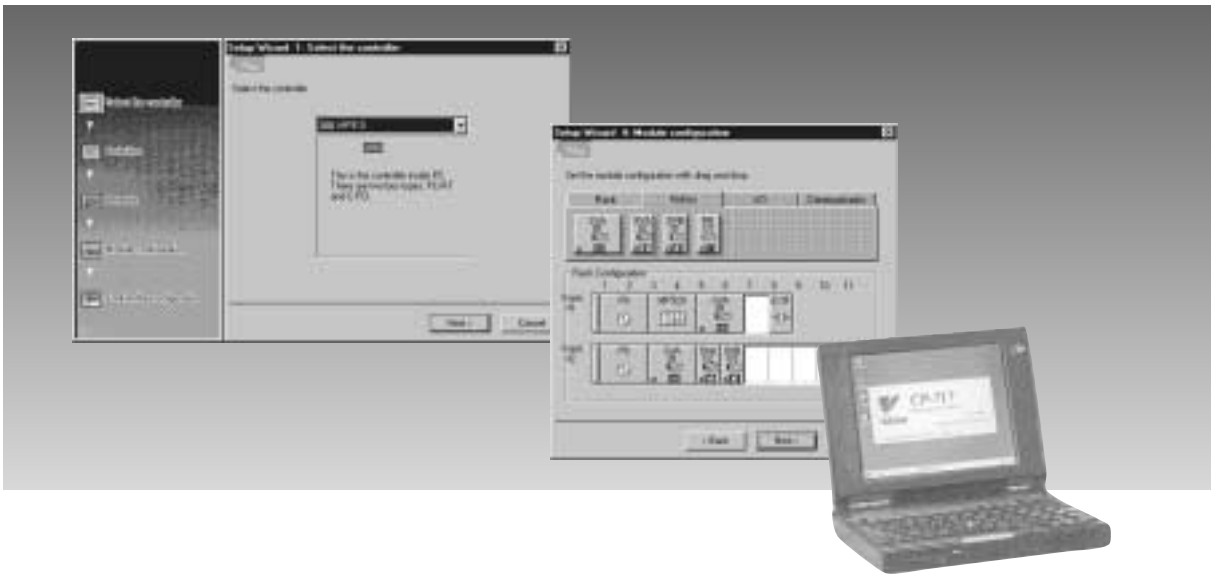
Machine Controller MP900 Series

Programming Panel Software

USER'S MANUAL

FOR SIMPLE OPERATION



YASKAWA

MANUAL NO. SIEZ-C887-2.3

Safety Information

The following conventions are used to indicate precautions in this manual. Failure to heed precautions provided in this manual can result in serious or possibly even fatal injury or damage to the products or to related equipment and systems.

⚠ WARNING IIndicates precautions that, if not heeded, could possibly result in loss of life or serious injury.

⚠ Caution Indicates precautions that, if not heeded, could result in relatively serious or minor injury, damage to the product, or faulty operation.

In some situations, the precautions indicated could have serious consequences if not heeded.

Prohibited Indicates prohibited actions that must not be performed. For example, this symbol would be used to indicate that fire is prohibited as follows: **.**

Manditory Indicates compulsory actions that must be performed. For example, this symbol would be used as follows to indicate that grounding is compulsory: .

Visual Aids

The following aids are used to indicate certain types of information for easier reference.

IMPORTANT Indicates important information that should be memorized.

Also, indicates low-level precautions that, if not heeded, may cause an alarm to sound but will not result in the device being damaged.

Indicates additional information or information that is useful to have memorized.

Describes technical terms that are difficult to understand, or appear in the text without an explanation being given.

CONTENTS

Overview

About this Manual

This manual describes the operation of the simple version of the CP-717 Engineering Tool, a programming software package that aids in the design and maintenance of MP900-series Machine Controllers.

The main information provided in this manual is as follows:

- Functions
- Settings and operation methods

Refer to the standard version of the *MP900 Series Programming Software User's Manual* (SIEZ-C887-2.4) for the operation of the whole CP-717.

The simple version applies to the following Machine Controllers.

- MP910, MP920, MP920-02, MP930, MP930-02, and MP940 Machine Controllers

Read this manual carefully to ensure the proper use of the CP-717 Engineering Tool. Also, keep this manual in a safe place so that it can be referred to whenever necessary.

Related Manuals

Refer to the following related manuals as required.

Manual name	Manual Number	Contents
MP900 Series Machine Controller User's Manual: CP-717 Programming Panel Software (for standard operation)	SIEZ-C887-2.4	Describes the installation and operating procedures for the CP-717 Programming Panel software used for MP900 Series Machine Controllers.
MP910 Machine Controller User's Manual: Design and Maitenance	SIEZ-C887-3.1	Describes the design and maintenance for the MP910 Machine Controller.
MP920 Machine Controller User's Manual: Design and Maitenance	SIEZ-C887-2.1	Describes the design and maintenance for the MP920 Machine Controller.
MP930 Machine Controller User's Manual: Design and Maitenance	SIEZ-C887-1.1	Describes the design and maintenance for the MP930 Machine Controller.
MP940 Machine Controller User's Manual: Design and Maitenance	SIEZ-C887-4.1	Describes the design and maintenance for the MP940 Machine Controller.
MP900 Series Machine Controller User's Manual: Ladder Programming	SIEZ-C887-1.2	Describes the instructions used in MP900 Series ladder logic programming.
MP900 Series Machine Controller User's Manual: Motion Programming	SIEZ-C887-1.3	Describes the motion programming language used for MP900 Series Machine Controllers.

Using This Manual

Intended Audience

This manual is intended for the following users.

- Those responsible for designing the MP900-series System
- Those responsible for writing MP900-series motion programs
- Those responsible for writing MP900-series ladder logic programs

Description of Technical Terms

In this manual, the following terms are defined as follows:

- PLC: MP900-series Machine Controller
- CP-717: CP-717 Engineering Tool

About the Software

Precautions

- This software is to be installed on one and only one computer. You must purchase another copy of the software to install it on another computer.
- This software is not to be copied for any reason other than when installing it on the computer.
- Store the floppy disks containing the software in a safe place.
- This software is not to be decompiled, disassembled, or reverse engineered.
- This software is not to be given to, rented to, exchanged with, or otherwise released to a third party without the prior permission of Yaskawa Corporation.

Trademarks

- Windows and Windows 95 are registered trademarks of Microsoft Corporation.
- Pentium is a registered trademark of Intel Corporation.
- Ethernet is a registered trademark of Xerox Corporation.

1 Outline of Functions

This chapter provides an outline of the functions of the simple version of the CP-717 Engineering Tool.

1.1 List of Simple Operation Functions

The following six simple operation functions are supported.

1. Setup Wizard
2. Machine Controller Configuration Information
3. Quick Reference
4. Motion Parameters
5. Data Trace Simple Settings
6. Module Configuration Definitions

We selected and simplified these functions because they are used frequently in normal operation. We also added the following features to these functions to make operation even easier.

- Data items appearing on a number of windows are integrated on a single window.
- Register data was made easier to handle.
- Setting data traces was made easier.
- Windows were made easier to open.

Each function is explained in detail beginning with *Chapter 2*.

1.2 Simple Operation Flow and Window Development

The following description provides information on the operation flow and window development of the simple version.

1. Install the CP-717 in the normal method.

   Refer to the *MP900 Series Programming Panel Software User's Manual for standard operation* (SIEZ-C887-2.4) for the installation of the software.

2. The Setup Wizard Window will appear when the software is started for the first time after installing the software. Set the necessary items, such as the module configuration.

   Set the module configuration for your system configuration items, such as the SERVO-PACK model and the number of I/O Units.

   When Setup Wizard operations have been completed, all data required by the system configuration will be automatically set and the Machine Controller will be ready to start.

3. You can open the Engineering Manager Window after completion operations for the Setup Wizard.

   Each function of the Engineering Manager has been improved as listed below.

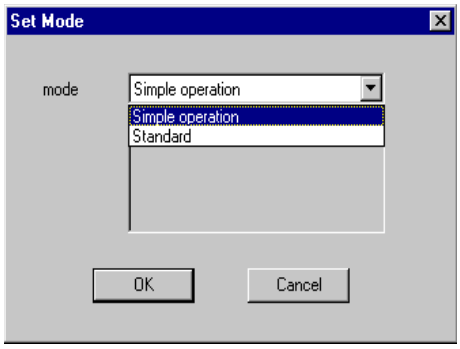
   - Selection and display of frequently used data
   - Ease of operation

INFO

If the version upgrade has been installed, the File Manager Window will appear when the software starts for the first time. In this case, the Setup Wizard Window will appear when a new PLC folder has been created.

IMPORTANT

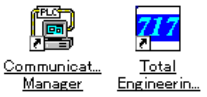
1 When the 3.53 or a later version (i.e., a version provided with the Simple Operation Function) is installed, the software will use the simple operation mode by default. To change it to Standard Mode, click ***View (V)*** and then ***Change Program Mode*** in the File Manager, and restart the CP-717.



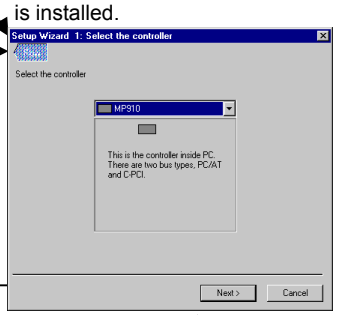
2 Unlike the Standard Mode, the Simple Operation Mode has the following restrictions.

- Group definitions cannot be changed.
- The number of groups is fixed at 1.
- Unless the model is t1e MP940, the station allocations for MECHATROLINK cannot be edited by changing the module configuration.

The following flow outlines starting the software.

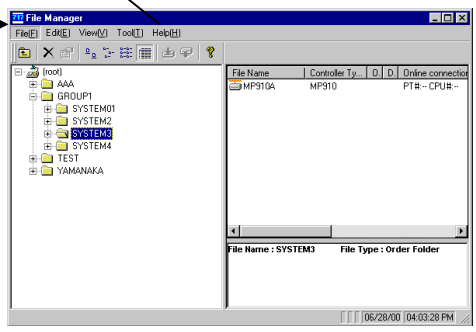


The Setup Wizard Window will appear when the CP-717 starts for the first time after the software is installed.



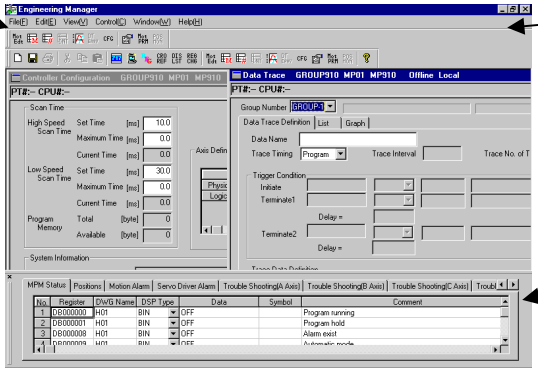
- By selecting the module configuration settings, all data required for starting the Machine Controller will be automatically set.
- The File Manager Folder will be set automatically as well.

File Manager Window



Only required files will be displayed.

Engineering Manager Window



Opening Windows
- Machine Controller configuration data
- Motion parameters
- Data traces

Quick Reference
Data can be easily written to and read from registers.

2 Setup Wizard

This chapter provides detailed information on the Setup Wizard. It is assumed that the CP-717 Engineering Tool has been already installed.

2

2.1 Setup Wizard Outline and Startup

2.1.1 Outline of Function

The following items are set in the Setup Wizard Window.

- Machine Controller model
- Network
- Module configuration

By making the above settings according to the instructions in the windows, all data necessary for starting the Machine Controller will be automatically set.

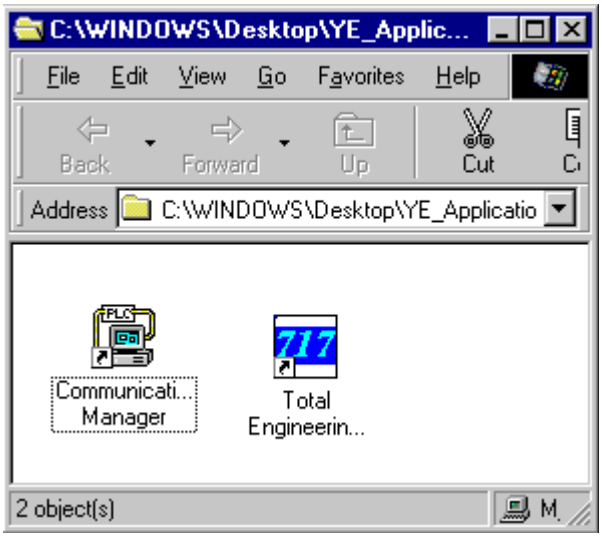
Default names are prepared for input data items, such as axis names and each folder name in the File Manager. These names will be input automatically unless the user changes them.

2.1.2 Starting the CP-717

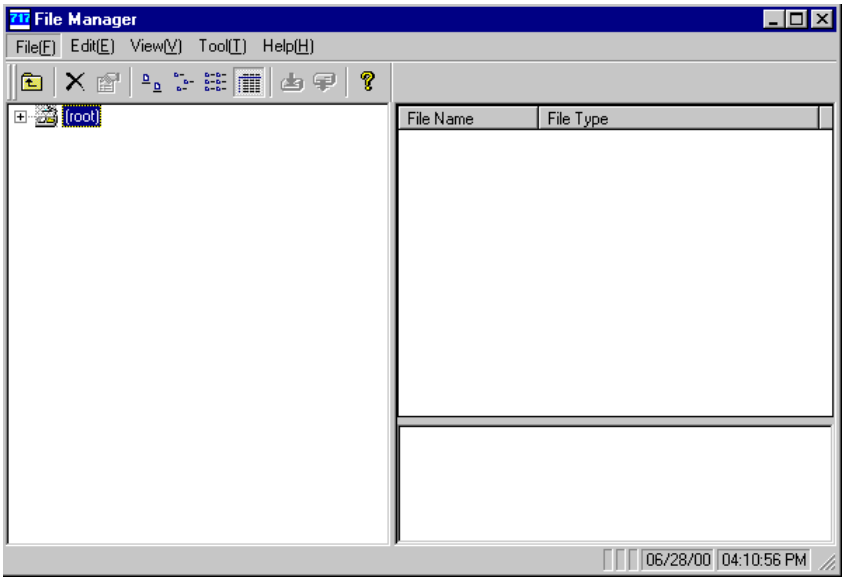
Use the following procedure to start the CP-717 (File Manager).

1. Double click the ***YE_Applications*** Folder on the desktop.

2. Double click ***Total Engineering WorkStation*** in the ***YE_Applications*** Folder.



The File Manager will start.



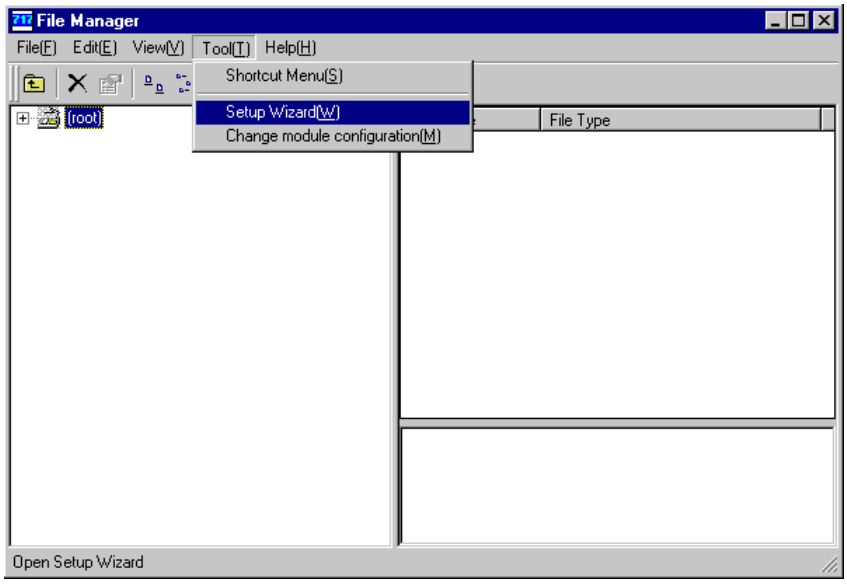
INFO

You can also start the File Manager by selecting ***Program***, ***YE_Applications***, and then ***Total Engineering WorkStation*** from the Windows ***Start*** Button.

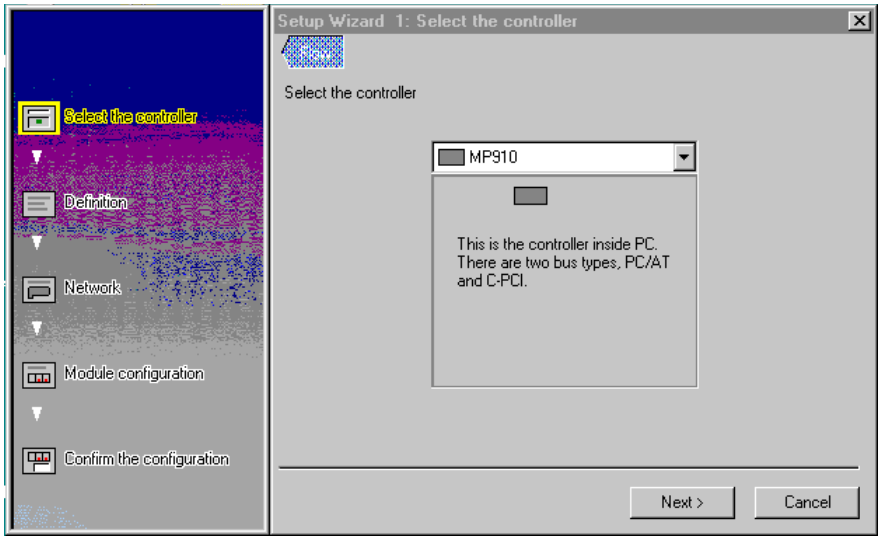
2.1.3 Starting the Setup Wizard

Use the following procedure to start the Setup Wizard.

1. Click ***Tool (T)*** and then ***Setup Wizard (W)*** on the Toolbar of the File Manager Window.



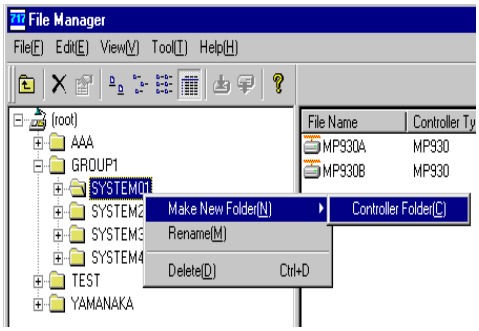
The Setup Wizard will start.



INFO

1 If the Machine Controller has not been set in the File Manager, the Setup Wizard will start automatically when the File Manager starts.

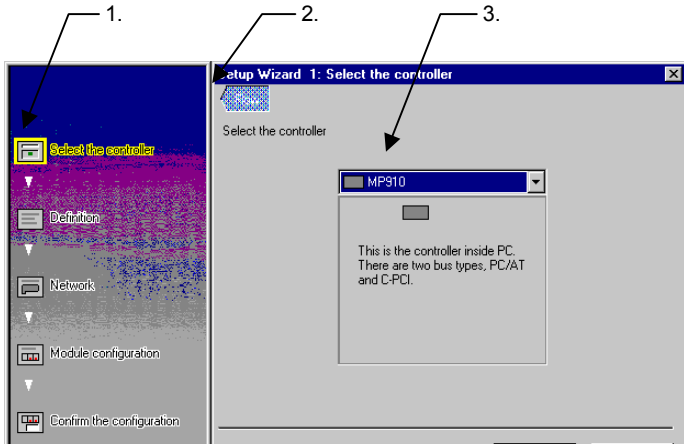
2 If an order folder exists in the File Manager, the Setup Wizard will also start if ***Make New Folder (N)*** and then ***Controller Folder (C)*** are selected in the pop-up menu that appears when the right mouse button is clicked on the order folder.



2.1.4 Basic Setup Wizard Operations

■ Screen Configuration

The Setup Wizard has the following configuration.



1. Flow Window

   The outline of the name of the window being set will appear in yellow.

2. Flow Button

   Click the **Flow** Button to turn the Flow Window display ON and OFF.

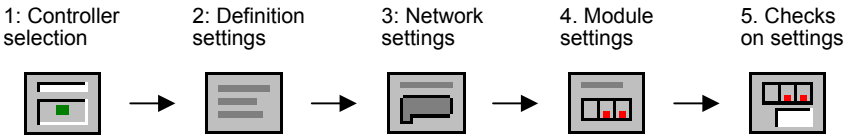
3. Controller Selection

   Select the Machine Controller from the drop-down list.

   The setup windows that will appear for the wizard will not change with the Machine Controller model selected.

■ Window Sequence

The following setup windows will open in sequence.



The sequence of Machine Controller windows is explained in detail in the next section.

2.2 MP910 Setup Wizard

The windows in the MP910 Setup Wizard are described in detail in this section.

2.2.1 Controller Selection

The Select the Controller Window is described in detail below.

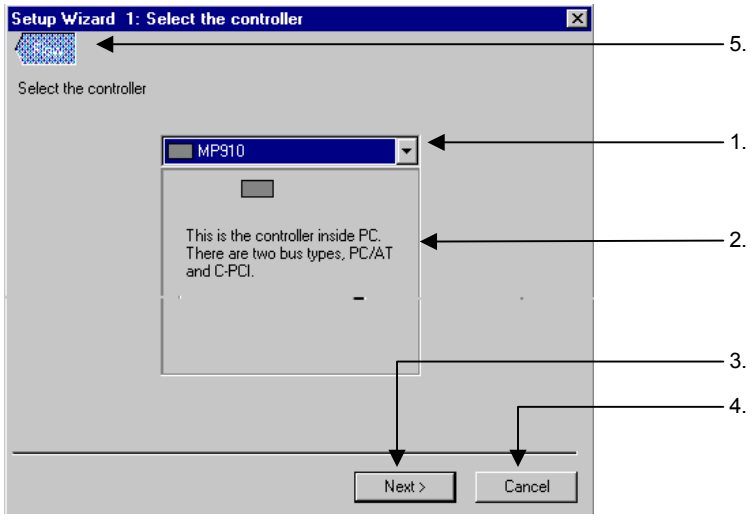


Fig 2.1 Setup Wizard 1: Select the controller

1. Controller Selection

   Select ***MP910*** from the drop-down list of Machine Controllers.

2. Explanation of Model

   The following explanation of the MP910 will appear.

   This is the controller inside PC.
   There are two bus types, PC/AT and C-PCI.

3. Next Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.2.2 Definitions

The Definition Window is described in detail below.

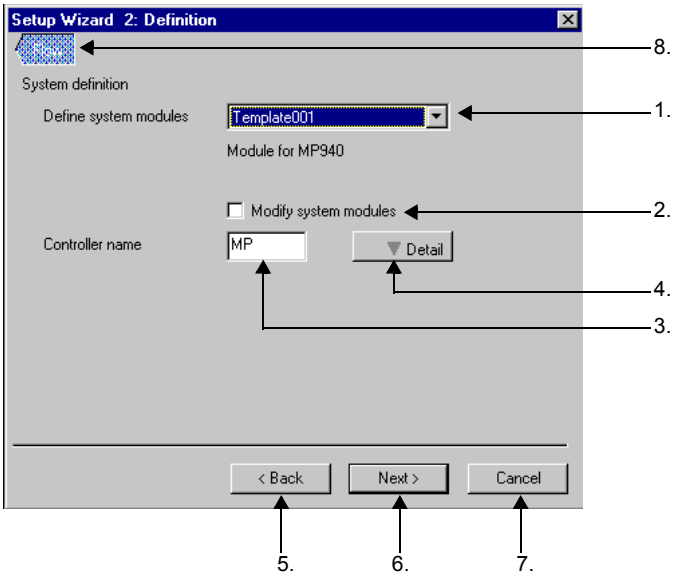


Fig 2.2 Setup Wizard 2: Definition

1. Define System Modules

   Select the name of the module setting template from the drop-down list.

   The comments set in the selected module setting template will appear under the box.

INFO

1 Select the new user definition when setting a new Module.

2 If there is a registered MP910 module setting template, the defined names will be listed together with a selection for a new user definition. If a MP910 module setting template has not been registered, only a selection for a new user definition will appear.

2. Check Box for Modify System Modules

   Check the box if the module settings need to be changed.

   Changes in the Setup Wizard 4: Module Configuration Window will be possible only if this box is checked.

INFO

The above operation is possible only if a registered module setting template has been selected instead of a new user definition.

3. Controller Name

   Set the name of the Machine Controller.

   “01" will be added to the input character string to form the name of the Machine Controller.

   Up to six characters can be input for the name. The suffix to be added will be incre-

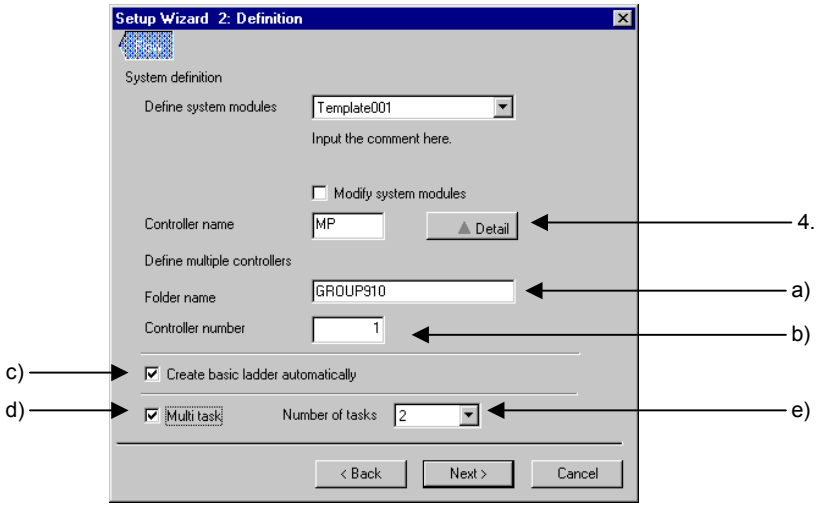
mented automatically (i.e., 01, 02, 03, and so on) if a name already exists.

INFO The name of the Machine Controller will be by default set to MPxx, where xx is 01, 02, 03, etc.

4. Detail Button

Click this button to access detailed settings.

The following window will be displayed.



a) Folder Name

Set the folder name of the Module to be set.

Up to eight characters can be input. If the folder name already exists, the Module will be added to that folder.

The folder name will be used by the File Manager.

If the Setup Wizard is started by selecting ***Make New Folder (N)*** and then ***Controller Folder (C)*** from the pop-up menu for an order folder in the File Manager, the folder name will be set to the order folder name. Manual input of the folder name will not be possible.

b) Controller Number (Number of Controllers)

Set the number of Machine Controllers in the Module to be set.

The number can be set to between 1 and 99.

c) Check Box to Create Basic Ladder Automatically

Check the box if it is necessary to generate a basic ladder program automatically.

The check box for multitasking (d) will be enabled.

d) Check Box for Multitask

Check the box to perform multitask control.

Multitask control will be possible only if the check box to create a basic ladder automatically (c) is checked.

The number of tasks (e) will be enabled.

e) Number of Tasks

Select the number of tasks for multitask control from the drop-down list.

The number of tasks displayed in the drop-down list will be 2 to 4.

This item can be set only if the check box for multitasking (d) is checked.

5. Back Button

The window will change to the Setup Wizard 1: Select the Controller Window when this button is clicked.

6. Next Button

The window will change to the Setup Wizard 3: Network Window when this button is clicked.

The above will be possible only if all the items are set.

7. Cancel Button

The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

Clicking this button will turn the Flow Window display ON and OFF.

2.2.3 Network Settings

The Network Window is described in detail below.

