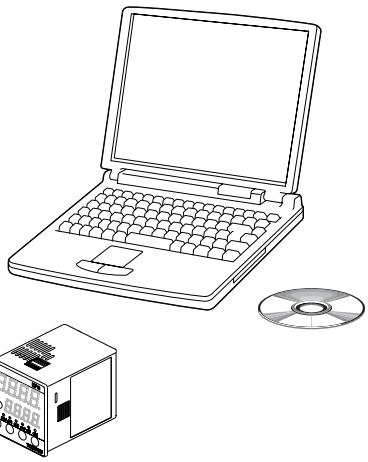
azbil

No. CP-UM-5355E

TM

MLP200 Loader Package for MPC Series Panel Mount Mass Flow Controller

User's Manual

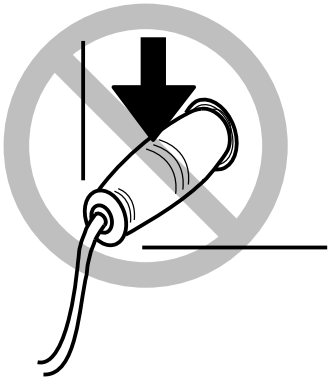


Thank you for purchasing the MLP200 Loader Package for MPC Series Panel Mount Mass Flow Controller.
This manual contains information for ensuring correct use of the MLP200. It also provides necessary information for installation, maintenance, and troubleshooting.
This manual should be read by those who design and maintain devices that use the MLP200.
Be sure to keep this manual nearby for handy reference.

Yamatake Corporation

IMPORTANT

Do not apply a strong force while connecting a loader plug. Failure to do so might damage the instrument.



Handling Precautions

Application of excessive force to the loader plug might cause communication failure. If such failure happens, reconnect the loader plug correctly.

REQUEST

Ensure that this User's Manual is handed over to the user before the product is used.

Copying or duplicating this User's Manual in part or in whole is forbidden. The information and specifications in this User's Manual are subject to change without notice.

Considerable effort has been made to ensure that this User's Manual is free from inaccuracies and omissions.
If you should find any inaccuracies or omissions, please contact Yamatake Corporation.

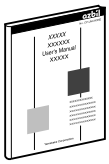
In no event is Yamatake Corporation liable to anyone for any indirect, special or consequential damages as a result of using this product.

Unpacking

Check the following items when removing the MLP200 from its package:

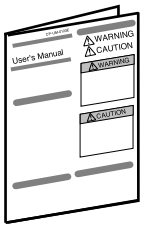
1. Check the model No. to make sure that you have received the product that you ordered.
2. Check the MLP200 for any apparent physical damage.
3. Check the contents of the package against the Package List to make sure that all accessories are included in the package.

After unpacking, handle the MLP200 and its accessories taking care to prevent damage or loss of parts.
If an inconsistency is found or the package contents are not in order, immediately contact your dealer.

Name	Model No.	Q'ty	Remarks
System disk 	MLP200A100	1	CD-ROM
USB Loader cable	-	1	-
User's Manual 	CP-UM-5355E	1	This manual.

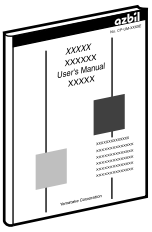
The Role of This Manual

In all, four manuals have been prepared for the MPC Series. Read the manual according to your specific requirements.
The following lists all the manuals that accompany the MPC Series and gives a brief outline of the manual:
If you do not have the required manual, contact Yamatake Corporation or your dealer.



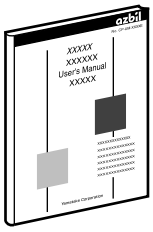
MPC Series Panel Mount Mass Flow Controller
Manual No. CP-UM-5317E

This manual is supplied with the product. Personnel in charge of design and/or manufacture of a system using this unit must thoroughly read this manual. This manual describes the safety precautions, installation, wiring and primary specifications. For further information about operation, refer to other manuals, "Installation & Configurations".



MPC Series Panel Mount Mass Flow Controller
"Installation & Configurations" **Manual No. CP-SP-1153E**

This manual describes the hardware and all functions of this unit. Personnel in charge of design, manufacture, operation, and/or maintenance of a system using this unit must thoroughly read this manual. This manual also describes the installation, wiring, all functions and settings of this unit, operating procedures, troubleshooting, and detailed specifications.



MPC Series Panel Mount Mass Flow Controller
"Communication Functions" **Manual No. CP-SP-1154E**

Those using the "communication functions" of the MPC series should read this manual.
This manual describes an outline of communications, wiring, communication procedures, a list of MPC series communication data, how to remedy trouble, and communication specifications.

MLP200 Loader Package for MPC Series Panel Mount Mass Flow Controller **Manual No. CP-UM-5355E**

This manual.

This manual is supplied with the MLP200 Loader Package.
The manual describes the software used to make various settings for MPC Series using a personal computer. Personnel in charge of design or setting of a system using MPC Series must thoroughly read this manual. The manual describes installation of the software into a personal computer, operation of the personal computer, various functions, and setup procedures.

Organization of This User's Manual

This manual is organized as follows:

Chapter 1. INTRODUCTION

Be sure to read this chapter before you start using the Loader Package. This chapter describes the required operating environment for the personal computer, how to install the package, and briefly introduces its features.

Chapter 2. INSTALLATION, STARTING UP AND QUITTING THE MLP

This chapter describes how to install, start up and quit.

Chapter 3. SETTING UP THE MPC

This chapter describes how to set up the data.

Chapter 4. MONITORING THE OPERATION STATUS OF THE MPC

This chapter describes how to change the settings, as well as the screens monitoring the operation status.

Chapter 5. TROUBLESHOOTING

This chapter describes how to remedy trouble.

Contents

Conventions Used in This Manual

The following conventions are used in this manual:

Handling Precautions :
Handling Precautions indicate items that the user should pay attention to when handling the MLP200.

Note : Notes indicate useful information that the user might benefit by knowing.

☞ : This indicates the item or page that the user is requested to refer to.

(1), (2), (3) : The numbers with the parenthesis indicate steps in a sequence or indicate corresponding parts in an explanation.

[OK] button : Indicates a selection button in screens displayed on the personal computer.

[Option] : Indicates messages and menus displayed on the personal computer.

[Option] → [Type Setting] :
Indicates the order to select the [Option] first and then select the [Type Setting] displayed on the personal computer.

>> : Indicates the result of an operation, details displayed on the personal computer or devices, or the state of a device after an operation.

[Ctrl] key :
[A] key
Indicates keys on the keyboard.

[Ctrl]+[A] key : Indicates the operation of pressing the [A] key with the [Ctrl] key on the keyboard held down.

Chapter 1. INTRODUCTION

1 - 1 Overview

The MLP200 (simply called “MLP” from here on) is an engineering tool for MPC Series Panel Mount Mass Flow Controller (simply called “MPC” from here on).
The MLP runs on Windows 2000/XP/Vista (simply called "Windows" from here on) on a personal computer.

Note

- Install MLP on the hard disk following the procedure in
  ☞■ Installing procedures (page 2-1).
  Use the system disk that you have purchased as the backup system.

Handling Precautions

- This disk does not contain the system, and cannot be used as they are.

■ Loader functions

The MLP has the following functions:
- Setup function
- Monitor function

● Setup function

This function is for setting up parameters required for the operation of the MPC on the personal computer and writing (setting) them to the MPC.

● Monitor function

After the setup parameters have been written to the MPC is running, switching of modes (operating mode, instantaneous SP No. in use etc.), run state and alarm occurrence can be checked.
The run state can also be checked on the Trend screen, and sampled data can be output in CSV format so that it can be handled in third-party spreadsheet software such as Microsoft Excel.

Handling Precautions

- The monitor target is limited to only one unit when the loader jack on the (rear panel) is used for performing monitoring.

1 - 2 System Operating Environment

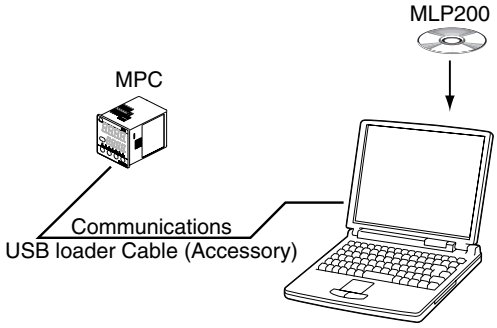
The following system environment is required for using the loader:

■ Hardware

Item	Description	
Personal Computer	Target model	PC/AT compatibles with a Pentium chip or higher
	Memory	32M byte or more
	Operating system	Windows2000 Professional/XP Home/ XP Professional/Vista (32 bits)
	USB Port	1 port or more (Use USB loader cable)
	Serial port	9-pin, serial port, 1ch or more (Use CML10L)
Peripheral Devices	Display	800 X 600 dot or more, 1024 X 768 dot or more, 16 bit color or more
	Hard disk drive	Hard disk with at least 40M byte of free space
	CD-ROM drive	1 drive or more
	Pointing device	Windows-compatible mouse or equivalent device

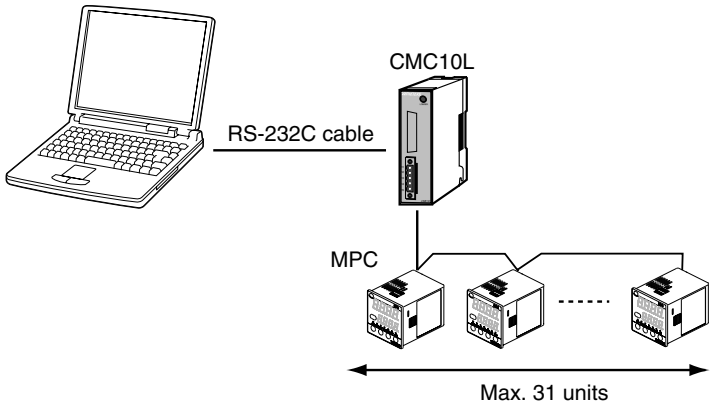
■ Hardware configuration

● General configuration (connected with USB loader cable)



● Configuration with CMC10L (MPC with RS-485 communications function only)

If multiple MPC units (max. 31) with RS-485 communications are connected, the CMC10L must be used. The CMC10L is a converter for RS-232C ↔ RS-485 conversion.
(However, if the PC has a 3-wire RS-485 communications port, the CMC10L is not required.)



