 data sheets are provided specifically for structure registered device monitors.   |
| I      | Register       | Displays the Register Structure dialog box and registers a structure.   |
| J      | Delete         | Deletes a data sheet.   |
| K      | ↑              | Switches the position of the selected data row to the row above it.   |
| L      | ↓              | Switches the position of the selected data row to the row below it.   |

## ■ Data Display Format

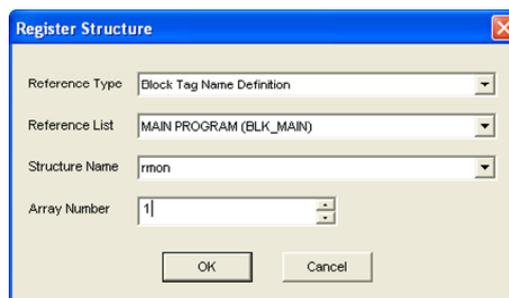
The display format of a data item follows the data type registered in the structure type definition.

## ■ Registering to a Registered Device Monitor

To register a structure in the registered device monitor, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the **Registered Device Monitor window is displayed.**
- (2) Select one of the following sheets:  
[Struct 1] to [Struct 4].  
⇒ The registered device monitor sheet for structures is displayed.
- (3) Select [Online]–[Registered Device Monitor]–[Add] from the menu bar, or click [Add] in the [Registered Device Monitor] window.  
⇒ The Register Structure dialog box is displayed.
- (4) Set the reference type, reference list, structure name, array number and click [OK].  
⇒ The settings are registered and displayed.



Step (4)

H1301\_02.VSD

### Note

Use the Register Structure dialog box to specify the structure to be monitored. Set all information required for monitoring.

**Table H13.3 Register Structure Dialog**

| Item           | Description   |
|----------------|---|
| Reference type | Select the tag name definition where the structure object is defined. Select either [Block Tag Name Definition], [Macro Tag Name Definition] or [Common Tag Name Definition].   |
| Reference list | Displays a list of blocks (macros).   |
| Structure name | Displays a list of structure names found in the selected reference type.  |
| Array number   | If the selected structure is an array, specify the array index. The values that can be selected are determined by the array size set in the structure object definition. This item is disabled if the selected structure is not an array. |

### Note

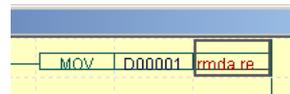
Structure pointers (Q) cannot be registered to a registered device monitor.

## ■ Registering from a Block Monitor

To perform registration from a block monitor, use the following procedure.

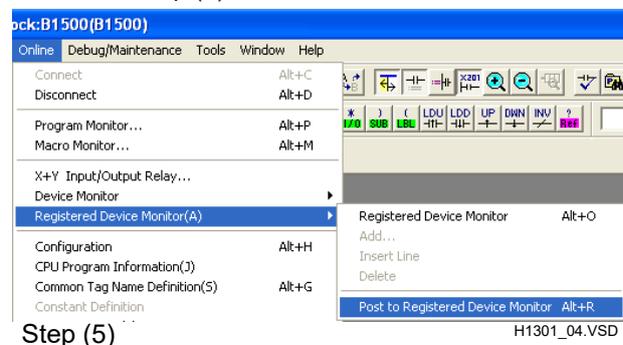
### ◆ Procedure ◆

- (1) Confirm that the Registered Device Monitor window is displayed.
- (2) Select one of the following sheets: [Struct 1] to [Struct 4].  
⇒ The registered device monitor sheet for structures is displayed.
- (3) Open the Block Monitor window.
- (4) Move the cursor to a structure member.
- (5) Select [Online]–[Registered Device Monitor]–[Post to Registered Device Monitor] from the menu bar.  
⇒ The structure member is added to the registered device monitor.



Step (4)

H1301\_03.VSD



Step (5)

H1301\_04.VSD

## ■ Prerequisites for Registering to Registered Device Monitor

The following are prerequisites for registering a structure member to the Registered Device Monitor.

- A project is open.
- The structure object is defined in the tag name definition.
- The structure type definition file referred in the structure object definition exists in the common folder.

## ■ Procedures for Debugging

The user interface for debugging structure members in a Registered Device Monitor window is the same as that for normal tag names and addresses and includes the following functions: change word, change long word, change double-long word, forced set, forced reset, etc.

## H13.2 Transferring Structure Definitions

This section describes how to transfer various types of structure definition information to the CPU.

### ■ Transferring Structure Type Definitions

#### ● Downloading or Transferring to ROM

Downloading transfers all structure type definition files referred to by structure names defined in a project (common tag name definition and block tag name definitions). Structure type definitions are downloaded only if setup is performed to download tag name definitions.

Structure type definitions are downloaded together with common tag name definitions. If a project is configured to not download tag name definitions, structure type definitions are also not downloaded.

#### Note

Structure type definitions are not transferred with the block and macro download functions.

#### ● Uploading

You can upload structure type definitions stored in the CPU together with common tag name definitions.

When unloading completes, a dialog box is displayed to confirm whether to save data to the common folder.

Structure type definition files can only be unloaded to the common folder and not elsewhere.

#### Note

Structure type definitions are not transferred by uploading of block /macro.

Structure type definitions are not transferred by uploading of common tag name definition.

#### ● Comparing

Comparison with structure type definition transferred to the CPU is only done in the common tag name definition comparison function.

**Table H13.4 Results of Comparison**

| Condition  | Message  | Category | Block Name                          | Instruction Number |
|--|--|----------|-------------------------------------|--------------------|
| When structure type definition file does not exist   | Structure type definition file not on the personal computer. | Warning  | Structure type definition file name | None               |
| When the structure type definition does not match the structure type definition in the CPU | Structure type definition differs.                           | Warning  | Structure type definition file name | None               |

#### Note

Structure type definitions are not compared in block comparison.

## ■ Transferring Structure Object Definitions

Transfers of structure object definitions depend on the transfers of tag name definitions.

### ● Download, Upload or ROM Transfer

Transfers of structure objection definitions depend on the transfers of tag name definitions where the structure object definitions are defined.

### ● Comparing

Contents of structure object definitions are not compared.

---

## H13.3 Monitoring Structure Parameters in Block Monitors

This section describes the display of structure parameters in block monitor windows and the debugging functions.

### ■ Prerequisites for Displaying Structures

#### ● Structure Members

The following are prerequisites for displaying structure members in a block monitor.

- The project to be monitored is open.
- The reference tag name definition of the block exists and is accessible.
- The structure name is defined in tag name definition.

If the above conditions are not fully satisfied, the actual addresses allocated to the structure members at the time of downloading are displayed.

#### ● Structure Name

Structure names used in circuits are always displayed as structure names, without exception.

### ■ Monitoring Structure Parameter Data

#### ● Structure Members

Structure members can be monitored in normal block monitors. The display of data in a monitor is similar to that for tag names.

Members with arrays are also monitored.

The data display format depends on the [View]–[Specify Display Mode]–[Display Format] settings on the menu bar. The data type set for each member is ignored in a block monitor.

#### Note

---

If the full name of a structure member, including array representation, cannot be displayed, the name is displayed as the parameter string followed by "...". In this case, you can use TipHelp to confirm its full name.

---

#### ● Structure Pointer (Q) Members

Structure pointer (Q) members cannot be monitored in a block monitor.

#### ● Structure Name

Instructions coded with structure names as instruction parameters cannot be monitored.

If a parameter is a structure name, the data area is displayed as blanks.

### ■ Display of Structure Members in Address Display Mode

Normally, by selecting [View]–[Specify Display Mode]–[Display Address] from the menu bar, you can switch parameters displayed as tag names into their allocated addresses.

However, the display of structure members do not change even when you select [View]–[Specify Display Mode]–[Display Address] from the menu bar.

## ■ Display of I/O Comments

I/O comments set in structure type definitions are displayed, just as in offline mode.

I/O comments of structure pointer (Q) members are not displayed.

## ■ TipHelp Display

TipHelp for structure members is displayed, regardless of the presence or absence of arrays.

TipHelp is not displayed for structure name parameters.

TipHelp is not displayed for structure pointer (Q) members.

---

## H13.4 Online Editing

This section describes the restrictions in online-editing of blocks containing structures.

### ■ Editing Structure Members

Structure members can be edited online, just as in offline mode.

### ■ Edit-Prohibition of Circuits Containing Structure-related Instructions

Circuits containing SCALL instructions, STMOV instructions or STRCT instructions are edit-prohibit circuits in online mode.

### ■ Inserting Empty Lines above STRCT Instructions

Inserting empty lines above a STRCT instruction is not allowed.

### ■ Adding Instructions

SCALL instructions, STMOV instructions and STRCT instructions cannot be added in online-edit mode.



#### **CAUTION**

---

Results of online editing are written to the built-in flash ROM immediately after they are saved in the CPU. For this reason, do not power off the FA-M3 while a "Writing" status is blinking on the Action Monitor bar.

---

## H13.5 Other Online Debugging Functions

- **Sampling Trace**

Structure members cannot be set up for sampling trace.

# H14. Macros

This chapter describes the online functions of macros.

## Note

For details on the offline functions of macros, see Chapter F1, "Using Macros" (Offline).

### ● Function Limitations for Each CPU Type

Table H14.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A         |          |

## Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

## Note

For details on limitations for each CPU type, refer to the user's manual for each type.

---

## H14.1 Transferring Macros

Macros are transferred by downloading. When an executable program is transferred, the macros used in the program are also transferred automatically. If there are macro files with the same macro name, one each in the project folder and the macro folder, only the macro in the project folder is transferred.

If an executable program contains macros, in addition to normal errors, the following errors may also occur during program syntax checking or downloading.

### ● Errors

- **Macro not found.**  
A macro definition is not found in a project or macro folder.
- **Number of steps exceeds the maximum limit.**  
When counting the number of steps of a block, the number of steps in macro definitions is also counted.
- **MRET instruction is not at the end**  
A macro must have a MRET instruction at its end.
- **Number of macros exceeds the maximum limit for the model.**  
The maximum number of macro types allowed depends on the CPU type.
- **Global device overlaps local device area**  
If a macro uses macro local devices, they are added behind the setup range for blocks. When using global devices, always take macro local devices into consideration.
- **Invalid local device setting**  
If a macro uses local devices, you must set a start number for the local devices, taking into consideration the number of macro local devices.

### Note

---

You need not register macros when you develop an executable program.

When an executable program is downloaded to the CPU, macros are automatically linked and downloaded together.

No checking is done for the presence of a macro execution result instruction.

---

### Note

---

When the NMOUT instruction (macro execution result instruction) is executed, a logical operation result from the execution of an input-type macro instruction is transferred to the next instruction.

---

## H14.2 Debugging Macros

To monitor or debug macros, you can use the program monitor or device monitor window. You have to open a project before you can debug macros.

### Note

Registering debugged macros in the macro folder as program assets enables them to be reused by other projects.

### Note

For details on registering macros, see Section F1.2.4, "Registering Macros" (Offline).

To debug macros, use the following procedure.

### ◆ Procedure ◆

(1) Select [Online]–[Macro Monitor] from the menu bar.

⇒ The Macro Monitor - Select Macro dialog box opens with a list of active macros displayed.

(2) Select a macro to be monitored, and click [OK].

### Note

A macro can also be selected from the macro list in the [online] tab of the project window.

⇒ The Macro Monitor window for the selected macro is displayed.

### Note

If a macro is password-protected, the Password Entry dialog box will appear. In this case, enter a password and click [OK].

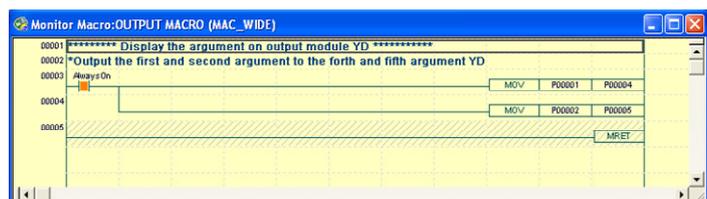
### Note

You can open multiple macro monitor windows for different macro types.



Step (2)

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Step (2)

H1402\_02.VSD

### Note

You cannot monitor pointer devices (P) with the macro monitor. Their values are always displayed as blank spaces.

## Note

If no project is open and no tag name definition/comment is downloaded, or if an open project and a downloaded executable program disagree, the following limitations apply:

- If no project is open and no tag name definition/comment is downloaded  
No tag names or comments will be displayed.  
You cannot save online-edited contents to a file.
- If an open project and a downloaded executable program disagree and no tag names and comments are downloaded to CPU  
Tag names or comments may not be displayed correctly.

## ■ Exiting the Macro Monitor

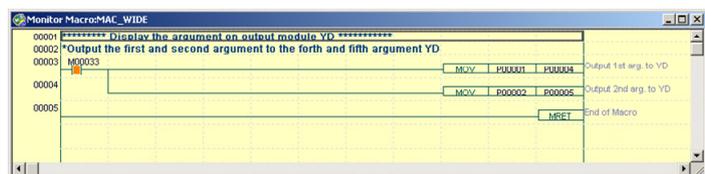
To exit from the macro monitor, select [File]–[Close] from the menu bar while you are in the Macro Monitor window.

## ■ Editing Macro Definitions Online

To edit macro definitions online, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Macro Monitor window is open.
- (2) Select [Debug/Maintenance]–[Start Online Editing] from the menu bar.  
⇒ Edit macro definitions online the same way as with normal blocks.
- (3) When you are finished with editing, select [Debug/Maintenance]–[End Online Editing] from the menu bar.  
⇒ Online editing ends.



Step (2)

H1402\_03.VSD

## Note

Some macro circuits cannot be modified online. To modify such circuits, use offline editing.

## Note

The MRET instruction and circuits containing the MRET instruction cannot be edited online.

## ■ Uploading Macro Definitions

To upload all macros or selected macros, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Online]–[Upload[CPU->PC]]–[Block/Macro] from the menu bar.

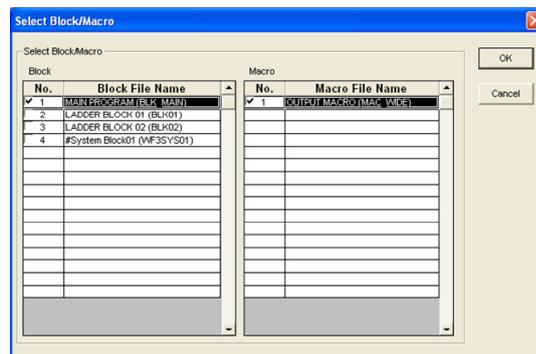
⇒ The Select Block/Macro dialog box is displayed.

#### Note

For CPU modules that can store constant definitions, a warning message appears to prompt the user to select whether to overwrite the existing constant definitions.

- (3) Turn on (check) the checkboxes for macros to be uploaded, and click [OK].

⇒ The Select Project dialog box is displayed.



Step (3)

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- (4) Select a project as destination for the upload, and click [Select].

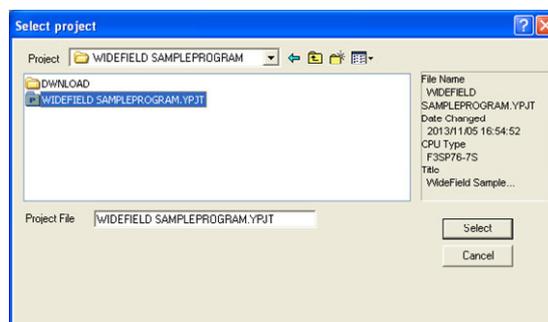
⇒ A dialog box is displayed to confirm whether to overwrite the file.

- (5) Click [Yes].

⇒ A confirmation dialog box is displayed.

- (6) Click [OK].

⇒ The selected macros are uploaded.



Step (4)

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## ■ Monitoring Macro Devices

To monitor macro devices, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is connected online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- (2) Select [Online]–[Device Monitor] from the menu bar, followed by either [Macro Relay (H)], [Macro Register (A)], or [Macro Index Register (U)].

⇒ The selected macro device is launched, and the Macro Relay Monitor, Macro Register Monitor, or Macro Index Register Monitor window is displayed.

- (3) When you have finished monitoring, close the window.

#### Note

You can also use the Tag Name Definition Monitor to monitor macro devices.

#### Note

For details on operations of the Tag Name Definition Monitor, see Chapter J4, "Tag Name Definition Monitor."

[Macro Register (A)] is selected

| Address | Word Data | Long Word Data | Double Long Word Data |
|---------|-----------|----------------|-----------------------|
| A00001  | 0         | 0              | 0                     |
| A00002  | 0         | 0              | 7.5129498033E+18      |
| A00003  | 0         | 0              | 1.1483897209E+14      |
| A00004  | 0         | 1.749221376E+9 | 1.749221376E+9        |
| A00005  | 26,691    | 26,691         | 26,691                |
| A00006  | 0         | 0              | 0                     |
| A00007  | 0         | 0              | 0                     |
| A00008  | 0         | 0              | 0                     |
| A00009  | 0         | 0              | 0                     |
| A00010  | 0         | 0              | 0                     |
| A00011  | 0         | 0              | 0                     |
| A00012  | 0         | 0              | 0                     |
| A00013  | 0         | 0              | 0                     |
| A00014  | 0         | 0              | 0                     |
| A00015  | 0         | 0              | 0                     |
| A00016  | 0         | 0              | 0                     |
| A00017  | 0         | 0              | 0                     |
| A00018  | 0         | 0              | 0                     |
| A00019  | 0         | 0              | 0                     |
| A00020  | 0         | 0              | 0                     |

Step (2)

H1402\_06.VSD

FA-M3  
Programming Tool WideField3  
Online  
PART-J Monitor Manual

IM 34M06Q16-03E

This manual describes various monitor operations in WideField3.

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# J1. Setting Operating Mode and Monitoring Operation Status

The FA-M3 CPU operating modes are listed and described below. This chapter describes how to monitor and set the CPU's operation status.

- **Run Mode (RUN LED lights)**

The Run mode is active when the CPU is executing a program. In Run mode, you can check the operating status of the program on the Action Monitor, Program Monitor, and Device Monitor of the CPU, but the Debug function cannot be used and online editing cannot be done.

When the operating mode is switched from Stop mode to Run mode, program execution starts from the beginning, just as in booting. Except for latched devices, all devices become 0. If the Debug function is being used, it is cancelled.

- **Stop Mode (RUN LED off)**

This is the mode when the CPU is not executing a program. The Debug function can be used and online editing can be done.

- **Debug Mode**

The Debug mode is used for debugging, and tuning. Program is executed in the same way as in Run mode but, unlike Run Mode, the Debug function can be used and online editing can be done.

- **ROM Writer Mode**

The ROM Writer Mode is used when erasing data in the ROM pack or writing programs to the ROM.

## Note

---

The RUN LED is one of the LED indicators located on the front of the sequence CPU module. It turns green when the program is running (in the Run or Debug mode).

---

## Note

---

- For details on the RUN LED, see "Sequence CPU – Functions."
  - For details on how to set the ROM writer mode, see Section H6.1 "ROM Writer Mode."
-

## ● Function Limitations for Each CPU Type

**Table J1.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations   | SEE ALSO      |
|---|---|---------------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | Protection connection status is not displayed in the Action Monitor bar.<br>The Force Cancel Online Editing Mode function is not available.               | J1.1<br>J1.10 |
| F3SP66-4S,<br>F3SP67-6S   | Protection connection status is not displayed in the Action Monitor bar.<br>The Force Cancel Online Editing Mode function is not available.               | J1.1<br>J1.10 |
| F3SP71-4N,<br>F3SP76-7N   | For F3SP71-4N and 76-7N, the Reset CPU function is not available.<br>The Force Cancel Online Editing Mode function is not available.                      | J1.8<br>J1.10 |
| F3SP71-4S,<br>F3SP76-7S   | For F3SP71-4S, and 76-7S, the Reset CPU function is not available.<br>The Force Cancel Online Editing Mode function is not available (for R2 or earlier). | J1.8<br>J1.10 |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

### Note

To identify the type and Rev of the CPU connected from WideField3, check the information displayed on Status Bar.

### Note

For details on Status Bar, see Section A3.1, "Screen Layout" (Introduction and Troubleshooting).

## J1.1 Displaying the Action Monitor

You can check the operation status of the CPU on the Action Monitor. As shown in Figure J1.1, the Action Monitor appears in the form of a horizontal bar. It appears automatically when the FA-M3 is connected. Selecting [View]–[Action Monitor] from the menu toggles between hiding and showing the Action Monitor bar. The displayed items in the Action Monitor bar vary with CPU type.

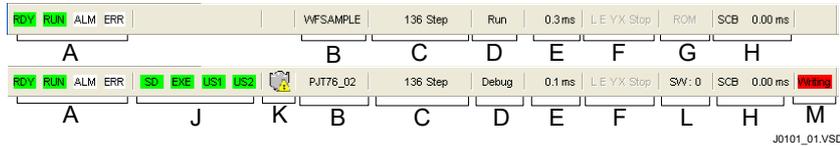


Figure J1.1 Action Monitor Bar

- A LED display status  
Shows the LED display statuses of the sequence CPU module.
- B Name of executable program  
Shows the name of the downloaded executable program.
- C Executable program step count  
Shows the number of steps in the executable program.
- D Operating mode  
Shows the CPU's operating mode (Run/Stop/Debug/ROM).
- E Scan time  
Shows the CPU scan time accurate to 0.1 ms (0.3 ms in the display example shown above).
- F Stop status for refreshing  
Shows the stop status for refreshing  
X: Input refreshing stopped, Y: Output refreshing stopped  
E: Shared refreshing stopped, L: Link refreshing stopped
- G ROM pack installation status  
This item is played when a ROM pack is installed.
- H Sensor control block (SCB) scan time  
This item appears for F3SP22/28/38/53/58/59/66/67/71/76 modules.  
The scan time appears accurate to 0.01 ms (10  $\mu$ s) (SCB 0.32 ms in the display example shown above).
- J LED display status  
Shows the LED display statuses of the sequence CPU module.
- K Protection connection status  
This item is displayed when a CPU module to which protection is set is used for login.
- L MODE switch number display  
Shows the current MODE switch number of the sequence CPU.
- M ROM write status  
Shows the status of write operations to the built-in ROM of the sequence CPU module. Blinks during data conversion in online edit.

**Note**

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- The scan time is the time required for common processing, instruction execution, input refresh, output refresh, and synchronization processing. Normally it represents the smallest unit for the control time of the system.
  - The SCB scan time displayed is not an execution interval but the actual time taken for input/output refresh and program execution.
  - Link refreshing is a process for refreshing the statuses of link devices (L/W).
- 

**Note**

---

- For details on scan time, see "Sequence CPU – Functions."
  - For details on SCB scan time, see "Sequence CPU – Functions."
  - For details on link refreshing, see "Sequence CPU – Functions."
  - For details on protection, see Chapter H11, "FA-M3 Defender (User Authentication and Operation Protection)".
-

## J1.2 Displaying Project Setting/Configuration of a Running Program

This section describes how to read and display the CPU project setting/configuration.

The project setting/configuration can be read but cannot be changed.

To display the CPU project setting/configuration, use the following procedure.

### ■ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting"

(2) Select [Online]–[Configuration] from the menu bar.

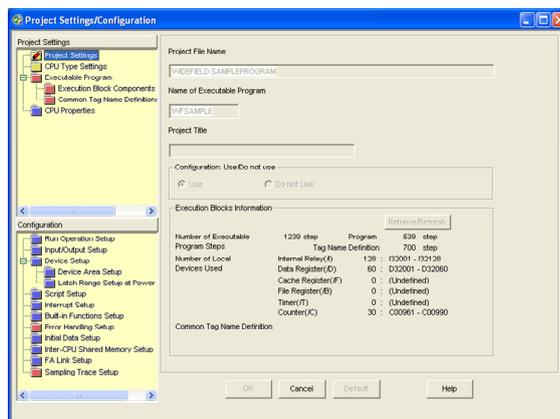
⇒ The Project Settings/Configuration window appears.

(3) Click [Cancel].

⇒ The Project Settings/Configuration window closes.

#### Note

You cannot change the project setting/configuration on the window.



Step (2)

J0102\_01.VSD

#### Note

In the [Common Tag Name Definitions/Local Device] screen that is displayed from the Project Settings/Configuration window of a running program, a blank is displayed for tag name definition reference, the number of constant definitions and the number of common tag name definitions.

# J1.3 Switching CPU Operating Modes

This section describes how to switch the CPU operating mode. To switch CPU operating modes, use the following procedure.

## ◆ Procedure ◆

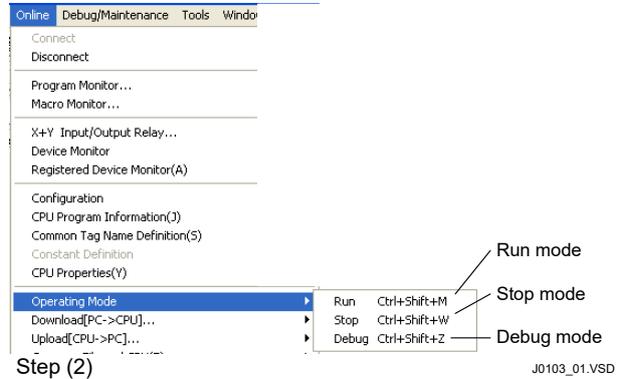
(1) Confirm that WideField3 is online.

### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Operating Mode], followed by one of the three CPU operating modes from the menu bar

⇒ A dialog box appears to confirm whether to change the CPU operating mode.



(3) Click [Yes].

⇒ The CPU operating mode is switched.



### Note

For details on the CPU operating modes, see "Sequence CPU - Functions."

### Note

The CPU module may sometimes fail to switch from Stop mode to Run or Debug mode because a continuous-type application instruction is being executed. If this happens, wait for the continuous-type application instruction to complete execution and re-execute the required operation.

## J1.4 Temporarily Changing Communication Speed

This section describes how to change the RS-232C communication speed of the CPU temporarily.

The communication speeds provided are:

- 9600 bps, even parity
- 9600 bps, no parity
- 19200 bps, even parity
- 19200 bps, no parity
- 38400 bps, even parity
- 38400 bps, no parity
- 57600 bps, even parity
- 57600 bps, no parity
- 115200 bps, even parity
- 115200 bps, no parity

The actual communication speeds that can be selected depend on the CPU type.

All the above communication speeds assume a character length of 8 bits with a stop bit.

The communication speed automatically reverts from the temporarily communication speed to the original communication speed at the next CPU power-up.

### Note

- To use the same communication speed constantly, select [Built-in Functions Setup] - [PROGRAMMER Port Setup] from the Project Settings/Configuration window, and specify the communication speed.
- If both WideField3 and other FA-M3 application such as ToolBox are connected online concurrently from the same PC, you must first disconnect the ToolBox or other application before you can temporarily change communication speed.

### Note

For details on how to change the communication speed using the Project Settings/Configuration window, see Section D3.1.10, "Built-in Functions Setup" (Offline).

To temporarily change communication speed, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

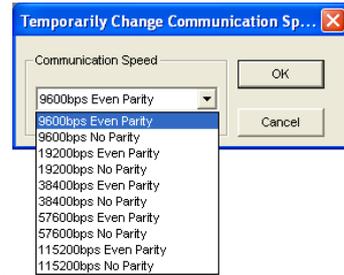
For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Temporarily Change Communication Speed] from the menu bar.

⇒ The Temporarily Change Communication Speed dialog box appears.

**(3) Select a communication speed from the communication speed drop-down list, and click [OK].**

⇒ A confirmation dialog box appears.



Step (3)

J0104\_01.VSD

**(4) Click [Yes].**

⇒ The communication speed is changed to the new speed and a confirmation dialog box appears.



Step (4)

J0104\_02.VSD

**(5) Click [OK].**



Step (5)

J0104\_03.VSD

**Note**

The temporary communication speed remains effective even after the FA-M3 is disconnected.



**CAUTION**

- If the communication speed is set to high speed, communication will fail with personal computers that do not support high-speed transfer rates. Before changing the CPU RS-232C communication speed, you should check the communication speed of your personal computer. To do so, select [System] on the [Control Panel] of Windows to display the System Properties dialog box.
- The CPU RS-232C communication speed can be changed temporarily only if [RS-232C] is selected in the Communications Setup dialog box displayed when the [Setup] button is clicked on the Communications Setup tab of the Set up Environment dialog box.

**Note**

For details on communication set up, see Section D1.2.3, "Communication Setup" (Offline).

## J1.5 Setting Time

This section describes how to change the CPU date and time setting. To do this, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Set Time] from the menu bar.

⇒ The Set up Time dialog box appears.

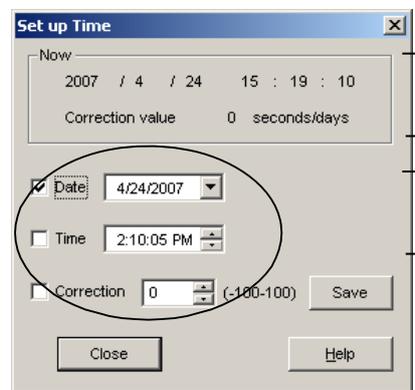
(3) Select the item to be changed by turning on the corresponding checkbox on the left, and enter a new value on the right.

#### Note

To change the date, click the relevant field and directly enter a new year, month, or day value or click the down-arrow on the drop-down list to display a calendar and click a date.

To change the time, click the field and directly enter a new hour, minute, or second value, or use the spin buttons.

To change the correction value, directly enter a new value; or use the spin buttons. A correction value must be between -100 and +100 (seconds), where a negative value indicates advancing a clock.



— CPU's current date and time

— Date and time of personal computer when this dialog box was opened.

Steps (3) to (5)

J0105\_01.VSD

(4) After entering a new value, click [Save].

⇒ The new values are written to the CPU and displayed in the [Now] group box.

(5) Click [Close].

⇒ The Set Time dialog box closes.

#### Note

The CPU's date and time setting can be changed even if no project is open.

#### Note

An entered correction value takes effect at the next restart or power-up.

## J1.6 Clearing Program

This section describes how to initialize the program in the CPU and clear (initialize) all devices except for file registers in the CPU.

This function is available only when the program is not executing.

To clear the program in the CPU, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Clear Program] from the menu bar.

⇒ A confirmation dialog box appears.

(3) Click [Yes].

⇒ If a program is running, a confirmation dialog box appears.

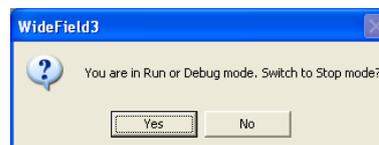


Step (3)

J0106\_01.VSD

(4) Click [Yes].

⇒ The program in the CPU is initialized, and a confirmation dialog box appears.



Step (4)

J0106\_02.VSD

(5) Click [OK].



Step (5)

J0106\_03.VSD

#### Note

If both WideField3 and other FA-M3 application such as ToolBox are connected online concurrently from the same PC, you must first disconnect the ToolBox or other application before you can clear the program in the CPU from WideField3.

#### Note

The program in the CPU can be cleared even if no project is open.

Clearing the program in the CPU automatically disconnects the FA-M3.

## J1.7 Clearing Devices

This function initializes all devices in the CPU. Latched devices are initialized as well, but some devices such as file registers are not initialized. This function is available only when no program is being executed.

### Note

Latched devices retain their state even when the power supply is shut off. To define the types and ranges of latched devices, use the project setting/configuration function.

### Note

For details on the devices that cannot be initialized with this function, see "Sequence CPU – Functions."

To clear devices, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Clear Devices] from the menu bar.

⇒ A confirmation dialog box appears.

(3) Click [Yes].

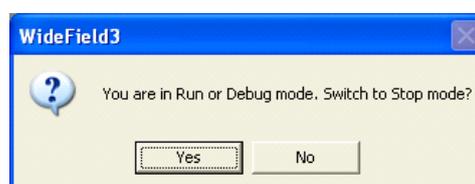
⇒ If a program is running, a confirmation dialog box appears.



Step (3) J0107\_01.VSD

(4) Click [Yes].

⇒ All devices are cleared, and a confirmation dialog box appears.



Step (4) J0107\_02.VSD

(5) Click [OK].



Step (5) J0107\_03.VSD

### Note

Devices can be cleared even if no project is open.

## J1.8 Reset Start

This section describes how to reset-start the FA-M3. You can reset either the entire system or only the connected CPU. To perform a reset, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

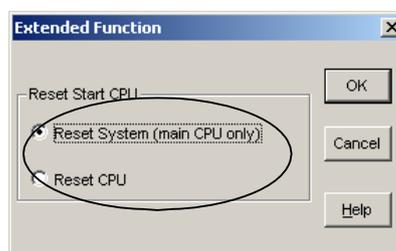
For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Reset Start] from the menu bar.

⇒ The Extended Function dialog box appears.

(3) Turn on the [Reset System] or [Reset CPU] option button in the [Reset Start CPU] group box, and click [OK].

⇒ A dialog box appears to confirm whether to reset start.

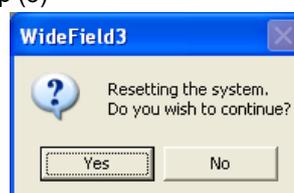


Step (3)

J0108\_01.VSD

(4) Click [Yes].

⇒ The reset start is performed, and a confirmation dialog box appears.



Step (4)

J0108\_02.VSD

(5) Click [OK].



Step (5)

J0108\_03.VSD

#### Note

Reset start can be executed even if no project is open.

When reset start is initiated for a sequence CPU module with a MODE switch, the system displays a confirmation message, which varies with the current selection of the MODE switch number.

**CAUTION**

---

- Reset start causes the FA-M3 to be disconnected from your personal computer.
  - The Reset System option applies only to the main CPU (the CPU installed in slot 1). If system reset is attempted on an add-on CPU, an error occurs and system reset is not performed.
  - Reset start initializes all devices other than latched devices.
  - Reset start is not available during online editing.
  - If a system is configured of multiple CPUs, do not perform Reset CPU on an individual CPU. Otherwise, an error will occur when CPUs are communicating or when multiple CPUs access the same module. If a system consists of multiple CPUs, perform System reset for the main CPU (CPU mounted in slot 1).
  - If both WideField3 and other FA-M3 application such as ToolBox are connected online concurrently from the same PC, you must first disconnect the ToolBox or other application before you can execute reset start from WideField3.
  - For F3SP71-4N, 76-7N, 71-4S, and 76-7S, the CPU reset function cannot be used. Perform [Reset System] from the main CPU.
-

## J1.9 Getting and Releasing Exclusive Access Control

This section describes how to get and release exclusive access control of the FA-M3.

Once a machine gets exclusive access control, the following functions are no longer available from other machines.

### Restricted Functions

- Changing the operating mode (run/debug/stop)
- Changing forced set/reset or device values
- Stopping or canceling refreshing
- Downloading
- Online editing

You can perform three types of operations on exclusive access control:

- **Getting Exclusive Access Control**  
Gets exclusive access control. Other machines can no longer use the restricted functions mentioned above. You cannot get exclusive access control if it is already held by another machine. Force the release of exclusive access control and then get it.
- **Releasing exclusive access control**  
Releases the exclusive access control that you hold. Other machines can now use the restricted functions mentioned above.
- **Forcing Release of Exclusive Access Control**  
Forces another machine that holds exclusive access control to release it. Once released, all terminals can now use the restricted functions mentioned above.

### ■ Getting Exclusive Access Control

Gets exclusive access control. To do this, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For online connection procedures, see H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Exclusive Access Control]–[Get] from the menu bar.

⇒ Your machine gets exclusive access control and a confirmation dialog box appears.

(3) Click [OK].



Step (3)

J0109\_01.VSD

## ■ Releasing Exclusive Access Control

Releases exclusive access control held by you. To do this, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions] [Exclusive Access Control]–[Release] from the menu bar.

⇒ Exclusive access control is released and a confirmation dialog box appears.

(3) Click [OK].



Step (3)

J0109\_02.VSD

## ■ Forcing Release of Exclusive Access Control

Forces releases of exclusive access control held by another machine. To do this, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

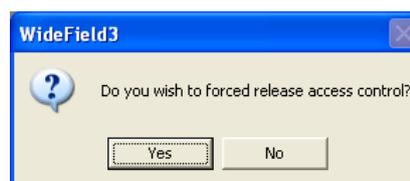
For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Extended Functions]–[Exclusive Access Control]–[Forced Release] from the menu bar.

⇒ A confirmation dialog box appears.

(3) Click [Yes].

⇒ Exclusive access control is released by force, and a confirmation dialog box appears.



Step (3)

J0109\_03.VSD

(4) Click [OK].



Step (4)

J0109\_04.VSD

---

## Note

Getting and releasing of exclusive access control can be executed even when no project is open.

---

## J1.10 Forcibly Canceling Online Editing Mode

For F3SP71-4S/SP76-7S R3 or later, online editing mode of the CPU can be forcibly cancelled. If a tag name definition download operation during RUN does not finish normally due to a communication error, the CPU continues to be in online editing mode. This causes some functions, such as switching from Run mode, online editing, and project downloading, to be made unavailable subsequently. These functions are made available again by turning FA-M3 off and then on again, but you can achieve this by performing the procedure described here.

To forcibly cancel CPU online editing mode, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedure, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]-[Extended Functions]-[Force Cancel Online Editing Mode] from the menu bar.

⇒ A confirmation dialog box appears.

(3) Click the [Yes] button.

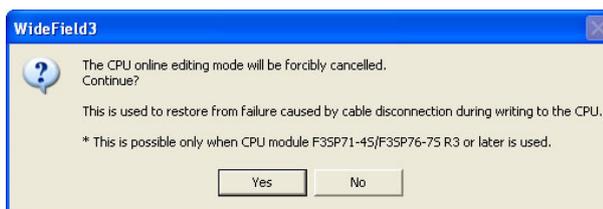
⇒ The CPU online editing mode is cancelled, and a confirmation dialog box appears.

#### Note

If the CPU is not in online editing mode, a message appears to report this.

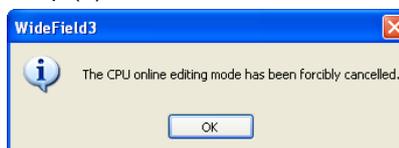
#### Note

Forcible cancelation of the CPU online editing mode must be performed via the same communication path from the same PC as the one where online editing was performed. Otherwise, the mode cannot be forcibly cancelled.



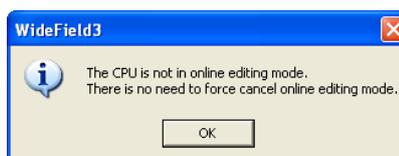
Step (2)

J0110\_01.VSD

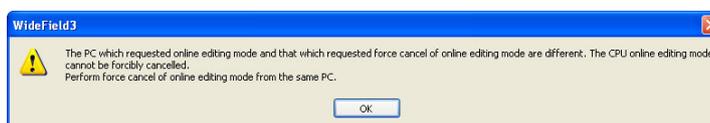


Step (3)

J0110\_02.VSD



J0110\_03.VSD



J0110\_04.VSD

---

**Note**

Forcible cancelation of the CPU online editing mode is useful when any of the following functions does not end normally due to a communication error:

- Downloading tag name definitions during RUN
  - Online editing of a program
  - Storage of balloon comments and monitor data in the CPU
- 

**Note**

- For details on the tag name definition download function during RUN, see Section H2.3, "Downloading Tag Name Definitions during RUN."
  - For details on online editing of programs, see Chapter K2, "Online Edit".
  - For details on storage of balloon comments and monitor data in the CPU, see Sections H9.3.2 "Downloading Offline Balloon Comment/Monitor" and H9.3.4, "Storing Online Balloon Comment/Monitor in the CPU".
- 

**CAUTION**

If tag name definition downloading during RUN or the program's online editing does not end normally due to a communication error, there is a chance the CPU program is unstable. In that situation, before forcibly cancelling the online editing mode, turn the FA-M3 off and on again, then restore it to before the changes and start over again. If you cannot turn on the FA-M3 off and on again, after forcibly cancelling the online editing mode, perform the procedure until it ends normally.

---

## J2. Program Monitor

The Program Monitor displays the contents of blocks in the form of a ladder program. It can be used to check the ON/OFF status of relays and the current values of data in a program.

### ● Function Limitations for Each CPU Type

Table J2.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A         |          |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

## J2.1 Program Monitor Window

Figure J2.1 shows an example of a Program Monitor window.

