
Thank you for purchasing the MW100 Data Acquisition Unit.

This user's manual contains useful information about the functions and operating procedures of the MW100 Viewer Software and lists the handling precautions of the software. To ensure correct use, please read this manual thoroughly before beginning operation.

After reading the manual, keep it in a convenient location for quick reference whenever a question arises during operation.

The following manuals relating to the MW100 Data Acquisition Unit are provided in addition to this one. Read them along with this manual.

Manual Title	Manual No.	Description
MW100 Data Acquisition Unit User's Manual	IM MW100-01E	Explains the MW100 Data Acquisition Unit functions, installation and wiring procedures, precautions, and browser operations.
MW100 Data Acquisition Unit Operation Guide	IM MW100-02E	Describes concisely the handling of the MW100 Data Acquisition Unit and the basic operations of the MW100 Viewer Software.
MW100 Communication Command Manual	IM MW100-17E	Describes the communication command of the MW100 main module.
MW100 Connecting Ethernet and Checking the Connection	IM MW100-71E	Explains the procedure to check the Ethernet connection.
Precautions on the Use of the MX100/MW100	IM MX100-71E	Summarizes the precautions regarding the use of the MW100 Data Acquisition Unit.
MX100/MW100 Data Acquisition Unit Installation and Connection Guide	IM MX100-72E	Describes concisely the installation procedures and wiring procedures of the MW100 Data Acquisition Unit.
MX100/MW100 Quick Start Package Checking the Contents of the Package	IM MX100-79E	Explains the contents of the quick start package (/SL1, /SL2, and /SL3 options).
Control of pollution caused by MX100/MW100 products	IM MX100-91C	Describes control of pollution caused by the product.
772075 AC Adapter	IM 772075-01E	Describes the specifications of the AC adapter (power supply suffix code "-2").

Notes

- This manual describes release number "R3.03.01" of the MW100 Viewer Software. You can check the release number by choosing About from the Viewer software's Help menu.
- The contents of this manual are subject to change without prior notice as a result of continuing improvements to the software's performance and functions. The figures given in this manual may differ from those that actually appear on your screen.
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Revisions

- 1st Edition: June, 2005
- 2nd Edition: October, 2006
- 3rd Edition: October, 2007
- 4th Edition: March, 2012

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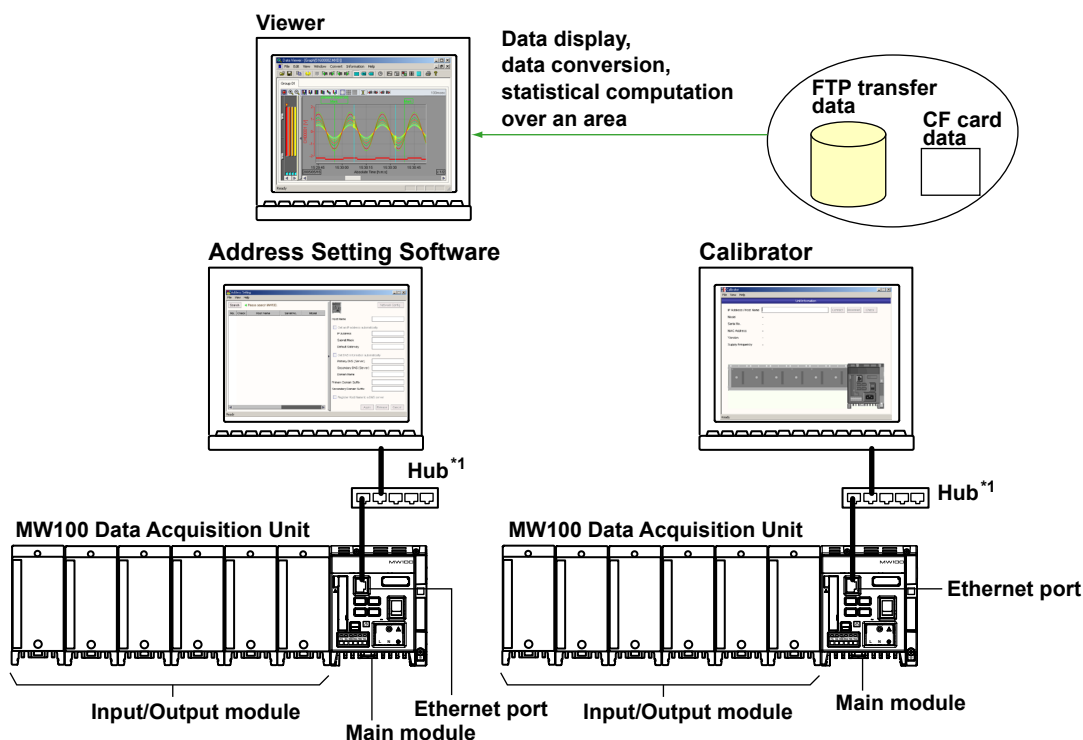
In the event that any provision hereof is declared or found to be illegal by any court or tribunal of competent jurisdiction, such provision shall be null and void with respect to the jurisdiction of that court or tribunal and all the remaining provisions hereof shall remain in full force and effect.

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1.1 Functional Explanation of MW100 Viewer Software

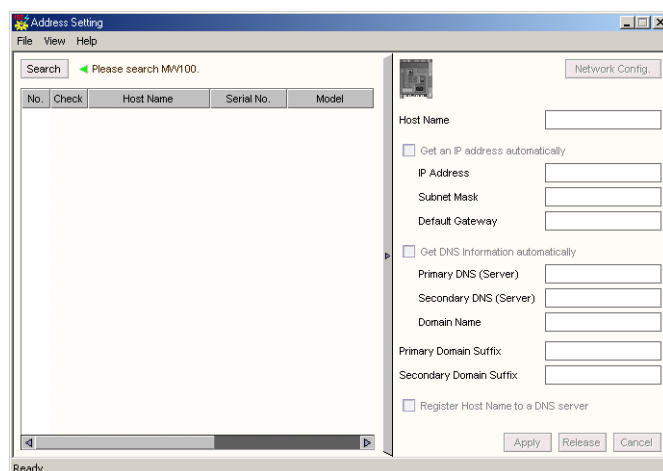
MW100 Viewer Software consists of the following three software components.



*1 To change the factory default IP address set, open a local (1:1) connection.

Address Setting Software

The address setting software allows you to enter initial communication settings on the MW100 main unit. The software opens a local (1-to-1) connection with the MW100 main unit, allowing changes to the factory default IP address, and it searches for and displays other MW100s on the same segment. The software allows you to change settings such as the MW100 host name, IP address, DNS server, domain name, and domain suffix, and register a host name on the DNS server.

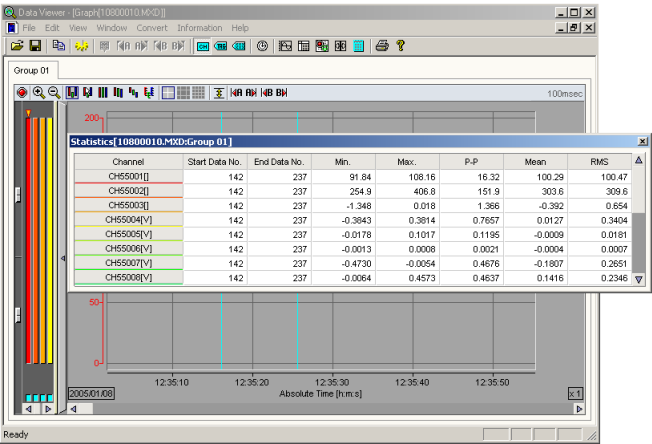


The Address Setting software can also be run directly from the CD-ROM without being installed on the PC. Click a language button in the MW100 Viewer Software CD-ROM address setting startup screen.

Viewer

You can load data generated by the MW100 and apply the following processes to those various data.

Measured, Computed, and Thinned Data (with the .MXD Extension)

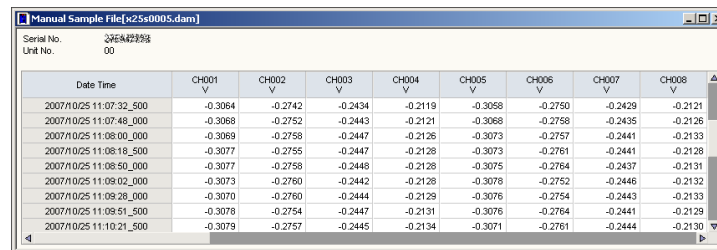


- Joining
When opening a divided data file, related files can be joined and displayed.
- Waveform display/numeric display
- Alarm/mark list display
- Change the display conditions (group assignments, scale, trip point, display color and other parameters)
- Read values using cursors
- Perform statistical computation over an area
- Display and add marks
- Save or load display conditions
- Display the file information
- Convert data formats (ASCII, Excel, and Lotus)
- Printing data (waveforms, numeric values, alarm/mark list, cursor values, statistics over an area, and computed values)
- Use and save templates

The following summarizes the differences between the Viewer and the MW100 browser when displaying measured, computed, or thinned data.

	Viewer	MW100 Browser
Unit number display	Yes	No
Measurement channel	001 to 060	001 to 060
MATH channel	101 to 400	A001 to A300
Display example when unit no. is 50		
Measurement channel (30 channel)	CH50030	CH030
MATH channel (A010 channel)	CH50110	CH010

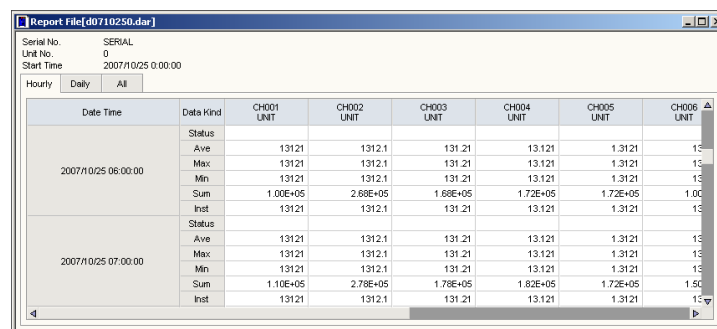
Manual Sample Data (with the .DAM extension)



Date Time	CH001 V	CH002 V	CH003 V	CH004 V	CH005 V	CH006 V	CH007 V	CH008 V
2007/10/25 11:07:32_500	-0.3064	-0.2742	-0.2434	-0.2119	-0.3058	-0.2750	-0.2429	-0.2121
2007/10/25 11:07:48_000	-0.3068	-0.2752	-0.2443	-0.2121	-0.3068	-0.2758	-0.2435	-0.2126
2007/10/25 11:08:00_000	-0.3069	-0.2758	-0.2447	-0.2126	-0.3073	-0.2757	-0.2441	-0.2133
2007/10/25 11:08:16_500	-0.3077	-0.2755	-0.2447	-0.2128	-0.3073	-0.2761	-0.2441	-0.2128
2007/10/25 11:08:50_000	-0.3077	-0.2758	-0.2448	-0.2128	-0.3075	-0.2764	-0.2437	-0.2131
2007/10/25 11:09:02_000	-0.3073	-0.2760	-0.2442	-0.2128	-0.3078	-0.2752	-0.2446	-0.2132
2007/10/25 11:09:28_000	-0.3070	-0.2760	-0.2444	-0.2129	-0.3076	-0.2754	-0.2443	-0.2133
2007/10/25 11:09:51_500	-0.3078	-0.2754	-0.2447	-0.2131	-0.3076	-0.2764	-0.2441	-0.2129
2007/10/25 11:10:21_500	-0.3079	-0.2757	-0.2445	-0.2134	-0.3071	-0.2761	-0.2444	-0.2130

- File information display (display when opening files)
- Date/time numeric display
- Data printing (date/time, numerical value, serial number, unit number)

Report Data (with the .DAR Extension)

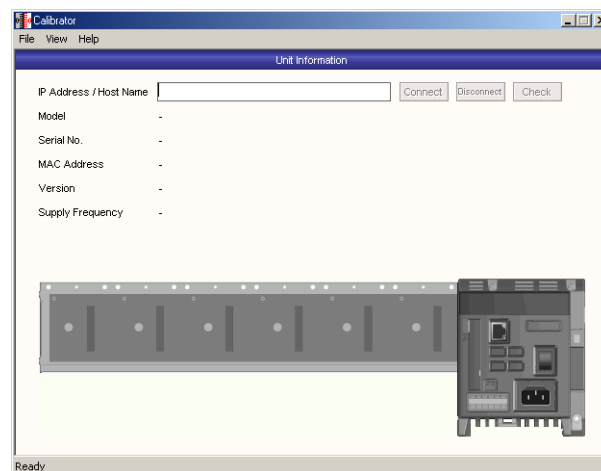


Date Time	Data Kind	CH001 UNIT	CH002 UNIT	CH003 UNIT	CH004 UNIT	CH005 UNIT	CH006 UNIT
2007/10/25 06:00:00	Status						
	Ave	13121	1312.1	131.21	13.121	1.3121	13
	Max	13121	1312.1	131.21	13.121	1.3121	13
	Min	13121	1312.1	131.21	13.121	1.3121	13
	Sum	1.00E+05	2.68E+05	1.68E+05	1.72E+05	1.72E+05	1.00E+05
	Inst	13121	1312.1	131.21	13.121	1.3121	13
2007/10/25 07:00:00	Status						
	Ave	13121	1312.1	131.21	13.121	1.3121	13
	Max	13121	1312.1	131.21	13.121	1.3121	13
	Min	13121	1312.1	131.21	13.121	1.3121	13
	Sum	1.10E+05	2.78E+05	1.78E+05	1.82E+05	1.72E+05	1.50E+05
	Inst	13121	1312.1	131.21	13.121	1.3121	13

- File information display (display when opening files)
- Display hourly, daily, weekly, or monthly report data, or all data
If a daily report file is open and you select the All tab, a daily report of 24 hours is displayed with its summary (daily report).
- Data printing (date/time, report data, serial number, unit number, and start time)

Calibrator

This software is used to calibrate the MW100 input/output modules. You can connect to the MW100, display the modules that can be calibrated, and carry out calibration at each measurement range and output range.



1.2 System Requirements

Operating System (OS)

Run the system under any of the following operating systems.

- Windows 2000 Professional SP4
- Windows XP Home Edition SP3
- Windows XP Professional SP3 (excluding Windows XP Professional 64-bit edition)
- Windows Vista Home Premium SP1, SP2 (excluding the 64-bit edition)
- Windows Vista Business SP1, SP2 (excluding the 64-bit edition)
- Windows 7 Home Premium (excluding the 64-bit edition)
- Windows 7 Professional (excluding the 64-bit edition)

The language displayed by the software under different language versions of the OS are as follows.

OS Language	Software Display Language
Japanese	Japanese or English
English or Other	English

PC

A PC that runs one of the OS above, and that meets the following CPU and memory requirements.

- **When Using Windows 2000 or Windows XP**
Pentium 4, 1.6 GHz or faster Intel x64 or x86 processor; 512 MB or more of memory
- **When Using Windows Vista**
Pentium 4, 3 GHz or faster Intel x64 or x86 processor; 2 GB or more of memory
- **When Using Windows 7**
32-bit edition: Intel Pentium 4, 3 GHz or faster x64 or x86 processor; 2 GB or more of memory
64-bit edition: Intel x64 processor that is equivalent to Intel Pentium 4, 3 GHz or faster; 2 GB or more of memory

Hard Disk

- Free disk space: 50 MB or more (1 GB or more recommended)
- RPM: 7200 rpm or more recommended

CD-ROM Drive

A CD-ROM drive supported by the OS, to be used for installation.

Input Devices (Mouse, Keyboard, Etc.)

A device supported by the OS.

Monitor

A video card that is recommended for the OS and a display that is supported by the OS, has a resolution of 1024×768 or higher, and that can show 65,536 colors (16-bit, high color) or more.

Printer

Printer and printer driver supported by the OS.

Ethernet Port

An Ethernet port compatible with the OS (10BASE-T or 100BASE-TX).

1.3 Setup Procedures of the MW100 Viewer Software

The following procedures are for installing the software on Windows XP.

1. Start Windows.

Log onto Windows as an administrator (Otherwise, you will not be able to install the software). This is the same when using an OS other than Windows XP.

When Auto Run Is Enabled

2. Insert the CD-ROM in the CD-ROM drive.

The setup program automatically starts. Proceed to step 4.

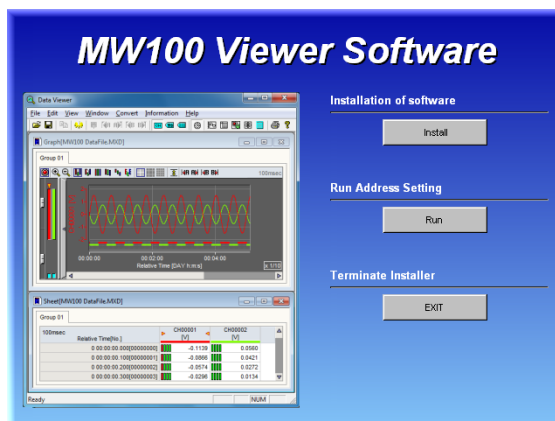
When Auto Run Is Disabled

2. Double-click the CD-ROM icon from **My Computer** to open the CD-ROM drive window.

3. Double-click the **SETUP.EXE** file.

The setup program starts.

4. Click **Install**. Select the languages and click **Next**.

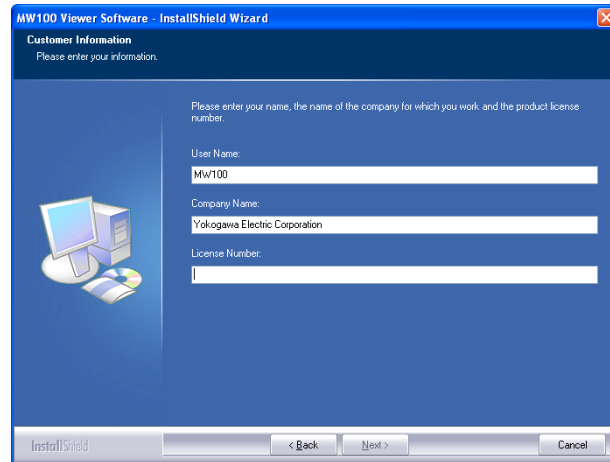


5. Click **Next**. Read the Software License Agreement that appears. If you agree to the terms, select the **I accept terms of the license agreement** check box. Click **Next**.