Note

- Personal computer used for confirmation of operating environment

Manufacturer	Model No.
Dell	OptiPlex GX270
IBM	ThinkPad A31

Chapter 2. INSTALLATION, STARTING UP AND QUITTING THE MLP

2 - 1 MLP Installation

■ MLP installation procedures

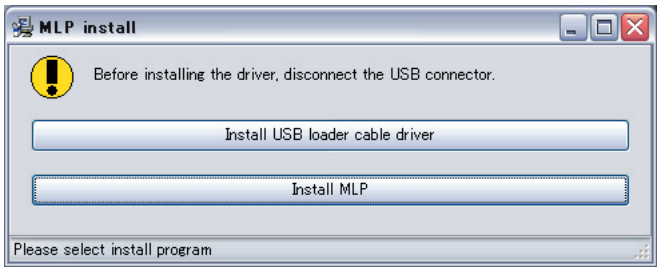
The MLP is installed on the hard disk of a personal computer. After installation, keep the system disk that you have purchased as a backup.
This section describes how to install the MLP on a personal computer.

! Handling Precautions

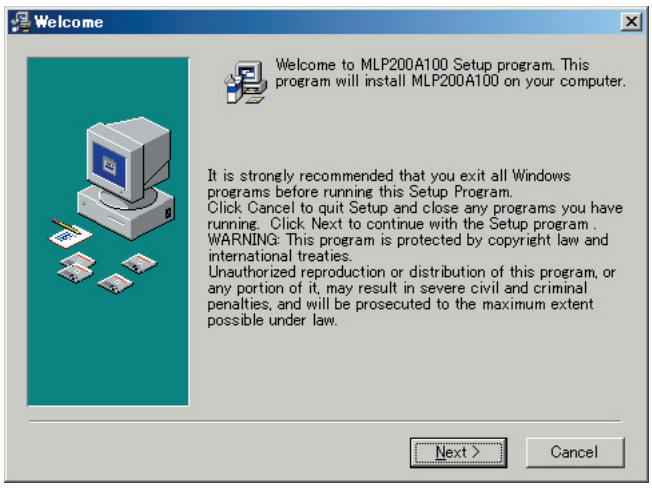
- Since the CD-ROM does not include an operating system for a personal computer, the program cannot be used on a personal computer which does not have an OS.
- If you start up the Installer while another application is running, the Installer may malfunction.
  Remove other resident applications from their directories before starting up the Installer. The MLP sometimes cannot be started up depending on the combination of other applications and drivers. For details on Windows and personal computer settings, refer to the User's Manuals provided with Windows and the personal computer.

The following descriptions and sample screens are based on a personal computer with Windows XP as the OS.

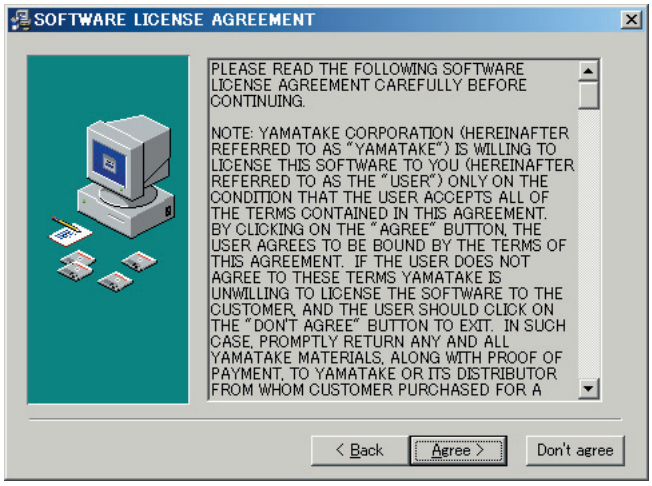
(1) Set the CD-ROM in the CD-ROM drive of your personal computer.
>>The installation program starts automatically, and the USB/MLP selection screen appears.



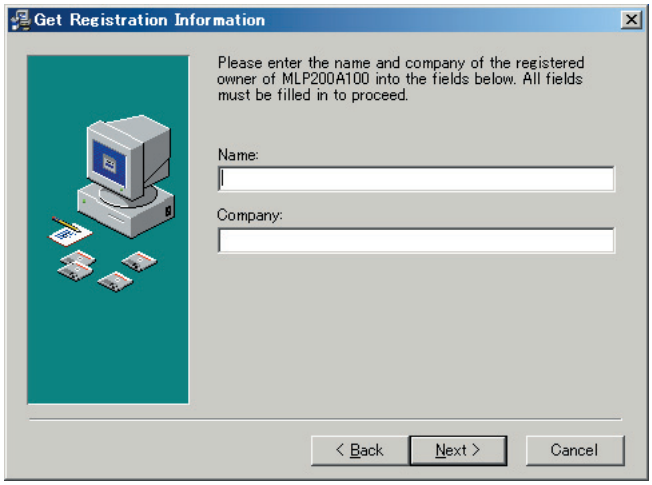
(2) Click [Install MLP] button.
>>The following screen appears:



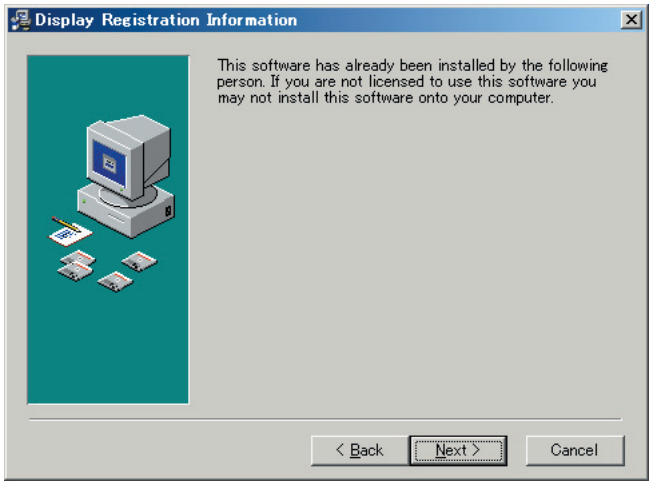
(3) Click [Next >] button.
>>The following screen appears :



(4) If you agree to the software license agreement and wish to install the loader, click the [Agree >] button.
If you abort the installation, click the [Don't agree] button.
>>When clicking the [Agree >] button, the following screen appears :

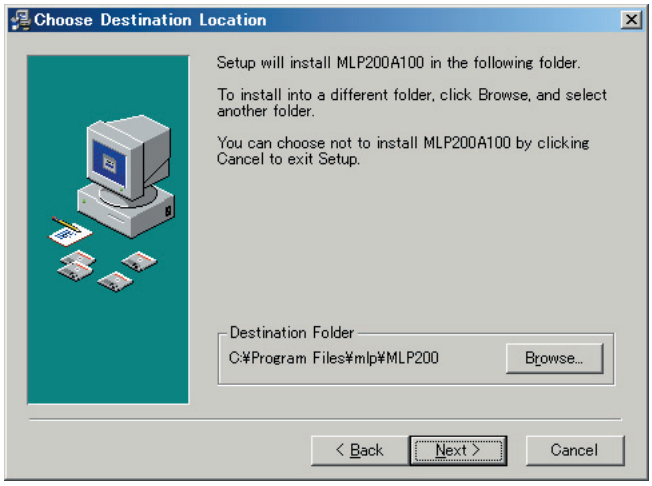


(5) Enter a registered user name and company name, and then click the [Next >] button.
>>The following screen appears :



(6) Click [Next >] button.

>>The following screen appears :

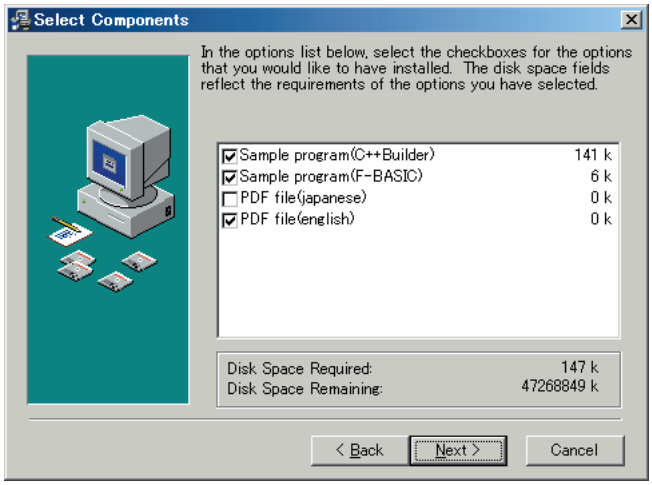


Note

- To change the installation destination directory, click [Browse...] button.

(7) Click [Next >] button.

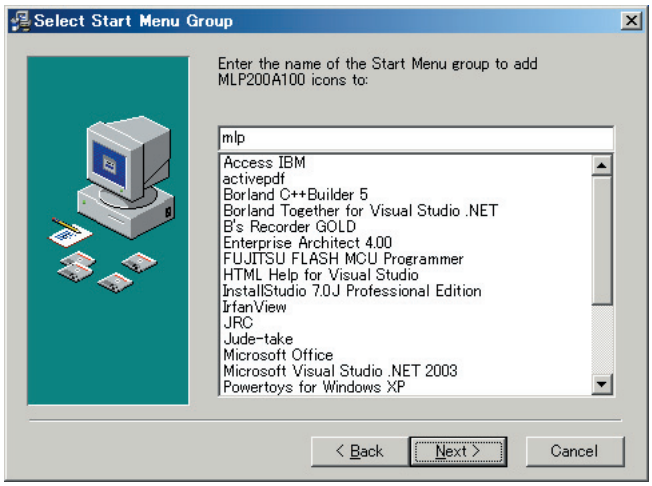
>>The following screen appears :



Note

- Check the necessary files. To display a PDF file, Adobe Reader is required. If Adobe Reader is not already installed on your PC, download it from the Adobe Systems webpage.