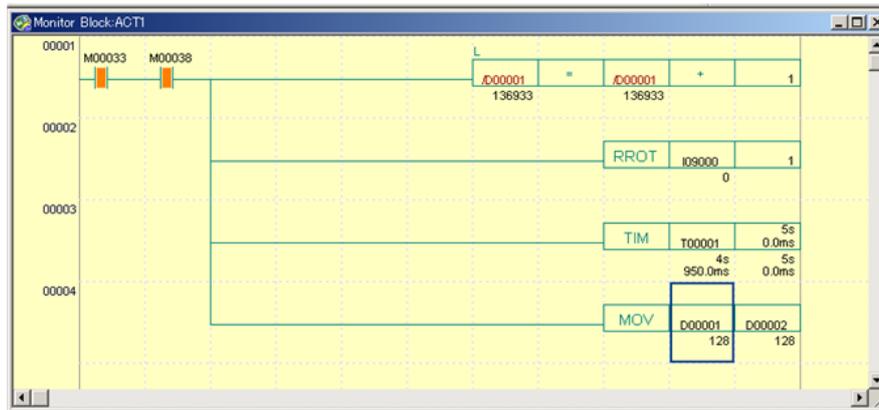


Figure J2.1 Program Monitor Window

J0201\_01.VSD

### J2.1.1 Display of Relay ON/OFF Status

The Program Monitor window shows the relay ON/OFF statuses as follows:

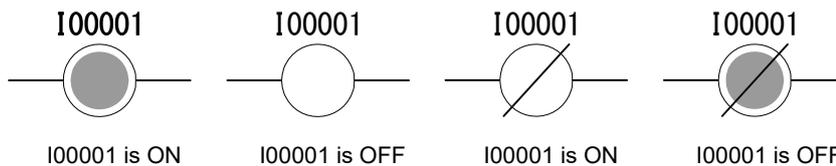
- A Conduction states of contact **A** and contact **B**



J0201\_02.VSD

Figure J2.2 Conduction States of Contact A and Contact B

- B Energizing states of coils



J0201\_03.VSD

Figure J2.3 Energizing States of Coils

### Note

The energizing state refers to the ON/OFF state of a relay coil specified in an instruction parameter. In the Program Monitor, the display of some instructions such as the Load (LD) and Out (OUT) instructions changes according to the ON/OFF state of the relay.

- C SET, RST, and FF instructions

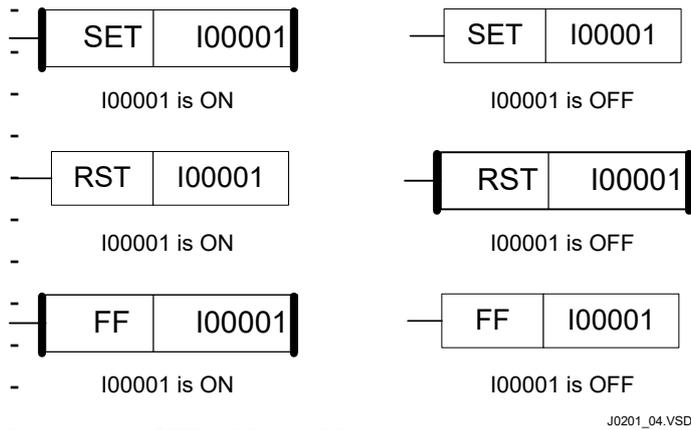


Figure J2.4 SET, RST, and FF Instructions

- D Display of Forced Set/Reset

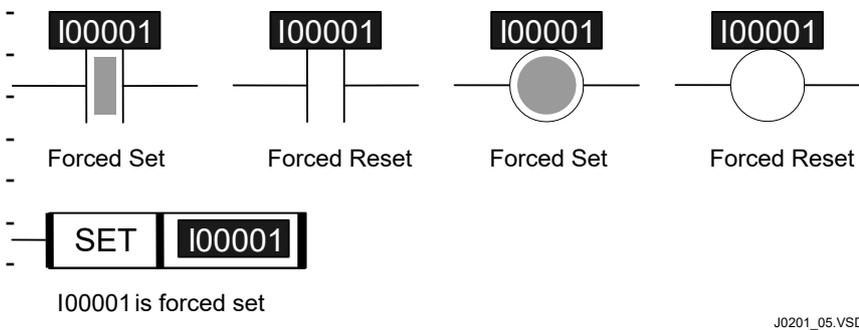


Figure J2.5 Display of Forced Set/Reset

Devices that are forced set or forced reset are highlighted in black.

## Note

The operation result of a contact A is ON when the instruction parameter relay is ON.

The operation result of a contact B is ON when the instruction parameter relay is OFF.

A contact may represent the result of the execution of a LOAD (LD), AND, or OR instruction.

## J2.1.2 Display of Application Instructions

You can display detailed contents of devices and current values of timers (T) and counters (C) within application instructions. The normal Program Monitor display is the same as that in offline mode.

### Note

Application instructions refer to advanced instructions performing arithmetic operations, character string processing, etc. Most instructions operate on 16-bit, 32-bit or 64-bit data.

The ON indicator is lit while basic instructions such as timer/counter and bit operation instructions and application instructions such as comparison instructions are executed.

### Note

- For details on application instructions, see "Sequence CPU Instruction Manual – Instructions" (IM 34M06P12-03E).
- For details on how to display detailed information, see Section J2.3.4, "Displaying Details of Application Instructions."

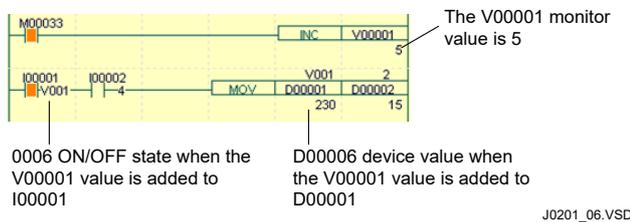
## J2.1.3 Display of Index Modified Devices

A device with index register modification can be displayed in 4 types of display formats, depending upon display modes specified.

This subsection describes each of these display formats.

### ■ Device Monitor Value Display/Automatic Index Display

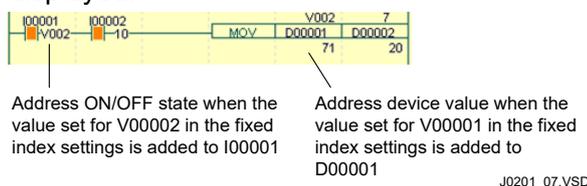
The content of the index register is loaded from the CPU module, and then a monitor value for the address of the parameter that reflects that value is displayed.



**Figure J2.6 Display of Index Modified Devices (Device Monitor Value Display/Automatic Index Display)**

### ■ Device Monitor Value Display/Fixed Index Display

The index value set in fixed index settings is read and then a monitor value for the address of the parameter that reflects that value and the content of the index register is displayed.



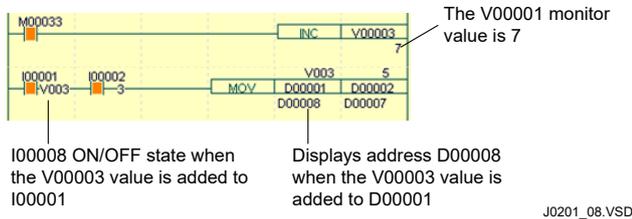
**Figure J2.7 Display of Index Modified Devices (Device Monitor Value Display/Fixed Index Display)**

### Note

For details on operations for the fixed index display, see Section J2.3.7, "Fixed Index Modification Monitor Display."

## ■ Device Address Display/Automatic Index Display

The content of the index register is loaded from the CPU module, and then the actual address number of the parameter that reflects that value is displayed. Only a detailed display of the application instructions is displayed in the address. The basic instructions are displayed in the monitor value.



**Figure J2.8 Display of Index Modified Devices (Device Address Display/Automatic Index Display)**

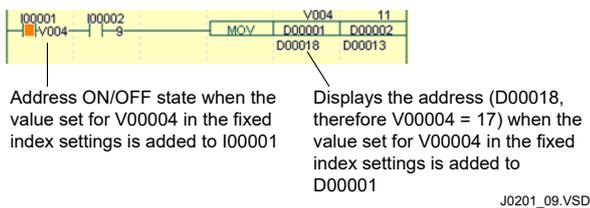
### Note

In long word index modification, actual address with a long word value added is displayed.

### Note

For details on how to display actual address of index modified parameters, see Real Indexed Addr./Indirect Register in Section J2.3.9, "Setting Multiple Display Modes."

## ■ Device Address Display/Fixed Index Display



**Figure J2.9 Display of Index Modified Devices (Device Address Display/Fixed Index Display)**

The index value set in fixed index settings is read and then the actual address number for the parameter that reflects that value and the content of the index register is displayed. Only a detailed display of the application instructions is displayed in the address. The basic instructions are displayed in the monitor value.

### Note

In long word index modification, actual address with a long word value added is displayed.

### Note

For details on operations for the fixed index display, see Section J2.3.7, "Fixed Index Modification Monitor Display."

For details on how to display actual address of index modified parameters, see Real Indexed Addr./Indirect Register in Section J2.3.9, "Setting Multiple Display Modes."

In addition, a device with constant index modifications is displayed with the device after index modification.

### ■ Device Monitor Value Display

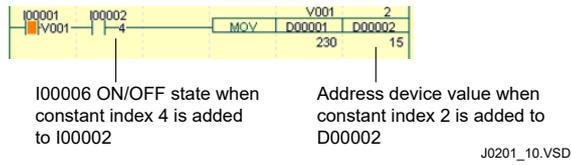


Figure J2.10 Display of Index Modified Devices (Constant Index Monitor Value Display)

### ■ Device Address Display

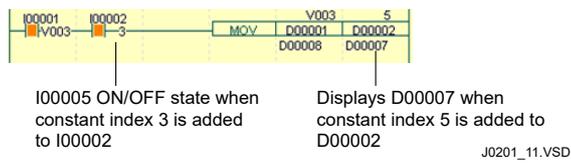


Figure J2.11 Display of Index Modified Devices (Constant Index Address Display)

### Note

For details about display formats, see Section J2.3, "Switching Display".

- For details on how to display actual address of index modified parameters, see Real Indexed Addr./Indirect Register in Section J2.3.9, "Setting Multiple Display Modes."

## J2.2 Starting and Closing the Program Monitor

This section describes how to start and exit from the Program Monitor, as well as how to save monitored programs.

### J2.2.1 Starting the Program Monitor

This subsection describes how to start the Program Monitor. Use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that WideField3 is online and open the project to be monitored.

#### Note

For details on the online connection procedure, see Section H1.1, "Connecting and Disconnecting."

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

- (2) Select [Online]–[Program Monitor] from the menu bar.

⇒ The Select Block (Active Block Monitor) window opens.

- (3) Double-click the line containing the name of the block to be monitored, or move the cursor to the line and press the [Enter] key.

#### Note

For details on #System Block01 (WF3SYS01), see Section A5.4, "System Block" (Introduction and Troubleshooting).

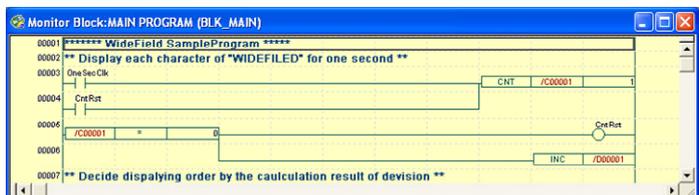
0 means stopped      1 means activated

| Block No. | Block File Name            | Active |
|-----------|----------------------------|--------|
| 1         | MAIN PROGRAM (BLK_MAIN)    | 1      |
| 2         | LADDER BLOCK 01 (BLK01)    | 0      |
| 3         | LADDER BLOCK 02 (BLK02)    | 0      |
| 4         | #System Block01 (WF3SYS01) | 0      |
| 5         |                            |        |
| 6         |                            |        |
| 7         |                            |        |
| 8         |                            |        |
| 9         |                            |        |
| 10        |                            |        |
| 11        |                            |        |
| 12        |                            |        |
| 13        |                            |        |

Step (3)

J0202\_01.VSD

⇒ The selected block is displayed as a ladder program in the Block Monitor window.



Step (3)

J0202\_02.VSD

#### Note

You can open multiple Block Monitor windows for different blocks concurrently.

---

## Note

You can open a Block Monitor window even if no project is open and no tag name definition/comment/balloon comment is downloaded, or if the open project is different from the downloaded program, with the following limitations:

- If no project is open and no tag name definition/comment is downloaded, tag names, structure tag names, or comments are not displayed. Online edited contents cannot be saved to the file.
  - Program coded with tag names and structure tag names display actual addresses that are allocated when the project is downloaded.
  - Balloon comments are not displayed.
  - If the open project is different from the downloaded program, tag names, structure tag names, or comments are not displayed correctly.
  - Only the balloons with the same block name and valid display position/settings are displayed.
  - If multiple PCs initiate uploading concurrently from the same CPU when connected via FL-net, the following error message may be displayed: "Invalid communication number in command. Retry." If this happens, try to upload again from each PC in turn.
- 

## Note

For details on FL-net connection, see Section H1.1, "Connecting and Disconnecting."

---

## J2.2.2 Saving a Monitored Program

You can save a block displayed in a Block Monitor window to a file.

### ◆ Saving by Overwriting File with the Same Block File Name

You can save the block you are monitoring to a file having the same block file name. To do so, use the following procedure

### ◆ Procedure ◆

(1) Confirm that the Block Monitor window is displayed.

(2) Select [File]–[Save] from the menu bar.

⇒ The block displayed in the Block Monitor window is saved, overwriting a file in the project with the same block file name.

## ■ Saving as a New File

You can save the block you are monitoring to a new file. To do so, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is displayed.
- (2) Select [File]–[Save As] from the menu bar.
  - ⇒ The Save As dialog box opens.
- (3) Enter a new file name in the [File name] text box, and click [Save].
  - ⇒ The block displayed in the Block Monitor window is saved in the project as a new file.

## J2.2.3 Closing the Program Monitor

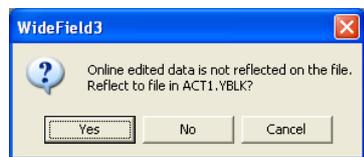
To end the Program Monitor, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is displayed.
- (2) Select [File]–[Close] from the menu bar.
  - ⇒ The Block Monitor window closes.

### Note

If the program in the program has been modified in online editing, a confirmation dialog box is displayed. Clicking [Yes] saves the changes to a file in the project with the same block file name. Clicking [No] discards all changes and closes the Block Monitor window.



Step (2)

J0202\_03.VSD

### Note

The Select Block (Active Block Monitor) window remains open even when the Block Monitor window closes. To close the Select Block window, select [File]–[Close] from the menu bar.

---

## J2.3 Switching Display

This section describes how to switch between Program Monitor display modes. It discusses the following items:

- Switching between displaying tag names and displaying addresses
- Displaying I/O comments
- Displaying instruction numbers

The content of devices and the current value of timers (T) and counters (C) in application instructions are also displayed.

### Note

---

For details on displaying structure devices, see Chapter H13, "Structures."

---

## J2.3.1 Switching between Displaying Tag Names and Displaying Addresses

You can display devices in the Block Monitor window with either their tag names or addresses. To toggle the display modes, use the following procedure.

### Note

You can switch between displaying tag names/addresses also from the Display Mode Collective Setting dialog box.

### Note

For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

## ◆ Procedure ◆

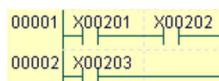
(1) Confirm that the Block Monitor window is open.

(2) Select [View]–[Specify Display Mode]–[Display Address] from the menu bar.

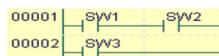
⇒ Devices are displayed with their addresses. When addresses are displayed, the [Display Address] menu item is displayed with a checkmark.

(3) Select [View]–[Specify Display Mode]–[Display Address] from the menu bar again.

⇒ Devices are now displayed with their tag names. The [Display Address] menu item is displayed without a checkmark.



Step(2) J0203\_01.VSD



Step(3) J0203\_02.VSD

### Note

If no project is open, no tag name or structure tag name but only addresses are displayed.

In the circuit monitor, tag names are displayed by referring to the tag definition file specified on the [Program Monitor Setup] tab of the Set up Environment dialog box. To display using tag name definitions in the CPU, you must first upload them from the CPU.

Parameters that are structures or structure member names are always displayed as such; addresses are not displayed even in address display mode.

### Note

For details on the Set up Environment dialog box, see Section D1.2, "Environment Setup" (Offline).

## J2.3.2 Displaying I/O Comments

You can display I/O comments in the Block Monitor window.

### Note

You can set whether to display I/O comments also from the Display Mode Collective Setting dialog box.

### Note

For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

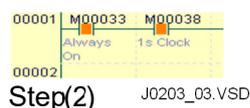
To do so, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the Block Monitor window is open.

(2) Select [View]–[Specify Display Mode]–[Display I/O Comment] from the menu bar.

⇒ I/O comments are displayed. When I/O comments are displayed, the [Display I/O Comment] menu item is displayed with a checkmark.



### Note

If detailed display option is active, detailed information is displayed as shown in the figure on the right.



(3) Select [View]–[Specify Display Mode]–[Display I/O Comment] from the menu bar again.

⇒ I/O comments disappear. The [Display I/O Comment] menu item is displayed without a checkmark.

### Note

If no project is open, I/O comments are not displayed.

If a parameter is a structure name, no I/O comment is displayed. If a parameter is a structure member name, the I/O comment specified for the member in the structure type definition will be displayed. However, if the structure is a structure pointer (Q) or an actual address allocated to a member, the I/O comment specified for the member in the structure type definition will not be displayed.

Comments for constant name are not displayed but can be read using TipHelp.

## J2.3.3 Displaying Instruction Numbers

You can display instruction numbers in the Block Monitor window.

### Note

You can set whether to display instruction numbers also from the Display Mode Collective Setting dialog box.

### Note

For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

## ■ How to Display Instruction Numbers

To display instruction numbers, use the following procedure.

### ◆ Procedure ◆

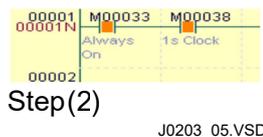
(1) Confirm that the Block Monitor window is open.

(2) Select [View]–[Specify Display Mode]–[Display Instruction Number] from the menu bar.

⇒ Instruction numbers are displayed. When instruction numbers are displayed, the [Display Instruction Number] menu option is displayed with a checkmark.

(3) Select [View]–[Specify Display Mode]–[Display Instruction Number] from the menu bar again.

⇒ The instruction numbers disappear. The [Display Instruction Number] menu item is displayed without a checkmark.



## ■ Hide Circuits in the Display

Hiding circuits displays ladder programs with circuit comments as titles but without circuit details. The procedure is the same as that used to fold circuits when editing a ladder program.

### Note

For details on hidden circuits, see Section E1.2.41, "Index View" (Offline).

## J2.3.4 Displaying Details of Application Instructions

To display detailed information for application instructions, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open.
- (2) Select [View]–[Specify Display Mode]–[Detail] from the menu bar.

⇒ Details of devices are displayed. In detailed display mode, the [Detail] menu item is displayed with a checkmark.

Step (2)

|     |         |         |
|-----|---------|---------|
| MOV | D00001  | D00002  |
|     | 512     | 512     |
| TIM | T00001  | 5s0.0ms |
|     | 4s      | 5s      |
|     | 590.0ms | 0.0ms   |

|     |               |        |
|-----|---------------|--------|
| L   |               |        |
| MOV | 2,147,483,647 | D00101 |
|     | 2,147,483,647 |        |
| CNT | C00001        | 1,000  |
|     | 999           | 1,000  |

J0203\_06.VSD

### Note

Current and preset values for timers (T) and counters (C) are displayed below instructions. If the preset value has been online-edited, the edited value is displayed.

Timers (T) and counters (C) are normally displayed with count-down current values. To display count-up values, select [Count-up] on the Circuit Display/Input tab of the Set up Environment dialog box.

If a parameter is a structure name, selecting [Detail] on the menu does not display the detailed content of the devices. If a parameter is a structure member name, the value at the allocated address is displayed.

### Note

- You can set whether to show or hide separator characters and specify the number of digits used for exponential notation, using the Circuit Display/Input tab of the Set up Environment dialog box.
- You can set whether to display details of application instructions also from the Display Mode Collective Setting dialog box.

### Note

- For details on the Circuit Display/Input tab of the Set up Environment dialog box, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).
- For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

## J2.3.5 Changing Display Format of Application Instructions

You can choose to display word data, long word data and double long word data of devices in application instructions in decimal, hexadecimal, as a character string, or as a floating point (default is decimal display).

### Note

- You can set whether to show or hide separator characters and specify the number of digits used for exponential notation, using the Circuit Display/Input tab of the Set up Environment dialog box.
- You can set whether to display details of application instructions also from the Display Mode Collective Setting dialog box.

### Note

- For details on the Circuit Display/Input tab of the Set up Environment dialog box, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).
- For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

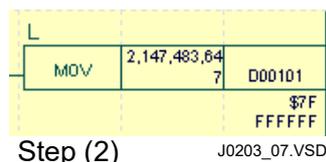
## ■ Hexadecimal Display

You can display the value of devices in hexadecimal notation. To do so, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open and the contents of devices are displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Hexadecimal] from the menu bar.

⇒ The contents of devices are displayed in hexadecimal notation. In hexadecimal display mode, the [Hexadecimal] menu item is displayed with a checkmark.



## ■ Character String Display

You can display the contents of devices as character strings. To do so, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open and the contents of devices are displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Character String] from the menu bar.

⇒ The contents of devices are displayed as character strings. In character string display mode, the [Character String] menu item is displayed with a checkmark.

|      |      |        |
|------|------|--------|
| L    |      |        |
| SMOV | "A1" | D00005 |
|      | "A1" |        |

Step(2) J0203\_08.VSD

## ■ Floating Point Display (for long word data and double long word data only)

You can display long word data/double long word data in floating point notation. To do so, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open and the contents of devices are displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Floating Point] from the menu bar.

⇒ The contents of devices are displayed in floating point notation. In floating point display mode, the [Floating Point] menu item is displayed with a checkmark.

|     |                    |                     |
|-----|--------------------|---------------------|
| L   |                    |                     |
| MOV | D00011             | D00102              |
|     | %1.4012<br>98E-045 | %-3.4867<br>08E-006 |

Step(2) J0203\_09.VSD

### Note

Floating points are only displayed to the sixth decimal place.

## ■ Decimal Display

You can display the contents of devices in decimal notation. To do so, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open and the contents of devices are displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Decimal] from the menu bar.

⇒ The contents of devices are displayed in decimal notation. In decimal display mode, the [Decimal] menu item is displayed with a checkmark.

|     |               |               |  |
|-----|---------------|---------------|--|
| L   |               |               |  |
| MOV | 2,147,483,647 | D00101        |  |
|     |               | 2,147,483,647 |  |

Step (2)

J0203\_10.VSD

### Note

Current value of timers (T) and the instruction parameter constants are always displayed in the format of the input data, regardless of any change in display format.

Current values of structure member names are displayed according to the selected display format regardless of its data format defined in the structure type definition.

## J2.3.6 Display of Indirect Specification Devices

Indirect specification devices are displayed in the Block Monitor window with either the address number of the indirect specified address or the value stored in the indirect specified address.

The menu bar display changes with the current display status.

### Note

- You can use indirect specification devices as pointers to data registers (D) or internal relays (I). You can use these devices in special-purpose instructions to manipulate addresses, or use them in normal instructions to access indirect specified devices.
- You can change the display format of indirect specification devices also from the Display Mode Collective Setting dialog box.

### Note

For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

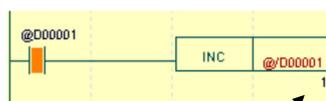
## ■ Switching from Displaying Indirect Specified Address to Displaying Value Stored in Indirect Specified Address

Indirect specification devices can be displayed with the value stored in the indirect specified address. To do so, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open with indirect specification devices displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Real Indexed Addr./Indirect Register] from the menu bar.

⇒ Indirect specification devices are displayed with the value stored in the indirect specified address. The [Real Indexed Addr./Indirect Register] menu item is displayed with a checkmark.



Value stored in indirect specified address is displayed  
Step (2)

J0203\_11.VSD

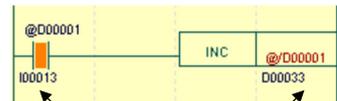
## ■ Switching from Displaying Value Stored in Indirect Specified Address to Displaying Indirect Specified Address

Indirect specification devices can be displayed with the address number of the indirect specified address. The relevant procedure is given below.

### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open with indirect specification devices displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Real Indexed Addr./Indirect Register] from the menu bar.

⇒ Indirect specified devices are displayed with the indirect specified address. The [Real Indexed Addr. /Indirect Register] menu item is displayed without a checkmark.



Indirect specified address is displayed  
Step (2)

J0203\_12.VSD

## J2.3.7 Fixed Index Modification Monitor Display

You can reflect a parameter modified by an index register onto the program monitor screen by specifying the fixed value for the index register and having the parameter reflect that value.

You can specify the fixed index value for each index register number. In addition, you can save fixed index settings to a file.

### Note

You can set the fixed index modification monitor mode also from the Display Mode Collective Setting dialog box.

### Note

For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

## ■ Display Fixed Index

You can change a detailed display to a mode with a monitor display that reflects the fixed index value.

The relevant procedure is given below.

## ◆ Procedure ◆

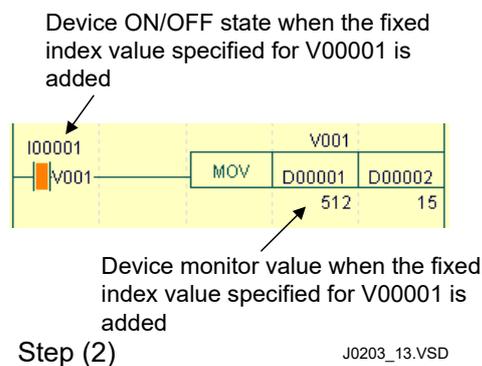
(1) Make sure the Monitor Block window is open and the device details are displayed.

(2) Select [View]–[Specify Display Mode]–[Display Format]–[Display Fixed Index] from the menu bar.

⇒ View a detailed display in fixed index display mode.

### Note

By checking [View]–[Specify Display Mode]–[Display Format]–[Real Indexed Addr./Indirect Register], you can display the address for the monitor device reflected by the fixed index value.



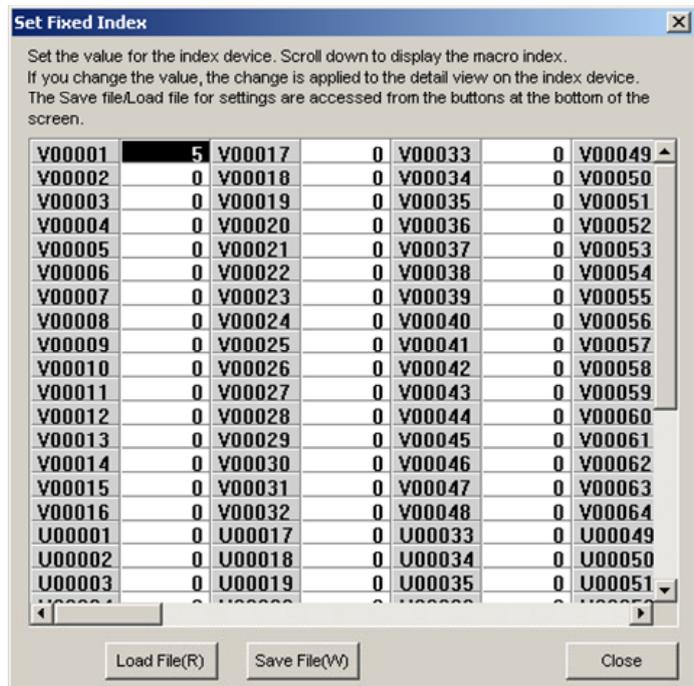
## ■ Set Fixed Index

You can set a fixed index. The relevant procedure is given below.

### ◆ Procedure ◆

- (1) Make sure the Monitor Block window is open and the device details are displayed.
- (2) Select [View]–[Specify Display Mode]–[Display Format]–[Set Fixed Index] from the menu bar.

⇒ The Set Fixed Index dialog box opens.



Step (2)

J0203\_14.VSD

- (3) Specify the values for the index registers.

⇒ The index settings are reflected and displayed in the detailed display results for the program monitor.

### Note

In the Set Fixed Index dialog box, set a value for the index register as a word device.

## ■ Save Fixed Index Settings

You can save fixed index settings. The relevant procedure is given below.

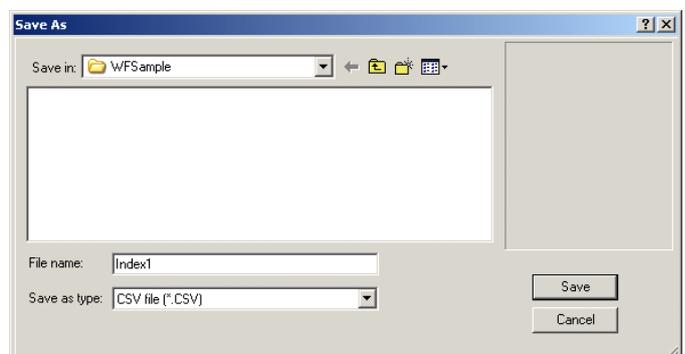
### ◆ Procedure ◆

- (1) Open the Set Fixed Index dialog box.
- (2) Click the [Save File] button.

⇒ The Save As dialog box is displayed.

- (3) Enter a file name, and click the [Save] button.

⇒ The Fixed Index Settings are saved as a CSV file.



Step (2)

J0203\_15.VSD

## ■ Load Fixed Index Settings

You can load fixed index settings that have been saved. The relevant procedure is given below.

### ◆ Procedure ◆

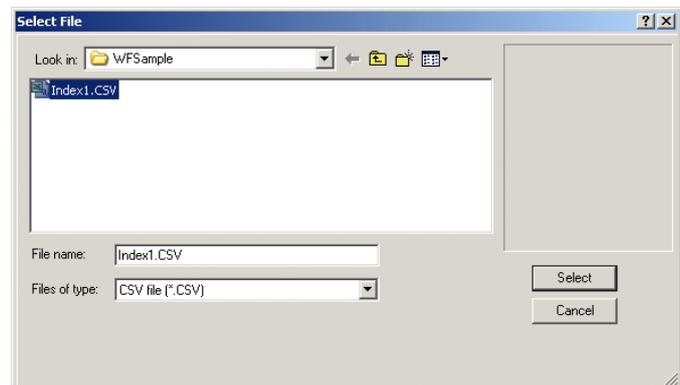
(1) Open the Set Fixed Index dialog box.

(2) Click the [Load File] button.

⇒ The Select File dialog box is displayed.

(3) Specify a fixed index setting file that has been saved, and click the [Select] button.

⇒ The fixed index settings are loaded.



Step (2)

J0203\_16.VSD

## J2.3.8 Display Data Change Identification

The Display Data Change Identification mode is for using colors to identify parameters that have changed when the value for the instruction parameter displayed on the program monitor has changed due to the execution of the instruction.

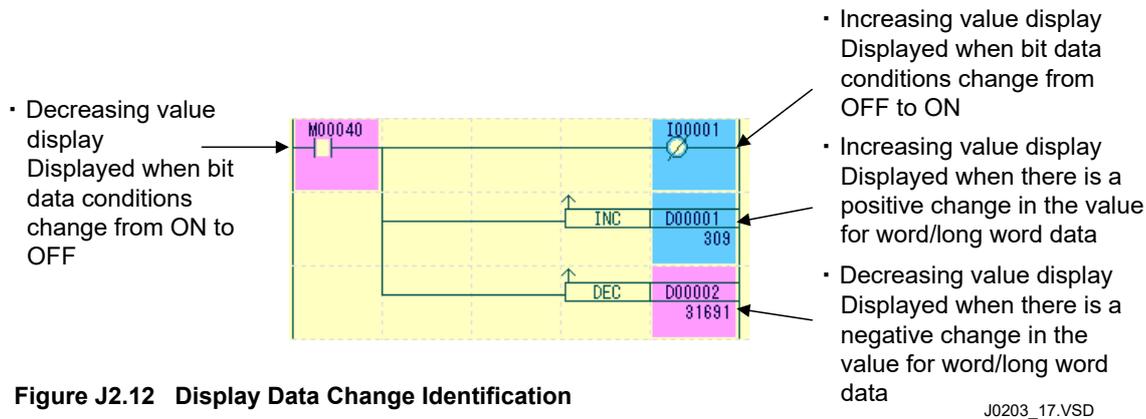


Figure J2.12 Display Data Change Identification

J0203\_17.VSD

### Note

You can set the Display Data Change Identification mode also from the Display Mode Collective Setting dialog box.

### Note

For details on the Display Mode Collective Setting dialog box, see Section J2.3.9, "Setting Multiple Display Modes."

The procedure for displaying data change identification is given below.

### ◆ Procedure ◆

(1) Make sure the Monitor Block window is open.

(2) Select [View]-[Specify Display Mode]-[Display (Expanded) Instruction Parameter]-[Display Data Change Identification] from the menu bar.

⇒ The screen switches to Display Data Change Identification mode. In Display Data Change Identification mode, the [Display Data Change Identification] menu item is displayed with a checkmark.

## J2.3.9 Setting Multiple Display Modes

You can collectively set various display parameters, for example, showing/hiding the parameters and changing the display formats.

Setting multiple display modes is available from the Display Mode Collective Setting dialog box.

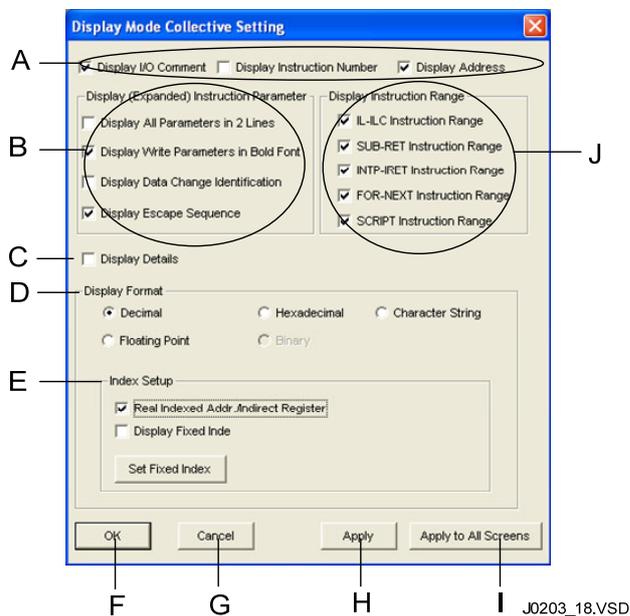


Figure J2.13 Display Mode Collective Setting Dialog Box

- A Select the display parameter.
  - [Display I/O Comment] Select the checkbox to display I/O comments.
  - [Display Instruction Number] Select the checkbox to display instruction numbers.
  - [Display Address] Select the checkbox to display devices with their addresses. When the checkbox is deselected, tag names are displayed.
- B Expanded display of instruction parameter
  - [Display All Parameters in 2 Lines] Select the checkbox to display all parameters in two lines. Deselect the checkbox to set the instruction parameter display to a single line and compress the program display vertically.
  - [Display Write Parameters in Bold Font] Select the checkbox to allow an emphasized display for the parameter used as the write parameter.
  - [Display Data Change Identification] Select the checkbox to use colors to identify parameters that have changed due to the execution of the instruction.
  - [Display Escape Sequence] Select the checkbox to display escape sequence to character string parameters enclosed in "".
- C Select the checkbox to display details of application instructions.
- D Select the display format.
  - [Decimal] Select this to display the current value of devices in decimal notation.
  - [Hexadecimal] Select this to display the current value of devices in hexadecimal notation.
  - [Character String] Select this to display the current value of devices as character strings.
  - [Floating Point] Select this to display the current value of devices in floating point notation.

- E Specify the index display.  
[Real Indexed Addr./Indirect Register] Select the checkbox to display index modified or indirect specified address. Deselect the checkbox to display the value stored in the address.  
[Set Fixed Index] Opens the Set Fixed Index dialog box.

## Note

For details on the fixed index settings, see Section J2.3.7, "Fixed Index Modification Monitor Display."

- F Closes the Display Mode Collective Setting dialog box and reflects the current display settings to the program monitor.
- G Closes the Display Mode Collective Setting dialog box without changing the display settings.
- H Reflects the current display settings to the program monitor without closing the Display Mode Collective Setting dialog box.
- I Reflects the current display settings to all opened program monitor screens (including screens for monitoring during online editing) and ladder program edit screens without closing the Display Mode Collective Setting dialog box.
- J Settings for the display instruction range.
- [IL-ILC Instruction Range] Select the checkbox to display the IL-ILC instruction range.
- [SUB-RET Instruction Range] Select the checkbox to display the SUB-RET instruction range.
- [INTP-IRET Instruction Range] Select the checkbox to display the INTP-IRET instruction range.
- [FOR-NEXT Instruction Range] Select the checkbox to display the FOR-NEXT instruction range.
- [SCRIPT Instruction Range] Select the checkbox to display the range of ladder programs that are converted from a script.

The procedure for setting multiple display modes is given below.

## ◆ Procedure ◆

(1) Select [View]–[Specify Display Mode]–**[Display Mode Collective Setting]** from the menu bar.

⇒ The Display Mode Collective Setting dialog box is displayed.

(2) Select the checkbox for the information to be displayed.

(3) Click the [OK], [Apply], or [Apply to All Screens] button.

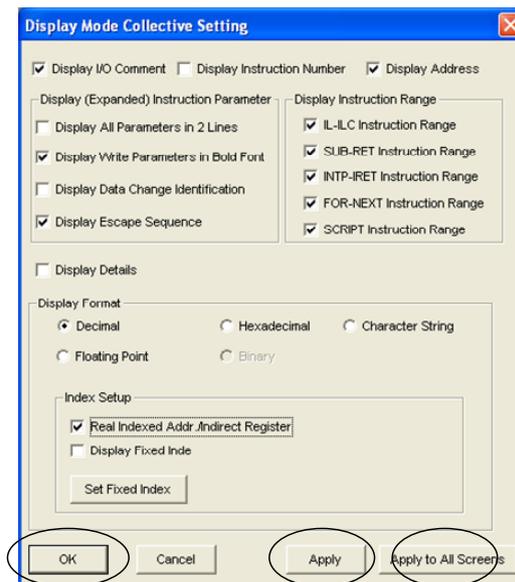
⇒ The ladder window display is changed.

## Note

Clicking the [OK] button closes the Display Mode Collective Setting dialog box and changes the ladder window display.

Clicking the [Apply] button changes the program monitor without closing the Display Mode Collective Setting dialog box.

Clicking [Apply to All Screens] button updates all opened program monitor screens (including screens for monitoring during online editing) and ladder program edit screens without closing the Display Mode Collective Setting dialog box.



Steps (2) and (3)

J0203\_19.VSD

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## J2.4 Finding in Program Monitor

You can search for devices/comments and instructions from a Block Monitor window.

### Note

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- In online monitoring, you can search the block or macro you are currently monitoring, but not all blocks in the CPU. To search all blocks, upload the program and then use project search. To avoid overwriting files on the computer, upload the files to a different project file name before performing searches.
- You can use structure names or structure member names, but not parameters that are allowed only within macros as search keys in online project search. In particular, structure pointer (Q) or structure pointer (Q) member names cannot be used as search keys.

---

### J2.4.1 Finding Devices/Comments and Instructions

You can search a block displayed in the Block Monitor window for devices/comments and instructions. The procedure is the same as that used to perform a search when editing a ladder program.

### Note

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For details on how to find devices/instructions and instructions, see Chapter E4, "Find and Replace" (Offline).

---

### Note

---

In the Program Monitor, it is assumed that all addresses allocated to tag names are confirmed allocations. Therefore, when searching for a tag name, it also searches for the address allocated to the tag name. Likewise, when searching for an address, it also searches for the tag name assigned to the address. For example, if "SW1=X00301" is defined in the tag name definitions, then searching for SW1 and searching for X00301 produce the same result.

---

## J2.4.2 Jump Function

You can use the jump function when a block is displayed in the Block Monitor window. The procedure is the same as that used to perform jumps when editing a ladder program.

### Note

For details on the jump function, see Section E4.1.6, "Jumps" (Offline).

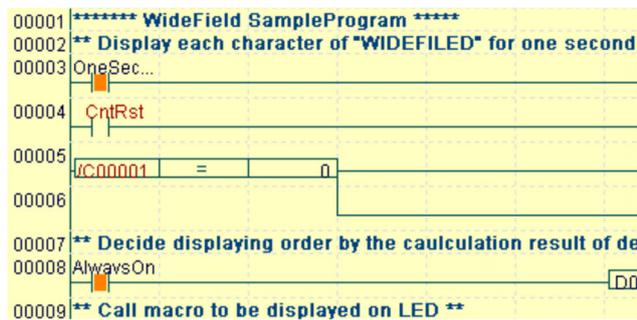
## J2.4.3 Jump to Tag Name Definition

The Jump to Tag Name Definition function displays defined tag name definitions for the device where the cursor is placed in the program monitor screen.

The relevant procedure is given below.

### ◆ Procedure ◆

(1) Move the cursor to the device position to which to jump.



Step (1)

J0204\_01.VSD

(2) Select [Find]-[Jump to Tag Name Definition].

⇒ The tag name definition monitor screen opens, and the positions of defined tag names are displayed.