1.3 Setup Procedures of the MW100 Viewer Software

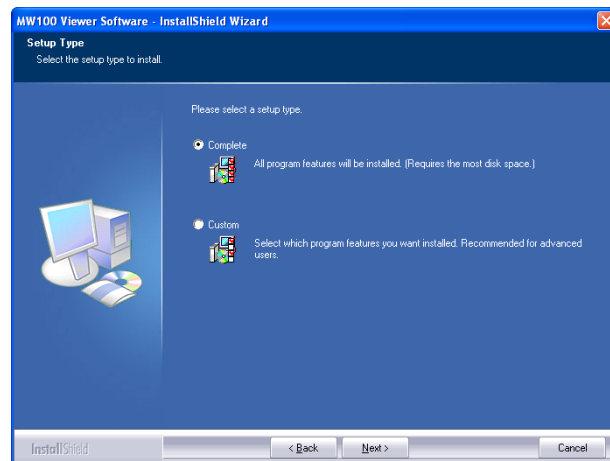
6. In the next dialog box, enter the user name, company name, and license number, and click **Next**.

The license number is written on the label that is attached to the front of the case for the MW100 Viewer Software Setup CD-ROM.



7. Select the setup type to install, and click **Next**.

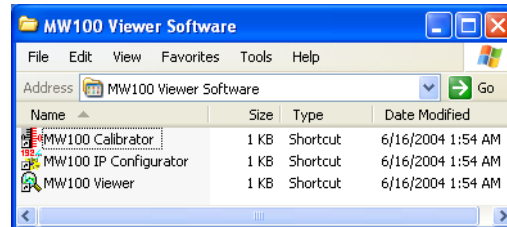
The default destination to install is [C:\Program Files\Yokogawa Electric Corporation\MW100 Viewer Software]. If you click **Custom**, you can select the installation location and installed functions. Follow the on-screen instructions.



8. Click **Install** to start the installation.
9. Click **Finish** to finish the installation.

Explanation**Installation Result**

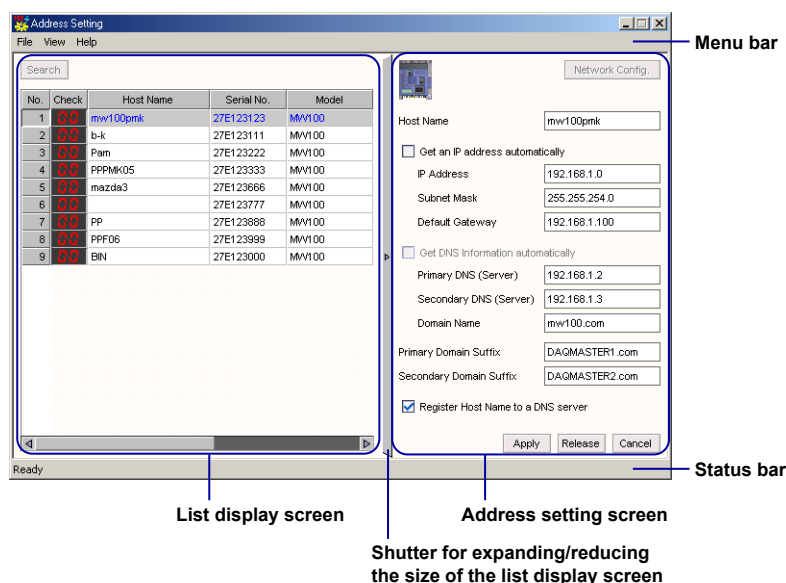
If the software is properly installed, a folder named MW100 Viewer Software is created in the specified directory (the C: /Program files/Yokogawa Electric Corporation by default). MW100 Viewer Software is registered in the program list, and MW100 IP Configurator, MW100 Viewer, and MW100 Calibrator are registered as in the sub list.

**Note**

Inside the MW100 Viewer Software folder, the Data folder and Work folder are created. The record files are saved in the Data folder. The Work folder is used to store temporary files by the MW100 Viewer Software. Do not delete this folder.

2.1 Names of Parts in the Address Setting Software Screen and Their Uses

Parts of the Address Setting Software Screen



Names of Parts of the List Display Screen and Their Uses

You can click the List Display Screen shutter to expand the display as in the figure below.

Search button

Click to search for other MW100s in the same segment and display them.

Respond button

If this button is clicked, the 7-segment LED on the main unit of the corresponding MW100 displays --CALL--.

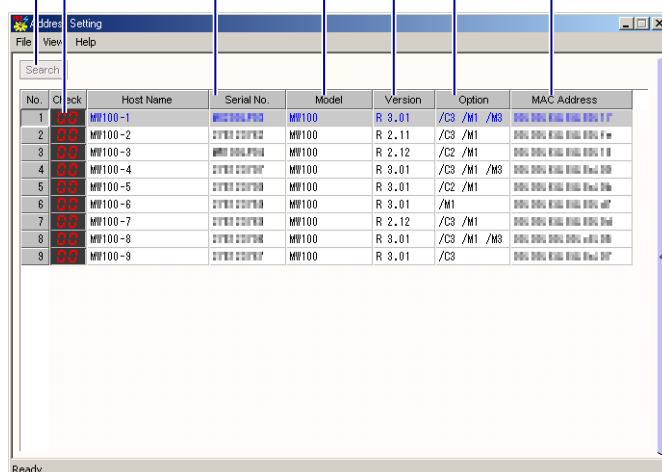
The instrument number marked on the name plate of the main module.

Model
MW100 is displayed.

MW100 firmware version

MW100 option code

MAC address set on the MW100 upon shipment from the factory
Marked on the name plate of the main module.



Address Setting Screen

If the check box is selected, the items that can and cannot be set change.
Dimmed setting items cannot be changed.

The screenshot shows a 'Network Config.' window. It contains the following fields and controls:

- Host Name: MW100-1
- ☐ Get an IP address automatically
- IP Address: 192.168.1.0
- Subnet Mask: 255.255.255.0
- Default Gateway: 192.168.1.100
- ☐ Get DNS information automatically
- Primary DNS (Server): 192.168.1.2
- Secondary DNS (Server): 192.168.1.3
- Domain Name: mw100.com
- Primary Domain Suffix: DAGMASTER1.com
- Secondary Domain Suffix: DAGMASTER2.com
- ☒ Register Host Name to a DNS server
- Buttons: Apply, Release, Cancel

Click the Network Settings button to enable changes to settings.

Restored to the condition before editing.

Resolves the IP address from the DHCP server.
Restores the settings to their defaults.
At the same time that the defaults are restored, the software searches again for MW100s.

Updates edited contents.
At the same time that updating occurs, the software searches again for MW100s.

2.2 Setting Item Details

Procedure

Before carrying out the procedure below, turn ON the power to the relevant MW100s and connect the MW100s to the network using Ethernet cables. When connecting the MW100 to the network, make the connection after changing the factory default IP address (see “Opening a Local (1-to-1) Connection between the PC and MW100 and Changing the Address”).

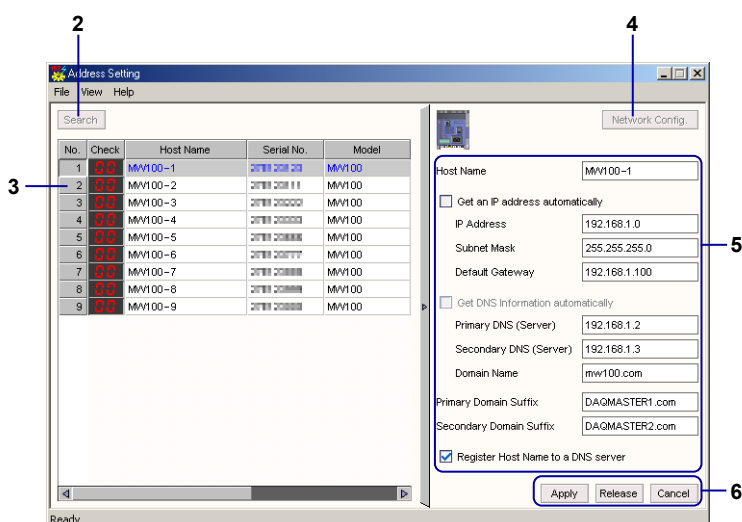
Opening a Local (1-to-1) Connection between the PC and MW100 and Changing the Address

The MW100 cannot perform communication using the factory default IP address. Create a local (1-to-1) connection between the MW100 and the PC on which the Address Setting software is installed, or the PC on which the Address Setting software CD-ROM has been inserted, and change the IP address.

The procedure for changing the address is as follows.

Changing the Address of the MW100 Connected to the Network

1. Start the Address Setting software.
The Address Setting screen is displayed.
2. Click the Search button in the List Display Screen.
The MW100s residing in the same segment are displayed.
3. Click the number of the MW100 whose address you wish to change.
The information of the selected MW100 is shown in blue characters.
4. Click Network Settings in the address setting change screen.
This enables changes to the settings.
5. Enter settings for each item.
6. Click Change to apply the changed settings to the MW100, Cancel to exit without saving changes, or Clear to clear the IP address from the DHCP server.



Note

If your OS is Windows XP, Windows Vista, or Windows 7 and the firewall is enabled, it may not be recognized even if you click the Search button. To solve the problem, see appendix 1 (this phenomenon may also occur with some third party anti-virus programs).

Changing the MW100 Fixed IP Address Setting

1. Turn OFF the power to the MW100, turn dip switch number 8 (only) OFF, then turn the power back ON.
The MW100's IP address and subnet mask are set to 192.168.0.10 and 255.255.255.0, respectively.
2. Set the PC's network settings to 192.168.0.xx, and the subnet mask to 255.255.255.0. (where xx is a number other than 10 from 1 to 254).
3. Type 192.168.0.10 in the browser to connect to the MW100. The MW100's settings are enabled to be changed.
4. Change the MW100 range, network, and other settings using the browser.
5. If a connection was made using IP address 192.168.0.10, turn OFF the power to the MW100, turn number 8 of dipswitch 1 OFF (dipswitches 1 through 7 are all ON), and then turn the power back ON. If you want to connect using a different IP address, turn number 8 of dipswitch 1 ON (dipswitches 1 through 8 are all ON) and then turn the power back ON.
The MW100 starts up using the settings entered in step 4 (including the network settings).

Explanation

If you turn OFF the power to the MW100 main unit then turn it back ON with dip switch number 8 turned OFF, the MW100's address is set to 192.168.0.10. If you enter that address (192.168.0.10) in your browser, you can connect to the MW100 main unit and make changes to range and other settings. To do this, leave the MW100 IP address unchanged, turn OFF the power to the MW100, turn dip switch number 8 ON, and turn ON the power again. The address returns to the one set prior to 192.168.0.10.

If users are connected to the MW100 when settings are changed using the Address Setting software, measurement and recording on the MW100 continues but monitoring pauses and the address is changed.

Host Name

You can enter a name that makes it easy to identify individual MW100s using up to sixty-three alphanumeric characters.

If you select Register host name on server, the host name is automatically registered on the DNS server. However, the DNS server must support dynamic DNS. Consult your network administrator for details.

Obtaining an IP Address Automatically

Select the check box to automatically obtain the IP address from the DHCP server. When Obtain DNS information automatically is selected, the IP address of the DNS server and domain name can also be obtained from the DHCP server. In this case, the domain name is fixed to the one specified on the DHCP server. For details, consult with your network administrator.

To check whether the IP address was obtained correctly each time, click the Change button, wait a few moments, then click the Search button in the List display screen. If you click the Change button immediately, the IP address, subnet mask, and default gateway may be displayed as 0.0.0.0. If this happens, wait a moment, then click the Search button again and check that the IP address was obtained correctly.

IP Address

The IP address is an ID that is assigned to each PC or communication device on an IP network such as the internet or an intranet. The address is a 32-bit value expressed using four octets in decimal notation (each 0 to 255), each separated by a period as in 211.9.36.148.

Enter the IP address to assign to the MW100. The default value is 0.0.0.0. When making a local (one-to-one) connection with the PC, do not set the PC to obtain the IP address automatically. Enter the IP address manually to an address other than the one that is to be assigned to the MW100 (192.168.0.100 if 192.168.0.10 was assigned to the MW100, for example).

When making a one-to-one connection, enter the parameters as follows:

Setup Example of the PC and MW100

IP address of the PC	192.168.0.100
Subnet mask of the PC	255.255.255.0
IP address of the MW100	192.168.0.10
Subnet mask of the MW100	255.255.255.0

Note

To initialize all settings including the IP address to their factory default values, turn OFF the power to the main module, turn OFF dipswitch number 5 on the main module, and then turn ON the power. When the 7-segment LED displays bF, all settings are initialized. After confirming the bF display on the 7-segment LED, turn OFF the power to the main module, turn dipswitch number 5 back ON, and then turn the power to the main module back ON.

Subnet Mask

Enter the mask value used when determining the subnet network address from the IP address. The default value is 0.0.0.0. Consult your network administrator for details about the subnet mask.

Note

Huge TCP/IP networks such as the Internet are often divided up into smaller networks called sub networks. The subnet mask is a 32 bit value that specifies the number of bits of the IP address used to identify the network address. The portion other than the network address is the host address that identifies individual computers on the network. Consult your network administrator for the subnet mask value. You may not need to set the value.

Default Gateway

Set the IP address of the gateway (default gateway) used to communicate with other networks. The default value is 0.0.0.0. When connecting to the PC locally in a one-to-one relationship, this value does not need to be changed. In this case, you do not have to set the default gateway on the PC.

Note

The default gateway is a router or computer that is used when accessing a computer outside its own network. Consult your network administrator for the IP address of the default gateway.

Primary DNS Server

Secondary DNS Server

The DNS is a system that pairs domain names with IP addresses. Host names and IP addresses must be registered on the DNS server that handles the domain names in order to access other instruments on the network by host name and domain name.

Also, on the MW100, the domain name is also used as a domain suffix.

On the MW100, you can specify two DNS servers. You must enter IP addresses. Consult your network administrator for details.

Domain Name

Up to sixty-three alphanumeric characters can be entered.

The address is expressed using numbers. It is difficult to identify instruments on the network with only a group of numbers. Therefore, you can assign domain and host names to make it easier to distinguish different units.

When using a browser to connect to the MW100, you can specify the MW100 main unit by specifying a domain and host name.

By specifying a unique host and domain name, you can access the MW100 without the IP address. To make this possible, the host name of the MW100 must be registered on the DNS server handling the domain names. Consult your network administrator for details.

The MW100 supports dynamic DNS servers (DNS) in which host names are automatically registered on the DNS server. To enable this function, select Register host name on server. However, the DNS server must also support dynamic DNS. Consult your network administrator for details.

Primary Domain Suffix

Secondary Domain Suffix

Up to sixty-three alphanumeric characters can be entered for the domain suffix.


The domain suffix is also referred to as a DNS suffix. When specifying the mail server and other nodes only by host name, it is the domain name that is automatically added. For example, if you set the domain name to mw100.com, the primary suffix to DAQMASTER1.com, the secondary domain suffix to DAQMASTER2.com, and the mail server to Mail, the MW100 queries the DNS server in the order:

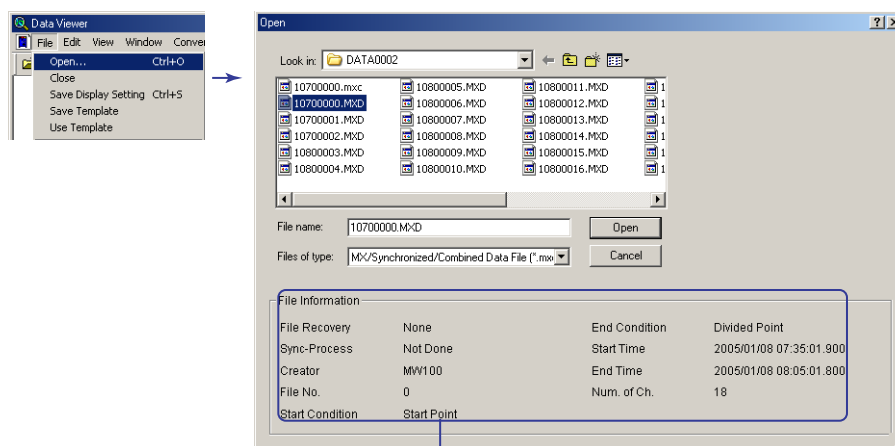
1. mail
2. mail.mw100.com
3. mail.DAQMASTER1.com
4. mail.DAQMASTER2.com

and sends an e-mail message to the IP address obtained first, as the mail server.

3.1 Loading Measured, Computed, and Thinned Data

Procedure

1. Start the Viewer.
2. From the **File** menu, choose **Open**.
You can also click the  button on the toolbar.
The Open dialog box opens.
3. Select the file you wish to load and click **Open**.
The waveform display window opens.

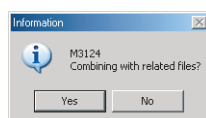


File information

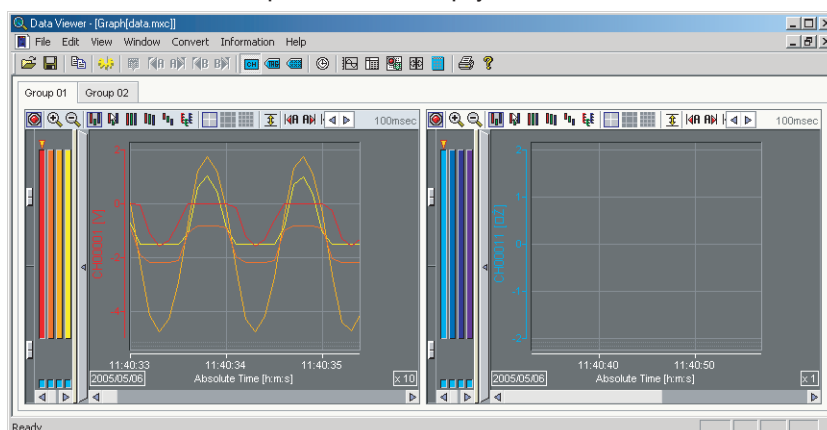
This information is also printed when the display data is printed

When Loading Divided Data Files on the MW100

If you open a data file that was recorded using the Integration Monitor, a dialog box opens asking you whether to synchronize the data file with a message “Combining with related files?” before the waveform display screen appears. To join the data files, click **Yes**. To display only the specified file, click **No**.