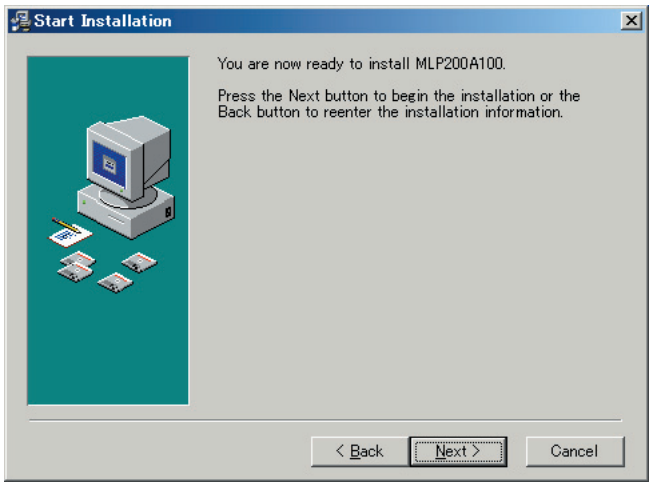
(8) Check on (put a check mark : ☑) software components you wish to install and click [Next >] button.
>>The following screen appears :



Note

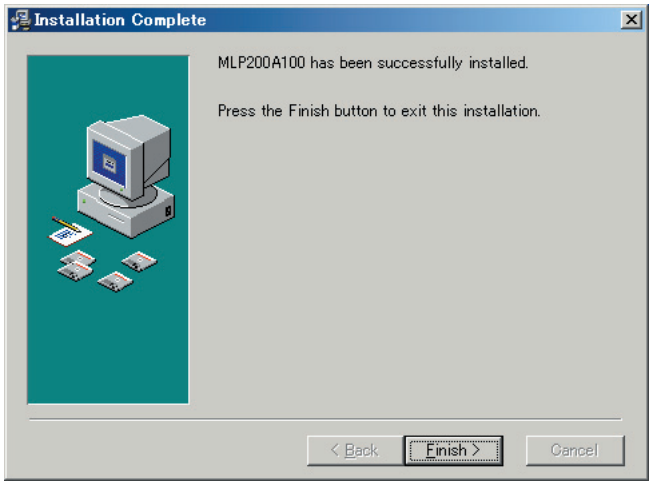
- To change the program folder, enter the new folder name.

(9) Click [Next >] button.
>>The following screen appears :



(10)Click [Next >] button.

>>The following screen appears :



(11)Click [Finish >] button.

>>When the installation is completed successfully, the screen will return to the Windows screen.

2 - 2 Installing the USB Loader Cable Device Driver

A device driver must be installed before using the USB loader cable.
Follow the procedure below to install the device driver.

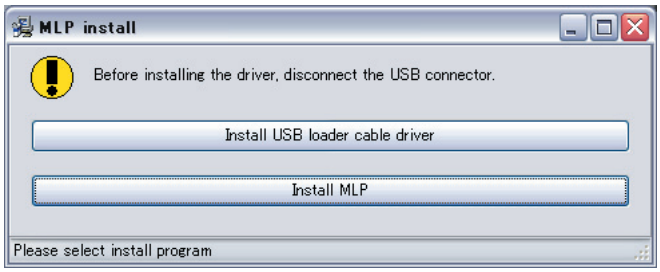
■ Installing the device driver

Handling Precautions

- Be sure to follow the procedure below when installing the device driver. The USB cable may not be recognized if the procedure is not followed. If the cable is not recognized, uninstall the driver and then install it again.
- Administrator privileges on the computer are required for driver installation. Installation should be done by the administrator or by a user who belongs to the administrator group. The USB loader cable is supported on Windows 2000/XP/Vista (32 bit type). It is not supported on 64-bit Windows XP, or on Windows 95, Windows NT, MS-DOS or PC-DOS.
- If there are multiple USB ports, connect the USB loader cable to the same port every time. If it is connected to a different port, there is a chance that driver installation may be required again.

1. Put the MLP CD-ROM into the CD-ROM drive of the personal computer.

>>The installation program is then started up automatically and the following screen appears:

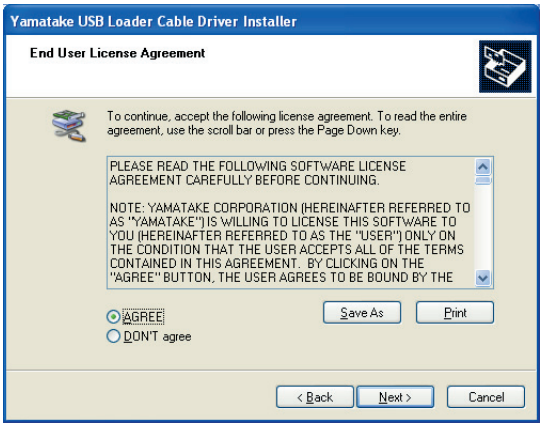


(1) Click the [Install USB loader cable driver] button.

>> The following screen appears:

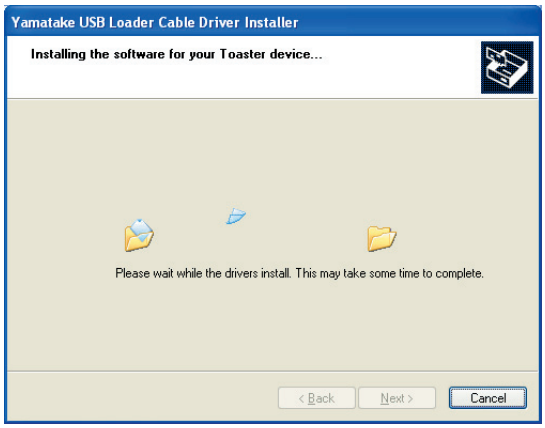
(2) Click the [Next >] button.

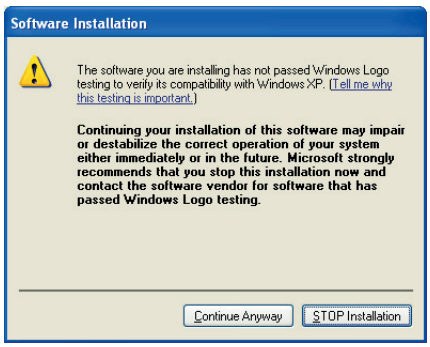
>> The following screen appears:



(3) Select [AGREE] and click the [Next>] button.

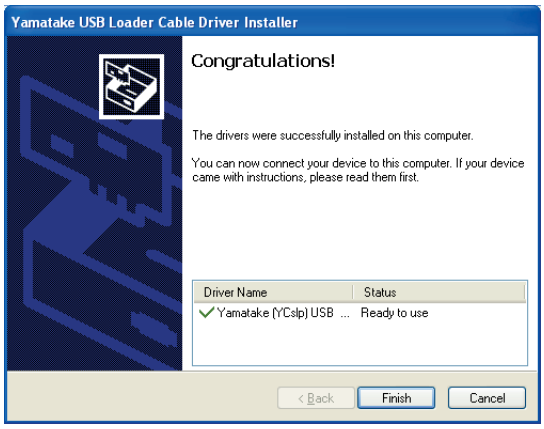
>>The following screen appears :





(4) Click the [Continue Anyway] button.

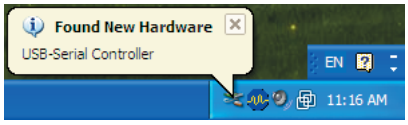
>>The installation program then starts up, and after it is completed, the following screen appears:



(5) Click [Finish] button to complete the installation.

2. Insert the USB loader cable into the USB port.

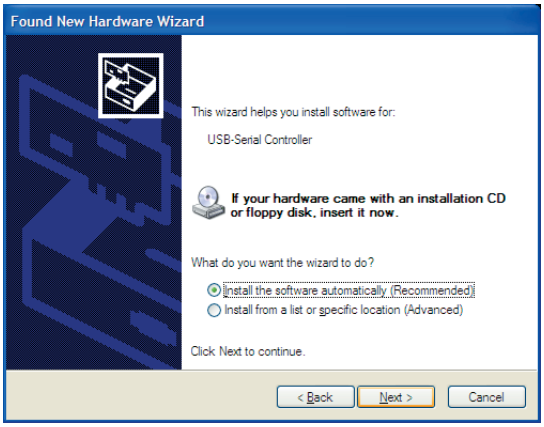
>>When Windows recognizes the USB cable, the notification shown below appears on the task tray and the driver installation wizard appears.



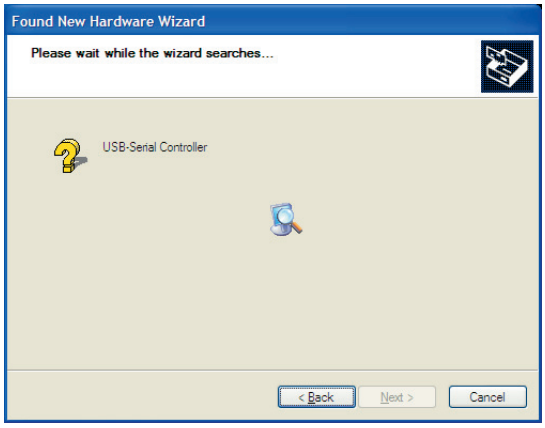
3. Install the device driver.