The screenshot shows a window titled 'Block Tag Name Definition:BLK\_MAIN Usage: 1%(1/5120)'. It contains a table with the following data:

|    | Tag Name | Address | Data                     | Format | I/O Comment (32 char) |
|----|----------|---------|--------------------------|--------|-----------------------|
| 1  | CntRst   | /I00001 | <input type="checkbox"/> | Relay  | Count Reset           |
| 2  |          |         |                          |        |                       |
| 3  |          |         |                          |        |                       |
| 4  |          |         |                          |        |                       |
| 5  |          |         |                          |        |                       |
| 6  |          |         |                          |        |                       |
| 7  |          |         |                          |        |                       |
| 8  |          |         |                          |        |                       |
| 9  |          |         |                          |        |                       |
| 10 |          |         |                          |        |                       |
| 11 |          |         |                          |        |                       |
| 12 |          |         |                          |        |                       |
| 13 |          |         |                          |        |                       |
| 14 |          |         |                          |        |                       |
| 15 |          |         |                          |        |                       |
| 16 |          |         |                          |        |                       |
| 17 |          |         |                          |        |                       |

Step(2)

J0204\_02.VSD

### Note

If the target device has no defined tag name definitions, only the tag name definition monitor screen opens.

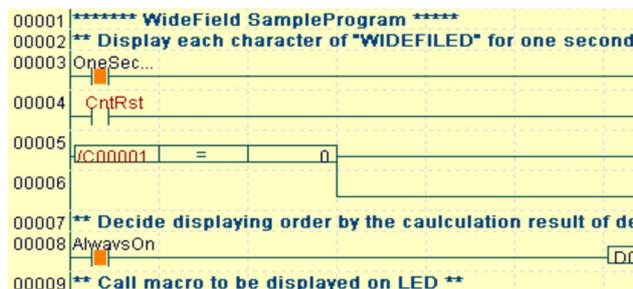
## J2.4.4 Jump to Device Monitor

The Jump to Device Monitor function displays applicable positions in the device monitor screen for the device where the cursor is placed in the program monitor screen.

The relevant procedure is given below.

### ◆ Procedure ◆

- (1) Move the cursor to the device position to which to jump.



Step (1)

J0204\_03.VSD

- (2) Select [Find]-[Jump to Device Monitor].

⇒ The device monitor screen opens, and the positions of applicable addresses are displayed.

| Address | Word Data                | Long Word Data |
|---------|--------------------------|----------------|
| #00001  | <input type="checkbox"/> | 0              |
| #00002  | <input type="checkbox"/> | 0              |
| #00003  | <input type="checkbox"/> | 0              |
| #00004  | <input type="checkbox"/> | 0              |
| #00005  | <input type="checkbox"/> | 0              |
| #00006  | <input type="checkbox"/> | 0              |
| #00007  | <input type="checkbox"/> | 0              |
| #00008  | <input type="checkbox"/> | 0              |
| #00009  | <input type="checkbox"/> | 0              |
| #00010  | <input type="checkbox"/> | 0              |
| #00011  | <input type="checkbox"/> | 0              |
| #00012  | <input type="checkbox"/> | 0              |
| #00013  | <input type="checkbox"/> | 0              |
| #00014  | <input type="checkbox"/> | 0              |
| #00015  | <input type="checkbox"/> | 0              |
| #00016  | <input type="checkbox"/> | 0              |

Step (2)

J0204\_04.VSD

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## J2.4.5 Obsolete Device List

You can display device usage status for a block displayed in a Block Monitor window. The procedure is the same as that used to display device usage status when editing a ladder program.

### Note

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You can also use the device list function to display device usage status.

---

### Note

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For details on how to display device usage status, see Section E4.1.9, "Obsolete Device List" (Offline).

For details on how to display device list, see Chapter E5, "Device List" (Offline).

---

## J2.4.6 Finding a Circuit Comment-out

You can search for the block positions where circuit comment-out is used when a block is displayed in the Block Monitor window. The procedure is the same as that used to perform search operations when editing a ladder program.

### Note

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For details on how to find circuit comment-out, see Section E4.1.10, "Find Circuit Comment-out" (Offline).

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## J2.5 Suspending and Resuming Program Monitor

This section describes how to suspend and resume the Program Monitor. When the Program Monitor is suspended, statuses of devices are no longer updated in the Block Monitor window.

### J2.5.1 Suspending a Program Monitor

To suspend the Program Monitor, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that a Block Monitor window is open.
  - (2) Select [View]–[Suspend Monitoring] from the menu bar.
- ⇒ The Program Monitor is suspended.

### J2.5.2 Resuming a Program Monitor

To resume the Program Monitor, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that the Block Monitor window is open.
  - (2) Select [View]–[Resume Monitoring] from the menu bar.
- ⇒ The Program Monitor resumes operation.

#### Note

---

Suspension of monitoring applies to all Block Monitor windows and device monitor windows.

---

## J2.6 Balloon Monitor

This section describes the monitoring function using balloons.

The balloon monitor function monitors the device values described in balloon comments. The function enables the values of devices located far away from each other in the program to be displayed in the balloon monitor.

To use the balloon monitor, describe the special format for the monitor in a balloon comment.

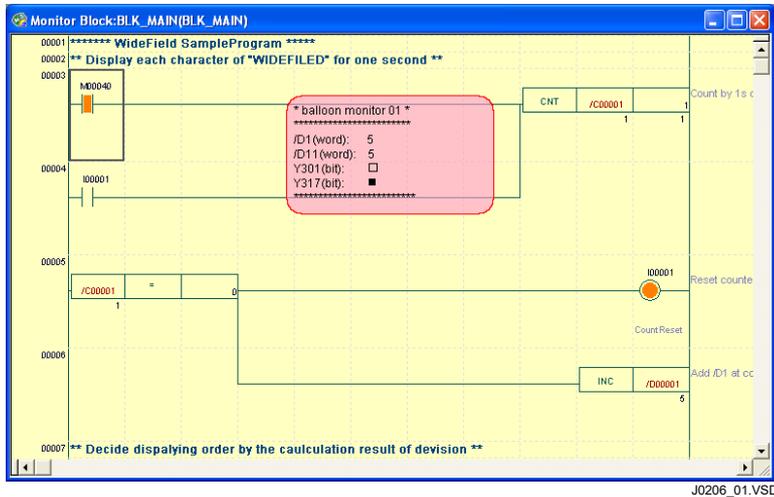


Figure J2.14 Example of Balloon Monitor Operation

### Note

Modifications of and operations on balloon comments/monitor in the program monitor are saved in online balloon comment/monitor. They are not reflected to balloon comment/monitor of an offline project.

### Note

For basic operations of creating, editing, showing/hiding balloons to be used for balloon monitor, use the same procedure as that used for balloon comments.

### Note

- For details on balloon comment operations, see Section E1.2.40, "Creating and Deleting Balloon Comments" (Offline).
- For details on online balloon comments, offline balloon comments, and how to store balloon comments in the CPU module, see Section H9.3, "Online Operation of Balloon Comments".

## J2.6.1 Fundamentals of Balloon Monitor

This subsection describes the format used for the balloon monitor.

### ■ Format

The format of the balloon monitor is as shown below.

[Data type:Device specification]

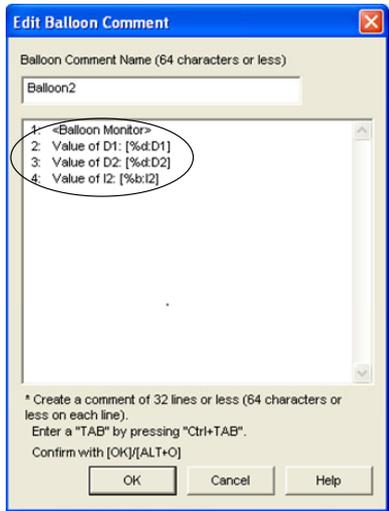


Figure J2.15 Example of Creating Balloon Monitor

### Note

- The monitor part of [Data type:Device specification] is not displayed in the program edit screen during offline but displayed during program monitoring.
- The balloon monitor display is updated even during online editing.

### ● Data Type

The data types available for the balloon monitor are as shown in the table below.

Table J2.2 Data Types

| Data Type | Description                       | Remarks  |
|-----------|-----------------------------------|--|
| %d        | Decimal word                      |  |
| %ld       | Decimal long word                 |  |
| %dd       | Decimal double long word          |  |
| %h        | Hexadecimal word                  | Example of monitor display: \$0000   |
| %lh       | Hexadecimal long word             | Example of monitor display: \$00000000   |
| %dh       | Hexadecimal double long word      | Example of monitor display: \$00000000000000   |
| %s        | Character string word             | Example of monitor display: "AB"   |
| %ls       | Character string long word        | Example of monitor display: "ABCD"   |
| %ds       | Character string double long word | Example of monitor display: "ABCDEFGH"   |
| %b        | Bit                               | Example of monitor display:<br>Rising edge: ■<br>Falling edge: □<br>Valid only if the relay device is specified. |
| %f        | Floating point                    | Example of monitor display: %0.000000E+000   |
| %df       | Double precision floating point   | Example of monitor display:<br>%0.0000000000000000E+0000   |

**Note**

Data types "%dd, %dh, %ds, %df" cannot be specified for a relay device.

● **Device Specification**

To specify a device, enter the device type followed by the address.

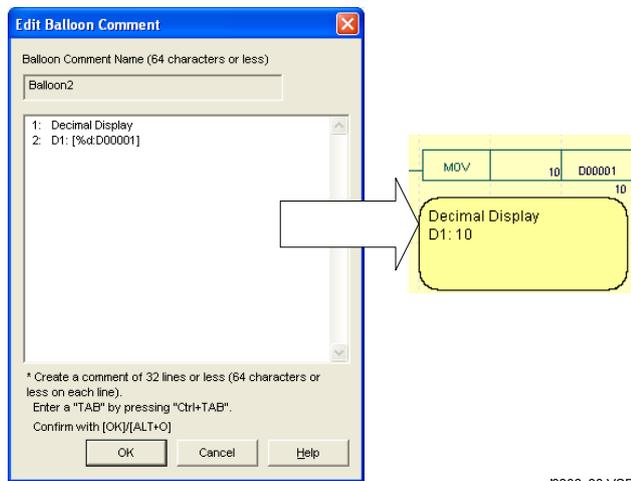
The device type is identical to the CPU device representation.

Local device specification "/" can also be described.

Unnecessary "0" can be omitted from description; for instance, you can enter "D1".

The following shows description examples:

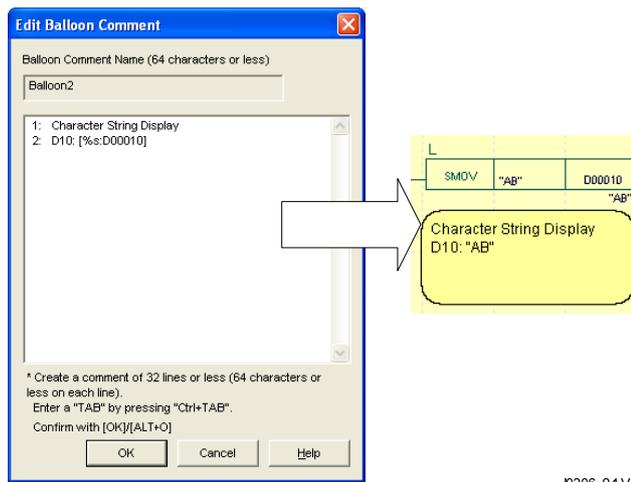
- To specify decimal word data



J0206\_03.VSD

**Figure J2.16 Balloon Monitor for Decimal Word Data**

- To specify character string word data



J0206\_04.VSD

**Figure J2.17 Balloon Monitor for Character String Word Data**

- To specify bit data

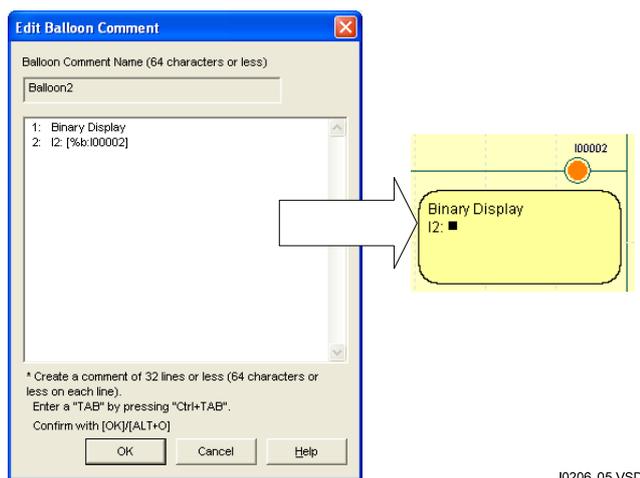


Figure J2.18 Balloon Monitor for Bit Data

## J2.6.2 Restrictions on Balloon Monitor

The restrictions on balloon monitor are as follows:

### ● Display of balloon

- Even in the case of inconsistency between the project opened offline and the project stored in the CPU, the balloon monitor/comment are displayed if the balloon is properly displayed in a valid display position with the same block name.
- Balloons in invalid position are not displayed on the program monitor screen but displayed only on the Balloon Comment List window.
- Balloons in hidden circuits are not displayed.

### ● Online edit

- The results of online edit of balloon comment/monitor are reflected to the CPU. However, if you finish online editing of circuits (ladder instructions and scripts) without making any modification of them, balloon comment/monitor data is not stored in the CPU.

### Note

- For details on online edit, see Chapter K2, "Online Edit."
- For details on how to store balloon comments to the CPU module, see Chapter H9, "Storing Comments and Tag Name Definitions."

## J2.7 Copying Images of Circuits

You can copy images of circuits in a block monitor window.

Similar to making an image copy in ladder program edit window, you can also make an image copy in a monitor window.

Besides circuits, you can also copy images of other monitored data in a monitor window so long as the window does not scroll while you are selecting the range to be copied.

---

## J2.8 Copying Device Data

You can copy device data on the Block/Macro Monitor window and paste it to another window.

Copied device data can be pasted to the following window or dialog box:

- Tag Name Definition edit screen
- Registered Device Monitor window
- Sampling Trace Setup dialog box
- Other windows of application supporting device data

### ■ Copying Device Data

To copy device data on the Block/Macro Monitor window, select a range and select [Edit]-[Copy] from the menu bar. Then, activate the window where the data is to be pasted and select [Edit]-[Paste] from the menu bar.

### ■ Dragging Device Data

To drag device data on the Block/Macro Monitor window, select a range and move the mouse pointer onto the window where the data is to be pasted while holding down the [Alt] key. When the mouse pointer is released on the destination window, the device data is pasted.

#### **Note**

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Dragging data does not cut a device on the program monitor screen.

---

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Blank Page

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## J3. Device Monitor

The Device Monitor displays windows for different device types as "xxxx Monitor" windows, where xxxx indicates a device type you have specified. Using the Device Monitor, you can check the ON/OFF status of relays, the current values of data, and the current and preset values of timers (T) and counters (C).

You can also use debugging functions in the Device Monitor. The debugging functions available include:

- Force set or reset a relay
- Change the data of a register or relay on a word, long-word, bit data, or double long-word basis.
- Change the current value of a timer (T) or counter (C).
- Change the preset value of a timer (T) or counter (C).

### Note

---

For details on debugging functions, see Chapter K1, "Using the Debugging Functions."

---

### Note

---

The following modules do not support the advanced function module register monitor.

- High Speed Counter Modules (F3XP01-0H and F3XP02-0H)
-

● **Function Limitations for Each CPU Type**

**Table J3.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A         |          |

**Note**

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

**Note**

For details on limitations for each CPU type, refer to the user's manual for each type.

---

## J3.1 Device Monitor Windows

Device Monitor windows can be classified into five types: relay monitor, register monitor, timer monitor, counter monitor, and advanced function module register monitor.

Details of each device monitor type are as follows:

### Relay Monitor

- Internal Relay Monitor
- Shared Relay Monitor
- Extended Shared Relay Monitor
- Link Relay Monitor
- Special Relay Monitor
- Local Internal Relay Monitor
- Macro Relay Monitor

### Register Monitor

- Data Register Monitor
- File Register Monitor
- Cache Register Monitor
- Shared Register Monitor
- Extended Shared Register Monitor
- Link Register Monitor
- Special Register Monitor
- Index Register Monitor
- Local Data Register Monitor
- Local File Register Monitor
- Local Cache Register Monitor
- Macro Register Monitor
- Macro Index Register Monitor

### Timer Monitor

- Timer Monitor
- Local Timer Monitor

### Counter Monitor

- Counter Monitor
- Local Counter Monitor

### Advanced Function Module Register Monitor

- I/O Relay Monitor
- I/O Register Monitor

### Note

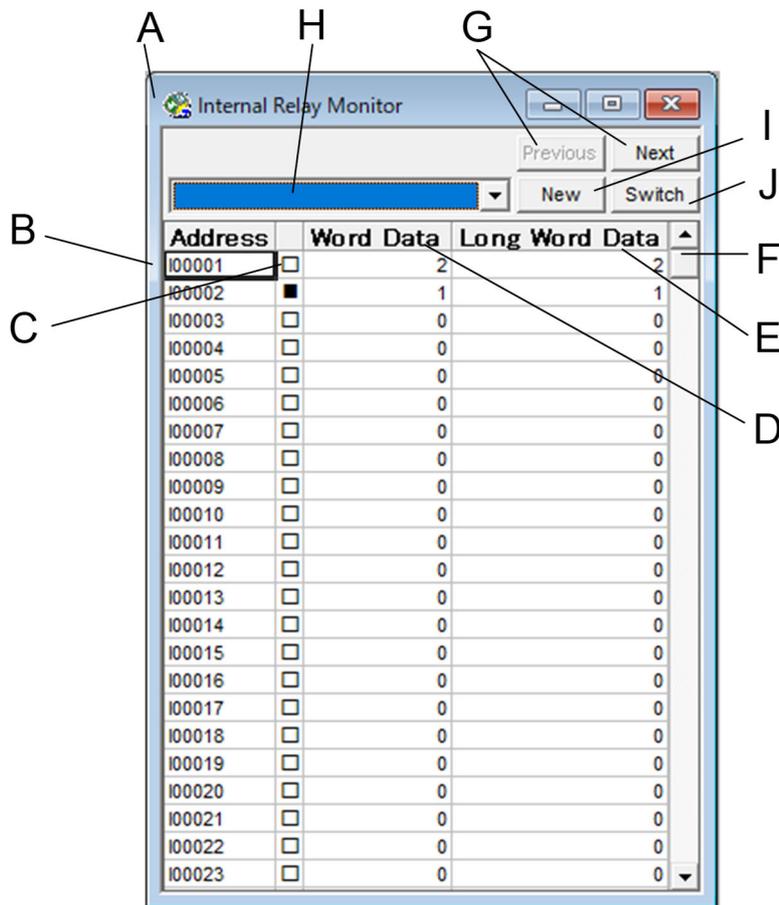
---

For details on the Advanced Function Module Monitor window, see Section J3.6, "Advanced Function Module Monitor".

---

### J3.1.1 Relay Monitor Window

The following figure shows the layout of a Relay Monitor window.



J0301\_01.VSD

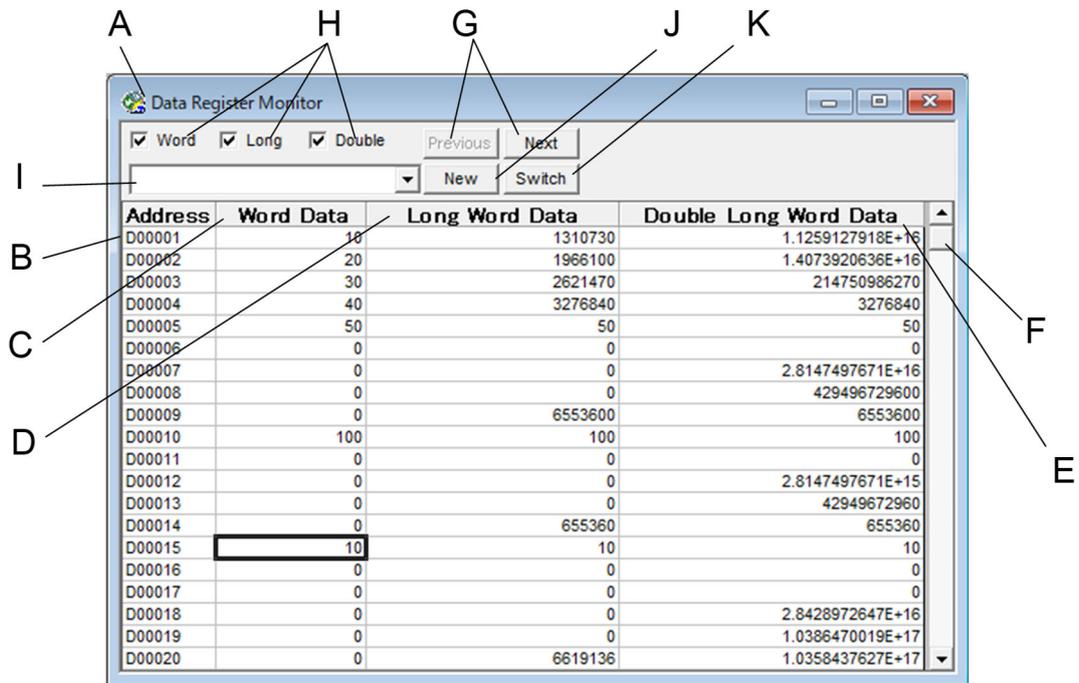
**Figure J3.1 Relay Monitor Window**

- A Monitor title  
Displays the window name in the form "<device type> + Monitor."
- B Device address  
Displays the addresses of devices to be monitored, sorted in ascending order.
- C ON/OFF display  
Displays the ON/OFF status of a relay (■: ON, □: OFF).  
If a relay is forced set or reset, its ON/OFF status is displayed with a different background color.
- D Word data display  
Displays 16-bit data, starting from a device.
- E Long word data display  
Displays 32-bit data, starting from a device.
- F Scroll bar  
Moves the device display vertically. You can scroll through a maximum of 256 data items.
- G [Previous] and [Next] buttons  
If there are more than 256 data items, these buttons allow you to display the previous or next set of 256 data items respectively.

- H Drop-down list for changing the device monitor  
Displays the list of devices used by the program. When you select a device and click the [New] or [Switch] button, the window for the device monitor is switched.
- I [New] button  
Opens a new window that displays the device monitor of the device selected from the drop-down list.
- J [Switch] button  
Displays the device monitor of the device selected from the drop-down list in the existing device monitor window.

## J3.1.2 Register Monitor Window

The following figure shows the layout of a Register Monitor window.



J0301\_02.VSD

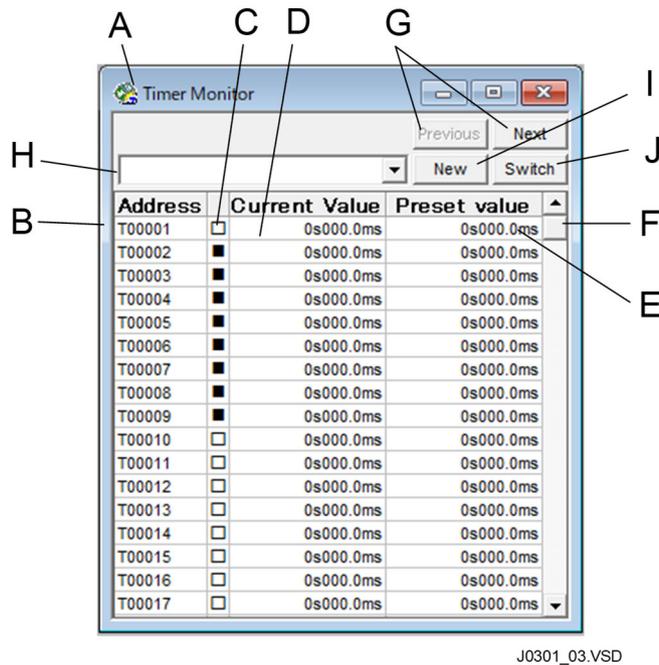
Figure J3.2 Register Monitor Window

- A Monitor title  
Displays the window name in the format "<device type> + Monitor."
- B Device address  
Displays the addresses of devices to be monitored, sorted in ascending order.
- C Word data display  
Displays the current value of a device.
- D Long word data display  
Displays two words of data, starting from a device.
- E Double long word data display  
Displays four words of data, starting from a device.
- F Scroll bar  
Moves device display vertically. You can scroll through a maximum of 256 data items.
- G [Previous] and [Next] buttons  
If there are more than 256 data items, these buttons allow you to display the previous and next set of 256 data items respectively.
- H Data display unit selection  
Select the data display unit among word, long word and double long word. Multiple selection is available.
- I Drop-down list for changing the device monitor  
Displays the list of devices used by the program. When you select a device and click the [New] or [Switch] button, the window for the device monitor is switched.
- J [New] button  
Opens a new window that displays the device monitor of the device selected from the drop-down list.

- K [Switch] button  
Displays the device monitor of the device selected from the drop-down list in the existing device monitor window.

### J3.1.3 Timer Monitor Window

The following figure shows the layout of a Timer Monitor window.



J0301\_03.VSD

**Figure J3.3** Timer Monitor Window

- A Monitor title  
Displays the window name in the format "<device type> + Monitor."
- B Device address  
Displays the addresses of devices to be monitored, sorted in ascending order.
- C ON/OFF display  
Displays the ON/OFF status of a time-up relay (■: ON, □: OFF).
- D Current value display  
Displays the current value of a timer (T).
- E Preset value display  
Displays the preset value of a timer (T).
- F Scroll bar  
Moves device display vertically. You can scroll through a maximum of 256 data items.
- G [Previous] and [Next] buttons  
If there are more than 256 data items, these buttons allow you to display the previous and next set of 256 data items respectively.
- H Drop-down list for changing the device monitor  
Displays the list of devices used by the program. When you select a device and click the [New] or [Switch] button, the window for the device monitor is switched.
- I [New] button  
Opens a new window that displays the device monitor of the device selected from the drop-down list.
- J [Switch] button  
Displays the device monitor of the device selected from the drop-down list in the existing device monitor window.

---

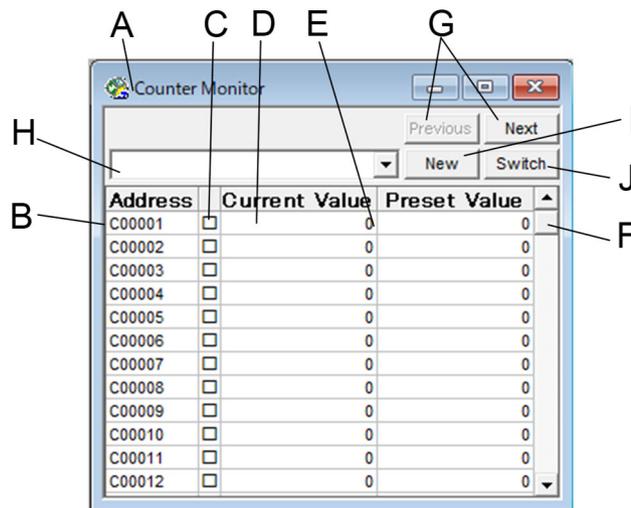
**Note**

Timers are normally displayed with count-down current values. To display count-up values, select [Count-up] on the Circuit Display/Input tab of the Set up Environment dialog box. Changing the preset value of a timer in count-up display mode also changes the display of its current value by the difference between the new and old preset values.

---

### J3.1.4 Counter Monitor Window

The following figure shows the layout of a Counter Monitor window.



J0301\_04.VSD

**Figure J3.4 Counter Monitor Window**

- A Monitor title  
Displays the window name in the format "<device type> + Monitor."
- B Device address  
Displays the addresses of devices to be monitored, sorted in ascending order.
- C ON/OFF display  
Displays the ON/OFF status of a count-up relay (■: ON, □: OFF).
- D Current value display  
Displays the current value of a counter (C).
- E Preset value display  
Displays the preset value of a counter (C).
- F Scroll bar  
Moves device display vertically. You can scroll through a maximum of 256 data items.
- G [Previous] and [Next] buttons  
If there are more than 256 data items, these buttons allow you to display the previous and next set of 256 data items respectively.
- H Drop-down list for changing the device monitor  
Displays the list of devices used by the program. When you select a device and click the [New] or [Switch] button, the window for the device monitor is switched.
- I [New] button  
Opens a new window that displays the device monitor of the device selected from the drop-down list.
- J [Switch] button  
Displays the device monitor of the device selected from the drop-down list in the existing device monitor window.

**Note**

Counters are normally displayed with count-down current values. To display count-up values, select [Count-up] on the Circuit Display/Input tab of the Set up Environment dialog box. Changing the preset value of a counter in count-up display mode also changes the display of its current value by the difference between the new and old preset values.

---

## J3.2 Starting and Terminating a Device Monitor

This section describes how to start and end the Device Monitor.

### Note

For details on how to start and terminate advanced function module monitors, see Section J3.6.3, "Starting and Terminating an Advanced Function Module Monitor."

### J3.2.1 Starting a Device Monitor

#### ■ When Monitoring I/O Relays

To monitor I/O relays, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that WideField3 is online, and select [Online]–[Device Monitor]–[Input/Output Relay] from the menu bar.

### Note

For details on online connection procedure, see Section H1.1, "Connecting and Disconnecting."

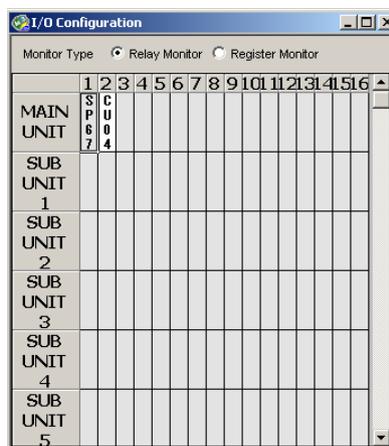
⇒ The I/O Configuration window will be displayed.

### Note

A module name displayed in orange indicates that the module is currently being used by the program.

- (2) Turn on the [Relay Monitor] or the [Register Monitor] option button to select the desired monitor type. Next, double-click the slot to be monitored or move the cursor to the desired slot and press the [Enter] key.

⇒ The selected slot is displayed in the Input/Output Relay Monitor window.



Step (2)

J0302\_01.VSD

### Note

If the Input/Output Relay Monitor is opened for a slot that is not available, you can perform monitoring by appropriately selecting one of the 64 input/output devices.

## ■ When Monitoring Local Devices

To monitor local devices, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

Select

[Online]–[Device Monitor] from the menu bar, and then select the local device type to be monitored: [Local Internal Relay], [Local Cache Register], [Local Data Register], [Local File Register], [Local Timer], or [Local Counter].

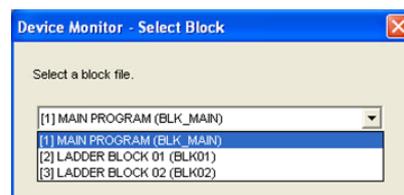
#### Note

For details on the online connection procedure, see Section H1.1, "Connecting and Disconnecting."

⇒ The "Device Monitor - Select Block" dialog box opens.

(2) From the drop-down list box, select a block or macro for the local device to be displayed and click [OK].

⇒ The selected block or macro is displayed in a window entitled "Local xxx Monitor", where xxx is the selected device type.



Step (2)

J0302\_02.VSD

---

## ■ When Monitoring Other Devices

To monitor devices other than I/O relays and local devices, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

Next, select [Online]–[Device Monitor] from the menu bar, and select a device type other than I/O relay and local device.

#### **Note**

---

For online connection procedure, see Section H1.1, "Connecting and Disconnecting."

---

⇒ The selected device is displayed in a window entitled "xxxx Monitor", where xxxx is the selected device type.

## J3.2.2 Terminating a Device Monitor

To terminate the Device Monitor, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that a "xxxx Monitor window" (xxxx is device type) is active.

(2) Click [Close] on the "xxxx Monitor window" (xxxx is device type), or select [File]–[Close] from the menu bar.

⇒ The xxxx Monitor window (xxxx is device type) closes.

#### **Note**

---

Even if the Device Monitor for I/O relays is closed, the [I/O Configuration] window remains open. To close the [I/O Configuration] window, click [Close] in the window, or select [File]–[Close] from the menu bar.

---

## J3.3 Changing Display Format

Word, long-word or double-long-word data in a "xxxx Monitor window" (where xxxx is device type) can be displayed either in decimal, hexadecimal, character string, floating point, or binary notation (decimal display is the default). Binary display, however, is available only in the Register Monitor.

### Note

Binary display is not available in Timer Monitor, Counter Monitor, or Relay Monitor windows.

### ■ Hexadecimal Display

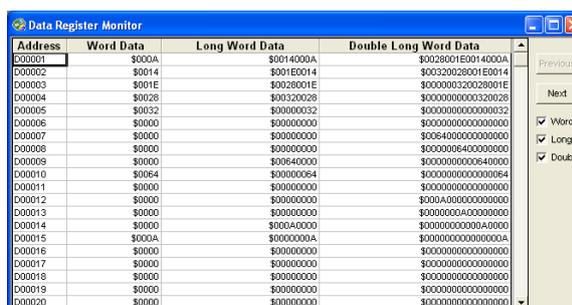
To display data in a device monitor in hexadecimal notation, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that the xxxx Monitor window (where xxxx is device type) is open.

(2) Select [View]–[Specify Display Mode]–[Display Format]–[Hexadecimal] from the menu bar.

⇒ Data is displayed in hexadecimal notation. In hexadecimal display mode, the [Hexadecimal] menu item is displayed with a checkmark.



Step (2)

J0303\_01.VSD

## ■ Character String Display

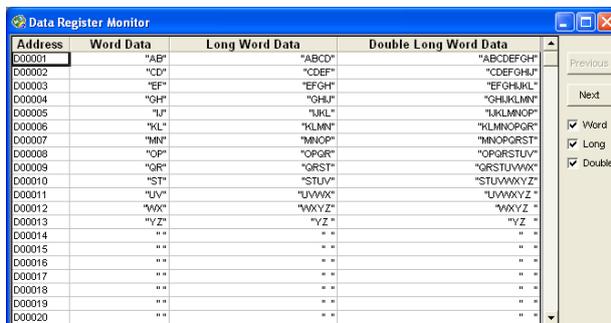
To display data in a device monitor as character strings, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the xxxx Monitor window (xxxx is device type) is open.

(2) Select [View]–[Specify Display Mode]–[Display Format]–[Character String] from the menu bar.

⇒ Data is displayed in character string notation. In character string display mode, the [Character String] menu item is displayed with a checkmark.



Step (2)

J0303\_02.VSD

## ■ Floating Point Display (for long-word data only)

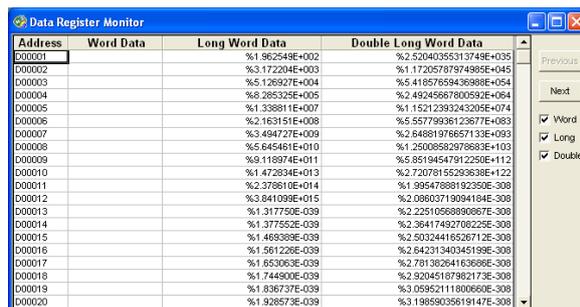
To display data in floating point notation in a device monitor, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the xxxx Monitor window (xxxx is device type) is open.

(2) Select [View]–[Specify Display Mode]–[Display Format]–[Floating Point] from the menu bar.

⇒ Data is displayed in floating point notation. In floating point display mode, the [Floating Point] menu item is displayed with a checkmark.



Step (2)

J0303\_03.VSD

## ■ Binary Display (for word data only)

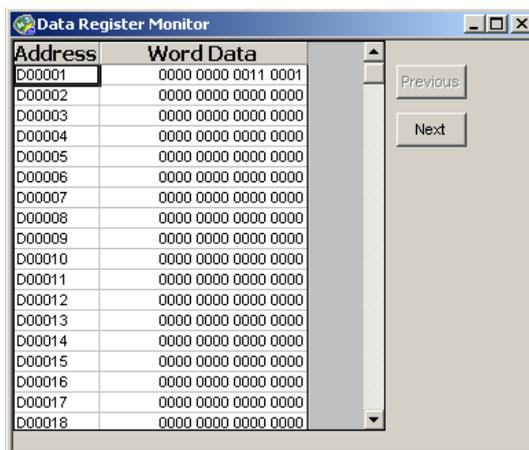
To display data in binary notation in a device monitor, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the xxxx Register Monitor window (xxxx is register device type) is open.

(2) Select [View]–[Specify Display Mode]–[Display Format]–[Binary] from the menu bar.

⇒ Data is displayed in binary notation. In binary display mode, the [Binary] menu item is displayed with a checkmark.



Step (2)

J0303\_04.VSD

## ■ Decimal Display

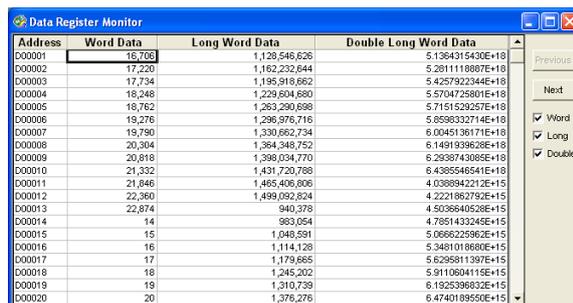
To display data in decimal notation in a device monitor, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the xxxx Monitor window (xxxx is device type) is open.

(2) Select [View]–[Specify Display Mode]–[Display Format]–[Decimal] from the menu bar.

⇒ Data is displayed in decimal notation. In decimal display mode, the [Decimal] menu item is displayed with a checkmark.



Step (2)

J0303\_05.VSD

## J3.4 Finding in Device Monitor

You can search for a device by address from a xxxx Monitor window (xxxx is device type). Only devices whose type is currently selected can be searched for.

### J3.4.1 Finding from the Keyboard

To open the Find dialog box from the keyboard, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that the xxxx Monitor window (xxxx is device type) is open.
- (2) Enter from the keyboard the address of a device you want to find.
  - ⇒ When you type the first character of an address, the Find dialog box opens.
- (3) After entering the address, press the [Enter] key, or click [OK] in the Find dialog box.

#### Note

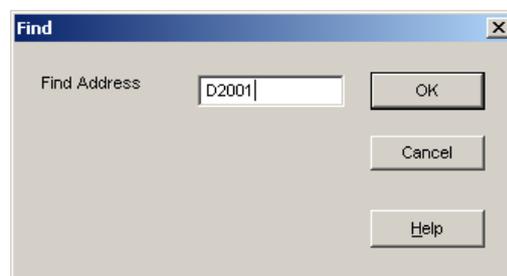
When entering an address, you can omit the device type character. For example, entering "1001" in place of "D1001" is allowed.

If you enter the address of a device type that is not displayed, the window is changed to the one for the device you entered. (If you enter "T1" in the Data Register window, the window is changed to the Timer Monitor window T00001.)

- ⇒ The cursor moves to the specified address.

#### Note

If you enter an invalid search address, a confirmation dialog box is displayed. Click [OK] and re-enter a valid address.



Step (3)

J0304\_01.VSD



Step (3)

J0304\_02.VSD

## J3.4.2 Finding from the Menu Bar

To open the Find dialog box from the menu bar, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the [xxxx Monitor] window (xxxx is device type) is open.
  - (2) Select [Find]–[Find] from the menu bar.
- ⇒ The Find dialog box opens.
- (3) Enter an address. Next, press the [Enter] key, or click [OK] in the Find dialog box.

### Note

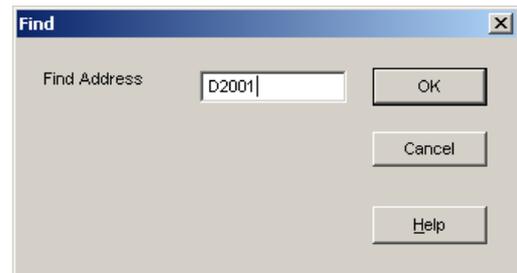
When entering an address, you can omit the device type character. For example, entering "1001" in place of "D1001" is allowed.

If you enter the address of a device type that is not displayed, the window is changed to the one for the device you entered. (If you enter "T1" in the Data Register window, the window is changed to the Timer Monitor window T00001.)

⇒ The cursor moves to the specified address.

### Note

If you enter an invalid search address, a confirmation dialog box is displayed. Click [OK] and re-enter a valid address.



Step (3)

J0304\_03.VSD



Step (3)

J0304\_04.VSD

---

## J3.5 Suspending and Resuming the Device Monitor

This section describes how to suspend and resume the Device Monitor. When the Device Monitor is suspended, statuses of devices are no longer updated to the xxxx Monitor window (xxxx is device type).

### J3.5.1 Suspending a Device Monitor

To suspend the Device Monitor, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that the xxxx Monitor window (xxxx is device type) is open.

(2) Select [View]–[Suspend Monitoring] from the menu bar.

⇒ The Device Monitor is suspended.

### J3.5.2 Resuming a Device Monitor

To resume the Device Monitor, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that the xxxx Monitor window (xxxx is device type) is open.

(2) Select [View]–[Resume Monitoring] from the menu bar.

⇒ The Device Monitor resumes operation.