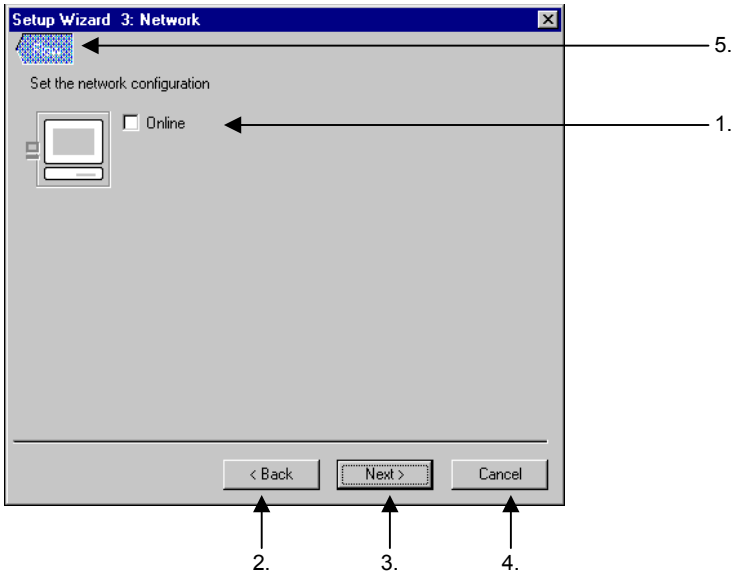
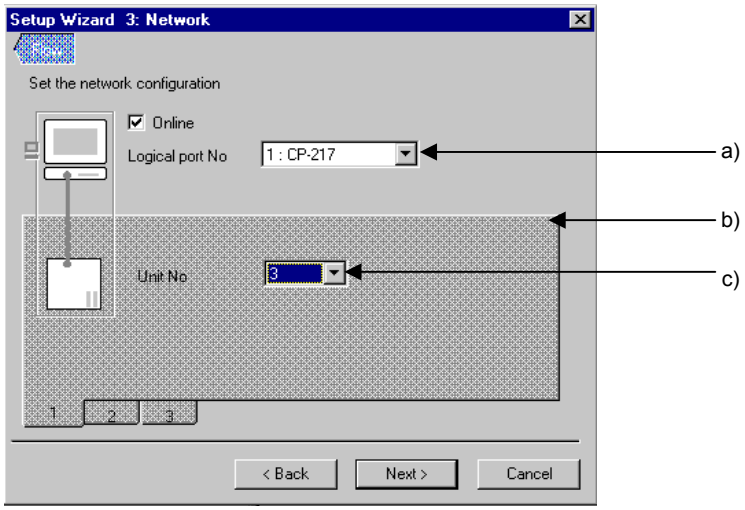


Fig 2.3 Setup Wizard 3: Network

1. Check Box for Online

   Check the box for online specification.

   The following window will be displayed.



a) Logical port No.

Select the logical port number from the drop-down list.

The list will show the CP-217 (serial) port and MP910 port as communications ports available to the MP910. Any other port will be displayed as an undefined port.

INFO

1 Set item c) to the unit number if the CP-217 port is selected.

2 Set item c) to the CPU number if the MP910 port is selected. The CPU number will appear in place of the Unit number.

---

b) Network Setting Tab

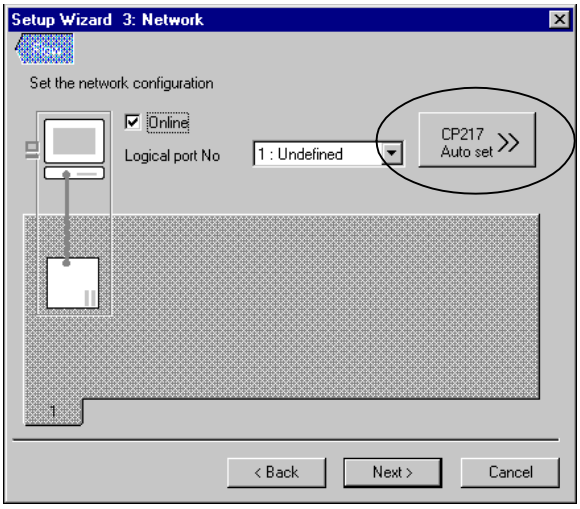
The tab number specified by the controller number setting in the Setup Wizard 2: Definitions Window will be displayed.

c) Unit/No. (CPU No.)

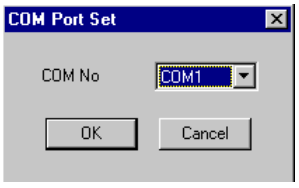
If the logical port number is set to CP-217, select the unit number for each Machine Controller from the drop-down list. If the logical port number is set to MP910, select the CPU number.

■ CP-217 Auto Set Button

1 If all items of the drop-down list of logical port numbers are undefined (i.e., the CP-217or MP910 has not been set in the communications process), the **CP-217 Auto Set** Button will be displayed as shown below.



2 The following COM Port Set Dialog Box will be displayed when this button is clicked. Set the COM port number to be used and click the **OK** Button. The CP-217 (serial) will be automatically set for the communications process.



2. Back Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

3. Next Button

   The window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

   If the Module is set in the Setup Wizard 2: Definition Window to a name already existing and the check box to modify system modules is not checked, the window will change to the Setup Wizard 5: Confirm the Configuration Window.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.2.4 Module Settings

The Module Configuration Window is described in detail below.

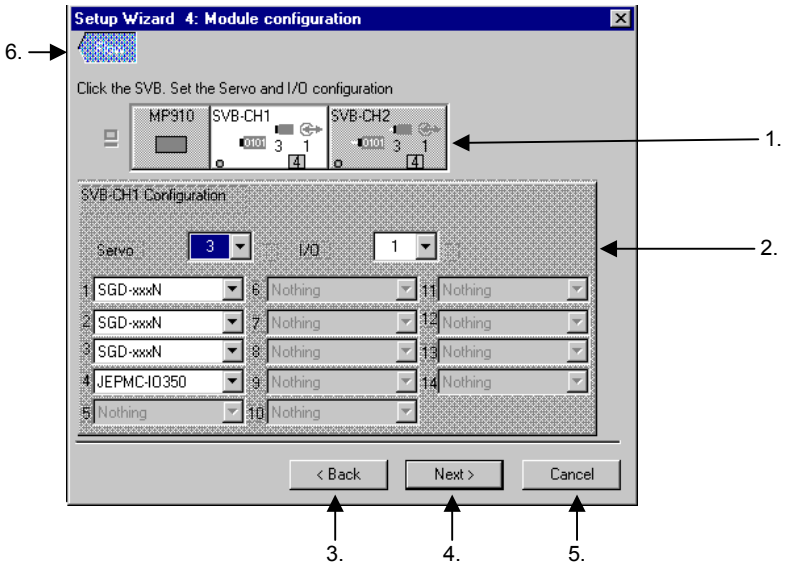


Fig 2.4 Setup Wizard 4: Module configuration

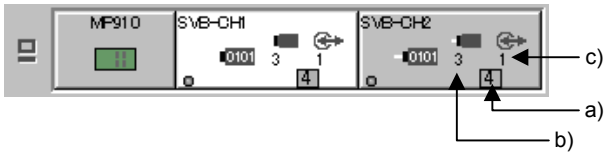
1. Servo and I/O Settings

   Click and select the SVB-CH1 or SVB-CH2 area. The background will appear white when the area is selected.

   Data on the Servo and I/O Unit configurations will be displayed in the SVB configuration. The configuration can be set or checked.

   A pop-up help will be displayed when the cursor is moved to this portion.

   The following illustration shows the Servo and I/O Setting Window in detail.



   a) Number of Servos and I/O Units

      The figure indicates the number of all Servos and I/O Units in the SVB.

   b) Number of Servos

      The figure indicates the number of Servos in the SVB.

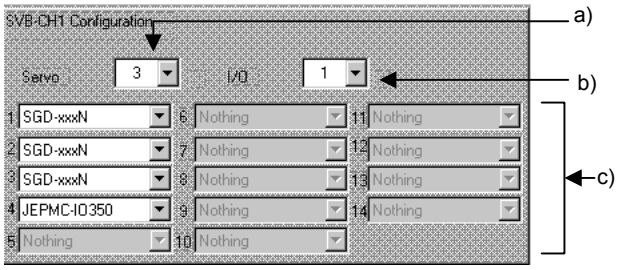
   c) Number of I/O Units

      The figure indicates the number of I/O Units in the SVB.

2. SVB Configuration

Data on the SVB-CH1 or SVB-CH2 configuration will be displayed.

The following illustration shows the SBV Configuration Window in detail.



a) Number of Servos

Select the number of Servos from the drop-down list.

A value between 1 and 14 will be displayed in the drop-down list.

b) Number of I/O Units

Select the number of I/O Units from the drop-down list.

A value between 1 and 14 will be displayed in the drop-down list.

INFO

1 The maximum total number of Servos and I/O Units is 14.

2 The background of a displayed value in the drop-down list will be gray if the total exceeds 14 with the value selected. Furthermore, the background of the box will also be gray.

3 The number of Servos and I/O Units selected will be reflected to the number of Servos and I/O Units (a), the number of Servos (b), and the number of I/O Units (c) in *1 Servo and I/O Settings*.

---

c) Servo and I/O Unit Allocation

Select the Servo or I/O Unit for each station from the drop-down list.

The number of Servos and I/O Units that has been set in the above can be allocated. An excessive number of Units cannot be set.

INFO

It will not be possible to go to the next window unless the following two items are set correctly.

1 Check that the number of Servos or I/O Units that has been set is the same as that set for Servo and I/O allocations.

2 The number of Servos is 1 or larger.

---

3. Back Button

The window will change to the Setup Wizard 3: Network Window when this button is clicked.

4. Next Button

The window will change to the Setup Wizard 5: Confirm the Configuration Window when this button is clicked.

5. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

6. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.2.5 Setting Checks

The Confirm the Configuration Window is described in detail below.

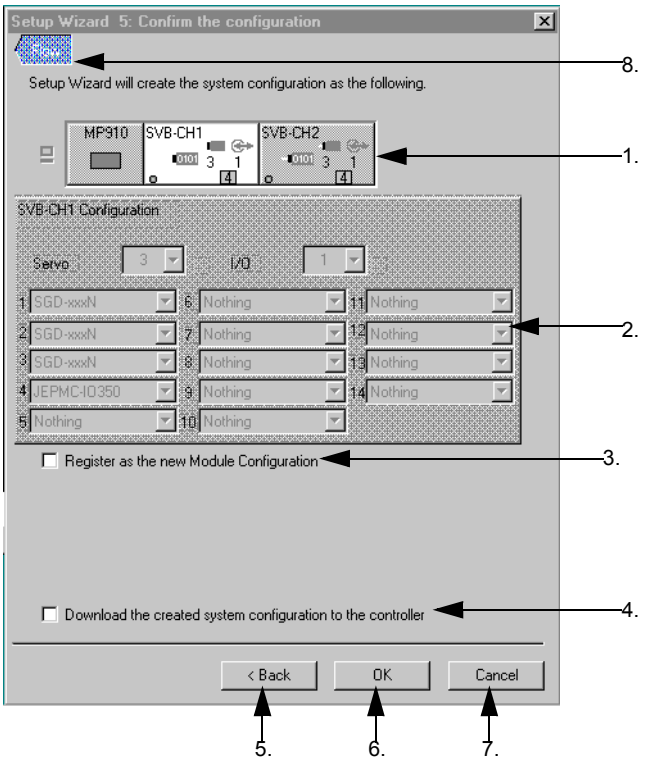


Fig 2.5 Setup Wizard 5: Confirm the Configuration

1. Servo and I/O Settings

   Click and select the SVB-CH1 or SVB-CH2 area. The background will appear white when the area is selected.

   Data on the Servo and I/O Unit configurations will be displayed in the SVB configuration. The configurations can be checked.

   A pop-up help will be displayed when the cursor is moved to this portion.

2. SVB Configuration

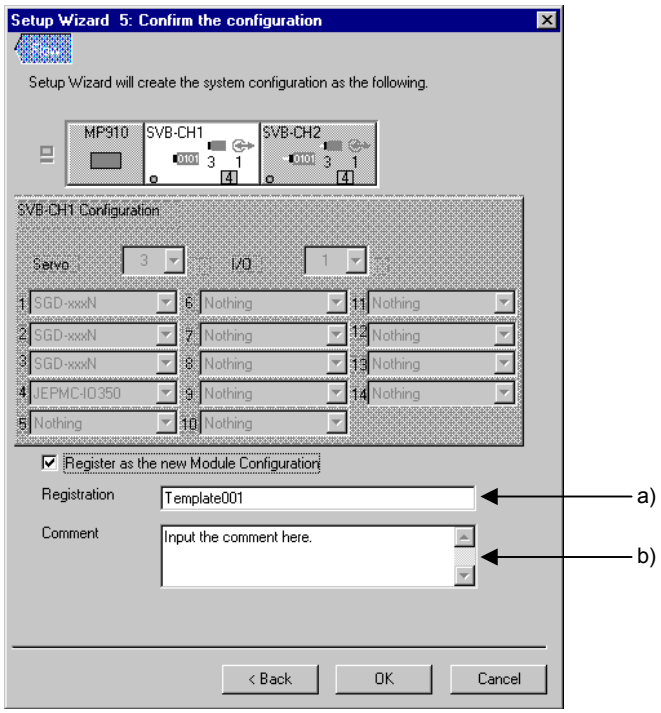
   Data on the SVB-CH1 or SVB-CH2 configuration will be displayed.

   The settings can be checked only, and they cannot be changed here.

3. Check Box to Register as the New Module Configuration

   Check the box to register a new module configuration.

   The following window will be displayed.



   a) Registration

      Set the name of the Module to be registered.

      Up to 64 characters can be input.

   b) Comment

      Set the comment about the Module.

      Up to 64 characters can be input.

4. Check Box to Download the Created System Configuration to the Controller

   Check the box to download to the Machine Controller the system configuration data created with the Setup Wizard.

   The box will appear only if the check box for online in the Setup Wizard 3: Network Window is checked.

5. Back Button

   The window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

6. OK Button

   The Setup Wizard will end and the system will be automatically generated when this button is clicked.

7. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.3 MP920 Setup Wizard

The windows in the MP920 Setup Wizard are described in detail in this section.

2.3.1 Controller Selection

The Select the Controller Window is described in detail below.

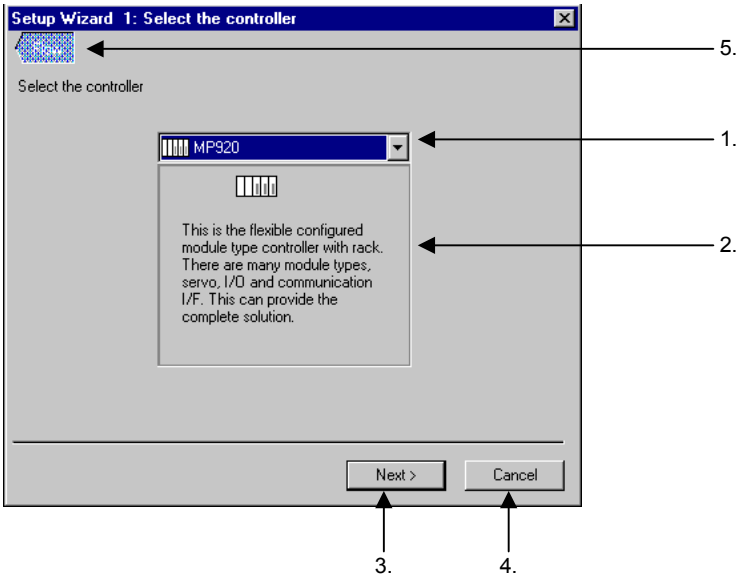


Fig 2.6 Setup Wizard 1: Select the controller

1. Controller Selection

   Select ***MP920*** from the drop-down list of Machine Controllers.

2. Explanation of Model

   The following explanation of the MP920 will appear.

   This is the flexible configured module type controller with rack.

   There are many module types, servo, I/O and communication I/F. This can provide the complete solution.

3. Next Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.3.2 Definitions

The Definition Window is described in detail below.

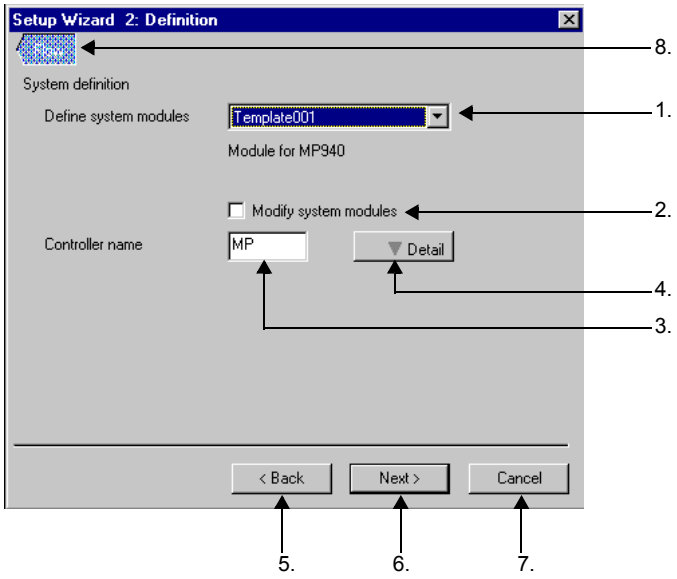


Fig 2.7 Setup Wizard 2: Definitions

1. Define System Modules

   Select the name of the module setting template from the drop-down list.

   The comment set in the selected module setting template will appear under the box.

INFO

1 Select the new user definition when setting a new Module.

2 If there is a registered MP920 module setting template, the defined names will be listed together with a selection for a new user definition. If a MP920 module setting template has not been registered, only a selection for a new user definition will appear.

2. Check Box to Modify System Modules

   Check the box if the module settings need changes.

   Changes in Setup Wizard 4: Module Configuration Window will be possible only if this box is checked.

INFO

The above operation is possible only if a registered module setting template has been selected instead of a new user definition.

3. Controller Name

   Set the name of the Machine Controller.

   “01" will be added to the input character string to form the name of the Machine Controller.

   Up to six characters can be input for the name. The suffix to be added will be incre-

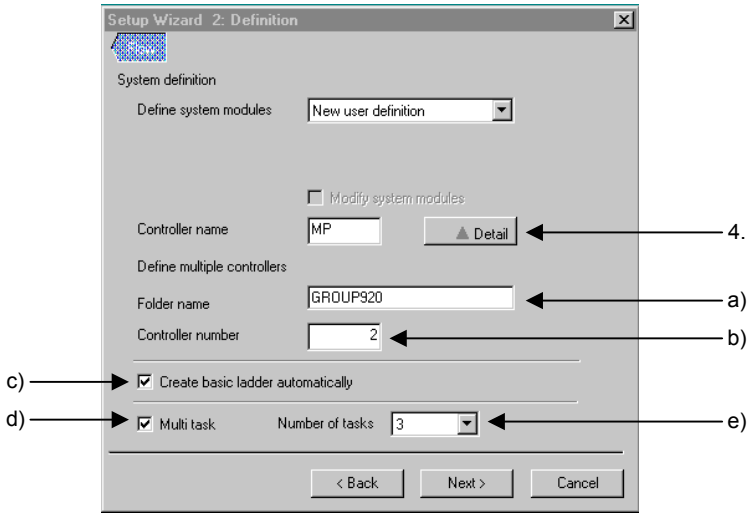
mented automatically (i.e., 01, 02, 03, and so on) if a name already exists.

INFO The name of the Machine Controller will be by default set to MPxx, where xx is 01， 02， 03, etc.

4. Detail Button

Click this button to access detailed settings.

The following window will be displayed.



a) Folder Name

Set the folder name of the Module to be set.

Up to eight characters can be input. If the name already exists, the name input will be added to the same group.

The folder name will be used by the File Manager.

If the Setup Wizard is started by selecting ***Make New Folder (N)*** and then ***Controller Folder (C)*** from the pop-up menu for an order folder in the File Manager, the folder name will be set to the order folder name. Manual input of the folder name will not be possible.

b) Controller Number (Number of Controllers)

Set the number of Machine Controllers in the Module to be set.

The number can be set to between 1 and 99.

c) Check Box to Create Basic Ladder Automatically

Check the box if it is necessary to generate a basic ladder program automatically. The check box for multitasking (d) will be enabled.

d) Check Box for Multitask

Check the box to perform multitask control.

Multitask control will be possible only if the check box to create a basic ladder automatically (c) is checked.

The number of tasks (e) will be enabled.

e) Number of Tasks

Select the number of tasks for multitask control from the drop-down list.

The number of tasks displayed in the drop-down list will be 2 to 4.

This item can be set only if the check box for multitasking (d) is checked.

5. Back Button

The window will change to the Setup Wizard 1: Select the Controller Window when this button is clicked.

6. Next Button

The window will change to the Setup Wizard 3: Network Window when this button is clicked.

The above will be possible only if all the items are set.

7. Cancel Button

The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

Clicking this button will turn the Flow Window display ON and OFF.

2.3.3 Network Settings

The Network Window is described in detail below.

■ Window Configuration

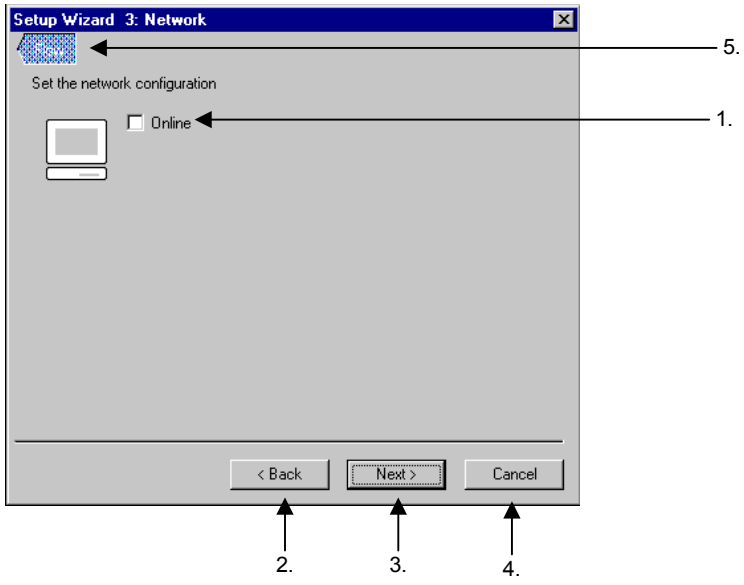
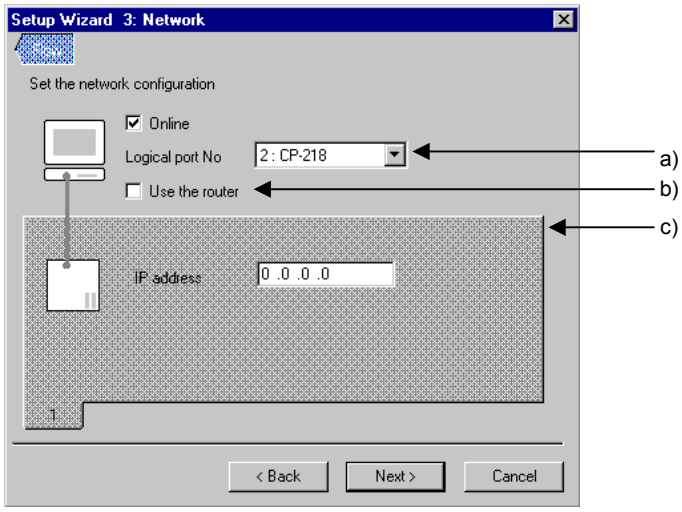


Fig 2.8 Setup Wizard 3: Network

1. Check Box for Online

   Check the box for online specification.

   The following window will be displayed.



a) Logical Port No.

   Select the logical port number from the drop-down list.

   The list will show the CP-217 (serial) port, CP-218 port, CP-215 port, and modem as communications ports available to the MP920. Any other port will be displayed as an undefined port.

b) Check Box to Use the Router

   Check the box if a router is used.

INFO The above check box will be available only if the CP-217 port or CP-218 port is selected.

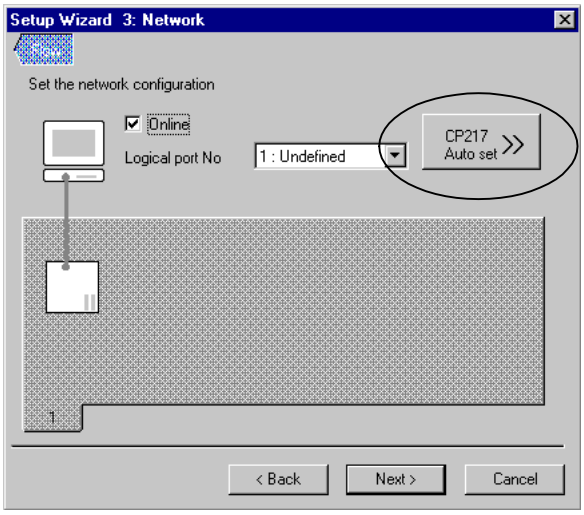
c) Network Setting Tab

   The tab number specified by the controller number setting in the Setup Wizard 2: Definition Window will be displayed.

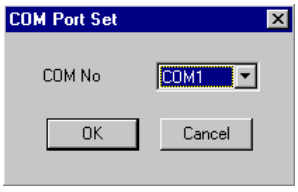
   Refer to the detailed settings below.

■ CP-217 Auto Set Button

1 If all items of the drop-down list of logical port numbers are undefined (i.e., the CP-217, CP-218, CP-215, or modem has not been set in the communications process), the **CP-217 Auto Set** Button will be displayed as shown below.



2 The following COM Port Set Dialog Box will be displayed when this button is clicked. Set the COM port number to be used and click the **OK** button. The CP-217 (serial) will be automatically set for the communications process.



2. Back Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

3. Next Button

   The widow will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

   If the Module is set in the Setup Wizard 2: Definition Window to a name already existing and the check box for modify system modules is not checked, the window will change to the Setup Wizard 5: Confirm the Configuration Window.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

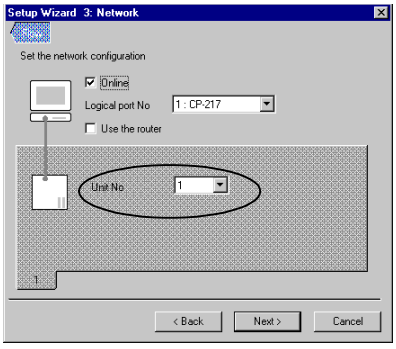
5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

■ Detail Settings

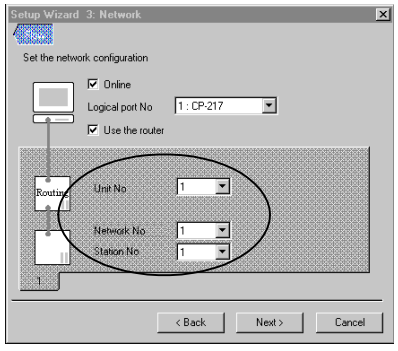
The window varies as shown below according to the type of logical port and the setting of the check box to use the router.

CP-217 Logical Port without Router



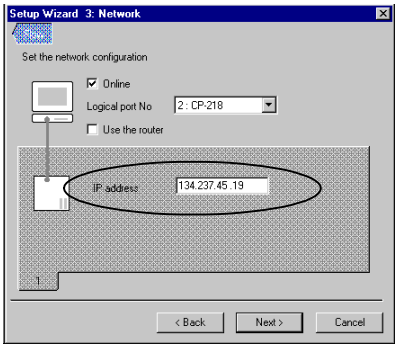
Select the unit number to be set from the drop-down list.

CP-217 Logical Port with Router



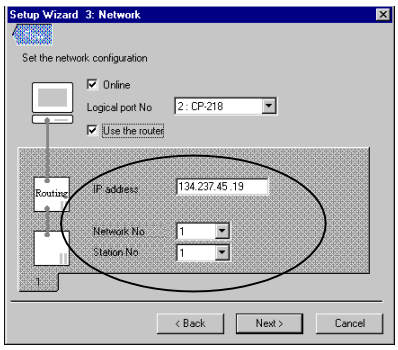
- Select the unit number to be set from the drop-down list.
- Select the network number or station number to be set from the drop-down list.

CP-218 Logical Port without Router



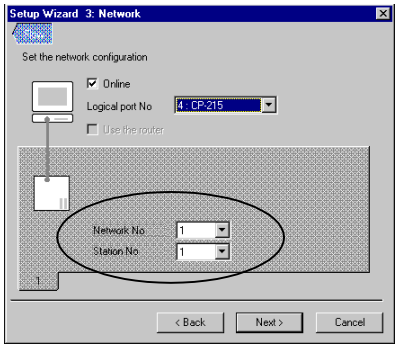
Set the IP address.

CP-218 Logical Port with Router



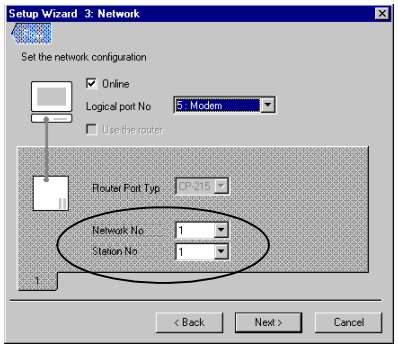
- Set the IP address.
- Select the network number or station number to be set from the drop-down list.

CP-215 Logical Port



Select the network number or station number from the drop-down list.

Modem Logical Port



Select the network number or station number from the drop-down list.

2.3.4 Module Settings

The Module Configuration Window is described in detail below.

