

MELSOFT

MR Configurator2 Version1

MODEL

SW1DNC-MRC2-E

INSTALLATION GUIDE

Thank you for choosing the MELSOFT MR Configurator2.
To optimize the use of the MR Configurator2, please read over this Installation Guide and the corresponding AC servo Installation Guide before using the software. After reading the Installation Guide, always place this Installation Guide in a safe place.

● Safety Instructions ●

(Always read these instructions before using the equipment.)

Do not attempt to install, operate, maintain or inspect the servo amplifier and servo motor until you have read through this Installation Guide, and appended documents carefully and can use the equipment correctly. Do not use the servo amplifier and servo motor until you have a full knowledge of the equipment, safety information and instructions.

In this Installation Guide, the safety instruction levels are classified into "WARNING" and "CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.




Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight injury to personnel or may cause physical damage.


Note that the CAUTION level may lead to a serious consequence according to conditions. Please follow the instructions of both levels because they are important to personnel safety.

What must not be done and what must be done are indicated by the following diagrammatic symbols:



: Indicates what must not be done. For example, "No Fire" is indicated by .

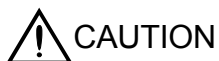


: Indicates what must be done. For example, grounding is indicated by .

In this Installation Guide, instructions at a lower level than the above, instructions for other functions, and so on are classified into "POINT".

After reading this Installation Guide, always keep it accessible to the operator.

- Windows is a trademark of Microsoft Corporation.
- The "Mitsubishi general-purpose AC servo MELSOFT MR Configurator2" is a production of Mitsubishi Electric Corporation. Mitsubishi Electric Corporation reserves the copyright and all other rights of this software.
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• Before executing the test mode, always read section 2.3 "Precautions for test mode".

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1. INTRODUCTION

1. INTRODUCTION

1.1 Specifications

Using the communication function of the servo amplifier, the MR Configurator2 allows functions, such as parameter setting change, graph, program operation mode and test mode, to be implemented from a personal computer.

When connecting to the servo amplifier

| Servo amplifier | | MR-J4-A | MR-J4-B | MR-J4-B -RJ010 | MR-JE-A | MR-J3-A | MR-J3-B | MR-J3-B -RJ006 | MR-J3-B -RJ004 | MR-J3-B -RJ080W | MR-J3-T | MR-JN-A |
|----------------------|---|---------|---------|-------------------|---------|---------|---------|-------------------|-------------------|--------------------|---------|---------|
| Communication Method | USB | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | RS-422(RS-232C) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Parameter | Parameter Setting | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Axis Name Setting | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Parameter Converter | *4○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Positioning-data | Point Table | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Program | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Monitor | Display All | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | I/O Monitor | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Graph | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | ABS Data Display | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Diagnosis | Alarm Display | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Alarm Onset Data | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Drive Recorder | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | No Motor Rotation | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | System Configuration | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Life Diagnosis | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Machine Diagnosis | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Fully Closed Loop Diagnosis | *1○ | *1○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Linear Diagnosis | *2○ | *2○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Test Mode | JOG Mode | *3○ | *3○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Positioning Mode | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Motor-less Operation | *4○ | *4○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | DO Forced Output | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Program Operation | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Single-step Feed | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Test Mode Information | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Adjustment | One-touch Tuning | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Tuning | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Machine Analyzer | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Advanced Gain Search | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Tools | Update Parameter Setting Range | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Machine Unit Conversion Display Setting | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

*1 Only available when operation mode is Fully closed loop control mode.

*2 Only available when operation mode is Linear servo motor control mode.

*3 Not available when operation mode is Linear servo motor control mode.

*4 Only available when operation mode is Standard control mode.

1. INTRODUCTION

When via a motion controller

| Servo amplifier | | MR-J4-B | MR-J3-B | MR-J3-B -RJ006 | MR-J3-B -RJ004 | MR-J3-B -RJ080W | MR-MT1200 |
|----------------------|---|---------|---------|-------------------|-------------------|--------------------|-----------|
| Communication Method | SSCNET III | *6○ | ○ | ○ | ○ | ○ | ○ |
| | SSCNET III/H | ○ | / | / | / | / | / |
| Parameter | Parameter Setting | ○ | ○ | ○ | ○ | ○ | ○ |
| | Axis Name Setting | / | / | / | / | / | / |
| | Parameter Converter | / | / | / | / | / | / |
| Positioning-data | Point Table | / | / | / | / | / | / |
| | Program | / | / | / | / | / | / |
| Monitor | Display All | ○ | ○ | ○ | ○ | ○ | / |
| | I/O Monitor | ○ | ○ | ○ | ○ | ○ | / |
| | Graph | ○ | ○ | ○ | ○ | ○ | / |
| | ABS Data Display | ○ | ○ | ○ | ○ | ○ | / |
| Diagnosis | Alarm Display | ○ | ○ | ○ | ○ | ○ | ○ |
| | Alarm Onset Data | ○ | ○ | ○ | ○ | ○ | / |
| | Drive Recorder | ○ | / | / | / | / | / |
| | No Motor Rotation | ○ | ○ | ○ | ○ | ○ | / |
| | System Configuration | ○ | ○ | ○ | ○ | ○ | ○ |
| | Life Diagnosis | ○ | ○ | ○ | ○ | ○ | / |
| | Machine Diagnosis | ○ | / | / | / | / | / |
| Test Mode | Fully Closed Loop Diagnosis | *1○ | / | ○ | / | / | / |
| | Linear Diagnosis | *2○ | / | / | ○ | / | / |
| | JOG Mode | *3○ | *5○ | *5○ | / | *5○ | / |
| | Positioning Mode | ○ | *5○ | *5○ | *5○ | *5○ | / |
| | Motor-less Operation | *4○ | ○ | ○ | / | / | / |
| | DO Forced Output | ○ | ○ | ○ | ○ | ○ | / |
| | Program Operation | ○ | *5○ | *5○ | *5○ | *5○ | / |
| Adjustment | Single-step Feed | / | / | / | / | / | / |
| | Test Mode Information | ○ | *5○ | *5○ | *5○ | *5○ | / |
| | One-touch Tuning | ○ | / | / | / | / | / |
| | Tuning | ○ | ○ | ○ | ○ | ○ | / |
| Tools | Machine Analyzer | ○ | *5○ | *5○ | *5○ | *5○ | / |
| | Advanced Gain Search | / | ○ | ○ | ○ | / | / |
| | Update Parameter Setting Range | ○ | ○ | ○ | ○ | ○ | / |
| Tools | Machine Unit Conversion Display Setting | ○ | ○ | ○ | ○ | ○ | / |

*1 Only available when operation mode is Fully closed loop control mode.

*2 Only available when operation mode is Linear servo motor control mode.

*3 Not available when operation mode is Linear servo motor control mode.

*4 Only available when operation mode is Standard control mode.

*5 Not available for Q17[H].

*6 This works as J3 compatibility mode.