Opens the waveform display window



Files are divided into the graphs and math channel graphs at the recording interval specified on the browser even when in the same group.

Explanation

Loadable Files

- Files transferred via FTP on the MW100 (.mxd extension).
- Data files are saved to the CF card using the MW100 (.mxd extension).
- Files saved after being joined and saved on the software (with the .mxc extension).

Display Range, File Size, and Number of Data Points of the Loadable Data

- 50 groups
- Maximum channels per group: 32
- File size: 2 GB
- Data points: 5 million

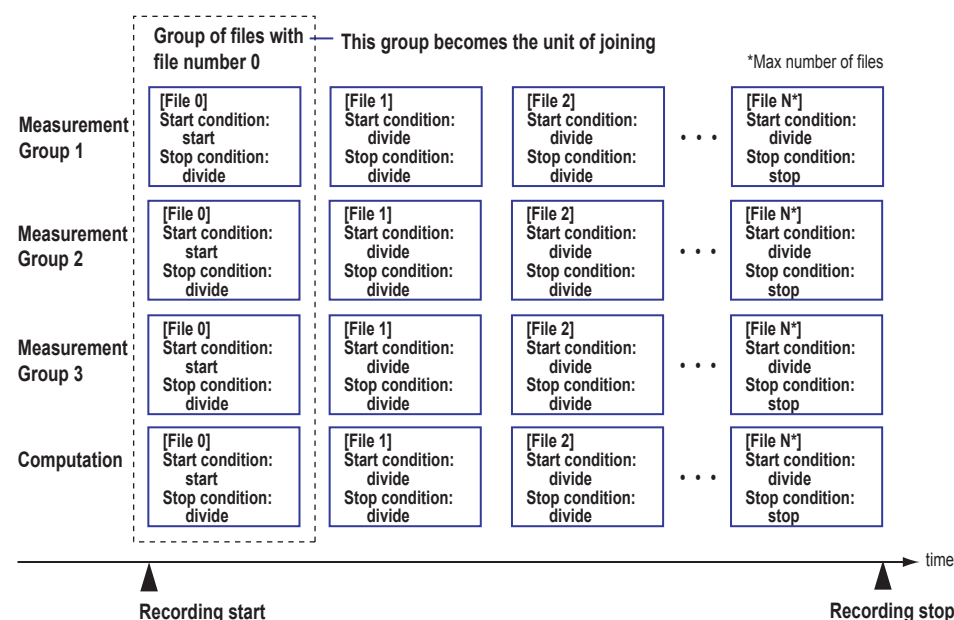
Note

- When loading a file of close to five million points, the error message "Insufficient Memory. Close immediately." appears. If this happens, set Total paging file size for all drives to 2 GB or more. On Windows XP, this setting is located in the control panel by double-clicking the System icon then choosing Details (tab) > Performance (setting button) > Details (tab) > Virtual memory (Change button).
- Please avoid loading multiple files containing close to five million data points. Doing so may degrade the PC performance greatly.
- Joining may take time depending on the number of data points in the divided files.
- Even when joining is performed, the files before joining (.MXD extension) are not deleted.

File Joining Function

Data saved to the CF card or transferred via FTP on the MW100 can be joined.
Files that are created using triggers cannot be joined.

- The data that can be joined are files measured or calculated and the thinning data files by the MW100 that were created on the same unit from record start to record stop.



- Data are joined by file groups of data with multiple measurement groups of the same file number
- If a number of files equaling the number of measurement groups of the specified file number (if three measurement groups are specified, the number would be 3) does not exist in the file group, files just prior to the file group of the relevant file number are joined.
- The resulting files that are created are limited to five million points/2 GB. If the limit from the specified file number group to the recorded file number group is exceeded, the software searches for the previous file number group from the specified file number group and joins them such that the limit is not exceeded.
- The extension of the joined files is .mxc.

Note

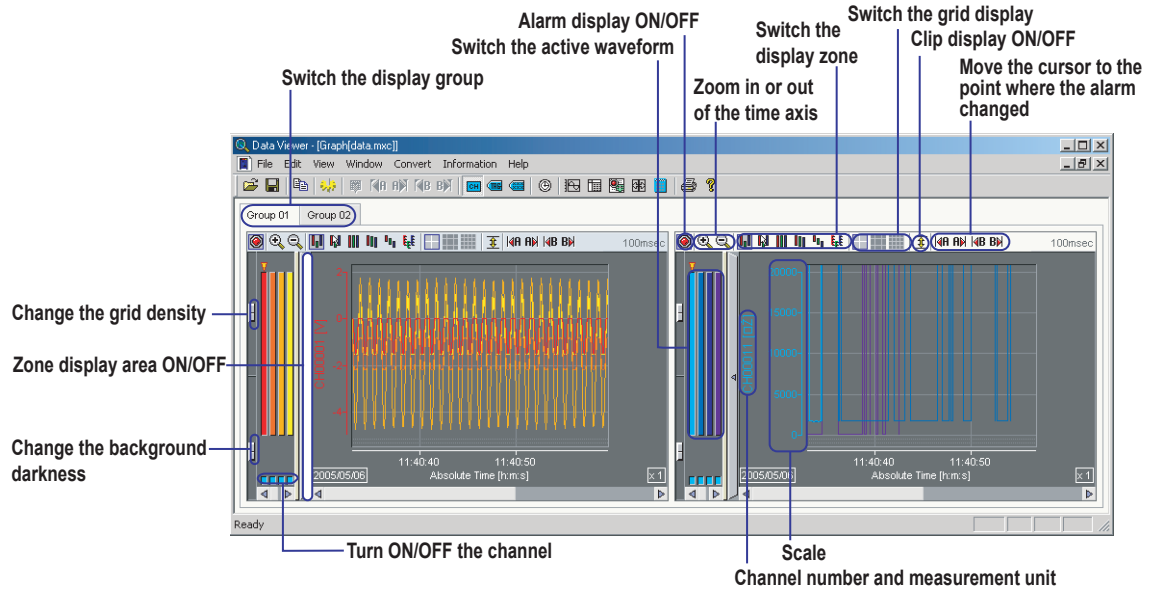
Perform this task after copying data in the CF card and data transferred via FTP to the PC hard disc.

3.2 Settings Related to Displaying Measured, Computed, and Thinned Data

Procedure

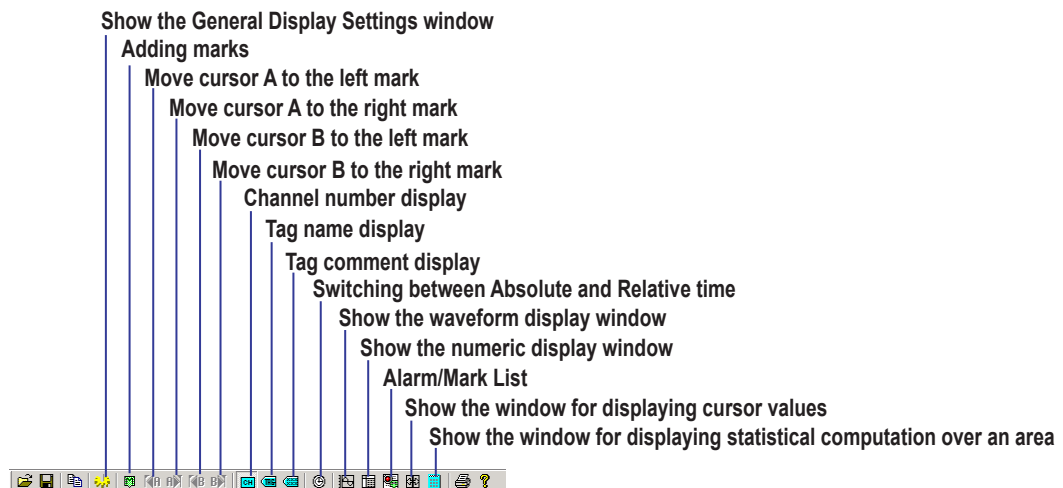
Changing the Display on the Waveform Display Window

Change the display settings according to the explanation in the figure below.



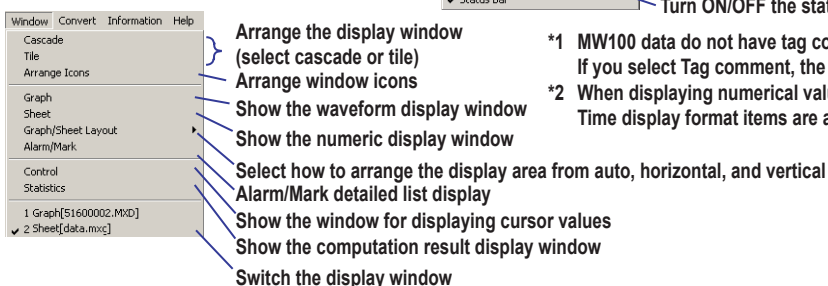
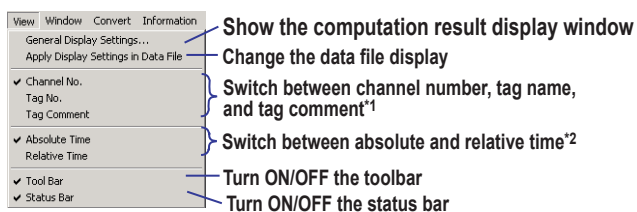
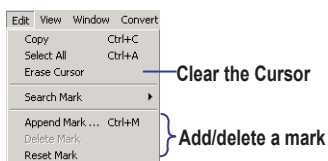
Changing the Display Using the Toolbar

Change the display settings according to the explanation in the figure below.



Changing the Display Using the Menu

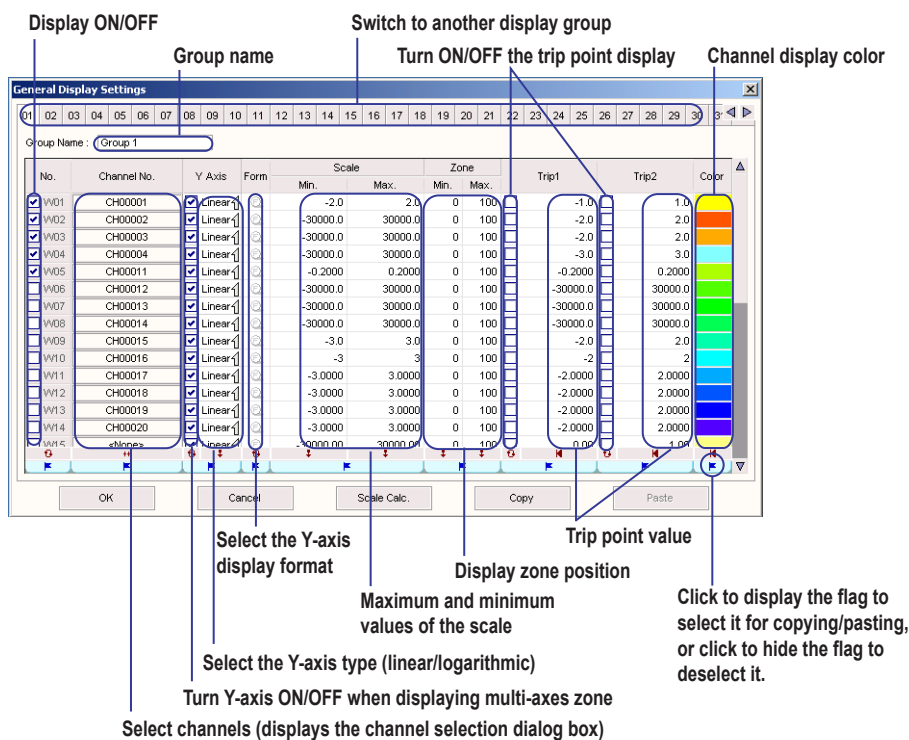
Choose appropriate commands from the Edit, View, and Window menus to change the display.



- *1 MW100 data do not have tag comments associated with them. If you select Tag comment, the Tag name is displayed.
- *2 When displaying numerical values, the Absolute Time/Relative Time display format items are also displayed.

Changing the Display Using the Display Setup Window

See the explanation in the figure below. Change the display settings and click OK. Set the display for each display group.



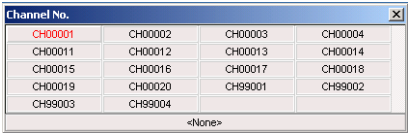
Note

The display settings of the browser are not applied to the Viewer.

Explanation

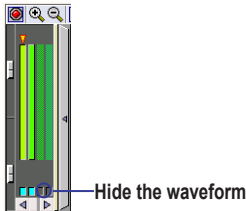
Display Groups and Group Names

The values of each channel that are loaded are divided into groups that were used during recording and displayed using waveforms or numeric values. The measured/computed values can be divided into up to fifty groups. Up to thirty-two channels can be registered to a single group. If you click the channel selection button on the General Display Settings window, the Channel No. dialog box opens (see the figure below). The labels used to identify the waveforms can be set to tag names or tag comments in addition to channel number on the View menu. The selected label type (channel number, tag name, or tag comment) is used in the Channel No. dialog box. Select <None>, if you are not assigning a channel.

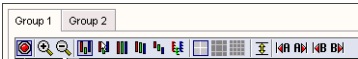


Channel No.			
CH00001	CH00002	CH00003	CH00004
CH00011	CH00012	CH00013	CH00014
CH00015	CH00016	CH00017	CH00018
CH00019	CH00020	CH99001	CH99002
CH99003	CH99004		
<None>			

To turn ON/OFF the waveform display on the waveform display window, click the button below the scale bar as shown in the figure below.

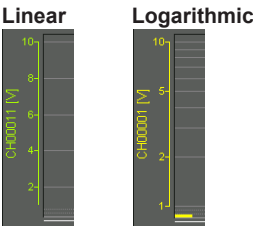


The name assigned to each group can be changed using up to thirty characters. The names of the display groups that have channels registered are displayed on the waveform display window or numeric display window.



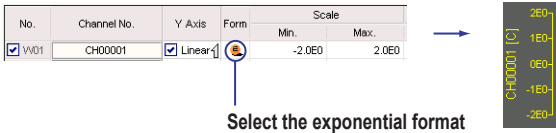
Y-Axis Type

You can select linear or logarithmic Y-axis for displaying the waveforms.



Maximum and Minimum Values of the Y-Axis and the Display Format of the Y-Axis Values

The maximum and minimum values of the scale on the waveform display can be changed. If you click the Scale Calc. button on the General Display Settings window, the maximum and minimum values of the Y-axes on the selected channels are calculated automatically according to the maximum and minimum values of the data. The scale values can also be displayed using logarithmic format as shown below.

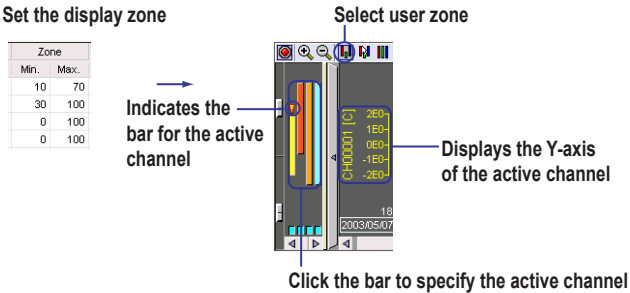


Selecting the Display Zone of the Waveform

You can select from the following. In the Zone setting on the General Display Settings window, assume the bottom and top edges of the waveform display area to be 0% and 100%, respectively, and set the waveform display position by specifying the minimum value (0 to 99%) and the maximum value (1 to 100%).

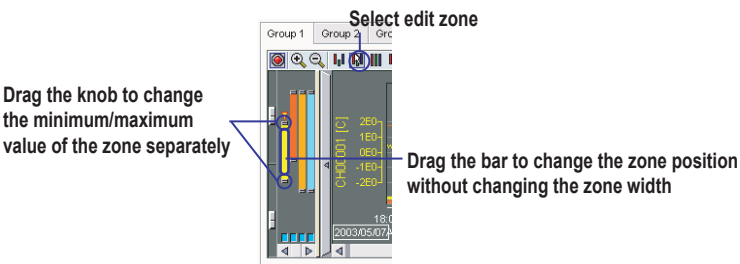
User zone

Displays each waveform at the position specified by Zone on the General Display Settings window. A single Y-axis active channel waveform can be displayed.



Edit zone

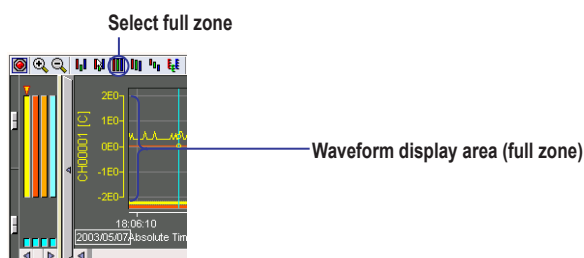
Like the user zone, each waveform is displayed at the position specified by Zone on the General Display Settings window. However, you can change the zone on the waveform display window. A single Y-axis scale of the active channel can be displayed.



3.2 Settings Related to Displaying Measured, Computed, and Thinned Data

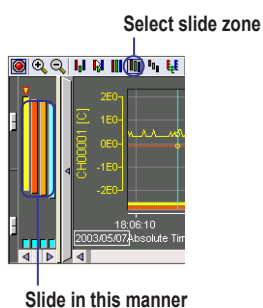
- **Full zone**

Displays all the waveforms over the full zone of the waveform display area regardless of the Zone settings on the General Display Settings window. A single Y-axis scale of the active channel can be displayed.



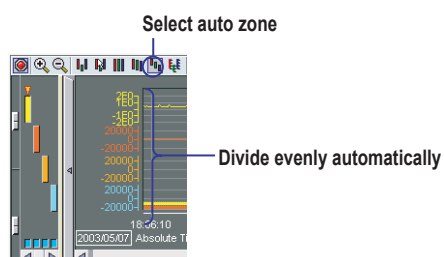
- **Slide zone**

Displays the waveforms by slightly offsetting the display position of each waveform vertically regardless of the Zone settings on the General Display Settings window. A single Y-axis scale of the active channel can be displayed.