■ Window Configuration

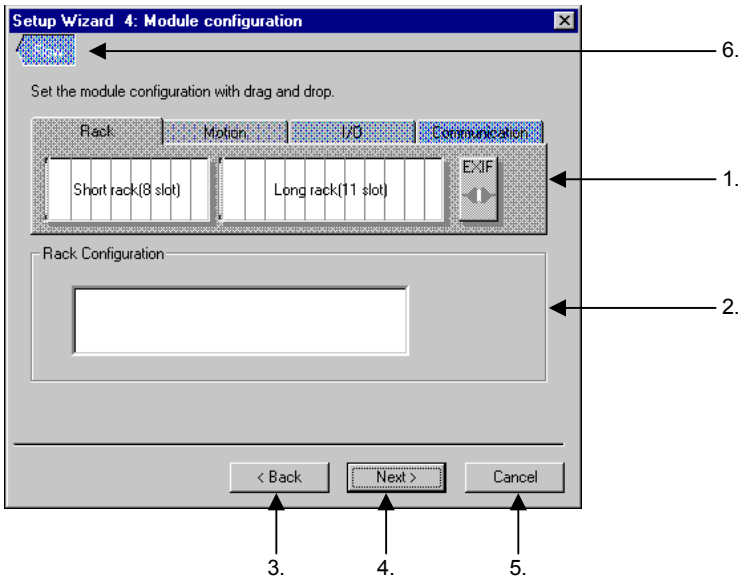


Fig 2.9 Setup Wizard 4: Module configuration

1. Module Selection Pallet

   Rack, Motion Control Module, I/O Unit, and Communications Module icons are provided. Drag and drop these icons to the ***Rack Configuration*** to make module settings.

   The mouse pointer will change to a hand icon from an arrow when the cursor is located at a movable Module icon.

   Pop-up help will be displayed as well if there is any help item provided.

2. Rack Configuration

   The rack configuration of the Module will be set and displayed here.

3. Back Button

   The window will change to the Setup Wizard 3: Network Window when this button is clicked.

4. Next Button

   The window will change to the Setup Wizard 5: Confirm the Configuration Window when this button is clicked.

5. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

6. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

INFO

If no Motion Modules are set in the rack or if no axes (i.e., Servos) are set in the Motion Modules, it will not be possible to go to the next window.

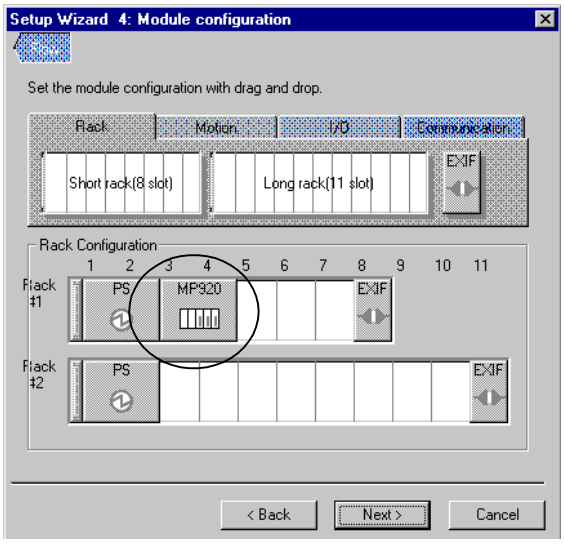
■ Rack Settings

The following description provides information on rack configuration settings.

Rack Configuration

Drag and drop the short or long rack icon from the Rack Tab on the palette to the rack configuration image. Up to four racks can be used.

The following illustration is an example of using a single short rack and a long rack.



Each rack will be displayed together with a power supply and the EXIF Module.

Rack #1 will be displayed together with the Machine Controller.

MP920 Icon

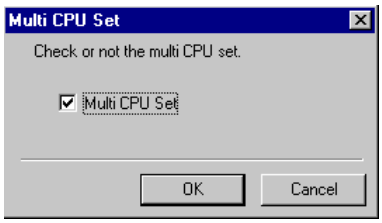
The M920 icon is circled in the above illustration.

When the racks are allocated, rack #1 will be displayed together with a power supply Module, the MP920 Machine Controller, and the EXIF Module.

Multiple CPU Settings

Use the following procedure to make multiple CPU settings.

1. Double-click the MP920 icon. The Multi CPU Set Dialog Box will appear.



2. Check the box for multiple CPU settings. Then click the **OK** Button.

   Multiple CPUs will be set.

INFO

1. It is also possible to make multiple CPU settings by clicking the MP920 icon with the right-mouse button and selecting ***Multi CPU (M)*** from the pop-up menu that appears.
2. If rack #1 to #5 or #1 to #6 is used, multiple CPU settings will not be possible.

Multiple CPU settings can be canceled by removing the check from the check box for multiple CPU settings or by using ***Multi CPU (M)*** in the pop-up menu.

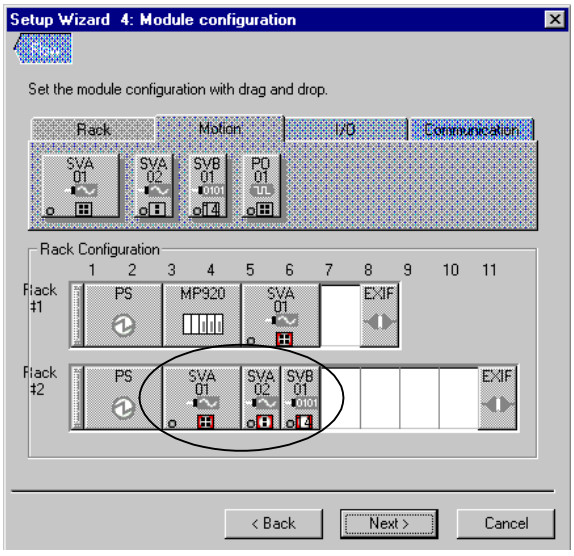
■ Motion Module Settings

Drag and drop a Motion Module icon from the Motion tab on the palette to the rack configuration image.

Up to 16 Motion Module icons can be allocated.

The settings will not be possible if the rack configuration does not include a rack.

The following illustration is an example of Motion Modules allocated in the rack configuration.



Motion Module Icon

The Motion Module icons are circled in the above illustration.

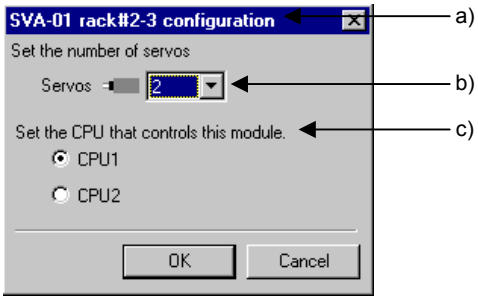
The Motion Module in the rack with a red indicator requires detailed configuration settings.

After making the settings, the red indicator will go off and the icon will change to gray. The number of Servos or I/O Units that has been set will appear.

The Detail Setting Dialog Box will appear by double-clicking the icon of the Module that requires detailed settings. Refer to the description below.

Detail Setting Dialog Box

1. SVA-01/SVA-02/PO



a) Title Bar

The module name and the rack number configuration will be displayed. The name of the Module will be SVA-01, SVA-02, or PO, depending on the Module selected.

b) Number of Servos

Select from the drop-down list the number of Servos to be set for the Module selected. The number varies with the Module as described below.

Module	Number of Modules
SVA-01	0 to 4
SVA-02	0 to 2
PO	0 to 4

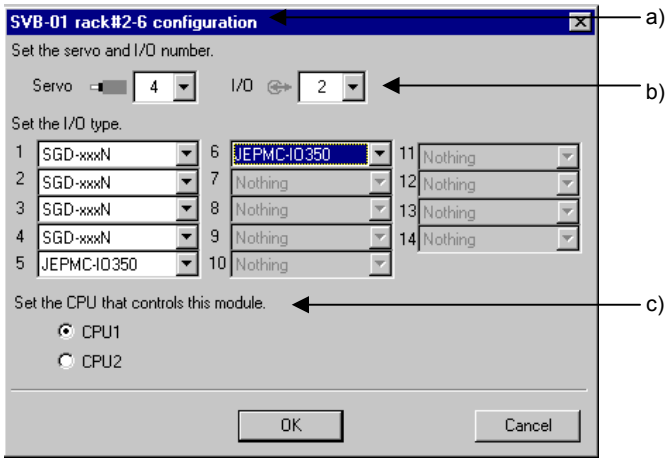
c) CPU Specification

Select the CPU1 or CPU2 for the control of the Module.

This will be possible only if multiple CPU settings have been specified.

2

2. SVB-01



a) Title Bar

The SVB-01 and the rack number configuration will be displayed.

b) Number of Servos and I/O Units

Allocate the Servos or I/O Units to the station according to the number of Servos or I/O Units that has been set.

The settings are the same as those for SVB configuration in the Setup Wizard 4: Module Configuration Window for the MP910. Refer to *2.2.4 Module Settings*.

c) CPU Specification

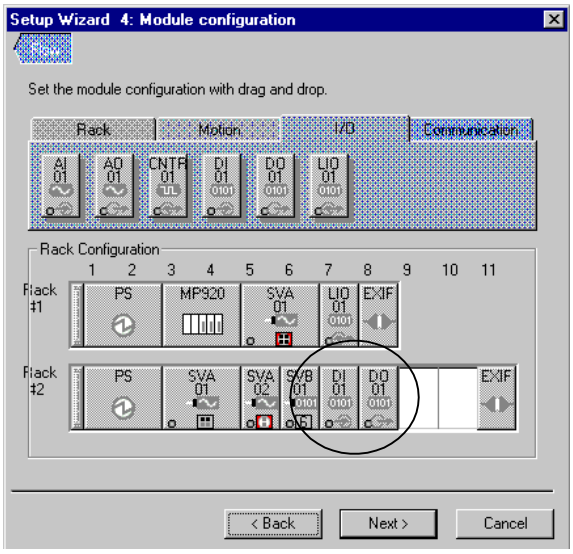
Select the CPU1 or CPU2 for the control of the Module.

This will be possible only if multiple CPU settings have been specified.

■ I/O Module Settings

Drag and drop an I/O Module icon from the I/O tab on the palette to the rack configuration image. The settings will not be possible if the rack configuration does not include a rack.

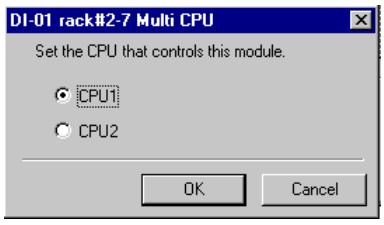
The following illustration is an example of I/O Modules allocated in the rack configuration.



I/O Module Icon

The I/O Module icons are circled in the above illustration.

If multiple CPU settings have been specified, the Multi CPU Dialog Box will appear by double-clicking the I/O Module icon. Select the CPU that will be in control of the I/O Module.



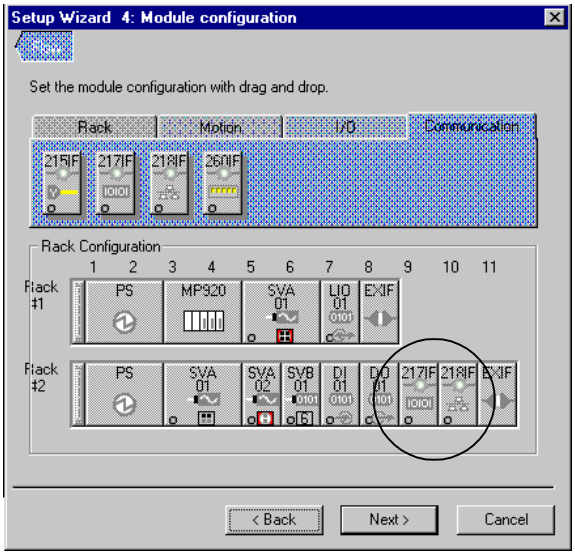
■ Communications Module Settings

Drag and drop a Communications Module icon from the Communication tab on the palette to the rack configuration image.

Up to 16 CP-215 or CP-218 icons or up to 24 CP-217 icons can be allocated.

The settings will not be possible if the rack configuration does not include a rack.

The following illustration is an example of Communications Modules allocated in the rack configuration.



Communications Module Icon

The Communications Module icons are circled in the above illustration.

If multiple CPU settings have been specified, the Multi CPU Dialog Box will appear by double-clicking the Communications Module icon. Select the CPU that will be in control of the Communications Module.

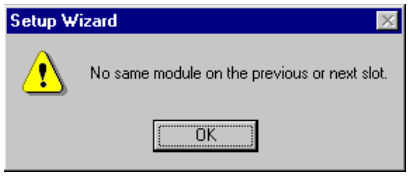
It will be possible to make duplicate settings for the Modules or communications path if two or more CP-215 Communications Modules are allocated next to each other on the rack.

Use the following procedure to make the settings.

Duplicate Settings for CP-215 Modules

1. Right-click the CP-215 icon.
2. Select ***Duplicate module (M)*** from the displayed pop-up menu.

   In the above case, two CP-215 Modules must be mounted next to each other on the rack, or otherwise the following message box will appear. When the message box appears, repeat the Communications Module settings from the beginning.

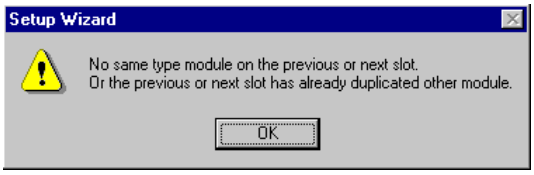


Duplicate Settings for CP-215 Communications Path

1. Right-click the CP-215 icon.
2. Select ***Duplicate line (L)*** on the displayed pop-up menu.

   In the above case, two CP-215 Modules must be mounted next to each other on the rack, or otherwise the following message box will appear. When the message box appears,

repeat the Communications Module settings from the beginning.



INFO

Module duplication will be automatically set if line duplication is set.

■ Editing Racks

It is possible to edit the rack configuration.

The following functions can be used.

Delete

The mouse pointer will change to a hand icon from an arrow when the cursor is located on the rack icon. Then drag and drop the rack icon outside the rack configuration. The selected rack will be deleted.

Move

The mouse pointer will change to a hand icon from an arrow when the cursor is located on the rack icon. Then drag and drop the rack icon to the position desired.

■ Editing Icons

Icons allocated to racks can be moved, deleted, or edited.

The following function can be used.

Copy

Select ***Copy (C)*** from the pop-up menu that will appear by right-clicking the Module icon.

The selected Module icon will be copied.

Paste

Select ***Paste (P)*** from the pop-up menu that will appear by right-clicking the empty slot.

The Module icon previously copied will be pasted to the selected slot.

Delete

There are two ways to delete icons.

1. Right Click

   Select ***Delete (D)*** from the pop-up menu that will appear by right-clicking the Module

icon.

The selected Module icon will be deleted from the slot.

2. Drag and Drop

The mouse pointer will change to a hand icon from an arrow when the cursor is located on the Module icon.

The drag and drop the icon outside the rack configuration. The selected rack will be deleted.

Move

The mouse pointer will change to a hand icon from an arrow when the cursor is located on the Module icon.

Then drag and drop the Module icon to the empty slot.

2.3.5 Setting Checks

The Confirm the Configuration Window is described in detail below.

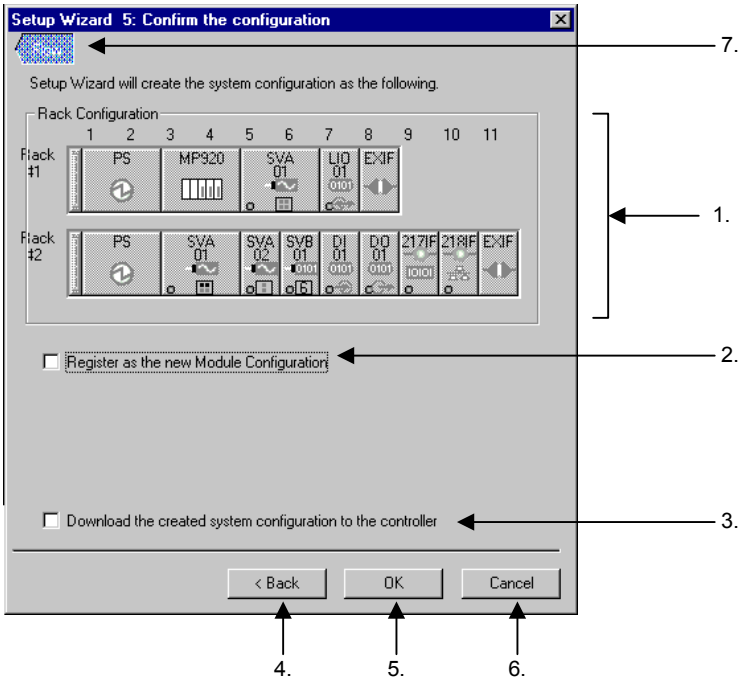


Fig 2.10 Setup Wizard 5: Confirm the configuration

1. Rack Configuration

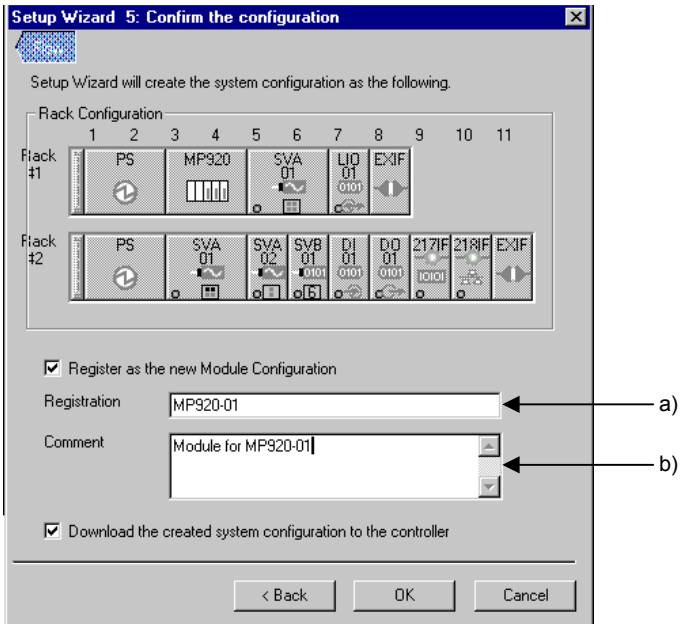
Check the rack and module configuration.

Pop-up help will be displayed when the cursor is moved to this portion.

2. Check Box to Register as the new Module Configuration

Check the box to register a new module configuration.

The following window will be displayed.



a) Registration

Set the name of the Module to be registered.

Up to 64 characters can be input.

b) Comment

Set the comment about the Module.

Up to 64 characters can be input.

3. Check Box to Download the Created System Configuration to the Controller

   Check the box to download to the Machine Controller the system configuration data created with the Setup Wizard.

   The box will appear only if the check box for online in the Setup Wizard 3: Network Window is checked.

4. Back Button

   The window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

5. OK Button

   The Setup Wizard will end and the system will be automatically generated when this button is clicked.

6. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

7. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.4 MP930 Setup Wizard

The windows in the MP930 Setup Wizard are described in detail in this section.

2.4.1 Controller Selection

The Select the Controller Window is described in detail below.

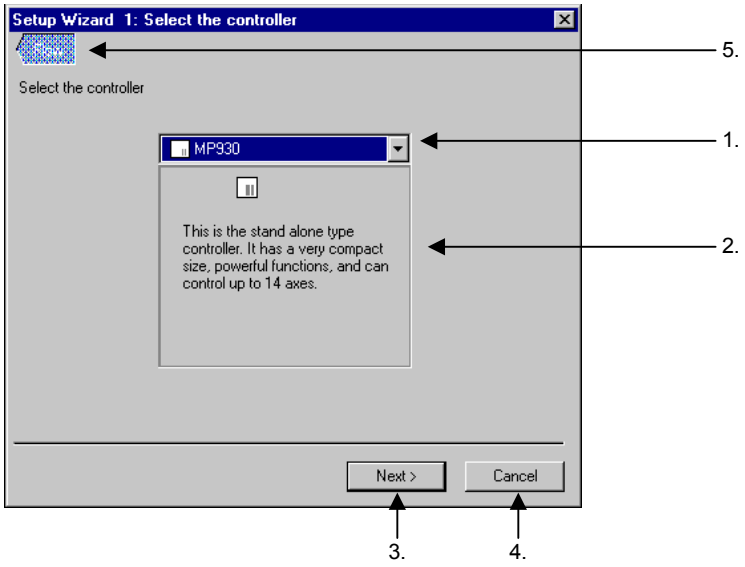


Fig 2.11 Setup Wizard 1: Select the controller

1. Controller Selection

   Select ***MP930*** from the drop-down list of Machine Controllers.

2. Explanation of Model

   The following explanation of the MP930 will appear.

   This is the stand alone type controller. It has a very compact size, powerful functions, and can control up to 14 axes.

3. Next Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.4.2 Definitions

The Definition Window is described in detail below.

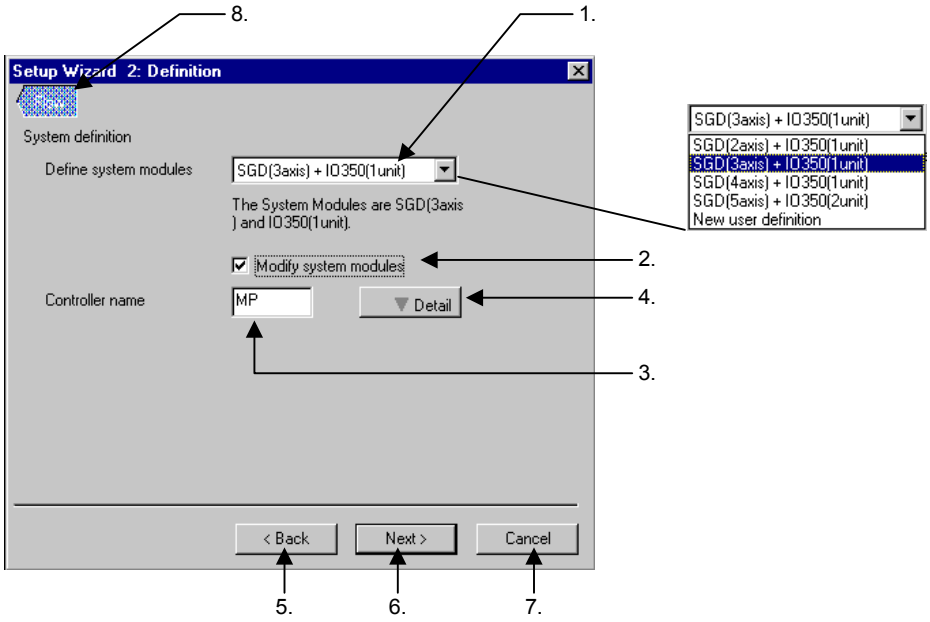


Fig 2.12 Setup Wizard 2: Definition

1. Define System Modules

   Select the name of the module setting template from the drop-down list.

   The comment set in the selected module setting template will appear under the box.

INFO

1 Select the new user definition when setting a new Module.

2 If there is a registered MP930 module setting template, the defined names will be listed together with a selection for a new user definition. If a MP930 module setting template has not been registered, only a selection for a new user definition will appear. After the installation, four module setting templates are prepared as shown in Fig. 2.12.

2. Check Box to Modify System Modules

   Check the box if the module settings need changes.

   Changes in the Setup Wizard 4: Module Configuration Window will be possible only if this box is checked.

INFO

The above operation is possible only if a registered module setting template has been selected instead of a new user definition.

3. Controller Name

Set the name of the Machine Controller.

“01" will be added to the input character string to form the name of the Machine Controller.

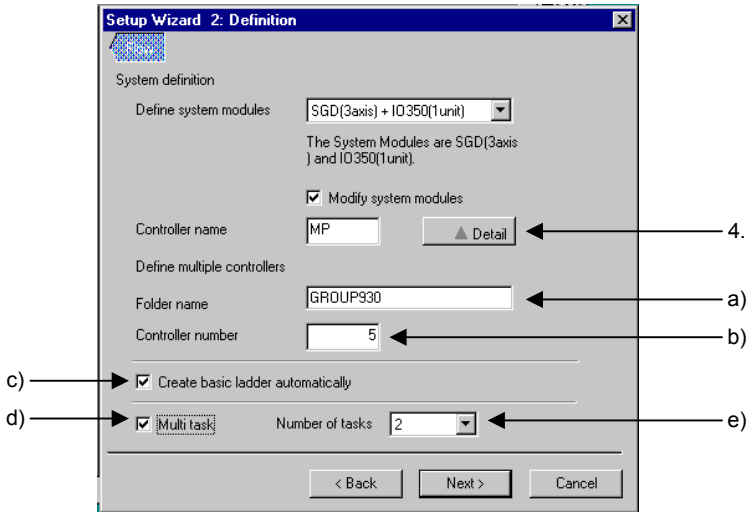
Up to six characters can be input for the name. The suffix to be added will be incremented automatically (i.e., 01, 02, 03, and so on) if a name already exists.

INFO The name of the Machine Controller will be by default set to MPxx, where xx is 01， 02， 03, etc.

4. Detail Button

Click this button to access detailed settings.

The following window will be displayed.



a) Folder Name

Set the folder name of the Module to be set.

Up to eight characters can be input. If the name already exists, the name input will be added to the same group.

The folder name will be used by the File Manager.

If the Setup Wizard is started by selecting ***Make New Folder (N)*** and then ***Controller Folder (C)*** from the pop-up menu for an order folder in the File Manager, the folder name will be set to the order folder name. Manual input of the folder name will not be possible.

b) Controller Number (Number of Controllers)

Set the number of Machine Controllers in the Module to be set.

The number can be set to between 1 and 99.

c) Check Box to Create Basic Ladder Automatically

Check the box if it is necessary to generate a basic ladder program automatically.

The check box for multitasking (d) will be enabled.

d) Check Box for Multitask

Check the box to perform multitask control.

Multitask control will be possible only if the check box to create a basic ladder automatically (c) is checked.

The number of tasks (e) will be enabled.

e) Number of Tasks

Select the number of tasks for multitask control from the drop-down list.

The number of tasks displayed in the drop-down list will be 2 to 4.

This item can be set only if the check box for multitasking (d) is checked.

5. Back Button

The window will change to the Setup Wizard 1: Select the Controller Window when this button is clicked.

6. Next Button

The window will change to the Setup Wizard 3: Network Window when this button is clicked.

The above will be possible only if all the items are set.

7. Cancel Button

The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

Clicking this button will turn the Flow Window display ON and OFF.

2.4.3 Network Settings

The Network Window is described in detail below.

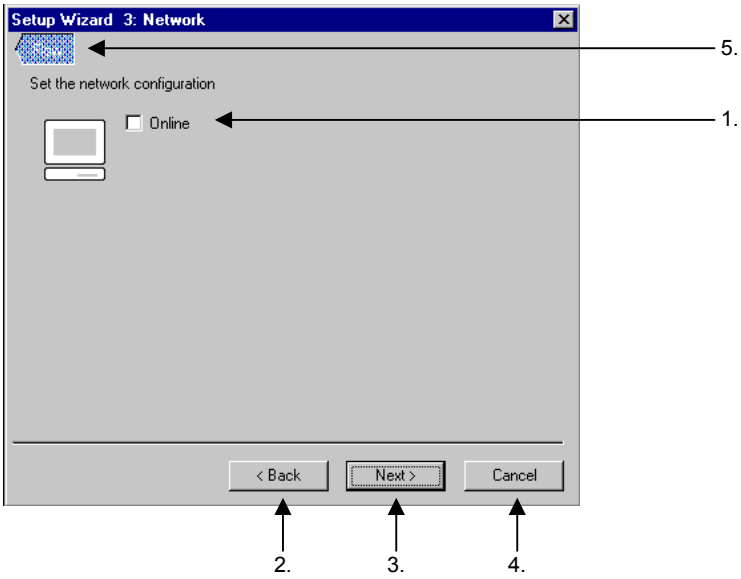
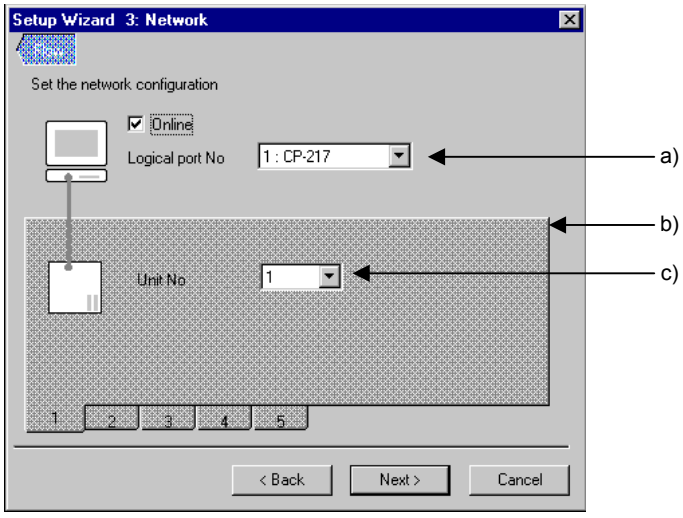


Fig 2.13 Setup Wizard 3: Network

1. Check Box for Online

   Check the box for online specification.