1. INTRODUCTION

When via a simple motion

| Servo amplifier | | MR-J4-B | MR-J4-B -RJ010 | MR-J3-B | MR-J3-B -RJ006 | MR-J3-B -RJ004 | MR-J3-B -RJ080W | MR- MT1200 |
|----------------------|---|---------|-------------------|---------|-------------------|-------------------|--------------------|---------------|
| Communication Method | SSCNET III | *6○ | | ○ | ○ | ○ | ○ | ○ |
| | SSCNET III/H | ○ | | | | | | |
| | CC-Link IE Field | | ○ | | | | | |
| Parameter | Parameter Setting | ○ | ○ | *7○ | *7○ | *7○ | *7○ | *7○ |
| | Axis Name Setting | | | | | | | |
| | Parameter Converter | | | | | | | |
| Positioning-data | Point Table | | | | | | | |
| | Program | | | | | | | |
| Monitor | Display All | ○ | ○ | ○ | ○ | ○ | ○ | |
| | I/O Monitor | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Graph | ○ | ○ | ○ | ○ | ○ | ○ | |
| | ABS Data Display | ○ | ○ | ○ | ○ | ○ | ○ | |
| Diagnosis | Alarm Display | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Alarm Onset Data | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Drive Recorder | ○ | ○ | | | | | |
| | No Motor Rotation | ○ | ○ | ○ | ○ | ○ | ○ | |
| | System Configuration | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Life Diagnosis | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Machine Diagnosis | ○ | ○ | | | | | |
| | Fully Closed Loop Diagnosis | *1○ | | | ○ | | | |
| Linear Diagnosis | *2○ | | | | ○ | | | |
| Test Mode | JOG Mode | *3○ | ○ | | | | | |
| | Positioning Mode | ○ | ○ | | | | | |
| | Motor-less Operation | *4○ | ○ | ○ | ○ | | | |
| | DO Forced Output | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Program Operation | ○ | ○ | | | | | |
| | Single-step Feed | | | | | | | |
| | Test Mode Information | ○ | ○ | ○ | ○ | ○ | ○ | |
| Adjustment | One-touch Tuning | ○ | ○ | | | | | |
| | Tuning | ○ | ○ | | | | | |
| | Machine Analyzer | ○ | ○ | | | | | |
| | Advanced Gain Search | | | | | | | |
| Tools | Update Parameter Setting Range | ○ | ○ | ○ | ○ | ○ | ○ | |
| | Machine Unit Conversion Display Setting | ○ | ○ | ○ | ○ | ○ | ○ | |

*1 Only available when operation mode is Fully closed loop control mode.

*2 Only available when operation mode is Linear servo motor control mode.

*3 Not available when operation mode is Linear servo motor control mode.

*4 Only available when operation mode is Standard control mode.

*6 This works as J3 compatibility mode.

*7 Not available for online setting. Please read/write parameters using GX Works2.

1. INTRODUCTION

1.2 System configuration

1.2.1 Components

To use the MR Configurator2, the following components are required in addition to the servo amplifier and servo motor. Configure the system according to the Installation Guide of each equipment.

| Equipment | | (Note 1) Description |
|--|---|---|
| (Note 2, 3, 4, 5) Personal computer | OS | Microsoft® Windows® 7 Ultimate Operating System Microsoft® Windows® 7 Enterprise Operating System Microsoft® Windows® 7 Professional Operating System Microsoft® Windows® 7 Home Premium Operating System Microsoft® Windows® 7 Starter Operating System Microsoft® Windows Vista® Home Basic Operating System Microsoft® Windows Vista® Home Premium Operating System Microsoft® Windows Vista® Business Operating System Microsoft® Windows Vista® Ultimate Operating System Microsoft® Windows Vista® Enterprise Operating System Microsoft® Windows® XP Professional, Service Pack 2 or later Microsoft® Windows® XP Home Edition, Service Pack 2 or later Microsoft® Windows® 2000 Professional, Service Pack 4 or later |
| | CPU | Desktop PC: Intel® Celeron® Processor 2.8GHz or higher Laptop PC : Intel® Pentium® M Processor 1.7GHz or higher |
| | Memory | 512MB or more recommended (For 32-bit edition) 1GB or more recommended (For 64-bit edition) |
| | Hard Disk | 1GB or more of free space |
| Browser | Internet Explorer 4.0 or more | |
| Display | One whose resolution is 1024 × 768 or more and that can provide a high color (16 bit) display. Connectable with the above personal computer. | |
| Keyboard | Connectable with the above personal computer. | |
| Mouse | Connectable with the above personal computer. | |
| Printer | Connectable with the above personal computer. | |
| USB cable | MR-J3USBCBL3M | |

Note 1. Windows and Windows Vista are the registered trademarks of Microsoft Corporation in the United States and other countries.

Celeron, Pentium is the registered trademarks of Intel Corporation.

2. On some personal computers, this software may not run properly.
3. If Microsoft® Windows®7, Microsoft® Windows Vista®, Microsoft® Windows® XP is used, the following functions cannot be used. If any of the following functions is used, this product may not operate normally.
 - Start of application in Windows® compatible mode
 - Fast user switching
 - Remote desktop
 - Big fonts (Detail settings of screen property)
 - DPI setting other than the normal size (96DPI) (Detail settings of screen property)
 - 64-bit OS^{Note-1}

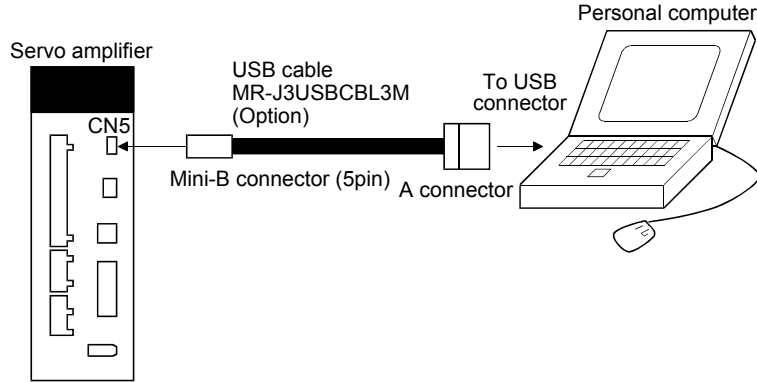
Note-1: Supported by Windows® 7.
4. If Windows Vista®, Windows® 7 is used, the following functions cannot be used.
 - Windows XP Mode
 - Windows Touch
5. If Windows Vista® or Windows® 7 is used, log in as a user having User authority or higher.

1. INTRODUCTION

1.2.2 Configuration

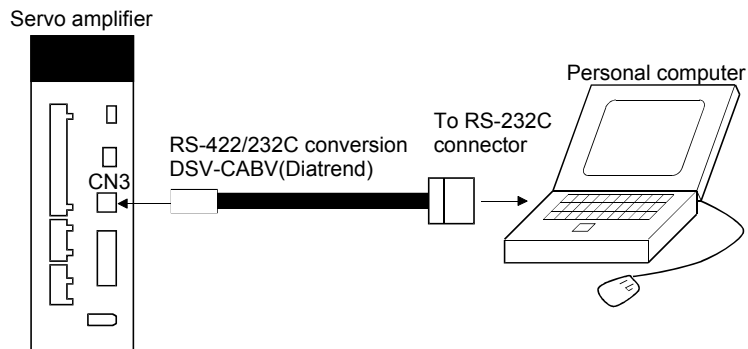
(1) For use of USB

Run/operate the servo amplifier of axis 1. As the USB cable, use the optional MR-J3USBCBL3M.



(2) For use of RS-422 (MR-J3-A/MR-J3-T)

Run/operate the servo amplifier of axis 1. It is recommended to use the following cable.