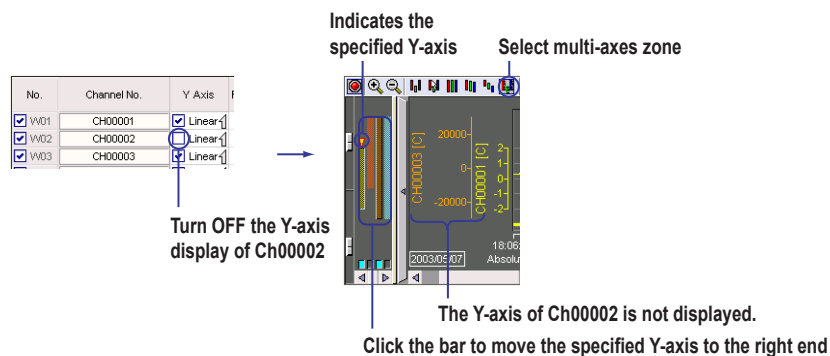
- **Auto zone**

Displays the waveforms by dividing the waveform display area evenly according to the number of displayed waveforms regardless of the Zone settings on the General Display Settings window.



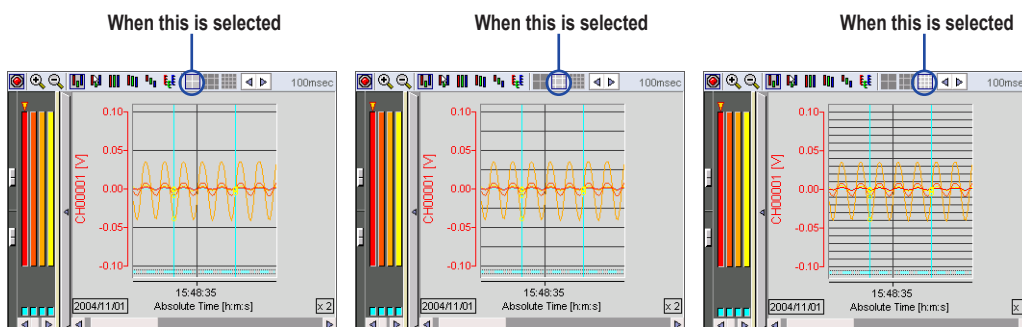
- **Multi-axes zone**

All the specified Y-axis of the displayed waveforms are aligned horizontally. To hide a Y-axis, clear the Y-axis check box on the General Display Settings window. The display position is set using Zone on the General Display Settings window. Dragging the channel bar to the waveform display area shows the Y-axis of the corresponding channel. Dragging the Y-axis to the zone display area hides the Y-axis of the corresponding channel.



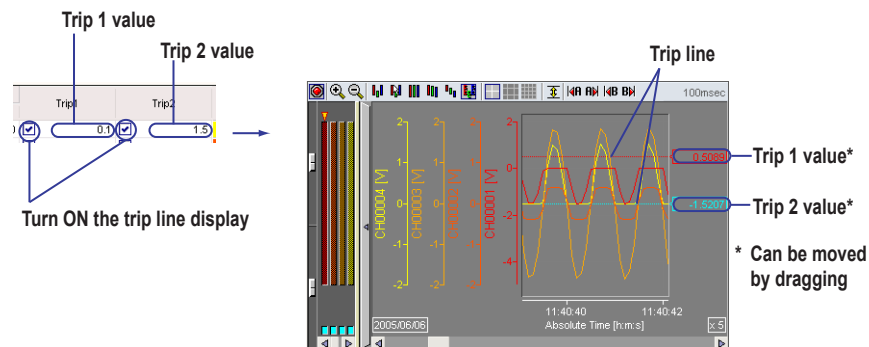
Grid Display

Select the grid type.



Trip Point

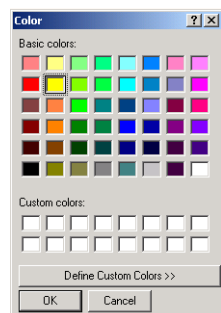
You can display a trip line to indicate a particular value of interest (trip point) in the waveform display area. Two trip points (trip 1 is red, trip 2 is blue) can be set on each waveform using the Trip 1 and Trip 2 settings on the General Display Settings window. The trip line of the waveform corresponding to the right-most Y-axis is shown in the waveform display area.



3.2 Settings Related to Displaying Measured, Computed, and Thinned Data

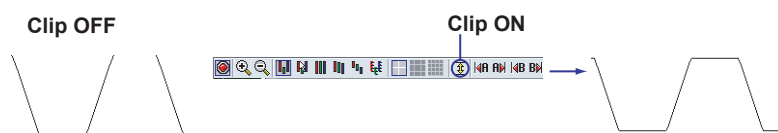
Channel Color

Clicking the channel color displayed in the Color column on the Display setup screen opens the Color dialog box. You can select the color of each channel using the Color dialog box.



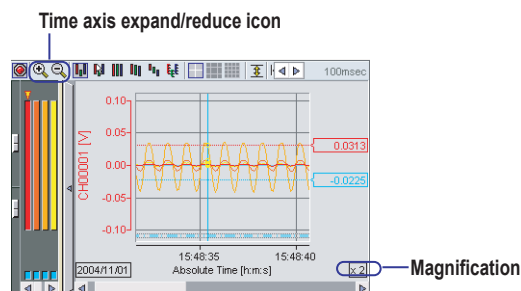
Clipping of Waveforms

By default (clip OFF), the waveform is not displayed when the measured/computed value exceeds the minimum/maximum value of the scale (see the lower left figure). When clip is turned ON, values that are smaller than the minimum value of the scale are displayed as the minimum value and the values that are larger than the maximum value of the scale are displayed as the maximum value.



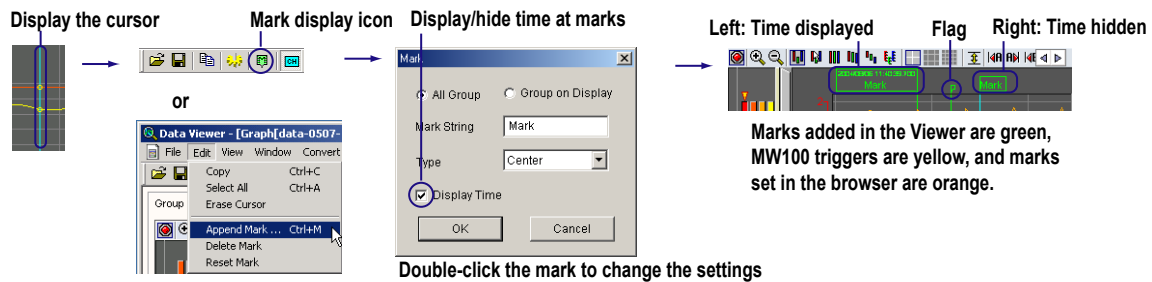
Expanding or Reducing the Time Axis on the Waveform Display

On the waveform display window, you can click the expand/reduce icon to expand or reduce the time axis in the range of 20 to 1/1000 times for each waveform display area.



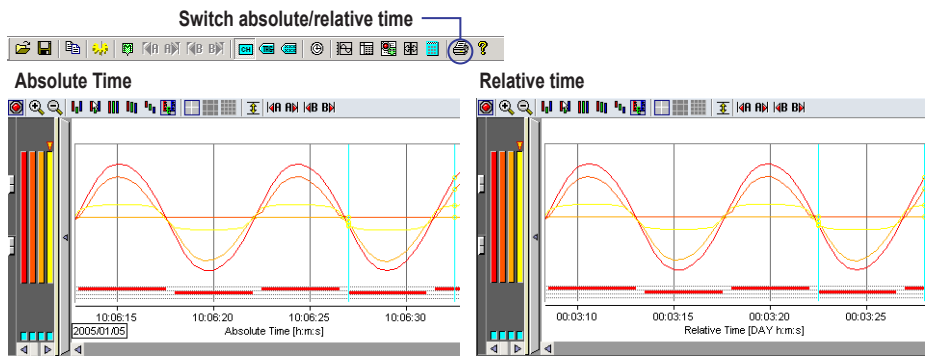
Adding Marks

In addition to the marks placed during measurement on the MW100 using other programs such as the browser, you can add marks at the positions where you click (displays a cursor) on the waveform display area. You can enter a text to be attached to the mark ("Mark" by default) using up to fifteen characters. You can also select Left, Center (default), Right, or Flag (small mark without text) for the Type. For types other than Flag, the specified string and the relative or absolute time at the mark position are displayed. You can set the string and type in the Mark dialog box that opens when you click the Append Mark icon (or choose Append Mark from the Edit menu). In the Mark dialog box, you can select whether to add the mark to the waveforms of all groups (default) or only the waveforms of the displayed group. To delete specific displayed marks, select the range using cursors, and then choose Delete Mark from the Edit menu. To delete all the marks added using the Viewer, choose Reset Mark from the Edit menu.

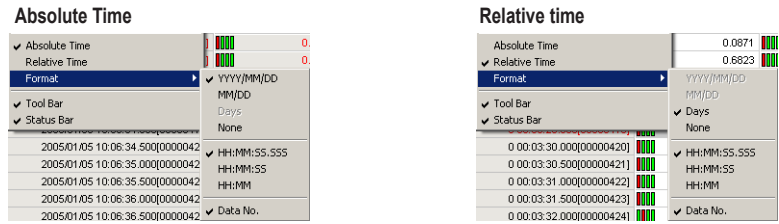


Switching between Absolute and Relative Time

By default, the time axis is displayed using absolute time. The time axis can also be displayed using time relative to the first data position.



On the numeric display, you can select the display format of the absolute or relative time and turn ON/OFF the data numbers using Format on the View menu.



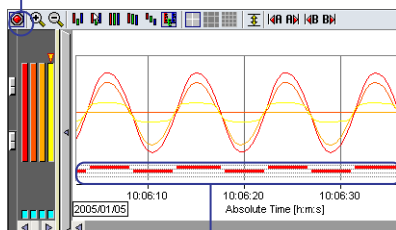
In the alarm/mark list, the time is always displayed using absolute time.

3.2 Settings Related to Displaying Measured, Computed, and Thinned Data

Showing/Hiding Alarms

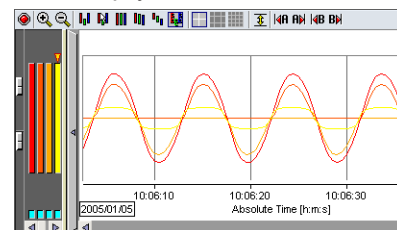
You can hide the alarm display area that indicates the status of alarm occurrence. The alarms are displayed in the same fashion as the alarms displayed in the waveform display area of the Integration Monitor.

Show/Hide the alarms



Alarm display area

No alarm display



Alarm/Mark List Display

Displays a detailed list of alarms and marks.

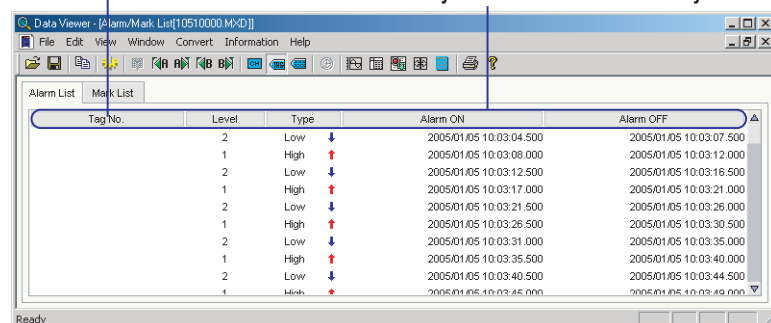
From the Window menu, choose Alarm/Mark List.

You can also click the  button on the toolbar.

• Alarm List

Sorted according to the clicked item

Currently sorted to the item indicated by this mark

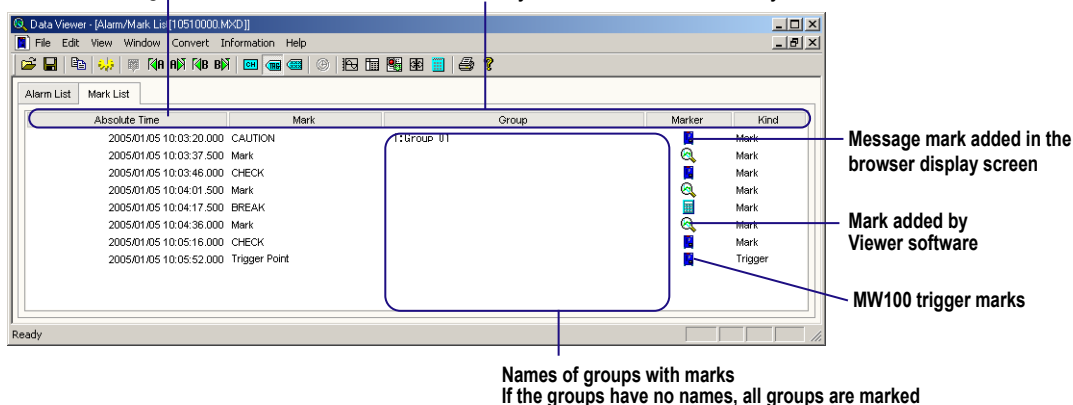
A screenshot of the 'Data Viewer - [Alarm/Mark List[10510000 M-D]]' window. The 'Alarm List' tab is selected. The table shows a list of alarms with columns: Tag No., Level, Type, Alarm ON, and Alarm OFF. The data is sorted by the 'Type' column, which is indicated by a red arrow in the header. The 'Type' column contains values like 'Low', 'High', and 'Alarm'. The 'Alarm ON' and 'Alarm OFF' columns show timestamps.

Tag No.	Level	Type	Alarm ON	Alarm OFF
2	Low	↓	2005/01/05 10:03:04.500	2005/01/05 10:03:07.500
1	High	↑	2005/01/05 10:03:08.000	2005/01/05 10:03:12.000
2	Low	↓	2005/01/05 10:03:12.500	2005/01/05 10:03:16.500
1	High	↑	2005/01/05 10:03:17.000	2005/01/05 10:03:21.000
2	Low	↓	2005/01/05 10:03:21.500	2005/01/05 10:03:26.000
1	High	↑	2005/01/05 10:03:26.500	2005/01/05 10:03:30.500
2	Low	↓	2005/01/05 10:03:31.000	2005/01/05 10:03:35.000
1	High	↑	2005/01/05 10:03:35.500	2005/01/05 10:03:40.000
2	Low	↓	2005/01/05 10:03:40.500	2005/01/05 10:03:44.500
1	High	↑	2005/01/05 10:03:45.000	2005/01/05 10:03:49.000

• Mark List

Sorted according to the clicked item

Currently sorted to the item indicated by this mark

A screenshot of the 'Data Viewer - [Alarm/Mark List[10510000 M-D]]' window. The 'Mark List' tab is selected. The table shows a list of marks with columns: Absolute Time, Mark, Group, Marker, and Kind. The data is sorted by the 'Mark' column, which is indicated by a red arrow in the header. The 'Mark' column contains values like 'CAUTION', 'CHECK', 'BREAK', 'Mark', and 'Trigger Point'. The 'Group' column contains values like '1: Group 01'. The 'Marker' column contains values like 'Mark' and 'Trigger'. The 'Kind' column contains values like 'Mark' and 'Trigger'. The 'Absolute Time' column shows timestamps. The 'Group' column is highlighted with a blue box, and a label points to it: 'Names of groups with marks. If the groups have no names, all groups are marked'. The 'Marker' column is highlighted with a blue box, and a label points to it: 'Message mark added in the browser display screen'. The 'Kind' column is highlighted with a blue box, and a label points to it: 'Mark added by Viewer software'. The 'Trigger' row is highlighted with a blue box, and a label points to it: 'MW100 trigger marks'.

Absolute Time	Mark	Group	Marker	Kind
2005/01/05 10:03:20.000	CAUTION			
2005/01/05 10:03:37.500	Mark			
2005/01/05 10:03:46.000	CHECK			
2005/01/05 10:04:01.500	Mark			
2005/01/05 10:04:17.500	BREAK			
2005/01/05 10:04:36.000	Mark			
2005/01/05 10:05:16.000	CHECK			
2005/01/05 10:05:52.000	Trigger Point			

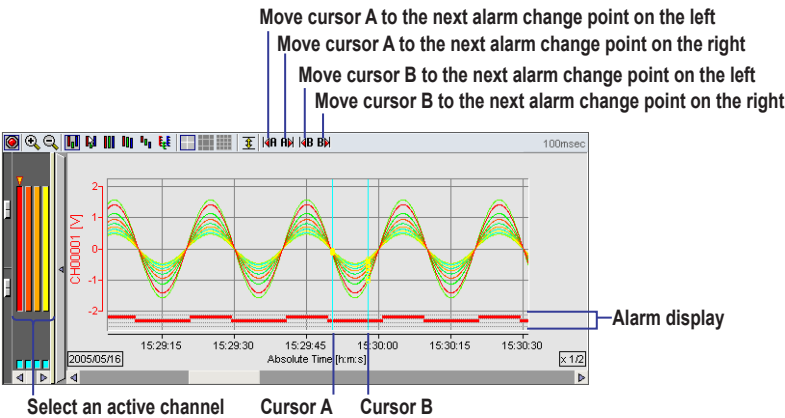
3.2 Settings Related to Displaying Measured, Computed, and Thinned Data

The alarm/mark list display's cursors are linked with those of the waveform display and numeric display layout screens. Alarms or marks selected with the cursor in the alarm/mark list display can be copied to the clipboard using the Edit > Copy command. The alarm/mark list can be converted to ASCII, Excel, or Lotus format (see section 3.7).

Alarm display limitation: One file can display a maximum of 10000 alarms.