   The following window will be displayed.



a) Logical Port No.

   Select the logical port number from the drop-down list.

   The list will show the CP-217 (serial) port as communications ports available to the MP930. Any other port will be displayed as an undefined port.

b) Network Setting Tab

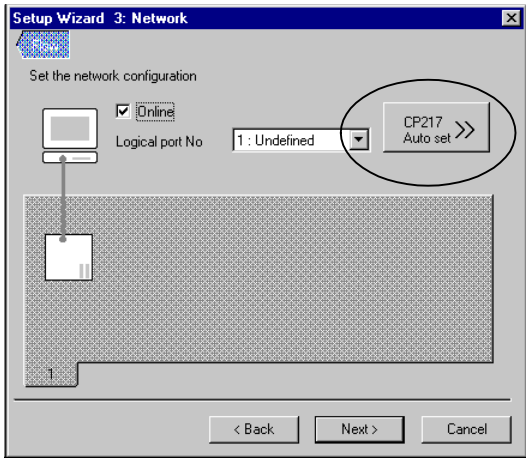
   The tab number specified by the controller number setting in the Setup Wizard 2: Definition Window will be displayed.

c) Unit No.

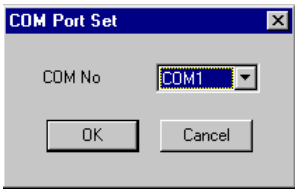
   If the logical port number is set to CP-217, select the unit number for each Machine Controller from the drop-down list.

■ CP-217 Auto Set Button

1 If all items of the drop-down list of logical port numbers are undefined (i.e., the CP-217 has not been set in the communications process), the **CP-217 Auto Set** Button will be displayed as shown below.



2 The following COM Port Set Dialog Box will be displayed when this button is clicked. Set the COM port number to be used and click the **OK** button. The CP-217 (serial) will be automatically set for the communications process.



2. Back Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

3. Next Button

   The window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

   If the Module is set in the Setup Wizard 2: Definition Window to a name already existing and the check box to modify system modules is not checked, the window will change to the Setup Wizard 5: Confirm the Configuration Window.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.4.4 Module Settings

The Module Configuration Window is described in detail below.

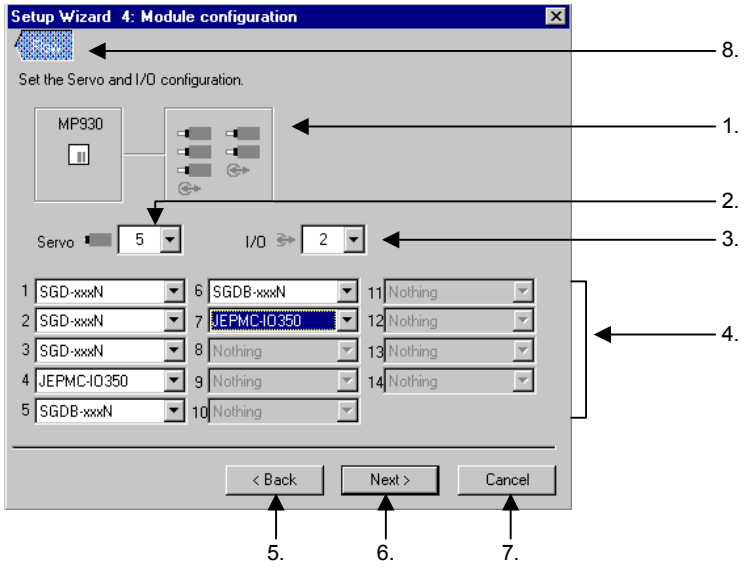


Fig 2.14 Setup Wizard 4: Module configuration

1. Overall Image

   The overall image of module settings will be displayed.

   The number of Servos and I/O Units and allocations are reflected in the displayed Servos and I/O Units on the screen.

2. Number of Servos

   Select the number of Servos from the drop-down list.

   A value between 1 and 14 will be displayed in the drop-down list.

3. Number of I/O Units

   Select the number of I/O Units from the drop-down list.

   A value between 1 and 14 will be displayed in the drop-down list.

INFO

1 The maximum total number of Servos and I/O Units is 14.

2 The background of a displayed value in the drop-down list will be gray if the total exceeds 14 with the value selected. Furthermore, the background of the box will also be gray.

4. Servo and I/O Unit Allocation

   Select the Servo or I/O Unit for each station from the drop-down list.

   The number of Servos and I/O Units that has been set in the above can be allocated. An excessive number of Units cannot be set.

   The Servos and I/O Units allocated will be reflected to the overall image.

INFO

It will not be possible to go to the next window unless the following two items are set correctly.

1 Check that the number of Servos or I/O Units that has been set is the same as that set for Servo and I/O allocations.

2 The number of Servos is 1 or larger.

5. Back Button

   The window will change to the Setup Wizard 3: Network Window when this button is clicked.

6. Next Button

   The window will change to the Setup Wizard 5: Confirm the Configuration Window when this button is clicked.

7. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.4.5 Settings Checks

The Confirm the Configuration Window is described in detail below.

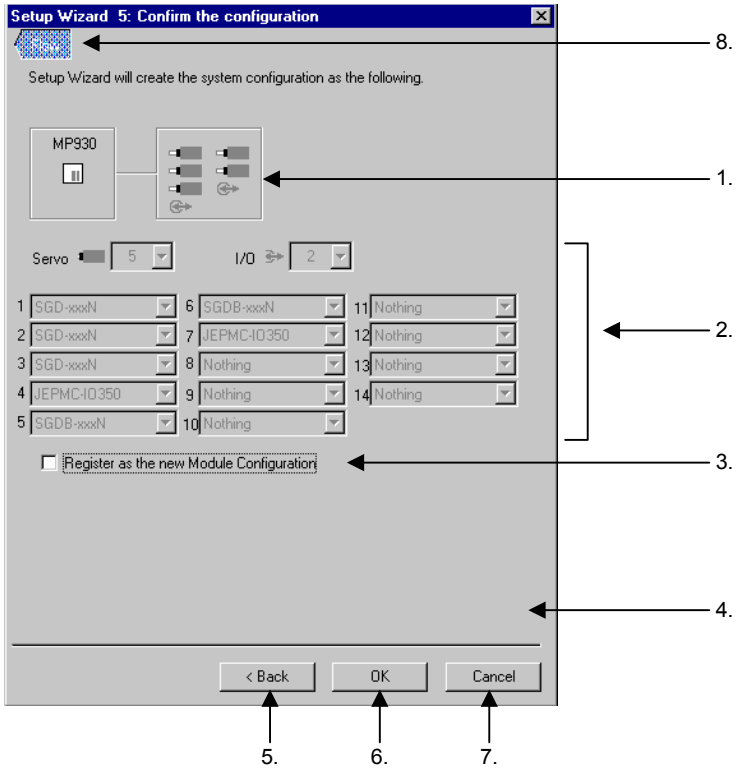


Fig 2.15 Setup Wizard 5: Confirm the configuration

1. Overall Image

   The overall image of module settings will be displayed.

   The number of Servos and I/O Units and allocations are reflected in the displayed Servos and I/O Units on the screen.

2. Servo and I/O Allocation Check

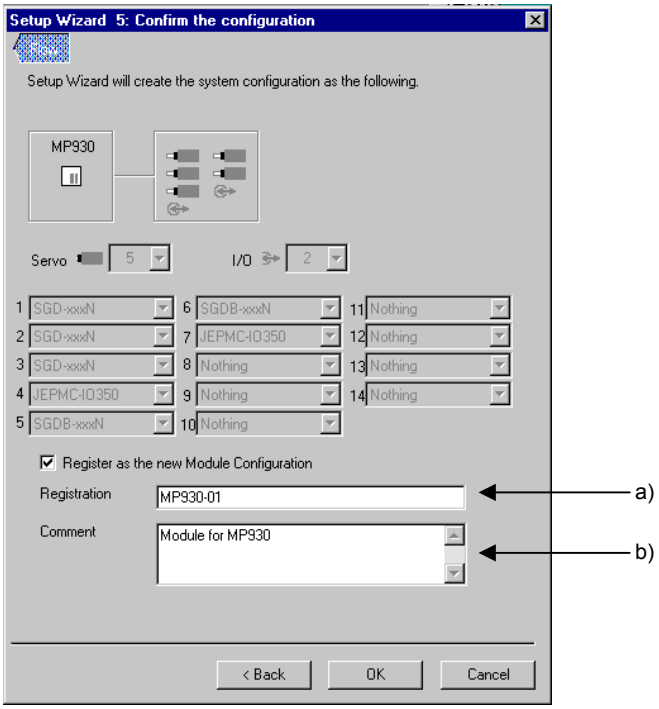
   Data on the number and allocation of the Servos and I/O Units will be displayed.

   The settings can be checked only, and they cannot be changed here.

3. Check Box to Register as the New Module Configuration

   Check the box to register a new module configuration.

   The following window will be displayed.



   a) Registration

      Set the name of the Module to be registered.

      Up to 64 characters can be input.

   b) Comment

      Set the comment about the Module.

      Up to 64 characters can be input.

4. Check Box to Download the Created Configuration Data to the Controller

   Check the box to download to the Machine Controller the system configuration data created with the Setup Wizard.

   The box will appear only if the ***Online Specification*** check box in the Setup Wizard 3: Network Settings Window is checked.

5. Back Button

   The display window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

6. OK Button

   The Setup Wizard will end and the system will be automatically generated when this button is clicked.

7. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.5 MP940 Setup Wizard

The windows in the MP940 Setup Wizard are described in detail in this section.

2.5.1 Controller Selection

The Select the Controller Window is described in detail below.

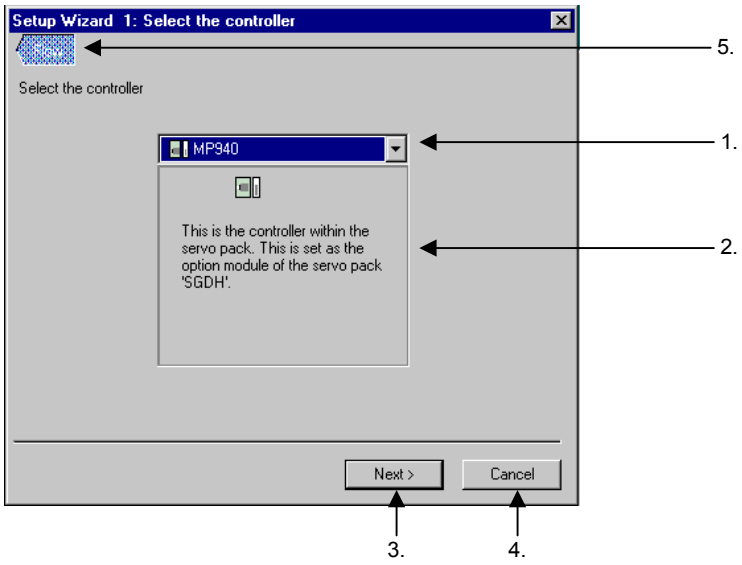


Fig 2.16 Setup Wizard 1: Select the controller

1. Controller Selection

   Select ***MP940*** from the drop-down list of Machine Controllers.

2. Explanation of Model

   The following explanation of the MP940 will appear.

   This is the controller within the servo pack. This is set as the option module of the servo pack SGDH.

3. Next Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.5.2 Definitions

The Definition Window is described in detail below.

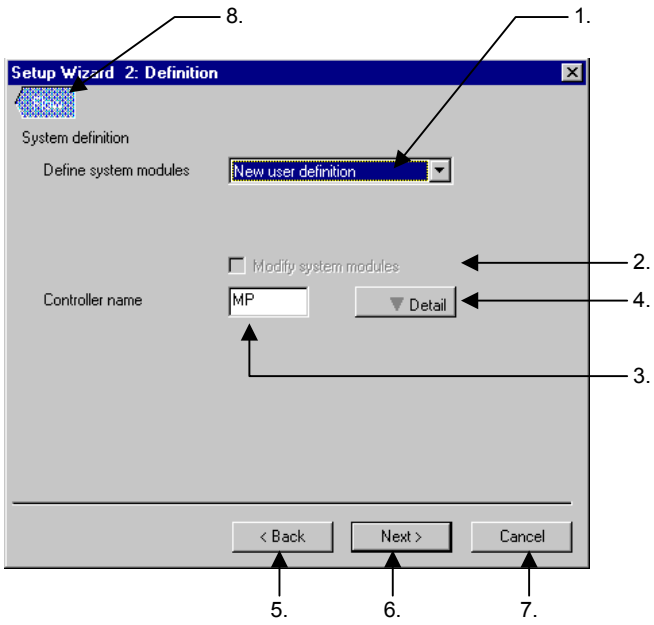


Fig 2.17 Setup Wizard 2: Definition

1. Define System Modules

   Select the name of the module setting template from the drop-down list.

   The comment set in the selected module setting template will appear under the box.

INFO

1 Select the new user definition when newly setting a Module.

2 If there is a registered MP940 module setting template, the defined names will be listed together with a selection for a new user definition. If a MP940 module setting template has not been registered, only a selection for a new user definition will appear.

2. Check Box to Modify System Modules

   Check the box if the module settings need changes.

   Changes in the Setup Wizard 4: Module Configuration Window will be possible only if this box is checked.

INFO

The above operation is possible only if a registered module setting template has been selected instead of a new user definition.

3. Controller Name

   Set the name of the Machine Controller.

   “01" will be added to the input character string to form the name of the Machine Controller.

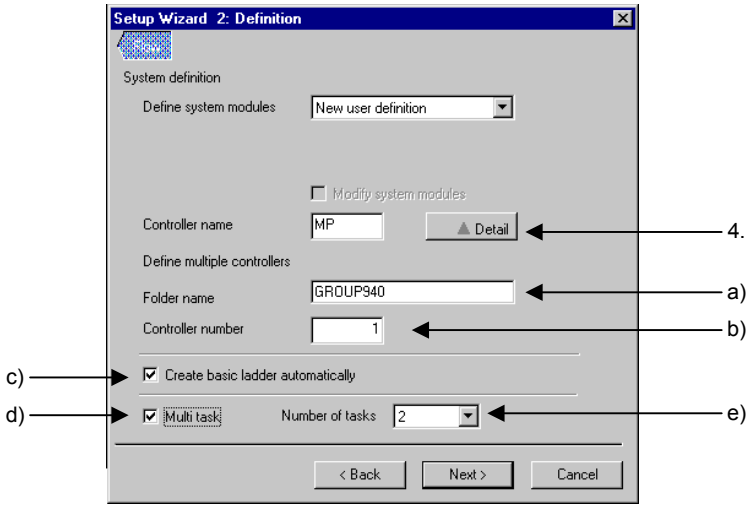
Up to six characters can be input for the name. The suffix to be added will be incremented automatically (i.e., 01, 02, 03, and so on) if a name already exists.

INFO The name of the Machine Controller will be by default set to MPxx, where xx is 01， 02， 03, etc.

4. Detail Button

Click this button to access detailed settings.

The following window will be displayed.



a) Folder name

Set the folder name of the Module to be set.

Up to eight characters can be input. If the name already exists, the name input will be added to the same group.

The folder name will be used by the File Manager.

If the Setup Wizard is started by selecting ***Make New Folder (N)*** and then ***Controller Folder (C)*** from the pop-up menu for an order folder in the File Manager, the folder name will be set to the order folder name. Manual input of the folder name will not be possible.

b) Controller Number (Number of Controllers)

Set the number of Machine Controllers in the Module to be set.

The number can be set to between 1 and 99.

c) Check Box to Create Basic Ladder Automatically

Check the box if it is necessary to generate a basic ladder program automatically. The check box for multitasking (d) will be enabled.

d) Check Box for Multitask

Check the box to perform multitask control.

Multitask control will be possible only if the check box to create a basic ladder automatically (c) is checked.

The number of tasks (e) will be enabled.

e) Number of Tasks

Select the number of tasks for multitask control from the drop-down list.

The number of tasks displayed in the drop-down list will be 2 to 4.

This item can be set only if the check box for multitasking (d) is checked.

5. Back Button

The window will change to the Setup Wizard 1: Select the Controller Window when this button is clicked.

6. Next Button

The window will change to the Setup Wizard 3: Network Window when this button is clicked.

The above will be possible only if all the items are set.

7. Cancel Button

The Setup Wizard will be canceled when this button is clicked.

8. Flow Button

Clicking this button will turn the Flow Window display ON and OFF.

2.5.3 Network Settings

The Network Window is described in detail below.

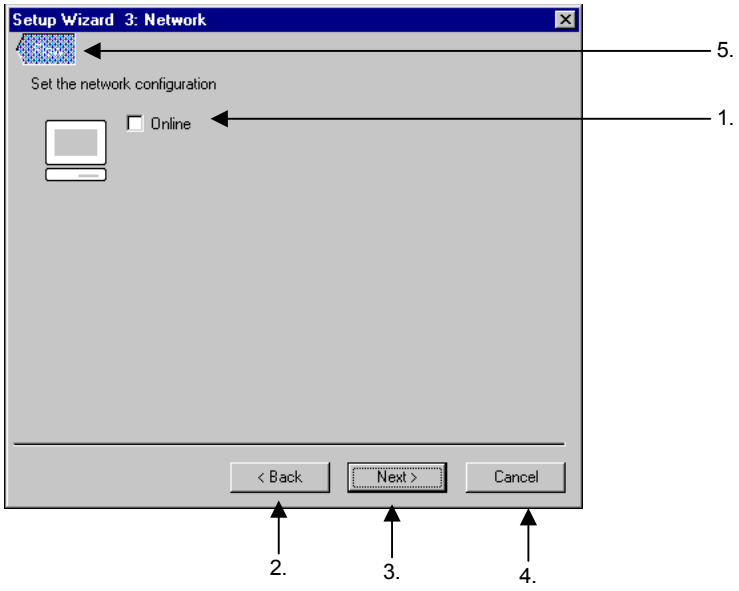
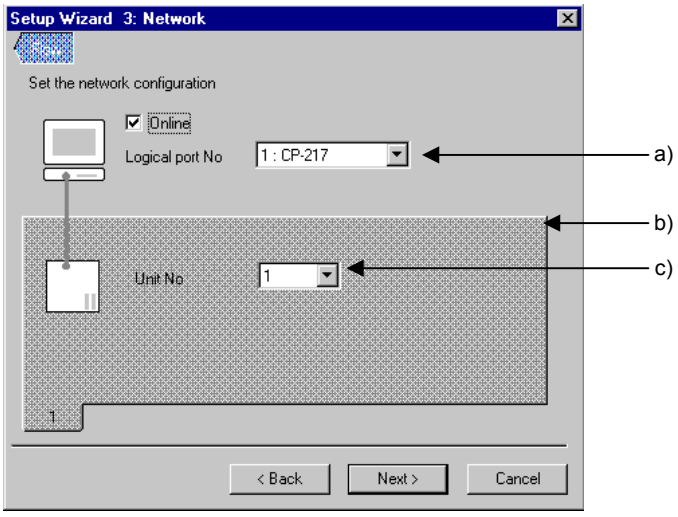


Fig 2.18 Setup Wizard 3: Network

1. Check Box for Online

   Check the box for online specification.

   The following window will be displayed.



a) Logical Port No.

   Select the logical port number from the drop-down list.

   The list will show the CP-217 (serial) port as communications ports available to the MP940. Any other port will be displayed as an undefined port.

b) Network Setting Tab

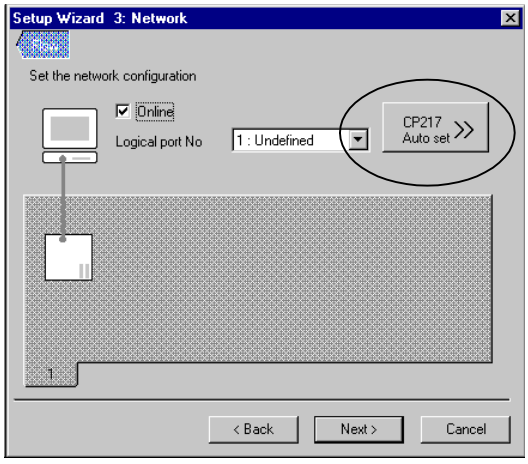
   The tab number specified by the controller number setting in the Setup Wizard 2: Definition Window will be displayed.

c) Unit No.

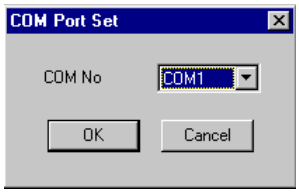
   If the logical port number is set to CP-217, select the unit number for each Machine Controller from the drop-down list.

■ CP-217 Auto Set Button

1 If all items of the drop-down list of logical port numbers are undefined (i.e., the CP-217 has not been set in the communications process), the **CP-217 Auto Set** Button will be displayed as shown below.



2 The following COM Port Set Dialog Box will be displayed when this button is clicked. Set the COM port number to be used and click the **OK** button. The CP-217 (serial) will be automatically set for the communications process.



2. Back Button

   The window will change to the Setup Wizard 2: Definition Window when this button is clicked.

3. Next Button

   The window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

   If the Module is set in the Setup Wizard 2: Definition Window to a name already existing and the check box to modify system modules is not checked, the window will change to the Setup Wizard 5: Confirm the Configuration Window.

4. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

5. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

2.5.4 Module Settings

The Module Configuration Window is described in detail below.

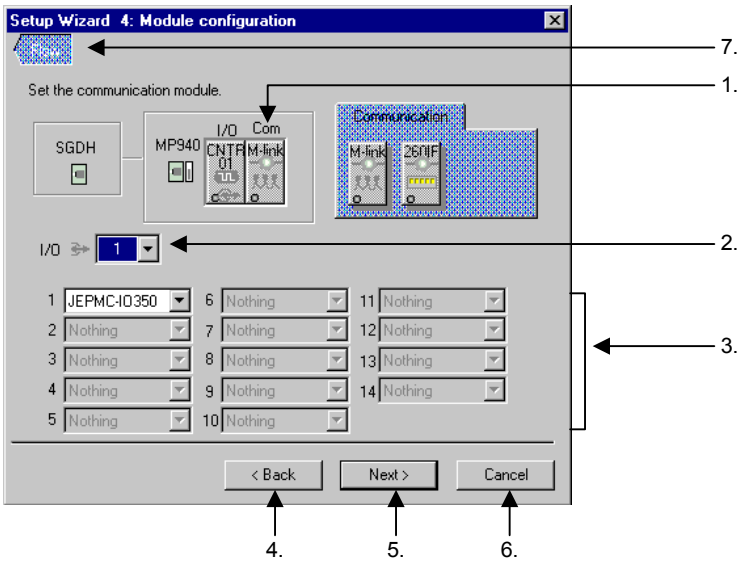


Fig 2.19 Setup Wizard 4: Module configuration

1. Communications Settings

   Make communications settings here. To change the present setting, delete the Module icon on the rack and drag and drop the Module icon on the palette.

   To delete the present Module, move the mouse pointer to the Module icon and drag and drop the Module icon to the outside the rack or select ***Delete (D)*** from the pop-up menu that will appear by right-clicking the Module icon.

   If M-Link (MECHATROLINK) is set for communications, boxes for setting the number of I/O Units and I/O allocations will be displayed.

2. Number of I/O Units

   Select the number of I/O Units from the drop-down list.

   A value between 1 and 14 will be displayed in the drop-down list.

INFO

1 The maximum total number of I/O Units is 14.

2 The background of a displayed value in the drop-down list will be gray if the total exceeds 14 with the value selected. Furthermore, the background of the box will also be gray.

3. I/O Unit Allocation

   Select the I/O Units for each station from the drop-down list.

   The number of I/O Units that has been set in the above can be allocated. An excessive number of Units cannot be set.

4. Back Button

   The window will change to the Setup Wizard 3: Network Window when this button is

clicked.

5. Next Button

   The window will change to the Setup Wizard 5: Confirm the Configuration Window when this button is clicked.

6. Cancel Button

   The Setup Wizard will be canceled when this button is clicked.

7. Flow Button

   Clicking this button will turn the Flow Window display ON and OFF.

Check that the number of I/O Units that has been set is the same as that set for I/O allocations.

It will be not possible to go to the next window unless the above item is set correctly.

2.5.5 Settings Checks

The Confirm the Configuration Window is described in detail below.

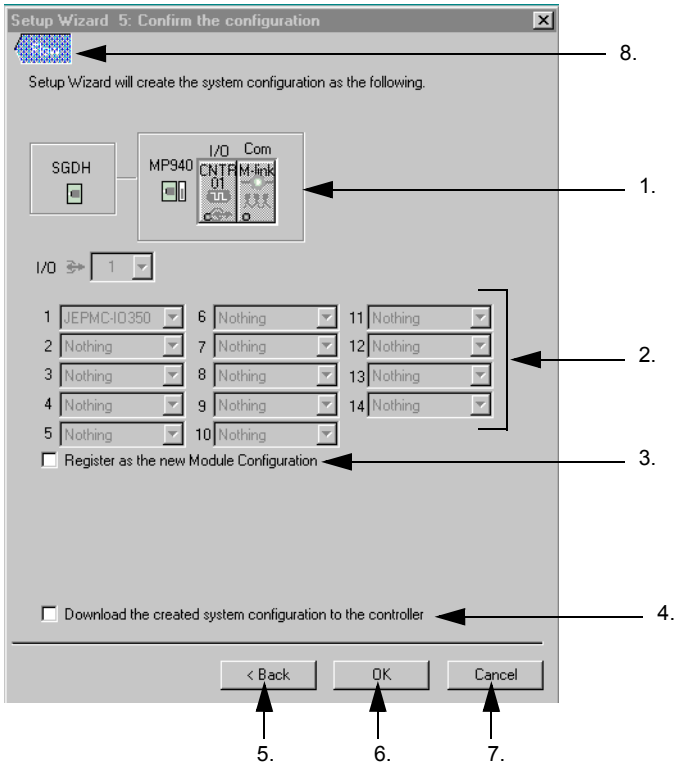


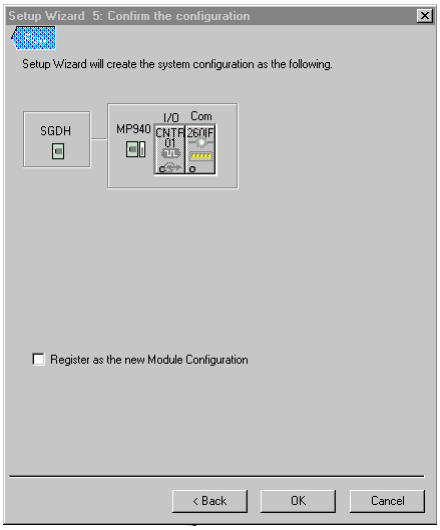
Fig 2.20 Setup Wizard 5: Confirm the configuration

1. Overall Image

   The overall image of module settings will be displayed.

   If M-Link is set for communications, the setting details of the number of I/O Units and allocation check will be displayed.

If the 260IF is set for communications, only the following image will be displayed.



2. I/O Units and Allocation Check

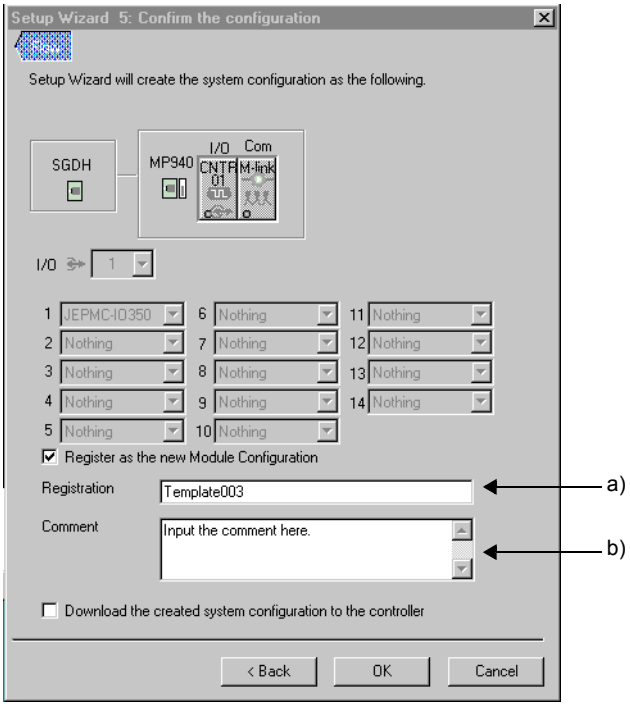
   Data on the number and allocation of the I/O Units will be displayed.

   The settings can be checked only, and they cannot be changed here.

3. Check Box to Register as the New Module Configuration

   Check the box to register a new module configuration.

   The following window will be displayed.



a) Registration

   Set the name of the Module to be registered.

   Up to 64 characters can be input.

b) Comment

Input a comment about the Module.