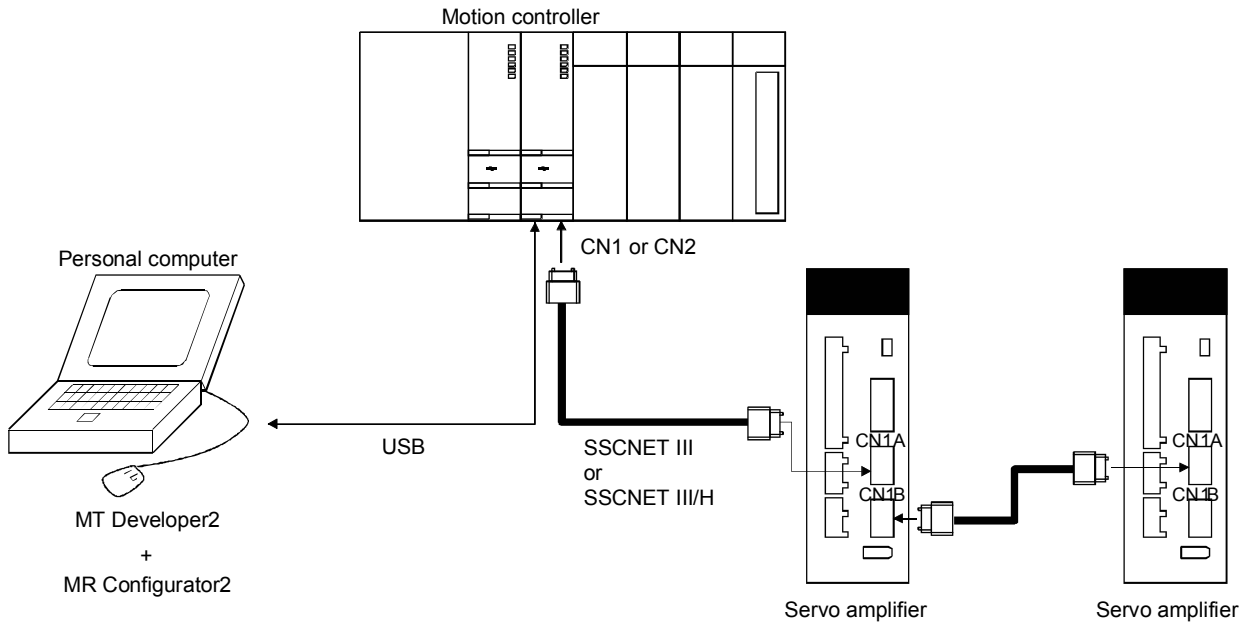


1. INTRODUCTION

(3) For setting up via a motion controller (MR-J3-B/MR-J4-B)

Control several servo amplifiers via a motion controller.

(a) When establishing USB connection



(b) When selecting the MT Communication setting

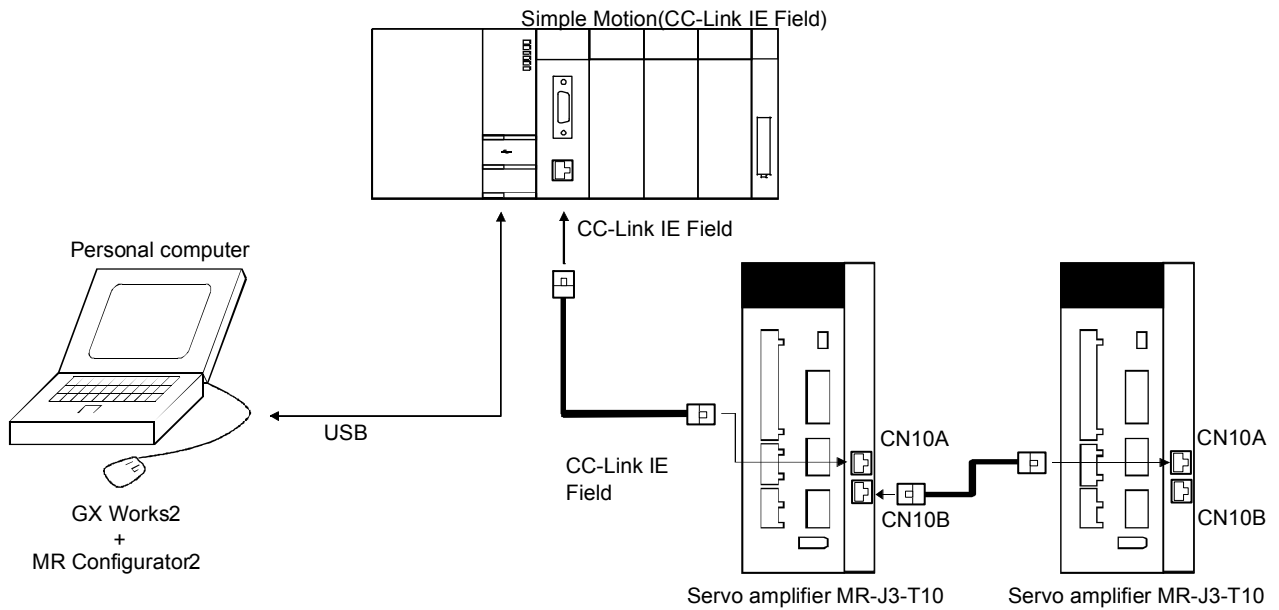
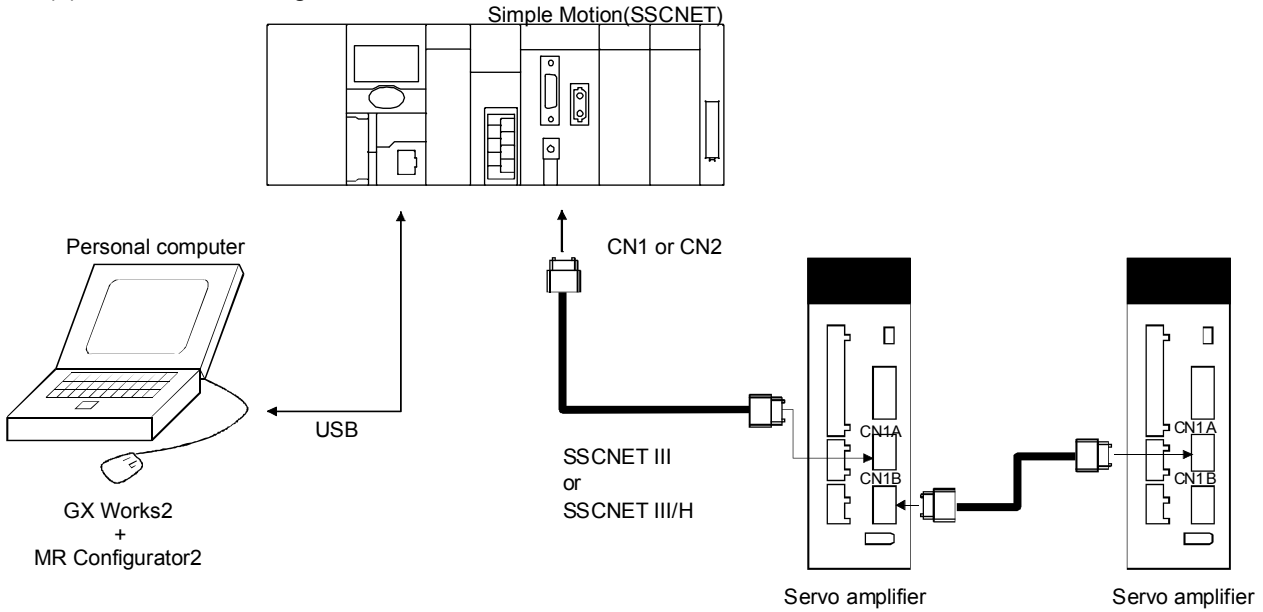
When MR Configurator2 is started from MT Developer2, communication is performed according to the communication method and communication path that are set in the communication setting on MT Developer2.

Note that it is not compatible with the SSCNET communication. When setting the SSCNET communication in the MT Developer2 communication setting, set the communication path to the motion controller USB connection using MR Configurator2.

1. INTRODUCTION

- (4) For setting up via a simple motion (MR-J3-B/MR-J4-B/MR-J4-B-RJ010)
Control several servo amplifiers via a simple motion.

(a) When establishing USB connection



(b) When selecting the GX Communication setting

When MR Configurator2 is started from GX Works2, communication is performed according to the communication method and communication path that are set in the communication setting on GX Works2.

1. INTRODUCTION

1.3 Basic terms

1) Mouse pointer

An on-screen arrow which moves with movements of the mouse.

2) Point

To move the mouse pointer to a particular item or position on the screen.

3) Click

To press and release the left button of the mouse once.