(1) Usually, when Windows recognizes the USB loader cable, the window shown below appears. (In some cases, depending on the Windows environment, it may not appear.) Select [No, not this time] and click the [Next >] button.

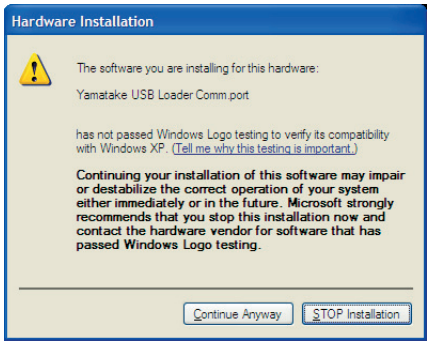
(2) For the retrieval location of the device driver to be installed, select the [Install the software automatically (Recommended)] and click the [Next >] button.



>>Retrieval of the device driver starts.

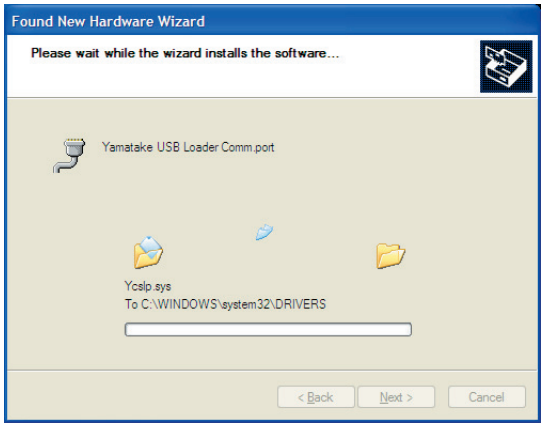


>>When the device driver is found, the following window appears:

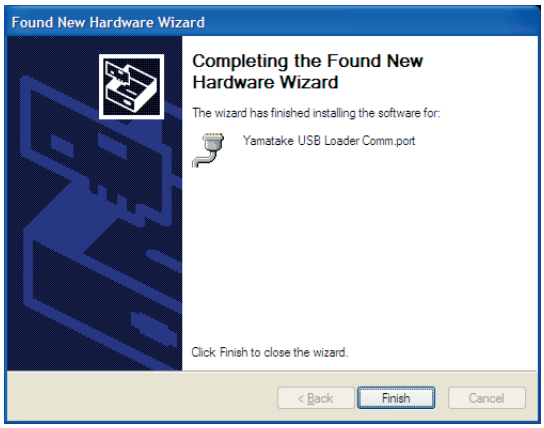


(3) Click [Continue Anyway].

>>Installation of the device driver starts

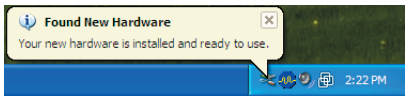


>>When the device driver installation is complete, the following window appears:

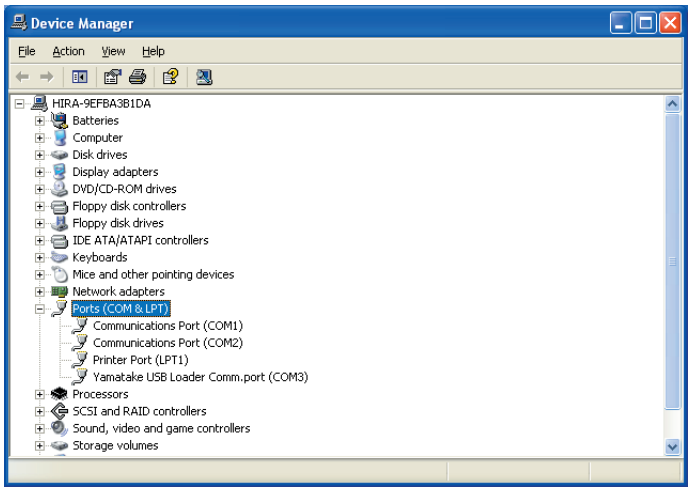


(4) Click [Finish].

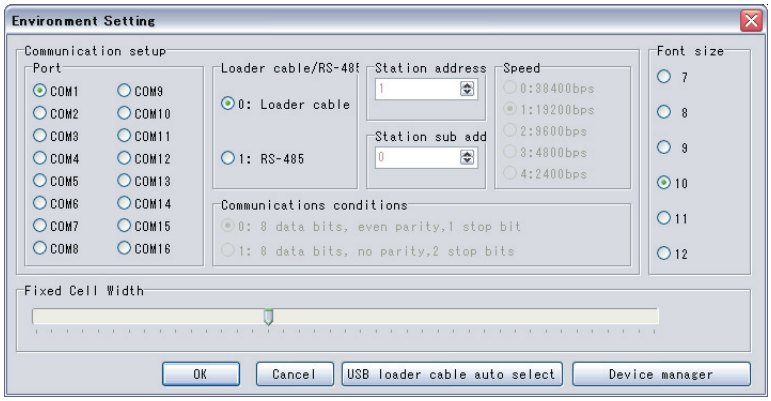
>>When the installation is complete, the notification shown below appears on the task tray, and Windows now correctly recognizes the USB loader cable.



(5) Select [Control Panel] → [System] → [Hardware] → [Device Manager] (for Windows XP/2000), and find the port number for the Yamatake USB Loader Comm. from [Ports (COM & LPT)].



(6) Start the MLP, select [Menu] → [Option], and set to the communications port number obtained in the previous step. Then press the [OK] button to complete the configuration.



Note

- When the [USB loader cable auto select] button is clicked, port selection can be done automatically .

Note

- If the MLP loader CD-ROM is not available, execute drvsetup.exe on the computer on which the MLP is installed. The setup program is normally installed in C:\Program Files\MLP\MLP200. Then install the device driver.

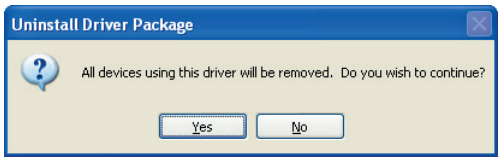
■ Uninstalling the device driver

Handling Precautions

- Removing the driver requires restarting the computer. Close other applications first, and then uninstall the driver.
- To uninstall the driver, administrator rights are required on the computer. Uninstalling should be done by the administrator or by a user who belongs to the administrator group.

1. Execute the driver removal program.

(1) Go to [Control Panel] → [Add or Remove Programs] and click on [Windows Driver Package - Yamatake (YC slp) USB (04/19/2007 1.0.0)]. Click the [Change/Remove] button.



(2) Click the [Yes] button.

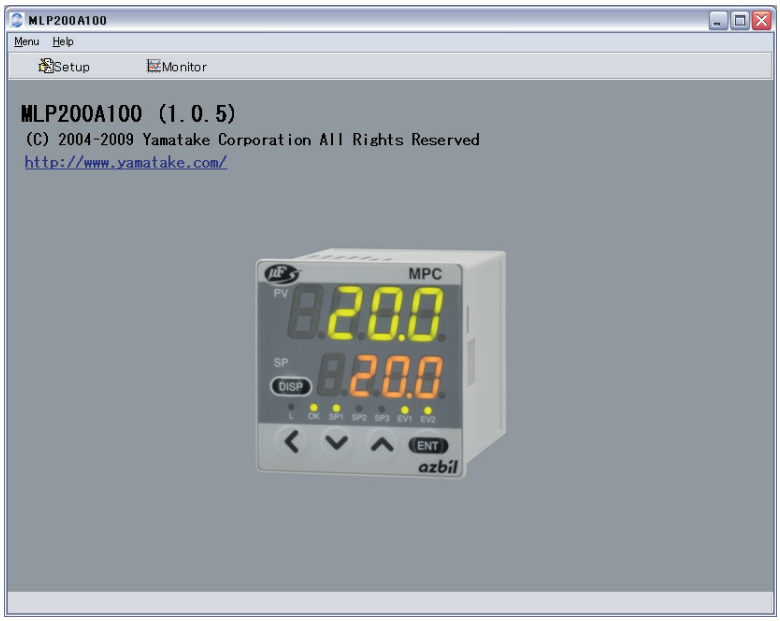
(3) Restart the computer.

2 - 3 Starting up and Quitting the MLP

■ Starting up the MLP

Double-click the MLP200A100 icon on the desk top or click [Start] button at the lower portion of the screen and select [Programs] → [MLP] → [MLP200A100].

>>The MLP is started up and the menu window is displayed.



Note

- For the operating system details and the mouse setup, refer to User's Manuals provided with Windows.

■ Quitting the MLP

Click icon at the top right of the screen.

The operation is the same by selecting the [Menu] → [Quit].

>>The MLP is completed.

Chapter 3. SETTING UP THE MPC

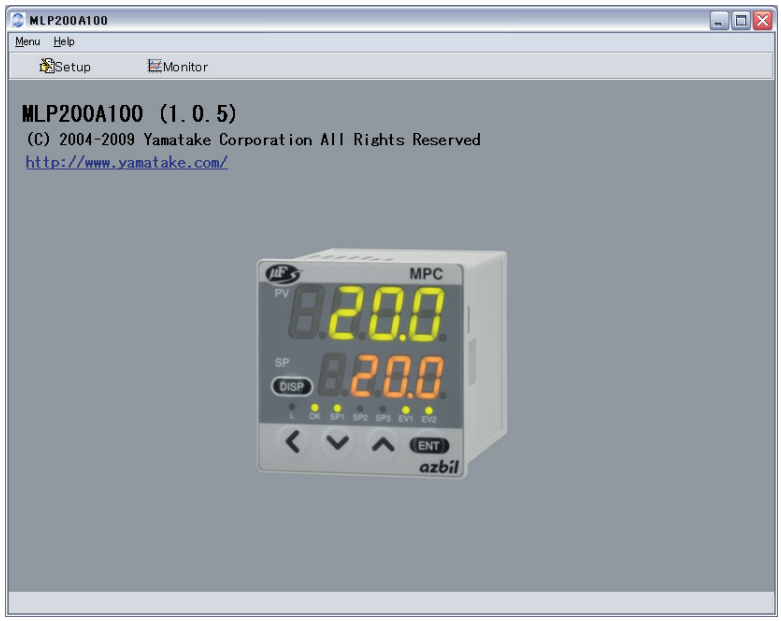
3 - 1 Setup Function

■ Overview

The setup function allows you to set the various parameters (about 10 to 50 constants required for operation) and write these parameters to the MPC so that it functions according to your particular control requirements.
When the MPC is used for the first time, it will not function as required unless it is set up by using this setup function.
Parameters such as SP (set point) and control constants that are changed relatively frequently while the MPC is running can also be set from the monitor function screen.
By the setup function, parameters that hardly need changing later once they are set are saved to file in list format before the MPC is run, and the saved file is called up and written to the MPC in a single operation.