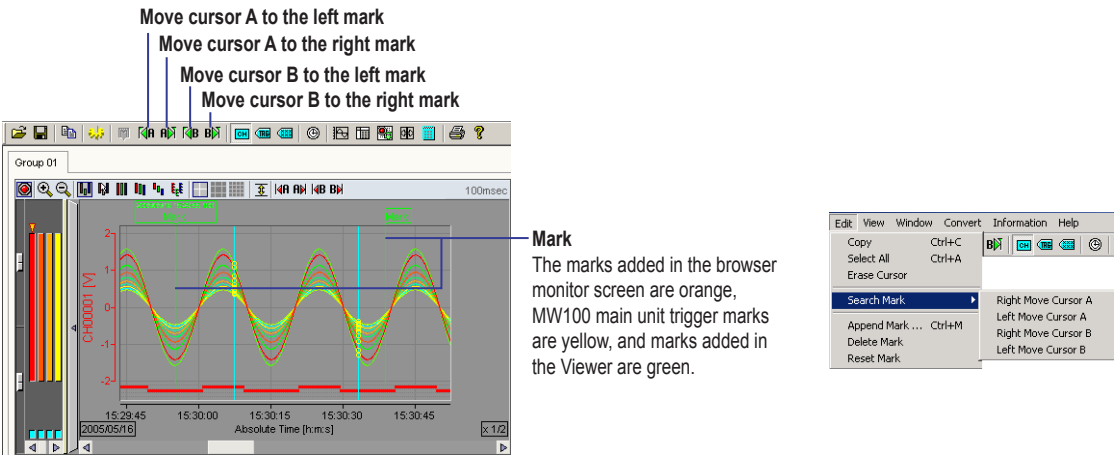
Left-to-Right Alarm Search (Waveform Display Screen Only)

Searches alarms on the active channel.



Left-to-Right Mark Search (Waveform Display Screen Only)

In the waveform display screen, move cursor A and B to the right or left side of the mark. From the Edit menu, choose Mark Search. Or click the corresponding toolbar button.

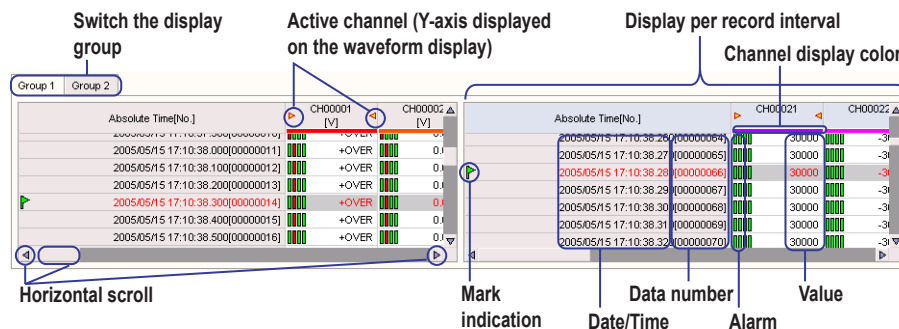


3.2 Settings Related to Displaying Measured, Computed, and Thinned Data

Numeric Display

Numeric display can be shown along with the waveform display window. When a group contain channels with different measurement intervals, the screen is divided accordingly. The display group, active channel, and mark display are synchronized to the waveform display.

If cursors are displayed on the numerical display window, the data values between the cursors are displayed in red. Also, the data column corresponding to the cursor position is displayed in gray background.



Note

- If you open the numeric display window when two cursors are shown on the waveform display window, the values in the interval between the cursors is displayed in red. If you choose Copy from the Edit menu (press the Ctrl + C key) in this condition, the data in the interval is copied to the clipboard as text data.
- Up to 1000 lines can be copied. (Copy on the Edit menu is not available if the number of lines specified by the cursors is above 1000.)
- If data of multiple measurement intervals is displayed, the data in the interval between the cursors on the data sheet with the active measurement interval is copied. In the active measurement interval data sheet, only the upper-most row is displayed in blue. The color of the upper-most row and the left most column are displayed using the same color on inactive sheets. You can activate a sheet by clicking it.

Initializing, Copying, and Pasting of Settings on the General Display Settings Window

On the General Display Settings window, you can reset the settings to default or copy and paste the settings of one or multiple waveforms to the settings of other waveforms. You can copy and paste according to the procedure below. Drag the copy source waveform numbers (No. column), click the Copy button, drag the copy destination waveform numbers, and click the Paste button.

Drag to select a range

Click to select all the channels

No.	Channel No.	Y Axis	Form	Scale	Zone	Trip1	Trip2	Color
				Min. Max.	Min. Max.			
W01	CH00001	Linear		-2.0 2.0	0 100	-1.0	1.0	Yellow
W02	CH00002	Linear		-30000.0 30000.0	0 100	-2.0	2.0	Orange
W03	CH00003	Linear		-30000.0 30000.0	0 100	-2.0	2.0	Red
W04	CH00004	Linear		-30000.0 30000.0	0 100	-3.0	3.0	Orange
W05	CH00011	Linear		-0.2000 0.2000	0 100	-0.2000	0.2000	Green
W06	CH00012	Linear		-30000.0 30000.0	0 100	-30000.0	30000.0	Green
W07	CH00013	Linear		-30000.0 30000.0	0 100	-30000.0	30000.0	Green
W08	CH00014	Linear		-30000.0 30000.0	0 100	-30000.0	30000.0	Green
W09	CH00015	Linear		-3.0 3.0	0 100	-2.0	2.0	Green
W10	CH00016	Linear		-3 3	0 100	-2	2	Green
W11	CH00017	Linear		-3.0000 3.0000	0 100	-2.0000	2.0000	Blue
W12	CH00018	Linear		-3.0000 3.0000	0 100	2.0000	2.0000	Blue
W13	CH00019	Linear		-3.0000 3.0000	0 100	2.0000	2.0000	Blue
W14	CH00020	Linear		-3.0000 3.0000	0 100	2.0000	2.0000	Blue

Click this button to reset to default settings

To set the scale to match the maximum and minimum values of the data

To copy the settings

To not copy/paste the item, click to hide the flag

To paste the copied settings

Click this button to enter the same settings as the first channel in the selected range

Click this button to automatically assign the channels in order

Click this button to turn ON/OFF the channels collectively

Applying Data File Display Conditions

Group display conditions set using Viewer (including group data display conditions reflecting the use of templates or the display conditions setting file) are cleared, and the channel display returns to the data file display settings. If there are no display settings in the data file, the default settings are restored. The settings configured using the tool buttons in the upper part of the waveform display screen for each group (alarm display ON/OFF, time axis zoom in/out, display zone switching, grid display switching, and grid display ON/OFF), and the grid color and waveform background color settings are restored to their default settings.

Alarm display ON/OFF

Zoom in or out of the time axis

Switch the display zone

Switch the grid display

Clip display ON/OFF

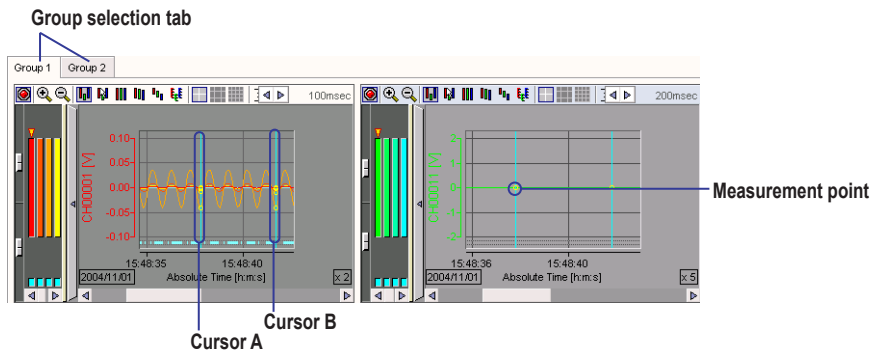
Move the cursor to the point where the alarm changed

3.3 Reading Measured, Computed, and Thinned Values Using the Cursors

Procedure

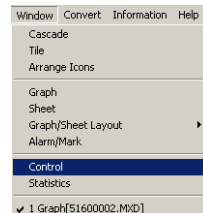
1. On the waveform display window, click the tag of the group from which you wish to read the value using cursors.
2. Click the position of the desired data in the waveform display area of the waveform display window.

If you wish to read another point simultaneously, drag the cursor. Cursor A appears at the position where you first clicked; Cursor B appears at the position where you released the mouse button. A yellow circle is displayed where the waveform and the cursor cross.

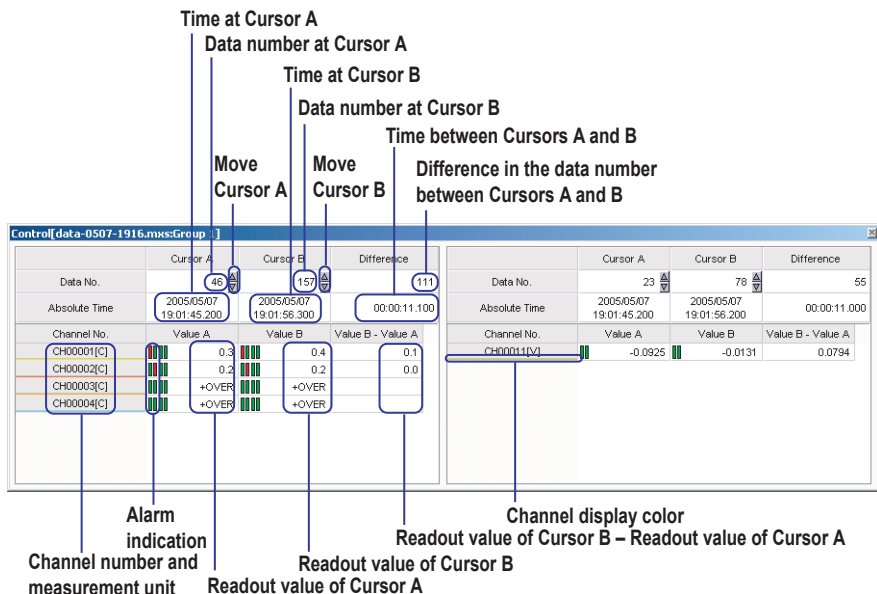


You can move the waveform that is displayed in the waveform display area using the scroll buttons or scroll bar.

3. From the Window menu, choose Control.



The Cursor Value window opens.



Clearing the Cursor

From the Edit menu, choose Erase Cursor.

The cursors are cleared as well as the cursor values displayed in the Cursor Value dialog box.

Explanation

Reading Measured/Computed Values Using Cursors

Two cursors can be displayed. The following values can be read on the Cursor Value window.

- Values at the cursors.
- Difference in the value between the cursors.
- Absolute time and data number at the cursor position.
- Time between the cursors and the difference between the data numbers.
- Alarm status of the value at the cursor.

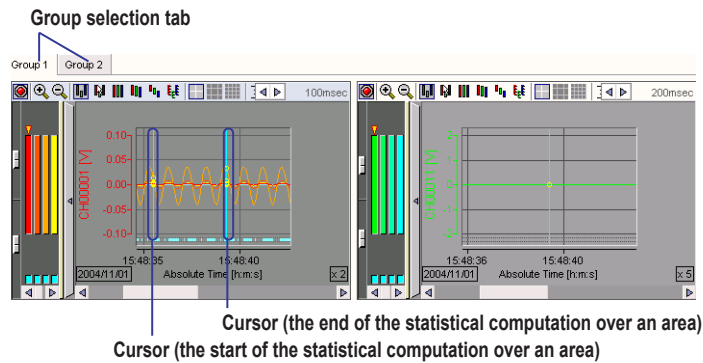
Note

- The cursors used to display cursor values and those used to specify the interval for statistical computation over an area are the same.
- The Cursor Value window and the Statistics window can be displayed simultaneously.
- If you click the tab of another group on the waveform display window while the Cursor Value window is open, the cursor values of the selected group are displayed on the Cursor Value window.
- You can change the cursor positions on the waveform display window while the Cursor Value window is open.
- If you choose Select All from the Edit menu, Cursor A is displayed at the first data position and Cursor B is displayed at the last data position.

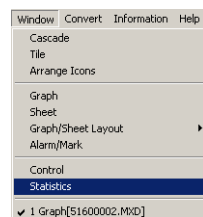
3.4 Statistical Computation over an Area of Measured/Computed Data

Procedure

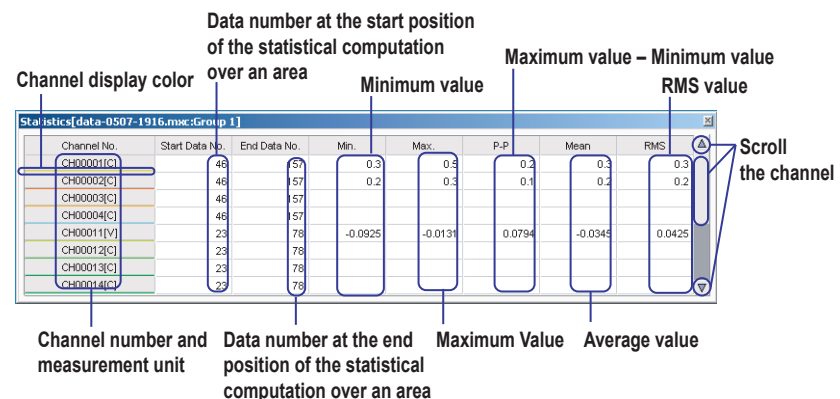
1. On the waveform display window, click the tab of the group on which you wish to perform statistical computation over an area.
2. Click the start position of the computation area in the waveform display area.
A light-blue cursor appears in the waveform display area. If multiple waveform display areas are displayed, the cursor is displayed at the time position each waveform display area.
3. Drag the cursor to the end position of the computation area.
Another light-blue cursor appears at the position where the cursor was dragged.



4. From the Window menu, choose Statistics.



The Statistics window opens.



Explanation**Statistical Computation over an Area**

Specify using two cursors the interval over which computation is to be performed.

If the cursors are not displayed, all the data are used in the statistical computation.

The statistical parameters are the minimum value, the maximum value, the P-P value (maximum - minimum), the average value, and the rms value.

Note

- To redo the computation after changing the computation area, you must select the "statistics calculated over an area display window" button (see page 3-4) or the menu command again.
- The cursors used to specify the interval for statistical computation over an area and those used to read values are the same.
- The Statistics window and the Cursor Value window can be displayed simultaneously.
- You can press Ctrl + C when the Statistics window is active to copy the displayed results as text data to the clipboard.

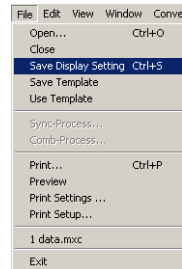
3.5 Saving Display Settings for Measured, Computed, and Thinned Data

Procedure

From the File menu, choose Save Display Setting File.

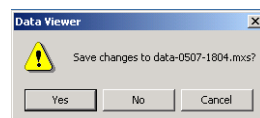
You can also click the  button on the toolbar.

The display setting file is created in the same folder as the data files.



When Closing the Viewer

If you open a file and change the display settings, the dialog box below opens when you attempt to close the Viewer. To save the changed display settings, click Yes.



Explanation

Display Settings That Are Saved

- Information about the group whose waveform or numeric display is open.
- Settings entered using the tool buttons at the top section of the waveform display area of each group.
Alarm display ON/OFF, magnification, scale, clip ON/OFF of the waveform display.
- Cursor position (absolute time).
- General Display Settings in the View menu.
- Channel No., Tag ID, and Tag comment settings on the View menu.
- Absolute Time or Relative Time setting on the View menu.
- Graph/Sheet Layout setting on the Window menu.
- Check box items in the File Information dialog box on the Information menu.
The items are used as headers when the data is printed.
- Print setting on the File menu.
Range, Color, Print Groups, and Comment.
- Marks created on the Viewer.
- Position of the display screen.

Display Setting File

The display setting file (with the .mxv extension) is created in the folder containing the data files. If the data file name is data.MXD, the display setting file name is data.MXD.m xv. If you open data.MXD again, a screen based on the display settings file is displayed.

If the display setting file is deleted or moved to another folder, the display opens according to the display settings used when the data file was created.

Note

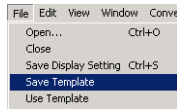
You cannot open a file containing the data you wish to view by selecting a file with .mxv extension.

3.6 Saving the Display Template for Measured, Computed, and Thinned Data

Procedure

Saving Templates

1. From the File menu, choose Save Template.
The currently displayed settings are saved as a template file to the same folder as the displayed data.



Using Templates

1. From the File menu, choose Use Template.
If the currently opened data file is not accompanied by its display settings file, it is displayed according to the setting information of the template file residing in the same folder.
If the currently opened data file is accompanied by its display settings file, it is displayed according to the setting information of the display settings file.

Explanation

The template file is saved with the name default.mxt in the folder of the currently displayed data.

When using a template file, the template file residing in the same folder as the displayed data is used.

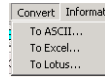
The setting information saved to the template file is as follows.

- Information about the group whose waveform or numeric display is open.
- Settings entered using the tool buttons at the top section of the waveform display area of each group.
Alarm display ON/OFF, magnification, scale, clip ON/OFF of the waveform display.
- General display settings in the View menu
- Channel No., Tag ID, and Tag comment settings on the View menu.
- Absolute Time or Relative Time setting on the View menu.
- Graph/Sheet Layout setting on the Window menu.
- Check box items in the File Information dialog box on the Information menu.
The items are used as headers when the data is printed.
- Print setting on the File menu.
Range, Color, Print Groups, and Comment.