4) Double-click

To press and release the left button of the mouse twice.

5) Drag

To hold down the left button of the mouse and move the mouse.

6) Focus

Highlights characters, button or the like when the menu or button is ready to accept an input from the keyboard.

7) Text box

Box used to enter characters.

8) List box

Box used to select one of several items.



9) Combo box

Box used to select one of several items.



10) Check box

Box used to select one or more of several items. When a choice is made a mark appears in the box.

11) Option button

Button used to select only one of several items. When a choice is changed  moves to a new choice.

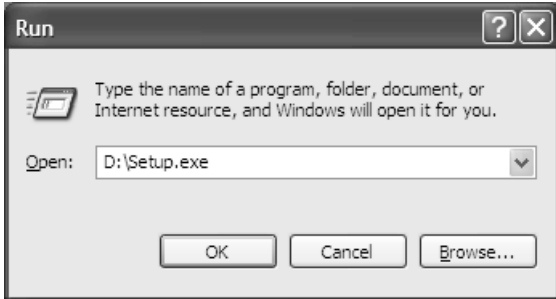
1. INTRODUCTION

1.4 Installation procedure

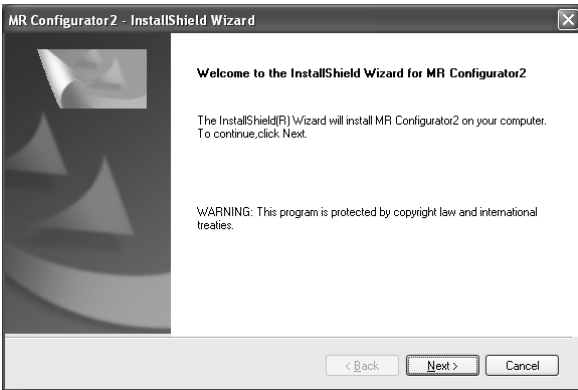
When Windows XP Professional, Windows 2000, Windows Vista or Windows 7 is used, perform installation with the administrator authority (computer administrator authority).

Here, the hard disk drive of the personal computer is explained as C and the CD drive as D.

Before executing this program, be sure to close all other Windows programs.



1) Insert the CD-ROM in Drive D (CD drive). Then, click the "Start" button on the task bar to open the menu, and click "RUN". When the left window as shown on the left appeared, enter "D:\Setup.exe" and click the "OK" button.



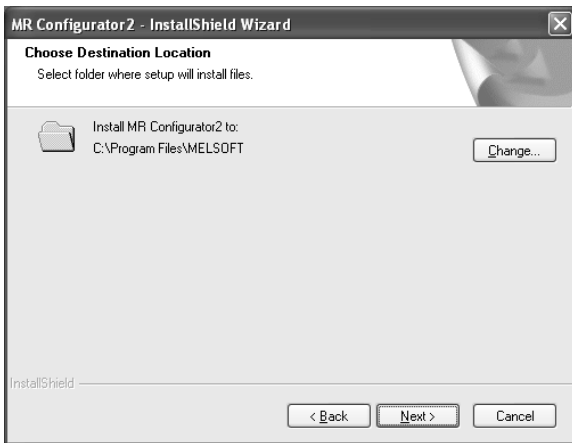
2) After the above window, the left window appears. Click the "Next" button.



3) After the Setup status screen, the User information screen appears. Enter the user name and company name. Also, enter the product ID on the license agreement which was provided with the product in single-byte alphanumeric characters, and click the "Next" button.

1. INTRODUCTION

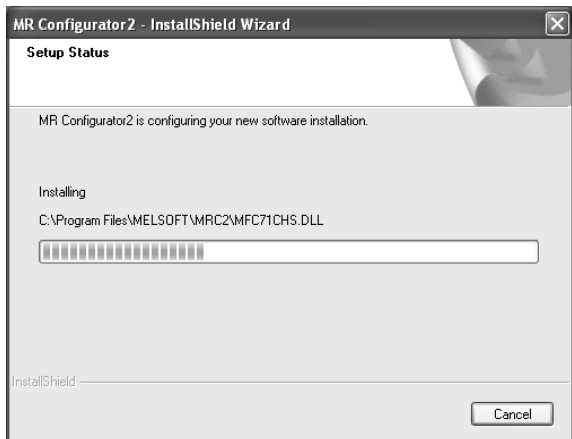
4) The Select installation destination screen appears. Specify the installation destination, and click the "Next" button. This starts installation.



5) Information for starting the program file copy is displayed. Click the "Next" button to start the installation.

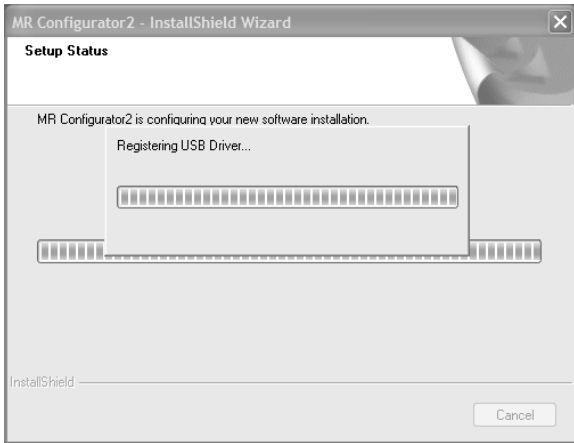


6) The Setup status screen appears.



1. INTRODUCTION

7) The driver installation window appears.

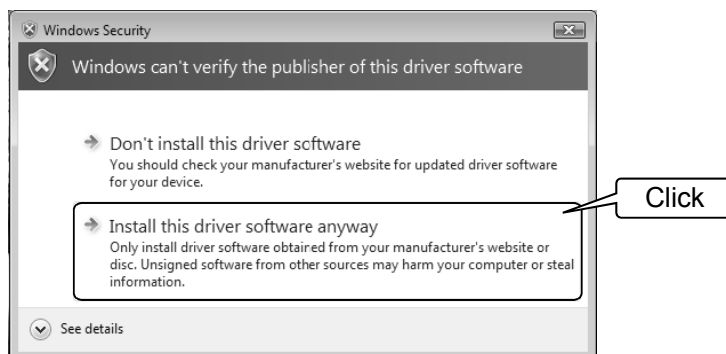


POINT

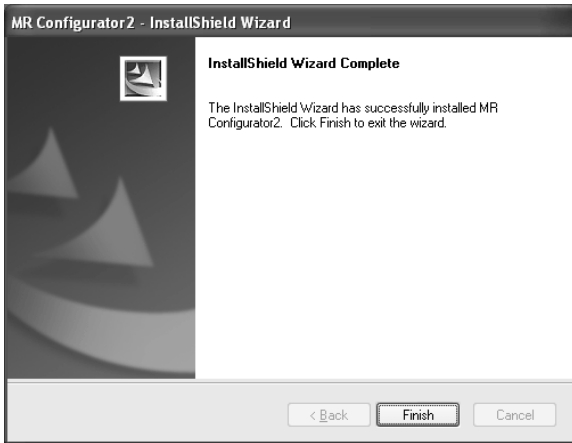
- When Windows XP is used, the verify screen appears. Click the "Continue Anyway" button.



- On Windows Vista or Windows 7, the security warning screen shown below appears several times. Select "Install this driver software anyway" for all three times. (The screen does not appear after the USB driver is registered.)



1. INTRODUCTION



8) When installation is completed, the next screen appears. Click the "Finish" button to end the setup. When restart message appears, starting again to use MR Configurator2.

POINT

- In the corresponding window, to stop installation, click the "Cancel" button.

1. INTRODUCTION

1.5 New hardware detection wizard

The New Hardware Adding Wizard appears when the servo amplifier powered on is connected with the personal computer via USB for the first time (Only when Windows XP is used). New hardware is automatically detected when Windows 2000, Windows Vista or Windows 7 is used. The following shows a display flow.