■ Screen explanations

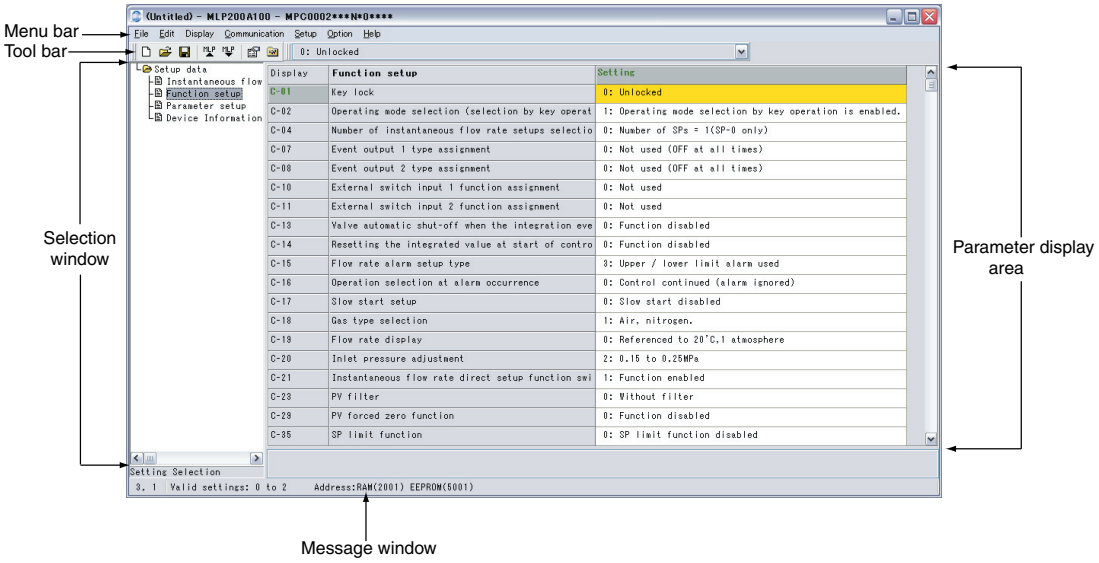
● Menu screen



- Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
Menu		Setup	Displays the Setup window.	Ctrl+S
		Monitor	Displays the Monitor / Trend window.	Ctrl+M
	-	Option(E)	Changes the environment setup.	Ctrl+E
	-	Quit	Quits the application.	Ctrl+Q
Help	-	Version(A)	Displays the version information.	Ctrl+A

● Setup screen



- Menu configuration list

Menu	Icon	Sub Menu		Description	Shortcut Keys
File		New		Creates new data.	Ctrl+N
		Open		Opens existing data.	Ctrl+O
		Save		Saves the active data.	Ctrl+S
	-	Save As		Saves the active data with name.	Ctrl+A
	-	CSV Out(X)		Saves the active data in CSV format.	Ctrl+X
	-	HTML Out(H)		Saves the active data in HTML format.	Ctrl+H
	-	Print		Prints out the data. (Same contents of data saved in the HTML format.)	-
	-	Quit		Quits the application.	Ctrl+Q
Edit	-	Data Check		Checks all setting values.	Ctrl+D
Display	-	Parameter disp area		Displays the parameter display area.	-
	-	Hint enable		Displays the hint.	-
	-	Auto size		Makes the auto-cell size enabled.	-
	-	Size initalize		Initializes the cell size.	-
	-	Cell size adjust		Makes the cell size matched with the window.	-
Communication		Read(MPC Series -> MLP)(R)		Reads the device data.	Ctrl+R
		Write(MLP -> MPC Series)(W)		Writes the data to the device.	Ctrl+W
Setup	-	Setup data	Instantaneous flowrate(A)	Displays or sets the setup flowrate.	Shift+Ctrl+A
			Function setup(B)	Displays or sets the function setup.	Shift+Ctrl+B
			Parameter setup (C)	Displays or sets the parameter setup.	Shift+Ctrl+C
			Device Information(D)	Displays the device related data.	Shift+Ctrl+D
Option		Type Setting		Changes the type setup.	Ctrl+T
		Environment Setting		Changes the environment setup	Ctrl+E
Help	-	Version(A)		-	-

3 - 2 Method of Setup

Configure setup in offline state (without connecting the cable to MPC).
Click the [Option] on the menu screen. Set up in the following steps:

The following tasks are performed:
Step 1: Setting up the loader type
Step 2: Initialization (clearing previous setting values)
Step 3: Setting up the environment
Step 4: Setting up MPC parameters
Step 5: Saving setup data
Step 6: Downloading the setup

Handling Precautions

- Operations in steps 1 to 5 are required before the setup parameters are entered on the MPC. Be sure to perform these steps. Otherwise, the MPC may be set up incorrectly. For example, the required setup items may not be displayed or unrequired items may be displayed.
- Step 6: Connect your personal computer to the MCP with the cable before downloading.

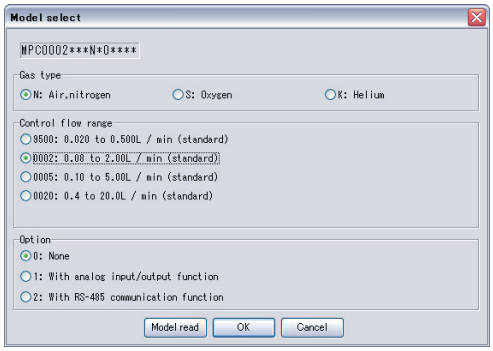
● Step 1 (setting up the loader type)

Set up the loader type to match the MPC model number.

Note

- When the [Read] button is clicked under the condition that the cable is connected to the MPC, the data is read out from the MPC. By this operation, the downloading of the incorrect parameters caused by model number setup error can be avoided.

(1) Click  icon.
The operation is the same by selecting the [Option] → [Type Setting] or the [Ctrl] + [T] keys.
>>The Type Setting dialog box is displayed.



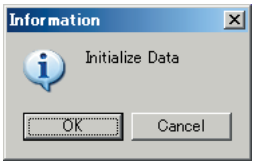
(2) Set the Control flow range and Option.
(3) Select from the selection items for each setting item.
(4) Click [OK] button.

Handling Precautions

- "Type" set here is the setting for internal use on the loader. The model number of the MPC will not change even if the type is changed on the loader.
- For an explanation of each of the specifications, refer to;
  ☞MPC Series Panel Mount Mass Flow Controller User's Manual "Installation & Configurations" CP-SP-1153E.

● Step 2 (initialization)

(1) Click icon.
The operation is the same by selecting the [File] → [New] or the [Ctrl] + [N] keys.
>>The initialize dialog box appears.



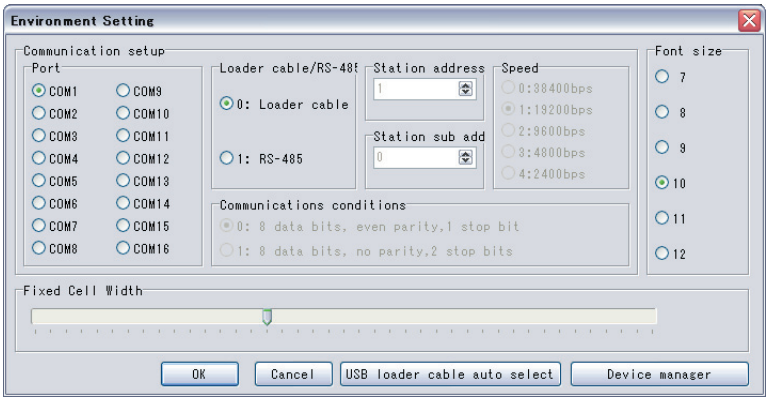
(2) Click [OK] button.
>>A new file opens.

Handling Precautions

- If the MPC is a special model (not a standard model), do not initialize.
- For instructions on initializing a special model, contact Yamatake Corporation.

● Step 3 (setting up the environment)

Set the communications port and font on the personal computer.
(1) Click icon.
The operation is the same by selecting the [Option] → [Environment Setting] or [Ctrl] + [E] keys.
>>The Environment Setting dialog box appears.



(2) Set the communications port. Select the port from the selection items.

(3) Set the font size. Select the front size from the selection items.

(4) Click [OK] button.

Handling Precautions

- When the [USB loader cable auto select] button is clicked, port selection can be done automatically.
- Normally “0: Loader Cable” should be selected for “Loader cable/RS-485.”

● **Step 4 (Setting up MPC parameters)**

The following setup is required for running the MPC.

- Instantaneous flowrate
- Function setup
- Parameter setup
- Device information (Read only and cannot be changed)

Note

- For details on the functions, refer to;
  ☞MPC Series Panel Mount Mass Flow Controller User's Manual "Installation & Configurations" CP-SP-1153E.