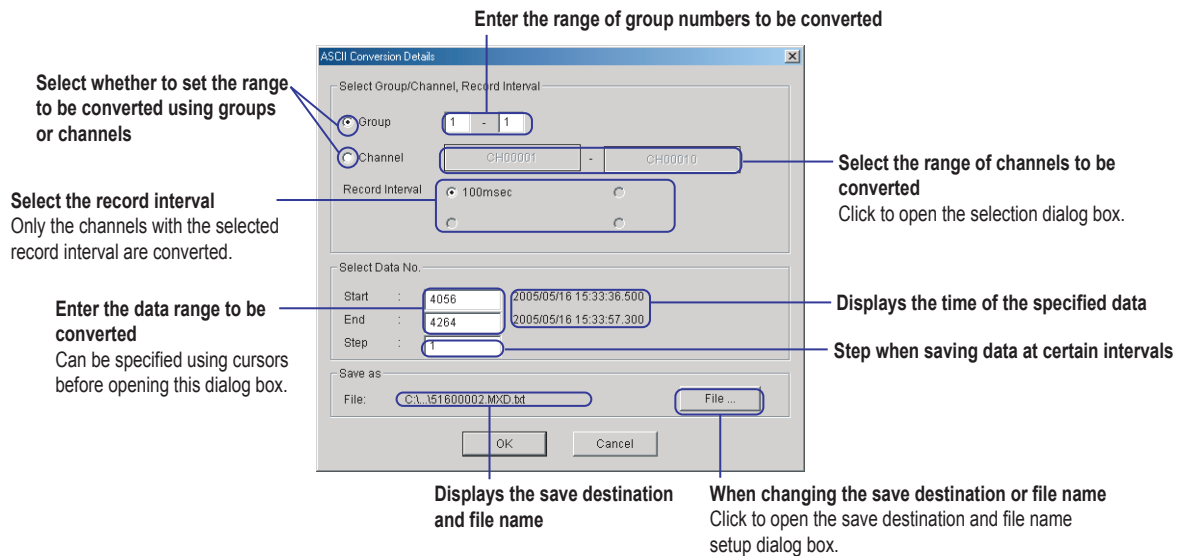
3.7 Converting the Data Formats for Measured, Computed, and Thinned Data

Procedure

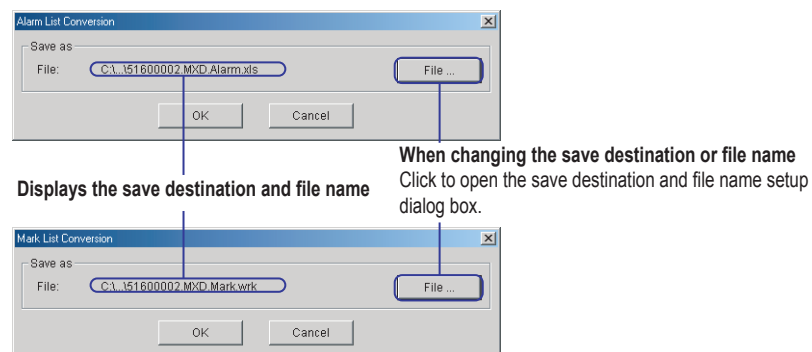
1. From the Convert menu, choose To ASCII, To Excel, or To Lotus.



2. After entering various settings in the dialog box that opens, click OK. The file is created at the specified destination.
Waveform or Numeric Display



Alarm/Mark List Display



Explanation

Data Formats for Conversion

- ASCII
Text data with each data point separated by a comma. The extension is .txt.
- Excel
Data that can be opened using Microsoft's spreadsheet application Excel version 8.0 (Excel 97) or later. The extension is .xls.
- Lotus
Data that can be opened using IBM's Lotus 1-2-3 spreadsheet application version 2.0 or later. The extension is .wj2.

Converted Data

Specify the range using group numbers or channel numbers. You can select the channel number by clicking in the dialog box as shown below.

Channel No.			
CH00001	CH00002	CH00003	CH00004
CH00011	CH00012	CH00013	CH00014
CH00015	CH00016	CH00017	CH00018
CH00019	CH00020	CH00021	CH00022
CH00023	CH00024	CH00025	CH00026
CH00027	CH00028	CH00029	CH00030
Cancel			

If multiple record intervals exist in the data to be converted, select the recording interval. Only the data of the channels having the selected recording interval is converted.

Conversion Range and Step

You can specify the range using data numbers or by using cursors. For the method of specifying the range using cursors, see the procedure in section 3.4, "Statistical Computation over an Area of Measured/Computed Data." By specifying the step, you can save data sampled at certain intervals rather than converting all the data in the range (when step is set to 1).

Display Example of the Converted Data

```

[Mw100 Viewer Software], "R2.13"
"Data Viewer", "R2.13"
"Yokogawa", "Mw100", "111-2222-xxxx"
"File Name", "1600002.MXD"
"File Recovery", "None"
"Creator", "Mw100"
"Sync-Process", "Not Done"
"Start Condition", "Start Point"
"End Condition", "End Point"
"Start Time", "2005/05/16", "15:26:50", 0.900
"End Time", "2005/05/16", "15:36:50", 0.800
"File Message", ""
"File No.", 0
"Num. of Ch.", 10
"Num. of Ref. File", 0
"Ref. File No.", ""
"Record Interval", 0.100, "second"
"Converted Step", 1
"Num. of converted Ch.", 10
"Num. of converted Data", 213
"Converted Group", 1, "-", 1
"Ch.", CH00001, CH00002, CH00003, CH00004, CH00005, CH00006, "C"
"Tag No.", "", "", "", "", "", ""
"Tag Comment", "", "", "", "", "", ""
"Mark", "Date", "Time", "Second", "V", "V", "V", "V", "V", "V", "V", "V"
"2005/05/16", "15:33:16", 0.900, -1.1766, -1.176,
"2005/05/16", "15:33:17", 0.000, -1.1510, -1.151,
"2005/05/16", "15:33:17", 0.100, -1.1249, -1.124,


```

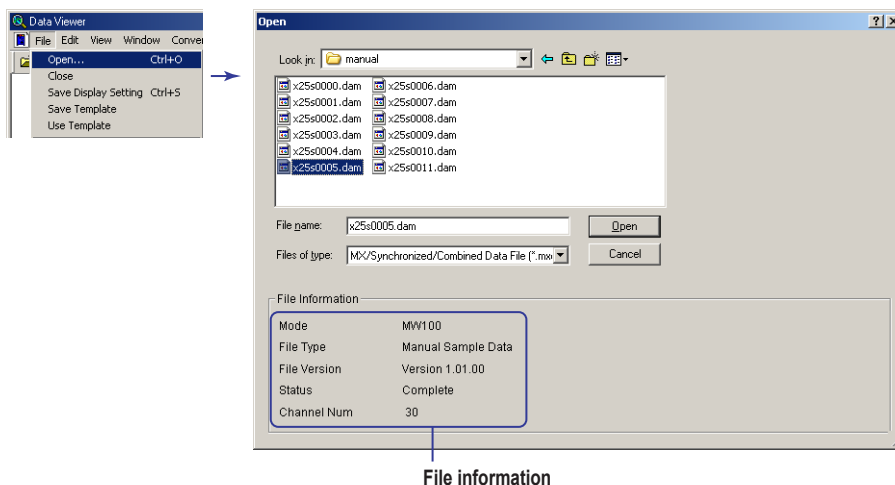
Notes When Converting Data

- There is a limit in the number of data that Excel and Lotus1-2-3 can handle. Before conversion, set the data to be converted, range of data, and steps such that the appropriate number of data are targeted. Also, if there is little free memory in the PC, Excel or Lotus 1-2-3 may not be able to load the data.
- If you specify conversion conditions that exceed the limits of Excel or Lotus 1-2-3, data is automatically divided prior to conversion, therefore multiple files are created. The file names are assigned automatically with sequential numbering. (For example if a file, data.MXD is converted to Excel and divided into n files, the resultant file names are data.MXD.0000.xls, data.MXD.0001.xls, ... data.MXD.000n.xls.)
- When converting to Excel, up to 252 channels and 65510 data are saved in a single conversion file (when channels are in columns and data are in rows).
- When converting to Lotus, up to 252 channels and 8166 data are saved in a single conversion file (when channels are in columns and data are in rows).
- If you set the save destination to a storage medium that has slow access such as a floppy disk, the saving of the data may take an extended time. It is recommended that such storage medium not be selected for the save destination.
- Select a save destination with adequate free space.
- The measured data during a burnout or measured data that exceeds the upper/lower limit of the measurement range are indicated as "+OVER" or "-OVER"
- If invalid data exists in the converted data (measured value of a channel without input or computed value when the data used in the equation does not exist), the data is indicated as "INVALID"

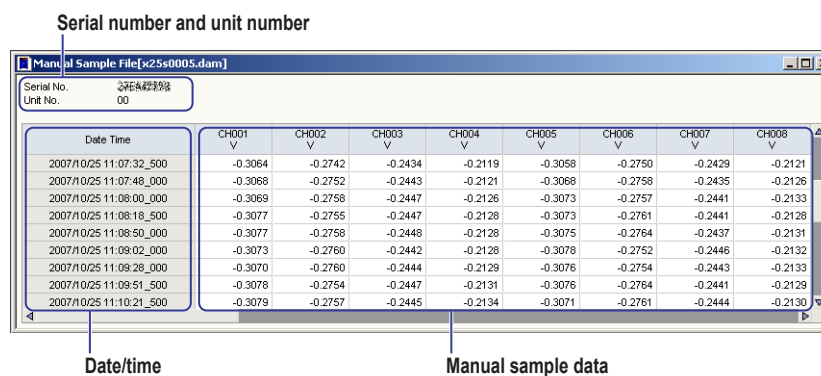
3.8 Loading Manual Sample Files

Procedure

1. Start the Viewer.
2. From the **File** menu, click **Open**.
You can also click the  button on the toolbar.
The Open dialog box is displayed.
3. Select the manual sample file you wish to load and click **Open**.
The manual sample file window is displayed.



The manual sample file window opens, as in the figure below.




Switching the Display

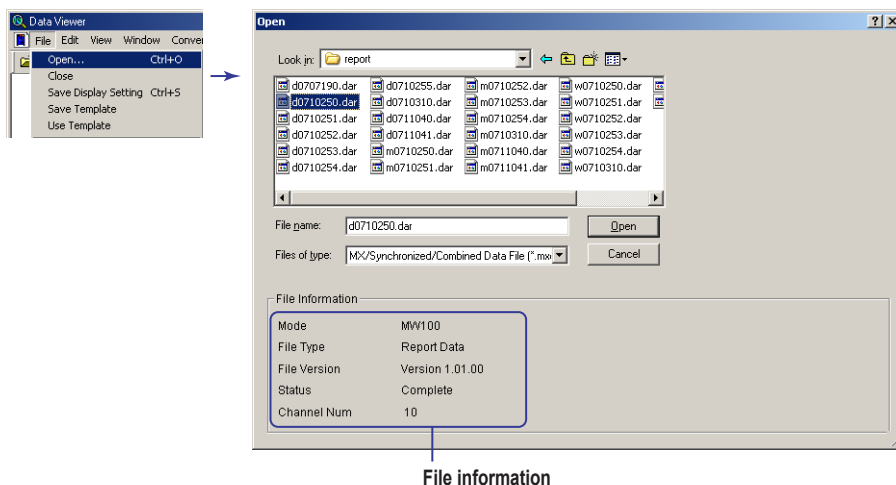
Channel Number/Tag Name

From the View menu, you can select to display channel numbers or tag names.

3.9 Loading Report Files

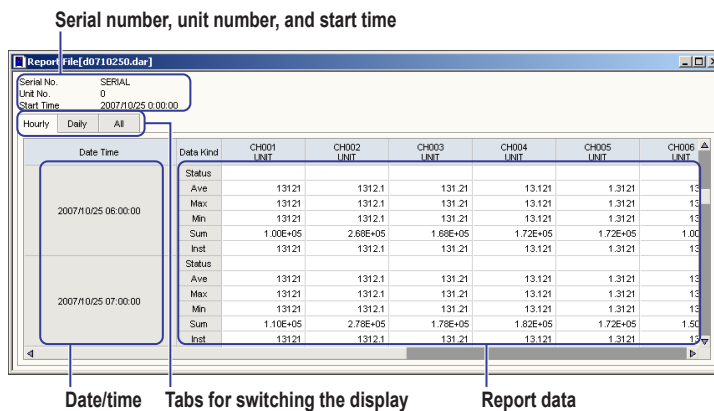
Procedure

1. Start the Viewer.
2. From the **File** menu, click **Open**.
You can also click the  button on the toolbar.
The Open dialog box is displayed.
3. Select the report file you wish to load and click **Open**.
The report file window is displayed.



File information

The report file window opens as in the figure below.



Date/time

Tabs for switching the display

Report data

Explanation

Display Switching Tabs

The report types that can be displayed differ depending on the type of report file loaded.

Loaded Report File	Displayable Report Types
Daily (Dxxxxxxx.DAR)	Hourly, daily, all (hourly + daily)
Weekly (Wxxxxxxx.DAR)	Daily, weekly, all (daily + weekly)
Monthly (Mxxxxxxx.DAR)	Daily, monthly, all (daily + monthly)

Switching the Display

Channel Number/Tag Name

From the View menu, you can select to display channel numbers or tag names.

3.10 Printing the Data

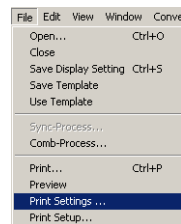
You can print files loaded onto MW100 Viewer. The contents that can be printed differ depending on the file type.

- Measured, computed, and thinned data files
The contents described in this section can be printed.
- Manual sample data and report data files
You can print, confirm the contents to be printed, and enter printer settings.

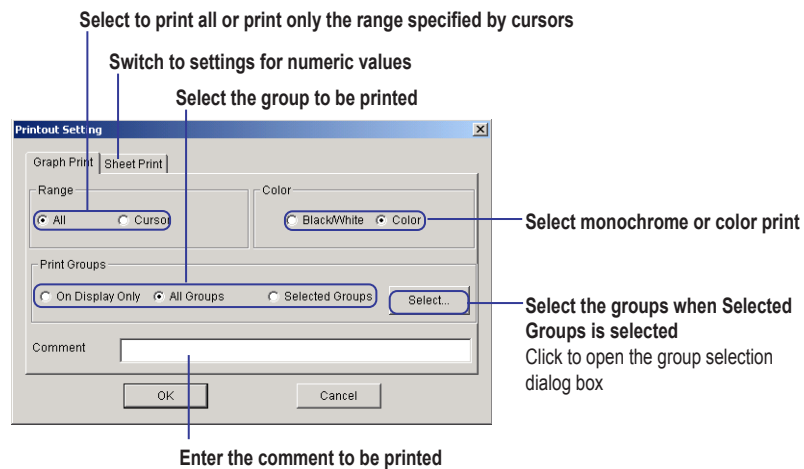
Procedure

Setting the Contents to Be Printed

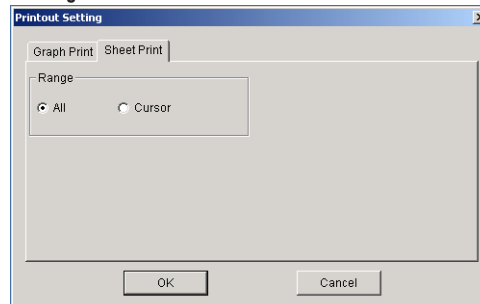
1. From the **File** menu, choose **Print Settings**.



2. In the **Printout Setting** dialog box, set **Range**, **Color**, and **Print Groups**, and then click **OK**. Enter a comment in the **Comment** box as necessary.
When printing numeric values, only a print **Range** need be selected.

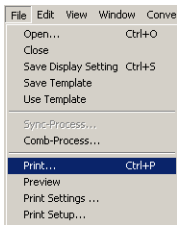


Settings for numeric values

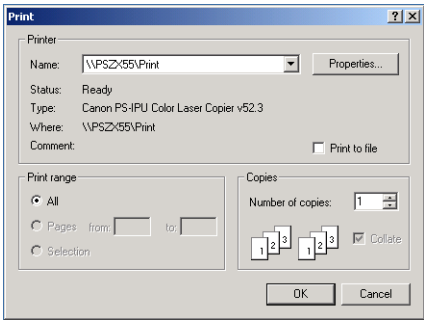


Executing the Print Operation

- 1. From the **File** menu, choose **Print**.
The **Print** dialog box opens.
- 2. In the **Print** dialog box, select the printer, print range, and the number of copies, and then click **OK**.
When printing waveforms, you cannot set the print range.

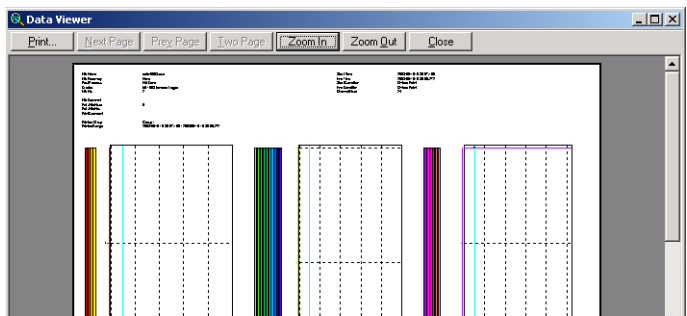
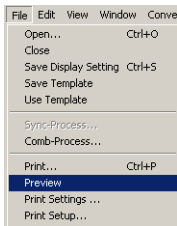


Display example of the Print dialog box



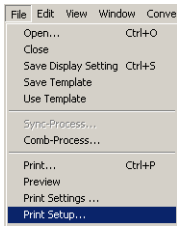
Print Preview

- From the **File** menu, choose **Preview**.
The print image is displayed.

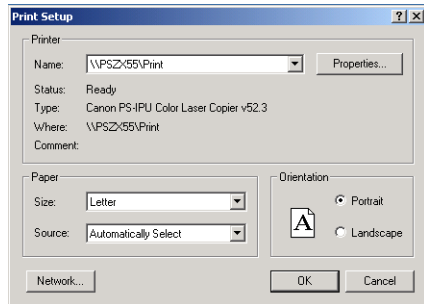


Setting Up the Printer

- 1. From the **File** menu, choose **Print Setup**.
The **Print Setup** dialog box opens.
- 2. Set the paper size, orientation, and other settings. Then, click **OK**.



Display example of the Print Setup dialog box



Explanation

Printed Items

To print waveforms, open the waveform display window; to print numeric values, open the numeric display window; to print alarm or mark lists, open the alarm/mark list display window. If multiple waveform display windows or numeric display windows are open, click the window you wish to print.

Also, to print cursor values or statistics calculated over an area along with waveforms, display those windows as well.

Print Range

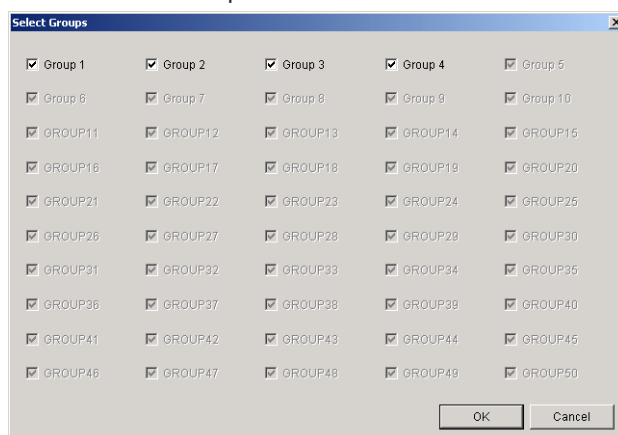
If you wish to print a specified range of the waveform, specify the range using cursors. For the method of specifying the range using cursors, see the procedure in section 3.4, "Statistical Computation over an Area of Measured/Computed Data."