(1) When Windows XP is used



Click "Next".



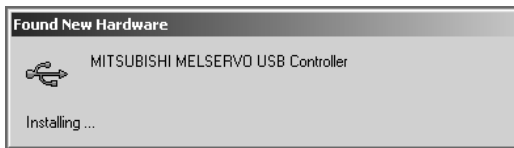
Click "Continue Anyway".



Click "Finish".

1. INTRODUCTION

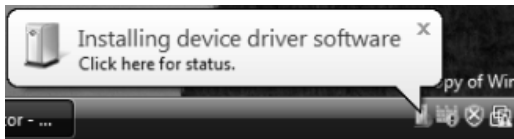
(2) When Windows 2000 is used



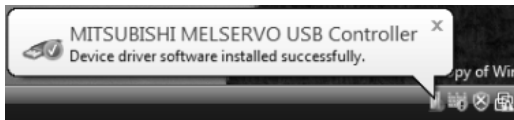
Indications on the left appear during automatic registration.
(Operation is not required.)



(3) When Windows Vista or Windows 7 is used



Indications on the left appear during automatic registration.
(Operation is not required.)



2. HOW TO USE THE SOFTWARE

2. HOW TO USE THE SOFTWARE

2.1 Operation

The method of selecting the command is the operation procedures using the mouse.
Unavailable commands are grayed out.

2.1.1 Start-up

(1) When connecting to the servo amplifier

- 1) Click the "Start" button of the task bar to open the menu.
- 2) Point to submenu "All Programs", "MR Configurator2" from "MELSOFT Application".
- 3) Click "MR Configurator2".

(2) When operating via a motion controller

Double-click the "Servo Parameter" icon of the Motion controller programming software MT Developer2.

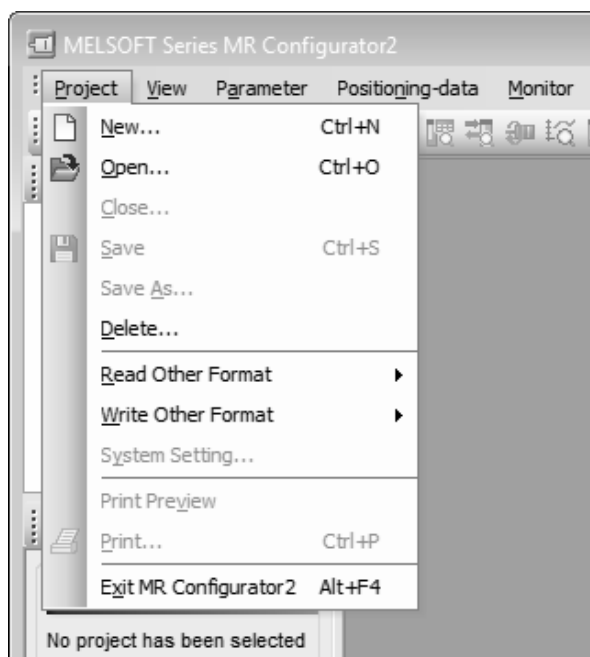
(3) When operating via a simple motion unit

Double-click the "Servo Parameter" icon of the simple motion unit programming software tool, which is integrated in the PLC programming software GX Works2.

2.1.2 Project

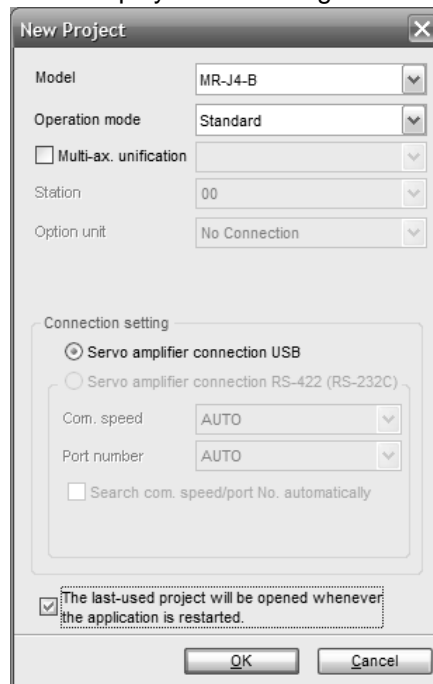
(1) New

Clicking "Project" on the menu bar displays the following menu.

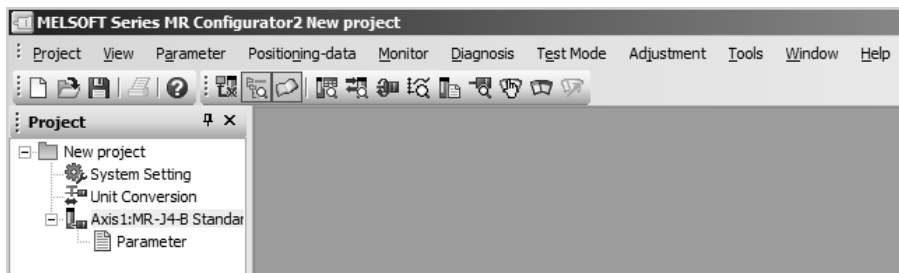


2. HOW TO USE THE SOFTWARE

Clicking "New" in the sub menu displays the following window.



When the model is selected, and "OK" button is clicked, the following windows are displayed.



(2) Open

Read the input information from the saved file.

Clicking "Open" in the sub menu opens a window, where you can specify the project to be read.

(3) Close

Close the currently open project.

Clicking "Close" in the sub menu closes the project.

(4) Save

Modify and save the currently open project.

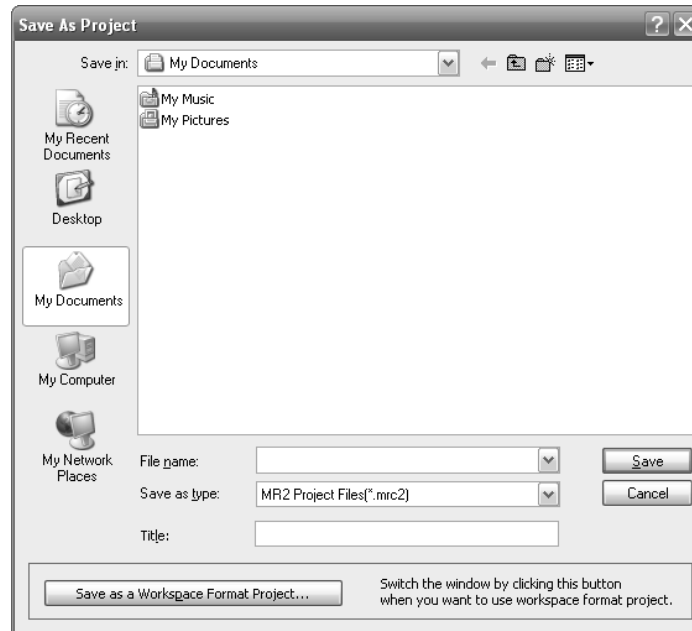
Clicking "Save as project" in the sub menu saves the project.

2. HOW TO USE THE SOFTWARE

(5) Save As

Save the current input information into a file. If the information to be repeatedly input is saved, that information can be read by clicking "Open".

Clicking "Save As" in the sub menu displays the following window.