Up to 64 characters can be input.

4. Check Box to Download the Created Configuration Data to the Controller

Check the box to download to the Machine Controller the system configuration data created with the Setup Wizard.

The box will appear only if the ***Online Specification*** check box in the Setup Wizard 3: Network Settings Window is checked.

5. Back Button

The window will change to the Setup Wizard 4: Module Configuration Window when this button is clicked.

6. OK Button

The Setup Wizard will end and the system will be automatically generated when this button is clicked.

7. Cancel Button

The Setup Wizard will be canceled when this button is clicked.

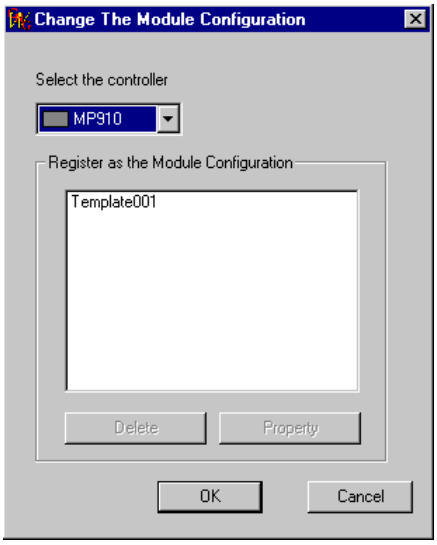
8. Flow Button

Clicking this button will turn ON and OFF the Flow Window display.

2.6 Module Settings

To delete the module settings template of each model registered with the Setup Wizard, use the following procedure.

1. Click the ***Tool (T)*** and then ***Change module configuration (M)*** in the File Manager to open the Change the Module Configuration Dialog Box.



2. Select the model from the Select the Controller Box.

   The registered template names will be displayed.

3. Click the template to be deleted and click ***Delete (E)***.

   The template name will disappear.

INFO

It will be possible to check information on the configuration of the template name by clicking ***Property (R)*** before deleting the template name.

4. Click the ***OK*** Button.

   A prompt message will be displayed. By selecting ***Yes (Y)***, deletion will be executed and the dialog box will close. By clicking ***Cancel***, deletion will be disabled and the dialog box will close.

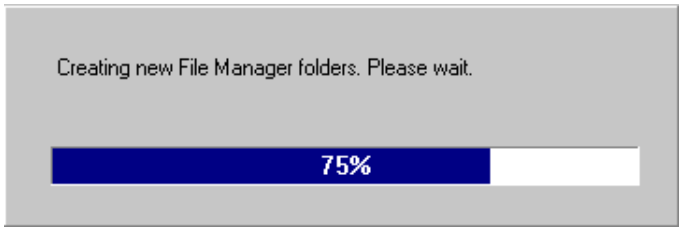
2.7 Completing the Setup

After the Setup Wizard is finished perform, the following procedure.

2.7.1 Generation of System Configuration

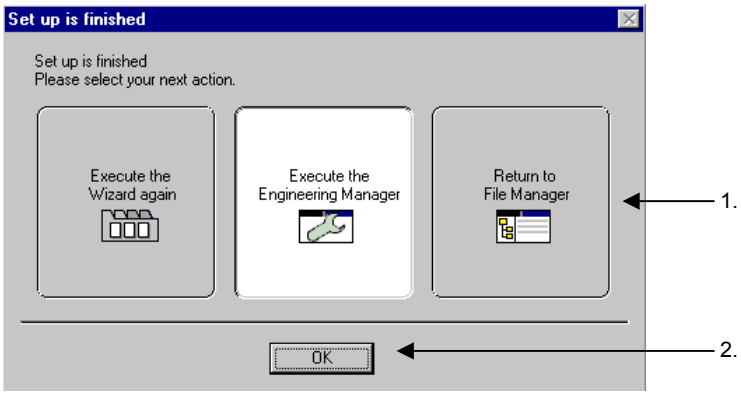
The system configuration that has been set up will be generated automatically when the Setup Wizard has finished (by clicking the **OK** Button in the Setup Wizard 5: Confirm the Configuration Window).

The following progress bar will be displayed while the system configuration is automatically generated.



2.7.2 Setup Completion

When the setup is completed, the following window will be displayed, making it possible to confirm the completion of the setup.



1. Selecting Next Window

   Select the tool to start after completing the Setup Wizard.

INFO

1 ***Return to File Manager*** will be selected by default if two or more Machine Controllers are set in the the Setup Wizard 2: Definition Window. In that case, ***Execute the Engineering Manager*** cannot be selected.

2 In any case other than the above, ***Execute the Engineering Manager*** will be the default.

2. OK Button

   Click the **OK** Button. The window will close and the tool selected in step 1 will start.

3 Controller Configuration

This chapter explains the configuration data on the Machine Controller.

3.1 Outline and Operation of Controller Configuration

3.1.1 Overview of Functions

All necessary data items on the system configuration will be automatically generated when the Setup Wizard is executed.

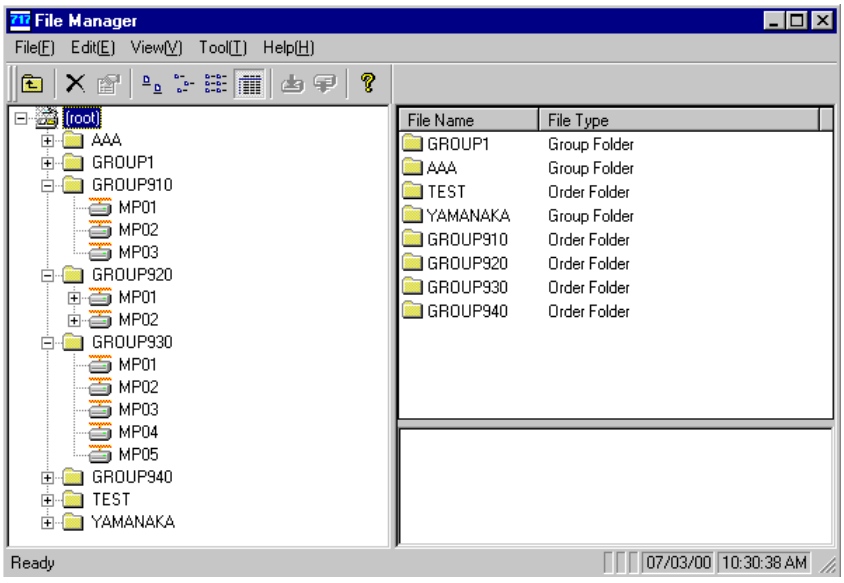
The Controller Configuration Window consists of the following data items that are used to operate the Machine Controller.

- Data items that may need modification
- Data items that need checked

The servo status display also makes it possible to monitor the status of servo operation control.

■ Checks in File Manager Window

All items set with the Setup Wizard explained in *Chapter 2 Setup Wizard* will be reflected in the File Manager.

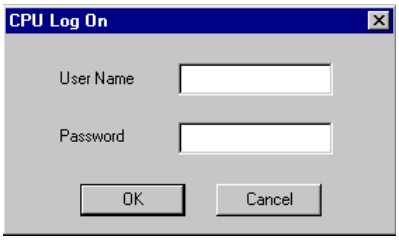


3.1.2 Starting the Controller Configuration

Use the following procedure to start the controller configuration data.

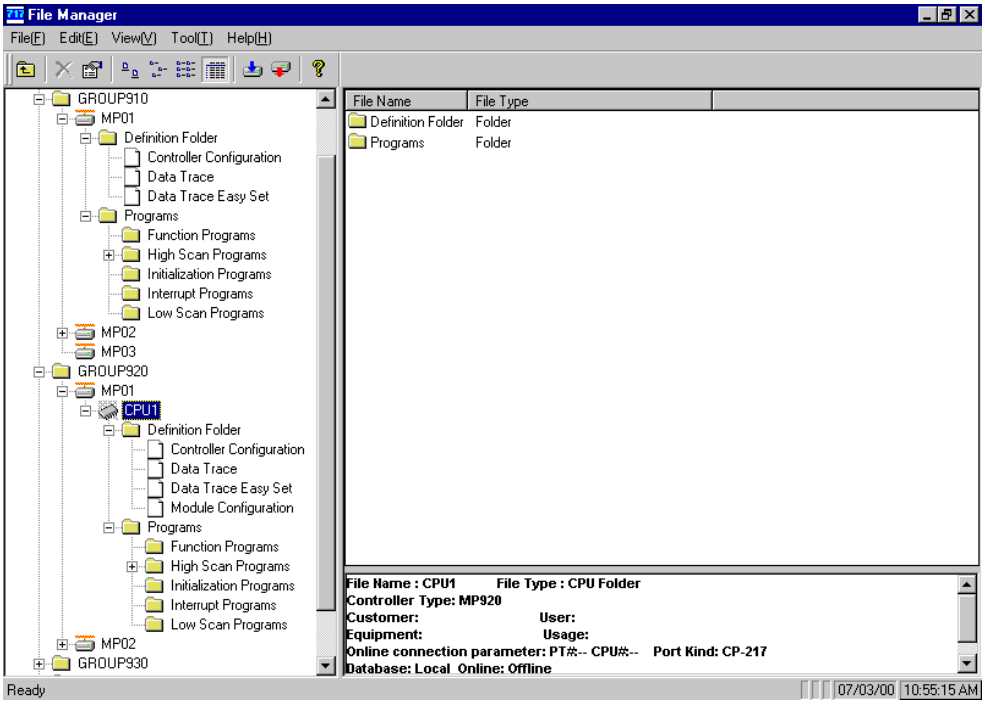
1. Select the name of the Machine Controller (or the name of the CPU if the model is the MP920) from the File Manager for which to start the controller configuration data.
2. Select ***File (F)*** and then ***Log On (G)*** from the menu bar or double-click the name of the Machine Controller.

   The CPU Log On Dialog Box will be displayed.



3. Input the user name and password and click the **OK** button.

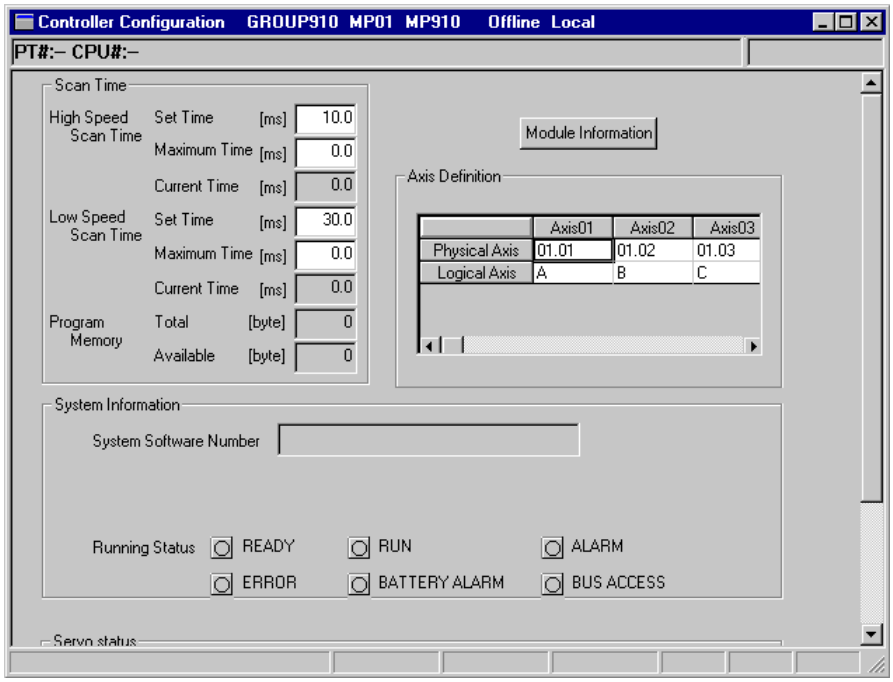
   When the log-on procedure to the CPU have been completed, the File Manager will display the names of Machine Controller (or CPU) programs and definitions.



Note: The above diagram is an example of logging onto the MP01 Machine Controller in the GROUP910 and the CPU1 of the MP01 Machine Controller in the GROUP920.

4. Double-click ***Controller Configuration*** under the ***Definition Folder*** of the Machine Controller to be started.

   The Engineering Manager will start and the Controller Configuration Window of the specified Machine Controller will be displayed.

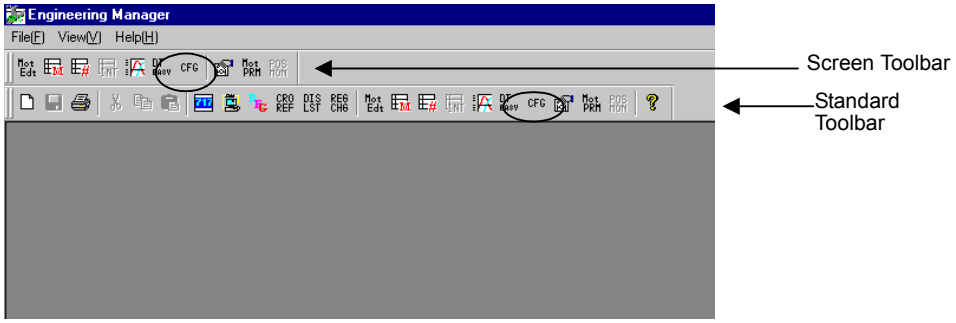


Note: The above diagram shows the Controller Configuration Window of the MP01 Machine Controller in GROUP910.

■ Engineering Manager Already Running

If the Engineering Manager is already running, use the following procedure to display the Controller Configuration Window.

Click ***CFG*** (i.e., the circled portions in the window below) on the Screen Toolbar or Standard Toolbar or select ***File (F)***, ***Open (O)***, ***Definition (D)***, and then ***Controller Configuration (L)***.



The Controller Configuration Window will be displayed in the Engineering Manager.

3.2 Operation of Controller Configuration

3.2.1 Outline of Controller Configuration Window

By performing the procedure explained in *3.1.2 Starting Controller Configuration*, the Controller Configuration Window will open as one of the windows in the Engineering Manager.

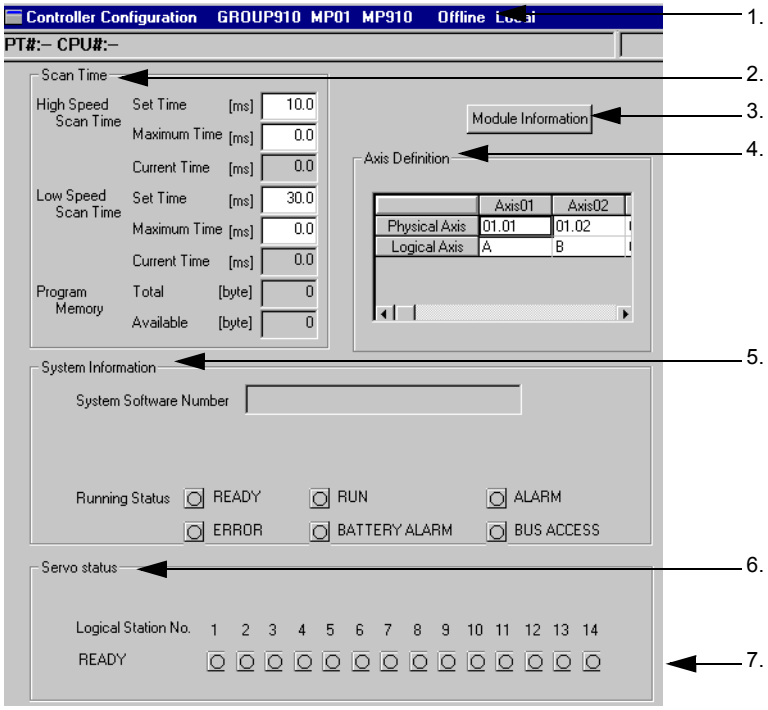
■ Outline of Functions

The Controller Configuration Window allows the setting or display of the following items for the MP910, MP920, MP930, and MP940.

- Scan time setting
- Module information
- Axis definition
- System information
- Servo status

■ Window Configuration

◀EXAMPLE▶ The following illustration is an example of the MP910 Controller Configuration Window.



1. Title Bar

   The following items will appear on the title bar.

   - Group name
   - Machine Controller name
   - Machine Controller type

- Online/Offline
- Local/Network

2. Scan Time Setting

   Refer to *3.2.2 Scan Time Setting* for details.

3. Module Information

   Refer to *3.2.4 Module Information* for details.

4. Axis Definition

   Refer to *3.2.5 Axis Definition* for details.

5. System Information

   Refer to *3.2.6 System Information* for details.

6. Servo Status

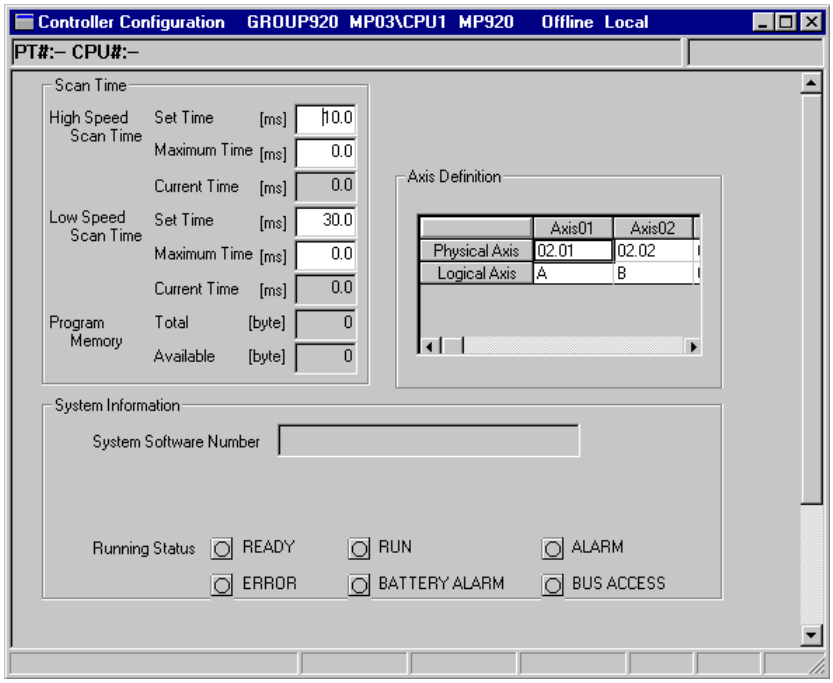
   Refer to *3.2.6 Servo Status* for details.

7. Window Resize

   When the cursor is moved to the border of the window, the appearance of the cursor on the screen will change to double-headed arrows, and the window size can be changed by dragging the mouse.

INFO

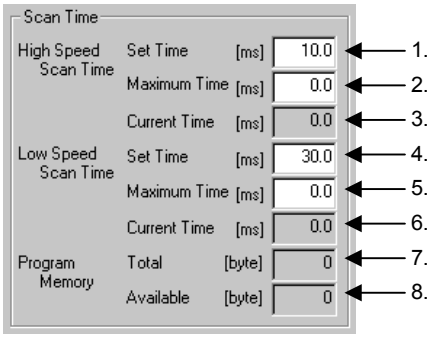
The Controller Configuration Window on the previous page will be displayed. If the MP920 Machine Controller is used while no SBV is set during the setup period, neither the **Module Information** Button nor the servo status will be displayed. The following window will be displayed instead.



3.2.2 Scan Time Settings

Scan time settings allow the following data items to be displayed and set.

The present value of online data items (i.e., 2, 3, and 5 through 8 below) will be displayed.



1. High Speed Scan Time - Set Time

   Input the high-speed scan time in milliseconds. The input must be an even number. If an odd number is input, it will be rejected and the previous value will be displayed.

   The default value varies with the number of axes as shown below.

Number of Axes	Set Value (ms)
1 to 8	10.0
9 to 16	20.0
17 to 24	30.0
25 to 32	40.0
33 to 40	50.0
41 to 48	60.0

   Note: Refer to *3.2.4 Axis Definition* for details.

2. High Speed Scan Time - Maximum Time

   The maximum high-speed scan time will be displayed in milliseconds.

   To clear the maximum value, input 0.

   In offline mode, 0 will be displayed.

3. High Speed Scan Time - Current Time

   The present high-speed scan time will be displayed in milliseconds.

   In offline mode, 0 will be displayed.

4. Low Speed Scan Time - Set Time

   Input the low-speed scan time in milliseconds.

   The default value varies with the number of axis as shown below.

Number of Axes	Set Value (ms)
1 to 16	30.0
17 to 32	50.0
33 to 48	50.0

5. Low Speed Scan Time - Maximum Time

   The maximum low-speed scan time will be displayed in milliseconds.

   To clear the maximum value, input 0.

   In offline mode, 0 will be displayed.

6. Low Speed Scan Time - Current Time

   The present low-speed scan time will be displayed in milliseconds.

   In offline mode, 0 will be displayed.

7. Program Memory - Total

   The total size (used amount) of program memory will be displayed in bytes.

   The value is the total sum of memory used for the motion programs, graphics, and functions.

   In offline mode, 0 will be displayed.

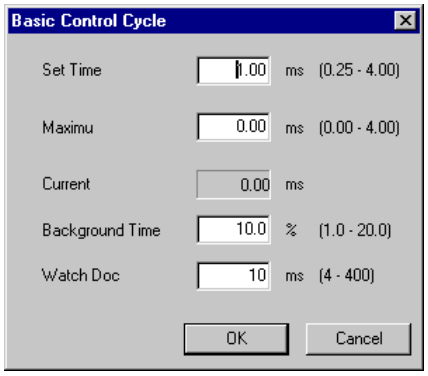
8. Program Memory - Available

   The size of remaining program memory will be displayed in bytes.

   In offline mode, 0 will be displayed.

3.2.3 Basic Control Cycle Settings

If the MP940 Machine Controller is used, the basic control cycle must be set in addition to the scan time. Open the Setting Dialog Box by clicking ***Basic Control Cycle (B)*** in the ***Set (S)*** menu while the Controller Configuration Window is active.



For the meanings of set items, refer to the *MP940 Machine Controller User's Manual: Design and Maintenance* (SIEZ-C887-4.1).

3.2.4 Module Information

The Module Information Window displays detailed information on Servo and I/O Unit allocations made with SVB settings in the Setup Wizard 4: Module Configuration Window.

■ Display Data

The following data will be displayed in the Module Information Window.

MP910

Data on SVB-CHI or SVB-CH2 configuration allocations will be displayed by clicking ***SVB-CH1*** or ***SVB-CH2*** in Setup Wizard 4: Module Configuration Window.

MP920

Data on SVB-01 configuration allocations will be displayed by double-clicking the icon located on the rack from the Motion tab in the Setup Wizard 4: Module Configuration Window.

MP930

Data on configuration allocations will be displayed in Setup Wizard 4: Module Configuration Window.

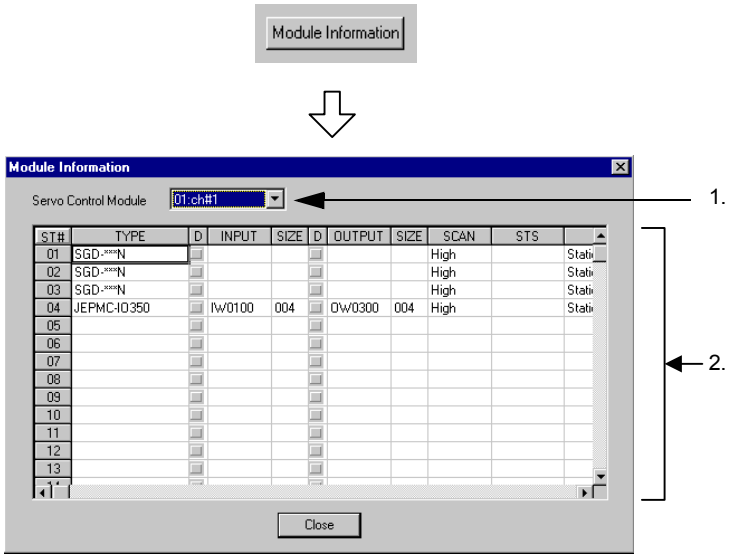
MP940

Data on configuration allocations will be displayed in Setup Wizard 4: Module Configuration Window when M-Link settings are made.

If the MP920 Machine Controller is used and no SVB is set during the setup period, the **Module Information** Button will not be displayed.

■ Module Information

The Module Information Window will be displayed when the **Module Information** Button is clicked.



The window has the following configuration.

1. Servo Control Module

   Select the model from the drop-down list of Servo Control Modules.

2. Module Information

   The module configuration data will be displayed.

The following description provides detailed information on the window configuration.

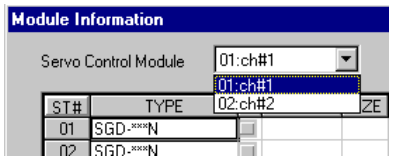
■ Selecting Servo Control Module

By selecting the model from the drop-down list of Servo Control Modules, the data on the configuration of the selected Servo Control Module will be displayed in the box.

Items selected from the drop-down list vary with the Machine Controller.

MP910

The drop-down list of Servo Control Modules always displays the following two items.



1. 01: ch#1

   This indicates ***SVB-CHI*** in Setup Wizard 4: Module Configuration Window.

   If this item is selected, detailed data on SVB-CH1 configuration allocations will be displayed.

2. 02 : ch#2

   This indicates ***SVB-CH2*** in Setup Wizard 4: Module Configuration Window.

   If this item is selected, detailed data on SVB-CH2 configuration allocations will be displayed.

MP920

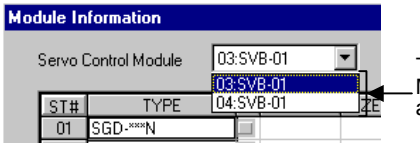
The drop-down list of Servo Control Modules will display □□:SVB-01 models, the number of which will be the same as that set in Setup Wizard 4: Module Configuration Window.

Note: Replace □□ with the Motion Module number in actual operation.

INFO

Motion Module numbers will be allocated automatically in numerical order (e.g., 01, 02, and so on) to all Servo Modules set in Setup Wizard 4: Module Configuration Window.

The following illustration is an example of the settings.

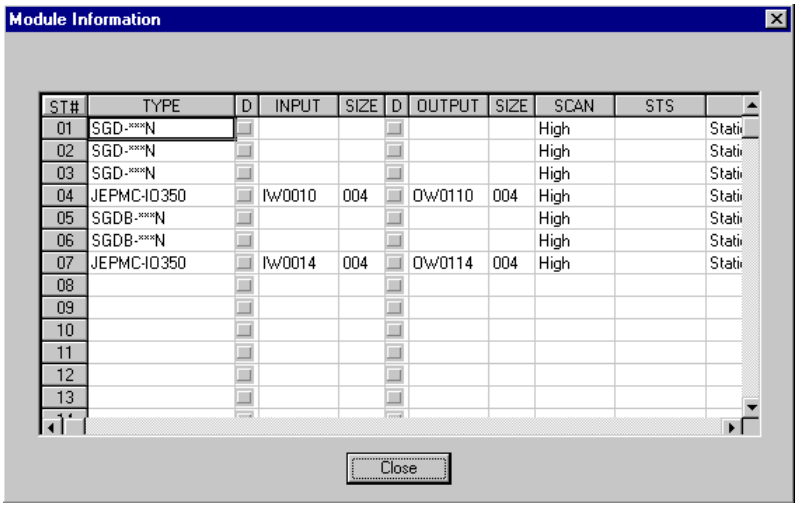


When any Module is selected from the drop-down list, Module information on the corresponding Module set in Setup Wizard 4: Module Configuration Window will be displayed.

MP930 or MP940

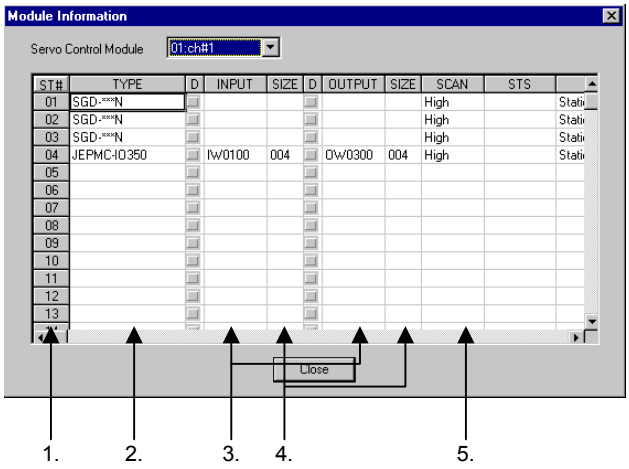
If the MP930 or MP940 Machine Controller is used, the box for Servo Control Module selection will not be displayed.

The following Module information will be displayed.



■ Module Information

The following description explains the items of module information to be displayed.



1. ST#: Station Number

   The station number range will be between 1 and 14. A Servo Unit or I/O Unit will be allocated to each station.

2. TYPE

   The type of Servo or I/O Unit allocated to each station will be displayed.