#### Note

---

Suspension of monitoring applies to all Block Monitor and Device Monitor windows.

---

## J3.6 Advanced Function Module Monitor

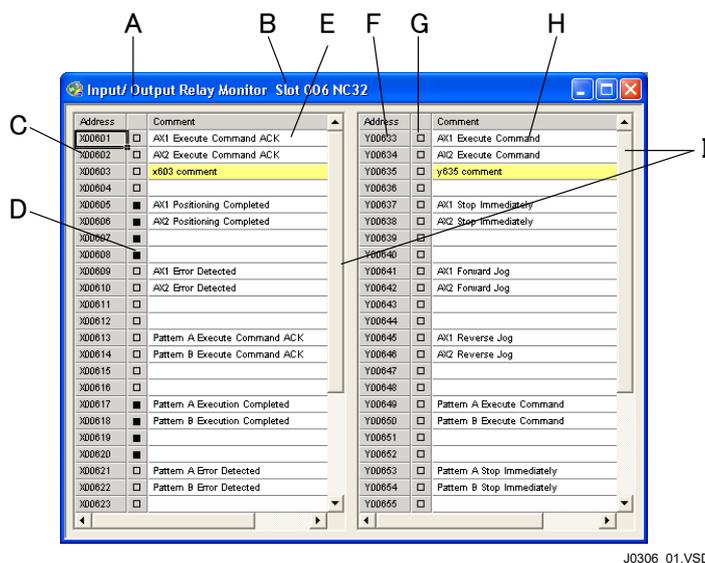
This section describes the advanced function module monitors.

There are two types of advanced function module monitors as follows:

- Advanced Function Module Relay Monitor
- Advanced Function Module Register Monitor

### J3.6.1 Advanced Function Module Relay Monitor Window

The following figure shows the layout of an Advanced Function Module Relay Monitor window.



J0306\_01.VSD

**Figure J3.5 Advanced Function Module Relay Monitor Window**

- **A Monitor title**  
Displays the string "I/O Relay Monitor."
- **B Additional Information**  
The module slot number and module type are displayed after the monitor title.
- **C Address of input device**  
Displays the addresses of input devices of the advanced function module to be monitored.
- **D ON/OFF display**  
Displays the ON/OFF status of a relay. (■: ON, □: OFF)
- **E Comment**  
Displays a comment for the address. Comments which reference to the tag name definition of the project, not the advanced function module system file, are displayed on a yellow background.
- **F Address of output device**  
Displays the addresses of output devices of the advanced function module to be monitored.
- **G ON/OFF display**  
Displays the ON/OFF status of a relay. (■: ON, □: OFF)
- **H Comment**  
Displays a comment for the address. Comments which reference to the tag name definition of the project, not the advanced function module system file, are displayed on a yellow background.
- **I Scroll bar**  
Moves the address display vertically.

## J3.6.2 Advanced Function Module Register Monitor Window

The following figure shows the layout of an Advanced Function Module Register Monitor window.

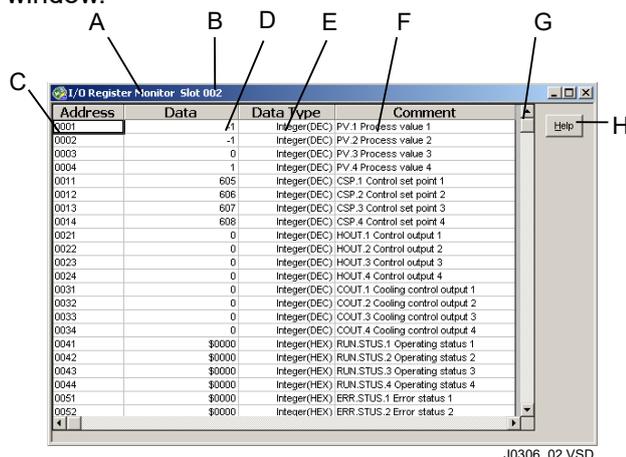


Figure J3.6 Advanced Function Module Register Monitor Window

- A Monitor title  
Displays the string "I/O Register Monitor."
- B Additional Information  
The module slot number and module type are displayed after the monitor title.
- C Address  
Displays the addresses of monitored data of an advanced function module, sorted in ascending order.
- D Data  
Displays the current value of a data address.  
Data is shown in decimal, hexadecimal (prefixed by the "\$" symbol), floating point, character string or binary notation as specified in the Data Type column. Data is displayed as word or long word data with corresponding number of digits.  
The data display format cannot be changed.
- E Data type  
Displays the data type of an address. Six data types are available as shown in the table below.

Table J3.2 Data Types of Addresses

| Data Type           | Description                     |
|---------------------|---------------------------------|
| Integer (DEC)       | Single word in decimal          |
| Integer (HEX)       | Single word in hexadecimal      |
| Long Integer (DEC)  | Long word in decimal            |
| Long Integer (HEX)  | Long word in hexadecimal        |
| D-Long Integer(DEC) | Double long word in decimal     |
| D-Long Integer(HEX) | Double long word in hexadecimal |
| Float               | Single precision floating point |
| Double              | Double precision floating point |
| Char                | Character string                |
| BIN                 | Binary number                   |

- F Comment  
Displays a comment for a data address.
- G Scroll bar  
Moves displayed data vertically.
- H [Help] button  
Provides information on the displayed advanced function module.  
Explains the meaning of the data of each address and how to use the module.

### J3.6.3 Starting and Terminating an Advanced Function Module Monitor

This section describes how to start and end the Advanced Function Module Monitor.

#### ■ Starting an Advanced Function Module I/O Relay Monitor

To monitor advanced function module I/O relays, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that WideField3 is online, and select [Online]–[Device Monitor]–[Input/Output Relay] from the menu bar.

#### Note

For details on online connection procedure, see Section H1.1, "Connecting and Disconnecting."

⇒ The I/O Configuration window will be displayed.

#### Note

A module name displayed in orange indicates that the module is currently being used by the program.



Step (2)

J0306\_03.VSD

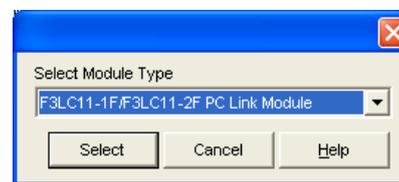
- (2) Turn on the [Relay Monitor] option button to select the desired monitor type. Next, double-click the slot to be monitored or move the cursor to the desired slot and press the [Enter] key.

#### Note

When there are several candidates for the advanced function module types to be displayed, the Select Module Type dialog box appears. Select the module actually being used.

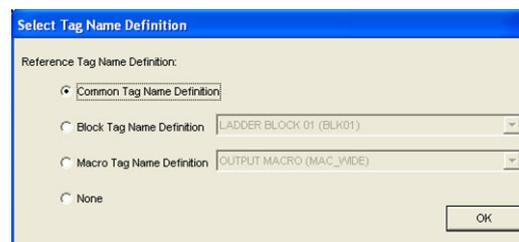
#### Note

When a project is open, the Select Tag Name Definition dialog box appears. Set the comment to be displayed in the monitor so that the tag name definition has priority over the system default comment and user comment. When selecting the block or macro tag name definition, select the Block Tag Name Definition/Macro Tag Name Definition checkbox, and then select a block/macro file name from the drop-down list.



Step (2)

J0306\_04.VSD



Step (2)

J0306\_05.VSD

⇒ The selected slot is displayed in the Input/Output Relay Monitor window.

## Note

When [Block Tag Name Definition] or [Macro Tag Name Definition] is selected in the Select Tag Name Definition dialog box, comments are displayed in the Input/Output Relay Monitor in the following order of priority:

Block/macro tag name definition > Common tag name definition > Advanced function monitor definition

## ■ Starting an Advanced Function Module Register Monitor

To monitor advanced function module registers, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is online, and select [Online]–[Display I/O Configuration(X)] from the menu bar.

### Note

For details on online connection procedure, see Section H1.1, "Connecting and Disconnecting."

⇒ The I/O Configuration window will be displayed.

### Note

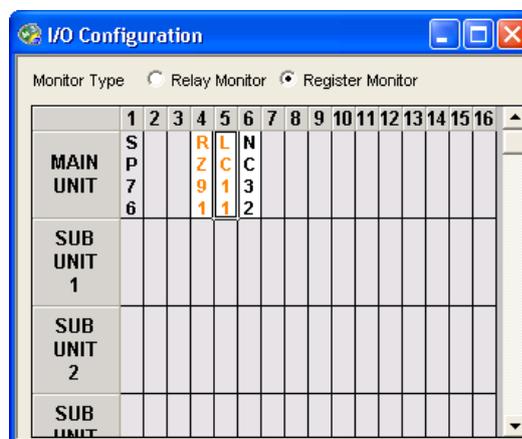
A module name displayed in orange indicates that the module is currently being used by the program.

- (2) Turn on the [Register Monitor] option button to select the desired monitor type. Next, double-click the slot to be monitored or move the cursor to the desired slot and press the [Enter] key.

### Note

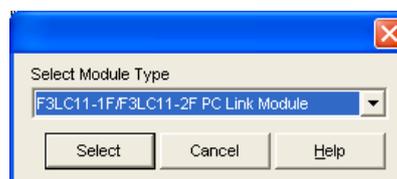
When there are several candidates for the advanced function module types to be displayed, the Select Module Type dialog box appears. Select the module actually being used.

⇒ The selected slot is displayed in the Register Monitor window.



Step (2)

J0306\_06.VSD



Step (2)

J0306\_07.VSD

---

## ■ Terminating an Advanced Function Module Monitor

To terminate the Advanced Function Module Relay/Register Monitors, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the Advanced Function Module Relay/Register Monitor window is active.

(2) Click [Close] on the Advanced Function Module Relay/Register Monitor window, or select [File]–[Close] from the menu bar.

⇒ The Advanced Function Module Relay/Register Monitor window closes.

### Note

---

Even if the Advanced Function Module Relay/Register Monitor window is closed, the I/O Configuration window remains open. To close the I/O Configuration window, click [Close] in the window, or select [File]–[Close] from the menu bar.

---

## J3.6.4 Displaying User Comments

The advanced function module relay/register monitor allows you to specify a data type and comment for each register of a module to be monitored.

### Note

---

If no user comment is defined for a register, the monitor displays its value using the system default data type and comment.

---

## ■ Creating User Comments

Create or edit a user comment definition file using Notepad or any other text editor. The relevant procedure is given below.

### ◆ Procedure ◆

(1) Run a text editor.

#### Note

---

If a user comment definition file has already been created, open it using a text editor.

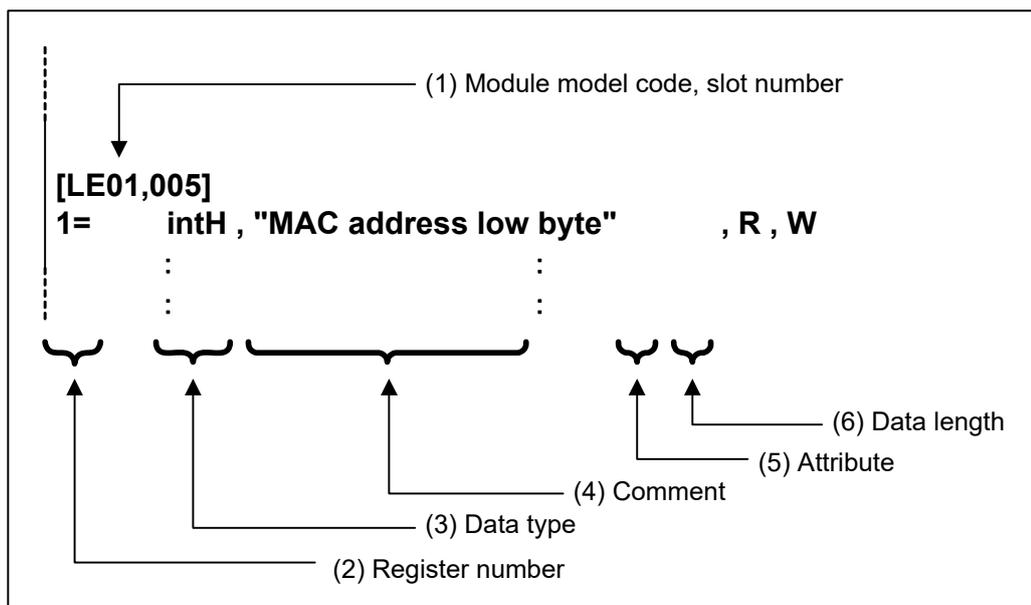
---

(2) Code user comment definitions in the file.

(3) Save the file.

(4) Using windows Explorer or any other file management software, change the filename extension of the saved file to ".ycmt".

A user comment definition file should be coded with the following format.



J0306\_08.VSD

**Figure J3.7 User Comment Definition File Format**

The elements of a user comment definition file are described below.

(1) Module model code and slot number

Code the module model code and slot number in the form "[xxxx,yyy]" where "xxxx" denotes the four characters preceding the hyphen ('-') character in the model name of the target module (e.g. "LE01" for F3LE01-5T module), and "yyy" denotes the slot number where the module is installed. The above figure shows an example for a F3LE01-5T module installed in slot 5.

(2) Register number

Specify a register number of the module to be monitored. When the advanced function module register monitor is executed using a specified user comment definition file, only registers defined in the file are monitored.

(3) Data type

Specify the display format of the data to be monitored.

**Table J3.3 Data Types of Addresses**

| Data Type | Description                     | Examples            |
|-----------|---------------------------------|---------------------|
| intD      | Single word in decimal          | 1234                |
| intH      | Single word in hexadecimal      | \$4D9F              |
| BIN       | Binary number                   | 0101 0001 1001 1111 |
| longD     | Long word in decimal            | 12345678            |
| longH     | Long word in hexadecimal        | \$A15FED87          |
| Float     | Single precision floating point | %1.894320E+022      |
| Char      | Character string                | "yes"               |

(4) Comment

Code a comment string of up to 32 characters to be displayed in the monitor window.

(5) Attribute

Specify whether displayed data in the advanced function module register monitor window can be modified.

**Table J3.4 Types of Attribute**

| Attribute | Short Description | Description   |
|-----------|-------------------|---|
| R         | Read only         | Defines read-only data intended for monitoring only. "Change Word Data" and "Change Long Word Data" are disabled for read-only data in the advanced function module register monitor window               |
| RW        | Read write        | Defines read/write data intended for monitoring and modification. "Change Word Data" and "Change Long Word Data" are enabled for read/write data in the advanced function module register monitor window. |

## (6) Data Length

Specify whether data modification described in (5) should be based on word or long word.

**Table J3.5 Types of Data Length**

| Data Length | Short Description | Description   |
|-------------|-------------------|---|
| W           | Word              | Allows modification of word data. The specified data length must match the specified data type. For word data length, the data type specified in (3) must be intD, intH, BIN or char.         |
| L           | Long Word         | Allows modification of long word data. The specified data length must match the specified data type. For long word data length, the data type specified in (3) must be longD, longH or float. |

**Note**

If coding errors are detected in a user comment definition file, an error message is displayed and user comments are not displayed.



J0306\_09.VSD

**Figure J3.8 User Comment Definition File Error Message**

If coding errors are reported, amend the definition using a text editor, taking into consideration the following possible source of errors.

- Data type and data length mismatch
- Superfluous or missing definition elements. The valid elements of a definition are register number, data type, comment, attribute and data length.
- More than 4096 definitions are coded for one slot.

**Note**

- You can code definitions for multiple slots within one user comment definition file. The definition section for each slot begins with a "[<module model>, <slot number>]" line and ends immediately before the next "[<module model>, <slot number>]" line.
- If a coded comment string is longer than the maximum limit of 32 characters, excessive characters are truncated and not displayed.

## ■ Switching between User Comment Display and System Comment Display

You can switch between using user-defined data types and comments and using system default data types and comments for displaying data in the advanced function module register monitor window. The relevant procedure is given below.

### ◆ Procedure ◆

- (1) Select [Online]–[Adv. Function Module Register Monitor]–[Specify User Comment File] from the menu.

⇒ The Open File dialog opens.

#### Note

By default, the system displays the contents of the WideField3 common folder (the default is the “Fam3com” folder in the folder where WideField3 is installed).

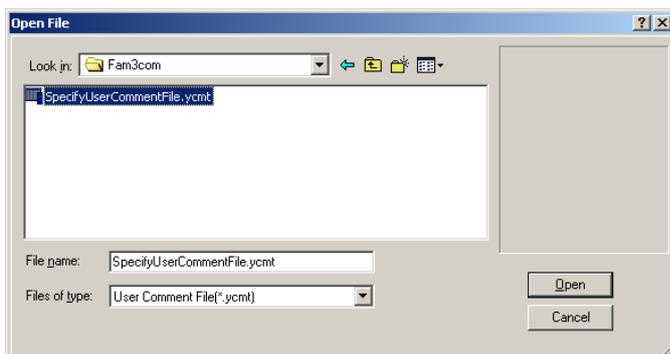
- (2) Select a user comment definition file to be used, and click [Open].

⇒ The Advanced Function Module Register Monitor window opens.

- (3) Select [Online]–[Adv. Function Module Register Monitor]–[Display User Comment] from the menu.

#### Note

If [Display User Comment] is not selected in the menu, system default definitions are used for display in the monitor window.



Step (1)

J0306\_10.VSD

### Note

- If user comment display is selected but no definition for the slot of the module being monitored is found in the specified user comment definition file, system default definitions are displayed in the monitor window.
- If a user comment definition file contains coding errors, system default definitions are displayed in the monitor window.
- User comment definition files can be stored in any folder. The system default folder for comment definition files is the WideField3 common folder.

---

## J3.6.5 Copying Advanced Function Module Data

You can copy data in an Advanced Function Module Monitor window and paste it to any other window.

The copied data can be pasted to the following window or dialog box:

- Registered Device Monitor window
- Sampling Trace Setup dialog box
- Windows of other applications supporting advanced function module data, such as MS-Excel

### Note

---

Advanced function module register monitor data cannot be pasted to the Registered Device Monitor window or the Sampling Trace Setup dialog box.

---

## ■ Copying Advanced Function Module Data

To copy data on an Advanced Function Module Monitor window, select address(es) or tag name(s) and select [Edit]-[Copy] from the menu bar. Then, activate the window where the data is to be pasted and select [Edit]-[Paste] from the menu bar.

### Note

- 
- Multiple addresses or tag names can be selected.
  - You can also copy data by right-clicking an Advanced Function Module Monitor window and selecting [Copy] from the pop-up menu.
- 

## ■ Dragging Advanced Function Module Data

To drag data on an Advanced Function Module Monitor window, select address(es) or tag name(s) and move the mouse pointer onto the window where the data is to be pasted while holding down the [Alt] key. When the mouse button is released on the destination window, the data is pasted.

### Note

---

Multiple addresses or tag names can be selected.

---

---

## J3.7 Copying Device Data

You can copy device data on a Device Monitor window and paste it to another window.

Copied device data can be pasted to the following window or dialog box:

- Registered Device Monitor window
- Sampling Trace Setup dialog box
- Windows of other applications supporting device data, such as MS-Excel

### ■ Copying Device Data

To copy device data on a Device Monitor window, select address(es) or tag name(s) and select [Edit]-[Copy] from the menu bar. Then, activate the window where the data is to be pasted and select [Edit]-[Paste] from the menu bar.

#### Note

---

- Multiple addresses or tag names can be selected.
  - You can also copy data by right-clicking a Device Monitor window and selecting [Copy] from the pop-up menu.
- 

### ■ Dragging Device Data

To drag device data on a Device Monitor window, select address(es) or tag name(s) and move the mouse pointer onto the window where the data is to be pasted while holding down the [Alt] key. When the mouse pointer is released on the destination window, the device data is pasted.

#### Note

---

Multiple addresses or tag names can be selected.

---

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Blank Page

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## J4. Tag Name Definition Monitor

You can use the Tag Name Definition Monitor to monitor registered devices on lists of common tag name definitions and block tag name definitions defined in a project.

From the Tag Name Definition Monitor screen, you can display tag names, addresses, display formats, and monitor values for specified display formats, as well as I/O comments.

In the Tag Name Definition Monitor screen, you can sort displays by tag name/address, divide the window into 1 – 4 partitions, and specify monitoring conditions as needed.

In addition, you can use the debugging functions while monitoring tag name definitions. The following debugging functions are available.

- Forced Set/Reset of relays
- Changing data of registers or relays in word, long word, bit data, or double long word units
- Changing the current value of timers (T) and counters (C)
- Changing the preset value of timers (T) and counters (C)

### Note

---

- For details about tag name definition functions, see Chapter E2, "Tag Name Definition" (Offline).
  - For details about debugging functions, see Section K1, "Using the Debugging Functions."
- 

### Note

---

You can use the Tag Name Definition Monitor function only when an offline project is open.

---

---

- **Function Limitations for Each CPU Type**

**Table J4.1 Function Limitations for Each CPU Type**

| <b>CPU Type</b>   | <b>Limitations</b> | <b>SEE ALSO</b> |
|---|--------------------|-----------------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A                |                 |
| F3SP66-4S,<br>F3SP67-6S   | N/A                |                 |
| F3SP71-4N,<br>F3SP76-7N   | N/A                |                 |
| F3SP71-4S,<br>F3SP76-7S   | N/A                |                 |

**Note**

---

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

---

**Note**

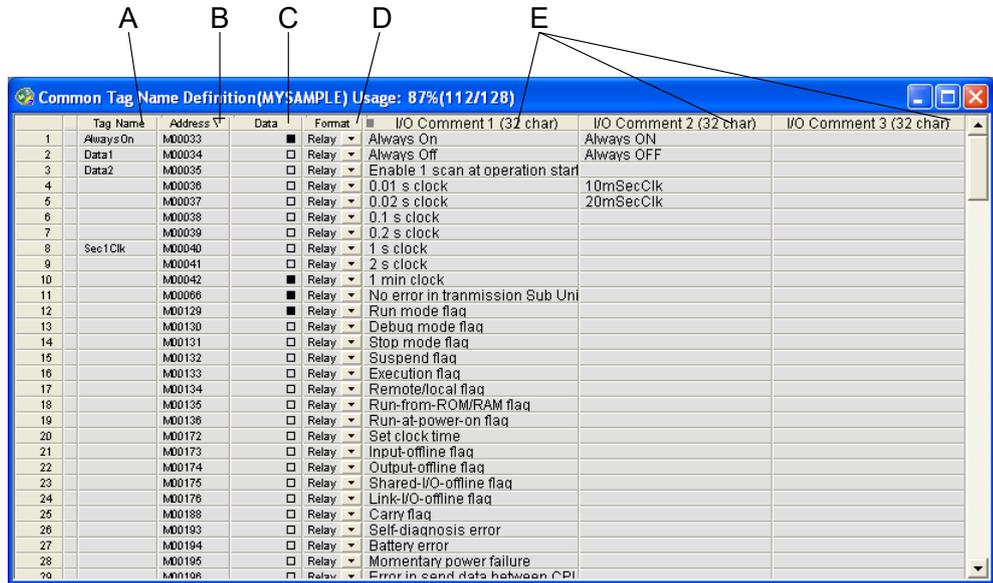
---

For details on limitations for each CPU type, refer to the user's manual for each type.

---

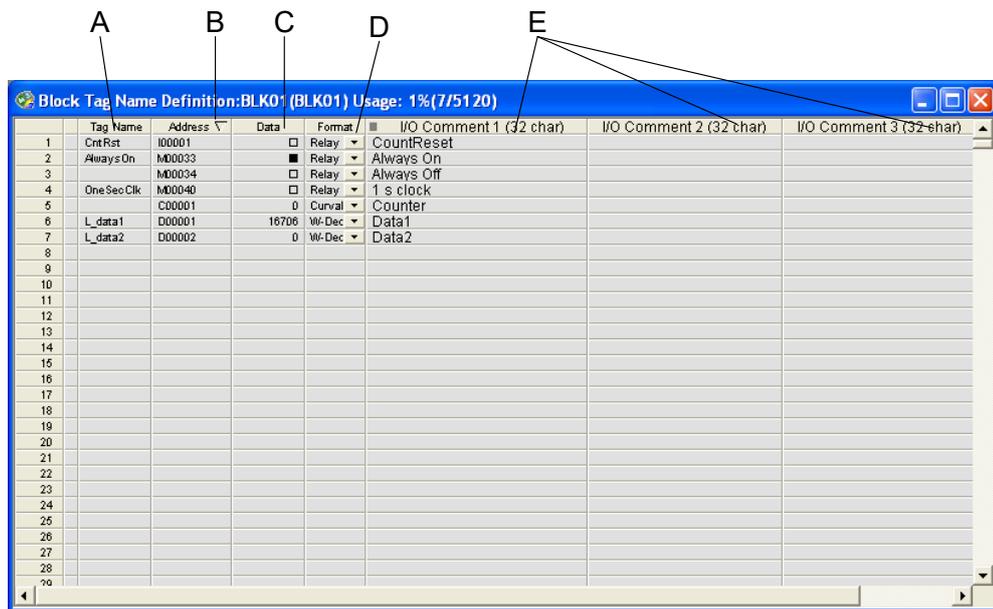
# J4.1 Tag Name Definition Monitor Window

There are two types of Tag Name Definition Monitor, the Common Tag Name Definition Monitor and the Block Tag Name Definition Monitor, which are displayed in the following windows.



J0401\_01.VSD

Figure J4.1 Common Tag Name Definition Monitor Window



J0401\_02.VSD

Figure J4.2 Block Tag Name Definition Monitor Window

- A Tag Name  
Displays the tag name registered for the tag name definition.
- B Address  
Displays the address registered for the tag name definition.
- C Data  
Displays the monitor value for the device in the format specified in Format.

Data fields for addresses with a forced set/reset are shown with a background color of orange.

- D Format

You can select a display format for the monitor values shown in Data.

- E I/O Comment

Displays the I/O comments registered for the tag name definition. Multiple I/O comments can be assigned and displayed for each tag name definition.

**Note**

For details on how to assign and display multiple I/O comments, see Section E2.8, "Multiple I/O Comments" (Offline).

The devices that can be used with a data display format are predetermined, as shown in the table below. Monitor values are displayed as shown in the following table, according to the display format selected.

**Table J4.2 Data Display Format**

| Format | Data Display Format                    | Example Display       | Usable Devices                |
|--------|--|-----------------------|-------------------------------|
| W-Dec  | Word data/decimal                      | 1529                  | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| W-Hex  | Word data/hexadecimal                  | \$12EF                | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| W-Char | Word data/character string             | "PG"                  | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| W-BIN  | Word data/binary                       | 1011 0001 1011 0010   | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| L-Dec  | Long word data/decimal                 | 67109243              | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| L-Hex  | Long word data/hexadecimal             | \$04D392CA            | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| L-Char | Long word data/character string        | "K7JR"                | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| D-Dec  | Double long word data/decimal          | 1234567890123         | D,B,F,R,W,Z,V,A,U             |
| D-Hex  | Double long word data/hexadecimal      | \$ 11F71FB04CB        | D,B,F,R,W,Z,V,A,U             |
| D-Char | Double long word data/character string | "ABCD1234"            | D,B,F,R,W,Z,V,A,U             |
| Cu-Dec | Timer/Counter current value/decimal    | 272,4s500.0ms         | T,C                           |
| Cu-Hex | Counter current value/hexadecimal      | \$4E2C                | C                             |
| Float  | Single precision floating point        | %1.504680E-032        | X,Y,I,E,L,M,D,B,R,W,Z,V,H,A,U |
| Double | Double precision floating point        | %1.234567890123 E-301 | D,B,F,R,W,Z,V,A,U             |
| Bit    | Bit data                               | □, ■                  | X,Y,I,E,L,M,T,C,H             |

## J4.2 Starting Tag Name Definition Monitor

This section describes the startup and shutdown procedures for Tag Name Definition Monitors.

### J4.2.1 Common Tag Name Definition Monitor Startup Procedure

The procedure for Common Tag Name Definition Monitor startup is given below.

#### ◆ Procedure ◆

- (1) Make sure WideField3 is connected online, and then select [Online]-[Common Tag Name Definition] from the menu bar.

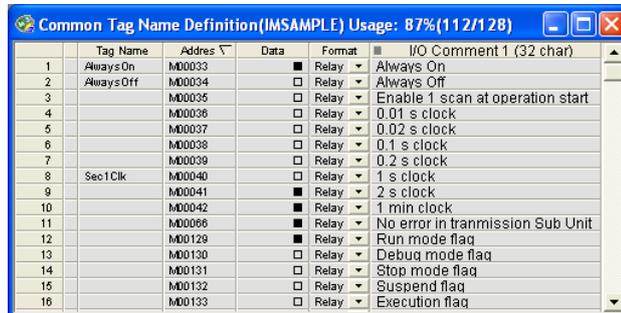
#### Note

For details about the online connection procedure, see Section H1.1, "Connecting and Disconnecting".

#### Note

You can also perform startup from Common Tag Name Definition in the Online Project Window.

- ⇒ The Common Tag Name Definition monitor window opens.



The screenshot shows a window titled "Common Tag Name Definition(IMSAMPLE) Usage: 87%(112/128)". The window contains a table with the following columns: Tag Name, Address, Data, Format, and I/O Comment 1 (32 char). The table lists 16 rows of tag definitions.

|    | Tag Name  | Address | Data                                | Format | I/O Comment 1 (32 char)           |
|----|-----------|---------|-------------------------------------|--------|-----------------------------------|
| 1  | AlwaysOn  | M00033  | <input checked="" type="checkbox"/> | Relay  | Always On                         |
| 2  | AlwaysOff | M00034  | <input type="checkbox"/>            | Relay  | Always Off                        |
| 3  |           | M00035  | <input type="checkbox"/>            | Relay  | Enable 1 scan at operation start  |
| 4  |           | M00036  | <input type="checkbox"/>            | Relay  | 0.01 s clock                      |
| 5  |           | M00037  | <input type="checkbox"/>            | Relay  | 0.02 s clock                      |
| 6  |           | M00038  | <input type="checkbox"/>            | Relay  | 0.1 s clock                       |
| 7  |           | M00039  | <input type="checkbox"/>            | Relay  | 0.2 s clock                       |
| 8  | Sec1Clk   | M00040  | <input type="checkbox"/>            | Relay  | 1 s clock                         |
| 9  |           | M00041  | <input checked="" type="checkbox"/> | Relay  | 2 s clock                         |
| 10 |           | M00042  | <input checked="" type="checkbox"/> | Relay  | 1 min clock                       |
| 11 |           | M00066  | <input checked="" type="checkbox"/> | Relay  | No error in transmission Sub Unit |
| 12 |           | M00129  | <input checked="" type="checkbox"/> | Relay  | Run mode flag                     |
| 13 |           | M00130  | <input type="checkbox"/>            | Relay  | Debug mode flag                   |
| 14 |           | M00131  | <input type="checkbox"/>            | Relay  | Stop mode flag                    |
| 15 |           | M00132  | <input type="checkbox"/>            | Relay  | Suspend flag                      |
| 16 |           | M00133  | <input type="checkbox"/>            | Relay  | Execution flag                    |

Step (1)

J0402\_01.VSD

## J4.2.2 Block Tag Name Definition Monitor Startup Procedure

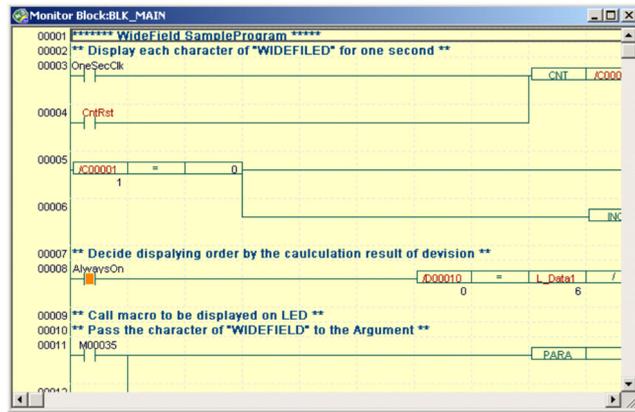
The procedure for Block Tag Name Definition Monitor startup is given below.

### ◆ Procedure ◆

- (1) Make sure WideField3 is connected online, and then open the program monitor window for the block or macro to be monitored.

#### Note

For details about the online connection procedure, see Section H1.1, "Connecting and Disconnecting". For details about program monitor operations, see Chapter J2, "Program Monitor".



Step (1)

J0402\_02.VSD

- (2) Select [Edit]-[Block Tag Name Definition] from the menu bar.

#### Note

You can also perform startup by right-clicking on the program monitor window and selecting [Block Tag Name Definition] from the pop-up menu, or right-clicking a block in the Project Window and selecting [Block Tag Name Definition Monitor] from the pop-up menu.

⇒ The Block Tag Name Definition monitor window opens.

|    | Tag Name  | Address | Data  | Format | I/O Comment 1 (32 char) |
|----|-----------|---------|-------|--------|-------------------------|
| 1  | Cnt Rst   | I00001  |       | Relay  | CountReset              |
| 2  | Always On | M00033  |       | Relay  | Always On               |
| 3  |           | M00034  |       | Relay  | Always Off              |
| 4  | OneSecClk | M00040  |       | Relay  | 1 s clock               |
| 5  |           | C00001  | 0     | Curval | Counter                 |
| 6  | L_data1   | D00001  | 18706 | W-Dec  | Data1                   |
| 7  | L_data2   | D00002  | 0     | W-Dec  | Data2                   |
| 8  |           |         |       |        |                         |
| 9  |           |         |       |        |                         |
| 10 |           |         |       |        |                         |
| 11 |           |         |       |        |                         |
| 12 |           |         |       |        |                         |
| 13 |           |         |       |        |                         |
| 14 |           |         |       |        |                         |
| 15 |           |         |       |        |                         |
| 16 |           |         |       |        |                         |

Step (2)

J0402\_03.VSD

# J4.3 Changing Display Format

From the Tag Name Definition Monitor screen, you can change the display format of the data being monitored and change the display method of the list of devices registered in tag name definitions.

## J4.3.1 Changing the Display Format of Monitor Data

The procedure for changing the display format of data for each tag name definition is given below.

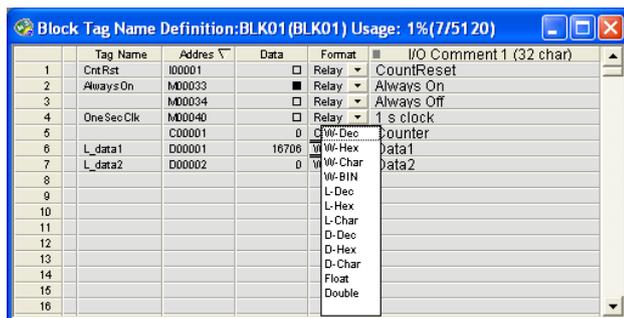
### ◆ Procedure ◆

(1) Open the Tag Name Definition Monitor screen.

#### Note

For details about how to open the Tag Name Definition screen, see Section J4.2, "Starting Tag Name Definition Monitor".

(2) Select the display format you wish to use for the data from Format.



Step (2)

J0403\_01.VSD

⇒ Monitor values are displayed in the Data field in the selected display format.

When selected Binary display format



Step (2)

J0403\_02.VSD

---

## J4.3.2 Changing Display Style

You can select from three methods for displaying lists on the Tag Name Definition Monitor: by Addresses, by Tag Names, and Address List.

### ■ Registered Devices (by Addresses)

The procedure for sorting and displaying devices by addresses registered in the tag name definition is given below.

#### ◆ Procedure ◆

(1) Open the Tag Name Definition Monitor screen.

#### **Note**

---

For details about how to open the Tag Name Definition screen, see Section J4.2, "Starting Tag Name Definition Monitor".

---

(2) Select [View]-[Display Format]-  
[Registered Devices (by Addresses)]  
from the menu bar.

⇒ Devices are sorted in the order of registered addresses, and displayed in the Tag Name Definition Monitor.

### ■ Registered Devices (by Tag Names)

The procedure for sorting and displaying devices by tag names registered in the tag name definition is given below.

#### ◆ Procedure ◆

(1) Open the Tag Name Definition Monitor screen.

#### **Note**

---

For details about how to open the Tag Name Definition screen, see Section J4.2, "Starting Tag Name Definition Monitor".

---

(2) Select [View]-[Display Format]-  
[Registered Devices (by Tag Names)]  
from the menu bar.

⇒ Devices are sorted in the order of registered tag names, and displayed in the Tag Name Definition Monitor.

## ■ Address List

The procedure for displaying a list of all addresses for each type of device is given below.

### ◆ Procedure ◆

- (1) Open the Tag Name Definition Monitor screen.

#### Note

For details about how to open the Tag Name Definition screen, see Section J4.2, "Starting Tag Name Definition Monitor".

- (2) Select [View]-[Display Format]-[Address List] from the menu bar.  
 ⇒ Devices are displayed in a list of all addresses in the Tag Name Definition Monitor. (The initial state is X Relay.)

|    | Address | Tag Name | Data | Format                         | I/O Comment 1 (32 char) |
|----|---------|----------|------|--------------------------------|-------------------------|
| 1  | X00201  |          |      | <input type="checkbox"/> Relay |                         |
| 2  | X00202  |          |      | <input type="checkbox"/> Relay |                         |
| 3  | X00203  |          |      | <input type="checkbox"/> Relay |                         |
| 4  | X00204  |          |      | <input type="checkbox"/> Relay |                         |
| 5  | X00205  |          |      | <input type="checkbox"/> Relay |                         |
| 6  | X00206  |          |      | <input type="checkbox"/> Relay |                         |
| 7  | X00207  |          |      | <input type="checkbox"/> Relay |                         |
| 8  | X00208  |          |      | <input type="checkbox"/> Relay |                         |
| 9  | X00209  |          |      | <input type="checkbox"/> Relay |                         |
| 10 | X00210  |          |      | <input type="checkbox"/> Relay |                         |
| 11 | X00211  |          |      | <input type="checkbox"/> Relay |                         |
| 12 | X00212  |          |      | <input type="checkbox"/> Relay |                         |
| 13 | X00213  |          |      | <input type="checkbox"/> Relay |                         |
| 14 | X00214  |          |      | <input type="checkbox"/> Relay |                         |
| 15 | X00215  |          |      | <input type="checkbox"/> Relay |                         |
| 16 | X00216  |          |      | <input type="checkbox"/> Relay |                         |

Step (2)

J0403\_03.VSD

- (3) Select the type of devices that you wish to show in the list from [View]-[Display Device] from the menu bar.  
 ⇒ Devices are displayed in a list of addresses for the selected type of devices. (The figure shows an example for I Relay.)

|    | Address | Tag Name | Data | Format                                    | I/O Comment 1 (32 char) |
|----|---------|----------|------|---|-------------------------|
| 1  | I00001  | CntRst   |      | <input checked="" type="checkbox"/> Relay | CountReset              |
| 2  | I00002  |          |      | <input checked="" type="checkbox"/> Relay |                         |
| 3  | I00003  |          |      | <input type="checkbox"/> Relay            |                         |
| 4  | I00004  |          |      | <input type="checkbox"/> Relay            |                         |
| 5  | I00005  |          |      | <input checked="" type="checkbox"/> Relay |                         |
| 6  | I00006  |          |      | <input type="checkbox"/> Relay            |                         |
| 7  | I00007  |          |      | <input type="checkbox"/> Relay            |                         |
| 8  | I00008  |          |      | <input type="checkbox"/> Relay            |                         |
| 9  | I00009  |          |      | <input type="checkbox"/> Relay            |                         |
| 10 | I00010  |          |      | <input checked="" type="checkbox"/> Relay |                         |
| 11 | I00011  |          |      | <input type="checkbox"/> Relay            |                         |
| 12 | I00012  |          |      | <input checked="" type="checkbox"/> Relay |                         |
| 13 | I00013  |          |      | <input type="checkbox"/> Relay            |                         |
| 14 | I00014  |          |      | <input type="checkbox"/> Relay            |                         |
| 15 | I00015  |          |      | <input type="checkbox"/> Relay            |                         |
| 16 | I00016  |          |      | <input type="checkbox"/> Relay            |                         |

Step (3)

J0403\_04.VSD

### J4.3.3 Split Display

You can use this function to split the Tag Name Definition Monitor window in from 1 to 4 partitions.

Since you can freely scroll each partitioned pane, it is easy to simultaneously view data for tag name definitions that are defined in locations far apart from each other.

The procedure for splitting the Tag Name Definition Monitor window is given below.