Printed Colors of Waveforms

You can select to print in black and white or in color.

Print Groups

- On Display Only
Only the groups whose waveforms are displayed are printed.
- All Groups
All groups that can be displayed on the waveform display window are printed.
- Selected Groups
Groups selected in the dialog box that opens (see the figure below) when the Select button is clicked are printed.

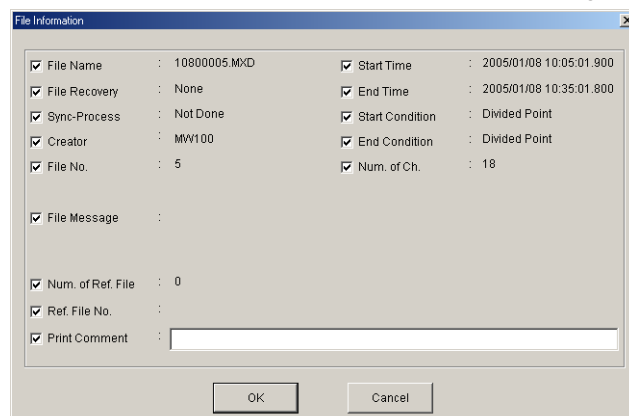


Printing a Comment

You can enter a comment using up to 127 characters. The comment is printed in the Print Comment column.

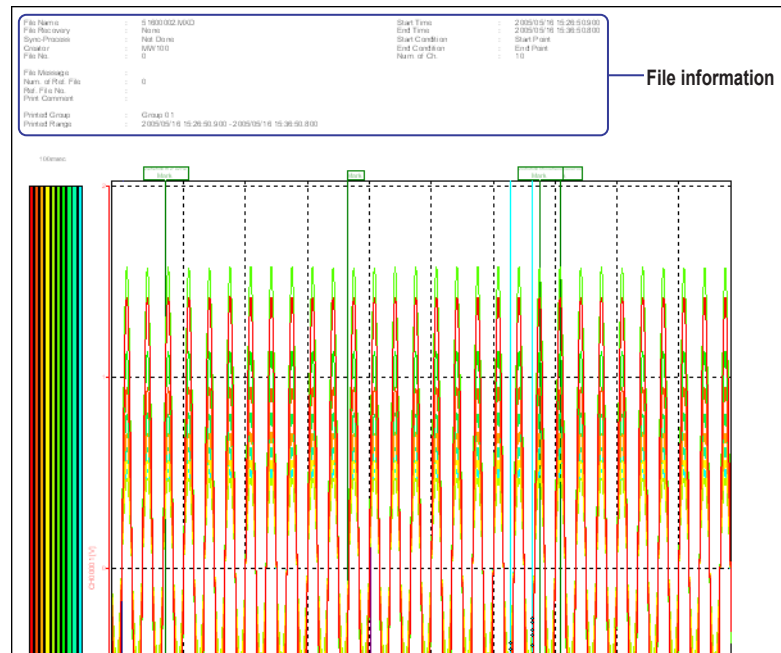
Printing File Information

When you print data, the file information is also printed. You can check the file information in the dialog box that appears when choosing File Information from the Information menu. You can also select the items to be printed using the check boxes.



Print Example

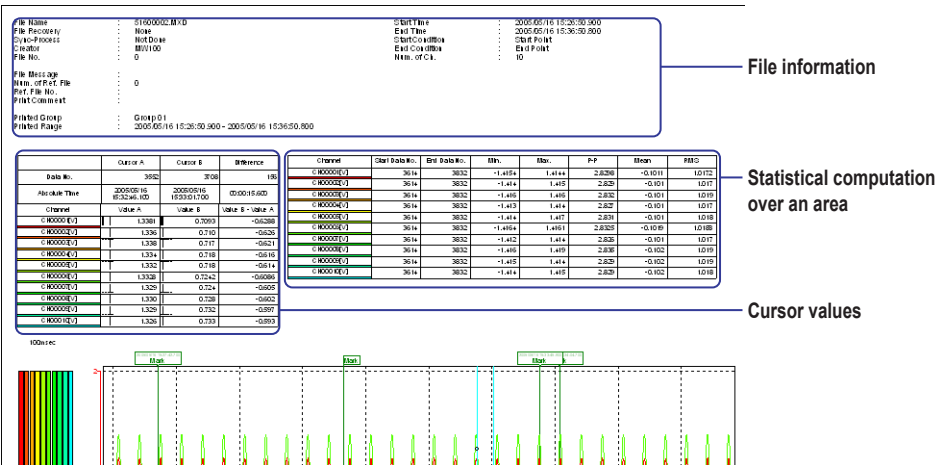
- When only the waveforms are printed



Note

If you wish to arrange the waveform graphs vertically when printing waveforms of multiple recording intervals, choose Tile Vertical under Graph/Sheet Layout from the Window menu. To arrange the waveform graphs horizontally, choose Tile Horizontally.

- When cursor values, values of statistical computation over an area, and waveforms are printed



3.10 Printing the Data

- When printing an alarm list

Alarm List[51600002.MXD]						1/1
Channel	Level	Type	Alarm On	Alarm Off		
C W0001	2	Low	2009/05/16 15:26:30.900	2025/05/16 15:27:00.800		
C W0001	1	High	2009/05/16 15:27:00.800	2025/05/16 15:27:09.300		
C W0001	2	Low	2009/05/16 15:27:09.300	2025/05/16 15:27:20.800		
C W0001	1	High	2009/05/16 15:27:20.800	2025/05/16 15:27:29.300		
C W0001	2	Low	2009/05/16 15:27:29.300	2025/05/16 15:27:40.800		
C W0001	1	High	2009/05/16 15:27:40.800	2025/05/16 15:27:49.300		
C W0001	2	Low	2009/05/16 15:27:49.300	2025/05/16 15:28:00.800		
C W0001	1	High	2009/05/16 15:28:00.800	2025/05/16 15:28:09.300		
C W0001	2	Low	2009/05/16 15:28:09.300	2025/05/16 15:28:20.800		
C W0001	1	High	2009/05/16 15:28:20.800	2025/05/16 15:28:29.300		
C W0001	2	Low	2009/05/16 15:28:29.300	2025/05/16 15:28:40.800		
C W0001	1	High	2009/05/16 15:28:40.800	2025/05/16 15:28:49.300		
C W0001	2	Low	2009/05/16 15:28:49.300	2025/05/16 15:29:00.800		
C W0001	1	High	2009/05/16 15:29:00.800	2025/05/16 15:29:09.300		
C W0001	2	Low	2009/05/16 15:29:09.300	2025/05/16 15:29:20.800		
C W0001	1	High	2009/05/16 15:29:20.800	2025/05/16 15:29:29.300		
C W0001	2	Low	2009/05/16 15:29:29.300	2025/05/16 15:29:40.800		
C W0001	1	High	2009/05/16 15:29:40.800	2025/05/16 15:29:49.300		
C W0001	2	Low	2009/05/16 15:29:49.300	2025/05/16 15:30:00.800		
C W0001	1	High	2009/05/16 15:30:00.800	2025/05/16 15:30:09.300		

- When printing a mark list

Mark List[51600002.MXD]					1/1
Absolute Time	Mark	Group	Marker	Unit	
2009/05/16 15:27:42.700	Mark		Viewer	Mark	
2009/05/16 15:28:56.100	Message On		Unit	Mark	
2009/05/16 15:29:03.500	Message On		Unit	Mark	
2009/05/16 15:30:36.700	Mark		Viewer	Mark	
2009/05/16 15:31:01.700	Message On		Unit	Mark	
2009/05/16 15:32:09.800	Trigger Pulse		Unit	Trigger	
2009/05/16 15:33:45.500	Mark		Viewer	Mark	
2009/05/16 15:33:45.700	Mark		Viewer	Mark	

- When printing a list of numeric values

Data List[51600002.MXD]							1/186
100msec	CH0001	CH0002	CH0003	CH0004	CH0005	CH0006	
Absolute Time[sec]	M	M	M	M	M	M	
2009/05/16 15:26:50.800(00000000)	-0.3785	-0.384	-0.395	-0.399		-0.363	-0.3680
2009/05/16 15:26:51.000(00000001)	-0.4212	-0.428	-0.435	-0.451		-0.437	-0.4352
2009/05/16 15:26:51.100(00000002)	-0.4637	-0.470	-0.471	-0.474		-0.479	-0.4774
2009/05/16 15:26:51.200(00000003)	-0.5054	-0.511	-0.513	-0.516		-0.520	-0.5198
2009/05/16 15:26:51.300(00000004)	-0.5483	-0.552	-0.554	-0.556		-0.562	-0.5604
2009/05/16 15:26:51.400(00000005)	-0.5911	-0.593	-0.594	-0.597		-0.602	-0.6011
2009/05/16 15:26:51.500(00000006)	-0.6339	-0.633	-0.634	-0.637		-0.642	-0.6413
2009/05/16 15:26:51.600(00000007)	-0.6767	-0.673	-0.674	-0.676		-0.681	-0.6802
2009/05/16 15:26:51.700(00000008)	-0.7195	-0.711	-0.712	-0.715		-0.720	-0.7188
2009/05/16 15:26:51.800(00000009)	-0.7623	-0.744	-0.750	-0.753		-0.757	-0.7568
2009/05/16 15:26:51.900(00000010)	-0.8051	-0.787	-0.788	-0.791		-0.795	-0.7940
2009/05/16 15:26:52.000(00000011)	-0.8479	-0.823	-0.825	-0.827		-0.832	-0.8303
2009/05/16 15:26:52.100(00000012)	-0.8907	-0.864	-0.869	-0.883		-0.887	-0.8860
2009/05/16 15:26:52.200(00000013)	-0.9335	-0.894	-0.895	-0.898		-0.902	-0.9003
2009/05/16 15:26:52.300(00000014)	-0.9763	-0.928	-0.929	-0.931		-0.936	-0.9341
2009/05/16 15:26:52.400(00000015)	-1.0191	-0.962	-0.962	-0.965		-0.968	-0.9673

- When printing a list of manual sample values

Manual Sample [c25.s0005.dam]									1/4
Serial No.	Unit No.								
00	00								
Date Time	CH001 V	CH002 V	CH003 V	CH004 V	CH005 V	CH006 V	CH007 V	CH008 V	
2007/10/25 11:04:33.000	-0.1828	-0.1648	-0.1450	-0.1268	-0.1091	-0.9539	-0.1457	-0.1256	
2007/10/25 11:06:19.000	-0.1830	-0.1646	-0.1454	-0.1267	-0.1096	-0.9538	-0.1457	-0.1271	
2007/10/25 11:08:05.000	-0.1825	-0.1643	-0.1457	-0.1276	-0.1069	-0.9546	-0.1460	-0.1268	
2007/10/25 11:09:41.000	-0.1835	-0.1644	-0.1461	-0.1287	-0.1054	-0.9550	-0.1453	-0.1272	
2007/10/25 11:09:51.000	-0.1830	-0.1648	-0.1458	-0.1269	-0.1087	-0.9541	-0.1458	-0.1275	
2007/10/25 11:09:18.000	-0.1830	-0.1647	-0.1450	-0.1271	-0.1054	-0.9541	-0.1458	-0.1256	
2007/10/25 11:09:42.500	-0.2084	-0.1865	-0.1659	-0.1441	-0.2082	-0.1875	-0.1652	-0.1445	
2007/10/25 11:07:05.500	-0.2945	-0.2647	-0.2344	-0.2040	-0.2062	-0.2642	-0.2344	-0.2046	
2007/10/25 11:07:13.000	-0.3068	-0.2704	-0.2387	-0.2084	-0.3010	-0.2698	-0.2394	-0.2092	
2007/10/25 11:07:32.500	-0.3064	-0.2742	-0.2434	-0.2119	-0.3088	-0.2758	-0.2429	-0.2121	
2007/10/25 11:07:48.000	-0.3068	-0.2752	-0.2443	-0.2121	-0.3068	-0.2758	-0.2435	-0.2125	

- When printing a report

Report [d0710250.dar]

Serial No.

Unit No.

Start Time

2007/10/25 09:00:00

Hourly

1/6

Date Time	Date Unit	CH001 UNIT	CH002 UNIT	CH003 UNIT	CH004 UNIT	CH005 UNIT	CH006 UNIT
2007/10/25 01:00:00	Stats						
	Ave	13121	1312.1	131.21	13.121	1.3121	131210
	Max	13121	1312.1	131.21	13.121	1.3121	131210
	Min	13121	1312.1	131.21	13.121	1.3121	131210
	Sum	1.00E+05	2.88E+05	1.68E+05	1.72E+05	1.72E+05	1.00E+05
	Wrt	13121	1312.1	131.21	13.121	1.3121	131210
	Stats						
2007/10/25 02:00:00	Ave	13121	1312.1	131.21	13.121	1.3121	131210
	Max	13121	1312.1	131.21	13.121	1.3121	131210
	Min	13121	1312.1	131.21	13.121	1.3121	131210
	Sum	1.00E+05	2.88E+05	1.68E+05	1.82E+05	1.82E+05	1.00E+05
	Wrt	13121	1312.1	131.21	13.121	1.3121	131210
	Stats						
	Ave	13121	1312.1	131.21	13.121	1.3121	131210
2007/10/25 03:00:00	Max	13121	1312.1	131.21	13.121	1.3121	131210
	Min	13121	1312.1	131.21	13.121	1.3121	131210
	Sum	1.00E+05	2.88E+05	1.68E+05	1.72E+05	1.72E+05	1.00E+05
	Wrt	13121	1312.1	131.21	13.121	1.3121	131210
	Stats						
	Ave	13121	1312.1	131.21	13.121	1.3121	131210
	Max	13121	1312.1	131.21	13.121	1.3121	131210

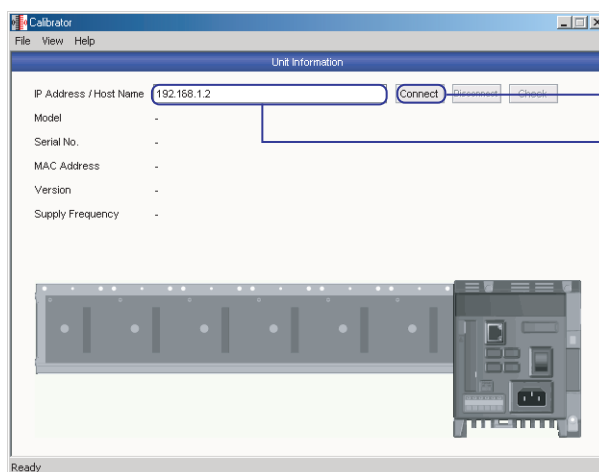
4.1 Connecting the MW100 Data Acquisition Unit

Notes before Using the Calibrator

- If connected to the MW100 from a browser, drop the connection before connecting with the Calibration Software. Also, place the MW100 in Calibration mode. To enter Calibration mode, turn OFF the power to the MW100 main unit, then turn it back ON again while holding down the **USER 1** key. Release the **USER 1** key one second or more after the self check begins (the 7-segment LED displays $\square\square \leftrightarrow \square\square$). To exit Calibration mode, turn the power OFF.
- If you change the module configuration before connecting with the Calibration Software, carry out system reconfiguration on the browser (see section 3.3, "Configuring the System" in the MW100 Data Acquisition Unit User's Manual, IM MW100-01E).

Procedure

1. Start the Calibrator.
The Unit Information window opens.
2. In the IP Address/Host Name box, enter the IP address or host name of the MW100 to be calibrated.
3. Click Connect.

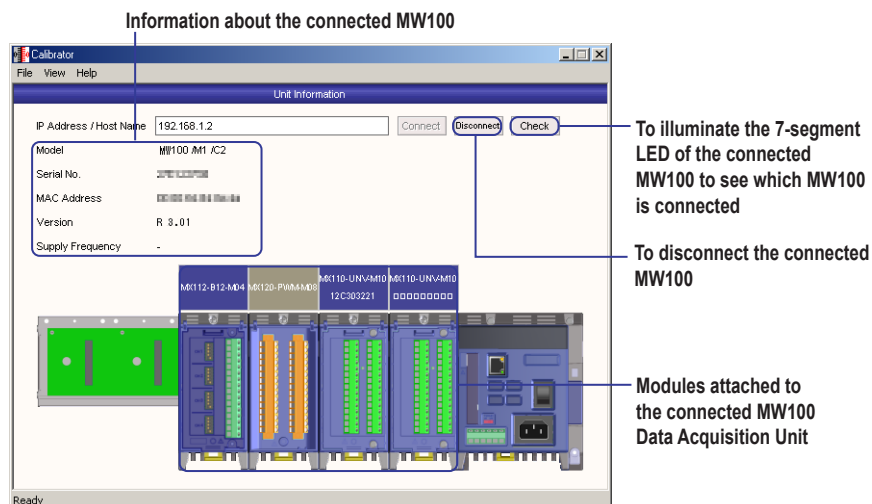


Execute connection

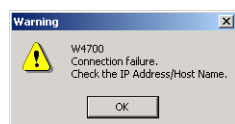
Enter the IP address or host name of the MW100 to be calibrated.

4.1 Connecting the MW100 Data Acquisition Unit

When the connection is established, information about the unit's module configuration is displayed.

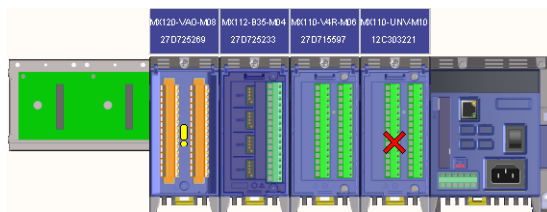


If the specified IP address or host name is not correct, or the MW100 is connected by another software program, the following dialog box opens.



Note

- You cannot change the MW100 network settings using the Calibrator. Use the Address Setting Software (MW100 Viewer Software) to change the IP address and other settings.
- If you change the module configuration before connecting with the Calibrator or if modules that are not operating properly exist, X marks are displayed on the modules as shown below. If you change the module configuration, reconfigure the system using the browser.