Move the cursor to the target channel of each setup item, and perform the following operations:

- When the setting is a numerical value
  Enter the numerical value, and press [Return] key.
- When the setting is selected by a number
  Press the right mouse button on a setting item. The list of settings you can select will appear. Select a desired item to complete the setting.

Handling Precautions

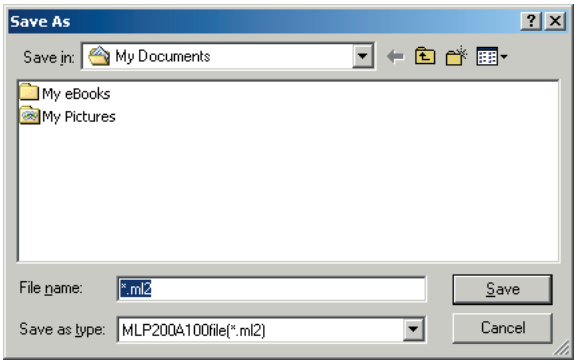
- About connection to the personal computer
  Normally, the MPC is connected to the personal computer with the special cable.
  Select [Option] → [Type Setting] and set [Loader cable/RS-485] to [RS-485]. The controller is then connected through the CMC10L.
  At this time, the environment setting and communication setup on the MPC main unit must be adjusted beforehand.
  Additionally, configure the settings on the MPC in the offline mode (the cable is not connected to the MPC). For details, refer to;
  ☞MPC Series Panel Mount Mass Flow Controller User's Manual "Communication Functions" CP-SP-1154E.

● **Step 5 (saving setup data)**

When you have finished making the settings, save the setup.
Saving setups in advance and using saved setups greatly reduces the time and load when setting up the loader. The following items are saved:

- Type
- Setup parameters

(1) The operation is the same by selecting the [File] → [Save As] or [Ctrl] + [A] keys.
>>The Save As dialog box appears.



(2) Enter the file name, and click [Save] button.

● **Step 6 (downloading the setup)**

Write the set parameters or parameters called up from a saved file to the MPC.

(1) Use the special loader cable to connect the personal computer to the MPC body.

(2) Turn the MPC ON.

(3) Click  icon.

The operation is the same by selecting [Communication] → [Write(MLP→MPC Series)] in the pull-down menu.

>>The message "Writing is going to be executed." is displayed.

(4) Click [OK] button.

>>This starts writing of the setup parameters.

During writing, the message [Please wait.] is displayed. When writing ends, the message [Normal end] is displayed.

Handling Precautions

- If writing fails, the message [Communications error has occurred.] is displayed. If writing is not possible, refer to;
  ☞Chapter 5. TROUBLESHOOTING.

Chapter 4. MONITORING THE MPC OPERATING STATUS

4 - 1 Monitoring Function

■ Overview

To enter the monitor screens, click [Monitor] in the menu screen.
There are two screens of “Numeric monitor” and “Trend monitor” for the monitor.
Each screen can be selected by the menu bar of the screen.

• Numeric Monitor screen:
This screen is for performing operations such as monitoring operating status, changing setups or switching modes.
- Numeric display of the various operating parameters (parameters can be changed)
- Lamp indication of operating status of the various running modes (lamp indications can be operated)
- Alarm display (representative and detailed)

• Trend Monitor screen:
This screen is for monitoring the running state of the MPC in the form of a trend graph.
- The screen displays graphs showing the trends in SP value, PV value and valve drive output.
  (If the personal computer is connected by RS-485 communications, trends for up to 5 units can be displayed.)
- Screen display of digital data trends for max. of six data items
- Export of sampled data as CSV file
- Trend screen dumps
- Sampling cycle
  Variable within the range 1 to 3600s
- Max. sampling count
  60,000 (fixed regardless of number of data items to sample)

Note

- A "CSV file" is the data format that can be handled in third-party spreadsheet software such as Microsoft Excel. In this format, sampled trend data can be interpreted in spreadsheet software.

These screens can be used to perform the following operations:
- Monitoring of operating status and changing of parameters in the Numeric Monitor screen
- Switching of the operation mode in the Numeric Monitor screen
- Monitoring of trends and sampling of data while the MPC is operating
- Monitoring of alarm states in the Numeric Monitor screen

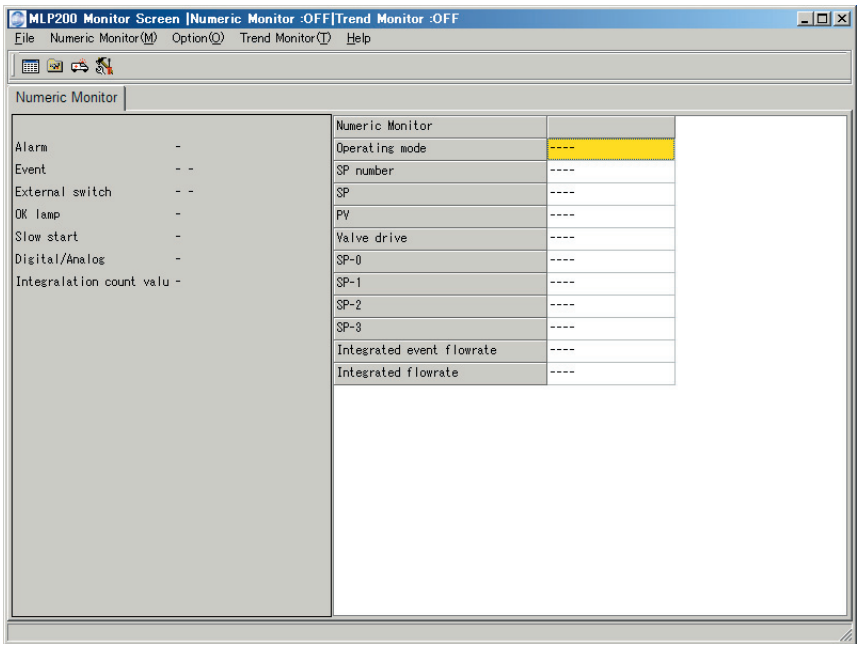
Handling Precautions

- About connection to the personal computer
  When making the setup or operating the monitor using the loader, connect the loader cable.

- Before starting the trend monitor, configure the settings suitable for the trend monitor.
- The sampling cycle sometimes shifts due to fluctuations in the communications cycle. To perform measurement at exact times, use the special recorder or data logger.

■ Screen explanations

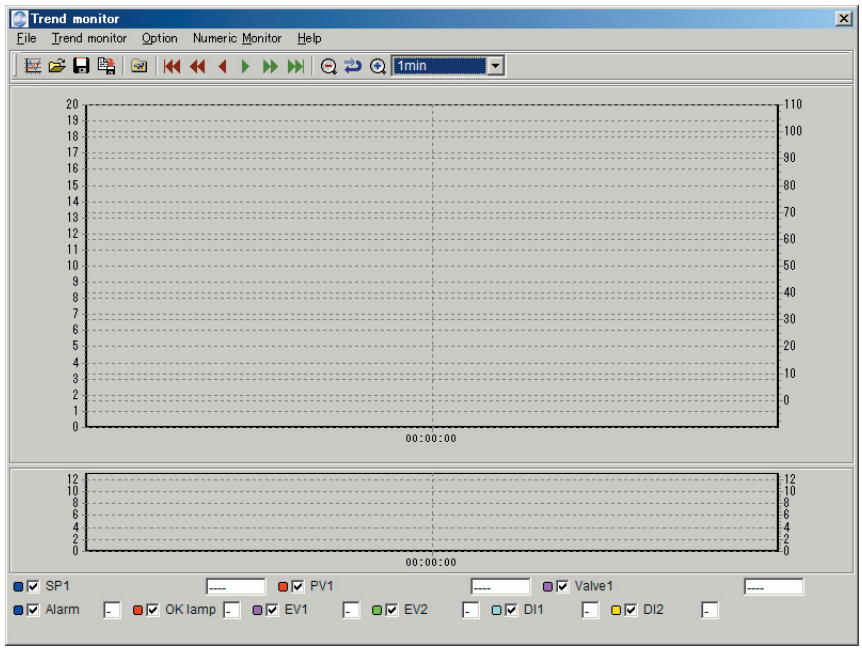
● Numeric monitor screen



- Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
File	-	Quit	Quits the Monitor window.	Ctrl+Q
Numeric Monitor (M)		Numeric Monitor Start/Stop (M)	Starts/stops the monitor.	Ctrl+M
Option (O)	-	Reset integrated flowrate	Resets the integrated flowrate.	-
		Alarm (A)	Displays the Alarm Details window.	-
		Command Line (C)	Displays the Command Line window.	-
Trend Monitor (T)	-	-	Changes the display to the trend monitor.	-
Help	-	Version(A)	Displays the version information.	-

● Trend monitor screen



- Menu configuration list

Menu	Icon	Sub Menu	Description	Shortcut Keys
File	-	Quit	Quits the Monitor window.	Ctrl+Q
Trend monitor		Trend monitor Start/Stop (T)	Starts/stops the trend monitor.	Ctrl+T
		CSV Read	Reads the trend data in CSV format.	-
		CSV Out(X)	Outputs the trend data in CSV format.	Ctrl+X
		Clipboard Graph Out	Outputs an image of the graph to the Clipboard.	Ctrl+C
Option		Setup	Displays the Setup window.	-
Numeric Monitor	-	-	Changes the display to the numeric monitor	-
Help	-	Version(A)	Displays the version information.	-

- Operating status display

The table below shows the relationship between the numerical value displayed at the bottom of the screen and the operating status.