#### ◆ Procedure ◆

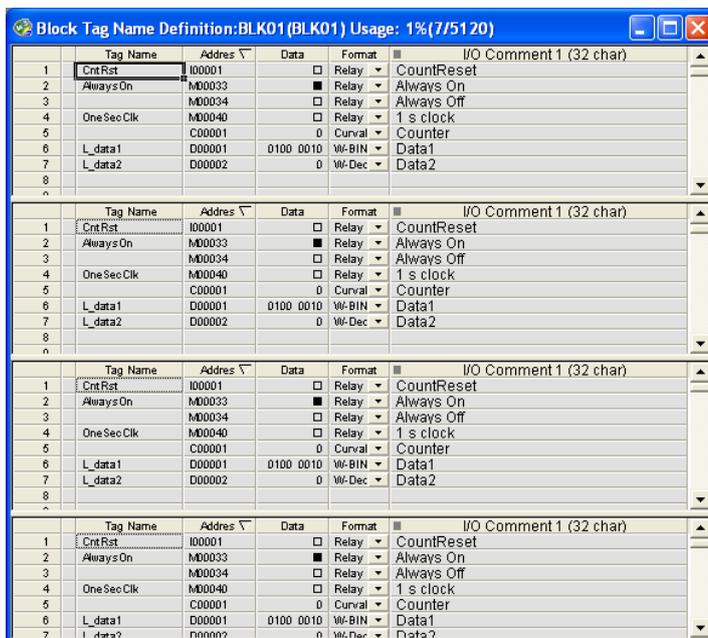
- (1) Open the Tag Name Definition Monitor screen.

#### Note

For details about how to open the Tag Name Definition screen, see Section J4.2, "Starting Tag Name Definition Monitor".

- (2) Select the partition display conditions from [View]-[Split Display] from the menu bar.

⇒ The Tag Name Definition Monitor window is split according to the number of partitions specified. (The figure shows an example of a windows split into 4 partitions.)



Step (2)

J0403\_05.VSD

---

## J4.4 Copying Device Data

You can copy device data on a Tag Name Definition Monitor window and paste it to another window.

Copied device data can be pasted to the following window or dialog box:

- Registered Device Monitor window
- Sampling Trace Setup dialog box
- Other windows of application supporting device data

### ■ Copying Device Data

To copy device data on a Tag Name Definition Monitor window, select address(es) or tag name(s) and select [Edit]-[Copy] from the menu bar. Then, activate the window where the data is to be pasted and select [Edit]-[Paste] from the menu bar.

#### Note

---

Multiple addresses or tag names can be selected.

---

### ■ Dragging Device Data

To drag device data on a Tag Name Definition Monitor window, select address(es) or tag name(s) and left-click the edge of the selected range while holding down the [Alt] key. Then, move the mouse pointer onto the window where the data is to be pasted while holding down the left mouse button. When the mouse button is released on the destination window, the device data is pasted.

#### Note

---

- Multiple addresses or tag names can be selected.
  - Dragging data does not cut a tag name definition on the Tag Name Definition Monitor window.
-

---

Blank Page

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## J5. Registered Device Monitor

You can use the Registered Device Monitor to monitor selected (relay and register) devices.

Up to 256 devices and 4 structures can be selected for monitoring in the Registered Device Monitor.

Indirect specification devices may also be registered for monitoring. When an indirect specification device is registered, the data of the device designated by the indirect register will be monitored.

Besides monitoring devices, the Registered Device Monitor may also be used for debugging. The following debugging functions are available.

- Forced Set/Reset of relays
- Changing data of registers or relays in word, long word, bit data, or double long word unit
- Changing the current value of timers and counters

Setup information in the Registered Device Monitor is saved to the project currently opened in WideField3.

Setup information in the Registered Device Monitor is not saved if a project is not displayed. To save setup information, open a project before exiting from the Registered Device Monitor.

### Note

---

For details on the debugging function, see Chapter K1, "Using the Debugging Functions."

---

### Note

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- Devices with index modification cannot be registered as Registered Device Monitor devices.
  - The debugging functions listed above cannot be used for indirect specification registers.
  - Timers (T) and counters (C) are normally displayed with count-down current values. To display count-up values, select [Count-up] on the Circuit Display/Input tab of the Set up Environment dialog box.
- 

### Note

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For details on the Circuit Display/Input tab of the Set up Environment dialog box, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).

---

● **Function Limitations for Each CPU Type**

**Table J5.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A         |          |

**Note**

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

**Note**

For details on limitations for each CPU type, refer to the user's manual for each type.

# J5.1 Registered Device Monitor Window

This section describes the layout of the Registered Device Monitor window. The Registered Device Monitor displays the following Registered Device Monitor window.

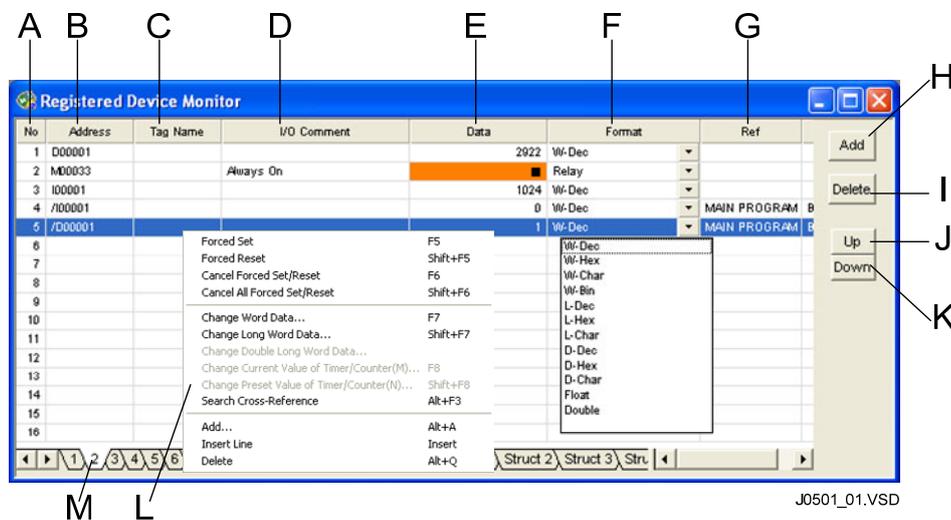


Figure J5.1 Registered Device Monitor Window

- A No  
Displays the registration No.
- B Address  
Displays the addresses of registered devices.
- C Tag Name  
Displays the tag names of registered devices.
- D I/O Comment  
Displays the currently active I/O comments for registered devices.
- E Data  
Displays the current values of registered devices. Devices that have been forced set are displayed on an orange background.
- F Format  
The data display format can be selected. The table below shows available formats.

Table J5.2 Data Display Format

| Format | Data Display Format                    | Example Display           | Usable Devices                                 |
|--------|--|---------------------------|--|
| W-Dec  | Word data/decimal                      | 1529                      | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| W-Hex  | Word data/hexadecimal                  | \$12EF                    | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| W-Char | Word data/character string             | "PG"                      | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| W-BIN  | Word data/binary                       | 1011 0001 1011 0010       | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| L-Dec  | Long word data/decimal                 | 67109243                  | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| L-Hex  | Long word data/hexadecimal             | \$04D392CA                | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| L-Char | Long word data/character string        | "K7JR"                    | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| D-Dec  | Double long word data/decimal          | 1234567890123             | D, B, F, R, W, Z, V, A, U                      |
| D-Hex  | Double long word data/hexadecimal      | \$11F71FB04CB             | D, B, F, R, W, Z, V, A, U                      |
| D-Char | Double long word data/character string | "ABCDEFGH"                | D, B, F, R, W, Z, V, A, U                      |
| Cu-Dec | Timer/Counter current value/decimal    | 272,4s500.0ms             | T, C   |
| Cu-Hex | Counter current value/hexadecimal      | \$4E2C                    | C  |
| Float  | Single precision floating point        | %1.504680E-032            | X, Y, I, E, L, M, D, B, F, R, W, Z, V, H, A, U |
| Double | Double precision floating point        | %1.79769313486 23157e+308 | D, B, F, R, W, Z, V, A, U                      |
| Bit    | Bit data                               | □, ■                      | X, Y, I, E, L, M, T, C, H                      |

- G Ref  
Displays the reference block/macro for tag names.
- H [Add] button  
Registers a device.
- I [Delete] button  
Deletes the currently selected registered device.
- J [↑] button  
Replaces the position of the currently selected device with that of the next higher one. This button is disabled on the structure tabs.
- K [↓] button  
Replaces the position of the currently selected device with that of the next lower one. This button is disabled on the structure tabs.
- L Context menu  
This context menu is displayed by right-clicking on the Registered Device Monitor window. During offline status, only the [Add], [Insert Line] and [Delete] menu items are enabled.
- M Monitor tab  
Switches the tab displayed in the Registered Device Monitor window. 16 tabs are provided for the Registered Device Monitor for devices and 4 tabs for the Registered Device Monitor for structures.

## Note

---

- If an invalid local device is registered, it is disabled in the display and cannot be monitored.
  - The Registered Device Monitor can be started even if the CPU is not connected. In this case, however, debugging functions of the Registered Device Monitor, such as forced set/reset and changing the current value of device, cannot be used. In addition, nothing is displayed in the data column of the Registered Device Monitor.
  - The maximum number of devices that can be registered for the Registered Device Monitor is 30 for relay devices and 32-bit devices, and 15 for 64-bit devices. If the maximum number of registered devices is reached, subsequent device registration is invalid.
-

## J5.2 Registering Devices

This section describes how to register global and local devices for monitoring. It also describes how to register devices for monitoring using tag names. Devices can be registered as Registered Device Monitor devices regardless of whether the CPU is connected or not. To register a device when the CPU is not connected, a project must be open.

### Note

When the selected tab contains less than 16 registered devices, selecting [Online]-[Registered Device Monitor]-[Insert Line] from the menu bar moves the selected and lower lines to a line lower respectively and inserts a blank line to the selected line.

### Note

With the Registered Device Monitor running, you can also register devices by right-clicking on the circuit edit window, tag name definition edit window, Program Monitor window, Tag Name Definition Monitor window, or Device Monitor window, and clicking [Post to Registered Device Monitor] from the displayed menu.

### J5.2.1 Global Devices

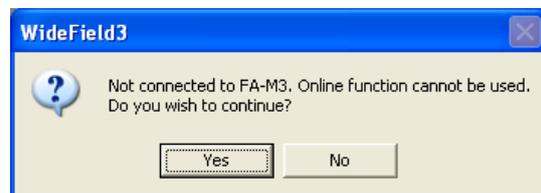
To monitor global devices, use the following procedure.

#### ◆ Procedure ◆

- (1) Select [Online]-[Registered Device Monitor]-[Registered Device Monitor] from the menu bar.

### Note

When WideField3 is not connected online, the online functions of the Registered Device Monitor are disabled. In this case, a confirmation message is displayed.



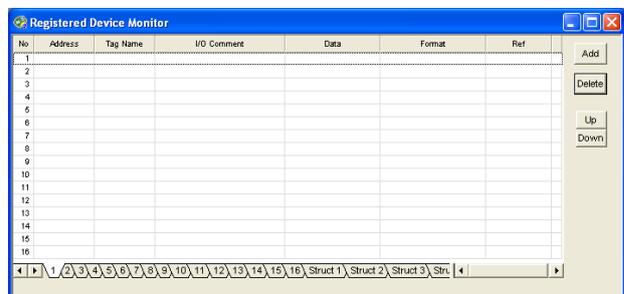
Step (1)

J0502\_01.VSD

- ⇒ The Registered Device Monitor window opens.

- (2) Move the cursor to a blank line and click [Add], or select [Online]-[Registered Device Monitor]-[Add] from the menu bar.

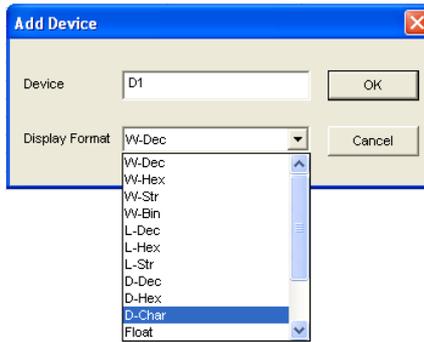
- ⇒ The Add Device dialog box opens.



Step (2)

J0502\_02.VSD

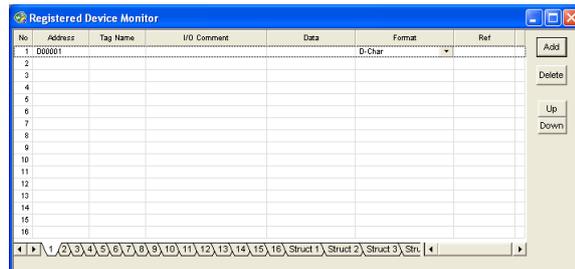
(3) Enter a global device address in the [Device] text box, select a display format from the [Display Format] drop-down list, and click [OK].



Step (3)

J0502\_03.VSD

⇒ Information of the specified device is displayed in the Registered Device Monitor window in the specified format.



Step (3)

J0502\_04.VSD

## J5.2.2 Local Devices

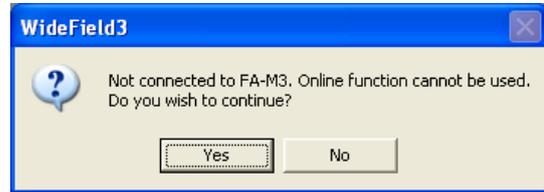
To monitor local devices, use the following procedure.

### ◆ Procedure ◆

- (1) Select **[Online]–[Registered Device Monitor]–[Registered Device Monitor]** from the menu bar.

#### Note

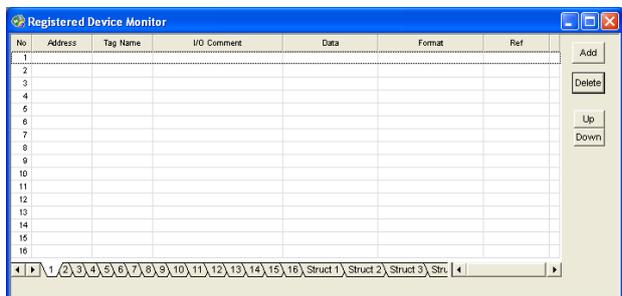
When WideField3 is not connected online, the online functions of the Registered Device Monitor are disabled. In this case, a confirmation message is displayed.



Step (1)

J0502\_01.VSD

- ⇒ The Registered Device Monitor window opens.
- (2) Move the cursor to a blank line and click **[Add]**, or select **[Online]–[Registered Device Monitor]–[Add]** from the menu bar.
- ⇒ The Add Device dialog box opens.

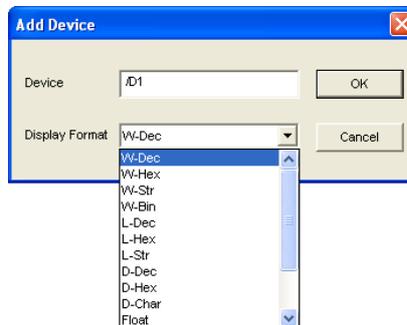


Step (2)

J0502\_02.VSD

- (3) Enter a local device address in the **[Device]** text box, select a display format from the **[Display Format]** drop-down list, and click **[OK]**.

⇒ The Local Device Reference dialog box opens.

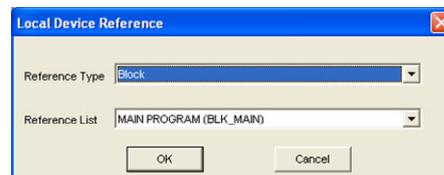


Step (3)

J0502\_05.VSD

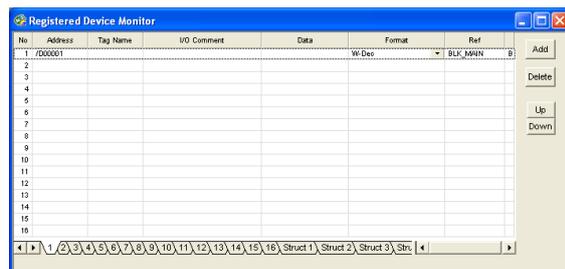
- (4) Select **[Block]** or **[Macro]** from the **[Reference Type]** drop-down list, select a block or macro from the **[Reference List]** drop-down list, and click **[OK]**.

⇒ Information of the specified device is displayed in the Registered Device Monitor window in the specified format.



Step (4)

J0502\_06.VSD



Step (4)

J0502\_07.VSD

## J5.2.3 Tag Names

To monitor devices by specifying their tag name, use the following procedure.

### ◆ Procedure ◆

- (1) Select [Online]–[Registered Device Monitor]–[Registered Device Monitor] from the menu bar.

⇒ The Registered Device Monitor window opens.

- (2) Move the cursor to a blank line and lick [Add], or select [Online]–[Registered Device Monitor]–[Add] from the menu bar.

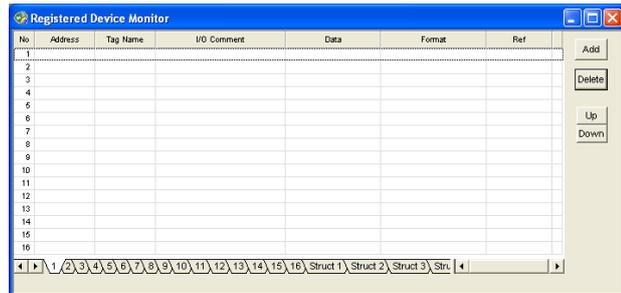
⇒ The Add Device dialog box opens.

- (3) Enter a tag name in the [Device] text box, select a display format from the [Display Format] drop-down list, and click [OK].

⇒ The Tag Name Reference dialog box opens.

- (4) Select [Common Tag Name Definition], [Block Tag Name Definition] or [Macro Tag Name Definition] from the [Reference Type] drop-down list, select a block or macro from the [Reference List] drop-down list, and click [OK].

⇒ Information of the specified device is displayed in the Registered Device Monitor window in the specified format.



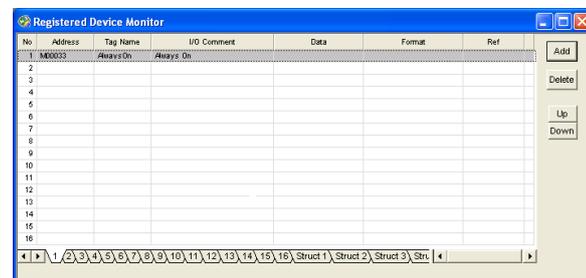
Step (2)

J0502\_02.VSD



Step (3)

J0502\_08.VSD



Step (4)

J0502\_09.VSD

## J5.2.4 Timer (T) or Counter (C) Devices

Valid display formats for timer (T) and counter (C) devices are 'current value' and 'relay'. Specifying 'word' as display format for timers or counters generates an error.

To register timers and counters, use the following procedure.

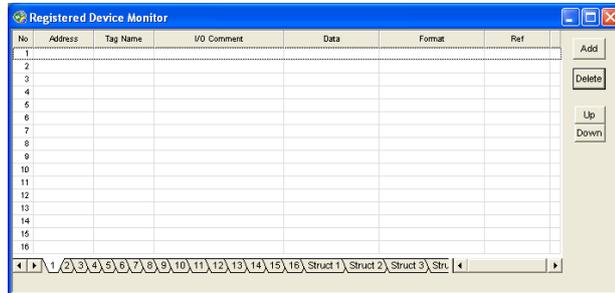
### ◆ Procedure ◆

- (1) Select [Online]–[Registered Device Monitor]–[Registered Device Monitor] from the menu bar.

⇒ The Registered Device Monitor window opens.

- (2) Move the cursor to a blank line and click [Add], or select [Online]–[Registered Device Monitor]–[Add] from the menu bar.

⇒ The Add Device dialog box opens.



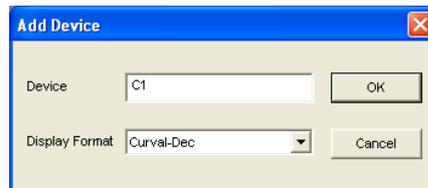
Step (2)

J0502\_02.VSD

- (3) Enter in the [Device] text box a device address, complete with the device type character 'T' for timer or 'C' for counter.

### Note

Enter a timer (T) device with the format "Txxxx" (where xxxx is the address number).  
Enter a counter (C) device with the format "Cxxxx" (where xxxx is the address number).



Steps (3) and (4)

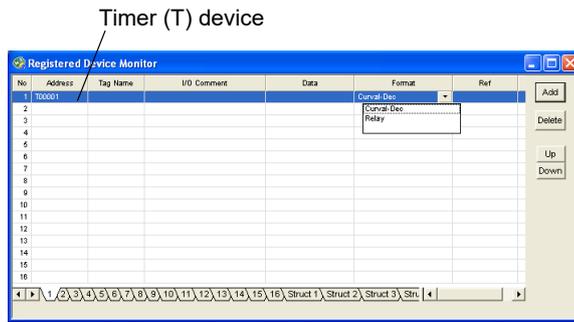
J0502\_10.VSD

- (4) Select a display format from the [Display Format] drop-down list, and click [OK].

### Note

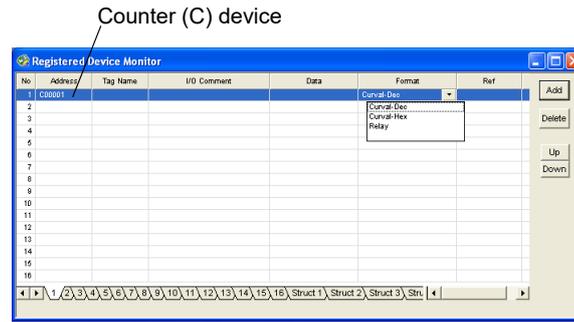
For the display format for timer (T) devices, select either "Cu-Dec" (Current value - Decimal) or "Bit" (ON/OFF).  
For the display format for counter (C) devices, select either "Cu-Dec" (Current value - decimal), "Cu-Hex" (Current value - Hexadecimal), or "Bit" (ON/OFF).

⇒ Information of the specified device is displayed in the Registered Device Monitor window with the specified display format.



Step (4)

J0502\_11.VSD



Step (4)

J0502\_12.VSD

### Note

If you enter an invalid display format, a confirmation dialog box opens. Click [OK] and re-enter a valid display format.



Step (4)

J0502\_13.VSD

## J5.2.5 Structures

To monitor structures, use the following procedure.

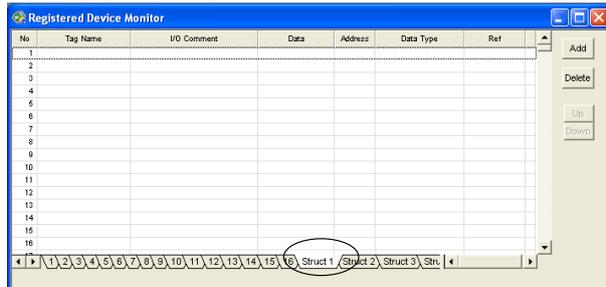
### ◆ Procedure ◆

(1) Select [Online]–[Registered Device Monitor]–[Registered Device Monitor] from the menu bar.

⇒ The Registered Device Monitor window opens.

(2) Select a Struct tab.

⇒ The selected Struct tab is displayed.



Step (2)

J0502\_14.VSD

(3) Select [Online]–[Registered Device Monitor]–[Add] from the menu bar.

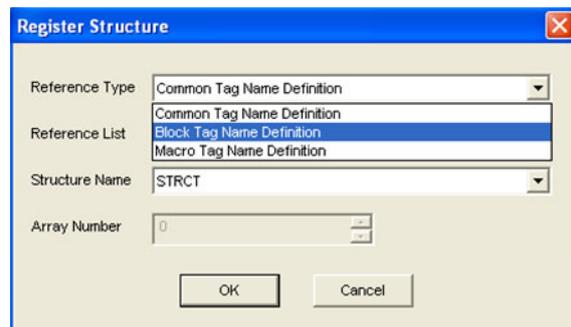


### CAUTION

A structure (or an element for an array structure) can be registered per tab. When a new structure is registered in a tab where a structure is already registered, the existing structure is deleted.

⇒ The Register Structure dialog box is displayed.

(4) From the [Reference Type] drop-down list, select the tag name definition where the structure to be registered is defined.



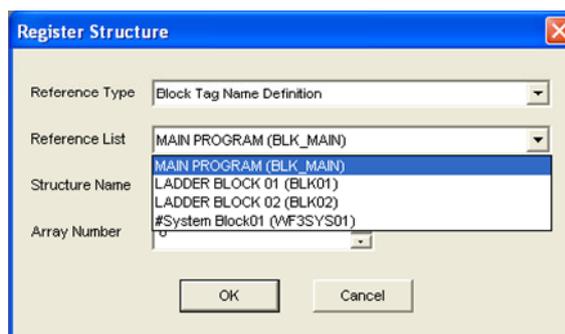
Step (4)

J0502\_15.VSD

(5) From the [Reference List] drop-down list, select the block or macro to be referenced.

**Note**

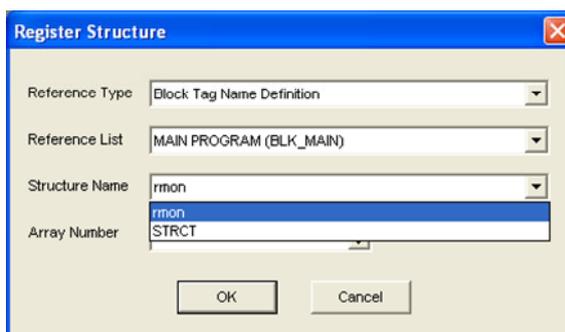
When [Common Tag Name Definition] is selected from [Reference Type], this step is skipped.



Step (5)

J0502\_16.VSD

(6) From the [Structure Name] drop-down list, select the structure name to be registered.



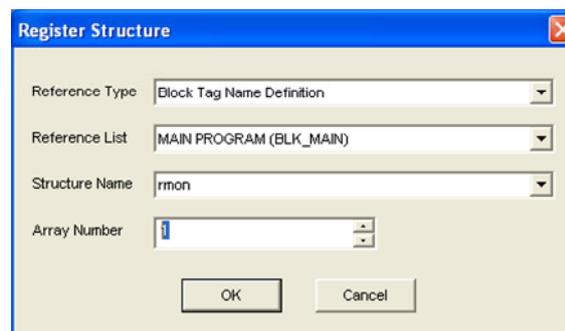
Step (6)

J0502\_17.VSD

(7) From the [Array Number] drop-down list, select the element of the array structure to be registered.

**Note**

When the specified structure is not an array, this step is skipped.

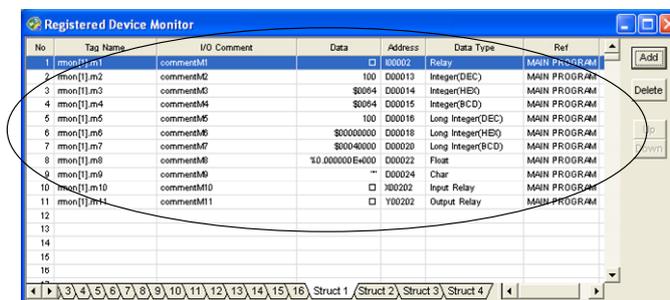


Step (7)

J0502\_18.VSD

(8) When you finish editing the settings for registration, click [OK].

⇒ The structure is registered.



Step (8)

J0502\_19.VSD

**Note**

Structure pointers (Q) cannot be registered as Registered Device Monitor devices.

## J5.3 Registering from Other Windows

You can register devices as Registered Device Monitor devices also from windows other than the Registered Device Monitor window when the Registered Device Monitor is displayed. The following five windows can be used for device registration.

- Program Edit window
- Program Monitor window
- Tag Name Definition (Common/Block) Window
- Tag Name Definition Monitor window
- Device Monitor window

To register devices as Registered Device Monitor devices from each window, you can use the same procedure.

To register devices from the Program Monitor window, use the following procedure.

### J5.3.1 Registering from Program Edit Window/Program Monitor Window

You can register devices as Registered Device Monitor devices from the Program Edit window or Program Monitor window.

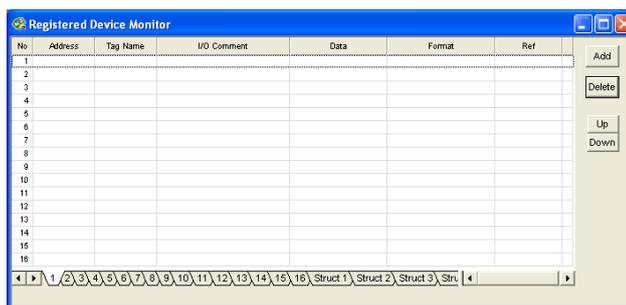
To register devices from the Program Edit window, use the following procedure.

#### ◆ Procedure ◆

(1) Select [Online]–[Registered Device Monitor]–[Registered Device Monitor] from the menu bar.

⇒ The Registered Device Monitor window opens.

(2) Move the cursor to a blank line.



Step (1)

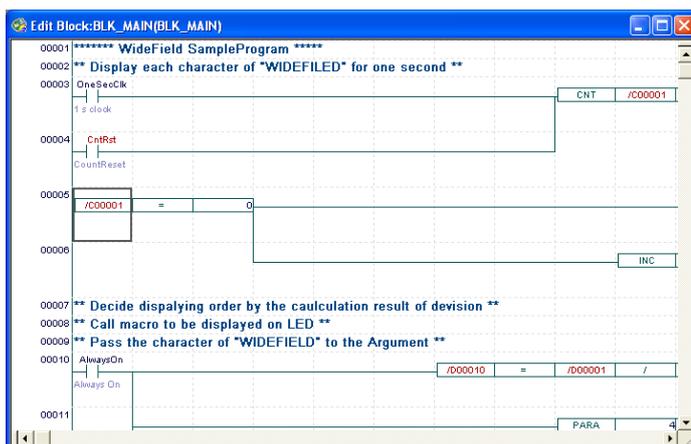
J0503\_01.VSD

**(3) Open the Edit Block window.****Note**

For details on how to open the Edit Block window, see Section D4.2, "Opening Block and Macro Files" (Offline).

**(4) Click the cell of device you want to register.****(5) Select [Online]–[Registered Device Monitor]–[Post to Registered Device Monitor] from the menu bar.**

⇒ Information on the specified device is displayed in the Registered Device Monitor window.



Steps (3) and (4)

J0503\_02.VSD

| No | Address | Tag Name | I/O Comment | Data | Format     | Ref      | Add |
|----|---------|----------|-------------|------|------------|----------|-----|
| 1  | /C00001 |          |             | 1    | Curval-Dec | BLK_MAIN | 0   |
| 2  |         |          |             |      |            |          |     |
| 3  |         |          |             |      |            |          |     |
| 4  |         |          |             |      |            |          |     |
| 5  |         |          |             |      |            |          |     |
| 6  |         |          |             |      |            |          |     |
| 7  |         |          |             |      |            |          |     |
| 8  |         |          |             |      |            |          |     |
| 9  |         |          |             |      |            |          |     |
| 10 |         |          |             |      |            |          |     |
| 11 |         |          |             |      |            |          |     |
| 12 |         |          |             |      |            |          |     |
| 13 |         |          |             |      |            |          |     |
| 14 |         |          |             |      |            |          |     |
| 15 |         |          |             |      |            |          |     |
| 16 |         |          |             |      |            |          |     |

Step (5)

J0503\_03.VSD

**Note**

- You can also select a device for registration using copy & paste, move, or drag & drop. To use drag & drop, select a device in the Program Edit/Program Monitor window while holding down the [Alt] key, and then drag and drop the selected device onto the Registered Device Monitor window while holding down the [Alt] key.
- When a Struct tab is displayed in the Registered Device Monitor window, only structures can be registered. When a normal device tab is displayed, only normal devices can be registered.
- Tentatively registered devices are ignored.

## J5.3.2 Registering from Tag Name Definition (Common/Block) Window/Tag Name Definition Monitor Window

You can register devices as Registered Device Monitor devices from the Tag Name Definition (Common/Block) window or Tag Name Definition Monitor window.

To register devices from the Tag Name Definition (Common/Block) window, use the following procedure.

### ◆ Procedure ◆

- (1) Select [Online]–[Registered Device Monitor]–[Registered Device Monitor] from the menu bar.

#### Note

When WideField3 is not connected online, the online functions of the Registered Device Monitor are disabled. In this case, a confirmation message is displayed.

⇒ The Registered Device Monitor window opens.

- (2) Move the cursor to a blank line.

- (3) Open the Tag Name Definition window.

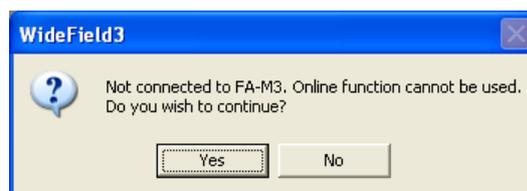
#### Note

For details on how to open the Tag Name Definition window, see Chapter E2, "Tag Name Definition" (Offline).

- (4) Click the tag name definition of device you want to register.

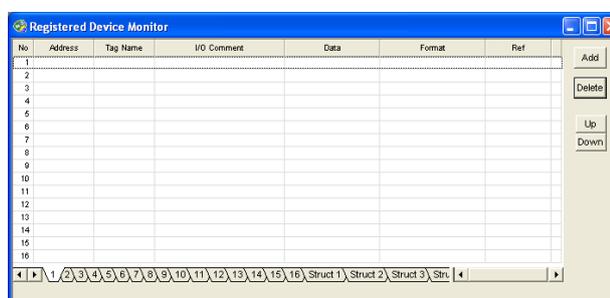
- (5) Select [Online]–[Registered Device Monitor]–[Post to Registered Device Monitor] from the menu bar.

⇒ Information on the specified device is displayed in the Registered Device Monitor window.



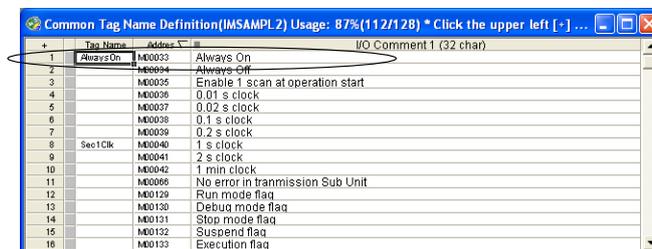
Step (1)

J0502\_01.VSD



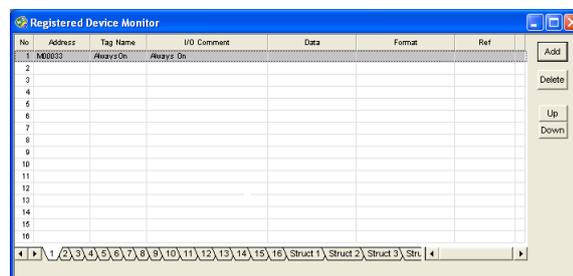
Step (2)

J0502\_02.VSD



Steps (3) and (4)

J0503\_04.VSD



Step (5)

J0503\_05.VSD

### Note

- You can also select a device for registration using copy & paste, move, or drag & drop. To use drag & drop, select a device in the Tag Name Definition (Common/Block)/Tag Name Definition Monitor window while holding down the [Alt] key, and then drag and drop the selected device onto the Registered Device Monitor window while holding down the [Alt] key.

- When a Struct tab is displayed in the Registered Device Monitor window, only structures can be registered. When a normal device tab is displayed, only normal devices can be registered.

### J5.3.3 Registering from Device Monitor Window

You can register devices as Registered Device Monitor devices from the Device Monitor window.

To do this, use the following procedure.

#### ◆ Procedure ◆

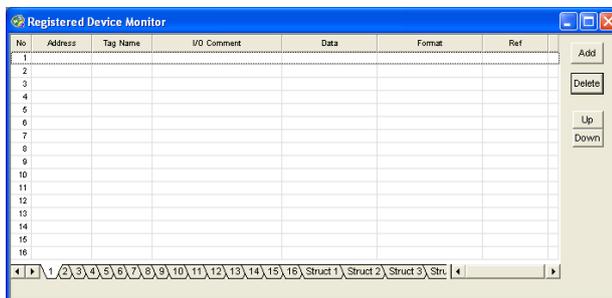
(1) Confirm that WideField3 is online.

#### Note

For details on online procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Online]–[Registered Device Monitor]–[Registered Device Monitor] from the menu bar.

⇒ The Registered Device Monitor window opens.



Step (2)

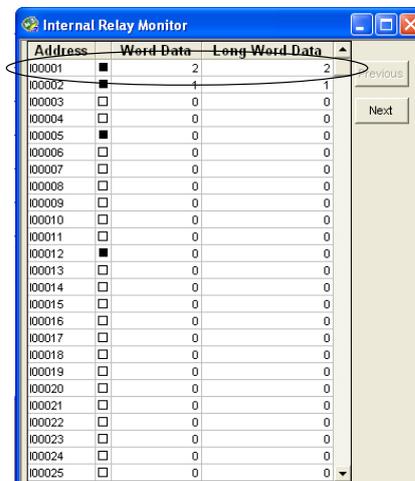
J0502\_02.VSD

(3) Open the Device Monitor window.

#### Note

For details on how to open the Device Monitor window, see Chapter J3, "Device Monitor."

(4) Click the device you want to register.

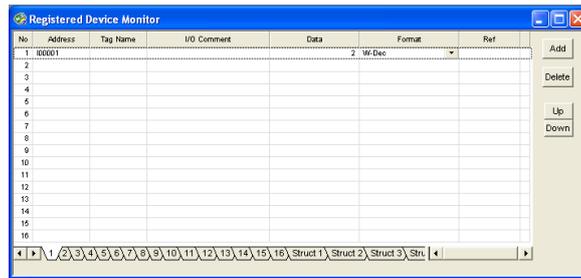


Steps (3) and (4)

J0503\_06.VSD

(5) Select [Online]–[Registered Device Monitor]–[Post to Registered Device Monitor] from the menu bar.

⇒ Information on the specified device is displayed in the Registered Device Monitor window.



Step (5)

J0503\_07.VSD

## Note

You can also select a device for registration using copy & paste, move, or drag & drop. To use drag & drop, select a device in the Device Monitor window while holding down the [Alt] key, and then drag and drop the selected device onto the Registered Device Monitor window while holding down the [Alt] key.

## J5.4 Deleting Registered Devices

You can delete registered devices. You can delete multiple registered devices at a time.

To do this, use the following procedure.

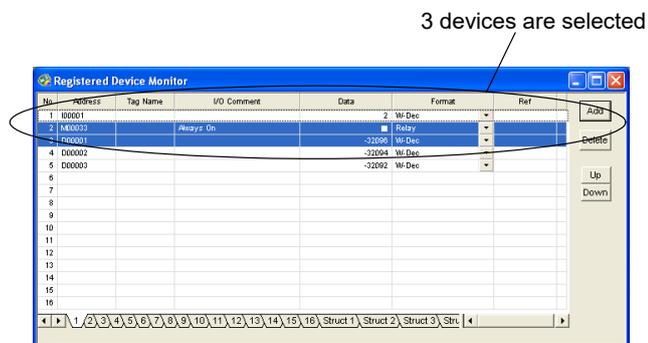
### ◆ Procedure ◆

- (1) In the Registered Device Monitor window, move the cursor to a device you want to delete, and click [Delete].

#### Note

You can select multiple devices at a time.

⇒ A confirmation dialog box opens.



Step (1)

J0504\_01.VSD

- (2) Click [Yes].



Step (2)

J0504\_02.VSD

⇒ The selected devices are deleted.



Step (2)

J0504\_03.VSD

## **J5.5 Increasing the Maximum Number of Registered Devices (Function Updating Planned)**

WideField3 R3 or earlier does not support the function to increase the maximum number of registered devices.

## J5.6 Rearranging Registered Devices

You can rearrange the display order of devices in the Registered Device Monitor window.

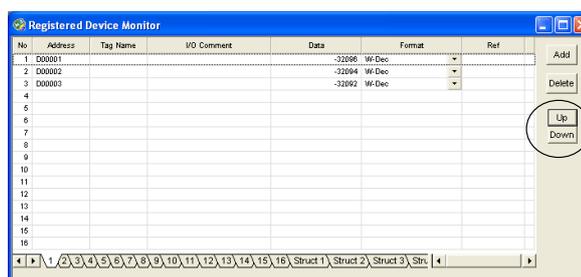
### Note

You cannot rearrange the display order of registered devices on the Struct tab.

To do this, use the following procedure.

### ◆ Procedure ◆

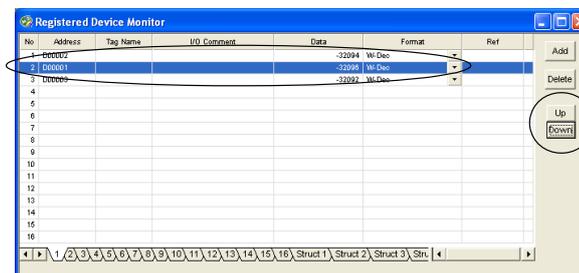
- (1) In the Registered Device Monitor window, select a device you want to move to the next higher or next lower line.



Steps (1) and (2)

J0506\_01.VSD

- (2) Click [Up] to move the device to the next higher line, and [Down] to move the device to the next lower line.  
 ⇒ The display order of the selected device is exchanged with that of the next higher or next lower device.



Step (2)

J0506\_02.VSD

## J5.7 Renaming Tabs

You can rename tabs. To do this, use the following procedure.

### ◆ Procedure ◆

(1) In the Registered Device Monitor window, double-click a tab you want to rename.