3. INPUT/OUTPUT

   The leading address of the I/O registers of each station where I/O is allocated is displayed.

   The offset of the leading address will be automatically calculated and allocated according to the type of the Machine Controller and the number of axes.

4. SIZE

   The number of I/O registers of each station where I/O is allocated is displayed.

5. SCAN

   The scan for I/O service will be displayed.

   "High" will be displayed for the high-speed scan and "Low" will be displayed for the low-speed scan.

   For a simple setup, the following allocations will be made.

   - High: Servo Amplifier or IO350 (JEPMC-IO350)
   - Low: I/O Units other than the above.

INFO

1 The Module Information Window only displays settings and they cannot be changed. To change the settings, execute the Setup Wizard again.

2 To change the high/low scan allocations, use the module definitions in Standard Mode.

3.2.5 Axis Definition

The Axis Definition Window displays physical axis names and logical axis names according to the number of Servo Units set in Setup Wizard 4: Module Configuration Window.

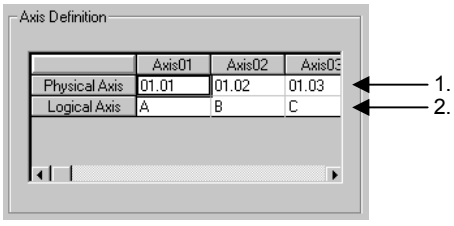
■ Number of Axes

The following table shows the number of axes of each model.

Model	Number of Axes	Range of Axes
MP910	Number of SVB-CH1 and SVB-CH2 Servo Units	1 to 28
MP920	Number of SVA-01, SVA-02, and PO-01 axes in use and number of SVB-01 Servo Units	1 to 48
MP930	Number of MP930 (SVB) Servo Units	1 to 14
MP940	Number of axes: Fixed at 1	-

■ Window Configuration

The following illustration shows the window configuration.



1. Physical Axis Names

   Motion module numbers and station numbers will be automatically allocated to the physical axis names.

   - Motion Module Numbers

     These numbers apply to Motion Module numbers in the Definition Window in the Engineering Manager.

   - Station Numbers

     Station numbers will be given to the above Modules, provided that the Modules are Servos.

2. Logical Axis Names

   Logical axis names will be assigned automatically in alphabetical order (e.g., A, B…Z, AA, AB…ZZ).

INFO

1 Motion Module numbers will be allocated in order (e.g., 01, 02, and so on) to all Servo Modules set in Setup Wizard 4: Module Configuration Window.

2 Axis definition settings will be only displayed and cannot be changed. To change the settings, execute the Setup Wizard again.

3.2.6 System Information

The System Information Window displays the system software number and running status of the Machine Controller.

1. System Software Number

   The system software number will be displayed when the system is online.

   Nothing will be displayed if the system is offline.

2. Running Status

   The running status indicates the following six items.

   - READY
   - RUN
   - ALARM
   - ERROR
   - BATTERY ALARM
   - BUS ACCESS

   When the system is online, the items corresponding to the running status will be indicated with black circles ●.

   When the system is offline, all circles will be white.

3.2.7 Servo Status

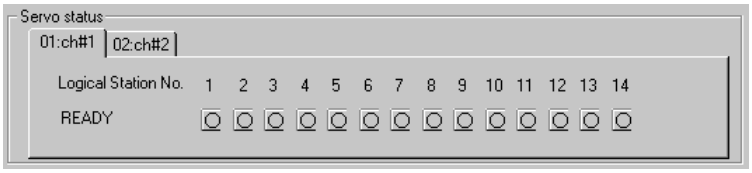
The Servo Status Window displays the READY status of Servo Modules and I/O Units allocated in Setup Wizard 4: Module Configuration Window.

If a station is ready, it will be indicated with a black circle ●.

The number of tabs and tab names in the Servo Status Window vary with the model as explained below.

■ MP910

Two tabs (01:ch#1 and 02:ch#2) will be always displayed.



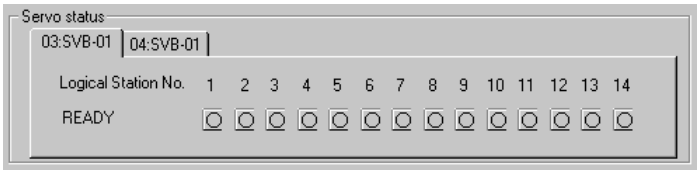
■ MP920

The number of tabs corresponding to the number of SVBs set in Setup Wizard 4: Module Configuration Window will be displayed.

Each tab name will be given like □□:SVB-01.

Note: Replace □□ with the Motion Module number in actual operation.

The following illustration shows an example of two SVBs allocated to Motion Module numbers 03 and 04.

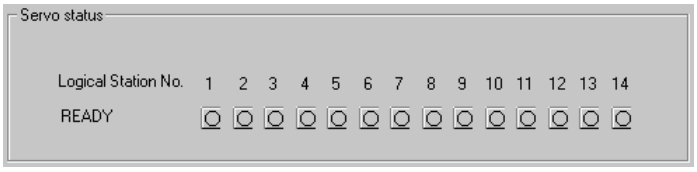


INFO

Motion Module numbers will be allocated automatically in numerical order (e.g., 01, 02, and so on) to all Servo Modules set in Setup Wizard 4: Module Configuration Window.

■ MP930

No tabs will be used.



■ MP940

No tabs will be used. Only a single axis will be used.

4 Quick Reference

This chapter provides detailed information on the quick reference function.

4.1 Outline and Display of Quick Reference Function

The quick reference function is one of the functions of the Engineering Manager.

4.1.1 Outline of Quick Reference Function

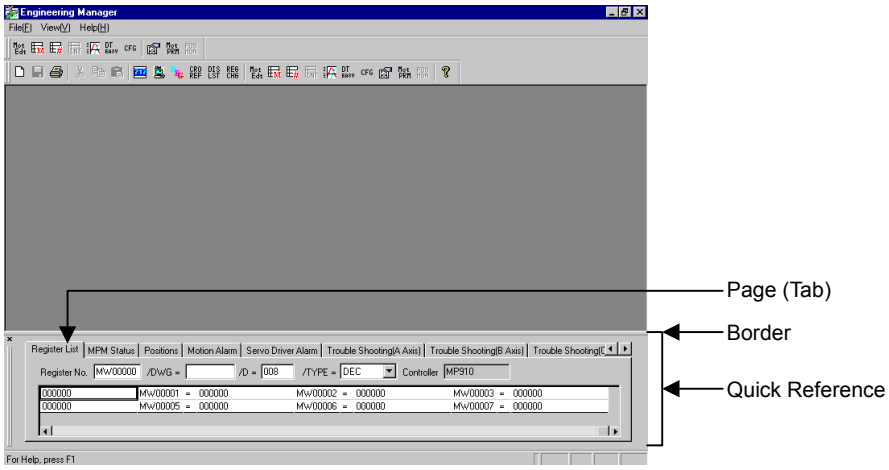
Quick Reference consists of a combination of three types of pages as described below.

- List pages: Display and setting of specified registers
- Watch pages: Display, adding, and modification of specified registers
- Graph pages: Graphical representation of specified registers in bits

All types of pages can be added or deleted. The title of each page uses up to 32 characters.

4.1.2 Display of Quick Reference

Quick Reference is displayed at the bottom of the Engineering Manager.



Quick Reference can be turned ON and OFF using the following methods.

INFO

Quick Reference is a docking view window. The window size can be changed by dragging the boundary line, and the window can be dragged left and right.

■ Turning ON Quick Reference

To turn ON Quick Reference, select ***View (V)*** and ***Quick Reference (Q)*** from the Menu Bar of the Engineering Manager.

■ Turning OFF Quick Reference

To turn OFF Quick Reference, select ***Quick Reference (Q)*** again.

INFO

Quick Reference will also be turned OFF if right-clicking Quick Reference and then ***View (V)*** and ***Quick Reference (Q)*** are selected from the pop-up menu.

■ Redisplay

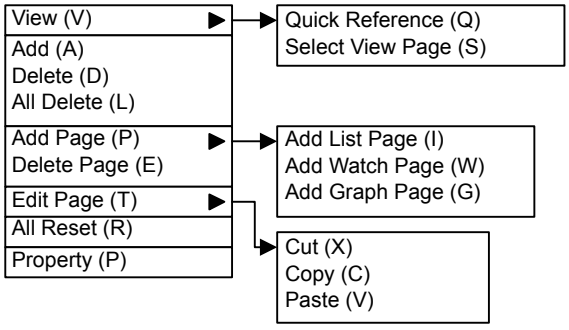
To redisplay Quick Reference, select ***View (V)*** and ***Quick Reference (Q)*** from the Menu Bar of the Engineering Manager.

4.2 Using Quick Reference

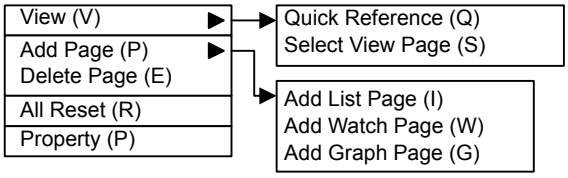
4.2.1 Pop-up Menu

To use Quick Reference e.g., to change the display page, right-click Quick Reference and select the item from the pop-up menu that will appear.

■ Watch Pages



■ List and Graph Pages



4.2.2 Page Control

This section provides detailed information on page control.

■ Selecting Show Page

Function

This function is used to customize the pages displayed on the screen.

Procedure

1. Select the ***View (V)*** and then ***Select View Page (S)***.

   The Select Show Page Dialog Box will be displayed.

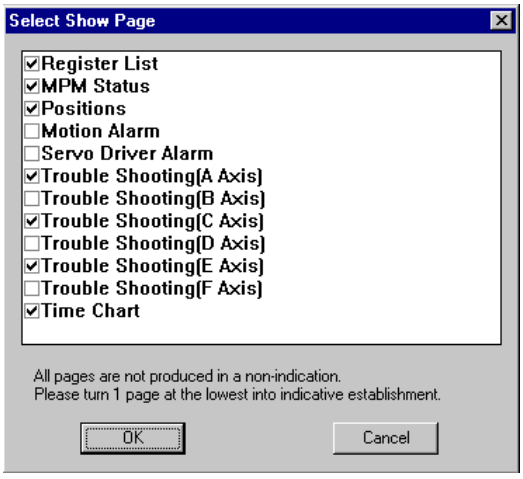


Fig 4.1 Select Show Page Dialog Box

2. Turn Page display ON and OFF.
   - Turning Page display ON

     Check the box for the page to be displayed.
   - Turning Page display OFF

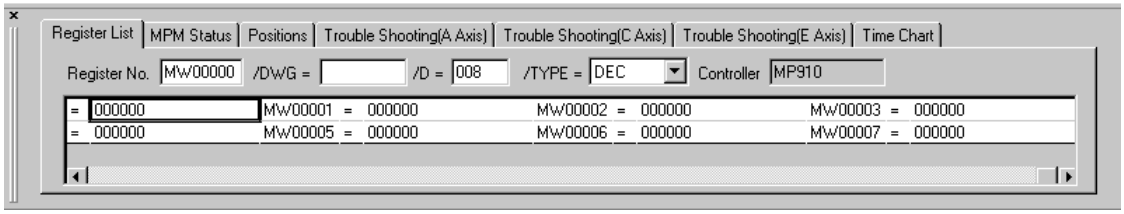
     Remove the check from the check box for the page not to be displayed.

INFO All page display cannot be turned OFF. At least the check box for one page must be checked.

3. Click the **OK** Button.

   Only the specified pages will be displayed.

   If the pages shown above in the Select Show Page Dialog Box are specified, the following seven pages (tabs) will be displayed.



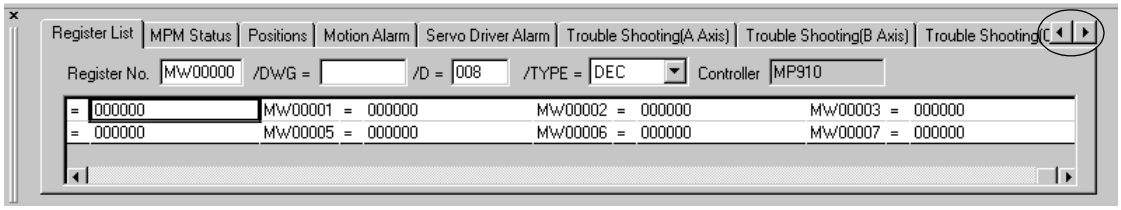
■ Moving Pages

Function

This function is used to move the displayed pages in Quick Reference to the right or left.

Procedure

If all page tabs cannot be displayed in the Quick Reference Window, scroll buttons will be displayed on the upper right corner of the Quick Reference Window, as shown in the circled portion below.



INFO The scroll buttons will not be displayed if all page tabs are displayed in the window.

Click the ***Right Scroll*** Button or ***Left Scroll*** Button.

The tabs will be moved to the right or left.

■ Adding Pages

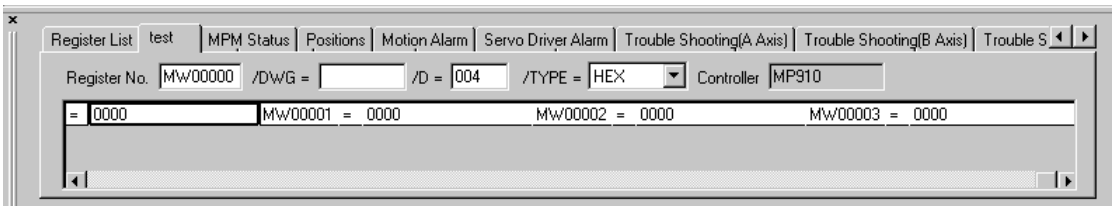
Function

This function is used to add a page to Quick Reference.

The following three types of pages can be added.

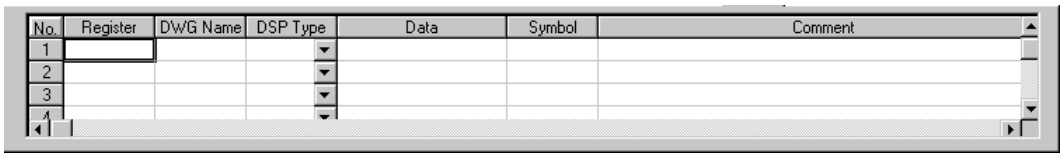
1. List Pages

   As shown below, pages will be displayed in a format similar to the register list display format.



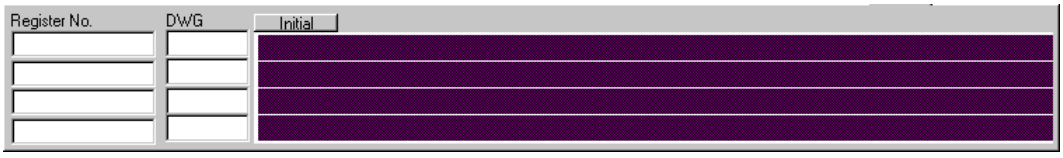
2. Watch Pages

   As shown below, pages will be displayed in a format similar to the axis position or the alarm status display format.



3. Graph Pages

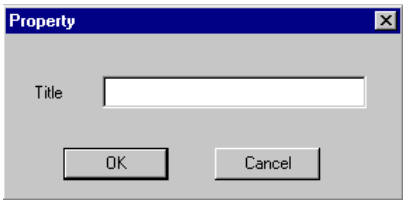
   As shown below, pages will be displayed in a format similar to the time chart display format.



Procedure

1. Select ***Add Page (P)*** from the sub-menu of the pop-up menu and then select ***Add List Page (l)***, ***Add Watch Page (W)***, or ***Add Graph Page (G)***.

   The Property Dialog Box will be displayed.



2. Input the title of the page to be added and click the **OK** Button.

   The selected type of page will be inserted into the Quick Reference.

   The title set in the Property Dialog Box will appear on the tab of the page inserted.

■ Deleting Pages

Function

This function is used to delete a page from Quick Reference.

Procedure

1. Select and activate the page to be deleted.
2. Select ***Delete Page (E)*** from the pop-up menu.

   The selected page will be deleted from Quick Reference.

IMPORTANT There is no function to undo the deletion of added pages. Be careful when deleting pages.

INFO At least one list page, watch page, and graph page will be displayed. These pages will be set by default when the Engineering Manager is restarted.

■ Changing the Title

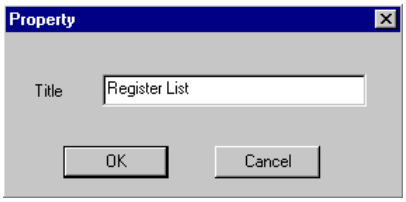
Function

This function is used to change the title of a page.

Procedure

1. Select and activate the page for a title change.
2. Select ***Property (P)*** from the pop-up menu.

   The Property Dialog Box will be displayed.



Note: The above dialog box is for the title change of a register list page.

3. Input the title and click the **OK** Button.

   The title set in the Property Dialog Box will appear on the tab of the selected page.

■ Cutting Pages

Only a watch page can be cut.

Function

This function is used to cut a watch page.

Procedure

1. Select and activate the watch page to be cut.
2. Select ***Edit Page (T)*** and then ***Cut (X)*** from the pop-up menu.

   The selected watch page will be cut.

INFO

1 A page that has been cut can be pasted.

2 Only the last page that has been cut can be pasted.

■ Copying Pages

Only a watch page can be copied.

Function

This function is used to copy a watch page.

Procedure

1. Select and activate the watch page to be copied.
2. Select ***Edit Page (T)*** and then ***Copy (C)*** from the pop-up menu.
   The selected watch page will be copied.

INFO

1 The page that has been copied can be pasted.

2 Only the last page that has been copied can be pasted.

■ Pasting Pages

Only a watch page can be pasted.

Function

This function is used to paste a watch page.

Procedure

1. Select and activate the watch page at the pasting position.
2. Click ***Edit Page (T)*** and then ***Paste (V)*** from the pop-up menu.
   The last page that has been cut or copied will be pasted in front of the active page.

4.2.3 Setting the Number of Register

■ Adding a Register

Only registers on watch pages can be added.

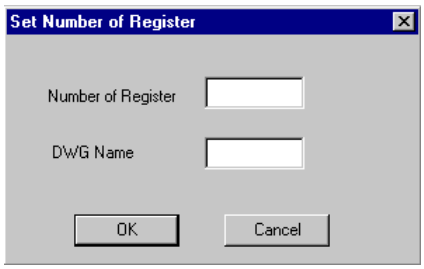
Function

This function is used to add a register to the list in a watch page.

Procedure

1. Select and activate the page where the register is to be added.
2. Select ***Add (A)*** from the pop-up menu.

   The Set Number of Register Dialog Box will be displayed.



3. Input the register number to be added to the page and the DWG name. Click the **OK** Button.

   Register data for the register number will be added to the last line of the list.

   If the register number is a D register, the DWG name will be displayed in the list.

IMPORTANT Illegal input data will not be accepted.

INFO Refer to *4.4 Editing Data* for detailed information on editing data, such as set values.

■ Deleting a Register

Only registers on watch pages can be deleted.

Function

This function is used to delete a register from the list in a watch page.

Procedure

1. Select and activate the line of data to be deleted.
2. Select ***Delete (D)*** from the pop-up menu.

The selected line will be deleted from the list.

4.2.4 Deleting and Resetting Data

■ Deleting All Data

Only data on watch pages can be deleted.

Function

This function is used to delete all the data from the list in a watch page.

■ Procedure

1. Select and activate the watch page where data is to be deleted.
2. Select ***All Delete (L)*** from the pop-up menu.
   All data will be deleted from the list in the selected watch page.

■ Resetting All Data

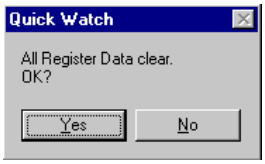
Function

This function is used to reset the displayed data in Quick Reference to the default status.

Refer to 4.3 Default Data for details.

Procedure

1. Select ***All Reset (R)*** from the pop-up menu.
   The Confirmation Dialog Box will be displayed.



2. Click the **Yes** Button.
   All the data and display of Quick Reference will be reset to the default status.

4.3 Default Data

Values set in the Setup Wizard determine the displayed data in Quick Reference as the default data.

4.3.1 Displaying Default Data

Default data will be displayed in the following two cases.

- Quick Reference is displayed after making settings in the Setup Wizard.
- ***All Reset (R)*** is selected in Quick Reference.

  Refer to *4.2.4 Deleting and Resetting Data* for information on resetting data.

4.3.2 Displayed Pages

Quick Reference displays the following pages by default.

Page	Description
Register List	Displays the specified number of register data items from the specified register.
MPM Status	Displays the operating status of the specified drawing.
Positions	Displays the present value of each axis.
Motion or Servo Driver Alarm	Displays alarm data.
Troubleshooting	Displays data on each axis. A page is displayed for each axis.
Time Chart	Displays the time chart of specified register data on the specified drawing.

The following section provides information on the default display data and data editing of each page.

4.3.3 Register List

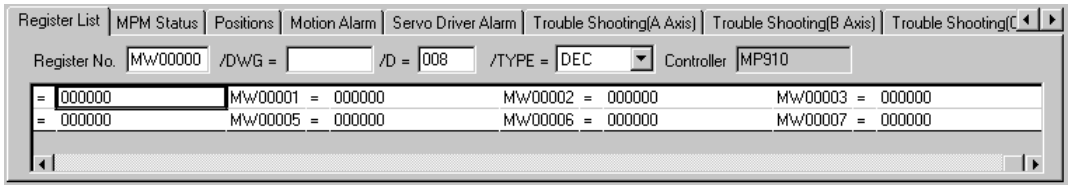
■ Displaying Register List Page

The following Register List page will be displayed by default.

1. The number of register data items specified by ***/D*** will be displayed in the format specified by ***/TYPE*** from the register specified by the register number (including ***/DWG*** if necessary).
2. The data will be displayed by default on the left-hand side of the screen.

■ Default Data Example

◀**EXAMPLE**▶ The name of the model set in the Setup Wizard 1: Select the Controller Window will be displayed. The present register value will be displayed for each register.



4.3.4 MPM Status

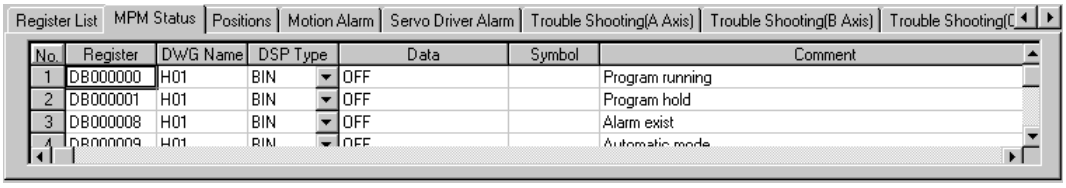
■ Displaying MPM Status Page

The following MPM Status page will be displayed by default.

1. The operating status of the H01 drawing will be displayed.

   The H01 drawing will not be generated and nothing will be displayed on the MPM Status page if the check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window has not been checked.

2. The tab of the MPM Status page will be displayed by default as the second item from the left.



■ Default Data Example

◀EXAMPLE▶ The present register values will be displayed for each register.

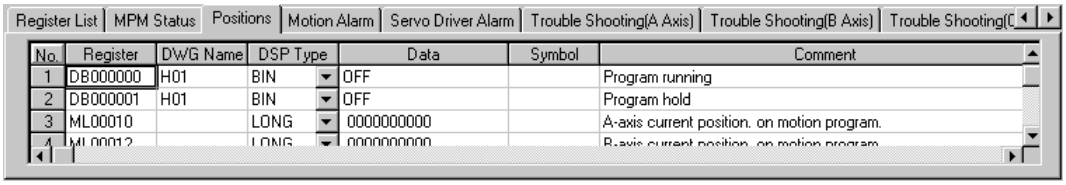
No.	Register Number	DWG Name	Display Type		Data	Symbol	Comment
1	DB000000	H01	BIN	▼	OFF		Program running
2	DB000001	H01	BIN	▼	OFF		Program hold
3	DB000008	H01	BIN	▼	OFF		Alarm exist
4	DB000009	H01	BIN	▼	OFF		Automatic mode
5	DB00000A	H01	BIN	▼	OFF		Manual mode
6				▼			
. .				▼			
128				▼			

4.3.5 Axis Position

■ Displaying Axis Position Page

The following Position page will be displayed by default.

1. The status of the H01 drawing in operation or program hold and the present value of all axes that have been set will be displayed.
2. The Position page will be displayed by default as the third item from the left.



■ Default Data Example

◀**EXAMPLE**▶ The present register values will be displayed for each register.

No.	Register Number	DWG Name	Display Type		Data	Symbol	Comment
1	DB000000	H01	BIN	▼	OFF		Program running
2	DB000001	H01	BIN	▼	OFF		Program hold
3	ML00010		LONG	▼	0000000000		A-axis current position on motion program
4	ML00012		LONG	▼	0000000000		B-axis current position on motion program
5	ML00014		LONG	▼	0000000000		C-axis current position on motion program
6	ML00016		LONG	▼	0000000000		D-axis current position on motion program
7	ML00018		LONG	▼	0000000000		E-axis current position on motion program
8	ML00020		LONG	▼	0000000000		F-axis current position on motion program
. .				▼			
128				▼			

Note: The above is default data if the check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window is checked and if six axes (A axis through F axis) are defined as controller configuration items.

Based on the above, the following description explains default data on the Position page.

1. The H01 drawing will not be generated and the operating status of the H01 drawing or program hold will not be displayed if the check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window has not been checked.

   In this case, the present value of the A axis will be displayed in number 1, followed by the present value of the B axis in number 2 and that of the C axis in number 3.

2. The Position page will display the present value of each axis that has been set.

   These axes refer to all axes defined as controller configuration items.

   Axis definition data will be created based on the settings in the Setup Wizard 4: Module Configuration Window. Refer to *3.2.4 Module Information*.

3. The register numbers of the present values of each axis will be assigned in 2-word increments (long size) beginning with ML00010.

   The data will be displayed in a long format.

4. The comment on each axis consists of the logical axis name and the present value of the axis program.

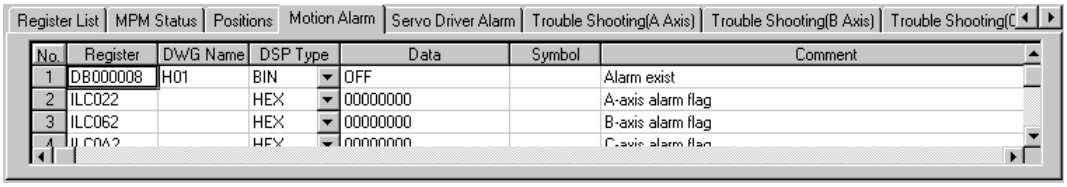
   As defined, the logical axis names will be A, B, C, etc.

4.3.6 Motion Alarm

■ Displaying Motion Alarm Page

The following Motion Alarm page will be displayed by default.

1. The alarm status of the H01 drawing, the parallel alarm code, and the alarm flag of each axis that has been set will be displayed.
2. The tab of the Motion Alarm page will be displayed by default as the fourth item from the left.



The above window will be displayed by default under the following conditions.

- The MP910 is selected in the Setup Wizard 1: Select the Controller Window.
- The check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window is checked.
- The six axes (A axis through F axis) are defined as controller configuration items.

■ Default Data Example

The present register values will be displayed for each register.

No.	Register Number	DWG Name	Display Type		Data	Symbol	Comment
1	DB000008	H01	BIN	▼	OFF		Alarm exist
2	MW00040		HEX	▼	0000		Process #1 alarm code
3	MW00041		HEX	▼	0000		Process #2 alarm code
4	MW00042		HEX	▼	0000		Process #3 alarm code
5	MW00043		HEX	▼	0000		Process #4 alarm code
6	ILC022		HEX	▼	00000000		A-axis alarm flag
7	ILC062		HEX	▼	00000000		B-axis alarm flag
8	ILC0A2		HEX	▼	00000000		C-axis alarm flag
9	ILC422		HEX	▼	00000000		D-axis alarm flag
10	ILC462		HEX	▼	00000000		E-axis alarm flag
11	ILC4A2		HEX	▼	00000000		F-axis alarm flag
. .				▼			
128				▼			

Based on the above, the following description explains default data on the Motion Alarm page.

1. The H01 drawing will not be generated and the alarm status of the H01 drawing will not be displayed if the check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window has not been checked.

   In this case, the data on the parallel #1 alarm code will be displayed in number 1, followed by data on the parallel #2 alarm code in number 2 and data on parallel #3 alarm code in number 3.

2. The Motion Alarm page will by default display data on parallel #N alarm codes (N = 1, 2,…n).

   If the check box for multitask in the Setup Wizard 2: Definition Window has been checked (i.e., the number of tasks is 2 or more), the above data on parallel #N alarm codes will not be displayed.