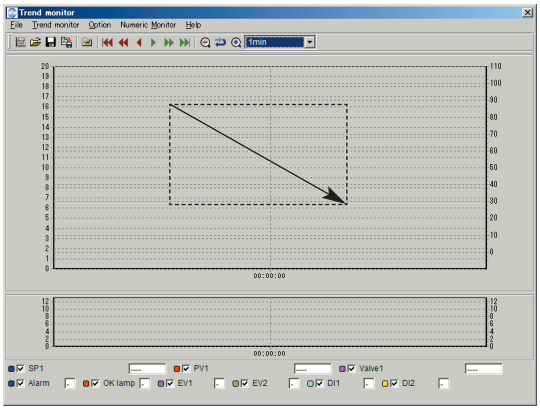
	Numeric display	Status
Alarm	0	No alarm
	1	Alarm occurrence
OK lamp	0	Lamp OFF
	1	Lamp ON
EV1, EV2	0	OFF
	1	ON
DI1 to DI2	0	OFF
	1	ON

- Icon list

Icon	Description
	Returns the graph to the start time.
	Returns the graph by 1/2 screen.
	Returns the graph by 1/4 screen.
	Advances the graph by 1/4 screen.
	Advances the graph by 1/2 screen.
	Advances the graph to the latest time.
	Zooms out the graph.
	Undoes the graph zoom.
	Zooms in the graph.
	Specify a time scale of the graph. 1min. 2min. 10min. 1hr. 12hrs. 24hrs. Auto

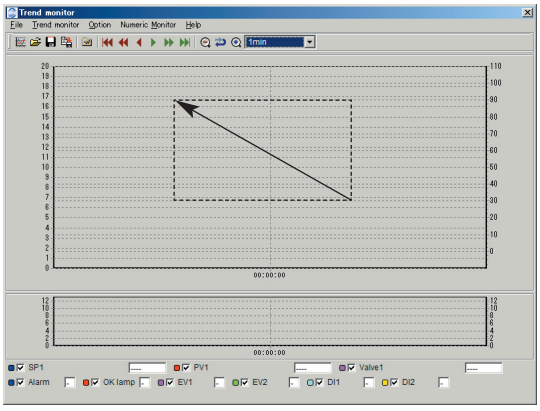
- Zooming the graph

  Drag the mouse from the upper left portion to the lower right portion with the left mouse button kept pressed.



- Canceling the zoomed graph

  Drag the mouse from the lower right portion to the upper left portion with the left mouse button kept pressed.



4 - 2 Method of Operation

■ How to operate the numeric monitor screen

● Start of monitoring (start of communications)

The operation described below is required to start monitoring.
Otherwise, monitoring and rewriting of data cannot be performed.

• Click  icon.
The operation is the same by selecting [Numeric Monitor] → [Numeric Monitor Start].

>> During normal operation: The data on the MPC is displayed.
During an error: The message [Check the device to which the loader is connected.] is displayed. Remedy according to Chapter 5. TROUBLESHOOTING.

The following operations are possible when the device and the loader are correctly connected:

● Monitoring of operation state and changing of parameters

Operation mode	0 : Valve fully closed 1 : Valve control 2 : Valve fully open
Numeric monitor (displayed in table format) Numeric group monitor	Instantaneous SP No. in use Instantaneous SP value in use PV value (control flowrate) Valve drive output Setting flowrate SP-0 Setting flowrate SP-1 Setting flowrate SP-2 Setting flowrate SP-3 Integrated event setting flowrate Integrated flowrate
State monitor (displayed in lamp lighting format)	Alarm Event External switch OK ramp Slow start operation Digital/analog setting Integrated count status

● Changing of data

The procedure described below is required to change data.

(1) Move the pointer to the data to be changed, and double-click the left button of the mouse (pressing the [Enter] key gives the same result).
>>The dialog box for data change is displayed.

(2) After changing the data, click the [OK] button.
>>The data is updated.

• Changeable data
- Operation mode
- Instantaneous SP No. in use
- Setting flowrate(SP-0 to SP-3)

Handling Precautions

- Data change is not possible when the Numeric Monitor display is stopped.
- Depending on the function settings, a data change may not be made even if the data change procedure is followed. For details, refer to:
  ☞MPC Series Panel Mount Mass Flow Controller User's Manual "Installation & Configurations" CP-SP-1153E.

● Use of the command line

Data can be read or written or the mode switched by directly entering communications commands on the command line.

Handling Precautions

- Use of the command line is not generally required, and sending an erroneous command can cause problems. For instructions on setting the command type, address, data, etc., contact Yamatake Corporation.
- For details on communications commands and data addresses, refer to;
  ☞MPC Series Panel Mount Mass Flow Controller User's Manual "Installation & Configurations" CP-SP-1153E.

● Checking details of alarms

You can check the details of alarms in the Alarm window when an alarm occurs.

- Click  icon.
  The operation is the same by selecting the [Option (O)] → [Alarm (A)].
- The details of the alarm that is occurring are displayed.

Handling Precautions

- This window displays the details of currently occurring alarms, and does not have a function for restoring the MPC. To restore the MPC, you must perform the appropriate remedy described in MPC Series Panel Mount Mass Flow Controller User's Manual "Installation & Configurations" CP-SP-1153E.

■ How to operate the trend monitor

● Setup

Select [Graph setup], [Station address setup], [Trend monitor color setup], and [Trend trigger setup] at [Option (O)] → [Setup], and make the settings below for each sampled data.
As the cycle and display upper/lower limits are common to all channels.

• Graph setup (left axis is flow rate, right axis is valve amperage)

Setting Item	Description	Setting Range	Factory Setting
Cycle	Setting of sampling cycle	1 to 3600s	1
Display low limit of left axis	Lower value of left vertical axis of screen display	-1999 to display upper limit	0
Display high limit of left axis	Upper value of left vertical axis of screen display	Display lower limit to 9999	20
Display low limit of right axis	Lower value of right vertical axis of screen display	-1999 to display upper limit	-10
Display high limit of right axis	Upper value of right vertical axis of screen display	Display lower limit to 9999	110

Handling Precautions

• Be sure to change the sampling cycle setting only when trend monitoring is stopped.

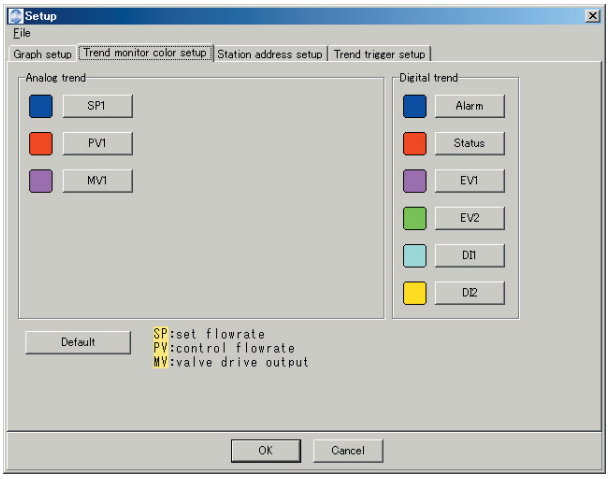
• Station address setup (only for RS-485 communications)

Setting Item	Description	Setting Range	Factory Setting
Station adress	Sets the station address to which the data is transmitted.	0 : Not used 1 to 127 :Station adress	1
Station sub adress	-	Fixed 0	0

Handling Precautions

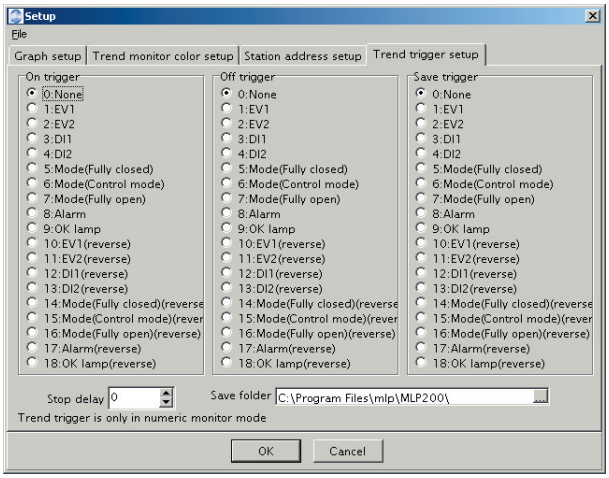
• Can be set only if [1: RS-485] is selected for [Loader cable/RS-485] at step 3 (Setting up the environment) on page 3-5.

• Selecting trend monitor colors



When each button is selected, the color selection screen will appear.
Select a desired color.
Clicking [Default] will return the color setting to its initial value.

• Setting up the trend trigger



When setting up the trend triggers, the trend can be started and stopped according to the status of the numeric monitor.
The trend trigger setup is valid only while the numeric monitor is running.
When setting up the trend save triggers, the trend can be saved according to the status of the numeric monitor.
The file is saved into a specified trend save folder in the "TREND-YYYY-MM-DD-HH-MM-SS.CSV" format.

● Starting the data sampling

When the setup is completed, start up the trend monitor.
Click  icon.
The same operation can be started by selecting [Trend Monitor] → [Trend Monitor Start].
The data sampling is started, and then the trend of the specified parameters is displayed on the screen.

- Once the trend monitor is started, it continues until the stop operation is performed or the data for 60,000 cycles is sampled.
- If the stop operation is not performed, the data is overwritten onto the old data when the data sampling for 60,000 cycles is completed.
- The screen can be transited to the "Numeric Monitor" screen while the trend monitor is running. However, the loader cannot be quitted or the screen cannot be transited to the "Setup" screen. To do so, quit the trend monitor.

Note

- If the check mark "☑" on the left of the item at the bottom of screen is removed, the graph for that item is not displayed.

● Stopping the data sampling

Select [Trend Monitor] → [Trend Monitor Stop].
The trend monitor is then stopped.

● Saving sampled data

The data sampled using the trend monitor can be saved into a file in the CSV format. The sampled data saved in the CSV format can be processed using spreadsheet applications, such as Microsoft Excel.

Handling Precautions

- The data can be saved into a file even while the trend monitor is running.
- Save the sampled data before trend start or CSV data read. After trend start or CSV data read is executed, the sampled data is overwritten.