⇒ The Rename Tab dialog box opens.



Step (2)

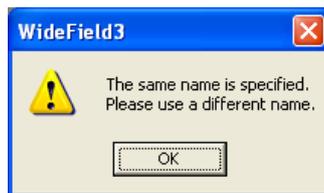
J0507\_01.VSD

(2) Enter a new tab name in the text box and click [OK].

⇒ The tab is renamed.

### Note

Tabs cannot be renamed to the same tab name. When the same tab name is specified, the following message is displayed.



J0507\_02.VSD

Figure J5.2 Error Message for Specifying Same Tab Name

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## J6. Watch Monitor

With the Watch Monitor function, you can use a dedicated screen (the Watch Monitor window) that works in association with the program monitor window to monitor devices displayed in an active program monitor window.

The Watch Monitor window is a single screen displayed on top of all the other windows. You can move the Watch Monitor out of the WideField3 screen.

Besides monitoring devices, the Watch Monitor may also be used for debugging. The following debugging functions are available.

- Forced Set/Reset of relays
- Changing data of registers or relays in word, long word, bit data, or double long word unit
- Changing the current value of timers and counters

Setup information in the Watch Monitor is saved to the project currently opened in WideField3.

Setup information in the Watch Monitor is not saved if a project is not displayed. To save setup information, open a project before exiting from the Watch Monitor.

### Note

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- This function cannot display addresses with index modifications expanded. Index modifications are displayed as they are.
  - This function cannot display the content of indirect registers. Indirect specification is displayed as it is, and the value of the indirect specification is monitored.
  - Timers (T) and counters (C) are normally displayed with count-down current values. To display count-up values, select [Count-up] on the Circuit Display/Input tab of the Set up Environment dialog box.
- 

### Note

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- For details on program monitoring, see Chapter J2, "Program Monitor".
  - For details on debugging functions, see Chapter K1, "Using the Debugging Functions".
  - For details on displaying addresses with index modifications expanded, see Section J2.1.3, "Display of Index Modified Devices".
  - For details on displaying indirect registers, see Section J2.3.6, "Display of Indirect Specification Devices".
  - For details on the Circuit Display/Input tab of the Set up Environment dialog box, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).
-

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## ● Function Limitations for Each CPU Type

**Table J6.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         | -        |
| F3SP66-4S,<br>F3SP67-6S   | N/A         | -        |
| F3SP71-4N,<br>F3SP76-7N   | N/A         | -        |
| F3SP71-4S,<br>F3SP76-7S   | N/A         | -        |

### Note

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This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

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### Note

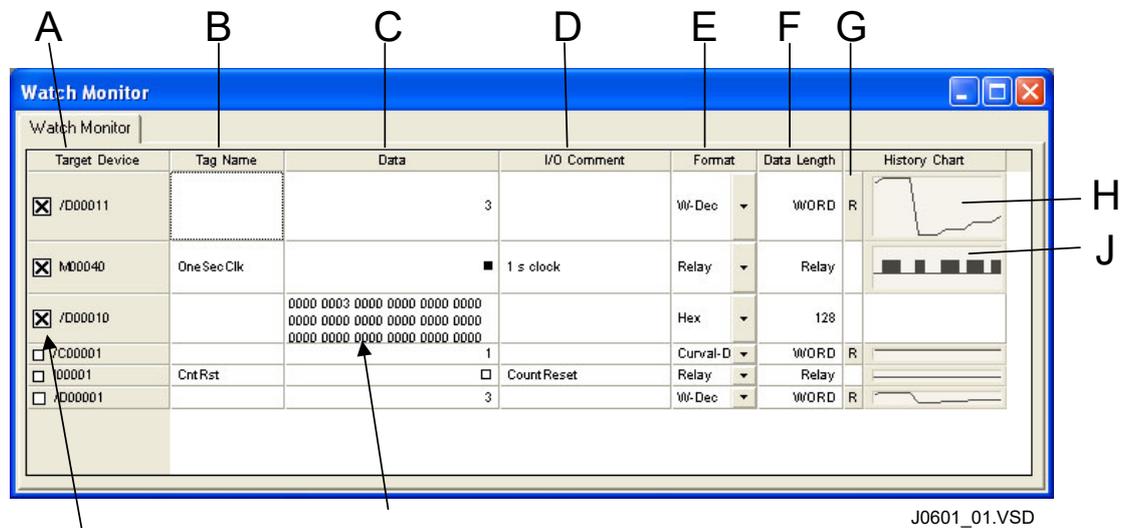
---

For details on limitations for each CPU type, refer to the user's manual for each type.

---

# J6.1 Watch Monitor Window

This section describes the screen layout of the Watch Monitor window. The Watch Monitor displays the following Watch Monitor window.



Always displayed K  
**Figure J6.1 Watch Monitor Window**

- A Target Device (address)  
 In association with the program monitor, devices displayed in the program monitor window are automatically registered. Turn on the checkbox on the left to always display the device, even if the program monitor no longer displays the device.

## Note

Local devices can also always be displayed. They remain displayed when scrolled out of the program monitor window but disappear from the Watch Monitor window when the target program monitor window is switched to another one.

- B Tag Name  
 Displays the tag names of registered devices.
- C Data  
 Displays the current values of registered devices. The background color of devices that have been forced set or reset is changed.
- D I/O Comment  
 Displays the currently active I/O comments for registered devices.
- E Format  
 The data display format can be selected. The initial value is the display format selected for the program monitor. The following display formats are available.

Table J6.2 Display Format

| Data Type | Description  | Additional Comment  |
|-----------|--|---|
| Bit       | Bit data   |   |
| W-Dec     | Word data/decimal number                             |   |
| L-Dec     | Long-word data/decimal number                        |   |
| D-Dec     | Double long-word data/decimal number                 |   |
| W-BIN     | Word data/binary number                              |   |
| L-BIN     | Long-word data/binary number                         |   |
| D-BIN     | Double long-word data/binary number                  |   |
| Float     | Single precision floating point                      |   |
| Double    | Double precision floating point                      |   |
| Hex       | Hexadecimal data indicated by the data length        | Hexadecimal data of 2- to 256-byte data length. Displayed on a word basis.  |
| Char      | Character string data indicated by the data length   | Character string data of 2- to 256-byte data length. If the data cannot be converted to any character code, "." is displayed for such a byte. |
| Cu-Dec    | Current value of the timer or counter/decimal number |   |
| Cu-Hex    | Current value of the counter/hexadecimal number      |   |

- **F Data Length**  
The data length can be specified only when the display format is Hex (hexadecimal number) or Char (character string). Specify an even number for the data length (in bytes). Up to 256 bytes can be monitored, starting from the target device.
- **G [R] Button**  
Resets the upper and lower limits of the history chart. A graph is regenerated.
- **H History Chart of Data Value**  
Out of the devices always displayed, a history chart for a data value is displayed when the display format is Dec (decimal number), Hex (hexadecimal number), or BIN (binary number) and the data size is within a double long-word (8 bytes). Adjust the row width so that you can check changes of a value.
- **J History Chart of Pulse**  
Out of the devices always displayed, a history chart for a pulse is displayed when the display format is Bit (bit). The value "1" is indicated by the black area. Adjust the row width so that you can check changes of a pulse.

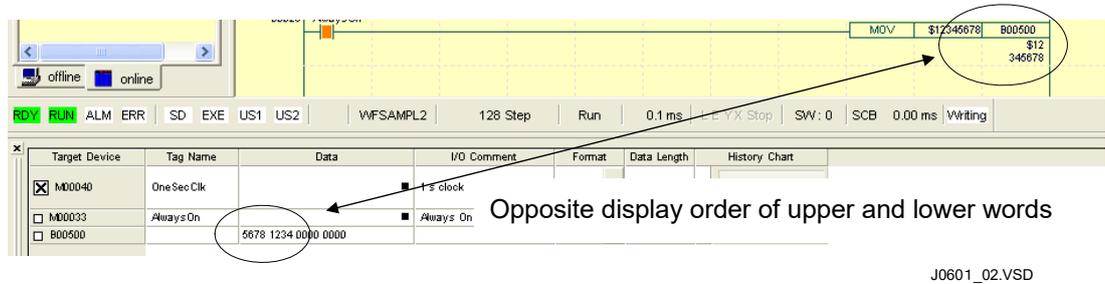
## Note

The History Charts do not operate in the CPU scan units. Like the program monitor and device monitor, data is collected in the monitor intervals for WideField3.

- K Display of Hex (Hexadecimal Number)  
 When the display format is Hex (hexadecimal number), the corresponding word or words are displayed starting from the target device. Adjust the row width so that you can check the entire data.

**Note**

When the display format is Hex (hexadecimal number), the data is displayed on a word basis with the lowest value placed first. As the program monitor shows data with the highest value first, values displayed in the Watch Monitor for long-word and double long-word data are different from those displayed in the program monitor.



**Figure J6.2 Data Orders of Program Monitor and Watch Monitor**

# J6.2 Starting the Watch Monitor

This section describes how to start and exit the Watch Monitor.

## Procedure

(1) Confirm that WideField3 is online, and select [Online]-[Watch Monitor] from the menu bar.

### Note

For details on online connection procedure, see Section H1.1, "Connecting and Disconnecting."

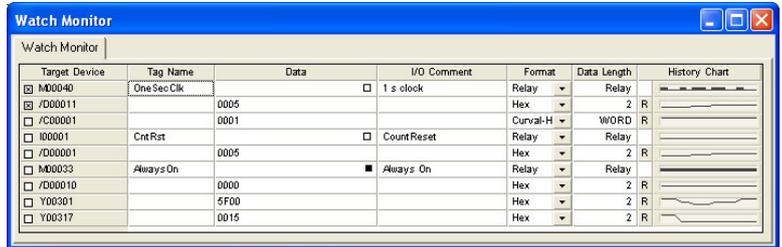
⇒ The Watch Monitor window opens. The devices displayed in the program monitor window are also monitored in the Watch Monitor window.

(2) Select [Online]-[Watch Monitor]-[Dock to Output Window] from the menu bar.

⇒ The data is displayed on the output window.

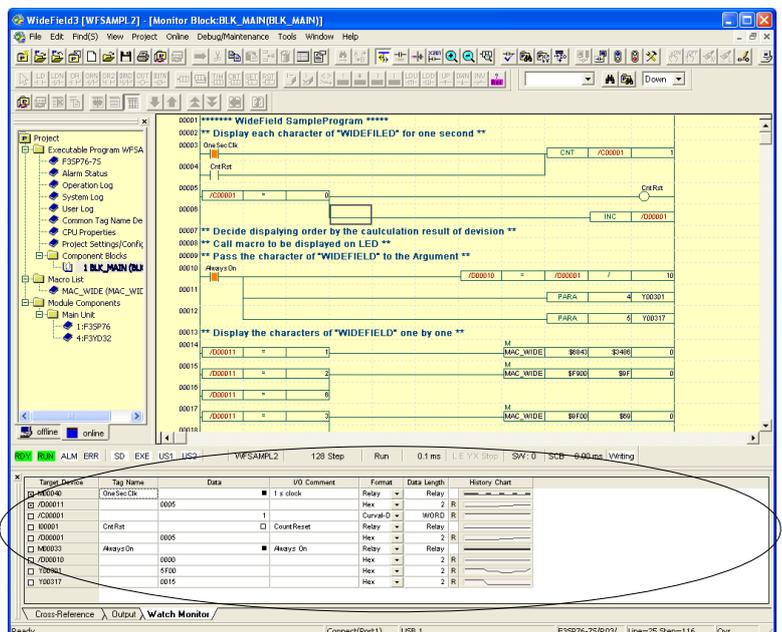
(3) Select [Online]-[Watch Monitor]-[Close Watch Monitor] from the menu bar.

⇒ The Watch Monitor window closes.



Step (1)

J0602\_01.VSD



Step (2)

J0602\_02.VSD

### Note

You do not have to register or delete devices in the Watch Monitor window. The devices displayed in the program monitor window are automatically displayed. Any device deleted from the program monitor window is automatically deleted.

FA-M3  
Programming Tool WideField3  
Online  
PART-K Debugging Manual

IM 34M06Q16-03E

This manual describes the debugging functions in WideField3.

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# K1. Using the Debugging Functions

The debugging function features the following operations:

- Forced set or reset of a relay
- Change register and relay data on a word, long-word, bit, or double-long-word basis.
- Change the current value of timers (T) and counters (C)
- Change the set value of timers (T) and counters (C)
- Stop refresh
- Start or stop a block

The debugging function can be used only when the CPU module is in Debug or Stop mode.

## ● Function Limitations for Each CPU Type

Table K1.1 Function Limitations for Each CPU Type

| CPU Type  | Limitations | SEE ALSO |
|---|-------------|----------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | N/A         |          |
| F3SP66-4S,<br>F3SP67-6S   | N/A         |          |
| F3SP71-4N,<br>F3SP76-7N   | N/A         |          |
| F3SP71-4S,<br>F3SP76-7S   | N/A         |          |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

---

## K1.1 Forced Set or Reset of a Relay

The forced set or reset function forces a specified relay device on or off. Up to 32 relay devices can be forced set or reset. The forced set/reset function is available in the following monitors.

- Device Monitor
- Program Monitor
- Tag Name Definition Monitor
- Registered Device Monitor

### K1.1.1 Devices That Can Be Forced Set or Reset

The following relay devices can be forced to set or reset:

- Input relay (X)
- Output relay (Y)
- Internal relay (I) and local internal relay (/I)
- Shared relay (E) and extended shared relay (E)
- Link relay (L)
- Special relay (Write-able relays) (M)
- Timer (T) and local timer (/T) (time-up relay)
- Counter (C) and local counter (/C) (count-up relay)



#### CAUTION

- 
- Do not attempt to forcibly set or reset special relays (M) that are not write-able. Otherwise, the CPU may stop.
  - Up to 32 relay devices can be forced set or reset. All forced set or reset instructions beyond this number are ignored.
  - Devices with index modification cannot be forced to set or reset.
- 

#### Note

---

Special relays (M) contain internal status, error and other system information of a sequence CPU module.

---

#### Note

---

For details on special relays, see "Sequence CPU – Functions."

---

#### Note

---

For details on the operation of the CPU, see "Sequence CPU – Functions."

---

## K1.1.2 Activating and Canceling Forced Set or Reset

- Forced set and reset operations have precedence over program execution. A relay that turned off by a program can be forced to turn on with this function.
- Forced set and reset operations have precedence over the input refreshing, shared refreshing, and link refreshing of inputs. An input that is turned off by an external circuit can be forced to turn on with this function.
- A device that is forced set or reset holds its state until one of the following conditions is met:
  - The forced set or reset is released.
  - The CPU operating mode is changed to Run mode.
  - The CPU is switched off.

## K1.1.3 Procedure for Activating Forced Set/Reset

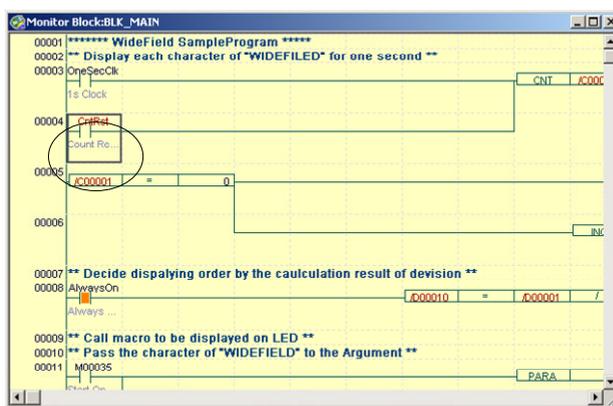
To forcibly set or reset a specified relay device, use the following procedure. This example shows the procedure that uses the Program Monitor.

### ◆ Procedure ◆

- (1) In the Block Monitor window, move the cursor to the relay device to be forced set or reset.

#### Note

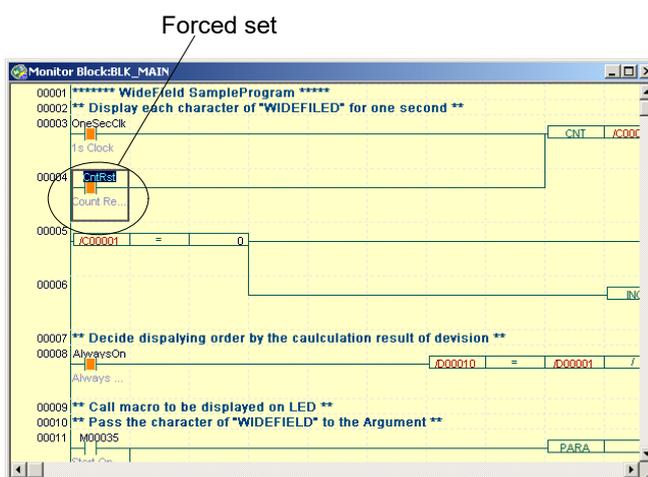
For details on how to use the Program Monitor, see Chapter J2, "Program Monitor."



Step (1)

K0101\_01.VSD

- (2) Select [Debug/Maintenance]–[Forced Set] or [Debug/Maintenance]–[Forced Reset] from the menu bar.  
⇒ The specified relay device is forced to set or reset accordingly.



Step (2)

K0101\_02.VSD

## K1.1.4 Procedure for Canceling a Forced Set or Reset

To cancel a forced set or reset on a specified relay device, use the following procedure. This example shows the procedure that uses the Program Monitor.

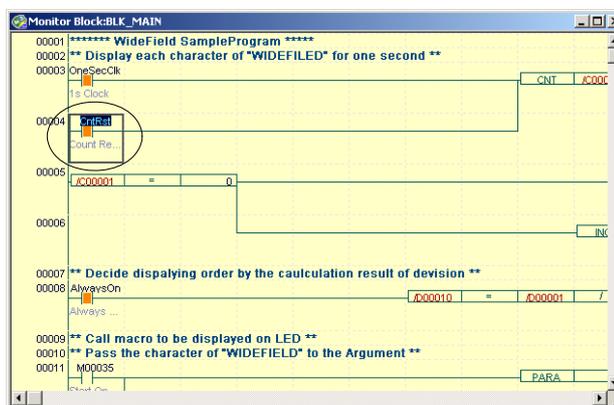
### ◆ Procedure ◆

- (1) In the Block Monitor window, move the cursor to the relay device for whose forced set or reset status you want to cancel.

#### Note

For details on how to use the Program Monitor, see Chapter J2, "Program Monitor."

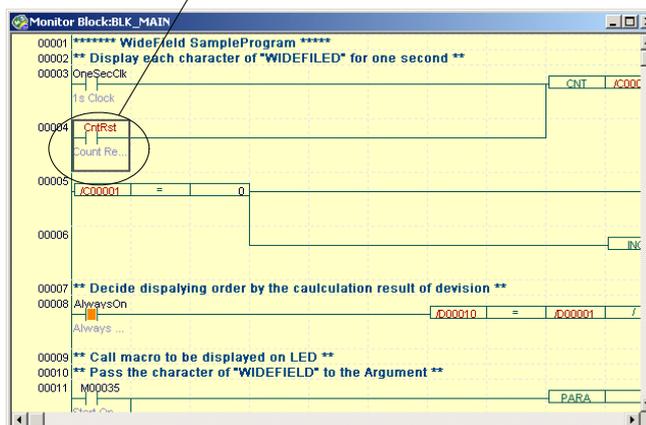
- (2) Select [Debug/Maintenance]–[Cancel Forced Set/Reset] from the menu bar.  
⇒ The forced set or reset state of the specified relay device is canceled.



Step (1)

K0101\_03.VSD

Forced set has been canceled



Step (2)

K0101\_04.VSD

---

## K1.1.5 Procedure for Canceling All Forced Set or Reset

To cancel forced set and reset states for all relay devices, use the following procedure.

### ◆ Procedure ◆

- (1) Select [Debug/Maintenance]–[Cancel All Forced Set/Reset] from the menu bar.  
⇒ The forced set and reset states of all relay devices are canceled.

---

## K1.2 Changing Word, Long Word, Bit or Double Long Word Data

You can change register data on a word, long-word or double-long-word basis. In addition, you can change relay data on a word, bit or long-word basis. There is no restriction on the number of devices that can be changed. You can change device data in the following monitors.

- Device Monitor
- Program Monitor
- Tag Name Definition Monitor
- Registered Device Monitor
- Watch Monitor
- Script Monitor

### K1.2.1 Device Data Which Can be Modified

Current values of all devices, except the following devices, can be changed:

- Timers (T) and counters (C)
- Special relays (M) and special registers (Z) that are not write-able
- All registers when changing data on a bit basis



#### CAUTION

- Do not attempt to change the current value of a special relay (M) or special register (Z) that is not write-able. Otherwise, the CPU may stop.
  - Current values of devices with index modification cannot be changed.
- 

#### Note

For details on the operation of the CPU, see "Sequence CPU – Functions."

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### K1.2.2 Operations of Modified Devices

- Program execution has precedence over manual modification of device data. Device data that has been manually modified may be overwritten by program execution.
- Input refreshing, shared refreshing and link refreshing have precedence over manual update of device data. Thus, any input from an external circuit can overwrite device data that has been manually modified.

## K1.2.3 Procedure for Changing Data

To manually change the data of a specified relay device, use the following procedure. This example shows the procedure that uses the Program Monitor.

### ◆ Procedure ◆

- (1) In the Block Monitor window, move the cursor to the device whose data is to be changed.

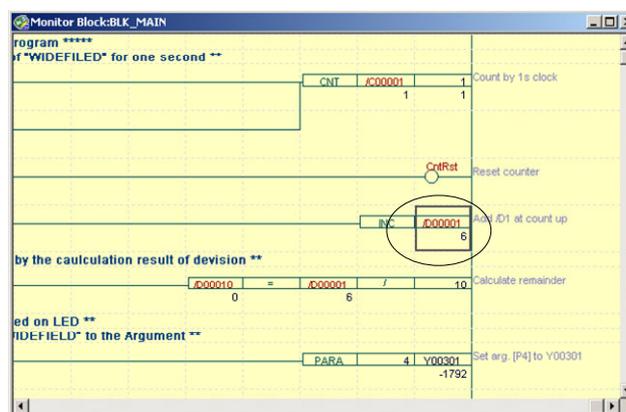
#### Note

For details on how to use the Program Monitor, see Chapter J2, "Program Monitor."

- (2) Select [Debug/Maintenance]–[Change Word Data], [Debug/Maintenance]–[Change Long Word Data], [Debug/Maintenance]–[Change Bit Data] or [Debug/Maintenance]–[Change Double Long Word Data] from the menu bar.

⇒ The Change Word Data, Change Long Word Data, Change Bit Data or Change Double Long Word Data dialog box opens. The current data value or zero is displayed in the [Enter Data] text box.

- (3) Enter new data in the [Enter Data] text box, and click [OK].



Step (1)

K0102\_01.VSD



Step (3)

K0102\_02.VSD

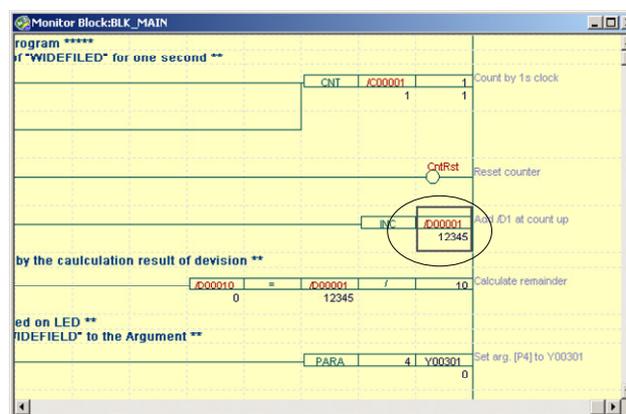
## Note

You may enter data in any of the following formats:

- Decimal (±) decimal value
- Hexadecimal hexadecimal value  
prefixed with "\$."  
Word: 4 digits  
Long word: 8 digits  
Double long word: 16 digits
- Character string Character string enclosed in quotation marks  
Word: 2 bytes max.  
Long word: 4 bytes max.  
Double long word: 8 bytes max.
- Single-precision floating point  $\% \pm ?.?????? E \pm ???$   
For long word only
- Double-precision floating point  $\% \pm ?.???????????????? E \pm ???$   
For double long word only

To change data on a bit basis, enter binary numbers (0s and 1s). For other formats of data change, you cannot enter binary numbers.

⇒ The device data is updated.



## Note

- The Change Word Data, Change Long Word Data and Change Double Long Word Data dialog boxes display data with the display format of the Block Monitor window. The Change Bit Data dialog box displays 0.
- If detailed display is not active in the [Block Monitor] window, data is displayed with the display format specified in the previous detailed display operation.
- Character strings should be entered starting from the high byte. If an entered character string is shorter than the data size, the low bytes are automatically filled with null characters (0).
- The Change Double Long Word Data dialog box is not applicable to relay device data.

## K1.3 Changing Current Values of Timers and Counters

You can change the current value of timers (T) and counters (C). There is no restriction on the number of devices that can be changed. You can change current values in the following monitors.

- Device Monitor
- Program Monitor
- Tag Name Definition Monitor
- Registered Device Monitor

### Note

You cannot change the current value of timers (T) used in the following instruction.  
ONDLY/OFDLY/PULSE/FTIMR/TMS/TME

### K1.3.1 Devices whose Current Values Can be Modified

Only current values of timers (T) and counters (C) can be changed.

### K1.3.2 Operation of Modified Devices

- If the current value of a timer (T) or counter (C) is changed, the device continues operation with the new current value.
- Program execution has precedence over manual modification of current values. A current value that has been manually modified may be overwritten by program execution.

### K1.3.3 Procedure for Changing Current Values

To manually change the current value of a timer (T) or counter (C), use the following procedure. This example shows the procedure that uses the Program Monitor.

#### ◆ Procedure ◆

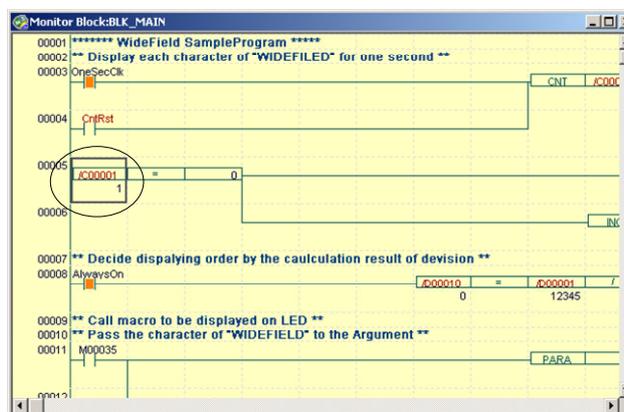
- (1) In the Block Monitor window, move the cursor to a timer or counter whose current value you want to change.

#### Note

For details on how to use the Program Monitor, see Chapter J2, "Program Monitor."

- (2) Select [Debug/Maintenance]–[Change Current Value of Timer/Counter] from the menu bar.

⇒ The Change Current Value dialog box opens. The current value is displayed in the [Enter current value] spin box or text box.



- (3) Enter a new current value in the [Enter current value] spin box or text box, and click [OK].

### Note

You can use the spin buttons to increment and decrement the counter (C) value or the timer (T) value in steps of one second.

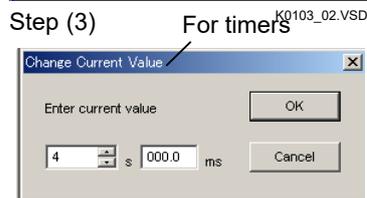
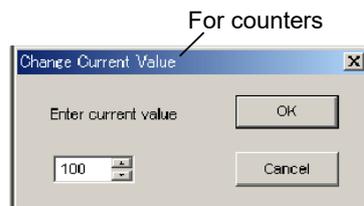
To change the timer (T) value in unit of milliseconds (1/1000 second), enter a value directly in the text box.

Timers (T) and counters (C) are normally displayed with count-down current values. To display count-up values, select [Count-up] on the Circuit Display/Input tab of the Set up Environment dialog box. Changing the preset value of a counter or timer in count-up display mode also changes the display of its current value by the difference between the new and old preset values.

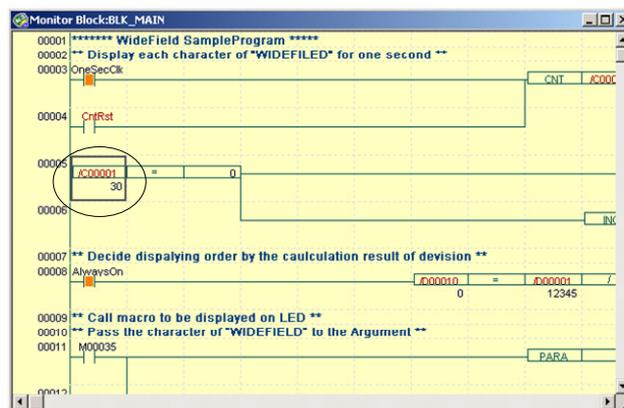
### Note

For details on the Circuit Display/Input tab of the Set up Environment dialog box, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).

- ⇒ The current value of the timer (T) or counter (C) is changed.



Step (3) K0103\_03.VSD



Step (4)

## K1.4 Changing Timer or Counter Preset Value

You can change the preset value of timers (T) and counters (C). There is no restriction on the number of devices that can be changed. You can change set values in the following monitors.

- Device Monitor
- Program Monitor
- Tag Name Definition Monitor
- Registered Device Monitor

### K1.4.1 Devices whose Preset Value Can Be Changed

Only preset values of timers (T) and counters (C) can be changed.

### K1.4.2 Operation of Modified Devices

A changed preset value takes effect when the timer (T) or counter (C) is next started. Even when you change the preset value of a running timer (T) or counter (C), the new preset value does not take effect until the timer or counter is next started. The timer or counter continues to operate with the previous preset value.

### K1.4.3 Procedure for Changing Preset Values

To manually change the preset value of a timer (T) or counter (C), use the following procedure. This example shows the procedure that uses the Program Monitor.

#### ◆ Procedure ◆

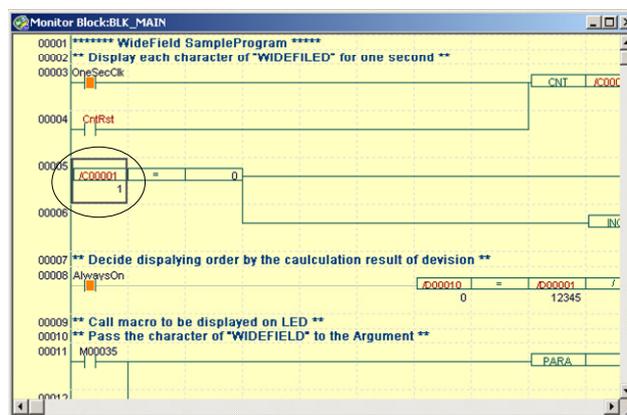
- (1) In the Block Monitor, Timer/Local Timer, or Counter/Local Counter window, move the cursor to the timer or counter whose preset value is to be changed.

#### Note

For details on how to use the Program Monitor, see Chapter J2, "Program Monitor."

- (2) Select [Debug/Maintenance]–[Change Preset Value of Timer/Counter] from the menu bar.

⇒ The Change Preset Value dialog opens. The current value is displayed in the [Enter preset value] spin box or text box.



Step (1)

K0104\_01.VSD

- (3) Enter a new set value in the [Enter preset value] spin box or text box, and click [OK].

## Note

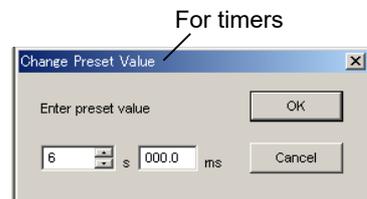
You can use the spin buttons to increment or decrement the counter (C) value and the timer (T) value in unit of a second.

To change the timer (T) value in units of milliseconds (1/1000 second), enter a value directly in the text box.



Step (3)

K0104\_02.VSD



Step (3)

K0104\_03.VSD

## Note

Changes made to a preset value will not be reflected to the file even if you perform file reflection. To reflect a new preset value to the file, change the preset value of a timer (T) or counter (C) using online editing, or upload a modified program.

## K1.5 Stopping Refresh

You can stop (and resume) various types of refreshing.

The types of refreshing you can stop (and resume) include:

- **Input refreshing**  
Stops refreshing of input relays (X).
- **Output refreshing**  
Stops refreshing of output relays (Y).
- **Shared refreshing**  
Stops refreshing of shared relays (E), extended shared relays (E), shared registers (R), and extended shared registers (R).
- **Link refreshing**  
Stops refreshing of link relays (L) and link registers (W).

### Note

The refresh process updates the status of I/O relays (X/Y) and other devices.

### K1.5.1 Procedure for Stopping Refresh

To stop refreshing, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

Select

[Debug/Maintenance]–[Stop Refreshing] from the menu bar, and then choose one of the following menu items: [Stop Input], [Stop Output], [Stop Shared], and [Stop Link].

### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

⇒ Refreshing for the specified device type stops.

### Note

The action monitor, if open, indicates which device (L, E, Y, and X) refreshing is not running.



Figure K1.1 Example Where Link Refreshing is Not Running

## K1.5.2 Procedure for Resuming Refresh

To resume refreshing, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is online, and select [Debug/Maintenance]–[Restart Refreshing] from the menu bar

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

- ⇒ All suspended device refresh processes resume operation.

#### Note

All devices (L, E, Y, and X) are dimmed in an open action monitor.



Figure K1.2 Resume Refreshing

## K1.6 Starting and Stopping Blocks

You can start and stop the execution of a block.

### Note

You can start and stop a block only if in the Project Settings/Configuration window, [Execution Method] of [Executable Program] on the [Execution Block Components] tab screen is set to [Specified Blocks]. If it is set to [All Blocks], you cannot start or stop an individual block.

### K1.6.1 Procedure for Starting a Block

To start a block, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that WideField3 is online and running in Debug Mode. Further confirm that a project is open and that the CPU type of the project agrees with the connected CPU.

### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to change operating modes, see Section J1.3, "Switching CPU Operating Modes."

For details on how to open a project, see Section D2.2.2, "Opening a Project."

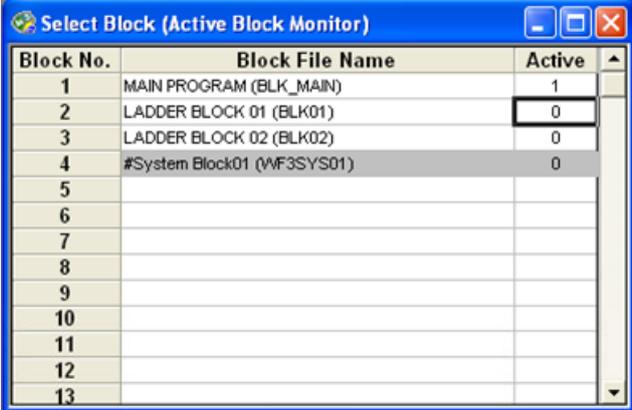
- (2) Select [Online]–[Program Monitor] from the menu bar.

⇒ The Select Block (Active Block Monitor) window opens. In the [Active] column, a value of 1 indicates a running block while a value of 0 indicates an idle block.

- (3) Move the cursor to the block you want to start.

### Note

For details on #System Block01 (WF3SYS01), see Section A5.4, "System Block" (Introduction and Troubleshooting).



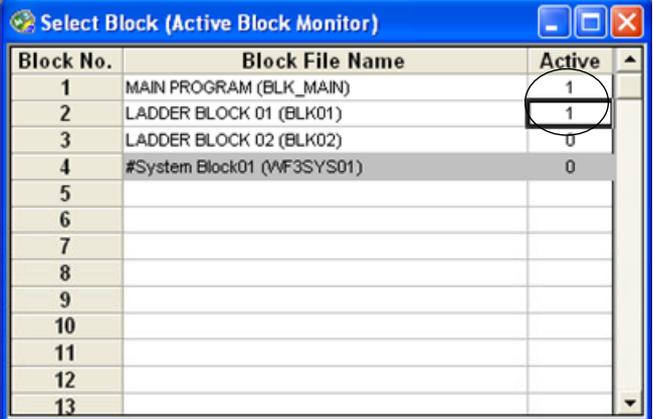
| Block No. | Block File Name            | Active |
|-----------|----------------------------|--------|
| 1         | MAIN PROGRAM (BLK_MAIN)    | 1      |
| 2         | LADDER BLOCK 01 (BLK01)    | 0      |
| 3         | LADDER BLOCK 02 (BLK02)    | 0      |
| 4         | #System Block01 (WF3SYS01) | 0      |
| 5         |                            |        |
| 6         |                            |        |
| 7         |                            |        |
| 8         |                            |        |
| 9         |                            |        |
| 10        |                            |        |
| 11        |                            |        |
| 12        |                            |        |
| 13        |                            |        |

Step (3)

K0106\_01.VSD

**(4) Select [Debug/Maintenance]–[Start Block] from the menu bar.**

⇒ The selected block starts. The Active status of the block in the Select Block (Active Block Monitor) window changes to 1.



| Block No. | Block File Name            | Active |
|-----------|----------------------------|--------|
| 1         | MAIN PROGRAM (BLK_MAIN)    | 1      |
| 2         | LADDER BLOCK 01 (BLK01)    | 1      |
| 3         | LADDER BLOCK 02 (BLK02)    | 0      |
| 4         | #System Block01 (WF3SYS01) | 0      |
| 5         |                            |        |
| 6         |                            |        |
| 7         |                            |        |
| 8         |                            |        |
| 9         |                            |        |
| 10        |                            |        |
| 11        |                            |        |
| 12        |                            |        |
| 13        |                            |        |

Step (4)

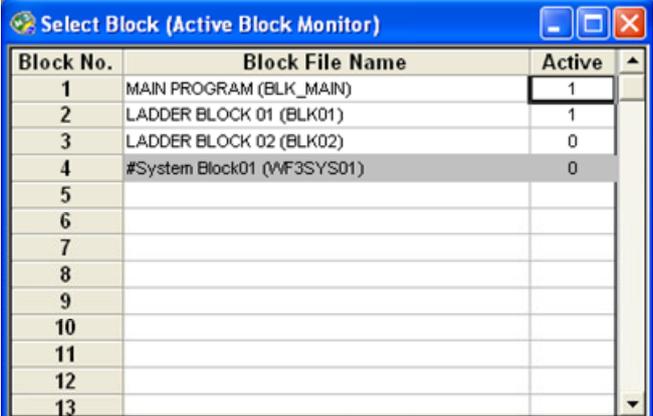
K0106\_02.VSD

## K1.6.2 Procedure for Stopping a Block

To stop a running block, use the following procedure.

### ◆ Procedure ◆

**(1) Move the cursor to the block you want to stop in the Select Block (Active Block Monitor) window.**



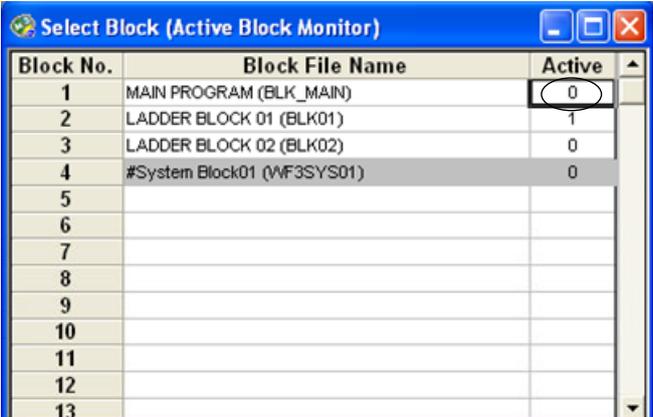
| Block No. | Block File Name            | Active |
|-----------|----------------------------|--------|
| 1         | MAIN PROGRAM (BLK_MAIN)    | 1      |
| 2         | LADDER BLOCK 01 (BLK01)    | 1      |
| 3         | LADDER BLOCK 02 (BLK02)    | 0      |
| 4         | #System Block01 (WF3SYS01) | 0      |
| 5         |                            |        |
| 6         |                            |        |
| 7         |                            |        |
| 8         |                            |        |
| 9         |                            |        |
| 10        |                            |        |
| 11        |                            |        |
| 12        |                            |        |
| 13        |                            |        |

Step (1)

K0106\_03.VSD

**(2) Select [Debug/Maintenance]–[Stop Block] from the menu bar.**

⇒ The selected block stops execution. The Active status of the block in the Select Block (Active Block Monitor) window changes to 0.



| Block No. | Block File Name            | Active |
|-----------|----------------------------|--------|
| 1         | MAIN PROGRAM (BLK_MAIN)    | 0      |
| 2         | LADDER BLOCK 01 (BLK01)    | 1      |
| 3         | LADDER BLOCK 02 (BLK02)    | 0      |
| 4         | #System Block01 (WF3SYS01) | 0      |
| 5         |                            |        |
| 6         |                            |        |
| 7         |                            |        |
| 8         |                            |        |
| 9         |                            |        |
| 10        |                            |        |
| 11        |                            |        |
| 12        |                            |        |
| 13        |                            |        |

Step (2)

K0106\_04.VSD

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## K2. Online Edit

The online edit function allows you to directly edit a program transferred to the CPU. Online editing can be used only when the sequence CPU module is in Debug or Stop operating mode.