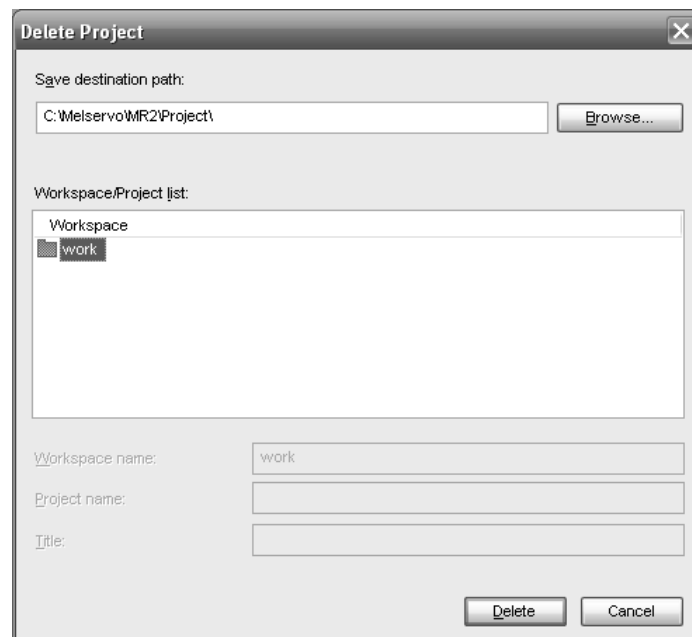
Note)

When you want to save the existing workspace format MR Configurator2 project, click the "Save as a Workspace Format Project" button.

(6) Delete

Delete the existing project for the workspace format MR Configurator2.

Clicking "Delete" in the sub menu displays the following window.

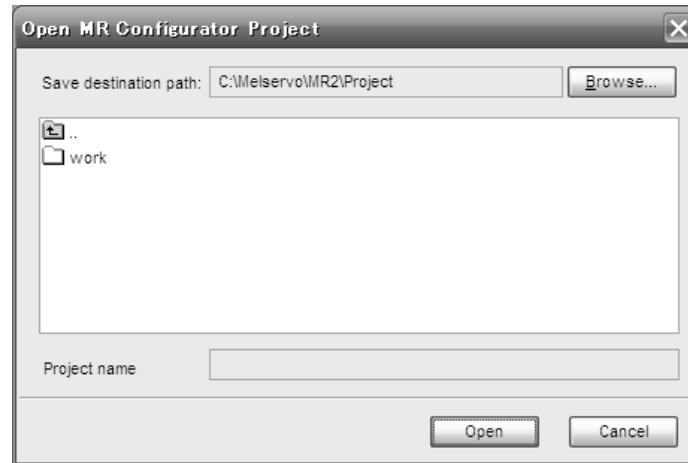


2. HOW TO USE THE SOFTWARE

(7) Open MR Configurator Project

Open an existing MR Configurator project.

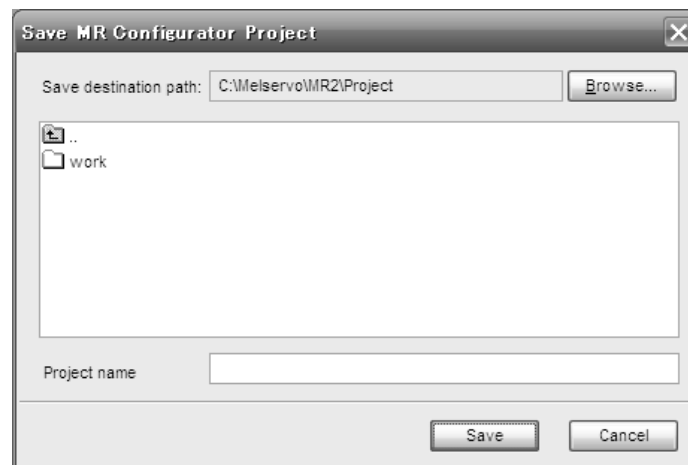
Clicking “Read Other Format” - “Open MR Configurator Project” in the sub menu displays the following window.



(8) Save MR Configurator Project

Open an existing MR Configurator project.

Clicking “Write Other Format” - “Save MR Configurator Project” in the sub menu displays the following window.

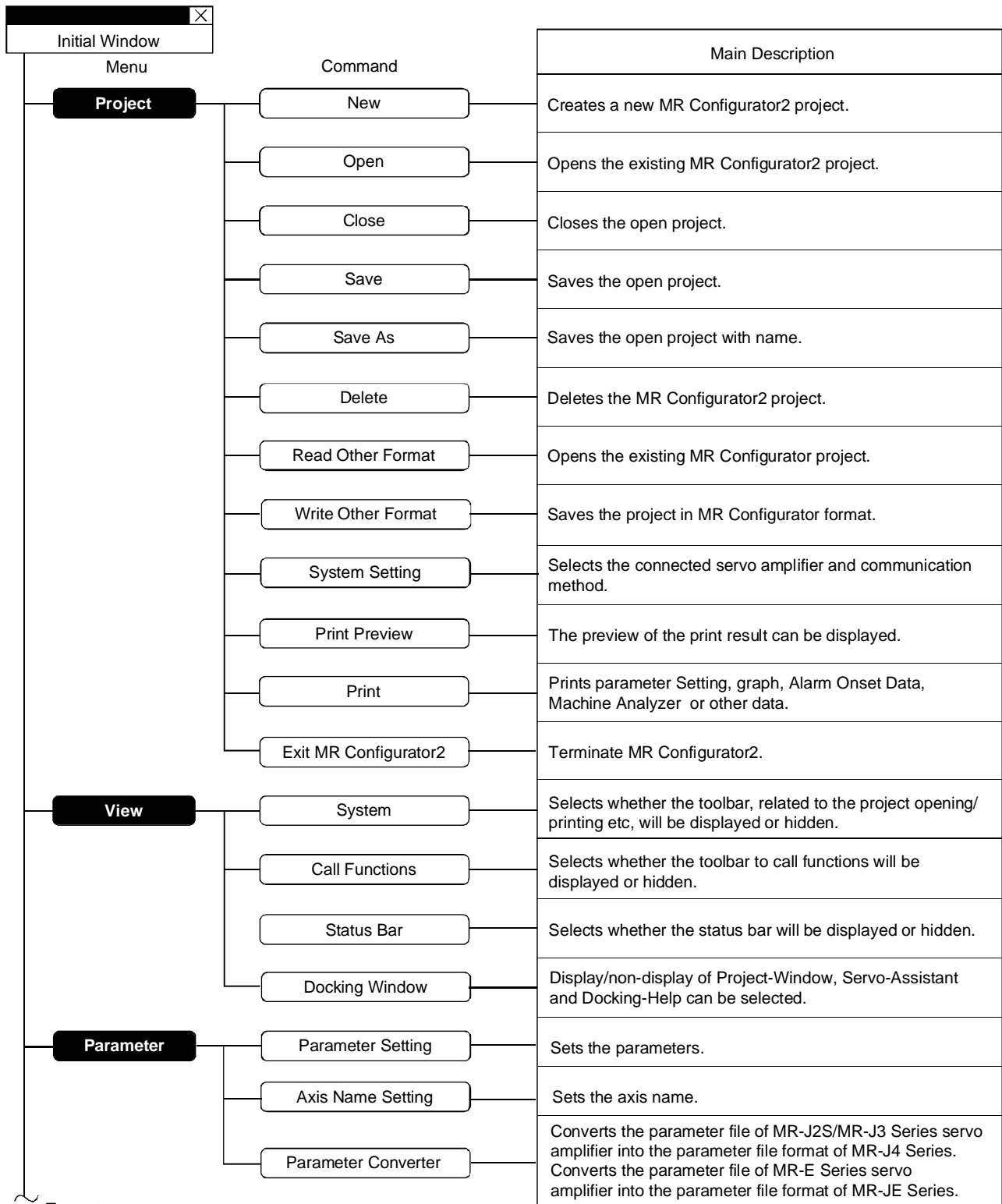


2. HOW TO USE THE SOFTWARE

2.2 Commands and display windows

This section provides commands and their main descriptions.

For the method of using each command, the detailed explanation is provided in the help function of the servo amplifier software.