3. As shown below, data n in the parallel #N alarm codes, where N is 1, 2, ... n, varies with the model of the Machine Controller selected in the Setup Wizard 1: Select the Controller Window.
   - MP910: n = 4

     Four data items (i.e., parallel #1 alarm code through parallel #4 alarm code) will be displayed.
   - MP920: n = 8

     Eight data items (i.e., parallel #1 alarm code through parallel #8 alarm code) will be displayed.
   - MP930: n = 4

     Four data items (i.e., parallel #1 alarm code through parallel #4 alarm code) will be displayed.
4. The comment on a parallel #N alarm code, where N is 1, 2, … n, will be "Parallel #N alarm code."
5. The Motion Alarm page will by default display alarm flag data on each axis that has been set.

   These axes represent all axes defined as controller configuration items.

   Axis definition data will be created based on the settings in the Setup Wizard 4: Module Configuration Window. Refer to *3.2.4 Module Information*.
6. The register number of the alarm flag of each axis will be determined as described below.
   - The I (ILxxxx) register will be set to long data.
   - The number of alarm flag top register will be automatically set according to the number of Motion Modules.

     In the above case, the Servo with Motion Module number 01 will be set to ILC022 and the Servo with Motion Module number 02 will be set to ILC422.

     Refer to *3.2.4 Module Information* for Motion Module numbers.
7. The register number of the alarm flag for the first axis of each Motion Module will be the leading register number as explained above. The register number of each axis after the first axis will be assigned in 40-word increments.

   In the above case, the numbers will be assigned as described below.
   - Axes of Motion Module Number 01

     ILC022, ILC062, and ILC0A2 (three axes)
   - Axes of Motion Module Number 02

     ILC422, ILC462, and ILC4A2 (three axes)
8. The comment on the alarm flag of each axis consists of a logical axis name and axis alarm flag.

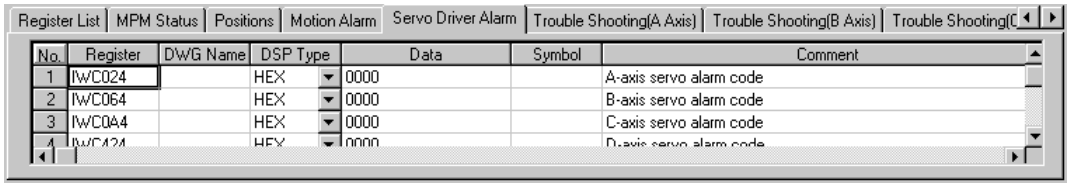
   As defined, the logical axis name will be A, B, C, etc.

4.3.7 Servo Driver Alarm

■ Displaying Servo Driver Alarm Page

The following Servo Driver Alarm page will be displayed by default.

1. The servo driver alarm code for each axis that has been set will be displayed.
2. The tab of the Servo Driver Alarm page will be displayed by default as the fifth item from the left.



The above window will be displayed by default under the following conditions.

- The MP910 is selected in the Setup Wizard 1: Select the Controller Window.
- The check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window is checked.
- The six axes (A axis through F axis) are defined as controller configuration items.

■ Default Data Example

The present register values will be displayed for each register.

No.	Register Number	DWG Name	Display Type		Data	Symbol	Comment
1	IWC024		HEX	▼	0000		A-axis servo alarm code
2	IWC064		HEX	▼	0000		B-axis servo alarm code
3	IWC0A4		HEX	▼	0000		C-axis servo alarm code
4	IWC424		HEX	▼	0000		D-axis servo alarm code
5	IWC464		HEX	▼	0000		E-axis servo alarm code
6	IWC4A4		HEX	▼	0000		F-axis servo alarm code
. .				▼			
60				▼			

Based on the above, the following description explains default data on the Servo Driver Alarm page.

1. The Servo Driver Alarm page will by default display the servo driver alarm code data on each axis that has been set.

   These axes represent all axes defined as controller configuration items.

   Axis definition data will be created based on the settings in the Setup Wizard 4: Module Configuration Window. Refer to *3.2.4 Module Information*.

2. The register number of the servo driver alarm code for each axis will be determined as described below.

   - The I (IWxxxx) register will be set to word data.
   - The register numbers of the servo driver alarm code for each axis will be the register numbers of the alarm flag plus two words.

   In the above case, the numbers will be assigned as described below.

   - Axes of Motion Module number 01

     IWC024, IWC064, and IWC0A4 (three axes)

   - Axes of Motion Module number 02

     IWC424, IWC464, and IWC4A4 (three axes)

3. The comment on the servo driver alarm code of each axis consists of a logical axis name and axis servo alarm code.

   As defined, the logical axis name will be A, B, C, etc.

4.3.8 Troubleshooting

■ Displaying Troubleshooting

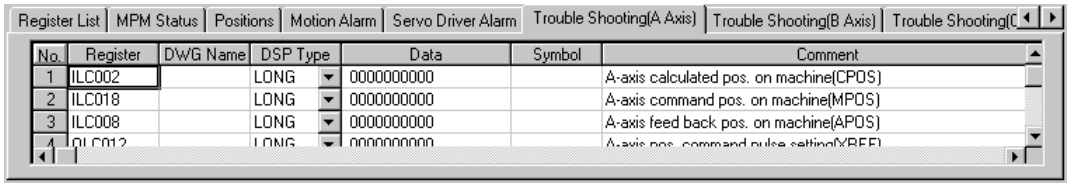
The following Troubleshooting page will be displayed by default.

1. Displayed items will be listed according to the axis.
2. A Troubleshooting page will displayed for each axis that has been set.

   These axes represent all axes defined as controller configuration items.

   Axis definition data will be created based on the settings in the Setup Wizard 4: Module Configuration Window. Refer to *3.2.4 Module Information*.
3. The title of the page of each axis will be "Trouble Shooting (*logical axis name*)."

   As defined, the logical axis name will be A, B, C, etc.
4. The tabs of the Troubleshooting pages will be displayed by default starting as the sixth item from the left. The number of tabs displayed will correspond to the number of axes.



■ Default Data Example

The present register values will be displayed for each register.

No.	Register Number	DWG Name	Display Type		Data	Symbol	Comment
1	ILC002		LONG	▼	0000000000		A-axis calculated pos. on machine (CPOS)
2	ILC018		LONG	▼	0000000000		A-axis command pos. on machine (MPOS)
3	ILC008		LONG	▼	0000000000		A-axis feedback pos. on machine (APOS)
4	OLC012		LONG	▼	0000000000		A-axis pos. command pulse setting (XREF)
5	OWC020		DEC	▼	00000		A-axis motion command code (MCMDCODE)
6	IWC014		DEC	▼	00000		A-axis motion command response (MCMDRCODE)
7	ILC022		HEX	▼	00000000		A-axis alarm flag
8	IBC0150		BIN	▼	OFF		A-axis command busy（BUSY）
9	IBC0152		BIN	▼	OFF		A-axis command completion（DEN）
10	IBC0157		BIN	▼	OFF		A-axis command unusually finished（FAIL）
. .				▼			
128				▼			

Based on the above, the following description explains default data on the Troubleshooting pages.

1. The Troubleshooting page for each axis will by default display the following data items.
   - Axis calculated position on machine (CPOS)
   - Axis command position on machine (MPOS)
   - Axis feedback position on machine (APOS)
   - Axis position command pulse setting (XREF)
   - Axis motion command code (MCMDRCODE)
   - Axis motion command response (MCMDRCODE)
   - Axis alarm flag
   - Axis command busy (BUSY)
   - Axis command completion (DEN)
   - Axis command error end status (FAIL)

2. The register numbers for each axis or each data item will be by default determined as described below.
   - The register numbers will be automatically set according to the number of Motion Modules.

     If two Motion Modules have been set, for example, the Servo with Motion Module number 01 will be set to XXC0xx and the Servo with Motion Module number 02 will be set to XXC4xx.

     Refer to *3.2.4 Module Information* for Motion Module numbers.
   - The register numbers for each axis after the first axis will be assigned in 40-word increments beginning with XXCx0x.

     The register numbers will be XXC000, XXC040, and XXC080 if two Motion Modules have been set and three axes have been set for Motion Module number 01. The numbers will be XXC400, XXC440, XXC480, and XXC4C0 if four axes have been set for Motion Module number 02.

In the above description, "XX" refers to characters and "xx" refers to numerical values.

3. As shown below, the register and format of each data item and offset will be specified.

Data Name	Register	Data Type	Offset
Axis calculated position on machine	I register	Long	2 words
Axis command position on machine	I register	Long	18 words
Axis feedback position on machine	I register	Long	8 words
Axis position command pulse setting	O register	Long	12 words
Axis motion command code	O register	Word	20 words
Axis motion command response	I register	Word	14 words
Axis alarm flag	I register	Long	22 words
Axis command busy	I register	Bit	15 words, 0 bit
Axis command completion	I register	Bit	15 words, 2 bits
Axis command error end status	I register	Bit	15 words, 7 bits

4. Data items will be displayed by default in the following formats respectively.
   - Axis calculated position on machine: Long
   - Axis command position on machine: Long
   - Axis feedback position on machine: Long
   - Axis position command pulse setting: Long
   - Axis motion command code: Decimal
   - Axis motion command response: Decimal
   - Axis alarm flag: Hexadecimal
   - Axis command busy: Binary
   - Axis command completion: Binary
   - Axis command error end status: Binary
5. The comment on each data item consists of a logical name, axis, and data name.

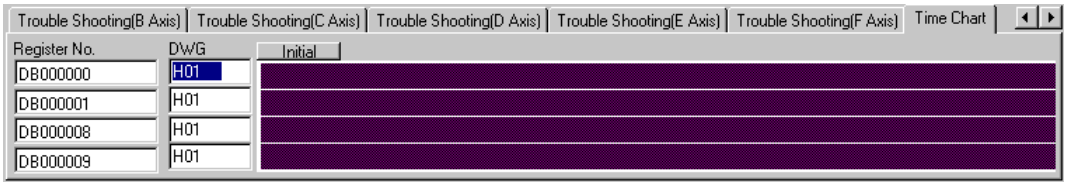
   As defined, the logical axis names will be A, B, C, etc. Refer to the above table for the data names.

4.3.9 Time Charts

The following Time Chart page will be displayed by default.

1. Time charts corresponding to the register numbers of H01 drawings (i.e., DB000000, DB000001, DB000008, and DB000009) will be displayed.

   The H01 drawing will not be generated and nothing will be displayed on the Time Chart page if the check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window has not been checked.
2. The tab of the Time Chart page will be displayed by default as the last item on the farthest right.



4.4 Editing Data

Data in Quick Reference can be edited to change displayed pages or data, or to set data in registers.

This section provides detailed information on each function.

4.4.1 Editing Pages

Pages displayed in Quick Reference can be edited.

The following editing items are available.

Item	Description
Adding pages	Adds a new page to Quick Reference.
Deleting pages	Deletes a page from Quick Reference.
Changing displayed pages	Specifies a page to be displayed.
Changing titles	Changes the title of a page.
Copying pages	Copies a page (watch pages only).
Cutting pages	Cuts a page (watch pages only).
Pasting pages	Pastes the copied or cut page (watch pages only).

Refer to *4.2 Using Quick Reference* for editing pages in detail.

4.4.2 Registers Accepting Input

In Quick Register, data can be input into the following registers.

Register Variable	Maximum Number				Read/Write
	MP910	MP920	MP930	MP940	
S register	1024	1024	1024	1024	R/W
I register	5120	5120	2048	2048	R/W
O register	5120	5120	2048	2048	R/W
M register	32768	32768	32768	32768	R/W
D register	16384	16384	16384	16384	R/W
C register	16384	16384	16384	16384	Read only

The D register is a unique register of each drawing. Therefore, when the D register is set, the DWG name must be set as well.

The number of D registers that are available corresponds to those set in DWG definition. The number of any other registers available corresponds to the maximum number shown in the table.

4.4.3 Registering from DWG

Registers used in the DWG can be registered into Quick Reference.

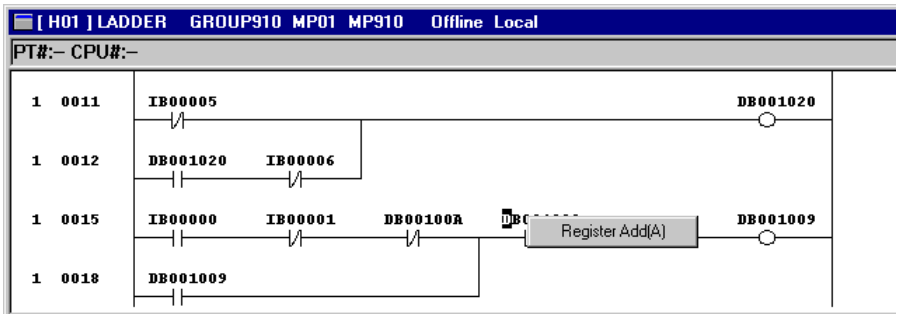
When a symbol or comment for the register number is input into Quick Reference, data on the symbol or comment will be reflected to the DWG.

The following description provides information on the registration of the numbers of register.

■ Registering Register Numbers (DWG to Quick Reference)

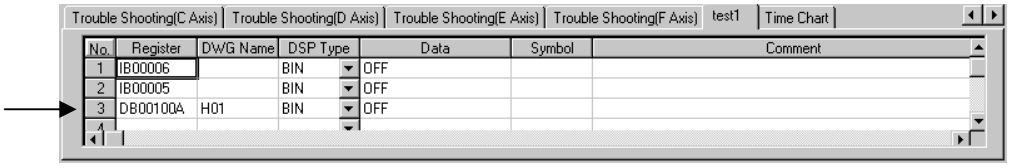
1. Open the DWG file with the Engineering Manager.
2. Select the register number to be registered with Quick Reference, move the cursor, and right-click.
3. Select ***Register Add (A)*** from the pop-up menu.

   The following illustration is an example of selecting DB00100A in the DWG.



When the above steps are taken, the register number (i.e., DB00100A in the above example) will be registered to the selected and activated watch page in Quick Reference.

The selected number of register and data on the register number will be added to the end of the list, as shown by the arrow below.

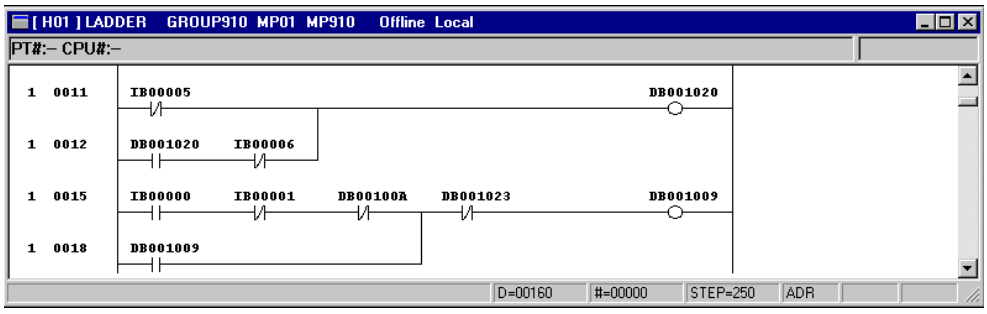


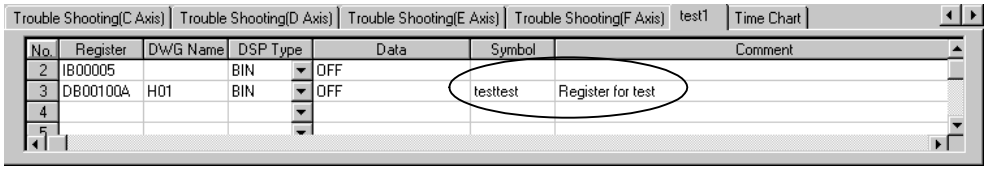
■ Adding Symbols or Comments (Quick Reference to DWG)

Set the symbol or comment for the watch page in Quick Reference as circled below.

An example is shown below.

- Symbol: testtest (Up to 8 characters)
- Comment: Test register (Up to 48 characters)

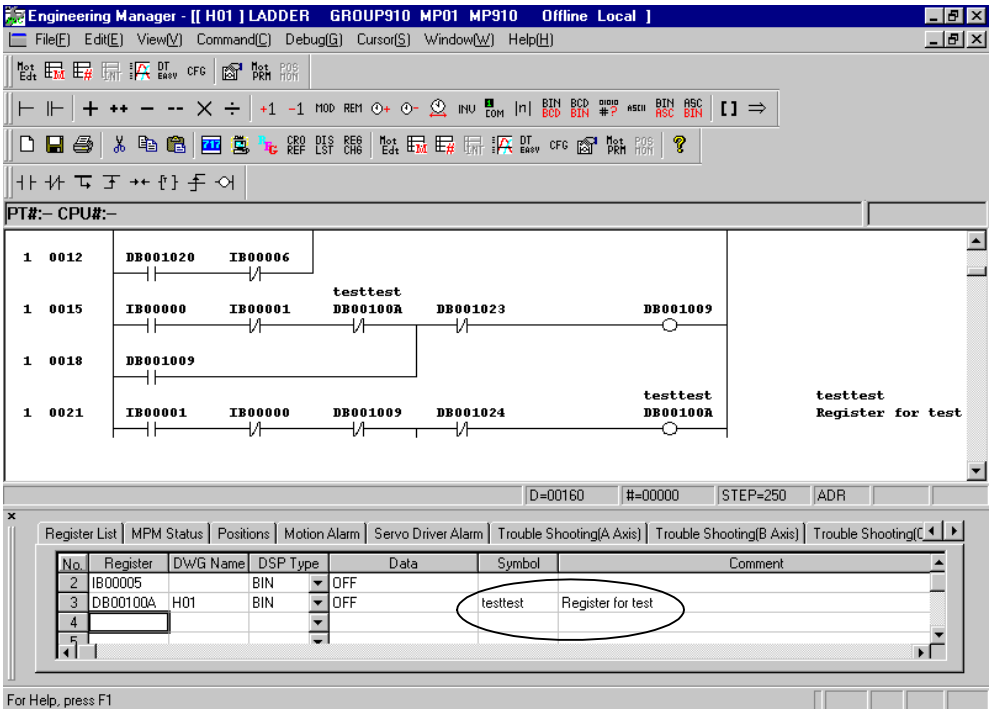




When the DWG is active after the symbol or comment is set, the setting will be reflected in the DWG.

The symbol will be displayed above the corresponding register number. The comment will be displayed after the last output register in each line.

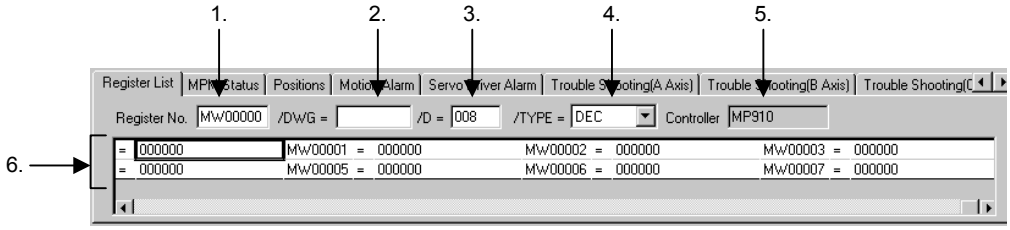
The symbol will be displayed above the comment as circled below.



4.4.4 Editing List Page Data

The following description explains each data item and set values that can be input for list pages.

The illustration below is the Register List page.



1. Register Number
   - Data: The start number of register where data is displayed or set.
   - Set value: Input the register number.
2. /DWG
   - Data: The name of the DWG where the register number exists.
   - Set value: Input the DWG name.
     If the D register is set for the register number, be sure that the D register is set because the D register is a unique register for the DWG. Any other set value will be ignored.
3. /D
   - Data: The number of registers where data is displayed or set.

- Set value: Input the number of registers where data is displayed.
  The set value must be a multiple of 4. If the input value is not a s multiple of 4, it will be increased to the next larger multiple.

4. /TYPE
   - Data: Display format of register data.
   - Set value: Select the display format of data from the drop-down list. The following values can be selected.

Case	Selection	Display/Value	
Binary setting for register number	Not possible	ON or OFF will be displayed.	
Word, long, or float-point number setting for register number	Possible	DEC	Decimal display
		HEX	Hexadecimal display
		BIN	Binary display
		FLOAT	Floating-point display
		LONG	Long (4-byte) display
		ASCII	ASCII display

The register number will be automatically set according to the selected value as described below.

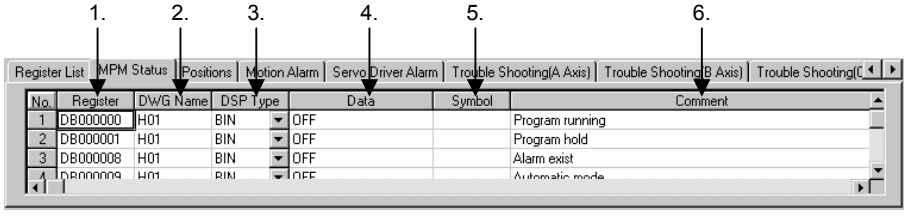
- FLOAT: Floating-point representation (e.g., MFxxxx)
- LONG: Long display (e.g., MLxxxx)
- Others: Word display (e.g., MWxxxx)

5. Controller
   - Data: Machine Controller model
   - Set value: Display only. No data can be set.
6. Register Data
   - Data: Present register data
   - Set value: Input the value according to the format set in ***/TYPE***.
     The data set here will be reflected as register data.

4.4.5 Editing Watch Page Data

The following description explains each data item and set values that can be input for watch pages.

The illustration below is the MPM Status page.



1. Register Number

- Data: The number of the register where data is displayed or set.
- Set value: Input the register number.

2. DWG Name
   - Data: The name of the DWG where the register number exists.
   - Set value: Input the DWG name.
     If the D register is set for the register number, be sure that the D register is set because the D register is a unique register of the DWG. Any other set value will be ignored.
3. DSP Type
   - Data: Display format of register data.
   - Set value: Select the display format of data from the drop-down list. The following values can be selected.

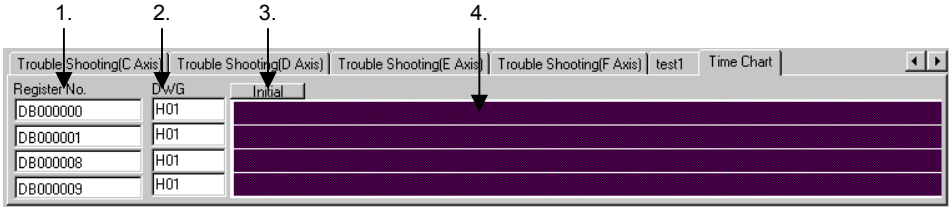
Register Number Setting	Selection	Display/Value	
Binary	Possible	BIN	ON/OFF display
Word	Possible	DEC	Decimal display
		HEX	Hexadecimal display
		BIN	Binary display
Long	Possible	LONG	Long (4-byte) display
		HEX	Hexadecimal display
Float	Possible	FLOAT	Floating-point display

4. Data (Register Data)
   - Data: Present register data
   - Set value: Input the value according to the format set in ***DSP type***.
     The data set here will be reflected as register data.
5. Symbol
   - Data: The symbol (name) corresponding to the register number.
   - Set value: Input the name (symbol) corresponding to the register data. The name input here will be displayed above the register number on the drawing specified by the **DWG Name**.
6. Comment
   - Data: Comment on data.
   - Set value: Input the comment on the register data.
     Up to 48 characters can be input.

4.4.6 Editing Graph Page Data

The following description explains each data item and set values that can be input for graph pages.

The illustration below is the Time Chart page.



1. Register Number
   - Data: The register number for the graph display.
   - Set value: Input the register number.
     Only bit data can be input.
2. DWG
   - Data: The name of the DWG where the register number exists.
   - Set value: Input the DWG name.
     If the D register is set for the register number, be sure that the D register is set because the D register is a unique register of the DWG. Any other set value will be ignored.
3. Initial Button

   Click the Initial Button.

   The graph displayed will be cleared.

   The register number or DWG name will not be cleared.
4. Graph Display

   The graph will be displayed based on the register data for the register number and DWG name.

5 Motion Parameters

This chapter provides information on motion parameters.

5.1 Outline and Operation of Motion Parameter Functions

5.1.1 Outline of Motion Parameter Functions

To make simple operation easier to understand, motion parameters are classified into three levels according to the importance and frequency of use.

Motion parameters are classified into the following levels.

- Easy mode: Minimum required parameters for operation control
- Detailed mode: Parameters required for more precise operation control
- Full-set mode: All parameters

5.1.2 Display of Motion Parameter Window

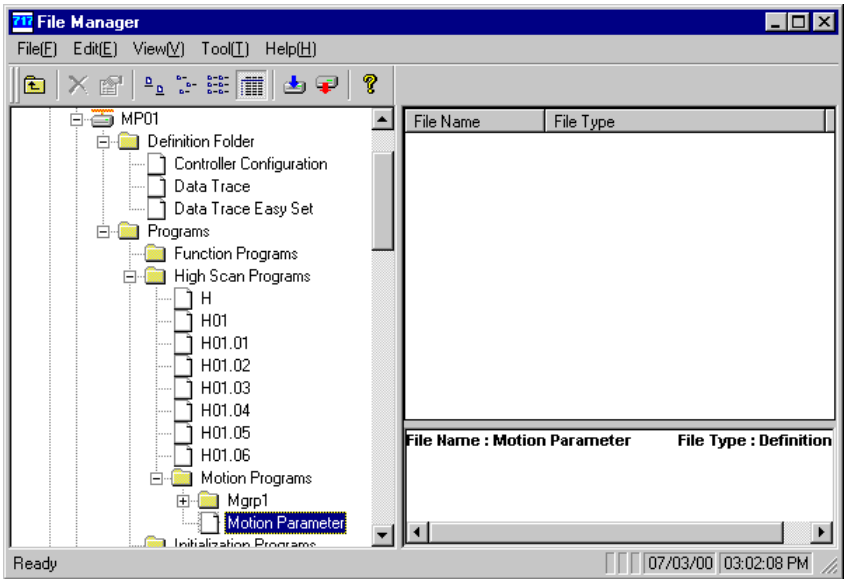
■ Opening the Window

Log onto the Controller folder to open the Motion Parameter Window. Then use the following procedure.

Opening through the File Manager

Double-click ***Motion Parameter*** under ***Programs\Motion Programs\Mgrp1*** on the directory tree.

The Motion Parameter Window can also be opened by selecting ***Programs\Motion Programs***, right-clicking to display the pop-up menu, and then clicking ***Open (O)*** and ***Motion Parameter (P)***.



Opening through the Engineering Manager

Select ***File (F)***, ***Open (O)***, ***Definition (D)***, and then ***Motion Parameter (P)***.

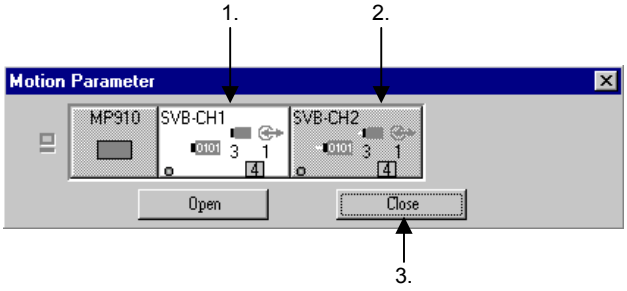
The Motion Parameter Window can also be opened by selecting ***MOTPRM*** from the Tool-bar.

■ Parameter Display

The method of parameter display varies with the Machine Controller model as described below.

MP910

The Motion Parameter Dialog Box will appear as shown below.



Use method 1, 2, or 3 below.

1. Double-click ***SVB-CH1***, or click ***SVB-CHI*** and then ***Open***.

   The Motion Parameter Window of the SVB-CH1 (Motion Module 01) will be displayed in the Engineering Manager and the Motion Parameter Dialog Box will close.

2. Double-click ***SVB-CH2***, or click ***SVB-CH2*** and then ***Open***.

   The Motion Parameter Window of the SVB-CH2 (Motion Module 02) will be displayed in the Engineering Manager and the Motion Parameter Dialog Box will close.

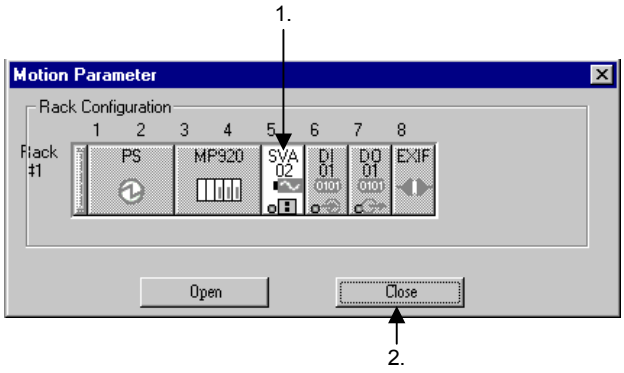
3. Click the **Close** Button.