Online editing is available for blocks and macros.

Multiple users can online edit different blocks or macros concurrently but only one user can modify the program for a block at any one time.



### WARNING

---

Do not online-edit a program that is currently controlling a machine.

The scan time at the end of online editing is usually longer because of the time taken to reflect the online-edited program on the sequence CPU module. During this period, I/O devices cannot be refreshed and external devices cannot communicate with the CPU, which may cause unexpected machine operation.

---



### CAUTION

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- If another terminal has online-edited a block which you are online-editing, you cannot overwrite the changes and continue online editing. A warning message will be displayed. If so, terminate your online editing session without reflecting the edited program on the CPU.
- If another terminal has online-edited a block which you are monitoring so that the actual content of the block and the content displayed in the monitor is no longer the same, online editing cannot be started. In this case, close and re-open the monitor window before starting online editing.
- Online-editing a program in a window does not reflect the changes to the CPU. The edited program is reflected on the CPU only when you select [Convert] from the menu.
- Conversion is automatically performed after the following operations: [Delete] in line units, [Cut] in line units or [Delete Lines]. Thus, changes made in line units are reflected on the CPU immediately.

If you want to confirm line deletion operations only upon conversion, use [Temporary Delete]. Temporarily deleted lines are displayed with a different background color. Temporarily deleted circuits are permanently deleted when conversion is executed.

- For WideField3 R2.02 or earlier, if there is a conversion error, then only contents up to the error area will be reflected on the CPU. To update all changes and exit, correct the conversion error. You may choose to exit without reflecting the invalid areas to the CPU but this may result in a displaced circuit comment in subsequent uploading if there was a conversion error in a circuit before or after the circuit comment.
  - For WideField3 R2.03 or later, if there is a conversion error, then all the contents, including areas without errors, will not be reflected on the CPU. To update all changes and exit, correct the conversion error. If you choose to exit without reflecting to the CPU, the program on the CPU retains its state prior to the modifications.
  - Copy, Paste and other editing functions that are available offline are also available online except that data copied offline cannot be pasted online.
-

## ● Function Limitations for Each CPU Type

**Table K2.1** Function Limitations for Each CPU Type

| CPU Type  | Limitations   | Reference      |
|---|---|----------------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The circuit comment out function is not available.<br>Circuit comments/subcomments cannot be added. | K2.3<br>K2.4.2 |
| F3SP66-4S,<br>F3SP67-6S   | The circuit comment out function is not available.<br>Circuit comments/subcomments cannot be added. | K2.3<br>K2.4.2 |
| F3SP71-4N,<br>F3SP76-7N   | Circuit comments/subcomments cannot be added.   | K2.4.2         |
| F3SP71-4S,<br>F3SP76-7S   | Circuit comments/subcomments cannot be added (for R2 or earlier).                                   | K2.4.2         |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

### Note

To identify the type and Rev of the CPU connected from WideField3, check the information displayed on Status Bar.

### Note

For details on Status Bar, see Section A3.1, "Screen Layout" (Introduction and Troubleshooting).

## K2.1 Online Edit Procedure

This section describes online edit operations from starting an online-edit session through terminating online editing.

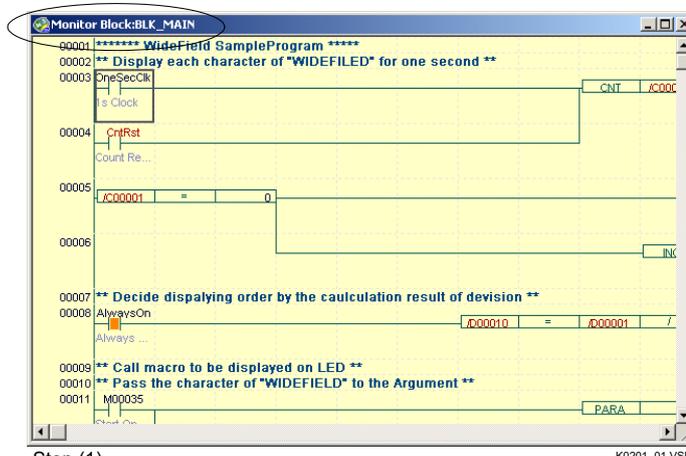
### ◆ Procedure ◆

- (1) Confirm that WideField3 is online and the Block Monitor or Macro Monitor window is open.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

For details on how to use the Program Monitor or Device Monitor, see Section J2.2, "Starting and Closing the Program Monitor" or Section J3.2, "Starting and Terminating a Device Monitor" respectively.



Step (1)

- (2) Select [Debug/Maintenance]–[Start Online Editing] from the menu bar.

#### Note

Online editing can be used only when the CPU operating mode is set to Debug or Stop mode. If you attempt to perform online editing when the CPU is in Run mode, a confirmation dialog box appears.

- ⇒ Online edit begins. The title of the window changes to "Monitor Block xxxx Online editing" (xxxx is block name) or "Monitor Macro xxxx Online editing" (xxxx is macro name).

#### Note

Blocks referring to the common library and to other projects are shown in windows titled [Library Block] and [Reference Block], respectively.

**(3) Edit the program.****Note**

Edited program and online balloon comment/monitor will be reflected on the CPU when you perform any of the following operations: [Convert], [Delete Line], [Delete] in line unit or [Cut] in line unit. When changes are reflected, a message is displayed in the output window to notify that the data is reflected.

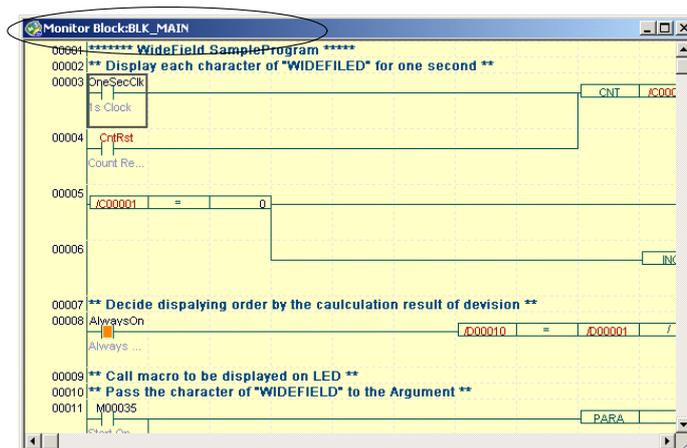
**(4) After you have finished editing the program, select [Edit]–[Convert] from the menu bar.**

⇒ The edited program is reflected on the CPU, and a confirmation dialog box opens.

**(5) Click [OK].****(6) Select [Debug/Maintenance]–[End Online Editing] from the menu bar.****Note**

If you attempt to exit online editing in step 6 without performing conversion of step 4, a dialog box opens to confirm whether to update the edited changes to the CPU. Clicking [Yes] in the dialog box updates the edited program and online balloon comment/monitor to the CPU and ends online editing. When online balloon comment/monitor data is reflected to the CPU, a message is displayed in the output window to notify that the data is reflected.

⇒ Online editing is terminated and you return to the Block Monitor or Macro Monitor window.



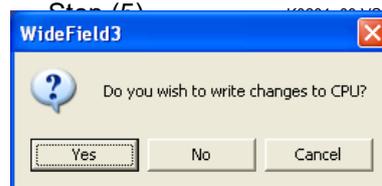
Step (3)

K0201\_02.VSD



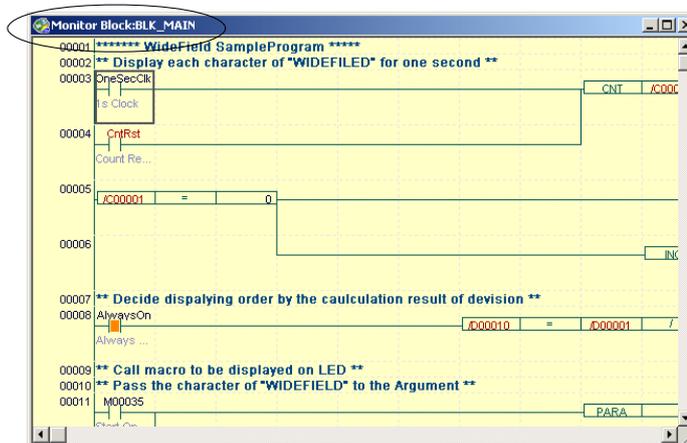
Step (5)

K0201\_03.VSD



Step (6)

K0201\_04.VSD



Step (6)

K0201\_05.VSD

**Note**

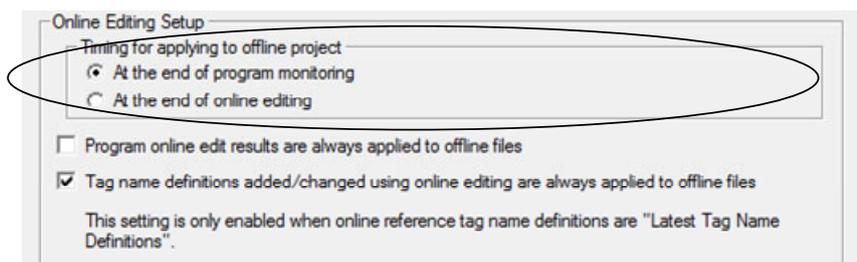
In F3SP66-4S, F3SP67-6S, F3SP71-4N, F3SP76-7N, F3SP71-4S, and F3SP76-7S, edited changes are written to the built-in ROM immediately after they are updated to the CPU. Do not switch off the FA-M3 while the "Writing" status message is blinking on the Action monitor.

## K2.2 Reflecting Changes on File

Online editing changes the program in the CPU directly. Online edited changes are not automatically reflected on the project in your personal computer. To reflect the changes on a project, use the following procedure.

### K2.2.1 Exiting from Program Monitor/Online Editing

When you attempt to close a Block Monitor or Macro Monitor window for a block which has been on-line edited but not saved or when you attempt to finish online editing, a dialog box opens to confirm whether to save the edited program to the project. You can specify the timing for displaying the dialog box on the [Program Monitor Setup] tab in the Set up Environment dialog box.



K0202\_03.VSD

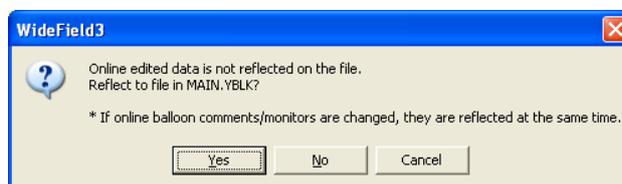
#### ◆ Procedure ◆

(1) To apply at the end of program monitoring, when you have finished online editing, click [Close] in the Block Monitor or Macro Monitor window, or select [File]–[Close] from the menu bar. To apply at the end of online editing, select [Debug/Maintenance]–[End Online Editing] from the menu.

⇒ A dialog box opens to confirm whether to save the edited program to the project on your personal computer.

(2) Click [Yes].

⇒ The edited program is overwritten and saved in your personal computer's project block/macro file with the same name, and the Block Monitor or Macro Monitor window closes.



Step (2)

K0202\_01.VSD

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## Note

When the edited program is overwritten and saved, the in-CPU names of blocks/macros cannot be changed.

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## Note

For details on in-CPU names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

---

## Note

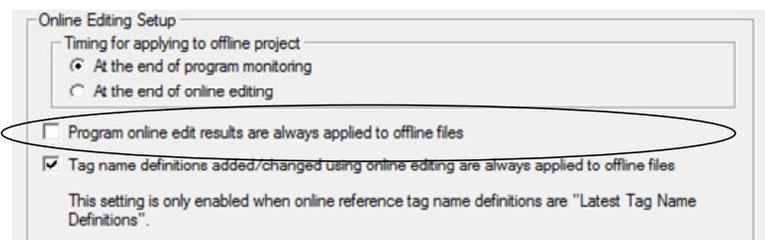
Any changes made on online balloon comment/monitor will be reflected at the same time.

When online balloon comment/monitor is reflected, an offline project will be updated not only with the balloons in the blocks containing any circuits changed during online editing but also with the entire online balloon comment/monitor.

---

## Note

- The top tree name on the [online] tab of the [Balloon Comment List] window shows whether online balloon comment and monitor data refers to the CPU or the data at the time of download.
- You can choose to apply editing results to offline files without displaying a confirmation message. Specify this on the [Program Monitor Setup] tab in the Set up Environment dialog box. The timing for applying editing results (at the end of program monitoring or online editing) is also specified here.



K0202\_04.VSD

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## K2.2.2 Reflecting Changes from the Menu

You can reflect an edited program on the project stored on your computer by selecting the appropriate command from the menu bar.

### ■ How to Overwrite and Save a Block or Macro with the Same Name

To overwrite and save an edited program in a block or macro file with the same name, use the following procedure.

#### ◆ Procedure ◆

(1) At the completion of online editing, select **[File]–[Save]** from the menu bar in the **Block Monitor** or **Macro Monitor** window. You can do this during online editing, but the modified circuit must have been transferred to the CPU module. (All circuits must have been converted).

⇒ The edited program is overwritten and saved in your personal computer's project block or macro file with the same name.

#### Note

---

When the edited program is overwritten and saved, the in-CPU names of blocks/macros cannot be changed.

---

#### Note

---

For details on in-CPU names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

---

### ■ How to Save in a Separate File

To save an edited program in a separate file, use the following procedure.

#### ◆ Procedure ◆

(1) At the completion of online editing, select **[File]–[Save As]** from the menu bar in the **Block Monitor** or **Macro Monitor** window. You can do this during online editing, but the modified circuit must have been transferred to the CPU module. (All circuits must have been converted).

⇒ The Save As dialog box opens.

(2) Enter a new block or macro file name in the [File name] text box, and click [Save].

(3) Enter a new block or macro name in the [Block Name] text box, and click [Save].

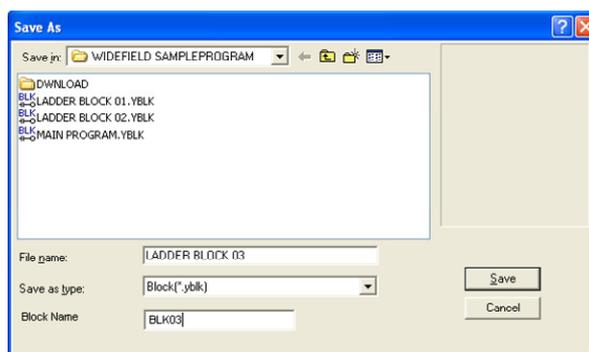
⇒ The edited program is saved as a new file.

### Note

In WideField3 R3 and later, an on-PC name different from the block or macro name can be specified for the block or macro file name.

### Note

For details on on-PC names and in-CPU names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).



Steps (2) and (3)

K0202\_02.VSD

## K2.3 Commenting Out Circuits

The circuit/instruction comment out function temporarily activates or disables selected instructions or circuits.

This is useful to temporarily disable instructions for debugging and to keep a circuit as a backup before modifying it. Disabling commenting-out restores the previous state.

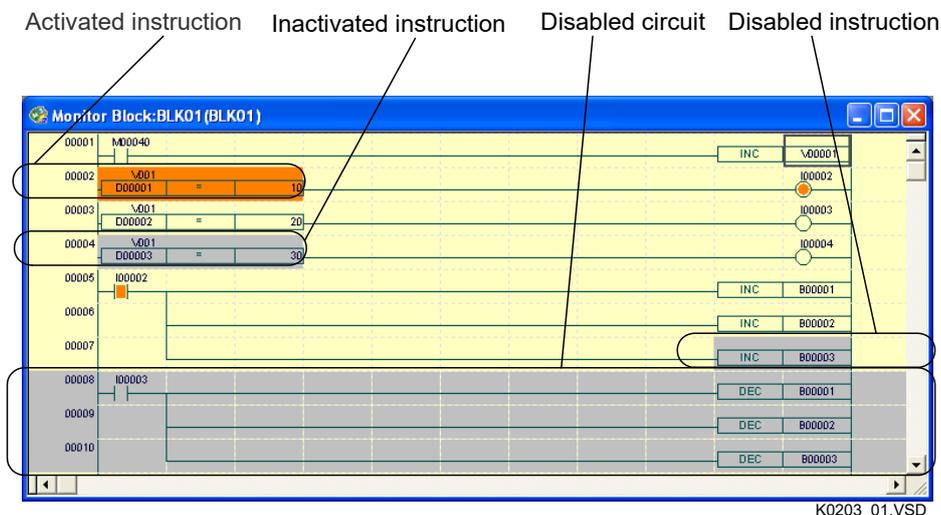


Figure K2.1 Commenting Out Circuits

### Note

You can comment out circuits in the circuits that have already converted.

### Note

For details on conversion, see Section E1.6, "Converting Circuits and Displaying Errors" (Offline).

## K2.3.1 Activating and Inactivating Instructions Temporarily

You can temporarily activate and inactivate input instructions. To do this, use the circuit editing window (when offline) or the program monitor window of the program being edited online (when online).

The following example shows the procedure that uses the program monitor window.

Use the following procedure.

### ◆ Procedure ◆

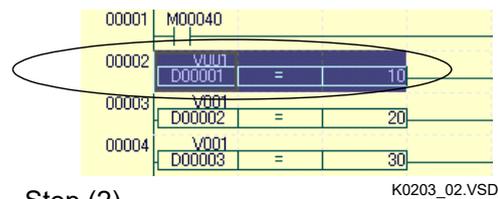
- (1) Confirm that WideField3 is in online editing mode and the Block Monitor or Macro Monitor window is open.

#### Note

For details on online editing procedures, see Section K2.1, "Online Edit Procedure."

For details on how to use the Program Monitor, see Section J2.2, "Starting and Closing the Program Monitor."

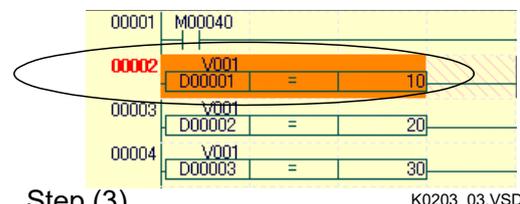
- (2) Select an input instruction to be activated temporarily.



Step (2)

- (3) Select [Edit]-[Circuit Comment-out]-[Forced On] from the menu bar.

⇒ The background color of the selected instruction changes, and the instruction is activated temporarily.



Step (3)

#### Note

To inactivate an input instruction, select [Edit]-[Circuit Comment-out]-[Forced Off] from the menu bar.

#### Note

- You can only activate and inactivate input instructions.
- If circuits containing commented-out instructions are modified in the mnemonic editing screen, commenting out of the instructions is cleared.

#### Note

- You can change the background color of temporarily activated or inactivated instructions.
- Selecting and activating (or inactivating) a part of an instruction makes the entire instruction activated (or inactivated).

**Note**

- For details on restrictions of instructions that can be activated and inactivated, see Section K2.3.5, "Restrictions of Commenting Out Circuits".
  - For details on how to change the background color of temporarily activated or inactivated instructions, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).
-

## K2.3.2 Disabling Circuits and Instructions Temporarily

You can temporarily disable selected input circuits and instructions. To do this, use the circuit editing window (when offline) or the program monitor window of the program being edited online (when online).

The following example shows the procedure for disabling an instruction in the program monitor window.

Use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that WideField3 is in online editing mode and the Block Monitor or Macro Monitor window is open.

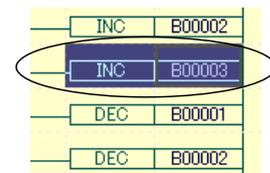
#### Note

For details on online editing procedures, see Section K2.1, "Online Edit Procedure."  
For details on how to use the Program Monitor, see Section J2.2, "Starting and Closing the Program Monitor."

- (2) Select an input instruction to be temporarily disabled.

#### Note

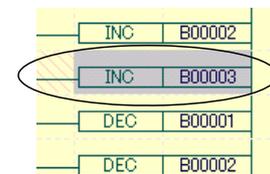
To disable a circuit, select the line of the circuit.



Step (2) K0203\_04.VSD

- (3) Select [Edit]–[Circuit Comment-out]–[Not Executed] from the menu bar.

⇒ The selected instruction is disabled temporarily.



Step (3) K0203\_05.VSD

#### Note

- You can only disable input instructions or circuits.
- If circuits containing commented-out instructions or circuits are modified in the mnemonic editing screen, commenting out of the instructions or circuits is cleared.

#### Note

- You can change the background color of temporarily disabled instructions or circuits.
- You can select and disable more than one line.
- Selecting and disabling a part of an instruction makes the entire instruction disabled.

**Note**

- For details on restrictions of instructions that can be disabled, see Section K2.3.5, "Restrictions of Commenting Out Circuits and Instructions."
  - For details on how to change the background color of temporarily disabled instructions, see Section D1.2.4, "Circuit Display/Input Setup" (Offline).
-

### K2.3.3 Clearing Commenting Out of Circuits

You can clear the temporarily activated, inactivated or disabled state of instructions and circuits. To do this, use the circuit editing window (when offline) or the program monitor window of the program being edited online (when online).

The following example shows the procedure using the program monitor window.

Use the following procedure.

#### ◆ Procedure ◆

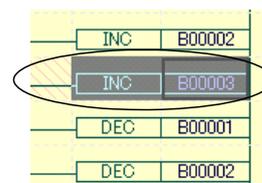
- (1) Confirm that WideField3 is in online editing mode and the Block Monitor or Macro Monitor window is open.

#### Note

For details on online editing procedures, see Section K2.1, "Online Edit Procedure."

For details on how to use the Program Monitor, see Section J2.2, "Starting and Closing the Program Monitor."

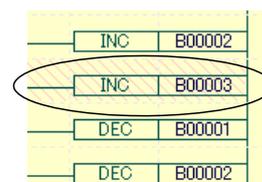
- (2) Select an input instruction or circuit to be cleared of temporary activation, inactivation or disability.



Step (2) K0203\_06.VSD

- (3) Select [Edit]–[Circuit Comment-out]–[Remove] from the menu bar.

⇒ The selected instruction or circuit is cleared of activation, inactivation or disability



Step (3) K0203\_07.VSD

### **K2.3.4 Comment-out List**

WideField3 R3 or earlier does not support the comment-out list function.

---

## K2.3.5 Restrictions of Commenting Out Circuits

This section describes restrictions of commenting out of circuits.

### ■ Scope of Commenting Out

- When an instruction and its parameters are displayed across multiple cells, selecting only a portion of the cells and commenting out the instruction causes not only the selected cells but also the entire instruction to be commented out.
- When a circuit line is selected, only the "disable" operation is allowed to comment out the circuit. You cannot activate nor inactivate the circuit.
- For a circuit across multiple lines, selecting only a portion of the lines and disabling the circuit causes not only the selected lines but also the entire circuit to be disabled.

### ■ Number of Steps

Commenting out a circuit does not affect its step count.

### ■ Restrictions of Commenting Out Circuits

- The circuit comment out function of online editing is not applicable to some instruction types. You cannot comment out the following instructions.

IL, ILC, SUB, RET, INTP, IRET, FOR, NEXT, MRET, STRCT, STMOV, SCALL, SCRIPT

You can still comment out these instructions other than the SCRIPT Instruction in the offline circuit editing screen, but after the commented-out program is downloaded, you cannot clear the commenting out of the instructions using online editing functions.

- You cannot comment out instructions contained in the lines that have already been commented out in online editing mode.
- In the Edit Mnemonics/Script screen, if you edit commented-out circuits, the comment out settings are removed.
- If, from an online or offline circuit editing screen, a part containing commented-out circuits is copied to another circuit editing screen in online editing mode, only the circuit is copied and the commenting-out settings are lost.
- You can use the comment out function in a block in read mode, but you cannot save or convert the block.
- You can comment out temporarily deleted lines. Note however that the commented-out temporarily deleted lines are deleted when converted.
- When a circuit line is selected, a [Not Executed] or [Remove] operation on circuit comment-out skips hidden lines in the selected area. Show hidden lines before performing a [Not Executed] or [Remove] operation.
- You cannot perform a collective cancellation of circuit commenting-out during online editing.

## K2.4 Restrictions in Online Editing

You can edit a program in online editing the same way you edit a block using a ladder program.

However, some edit functions are not available and some types of circuits cannot be edited in online editing.

### K2.4.1 Functions Not Available in Online Editing

The following edit functions cannot be used during online editing:

- Inserting page breaks
- Editing local device settings and properties
- Editing tag name definitions in a tag name definition window
- Replacement
- Monitoring a block being online-edited
- Adding macro call instructions to call macros that are not transferred to the CPU
- Entering an undefined constant name
- Modifying the value or data type of a defined constant name
- Adding new circuit comments/subcomments and pasting areas containing circuit comments/subcomments. These operations are available for F3SP71-4S/SP76-7S R3 or later.

---

## K2.4.2 Circuits That Cannot Be Online-edited

### ■ Edit-prohibit Circuits

The following circuits cannot be online-edited. They are called edit-prohibit circuits. You cannot modify, add or delete these circuits in online editing. To edit edit-prohibit circuits, you must first go offline.

- SUB/RET instructions and circuits containing SUB/RET instructions
- INTP/IRET instructions and circuits containing INTP/IRET instructions
- Circuits that cannot be represented in a ladder diagram
- Adding or modifying labels
- Circuits containing structure-related instructions (SCALL, STMOV, STRCT instructions)
- Copying/moving hidden lines

### ■ Edit-prohibit Comments

For CPU types other than F3SP71-4S/SP76-7S and for F3SP71-4S/SP76-7S R2 or earlier, you cannot add a new comment but you can delete or modify an existing comment using online editing for the following types of comments:

- circuit comments
- sub-comments

#### Note

---

- You can modify or delete circuit comments and sub-comments for all CPU types.
  - To delete a labels or sub-comment, delete all characters in the Edit Label dialog box or Enter Subcomment dialog box.
  - There are two ways to delete circuit comments. The first method is using the Delete Line function. To do this, select a circuit comment line, and then select [Edit]–[Delete Lines] from the menu bar. The second method is to temporarily delete a line and then perform conversion. To do this, select a circuit comment, and then select [Edit]–[Temporary Delete] from the menu bar. Temporarily deleted lines are displayed with a different background color. Next, select [Edit]–[Convert] from the menu bar to perform conversion. The highlighted line will be permanently deleted.
- 

#### Note

---

- For details on how to open the Edit Label dialog box, see Section E1.2.25, "Entering Labels" (Offline).
  - For details on how to open the Edit Sub-comment dialog box, see Section E1.2.38, "Entering and Deleting Subcomments" (Offline).
  - For details on modifying and deleting circuit comments, see Section E1.2.36, "Entering and Deleting Circuit Comments" (Offline).
-

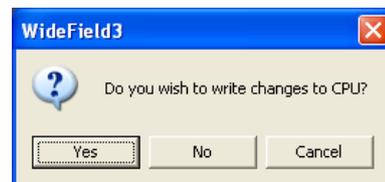
## K2.4.3 Precautions for Online Editing

### ■ Handling Line Failures during Online Editing

Never disconnect cables during online editing. If communication fails during on-line editing due to line fault, perform the following recovery procedure.

#### ◆ Procedure ◆

- (1) Confirm that the "Monitor Block xxxx Online editing" (xxxx is block name) or "Monitor Macro xxxx Online editing" (xxxx is macro name) window is open.
- (2) Select [Debug/Maintenance]–[End Online Editing] from the menu bar.
  - ⇒ If the program has been changed, a dialog box opens to confirm whether to reflect the changes to the CPU.
- (3) Click [No].
  - ⇒ Online editing will be terminated without reflecting the changes to the CPU.
- (4) Disconnect from the FA-M3 by selecting [Online]–[Disconnect] from the menu bar.
- (5) Switch off the FA-M3 and then switch it back on again.
- (6) Select [Online]–[Connect] from the menu bar to reconnect to the FA-M3.
- (7) Select [Online]–[Download[PC->CPU]] –[Block/Macro] from the menu bar to download the program.
- (8) Select [Online]–[Program Monitor] or [Online]–[Macro Monitor] from the menu bar to open a Block Monitor or Macro Monitor window respectively.
- (9) Select [Debug/Maintenance]–[Start Online Editing] from the menu bar, and edit the program again.



Step (3)

K0204\_01.VSD

## ■ Deleting Elements around Circuit Comments

For WideField3 R2.03 or later (including WideField3 R2.03), if deletion of circuits between two circuit comments causes the number of contiguous circuit comment lines to exceed the maximum limit, a conversion error occurs. The edited program is not written to the CPU.

For WideField3 R2.02 or earlier (including WideField3 R2.02), if deletion of circuits between two circuit comments causes the number of contiguous circuit comment lines to exceed the maximum limit, a conversion error occurs but the edited program is still written to the CPU.

In this case, uploading and other operations still proceed normally until you edit elements around the illegal circuit comment with offline editing. At this time, an error will be generated, indicating an excessive number of contiguous circuit comment lines.

### Note

Even if the number of contiguous circuit comment lines exceeds limit, the CPU operates normally.

## ■ Tag Name Display

If you enter an address not in Address Display mode during online editing, and the address is allocated to a tag name in the reference tag name definition, it will be displayed as a tag name.

## ■ Copying and Pasting in Online Editing

Program data that is copied in online editing mode can be pasted to the circuit editing screen of another block in online or offline editing mode.

## ■ Pasting to an Online Editing Screen

Program data that is copied in another circuit editing block or in online editing mode can be pasted to another screen in online editing mode. However, there are some restrictions as shown below.

**Table K2.2 Restrictions of Pasting Function in Online Editing Mode**

| Pasted Element                 | Restrictions  |
|--------------------------------|---|
| Instruction                    | Instructions that cannot be used in the target CPU type or block are pasted as empty cells.   |
| Circuit comment/<br>subcomment | For CPU types other than F3SP71-4S/SP76-7S and for F3SP71-4S/SP76-7S R2 or earlier, you cannot paste circuit comments/subcomments.  |
| Tag name/structure             | When not defined in the target, only the circuit elements are pasted as empty parameters.<br>When defined in the target, the definitions in the target are referenced and maintained when pasted. |
| Constant name                  | When not defined in the target, only the circuit elements are pasted as empty parameters.<br>When defined in the target, the definitions in the target are referenced and maintained when pasted. |

## ■ Pasting to Offline Editing

Program data that is copied in online editing mode can be pasted in offline editing mode. However, all instruction parameters of the pasted program data are converted to addresses. Tag name data cannot be pasted. Circuits that cannot be modified in online editing mode also cannot be copied.

## ■ Copying and Pasting Tag Name Definitions from Online Editing

Program data that is copied in online editing mode cannot be pasted to another block in online editing mode together with its tag name definitions.

### Note

For details on pasting that includes tag name definitions, see Section E1.2.32, "Copying and Moving Circuits Including Tag Name Definitions" (Offline).

## ■ Adding New Tag Name Definition Data

You can add new tag name definitions or edit I/O comments from an online edit window.

### Note

Adding new tag name definitions and editing I/O comments during online editing is allowed only if you perform the following setup on the [Program Monitor Setup] tab in the Set up Environment dialog box.

- Turn on the [Disallow concurrent ladder program editing and program monitoring for the same block] checkbox under [Program Editing/Monitoring].
- Turn on the [Latest Tag Name Definitions] option button under [Tag Name Definition Reference Setup].

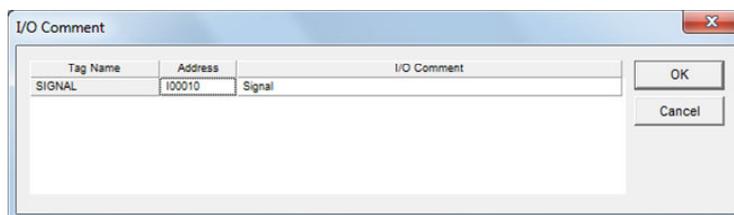
## ◆ Operation ◆

- (1) Enter a tag name or address, which is not already registered in the tag name definition as an instruction parameter.

⇒ The I/O Comment dialog box is displayed.

- (2) Enter the address and I/O comment and click [OK].

⇒ The entered information is reflected on the circuit.



Step (2)

K0204\_02.VSD

### Note

If you have entered an address that is not already registered in the tag name definition, you can then enter an I/O comment.

### Note

When you enter a tag name that is not already registered in the tag name definition, the I/O Comment dialog box is always displayed to allow you to allocate addresses.

The entered instruction parameter will be cancelled by any of the following operations on the I/O Comment dialog box.

- Entering a tag name or address that duplicates any tag name.
- Entering an invalid comment.

---

## Note

For details on how to modify I/O comments, see Section E1.2.39, "Entering and Deleting I/O Comments" (Offline).

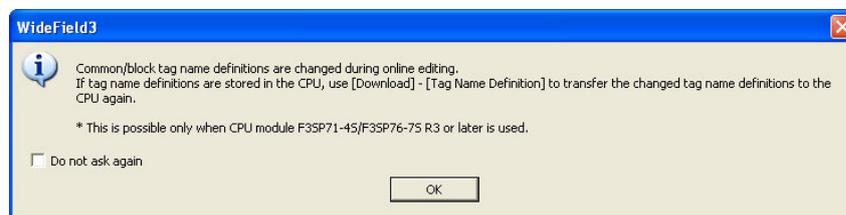
---



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## CAUTION

- Changes made to tag name definitions within a project are updated regardless of whether you reflect changes to the block or macro file.
- Tag name definitions in the CPU are not modified even if you download the tag name definition to the CPU. After tag name definitions are modified in online editing, the message shown below appears when the program monitor is closed. Use the tag name definition download function during RUN to transfer the most recent tag name definitions to the CPU. Note, however, that the tag name definition download function during RUN is only available for F3SP71-4S/SP76-7S R3 or later.



K0204\_06.VSD

**Figure K2.4.1 Message When Tag Name Definitions Are Modified**

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## Note

For details on the tag name definition download function during RUN, see Section H2.3, "Downloading Tag Name Definitions during RUN."

---

## ■ Editing Circuit Comments or Subcomments

You can edit circuit comments or subcomments from an online edit window.

### Note

- You can edit comments or subcomments regardless of the CPU type and whether comments and subcomments have been downloaded to the CPU.
- If circuit comments or subcomments have been downloaded to the CPU, then the comments in the CPU will also be changed when changes are reflected to the CPU.

### Note

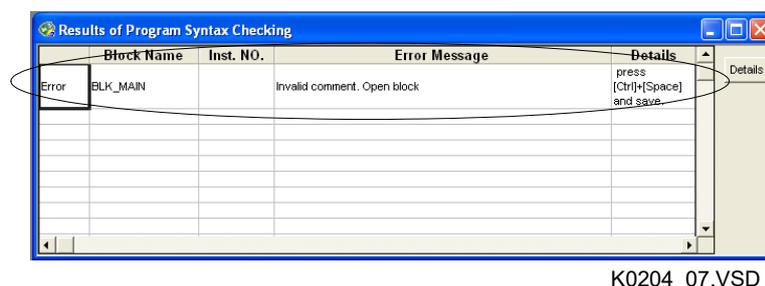
For details on how to edit circuit comments and subcomments, see Section E1.2.36, "Entering and Deleting Circuit Comments" (Offline) and Section E1.2.38, "Entering and Deleting Subcomments" (Offline).



### CAUTION

- Circuit comments/subcomments cannot be added with the mnemonic editing function.
- Circuit comments/subcomments can be added for F3SP71-4S/SP76-7S R3 or later. If you try to add a comment for other CPU types, an error occurs when you confirm an added comment and click [OK]. Click [Cancel] and restore the state before the modification is made.
- Areas containing circuit comments/subcomments can be copied for F3SP71-4S/SP76-7S R3 or later. If you perform this operation for other CPU types, the area is pasted with all the circuit comment/subcomment removed from the area. If you copy only a circuit comment, an error occurs when it is pasted.
- You must be careful when you use a program on WideField3 R2.03 or earlier if the program contains any circuit comment/subcomment that has been added to the CPU type of F3SP71-4S/SP76-7S R3 or later in online editing on WideField3 R2.04.

In this case, if you try to perform program syntax checking or a download, the operation may be aborted with the message shown below. If this occurs, open and save the relevant block, and perform the operation again.



K0204\_07.VSD

Figure K2.4.2 Message When a Comment Error Occurs

- If circuit comments are deleted in the circuit comment edit dialog box, blank circuit comment lines are added for the number of lines deleted. These lines are temporary deletion lines, and are automatically deleted by conversion.
- Changes made to circuit comments and subcomments are reflected to the block or macro in a project when you reflect the changes to the block/macro file.

## ■ Editing Balloon Comments

You can edit balloon comments and monitor data in the online editing windows.

Online balloon comments and monitor data are stored in the CPU at the same time as when online-edited modifications are reflected to the CPU.

### Note

- For details on how to edit balloon comments, see Section E1.2.40, "Creating and Deleting Balloon Comments" (Offline).
- For details on storing balloon comments, see Section H9.3, "Online Operation of Balloon Comments".
- For details on formats in the balloon monitor, see Section J2.6, "Balloon Monitor."



### CAUTION

- The only CPU types that can store balloon comments are F3SP71/76.
- Balloons you can edit in the program monitor and by online editing are online balloon comments and monitor data. As they are saved separately from balloons that can be edited in offline Edit Block windows (offline balloon comments and monitor data), balloon modifications made in the program monitor and by online editing are not applied to offline balloon comments and monitor data.
- Balloon comments stored by online editing are online balloon comments and monitor data (balloons in the program monitor). Offline balloon comments and monitor data (balloons in offline edit windows) are not stored in the CPU by online circuit editing.
- Online editing causes online balloon comments to be reflected to the CPU when the circuit is stored in the CPU. Therefore, [Convert] operations do not store online balloon comments and monitor data in the CPU unless you make any change to the circuit during online editing.
- If any online-edited balloons are reflected to the CPU, not only the balloons in the modified blocks but the balloons in all the blocks shown on the [online] tab of [Balloon Comment List] are reflected.

### Note

Even if a project opened offline and a project stored in the CPU differ, balloon monitors and comments are displayed as long as the block name is the same and the position and display of a balloon are valid.

---

## K2.5 Monitoring During Online Editing

The online editing monitoring function displays the ON/OFF status of relays and the current values of data in the monitor display, as in a Program Monitor window, even during online editing.

Also, you can use the forced set, forced reset, forced cancel, and forced all-cancel functions, as well as change the current values of data, timers, and counters. Additionally, you can use the debugging function when changing the settings of timers and counters.

To set up the online editing monitoring function, use [Online Editing Monitor Function Setup] of [Program Monitor Setup] in the Set up Environment dialog box.

### Note

---

- Any device with its line modified during online editing is not monitored until the changed settings are loaded into the CPU.
  - Editing keys have priority during online editing. Editing functions are enabled for function keys and shortcut keys that have both editing and debugging functions (such as [F5]).
  - The balloon comment and monitor display is updated even during online editing.
- 

### Note

---

- For details on Program Monitor windows, see Section J2.1, "Program Monitor Window."
  - For details on the debugging functions, see Chapter K1, "Using the Debugging Functions."
  - For details on [Program Monitor Setup] in the Set up Environment dialog box, see Section D1.2.5, "Program Monitor Setup" (Offline).
  - For details on the balloon comment monitor, see Section J2.6, "Balloon Monitor".
-

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## K3. Logs and Alarms

Logs and alarms are used to monitor the operation status and error events of the FA-M3. The following maintenance functions are available:

- **Alarm display**  
Displays all active error and alarm statuses.
- **System log display**  
The FA-M3 logs error events, power-on events and other events along with time information in the CPU. You can use the system log function to display such information, save it to a file and print it.  
System log files have filename extension ".yslg" and are stored in the WideField3 common folder (the default is the "Fam3com" folder in the folder where WideField3 is installed) by default.
- **User log display**  
By executing User Log instructions, you can store to the CPU a history of errors that has occurred in the user system. You can use the user log function to display such information, save it to a file and print it.  
User log files have filename extension ".yulg" and are stored in the WideField3 common folder by default.
- **Operation log display**  
Displays the history of operations performed on the CPU. You can save operation logs to a file. Operation log files have filename extension ".yolg" or ".yclg" and are stored in the WideField3 common folder by default.

### Note

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Operation log files created by the CPU have filename extension ".yolg", and operation log files created by WideField3, which contain system log data, have filename extension ".yclg".

WideField3 can read both formats of operation log files.

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### Note

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To print logs and alarms, see Chapter E8, "Printing" (Offline).