● Saving clipboard graph output

Contents displayed on the Trend Monitor, such as SP value, PV value and valve amperage, can be directly saved to the clipboard in the form of a screenshot.

Chapter 5. TROUBLESHOOTING

5 - 1 Error Messages and Remedy

■ Setup error messages

Category	Message	Description	Remedy
Loader system error	Can't start up three or more MLP 200s at once.	Three or more loaders are started at the same time.	Click [OK] button.

■ Communications error messages

Category	Message	Description	Remedy
Communication error	Time out.	The message cannot be received within a period of the time-out time. An instrument other than MPC is connected. The main unit is not connected.	Check the cable connections and contacts. Use the loader with it connected to MPC.
	Cannot open communications port.	The communication port cannot be opened.	Do not run the loader and other application using the communication port at the same time.
	A communications error has occurred. or Check the connected instrument.	The system error occurs.	Re-operate or quit the loader to restart Windows.
		Inconsistency occurs on the communication setup.	Check the communication setup.
	Trend monitor is active.	The monitor screen cannot be quitted while the trend monitor is running.	Quit the monitor screen after the trend monitor has been completed.
MPC status error	Cannot support currently connected MPC.	The loader currently in use is not applicable to the version of the main unit.	Contact Yamatake Corporation or its dealer.
	Flow range or gas type mismatch between MPC and loader. Upload stopped.	Mismatch of model numbers.	Click [Read model] on the model selection screen to read out the MPC model No.
	Parameter settings exceeded range. Some data possibly not written.	Attempt to write data outside the allowable range.	After reading out the data from the MPC, review the parameter settings.

■ File error messages

Category	Message	Description	Remedy
File name error	This filename is not valid.	An invalid file name is input.	Input a correct file name.
	This file cannot be found. Make sure that the correct path and filename are given.	A file name not existing is input.	Input an existing file name.
	This filename is a reserved device name. Use a different filename.	A file name reserved for the device name is input.	Input a correct file name.
Disk error	Not enough free space on disk.	The disk free capacity is insufficient.	Keep a sufficient disk free capacity.
	The device is not ready.	The disk is not ready.	Prepare the disk and restart the operation.
	Cannot make file.	The CD-ROM is specified as save destination.	Save the file to another directory.
	File name too long.	The file name is too long.	Use 255 characters or less for the file name.
Pass name error	The path does not exist. Make sure that the correct path is given.	An illegal path name is input.	Input a correct path name and restart the operation.
File information error	Illegal file size.	The file is corrupted.	Corrupted file cannot be used. Create a file again.
	Illegal file information.		

5 - 2 Other Troubleshooting

Trouble	Description	Remedy
Numeric values are not displayed correctly.	If a decimal point symbol other than " . " (period) is set, the loader does not function correctly.	Check that the decimal point symbol is " . " (period). If not, set the decimal point symbol to " . " (period).

Note

- "." (period) should be set as the decimal separating symbol in the Windows control panel.
  Example: for Windows XP, go to [Control Panel] → [Date, Time, Language, and Regional Options] → [Regional and Language Options] → [Regional Options] → [Customize...] → [Decimal symbol]. Select " . " and click [OK] button.

Revision History

Printed Date	Manual Number	Edition	Revised pages	Description
04-06	**CP-UM-5355E**	**1st Edition**		
09-05		**2nd Edition**		Overall revision

Terms and Conditions

We would like to express our appreciation for your purchase and use of Yamatake products.
You are required to acknowledge and agree upon the following terms and conditions for your purchase of Yamatake products (field instruments, control valves, and control products), unless otherwise stated in any separate document, including, without limitation, estimation sheets, written agreements, catalogs, specifications and instruction manuals.

1. Warranty period and warranty scope
   1.1 Warranty period
   Yamatake products shall be warranted for one (1) year from the date of your purchase of the said products or the delivery of the said products to a place designated by you.
   1.2 Warranty scope
   In the event that Yamatake product has any failure attributable to Yamatake during the aforementioned warranty period, Yamatake shall, without charge, deliver a replacement for the said product to the place where you purchased, or repair the said product and deliver it to the aforementioned place. Notwithstanding the foregoing, any failure falling under one of the following shall not be covered under this warranty:
   (1) Failure caused by your improper use of Yamatake product
   (noncompliance with conditions, environment of use, precautions, etc. set forth in catalogs, specifications, instruction manuals, etc.);
   (2) Failure caused for other reasons than Yamatake product;
   (3) Failure caused by any modification or repair made by any person other than Yamatake or Yamatake's subcontractors;
   (4) Failure caused by your use of Yamatake product in a manner not conforming to the intended usage of that product;
   (5) Failure that the state-of-the-art at the time of Yamatake's shipment did not allow Yamatake to predict; or
   (6) Failure that arose from any reason not attributable to Yamatake, including, without limitation, acts of God, disasters, and actions taken by a third party.
   Please note that the term "warranty" as used herein refers to equipment-only-warranty, and Yamatake shall not be liable for any damages, including direct, indirect, special, incidental or consequential damages in connection with or arising out of Yamatake products.

2. Ascertainment of suitability
   You are required to ascertain the suitability of Yamatake product in case of your use of the same with your machinery, equipment, etc. (hereinafter referred to as "Equipment") on your own responsibility, taking the following matters into consideration:
   (1) Regulations and standards or laws that your Equipment is to comply with.
   (2) Examples of application described in any documents provided by Yamatake are for your reference purpose only, and you are required to check the functions and safety of your Equipment prior to your use.
   (3) Measures to be taken to secure the required level of the reliability and safety of your Equipment in your use
   Although Yamatake is constantly making efforts to improve the quality and reliability of Yamatake products, there exists a possibility that parts and machinery may break down. You are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design, safety design, or the like so that the said Equipment may satisfy the level of the reliability and safety required in your use, whereby preventing any occurrence of physical injuries, fires, significant damage, and so forth.

3. Precautions and restrictions on application
   Yamatake products other than those explicitly specified as applicable (e.g. Yamatake Limit Switch For Nuclear Energy) shall not be used in a nuclear energy controlled area (radiation controlled area). Any Yamatake products shall not be used for/with medical equipment.
   In addition,
   you are required to conduct a consultation with our sales representative and understand detail specifications, cautions for operation, and so forth by reference to catalogs, specifications, instruction manual , etc. in case that you intend to use Yamatake product for any purposes specified in (1) through (6) below.
   Moreover, you are required to provide your Equipment with fool-proof design, fail-safe design, anti-flame propagation design and other designs of protection/safety circuit on your own responsibility to ensure the reliability and safety, whereby preventing problems caused by failure or nonconformity.
   (1) For use under such conditions or in such environments as not stated in technical documents, including catalogs, specification, and instruction manuals
   (2) For use of specific purposes, such as:
   * Nuclear energy/radiation related facilities
   [For use outside nuclear energy controlled areas] [For use of Yamatake Limit Switch For Nuclear Energy]
   * Machinery or equipment for space/sea bottom
   * Transportation equipment
   [Railway, aircraft, vessels, vehicle equipment, etc.]
   * Antidisaster/crime-prevention equipment
   * Burning appliances
   * Electrothermal equipment
   * Amusement facilities
   (3) Supply systems such as electricity/gas/water supply systems, large-scale communication systems, and traffic/air traffic control systems requiring high reliability
   (4) Facilities that are to comply with regulations of governmental/public agencies or specific industries
   (5) Machinery or equipment that may affect human lives, human bodies or properties
   (6) Other machinery or equipment equivalent to those set forth in items (1) to (5) above which require high reliability and safety

4. Precautions against long-term use

Use of Yamatake products, including switches, which contain electronic components, over a prolonged period may degrade insulation or increase contact-resistance and may result in heat generation or any other similar problem causing such product or switch to develop safety hazards such as smoking, ignition, and electrification. Although acceleration of the above situation varies depending on the conditions or environment of use of the products, you are required not to use any Yamatake products for a period exceeding ten (10) years unless otherwise stated in specifications or instruction manuals.

5. Recommendation for renewal

Mechanical components, such as relays and switches, used for Yamatake products will reach the end of their life due to wear by repetitious open/close operations.

In addition, electronic components such as electrolytic capacitors will reach the end of their life due to aged deterioration based on the conditions or environment in which such electronic components are used. Although acceleration of the above situation varies depending on the conditions or environment of use, the number of open/close operations of relays, etc.

as prescribed in specifications or instruction manuals, or depending on the design margin of your machine or equipment, you are required to renew any Yamatake products every 5 to 10 years unless otherwise specified in specifications or instruction manuals.

Field instruments (sensors such as pressure/flow/level sensors, regulating valves, etc.) will reach the end of their life due to aged deterioration of parts.

For those parts that will reach the end of their life due to aged deterioration, recommended replacement cycles are prescribed. You are required to replace parts based on such recommended replacement cycles.

6. Other precautions

Prior to your use of Yamatake products, you are required to understand and comply with specifications (e.g., conditions and environment of use), precautions, warnings/cautions/notices as set forth in the technical documents prepared for individual Yamatake products, such as catalogs, specifications, and instruction manuals to ensure the quality, reliability, and safety of those products.

7. Changes to specifications

Please note that the descriptions contained in any documents provided by Yamatake are subject to change without notice for improvement or for any other reason.

For inquires or information on specifications as you may need to check, please contact our branch offices or sales offices, or your local sales agents.

8. Discontinuance of the supply of products/parts

Please note that the production of any Yamatake product may be discontinued without notice.

For repairable products, we will, in principle, undertake repairs for five (5) years after the discontinuance of those products. In some cases, however, we cannot undertake such repairs for reasons, such as the absence of repair parts.

For field instruments, we may not be able to undertake parts replacement for similar reasons.

azbil

Yamatake Corporation
Advanced Automation Company

1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan

URL: http://www.azbil.com

1st Edition: Issued in June 2004 (W)
2nd Edition: Issued in May 2009 (G)