   The Motion Parameter Dialog Box will close. The Motion Parameter Window will not be displayed.

MP920

The Motion Parameter Dialog Box will be displayed as shown below.

In the Dialog Box, the rack configuration consisting of racks or Modules set in the Setup Wizard 4: Module Configuration Window will be displayed. The following illustration is an example of the Motion Parameter Dialog Box.



Use method 1 or 2 below.

1. Double-click the Motion Module icon in the Dialog Box or click the Motion Module icon and then the ***Open*** Button.

   The Motion Parameter Window of the Servo Module selected will be displayed in the Engineering Manager and the Motion Parameter Dialog Box will close.

2. Click the **Close** Button.

   The Motion Parameter Dialog Box will close. The Motion Parameter Window will not be displayed.

MP930 or MP940

The Motion Parameter Window will be displayed.

INFO To log onto the Controller folder, refer to the *Machine Controller MP900 Programming Software User's Manual for standard operation* (SIEZ-C887-2.4).

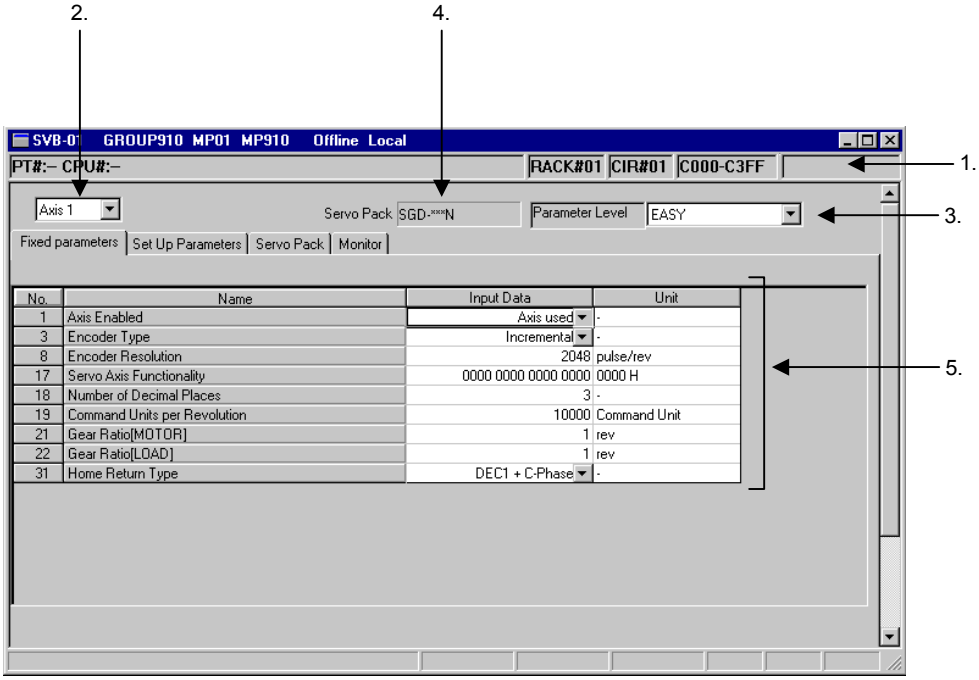
5.2 Operation Control of Motion Parameters

The Motion Parameter Window will be opened in the Engineering Manager Window. The displayed contents in the Motion Parameter Window vary with the Machine Controller model and the type of Motion Module.

The following description explains the operation of the Motion Parameter Window for each model.

5.2.1 Motion Parameter Window

The following illustration shows the Motion Parameter Window in detail.



1. Rack Number, Motion Module Number, and Register Number

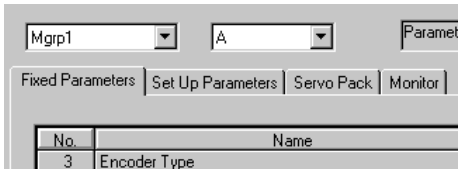
   The rack number, Motion Module number, and register number in use for the selected Servo Module will be displayed unless the model is the MP930.

2. Axis Selection

   Select from the drop-down list the axis that the Motion Parameter will display.

   The list will display the axis followed by the station number (e.g., axis 1, axis 2, etc.). The station number corresponds to the number of the station to which the Servo is allocated in the Setup Wizard 4: Module Configuration Window.

   If the model is the MP930, the drop-down list will have group names and logical axis names.



3. Parameter Display Level

   Select the display level of motion parameters from the drop-down list.

   The display level can be selected from the following three types. Parameters displayed will vary with the display level.

   - Easy mode
   - Detailed mode
   - Full-set mode

4. SERVOPACK

   The type of SERVOPACK for the selected axis will be displayed only.

   The type will be displayed in the SERVOPACK tab if the model is the MP930.

5. Data Display, Setting, and Monitoring

   Motion parameters will be grouped and displayed according to the Machine Controller model and the type of Motion Module. Displayed items vary with the model of Servo Module as shown in the following table.

Model	Display Item
MP910, MP920's SVB-01, MP930, or MP940	• Fixed Parameters • Setup Parameters • SERVOPACK • Motion Monitor
MP930's SVA-01, SVA-02, PO	• Fixed Parameters • Setup Parameters • Motion Monitor

   Data on each item can be selected by clicking the tab.

5.2.2 Parameter Operation Control

Motion parameters vary with the Machine Controller model and the type of Motion Module.

For details, refer to *Design and Maintenance Manual* for your model of Machine Controller.

If this model is the MP920, refer to the *MP920 Motion Module User's Manual* (SIEZ-C887-2.5).

6 Data Trace Easy Setup

This chapter provides information on the data trace easy setup function.

6.1 Outline and Display of the Data Trace Easy Setup Function

6.1.1 Outline of the Data Trace Easy Setup Function

There are many data items (e.g., position data and speed data items) that need to be traced.

The data trace easy setup function lists position and speed data items set for each axis, thus making it possible to set trace data automatically by selecting the data to be traced.

The trigger signal for the trace data will be automatically allocated as well, which makes it possible to omit setting the data trace definition.

IMPORTANT

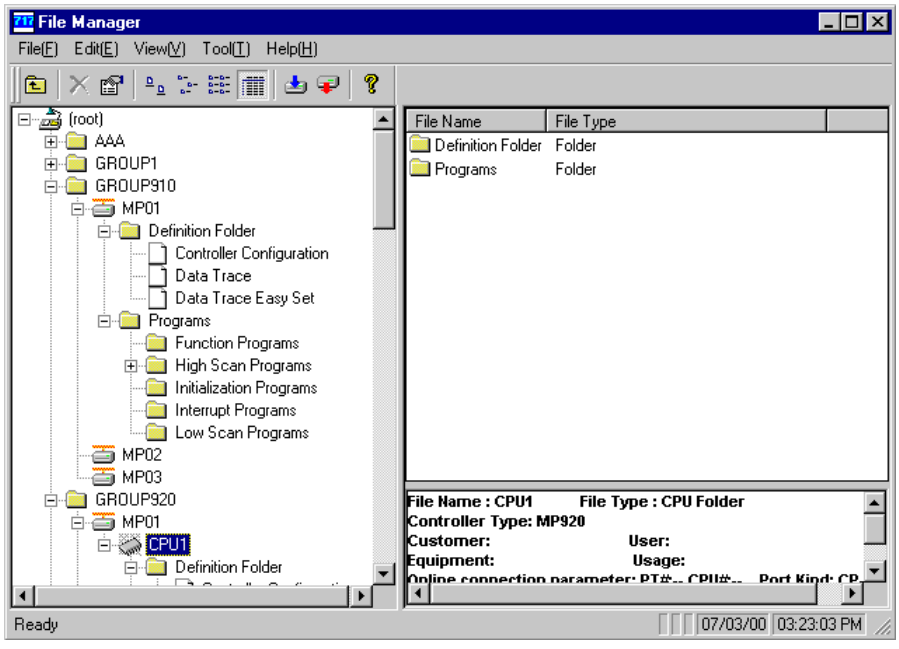
This function will be enabled only if the check box to create a basic ladder program automatically in the Setup Wizard 2: Definition Window is checked.

6.1.2 Data Trace Easy Setup Display

The Data Trace Easy Setup Dialog Box can be opened with the following procedure after logging onto the Controller folder.

■ Opening through the File Manager

Select ***Definition Folder*** on the directory tree and double-click ***Data Trace Easy Set***.

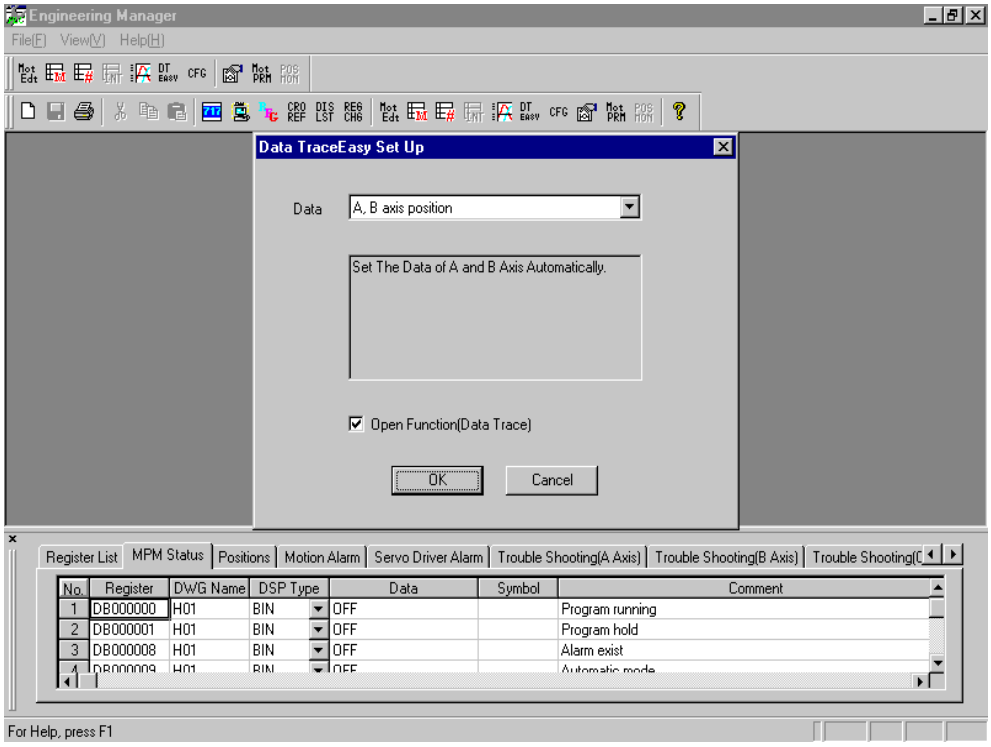


Note: The above window will appear when the user logs onto the Machine Controller MP01 in GROUP910 and the Machine Controller MP01's CPU1 in GROUP920.

■ Opening through the Engineering Manager

Click ***File (F)***, ***Open (O)***, ***Definition (D)***, and then ***Data Trace Easy Definition (E)***.

Alternatively, click the DT EAZY icon on the Toolbar.



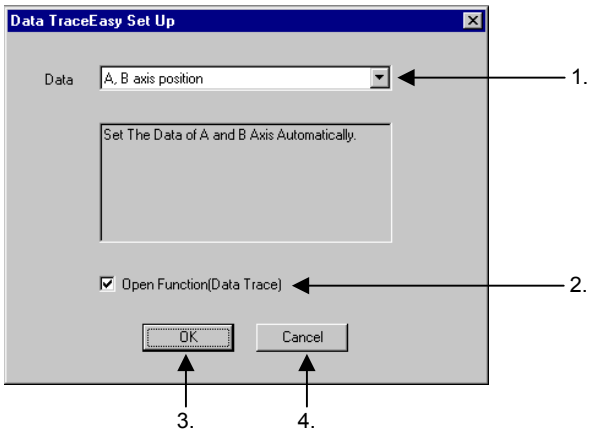
6

6.2 Data Trace Easy Setup Control

This section explains data trace easy setup control.

6.2.1 Details of Data Trace Easy Setup Window

As explained in *6.1.2 Data Trace Easy Setup Display*, the Data Trace Easy Setup Window will appear as a dialog box in the Engineering Manager Window.

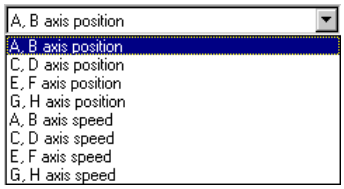


1. Data

   Select the axes and data to be traced from the drop-down list. The data set here will determine the data to be traced.

   Items displayed in drop-down list vary with the Machine Controller model and the number of axes as shown below.

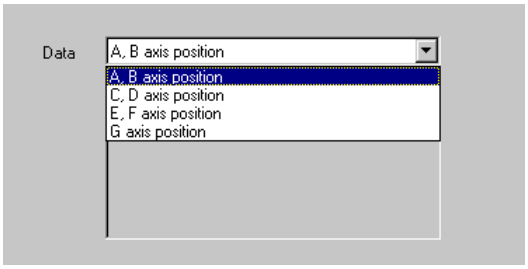
   a) MP910 or MP920



   Note: The above drop-down list will be displayed if seven axes (A to G axes) have been set.

   As shown above, the axis position and axis speed will be displayed for set axes in pairs, that is, A axis and B axis, C axis and D axis, etc. If there are an odd number of axes, the last axis (i.e., the G axis in the above case) will not be paired with any axis.

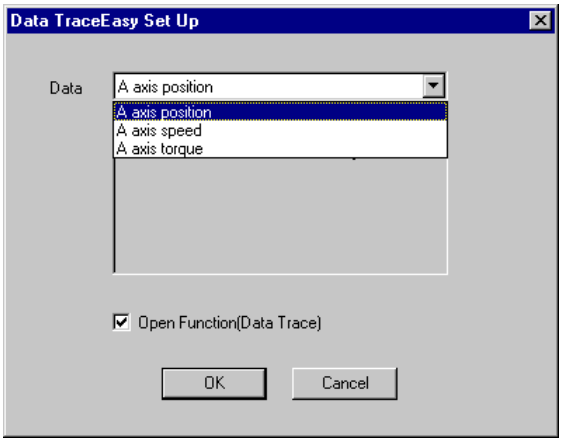
b) MP930



Note: The above drop-down list will be displayed if seven axes (A to G axes) have been set.

As shown above, the axis position will be displayed for set axes in pairs, that is, A axis and B axis, C axis and D axis, etc. If the number of axes is odd, the last axis (e.g., the G axis in the above case) will not be paired with any axis.

c) MP940



The following items on the A axis will be displayed.

- Axis position
- Axis speed
- Axis torque

INFO

1 Set axes refer to all axes defined as controller configuration items. A logical axis name refers to the logical names in definitions of the axes.

2 Axis definition data is created based on the settings in the Setup Wizard 4: Module Configuration Window. Refer to *3.2.4 Module Information* for axis definition in detail.

2. Check Box to Open the Function (Data Trace)

   To display the Data Trace Window with the OK Button, check the box to open the function (data trace). The Data Trace Window will not be displayed with the OK Button if the check box is not checked.

3. OK Button

   By clicking the OK Button, the trace data for the specified axis and data will be auto-

matically set and the Data Trace Easy Setup Dialog Box will close.

The Data Trace Window will be displayed if the check box to open the function (data trace) is checked.

4. Cancel Button

   If the Cancel Button is clicked, the trace data will not be set automatically. The Data Trace Easy Setup Dialog Box will close.

6.2.2 Automatically Set Trace Data

The following data items will be automatically set in the Trace Data Easy Setup Window.

- Group Number: GROUP-1
- Trace name: A axis and B axis positions

  Character strings selected with the set data in the Trace Data Easy Setup Window will be displayed.
- Execution timing: H-SCAN
- Trace interval: 00000
- Number of trace times: 0000000
- Start trigger: IB000002 = ON
  Motion Program Start
- Stop trigger 1:IB00003 = ON Reset
  Delay = 00000
- Stop trigger 2:IB00004 = OFF Emergency stop
  Delay = 00000
- Trade Data Specification: The following trace data items will be specified in the Trace Data Easy Setup Window.

◀EXAMPLE▶ Example of Data Setting to X Axis and Y Axis Positions with Data

No.	REG	DWG	SCALE	Comment
01	ILCxxx		0100000	X axis calculated pos. on machine
02	ILCxxx		0100000	X axis feedback pos. on machine
03	ILCxxx		0100000	Y axis calculated pos. on machine
04	ILCxxx		0100000	Y axis feedback pos. on machine
05	IB000002			Motion program start
06	IB000003			Reset
07	DB000000	H01		Run
. .				
16				

The REGs of the above numbers 01 through 04 will display register numbers corresponding to the following items respectively.

- X axis calculated position on machine

- X axis feedback position on machine
- Y axis calculated position on machine
- Y axis feedback position on machine

INFO

1 If only a single axis is specified (e.g., only X axis position is specified) with the data, the above data number 03 or 04 will not be used as shown below.

No.	REG	DWG	SCALE	Comment
01	ILCxxx		0100000	X axis calculated pos. on machine
02	ILCxxxx		0100000	X axis feedback pos. on machine
03	IB000002			Motion program
04	IB000003			Reset
05	DB000000	H01		Run
. .				
16				

2 There is no difference from the standard mode in the data trace definition.

- Refer to the *Machine Controller MP900 Programming Software User's Manual for standard operation* (SIEZ-C887-2.4) for details.

7 Module Configuration Definitions

This chapter provides information on Module configuration definitions in simple operation mode.

7

7.1 Outline and Starting of Module Configuration Definitions

7.1.1 Outline of Function of Module Configuration Definitions

Module configuration definitions are created with the Setup Wizard.

The Module configuration definitions in simple operation mode make it possible to display the Module configuration and data settings for each Module.

If the settings are not supported, make the settings in standard mode or use the Setup Wizard. Module configuration definitions in simple operation mode are available to the MP920 and MP940 only.

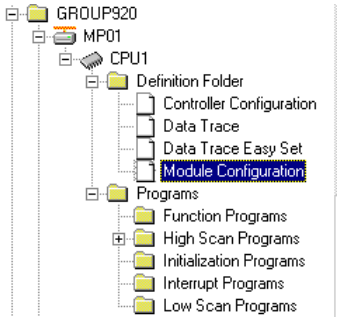
7.1.2 Display of Module Configuration Definitions

■ Opening the Window

The Module Configuration Window can be opened with either of the following procedure after logging onto the Controller folder.

Opening through the File Manager

Double-click **Module Configuration** under the **Definition Folder** on the directory tree.



Opening through the Engineering Manager

Click ***File (F)***, ***Open (O)***, ***Definition (D)***, and then ***Module Configuration (M)*** on the menu.

INFO

To log onto the Controller folder, refer to the *Machine Controller MP900 Programming Software User's Manual for standard operation (SIEZ-C887-2.4)*.

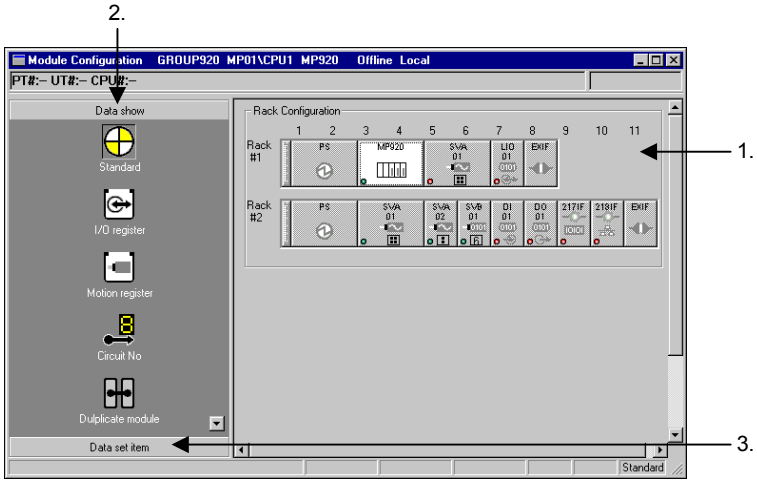
7.2 Manipulating Module Configuration Definitions

The Module Configuration Window will open in the Engineering Manager Window. The contents of the Module Configuration Window vary with the model of the Machine Controller as described below.

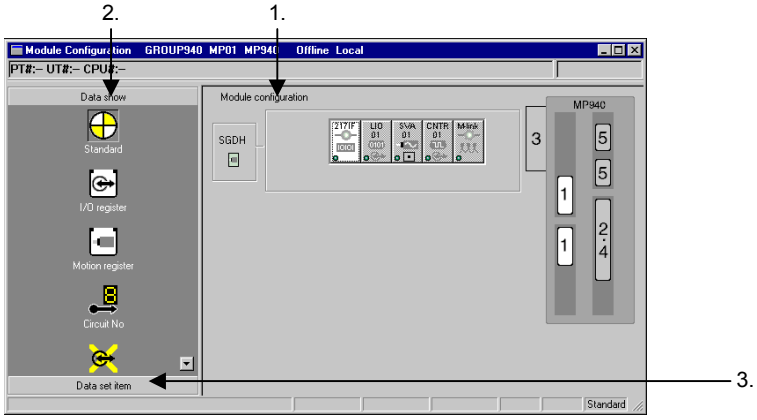
7.2.1 Module Configuration Window

This section explains the details of the Module Configuration Window.

■ MP920



■ MP940



7

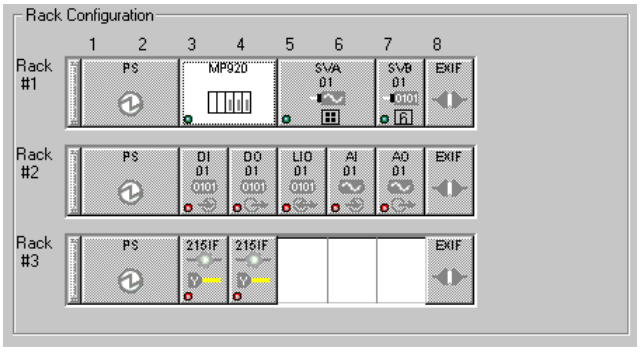
1. Rack Configuration

The rack configuration or module configuration created with the Setup Wizard will be displayed.

The configuration will be displayed only and it cannot be changed.

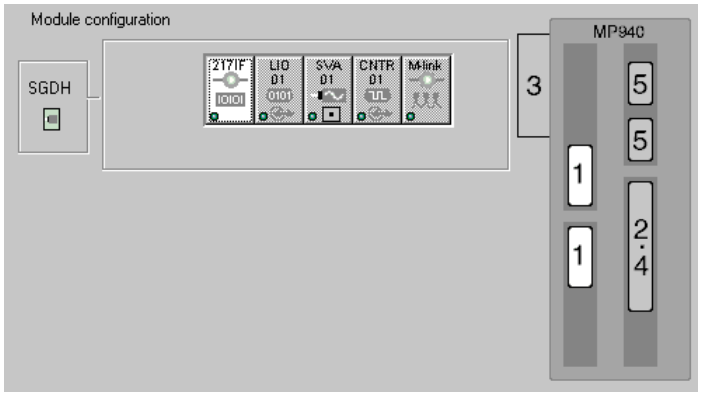
a) MP920

The rack configuration and the Module configuration in the rack will be displayed.



b) MP940

The Module configuration and the physical allocation image will be displayed.



2. Data Display

The icon each data item in the Rack Configuration can be switched. The following icons will be displayed for corresponding Modules when the display mode is selected.

Display	Description	Remarks
	The allocation status of the Module will be displayed. A green or red lamp appearing on the lower left side of the Module has the following meaning. • Green: Indicates that the Module has been allocated. • Red: Indicates that the detailed data definition of the Module has not been set.	
	The range of register numbers allocated to the Module will be displayed if the Module needs I/O register allocation. A green lamp will appear on the lower left side of the Module.	
	The range of motion register numbers allocated to the Motion Module will be displayed.	
	The circuit number will be displayed for the Communications Module. The servo number will be displayed for the Motion Module.	
	Not used	MP920 only
	The duplicate line status of the Communications Module will be displayed if the 215IF Module is used. *1	MP920 only
	The I/O disable status of the I/O Module will be displayed. *2 •  : Indicates that input is disabled. •  : Indicates that output is disabled. •  : Indicates that both input and output are disabled.	

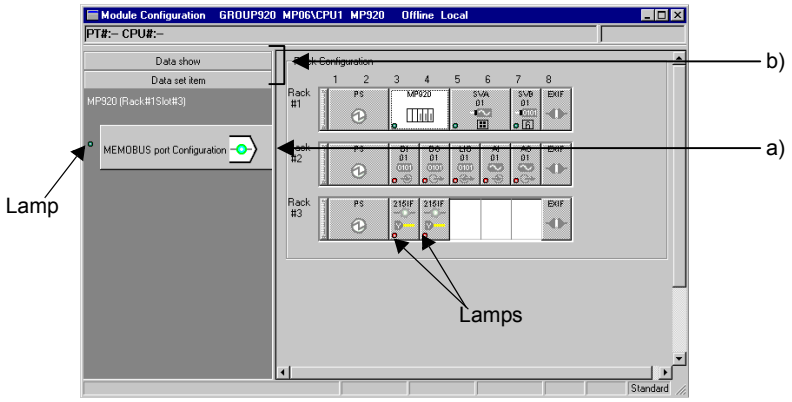
∗ 1. For the duplication of the communication path of the 215IF Modules, the Modules must be in a duplicate configuration.

∗ 2. It is not possible to make I/O disable settings in simple operation mode. Set the mode to standard mode.

3. Data Set Item

The mode can be changed to data set mode for each Module by clicking on ***Data set item***. The data set icon of the Module will be displayed in the Data set item portion by clicking the Module desired on the Module Configuration.

The following icon will be displayed if the MP920 Module is selected, for example.



a) MEMOBUS Port Configuration

To open the Data Set Window for each Module, click the icon in the data set item.

b) Data Show and Data Set Item

To change the Data set item display to Data show display, click ***Data show***.

INFO

1 Regardless of whether the Data set item display or Data show display is selected, the Data Set Window can be opened by double-clicking each Module on the Module Configuration.

2 The lamp on the left side of the Data Set Item Icon is the same in meaning as the lamp on the lower left side of each Module in standard mode.

3 For the details on the Data Set Window for each Module, refer to the *Machine Controller MP900 Programming Software User's Manual for standard operation (SIEZ-C887-2.4)*.

7

8 List of Comments

This chapter provides a list of comments.

8.1 Comments on Setup Wizard

8.1.1 Comments under Selection Boxes

The following comments will be displayed under the box where the Machine Controller is selected in the Setup Wizard 1: Select the Controller Window.

Item	Model	Comment
Controller selection	MP910	This is the controller inside PC. There are two bus types, PC/AT and C-PCI.
	MP920	This is the flexible configured module type controller with rack. There are many module types, servo, I/O and communication I/F. This can provide the complete solution.
	MP930	This is the stand alone type controller. It has a very compact size, powerful functions, and can control up to 14 axes.
	MP940	This is the controller within the servo pack. This is set as the option module of the servo pack 'SGDH'.

8.1.2 Pop-up Help Menu

This section explains the contents of the pop-up help that will be displayed with the mouse cursor located.

■ Module Configuration Window

The following pop-up help menu items will appear when the cursor is located on the icon of each Module in the Setup Wizard 4: Module Configuration Window.

Item	Kind	Comment
Module configu-ration	Short/Long rack	Set the rack for set the module. Possible to set maximum 4 racks.
	CPU	CPU module This has to be set on the 1st rack.
	EXIF	Module for the connecting between a module and a module Required for setting more than 2 racks.
	SVA1	Analog servo module Possible to control the 4 axes. This uses 2 slots.
	SVA2	Analog servo module Possible to control the 2 axes.
	SVB1	Network digital servo module Possible to control the 14 axes with MECHATROLINK.
	PO	Pulse output module Possible to control the 4 axes of the pulse motors.
	AI	Analog input module The analog input number are 8.
	AO	Analog output module The analog output number are 4.
	CNTR	Counter module The pulse input number are 4.
	DI	Digital input module The digital input number are 64.
	DO	Digital output module The digital output number are 64.
	LIO	Local I/O module This has 32 digital inputs and 32 digital outputs.
	215IF	215 I/F module Connectable to the CP-215 N to N communication.
	217IF	217 I/F module Serial I/F and possible to connect RS-232C, RS-485.
	218IF	218 I/F module ETHERNET protocol
	216IF	DeviceNet module Connect the DeviceNet module.

■ Setup Completed Window

The following pop-up help will appear when the cursor is located on each icon (button) when the setup completed.

Item	Kind	Comment
Setup completion	Execute the Wizard again.	Return the wizard after creating the controller configuration data.
	Execute the Engineering Manager.	Execute the engineering function for the created controller data by wizard.
	Return to File Manager.	Return the File Manager after creating the controller configuration data.

Machine Controller MP900 Series
Programming Panel Software
USER'S MANUAL

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In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

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