---

## ● Function Limitations for Each CPU Type

**Table K3.1 Function Limitations for Each CPU Type**

| CPU Type  | Limitations  | SEE ALSO       |
|---|--|----------------|
| F3SP22-0S,<br>F3SP28-3S,<br>F3SP38-6S,<br>F3SP53-4S,<br>F3SP58-6S,<br>F3SP59-7S | The operation log function is not available.   | K3.4           |
| F3SP66-4S,<br>F3SP67-6S   | There are precautions about clearing memory.   | K3.1.2         |
|   | The operation log function is not available.   | K3.4           |
| F3SP71-4N,<br>F3SP76-7N   | There are precautions about clearing memory.   | K3.1.2         |
|   | The virtual directory function is not available.   | K3.2.5<br>K3.4 |
|   | The partial download/upload functions are not available.   | K3.4.5         |
|   | Card batch execution by specifying a file name in the virtual directory command is not possible. | K3.4.5         |
| F3SP71-4S,<br>F3SP76-7S   | There are precautions about clearing memory.   | K3.1.2         |
|   | The partial download/upload functions are not available.   | K3.4.5         |

### Note

This section does not describe hardware-dependant limitations for each CPU type, such as the number of available devices.

### Note

For details on limitations for each CPU type, refer to the user's manual for each type.

## K3.1 CPU Alarms

This function displays the status of active alarms and errors in the connected FA-M3.

### K3.1.1 Displaying and Canceling Alarms

To display alarms and cancel minor failures, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Debug/Maintenance]–[Display Alarm] from the menu bar.

⇒ The alarm display window opens.

#### Note

You can also open the alarm display window by selecting [Executable Program] and then double-clicking [Alarm Status] in the online project window.

#### Note

For details on alarm messages and codes, see Section K3.1.2, "Error Messages Displayed in the Alarm Display Window."

(3) If one or more alarms are active, double-click an alarm to be displayed, or move the cursor to the alarm using the arrow keys.

⇒ The block that generated the alarm opens and the display jumps to the corresponding location.

(4) Select [Debug/Maintenance]–[Cancel Alarm] from the menu bar of the Alarm Display window.

⇒ This cancels the alarm (cancels minor failures).

| Alarm Message        | Code    | File/Name               | Location |
|----------------------|---------|-------------------------|----------|
| I/O comparison error | 05-0000 | LADDER BLOCK 01 (BLK01) | 00015N   |
|                      |         |                         |          |
|                      |         |                         |          |
|                      |         |                         |          |
|                      |         |                         |          |

Step (3)

K0301\_01.VSD

**Note**

Clicking an alarm does not jump to a Macro Monitor window. If a macro generated an error, the display jumps to the block location of the instruction invoking the macro.

Jumps can only be made from alarms displayed with a file name and location (instruction number).

---

**Note**

For details on how to cancel alarms (cancel minor failures), see "Sequence CPU – Functions."

---

**Note**

If you select [Debug/Maintenance]–[Redisplay Alarm] with the Alarm Display window open, the alarm display will be updated with the latest alarm status.

---

## K3.1.2 Error Messages Displayed in the Alarm Display Window

The table below lists the error status output by the sequence CPU module.

### Note

For details on the error statuses listed in Table K3.2, see "Sequence CPU – Functions."

**Table K3.2 Alarm Messages**

| Message                       | Code    | Description   | Troubleshooting  |
|-------------------------------|---------|---|--|
| Self-diagnosis error          | 01-1002 | Number of modules exceeded CPU capacity.              | Check the modules in use.  |
|                               | 01-1003 | Module mapping failure                                | Check for noise in the installation environment. If problem recurs, replace the hardware.  |
|                               | 01-1004 | Module access failure                                 |  |
|                               | 01-1005 | Other failures during CPU initialization              |  |
|                               | 01-11XX | SPU error   |  |
|                               | 01-1201 | Program memory failure                                | Noise and other external factors may cause transient memory failures. Check the installation environment. Clear memory (see CAUTION below) and download program again. If problem recurs, replace the module.  |
|                               | 01-1202 | Device memory failure                                 |  |
|                               | 01-1203 | System memory failure                                 |  |
|                               | 01-1207 | Flash ROM failure                                     |  |
|                               | 01-1208 |   |  |
|                               | 01-1211 | Memory failure causing ECC correction to fail         |  |
|                               | 01-1212 |   |  |
|                               | 01-1701 | An invalid instruction word was detected.             | Amend the program.   |
|                               | 01-1702 | No END instruction                                    |  |
|                               | 01-2001 | Label mismatch  |  |
|                               |         | 01-2002   | I/O points exceeded maximum limit.   |
|                               | 01-8203 | ROM pack error (type mismatch)                        | <ul style="list-style-type: none"> <li>- This does not indicate an error if you have just executed an Erase ROM operation. You can continue using the ROM pack.</li> <li>- You may have written to the ROM with an incorrect CPU type. Try to write again. If the same error recurs, it may indicate a hardware fault. Replace the ROM pack or the sequence CPU module.</li> </ul> |
|                               | 01-8204 | ROM pack error (cannot read or write)                 | Try to write to the ROM again. If the same error recurs, it may indicate a hardware fault. Replace the ROM pack or the sequence CPU module.  |
| Momentary power failure       | 02-0000 | Momentary power failure                               | —  |
| Inter-CPU communication error | 03-0000 | Inter-CPU communication failure in a multi-CPU system | When using multiple CPUs, this may indicate an error from other CPUs. Do not reset CPU modules individually. Instead, reset all CPUs from the main CPU. If the problem recurs, replace the CPU module.   |

| Message                                    | Code   | Description   | Troubleshooting   |
|--|--|---|---|
| Instruction error                          | 04-2101  | Invalid instruction parameter range   | Amend the program.  |
|  | 04-2102  | Incorrect operation calculation   |   |
|  | 04-2103  | BIN/BCD conversion error.   |   |
|  | 04-2104  | FIFO table pointer failure  |   |
|  | 04-2105  | Device boundary value exceeded.   |   |
|  | 04-2106  | FOR-NEXT mismatch.  |   |
|  | 04-2107  | Instruction processing error (IL - ILC mismatch)  |   |
|  | 04-2201  | Non-existent subroutine return location   |   |
|  | 04-2202  | Subroutine nesting exceeded 8 levels  |   |
|  | 04-2301  | Non-existent interrupt instruction return location  |   |
|  | 04-2302  | More than 8 interrupt wait events   |   |
|  | 04-2501  | No macro instruction return location  |   |
| 04-2502                                    | Macro instruction nesting exceeded 7 levels  |   |   |
| I/O comparison error                       | 05-0000  | I/O module installation and program mismatch.   |   |
| I/O module error                           | 06-0000  | Cannot read from or write to I/O module.  | <ul style="list-style-type: none"> <li>- Ensure that the subunit is not switched off.</li> <li>- Ensure that the cable of the fiber-optic FA-bus module is intact.</li> <li>- Do not reset CPU modules individually. Instead, reset all CPU modules from the main CPU.</li> <li>- An I/O module may be faulty. Replace the module.</li> </ul> |
| Scan timeout                               | 07-0000  | Scan monitoring time exceeded.  | Amend the program.  |
| FA link (1-8) error                        | 09-0000<br>0A-0000<br>0B-0000<br>0C-0000<br>0D-0000<br>0E-0000<br>0F-0000<br>10-0000 | Invalid FA link settings  | Correct the FA link setup.  |
| Battery error /Memory check error          | 11-0000  | Memory backup circuit failure or error in the pattern data used for backup check. Program or data is initialized. | Noise and other external factors may cause transient memory errors. Check the installation environment. Clear memory (see CAUTION below) and download program again. If problem recurs, replace the module.   |
| Subunit communication error                | 12-0000  | Cannot read to or write from the module attached to the sub-unit.   | <ul style="list-style-type: none"> <li>- Switch on the sub-unit.</li> <li>- Check the fiber-optic FA-bus or fiber-optic FA-bus type 2 cable.</li> </ul>   |
| Subunit transmitter switching has occurred | 13-0000  | Line discontinuity detected in the remote I/O system connected in a loop.   | Replace the fiber-optic FA-bus or fiber-optic FA-bus type 2 cable.  |
| Sensor CB scan timeout                     | 14-0000  | Sensor control block scan monitoring time exceeded.   | Amend the program.  |
| *****                                      | XX-XXXX  | An undefined alarm was detected.  | Noise and other external factors may cause transient errors. Check the installation environment. Clear memory (see CAUTION below) and download program again. If problem recurs, replace the module.  |



---

**CAUTION**

You can clear the internal memory of the sequence CPU module and revert to factory default settings:

- For F3SP66-4S/67-6S/71-4N/76-7N/71-4S/76-7S: by operating the rotary switch on the front panel.
- For other CPU modules: by installing the sequence CPU module in slot 5 or a higher slot number of the main unit and turn on the power.

In the event of transient memory failure caused by noise and other external factors, try downloading the application program at a later time.

If the error recurs, this may indicate a hardware failure so you should consider replacing the module.

---

**Note**

- A remote I/O system is an extended I/O system consisting of  $\mu$ -bus, fiber-optic FA-bus, and fiber-optic FA-bus type 2.
  - The fiber-optic FA-bus module or fiber-optic FA-bus type 2 module is used to build a data link network between multiple FA-M3 systems.
- 

**Note**

- For details on precautions about clearing memory of F3SP66-4S/67-6S/71-4N/76-7N/71-4S/76-7S CPU modules, see "Sequence CPU Instruction Manual – Functions."
- 

**Note**

- For details on the remote I/O system, see "Sequence CPU – Functions."
  - For details on the fiber-optic FA-bus/bus type 2, see "Sequence CPU – Functions."
-

## K3.2 System Log

This system log function displays, saves to file, and prints log information of error events, power-on events and other events stored in the CPU. It stores a maximum of 70 to 150 history data entries, the actual limit depending on the kind of information stored. When it reaches the memory capacity, it erases the oldest data to store new data.

### Note

For details on error codes of system logs, see "Sequence CPU – Functions."

### K3.2.1 Displaying the System Log

To display the system log, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Debug/Maintenance]–[Display CPU Log]–[Display System Log] from the menu bar.

⇒ The system log display window opens.

#### Note

You can also open the system log display window by selecting [Executable Program] and then double-clicking [System Log] in the online project window.

Log messages:  
Displayed with the  
newest first

Error code

Name of block where  
error was generated

| Date & Time         | Message              | Code  | Block Name | Location |
|---------------------|----------------------|-------|------------|----------|
| 2010.07.04 10:10:33 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.07.04 10:10:25 | Power Off            | 03-00 |            |          |
| 2010.07.04 10:08:09 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.07.04 10:08:05 | Power Off            | 03-00 |            |          |
| 2010.07.04 09:53:51 | I/O comparison error | 24-01 | TEST       | 00009N   |
| 2010.07.04 07:52:47 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.07.03 20:10:57 | Power Off            | 03-00 |            |          |
| 2010.07.03 07:50:25 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.07.02 20:24:09 | Power Off            | 03-00 |            |          |
| 2010.07.02 08:31:47 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.06.30 17:39:08 | Power Off            | 03-00 |            |          |
| 2010.06.30 10:18:50 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.06.30 20:41:55 | Power Off            | 03-00 |            |          |
| 2010.06.29 14:49:38 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.06.29 14:49:15 | Power Off            | 03-00 |            |          |
| 2010.06.29 14:39:33 | Startup completed    | 01-00 |            | SLOT=001 |
| 2010.06.29 14:39:19 | Power Off            | 03-00 |            |          |

Instruction No.: In "XXXXN" format  
Slot No.: In "SLOT=XXX" format

Log date and time: In yyyy/mm/dd/hh:mm:ss format

Step (2)

K0302\_01.VSD

### Note

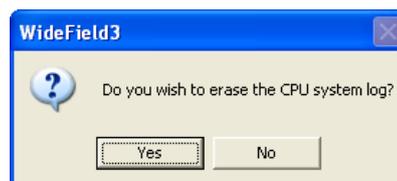
Selecting [Debug/Maintenance]–[Display CPU Log]–[Redisplay System Log] with the System Log Display window open updates the system log display with the latest information.

## K3.2.2 Clearing the System Log

To clear the system log, use the following procedure.

### ◆ Procedure ◆

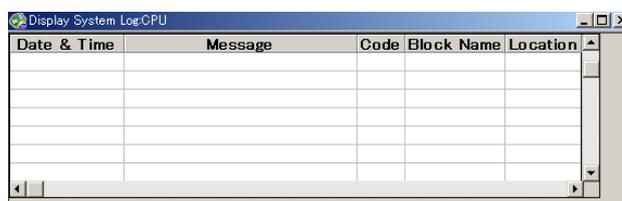
- (1) Confirm that the system log display window is open.
  - (2) Select [Debug/Maintenance]–[Display CPU Log]–[Clear Log] from the menu bar.
- ⇒ A confirmation dialog box opens.
- (3) Click [Yes].



Step (3)

K0302\_02.VSD

- ⇒ The content of the system log display window is cleared.



Step (3)

K0302\_03.VSD

## K3.2.3 Saving a System Log File

To save the system log to a file, use the following procedure.

### ◆ Procedure ◆

- (1) Confirm that the system log display window is open.
  - (2) Select [File]–[Save As] from the menu bar.
- ⇒ The Save As dialog box opens.
- (3) Enter a file name in the [File name] text box, and click [Save].
- ⇒ The system log file is saved.

Table K3.3 Files Created for System Logs

| Type            | Extension | Description  | Tip   |
|-----------------|-----------|--|---|
| System Log File | .yslg     | Stores system logs. Specify a file name according to the naming rules for in-CPU names. *1 | The default save destination is the WideField3 common folder (the default is the "Fam3com" folder in the WideField3 installation folder). |

\*1: For details on in-CPU names and on-PC names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

## K3.2.4 Opening a System Log File

To open a system log file, use the following procedure.

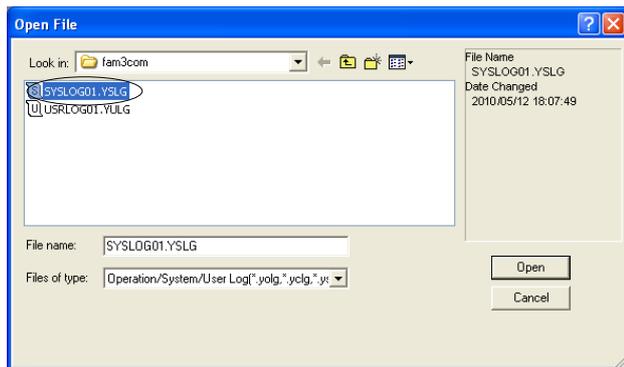
### ◆ Procedure ◆

(1) Select [File]–[Open]–[Log File] from the menu bar.

⇒ The Open File dialog box opens and a list of all types of log files stored in the WideField3 common folder (the default is the “Fam3com” folder in the folder where WideField3 is installed) is displayed.

(2) Double click a file name, or move the cursor to a file name and click [Open].

⇒ The log file opens.



Step (2)

K0302\_04.VSD

## K3.2.5 Log Messages Displayed in the System Log Display Window

The table below lists error statuses output by the sequence CPU module.

### Note

For details on the error statuses listed in Table K3.4, see "Sequence CPU – Functions."

**Table K3.4 System Log Messages**

| Message                              | Description  | Troubleshooting   |
|--------------------------------------|--|---|
| Startup completed                    | Initialization after power on has completed successfully.<br>Detailed error code: 01-0n<br>where n is the MODE switch value                | —   |
| Momentary power failure              | Momentary power failure  | —   |
| Power Off                            | Power is turned off.   | —   |
| Startup error                        | Error detected during initialization after power on.   | Replace the hardware.   |
| SPU error                            | Failure of the internal processor of the sequence CPU module   | Check for noise in the installation environment. If problem recurs, replace the hardware.   |
| Memory error                         | Memory data error  | Noise and other external factors may cause transient memory errors. Check the installation environment. Clear memory (see CAUTION below) and download program again. If problem recurs, replace the module. |
| Battery error<br>/Memory check error | Memory backup circuit failure or error in the pattern data used for backup check.<br>Program or data is initialized.                       | Check the installation environment. Clear memory (see CAUTION below) and download program again. If problem recurs, replace the module.   |
| Scan timeout                         | Scan monitoring time exceeded.   | Amend the program.  |
| Invalid instruction found            | An invalid instruction word was detected.  | Noise and other external factors may cause transient memory errors. Check the installation environment. Clear memory (see CAUTION below) and download program again. If problem recurs, replace the module. |
| FA link (1-8) error                  | Invalid FA link settings   | Correct the FA link setup.  |
| Program error                        | Invalid program  | Amend the program.  |
| Instruction error                    | Error was detected during execution of instruction.  | Amend the program.  |
| Subroutine error                     | Subroutine mismatch  | Amend the program.  |
| Interrupt error                      | - Non-existent interrupt instruction return location<br>- More than 8 interrupt wait events  | Amend the program.  |
| I/O comparison error                 | - I/O module installation and program mismatch.<br>- A READ/WRITE instruction is used for DIO.<br>- A HRD/HWR instruction is used for DIO. | Amend the program.  |
| Macro instruction error              | No macro instruction return location   | Amend the program.  |
| Inter-CPU communication error        | Inter-CPU communication failure in a multi-CPU system  | When using multiple CPUs, this may indicate an error from another CPU. Do not reset CPU modules individually. Instead, reset all CPUs from the main CPU. If the problem recurs, replace the CPU module.     |

| Message   | Description  | Troubleshooting  |
|---|--|--|
| ROM pack error  | ROM pack error   | <ul style="list-style-type: none"> <li>- This does not indicate an error if you have just executed an Erase ROM operation. You can continue using the ROM pack.</li> <li>- You may have written to the ROM with an incorrect CPU type. Try to write again. If the same error recurs, it may indicate a hardware fault. Replace the ROM pack or the sequence CPU module.</li> </ul> |
| I/O module error  | Cannot read from or write to I/O module.   | <ul style="list-style-type: none"> <li>- Ensure that the subunit is not switched off.</li> <li>- Ensure that the cable of the fiber-optic FA-bus module is intact.</li> <li>- Do not reset CPU modules individually. Instead, reset all CPU modules from the main CPU.</li> <li>- An I/O module may be faulty. Replace the module.</li> </ul>                                      |
| Subunit communication error                                   | Cannot read from or write to the module attached to the sub-unit.  | <ul style="list-style-type: none"> <li>- Switch on the sub-unit.</li> <li>- Check the fiber-optic FA-bus or fiber-optic FA-bus type 2 cable.</li> </ul>  |
| Subunit transmitter switching has occurred                    | Line discontinuity detected in the remote I/O system connected in a loop.  | Replace the fiber-optic FA-bus or fiber-optic FA-bus type 2 cable.   |
| Boot mode error   | Error related to boot mode.<br>Detailed code: 10-1n<br>n: MODE switch value  | Remove the cause of error and then switch off and on or reset the CPU module.  |
| Smart access press function error                             | An error was detected by a press rotary switch function.<br>Detailed code: 31-0n<br>n: MODE switch value   | Check rotary switch press function and re-execute.   |
| Smart access press and hold function error                    | An error was detected by a press & hold rotary switch function.<br>Detailed code: 32-0n<br>n: MODE switch value  | Check rotary switch press and hold function and re-execute.  |
| Card batch file error   | An error was detected by the card batch file function.<br>Detailed code: 33-0n<br>n=1: startup event trigger<br>n=2: error event trigger<br>n=3: run program trigger<br>n=4: stop program trigger<br>n=5: mount memory card event trigger<br>n=6: run batch file trigger<br>n=7: alarm event trigger | Check the standard output file, remove the cause of error and re-execute.  |
| Virtual command error   | An error was detected by virtual directory function.<br>Detailed code: 34-00<br>This is a typical error message of the virtual directory function.   | Check the response file, remove the cause of error and re-execute.   |
| Power Failure While Writing to a Flash ROM/Flash memory error | Power is turned off while data is being written to flash ROM.  | Turn on the power again and try to write the data again. If the error continues, flash ROM data may be faulty.   |

---

## Note

You can clear the internal memory of the sequence CPU module and revert to factory default settings:

- For F3SP66-4S/67-6S/71-4N/76-7N/71-4S/76-7S: by operating the rotary switch on the front panel.
- For other CPU modules: by installing the sequence CPU module in slot 5 or a higher slot of the main unit and turn on the power.

In the event of transient memory errors caused by noise and other external factors, try downloading the application program at a later time.

If the error recurs, this may indicate a hardware failure so you should consider replacing the module.

---

## Note

For details on precautions about clearing memory of F3SP66-4S/67-6S/71-4N/76-7N/71-4S/76-7S CPU modules, see "Sequence CPU Instruction Manual – Functions."

---



## CAUTION

Power off time may be incorrectly recorded in any of the following situations:

- (a) A major failure (RDY turned off) is detected.
- (b) The CPU module is removed from the base unit with power turned on.
- (c) Power off is not correctly detected due to power supply module failure.

If power off time is not correctly recorded, check for causes (a) and (b). If both causes are ruled out but the problem recurs frequently with no apparent cause, replace the power supply module.

---

## Note

The CPU module may sometimes record a power off time that is later than the startup completion time of the next startup. This may happen, in particular, when the CPU module is switched off after running for an extended period of time. This apparent discrepancy is not an error but happens because the power off time is obtained by adding the elapsed time maintained by the system timer to the most recent power on time but the power on time is recorded based on the backup real time clock reading.

---

## K3.3 User Log

This section describes the user log functions.

### K3.3.1 User Log

The user log function, like the system log function, records generated messages such as user system errors or operation statuses. The user log function records data generated by user programs. The recorded data, or user log, can be read using an instruction or programming tools.

- User log data is recorded by executing a user log instruction in a program. Up to 64 user log data entries can be recorded per CPU.
- User log data contains the date and time of generation, the main code (1 word), and the sub-code (1 word).
- You can store up to 64 messages of 32 characters in the CPU for the main codes. You can then attach these messages to the main codes and sub-codes when you read user log data.
- When the number of recorded user log data reaches 64, the oldest data will be erased and new data appended.
- User log data can be read using the programming tools or by executing a Read User Log instruction.
- The number of user log data entries is stored in the Z105 special register.

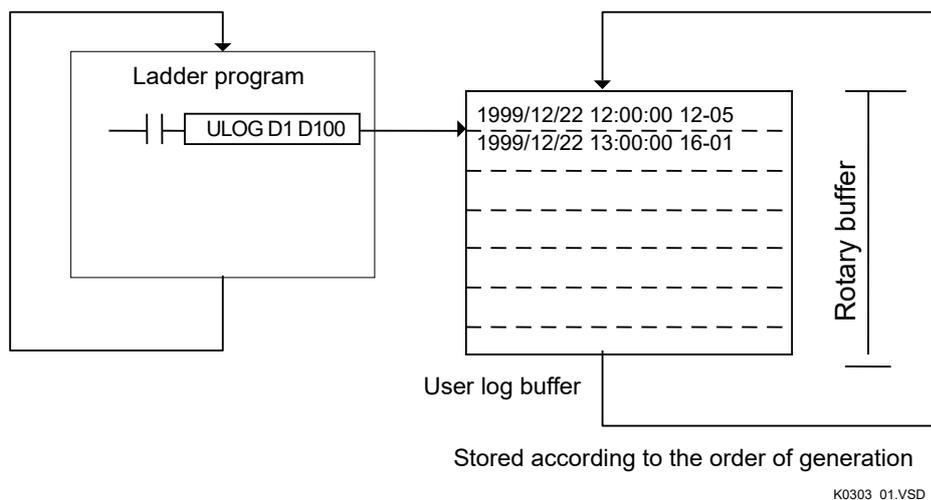


Figure K3.1 User Log Function

### Note

For details on the procedure for using user logs and instruction specifications, see "Sequence CPU Instruction Manual – Instructions" (IM 34M06P12-03E).

## K3.3.2 Creating User Log Messages

To create user log messages, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that a project is open.

#### Note

For details on how to open a project, see Section D2.2.2, "Opening a Project" (Offline).

(2) Select [Project]–[User Log Message] from the menu bar.

⇒ The User Log Message screen of the Project Settings/Configuration window appears.

(3) Select the [Use] option button.

⇒ Now you can enter user log messages.

(4) Enter messages that correspond to individual main code values.

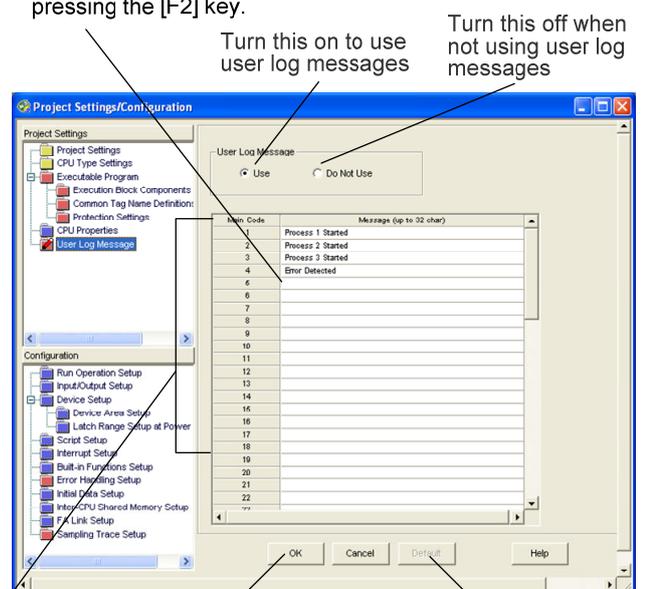
#### Note

For details on the main code and sub-code, see "Sequence CPU Instruction Manual – Instructions" (IM 34M06P12-03E).

(5) Click [OK].

⇒ The User Log Message screen of the Project Settings/Configuration window closes.

- Each message can be up to 32 characters long.
- An empty message can also be registered.
- You can cut, copy, and paste text after entering the input mode by double clicking in this area or pressing the [F2] key.



Up to 64 messages can be registered.

Validate the editing

Discards changes made and reverts to the state before editing.

Steps (3) to (5)

K0303\_02.VSD

### K3.3.3 Displaying the User Log

To display the user log, use the following procedure.

#### ◆ Procedure ◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Debug/Maintenance]–[Display CPU Log] – [Display User Log] from the menu bar.

⇒ The Display User Log:CPU window opens.

User defined message:  
Up to 64 messages with the newest message displayed at the top.

User defined main code

| Date & Time         | Message           | Main Code | Sub Code |
|---------------------|-------------------|-----------|----------|
| 2007.07.04 10:47:40 | Error Detected    | 4         | -1       |
| 2007.07.01 04:17:36 | Process 3 Started | 3         | 0        |
| 2007.06.27 23:14:05 | Process 2 Started | 2         | 50       |
| 2007.06.27 20:25:39 | Process 1 Started | 1         | 1        |

Step (2)

K0303\_03.VSD

#### Note

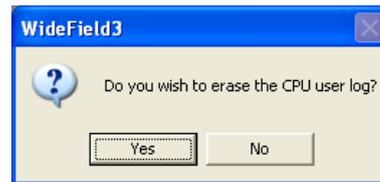
Selecting [Debug/Maintenance]–[Display CPU Log]–[Redisplay User Log] with the Display User Log:CPU window open updates the user log display with the latest user log information.

### K3.3.4 Clearing the User Log

To clear the user log stored in the CPU, use the following procedure.

#### ◆ Procedure ◆

- (1) Confirm that the Display User Log:CPU window is open.
  - (2) Select [Debug/Maintenance]–[Display CPU Log]–[Clear Log] from the menu bar.
- ⇒ A confirmation dialog box opens.
- (3) Click [Yes].



Step (3)

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⇒ The Display User Log:CPU window is cleared.



Step (3)

K0303\_05.VSD

## K3.3.5 Saving the User Log to a File

To save the user log to a file, use the following procedure.

### ◆ Procedure ◆

(1) Confirm that the Display User

Log:CPU window is open.

(2) Select [File]–[Save As] from the menu bar.

⇒ The Save As dialog box opens.

(3) Enter a file name in the [File name] text box, and click [Save].

⇒ The user log file is saved.

**Table K3.5 Files Created for User Logs**

| Type          | Extension | Description  | Tip   |
|---------------|-----------|--|---|
| User Log File | .yulg     | Stores user logs.<br>Specify a file name according to the naming rules for in-CPU names.*1 | The default save destination is the WideField3 common folder (the default is the "Fam3com" folder in the WideField3 installation folder). |

\*1: For details on in-CPU names and on-PC names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

## K3.3.6 Opening a User Log File

To open a user log file, use the following procedure.

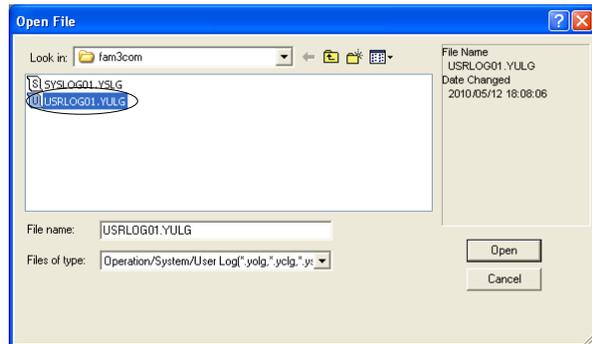
### ◆ Procedure ◆

(1) Select [File]–[Open]–[Log File] from the menu bar.

⇒ The Open File dialog box opens and a list of all types of log files stored in the WideField3 common folder (the default is the “Fam3com” folder in the folder where WideField3 is installed) is displayed.

(2) Double click a file name, or move the cursor to a file and click [Open].

⇒ The log file opens.



Step (2)

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---

## K3.4 Operation Log

The operation log function stores in the CPU the history of operations performed on the FA-M3.

This function is useful when, for example, the CPU starts to behave abnormally. You can check the operations that have been performed using the CPU to find out a cause of the behavior or effects of specific operations.

The operation log function records the following information.

- Time information
- Route information
- Messages
- Supplemental information
- User names

### Note

---

Unlike system and user logs, operation logs cannot be cleared.

---

### Note

---

- For details on the rotary switch, boot mode, card batch files and system logs, see "Sequence CPU Instruction Manual – Functions."
  - For details on virtual directory commands and tool services, see "Sequence CPU – Network Functions."
  - For details on the operation log file keyword setting, see Section H11.2.4, "Setting an Operation Log File Keyword."
  - For details on operation log settings, see Section H11.2.5, "Operation Log Settings."
- 

### Note

---

- The operation log function is supported on the CPU module types F3SP71-4N, 76-7N, 71-4S and 76-7S.
  - User names are not recorded unless the user is logged in to the CPU.
-

## K3.4.1 Operation Log Window

This section describes the operation log window.

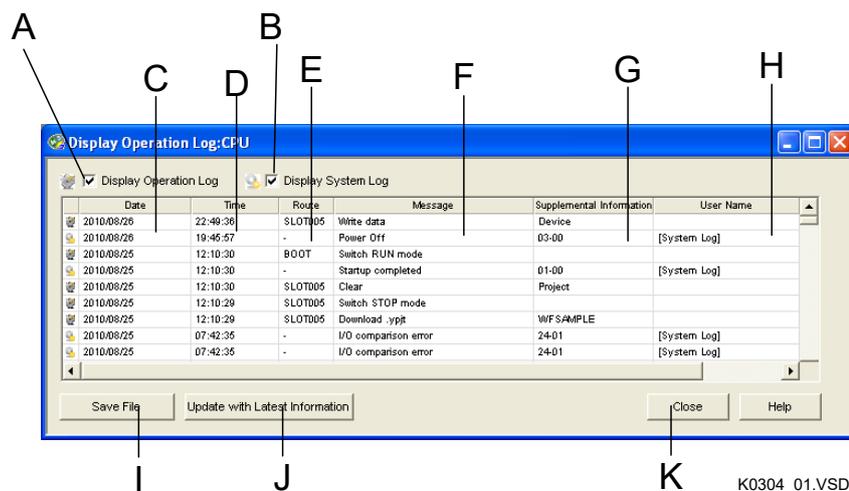


Figure K3.2 Operation Log Window

- A Display Operation Log  
Displays or hides the operation log.
- B Display System Log  
Displays or hides the system log.
- C Logged Date  
Displays the dates on which the operation or system logs were recorded.
- D Time  
Displays the time at which the operation or system logs were recorded.
- E Route  
Displays operation routes. The routes are any of the following.

Table K3.6 List of Operation Routes

| Operation Route | Description   |
|-----------------|---|
| SWS_x           | Press & release operation of the rotary switch x    |
| SWL_x           | Press & hold operation of the rotary switch x       |
| BOOT            | Boot startup  |
| CBAT            | Card batch file                                     |
| FTP             | FTP virtual directory                               |
| USB             | CPU operation via USB port                          |
| myETH1          | Built-in Ethernet port (programming service TCP/IP) |
| myETH2          | Built-in Ethernet port (programming service TCP/IP) |
| myETH3          | Built-in Ethernet port (programming service UDP/IP) |
| ELNK            | Built-in Ethernet port (higher-level link service)  |
| CPUm            | CPU operation via CPUm                              |
| SLOTnnn         | CPU operation via another slot, nnn                 |

### Note

Up to two TCP/IP programming services can be connected concurrently. Whether myETH1 or myETH2 is selected depends on connection conditions.

- F Message  
Displays the overview of CPU operations.
- G Supplemental Information  
Displays supplemental information of CPU operations. This information includes executable program names and block names of up to eight characters long.
- H User Name  
Displays the user who performed the operation. For system logs, [System Log] is displayed.
- I [Save File] button  
Saves the information displayed in the operation log window in a file.
- J [Update with Latest Information] button  
Updates the information displayed in the window with the latest information.
- K [Close] button  
Closes the operation log window.

## K3.4.2 Displaying the Operation Log Window

To display the operation log window, use the following procedure.

### ◆ Procedure◆

(1) Confirm that WideField3 is online.

#### Note

For details on online connection procedures, see Section H1.1, "Connecting and Disconnecting."

(2) Select [Debug/Maintenance]–[Display CPU Log]–[Display Operation Log] from the menu bar.

⇒ The operation log window opens.

#### Note

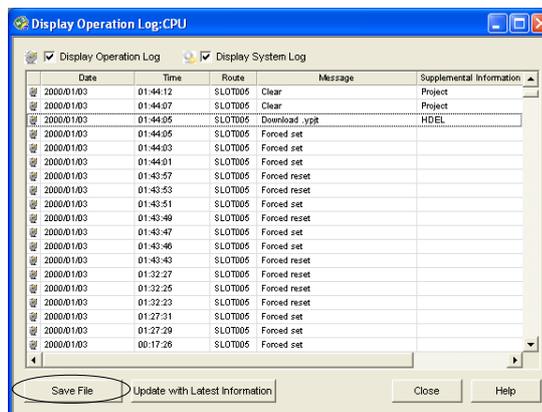
Clicking the [Update with Latest Information] button in the Display Operation Log window updates the operation log display with the latest operation log information.

### K3.4.3 Saving the Operation Log to a File

Use the following procedure to save information displayed in the operation log window to a file.

#### ◆ Procedure ◆

- (1) Confirm that the Display Operation Log window is open.
- (2) Click [Save File].



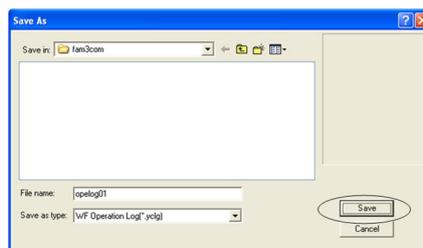
Step (2)

K0304\_02.VSD

⇒ The Save As dialog box opens.

- (3) Enter a file name in the [File name] text box, and click [Save].

⇒ The operation log file is saved.



Step (3)

K0304\_03.VSD

#### Note

Even when only the [Display System Log] button is selected, information is saved to an operation log file.

**Table K3.5 Files Created for Operation Logs**

| Type               | Extension      | Description  | Tip  |
|--------------------|----------------|--|--|
| Operation Log File | .yclg<br>.yolg | Stores operation logs.<br>Specify the file name of a .yclg file according to the naming rules for in-CPU names. *1<br>Specify up to 254 characters for the file name of a .yolg file with an absolute path within the range of the Windows specifications. | Operation log files created by the CPU have filename extension ".yclg", and operation log files created by WideField3, which contain system log data, have filename extension ".yclg".<br>WideField3 can read both formats of operation log files. |

\*1: For details on in-CPU names, see Chapter A5, "Names of Projects, Blocks, and Macros" (Introduction and Troubleshooting).

## K3.4.4 Opening an Operation Log File

To open an operation log file, use the following procedure.

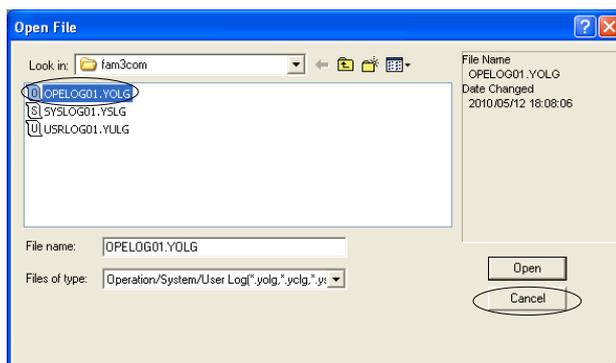
### ◆ Procedure ◆

(1) Select [File]–[Open]–[Log File] from the menu bar.

⇒ The Open File dialog box opens and a list of all types of log files stored in the WideField3 common folder (the default is the “Fam3com” folder in the folder where WideField3 is installed) is displayed.

(2) Double click a file name, or move the cursor to a file name and click [Open].

⇒ The log file opens.

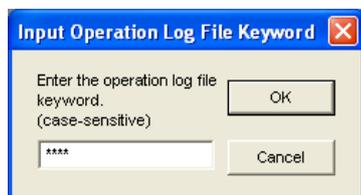


Step (2)

K0304\_04.VSD

### Note

You can always open operation log files from WideField3 regardless of whether an operation log keyword has been set. On the other hand, when the operation log is set to be automatically saved to an SD card and the log has been protected with an operation log keyword, you are prompted to enter the keyword when trying to open the file.



K0304\_05.VSD

Figure K3.3 Input Operation Log File Keyword Dialog Box

### Note

- For details on the operation log file keyword setting, see Section H11.2.4, "Setting an Operation Log File Keyword."
- For details on automatic output of operation logs, see Section H11.2.5, "Operation Log Settings."

## K3.4.5 Log Messages Displayed in the Display Operation Log Window

The table below lists messages displayed in the Display Operation Log window.

**Table K3.8 List of Operations and Messages**

| Message          | Supplemental Information                    | Description  |
|------------------|---|--|
| Download .ypjt   | Executable program name                     | A project was downloaded.  |
| Download .yprp   | CPU property names                          | CPU properties were downloaded.  |
| Download .yopr   | CPU operation protection settings file name | A CPU operation protection settings file was downloaded.                       |
| Upload .ypjt     | Executable program name                     | A project was uploaded.  |
| Upload .yprp     | CPU property names                          | CPU properties were uploaded.  |
| Upload .yopr     | CPU operation protection settings file name | A CPU operation protection settings file was uploaded (written).               |
| Switch RUN mode  | -   | The CPU switched to Run mode.  |
| Switch STOP mode | -   | The CPU switched to Stop mode.   |
| Switch DBUG mode | -   | The CPU switched to Debug mode.  |
| Online Edit      | Block name or macro name                    | Results of online editing of a block or macro were uploaded to the CPU module. |
| Act              | Block name                                  | A block was activated.   |
| Inact            | Block name                                  | A block was inactivated.   |
| Change date-time | -   | The date/time settings were written.   |
| Change Presetval | Tim/Cnt                                     | The timer/counter setting values were changed.                                 |
| Write data       | CSV file name                               | Device data was written based on CSV file information.                         |
|                  | Binary file name                            | Device data was written based on binary file information.                      |
|                  | Device                                      | Data was written to the device.  |
|                  | I/Omoddt                                    | Data was written to the I/O module.  |
| Clear            | Project                                     | A program was cleared.   |
|                  | Device                                      | A device was cleared.  |
|                  | CPUprop                                     | CPU properties were cleared.   |
|                  | Alarm                                       | An alarm was cleared after the alarm information was obtained.                 |
|                  | Syslog                                      | The system log was cleared.  |
|                  | Oprlog                                      | The operation log was cleared.   |
| Reset Start      | -   | CPU was reset and started.   |
| Forced reset     | -   | A forced reset operation was performed.  |
| Forced set       | -   | A forced set operation was performed.  |
| Forced set/reset | cancel                                      | A forced cancel operation was performed.                                       |
| Forced set/reset | A_cancel                                    | A forced all-cancel operation was performed.                                   |
| User login       | -   | A user logged in.  |
| User logout      | -   | A user logged out.   |
| All user logout  | -   | The login management table was cleared.  |

### Note

The following operations on balloon comments use the online edit function to store balloons in the CPU.

- Downloading offline balloon comment/monitor data
- Storing online balloon comment/monitor data in the CPU

If these operations are in Run mode when balloons are stored in the CPU, the CPU temporarily enters Debug mode and then returns to Run mode when balloons are successfully stored. Therefore, the switching of operation modes is written to operation logs. However, this change does not cause circuit modifications and thus no log for the above operation is written to online edit logs.

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## K4. Sampling Trace Tool

### Note

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For details on sampling trace function, see "FA-M3V Environment Tool Trace Function" (IM34M06Q50-21E).

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# FA-M3

## Programming Tool WideField3

IM 34M06Q16-03E

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