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2. HOW TO USE THE SOFTWARE

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| | | Main Description | |
|------------------|---|-----------------------------|---|
| Menu | Positioning-data | Command | |
| | | Point Table | Sets the point table. |
| | | Program | Sets the program. |
| Monitor | | Display All | Displays the servo status item-by-item numerically. |
| | | I/O Monitor | Displays the I/O signal, analog monitor and other status. |
| | | Graph | Displays the servo status in graphical form. |
| | | ABS Data Display | Displays the ABS data. |
| Diagnosis | | Alarm Display | Displays the monitored data at alarm occurrence if alarm or warning is currently occurring. Displays the detailed information if alarm or warning is currently occurring. |
| | | Alarm Onset Data | Displays the monitored data at alarm occurrence if alarm or warning is currently occurring. |
| | | Drive Recorder | Displays the drive recorder. |
| | | No Motor Rotation | Displays the reason why the servo motor does not rotate. |
| | | System Configuration | Displays the system configuration information. |
| | | Life Diagnosis | Displays the life diagnosis information. |
| | | Machine Diagnosis | Displays the machine diagnosis information. |
| | | Fully Closed Loop Diagnosis | Displays the monitor and parameters concerning the fully closed loop function. |
| Linear Diagnosis | Displays the monitor and parameters concerning the linear function. | | |
| Test Mode | | JOG Mode | Executes JOG operation. |
| | | Positioning Mode | Executes positioning operation. |
| | | Motor-less Operation | Executes motorless operation. |
| | | DO Forced Output | Executes DO forced output. |
| | | Program Operation | Executes programmed operation. |
| | | Single-step Feed | Executes single-step feed operation. |
| | | Test Mode Information | Displays the alarms and warnings which occurred at the start, end or during operation, in chronological order. |

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2. HOW TO USE THE SOFTWARE

Continued from previous page
Menu

| Menu | Command | Main description |
|-------------------|---|--|
| Adjustment | One-touch Tuning | Executes one-touch tuning. |
| | Tuning | Adjusts the gain parameters. |
| | Machine Analyzer | Executes machine analyzer. |
| | Advanced Gain Search | Executes Advanced Gain Search. |
| Tools | Update Parameter Setting Range | Acquires the parameter setting range from the connected amplifier and updates the data file of MR Configurator2. |
| | Machine Unit Conversion Display Setting | Sets the valid/invalid of machine unit conversion display and the unit/pulse/move distance for unit conversion. |
| Window | Cascade | Displays superimposed screens. |
| | Tile Vertically | Tiles the screens vertically. |
| | Tile Horizontally | Tiles the screens horizontally. |
| | Arrange Icons | Arranges minimized screens. |
| | Close All Windows | Closes all windows which are displayed. |
| | Reset Window Layout | Resets all windows layout. |
| Help | MR Configurator2 Help | Displays Help of MR Configurator2. |
| | About MR Configurator2 | Displays version information. |

2. HOW TO USE THE SOFTWARE

2.3 Precautions for test mode

⚠ WARNING

- Always touch the switches with dry hands. You may get an electric shock if you touch them with wet hands.
- Always operate the equipment with the front cover installed. Removing the front cover will expose the terminals and charged area having high voltages, which may lead to an electric shock.
- Keep the front cover closed while power is on the equipment is running. Otherwise, you may get an electric shock.

⚠ CAUTION

- Before starting operation, make sure that the parameters are set to correct values. Depending on machines, they may operate unpredictably.
- Take safety measures, e.g. provide covers, to prevent accidental contact of hands and parts (cables, etc.) with the servo amplifier heat sink, regenerative brake resistor, servo motor, etc. since they may be hot while power is on or for some time after power-off. Their temperatures may be high and you may get burnt or a parts may damaged.

(1) Servo on

In the JOG Mode, Positioning Mode, Program Operation, or Single-step Feed available in the Test, the servo amplifier's digital input signal Servo on (SON) is automatically switched on in the servo amplifier to start operation, independently of the ON/OFF status of Servo on (SON). Also, any external command pulse or input signal (except emergency stop) is not accepted until the test mode window is closed to terminate the command.

Servo on is automatically switched on by the following operation:

| Test mode | Mouse |
|-------------------|--|
| JOG Mode | Click the "Forward" or "Reverse" button. |
| Positioning Mode | |
| Program Operation | Click the "Operation Start" button. |
| Single-step Feed | |

(2) Stop

POINT

- To make an emergency stop, switch off the emergency stop signal of the servo amplifier or shut off the input power.

1) Perform the following operation to stop the test mode:

| Test mode | Mouse |
|-------------------|---|
| JOG Mode | When the check box for "Rotation only while the CCW or CW button is being pushed" on the JOG Mode window is not checked, click the "Stop" button. When the check box is checked, release the "Forward CCW" and "Reverse CW" buttons. |
| Positioning Mode | Click the "Pause" button or the "Stop" button. |
| Program Operation | |
| Single-step Feed | |

2. HOW TO USE THE SOFTWARE

2) The servo motor will stop if either of the following situations occurs in the test mode:

- The communication cable is disconnected.
- If the window is dragged or the other menu is opened, communication between the personal computer and the servo amplifier may be suspended temporarily, stopping the servo motor temporarily.
- Forced software stop is made.

2. HOW TO USE THE SOFTWARE

2.4 Simple language for program operation

The language used in the program operation-edit window will be described below.

2.4.1 Language

The chart below describes the commands in the program operation-edit window to execute the program operation mode, automatically goes into the position control mode.

Describe a program in upper case characters and Enter or Return at the end of a line. Up to 300 lines may be described.

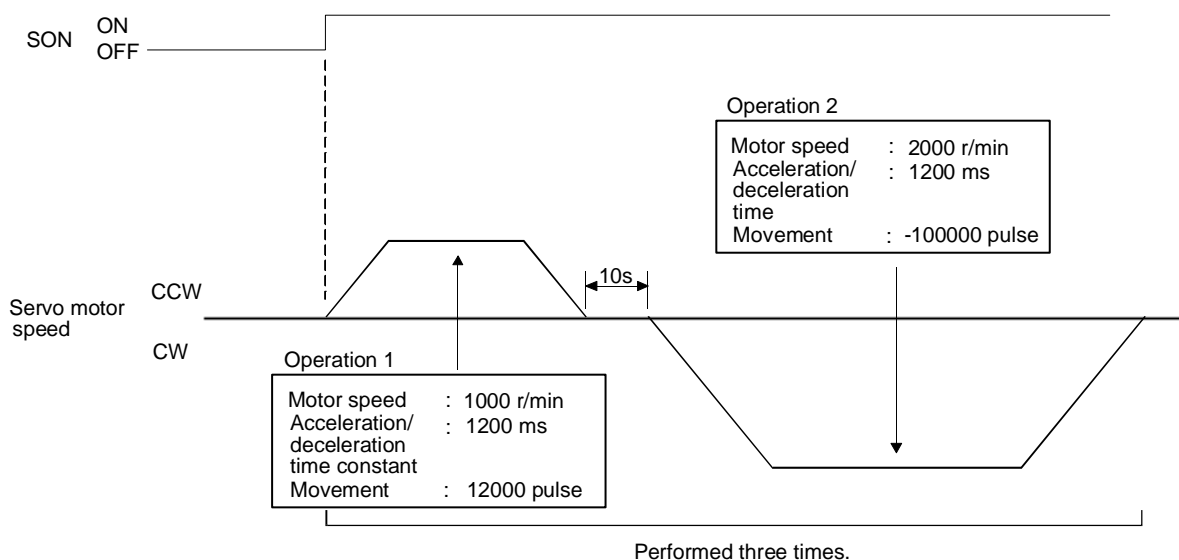
| Command | Name | Setting (**: Set value) | Setting range | Unit | Description |
|---------|--------------------------------------|-------------------------|--------------------------------------|-------|---|
| SPN | Feedrate | SPN (**) | 1 to permissible instantaneous speed | r/min | Used to set the command speed given to the servo motor for positioning. The set value should be not more than the permissible speed of the servo motor used. |
| STC | Acceleration/deceleration time | STC (**) | 0 to 50000 | ms | Used to set the acceleration/deceleration time. (Time required to reach the rated speed of the corresponding servo motor) |
| MOV | Move command | MOV (**) | -2147483647 to 2147483647 | pulse | Used to execute movement by the preset pulses. Positioning operation is performed with the set values of the feedrate (SPN) and acceleration /deceleration time (STC). No symbol: CCW rotation — : CW rotation |
| SYNC | Waiting external signal to switch on | SYNC (**) | As listed in the table at right. | | This command can be used for MR-J[]-A/MR-J3-T. Waits until the digital input signal (DI) of the servo amplifier, which was set, turns ON before executing the next operation. When "99" is set, the next operation is executed unconditionally. Please set the input signals as follows. In the input device setting of servo amplifier, signals which are not assigned in the signal assignment setting of position control mode are disabled even if they are selected here. When the model is MR-J3-T, the input device can be used in the external input signals of either CC-Link or CN6 connector. Input signals are assigned to the CN6 with PD06 to PD08. Set Value Device Input Signal 0 SON 1 LSP 2 LSN 3 TL 5 PC 6 RES 7 CR 99 Unconditional |
| TIM | Dwell command time | TIM (**) | 1 to 50 | s | Used to hold the next operation until the preset time elapses. |
| TIMES | Program count command | TIMES (**) | 1 to 9999 | times | Used to specify the number of cycles or times (from TIMES to STOP) that the positioning is to be repeated. Enter the TIMES (**) |
| STOP | Program stop | | | | Used to stop the program being executed. Need not be described on the last line. |

2. HOW TO USE THE SOFTWARE

2.4.2 Program example

As soon as the "Operation Start" button is clicked, SON is switched on automatically to start operation.

Timing chart



Program

TIMES (3) Repeats the program up to STOP three times.
 SYNC (0) Holds the program from running until the input signal with the set value of 0 (SON) switches on.
 SPN (1000) Sets the command speed to 1000r/min.
 STC (1200) Sets the acceleration/deceleration time to 1200ms. } Operation 1
 MOV (12000) Executes movement by 12000 pulses in the CCW direction. }
 TIM (10) Holds the next operation for 10s.
 SPN (2000) Sets the command speed to 2000r/min. } Operation 2
 MOV (-100000) Executes movement by 100000 pulses in the CW direction. }
 STOP

In this example, the acceleration/deceleration time in Operations 1 and 2 are the same.

In this case, the acceleration/deceleration time in Operation 2 need not be set. In this way, set values different from those in the preceding operation need only be described in the operation program.

2.4.3 Attention

When the program operation mode is executed with the program operation mode window and another window (Display All window) being displayed at the same time, the program may progress slower, making the dwell command time longer than the set value.

3. TROUBLESHOOTING

3. TROUBLESHOOTING

(1) Communication error

If communication between the personal computer and the servo amplifier is suspended and the communication error as shown in the following window occurs, check the detail code on the error message and remove its cause.

<Possible cause> Poor connection of communication cable, system setting mistake, noise entry, hard disk fault, etc.



| | |
|----------|--|
| *****001 | Communication error |
| *****002 | Communication time-out error |
| 80A00107 | |
| *****009 | Insufficient memory error |
| 80010400 | Station number specification error |
| 80010200 | Communication port specification error |
| 80070100 | Write-protected parameter |
| 80080200 | The RD signals cannot be turn on |

(2) If driver has been installed, driver installation screen appears at USB connection.

The driver must be installed for each USB port. When the servo amplifier is connected to a different USB port for the first time, the driver installation screen appears.

(3) Time-out error occurs at return from standby mode

| | |
|-------|--|
| POINT | <ul style="list-style-type: none"> ▪ Some personal computers cannot return to normal from a system standby. In this case, make the system standby of the personal computer invalid. |
|-------|--|

When a system standby has been set in the power option or power saving mode of a notebook PC, a time-out error will occur at a return from a system standby.

3. TROUBLESHOOTING

(4) Communication can never be made if USB is connected

The driver may not be set correctly. Check whether the USB driver is set correctly on the Device manager screen and whether "MITSUBISHI MELSERVO USB Controller" is displayed under the "Universal Serial Bus controllers" folder on the Device manager screen with the servo amplifier powered on. If "? USB Device" is displayed, delete the driver once, then power the servo amplifier off and then on, and reinstall the driver.



Set the Device Manager screen in any of the following methods.

(a) When Windows 2000 is used

Click My Computer, right-click, and click "Property". Open System Properties, click the "Hardware" tag, and click "Device Manager".

(b) When Windows XP is used

Click the "Start" button on the task bar to open the menu. Click "My Computer" to open the My Computer screen, and click "View system information" to open "System properties". Click the "Hardware" tag, and click "Device Manager".

(c) When Windows Vista or Windows 7 is used

Click the "Start" button on the task bar to open the menu. Right-click "Computer" and then click "Property". Open "System properties" and then click "Device Manager".

(5) MR Configurator2 cannot be started in Windows 2000 Service Pack4

If an update program for Windows 2000 Service Pack4 is installed, the phenomenon above may occur. In this case, install Internet Explorer 6.0 or later.

REVISIONS

*The manual number is given on the bottom left of the back cover.

| Print Data | *Manual Number | Revision |
|------------|-----------------|---|
| Sep., 2010 | IB(NA)0300163-A | First edition |
| Mar., 2012 | IB(NA)0300163-B | 1-1 Add MR-J4-A, MR-J4-B, MR-J3-A, and MR-J3-T in the table 1-2 Add MR-J4-B in the table 1-3 Add MR-J4-B in the table 1-4 Add 64-bit OS 1-6 Add to SSCNETIII/H communication path in the figure 1-7 Add to SSCNETIII/H communication path in the figure 2-2 Changes to the MR-J4-B from MR-J3-B models in the figure 2-6 Add "Point table", "Drive Recorder" and "Machine Diagnosis" 2-7 Add "Single-step Feed", "One-touch Tuning" and "Reset Window Layout" 2-8 Add "Single-step Feed" 2-10 Delete the description of MR-J3-B 2-10 Add the description of MR-J4-A to column of SYNC command 2-11 Add SYNC command in the figure |
| Jun., 2012 | IB(NA)0300163-C | 1-1 Available "Update Parameter Setting Range" of MR-J4-A 1-1 Available "Fully Closed Loop Diagnosis" of MR-J4-B 1-2 Available "Fully Closed Loop Diagnosis" of MR-J4-B 1-3 Available "Fully Closed Loop Diagnosis" of MR-J4-B 1-1 Add "Parameter Converter" in the table 1-2 Add "Parameter Converter" in the table 1-3 Add "Parameter Converter" in the table 2-5 Add "Parameter Converter" |
| Feb., 2013 | IB(NA)0300163-D | 1-1 Add MR-J4-B-RJ010, MR-JN-A and MR-JE-A in the table 1-1 Add "Program" in the table 1-1 Available "Fully Closed Loop Diagnosis" of MR-J4-A 1-1 Available "Linear Diagnosis" of MR-J4-A 1-2 Add "Program" in the table 1-3 Add MR-J4-B-RJ010 in the table 1-3 Add "CC-Link IE Field" and "Program" in the table 1-7 Add "MR-J4-B-RJ010" to "(4) For setting up via a simple motion" 1-7 Describe the USB connection by SSCNET and CC-Link IE Field 1-7 Modify the description of GX Communication setting 2-3 Modify the description of "(5) Saving the project with name" 2-3 Modify the description of "(6) Deleting the project" 2-6 Add "Program" to "Positioning-data" |

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