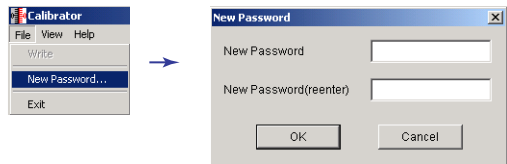


- If your OS is Windows XP, Windows Vista, or Windows 7 and the firewall is enabled, it may not be recognized even if you click the Search button. To solve the problem, see appendix 1 (this phenomenon may also occur with some third party anti-virus programs).

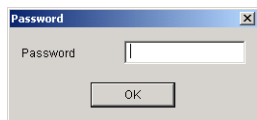
Setting a Password for Startup

You can use the following procedure to set up the Calibrator so that it prompts the user to enter a password upon startup.

- 1. From the File menu, click Set Password.
The password setting dialog box opens.



- 2. Click the New Password box, and enter a password.
There are no restrictions on the characters that can be used in the password. However, the number of characters used must be no more than thirty.
- 3. Enter the same password in the Confirm New Password box, then click OK.
When the Calibrator is restarted, the password confirmation dialog box below appears. If an incorrect password is entered and the OK button is clicked, the message, "Incorrect Password" is displayed in a dialog box. Click OK to exit the Calibrator.



Note To set up the Calibrator so that no password dialog box is displayed, open the password setting dialog box, make sure the entry boxes are blank, and click OK. There is no other way to cancel the password, so make sure you do not forget the password once it is set.

Explanation

Checking the Connected MW100

When the connection is established, the Unit Information window shows the serial number, MAC address, and input/output modules of the connected MW100. If you click the Check button, the 7-segment LED on the main module of the connected MW100 shows the text "--CALL--" flowing from right to left.

4.2 Calibration Procedure























Notes on Calibration

- Do not perform other operations during calibration. Take extra care because if you perform another operation while calibration is in progress, the module may suffer a break down.
- When the screw terminal block (model 772080) is connected to the 10-CH Medium-Speed Universal Input Module, the terminal arrangement differs from that of clamp terminals.

With the calibration software, modules with screw terminal blocks connected are recognized as clamp terminals, meaning that the wiring diagrams show the wiring for the clamp terminals.

Therefore when wiring and performing calibration, you must follow the markings showing the terminal functions and the terminal codes indicating the types of signals input to each terminal located on the back of the terminal cover of the 10-CH screw terminal block.

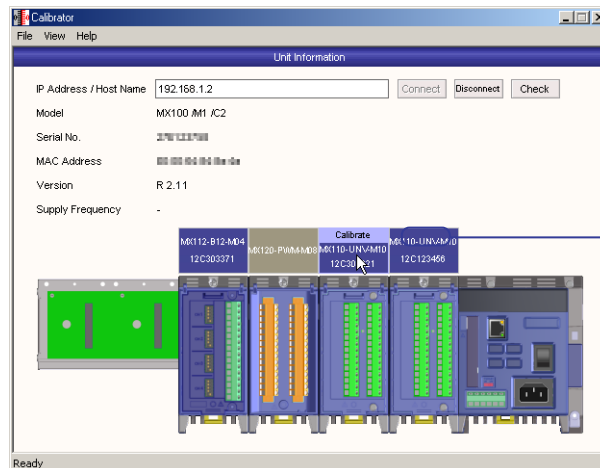
Screw terminal block (model: 772080) terminal wiring markings.

 1 CH6	 1 CH1
 2	 2 CH1
 3 CH7	 3 CH2
 4	 4 CH2
 5 CH8	 5 CH3
 6	 6 CH3
 7 CH9	 7 CH4
 8	 8 CH4
 9 CH10	 9 CH5
 10	 10 CH5
 11 RTD	 11 RTD

Note: The b terminal is common to all channels.
The b terminals are connected internally.

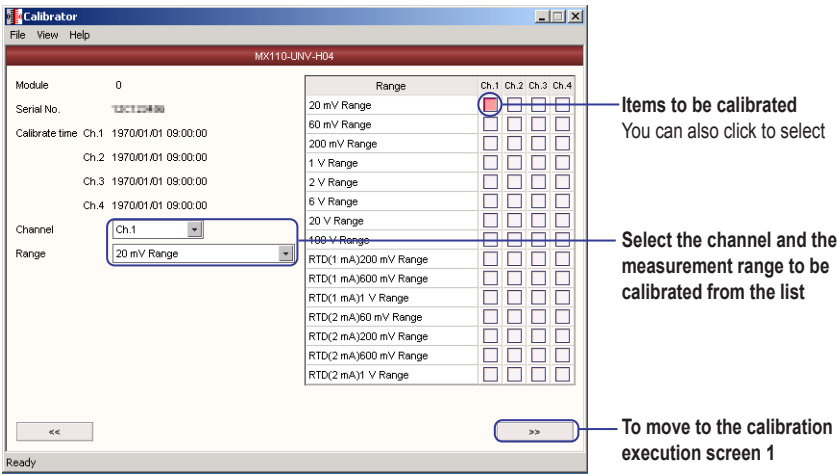
Procedure

1. Click the illustration of the input/output module that you wish to calibrate.

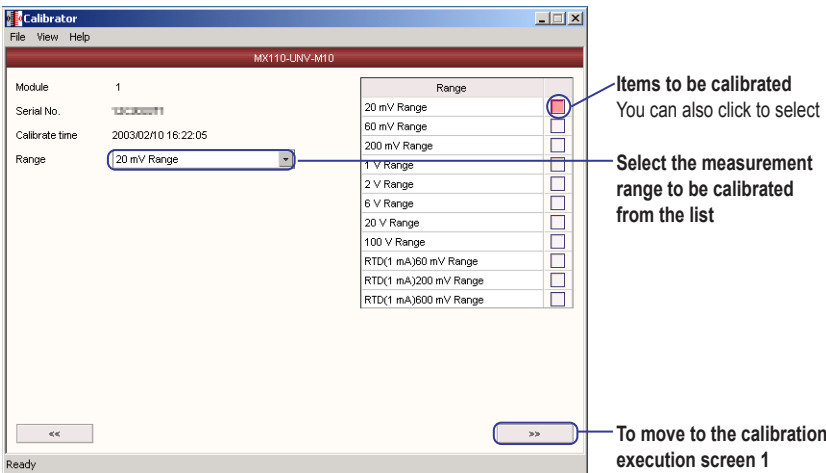


Moving the cursor over an module that can be calibrated shows the word "Calibrate"

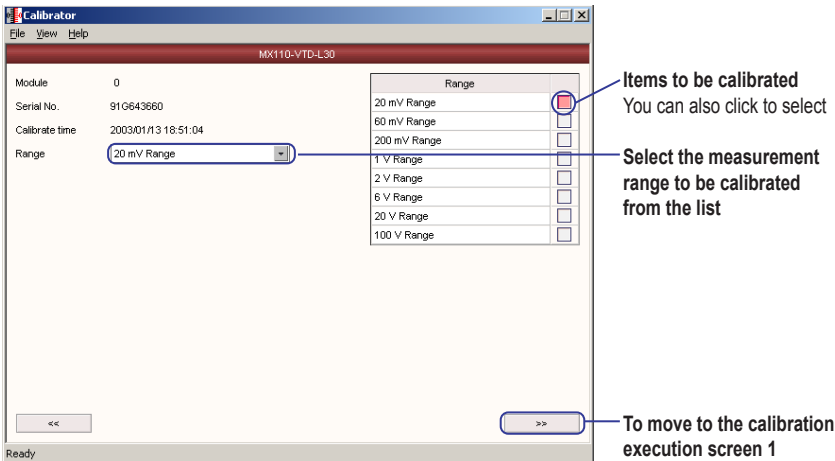
2. On the calibration detail setup screen that appears, select the channel and range to be calibrated and click the >> button.
The figure below is an example of the 4-CH, High-Speed Universal Input Module.



The figure below is an example of the 10-CH, Medium-Speed Universal Input Module. Channels are not selected.

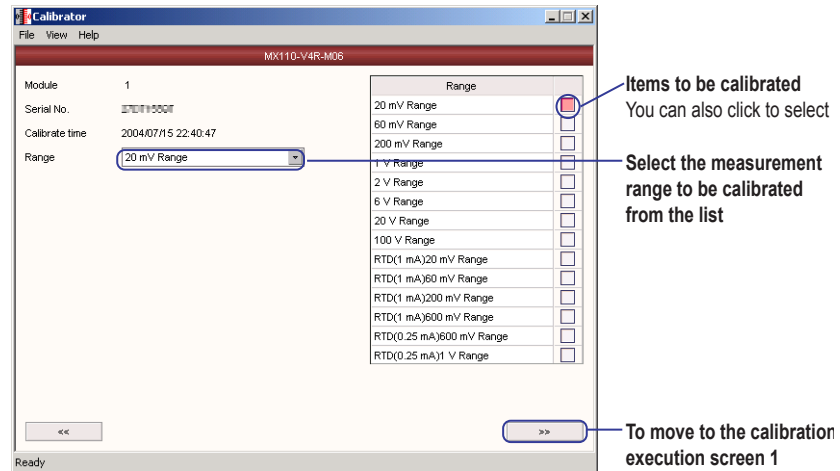


The figure below is an example of the 30-CH, Medium-Speed DCV/TC/DI Input Module. Channels are not selected.

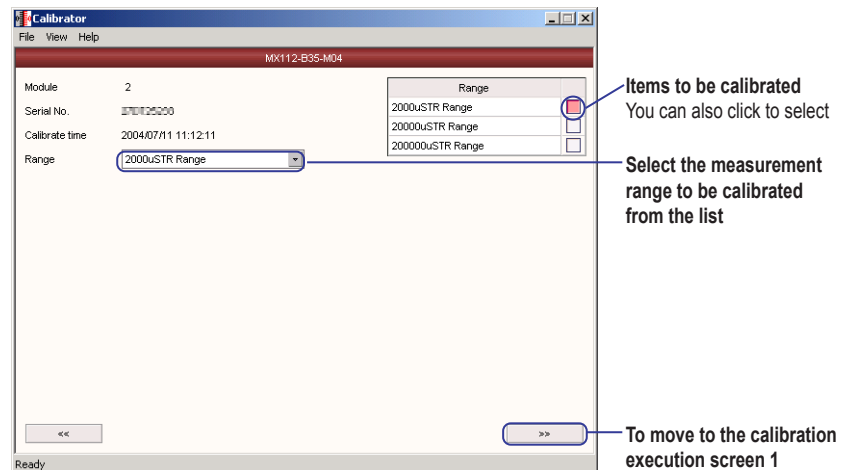


4.2 Calibration Procedure

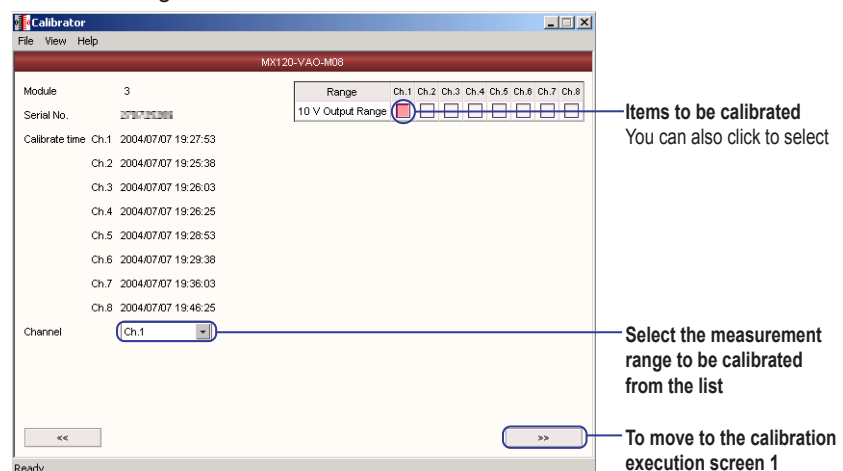
The figure below is an example of the 6-Channel, Medium-Speed, 4-Wire RTD Resistance Input Module. Channels are not selected.



The figure below is an example of the 4-CH, Medium-Speed Strain Input Module. Channels are not selected.



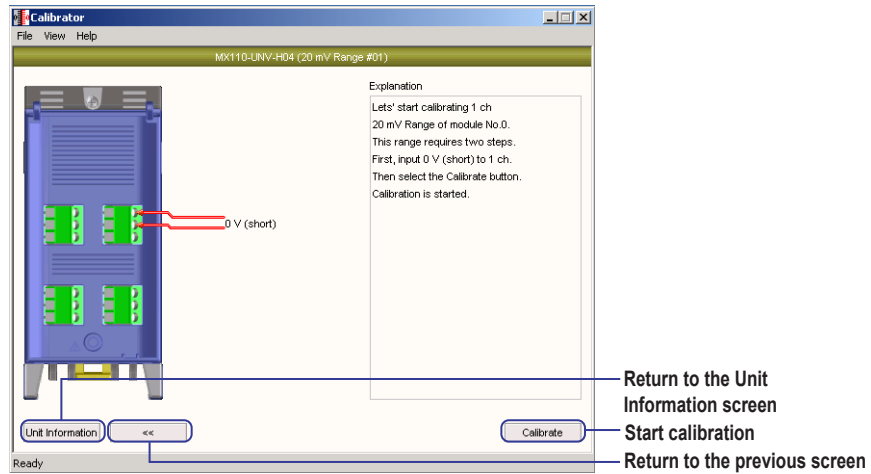
The figure below is an example of the 8-CH, Medium-Speed Analog Output Module. A range is not selected.



3. After making the connections according to the explanation given on the calibration execution screen 1, click the Calibrate button.

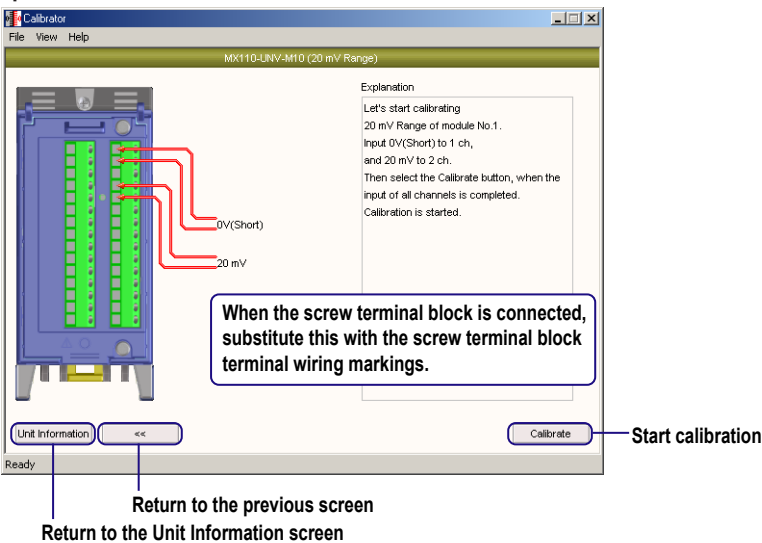
For the 8-CH Medium Speed Analog Output module, after entering settings according to the explanation given on the calibration execution screen 1, click the Calibrate button.
The figure below is an example of the 4-CH, High-Speed Universal Input Module.

Exp.Calibration execution screen 1



The figure below is an example of the 10-CH, Medium-Speed Universal Input Module.

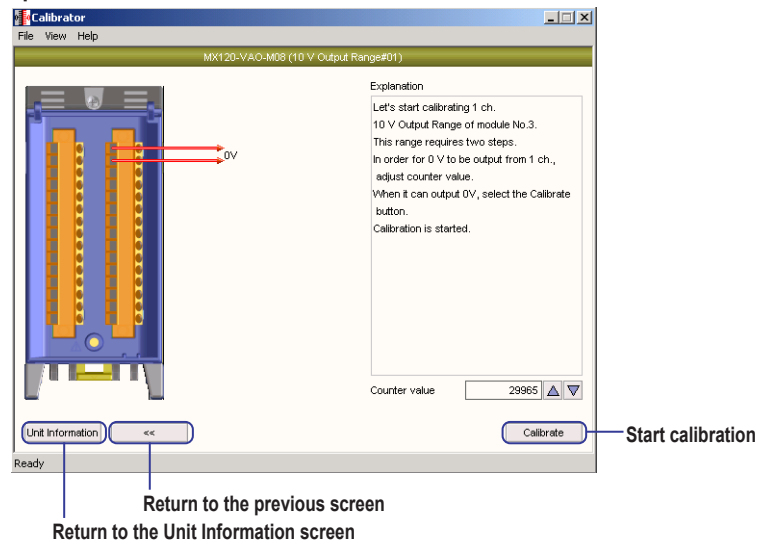
Exp. Calibration execution screen 1



4.2 Calibration Procedure

The figure below is an example of the 8-CH, Medium-Speed Analog Output Module.

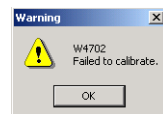
Exp. Calibration execution screen 1



When you click the Calibrate button, a message "Please wait and do not perform any other operation." appears.

When the calibration completes successfully, the calibration execution screen 2 appears.

If the calibration fails, a message "Failed to calibrate." appears.

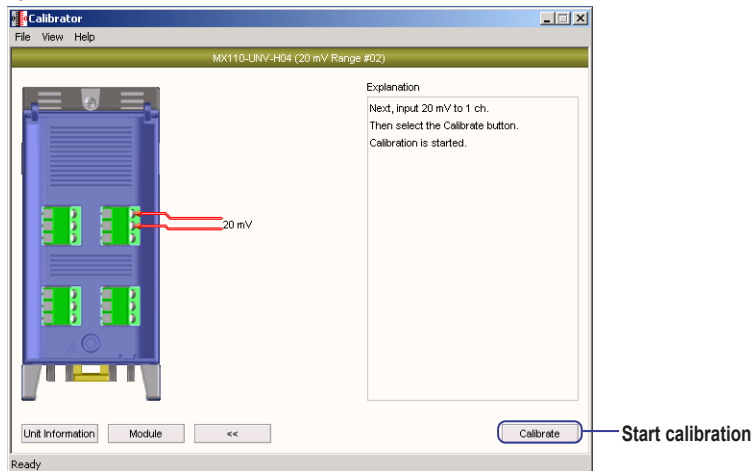


Note

For a description of the accuracy of the connected input module, the calibration accuracy, and the environmental conditions for calibration, see the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E).

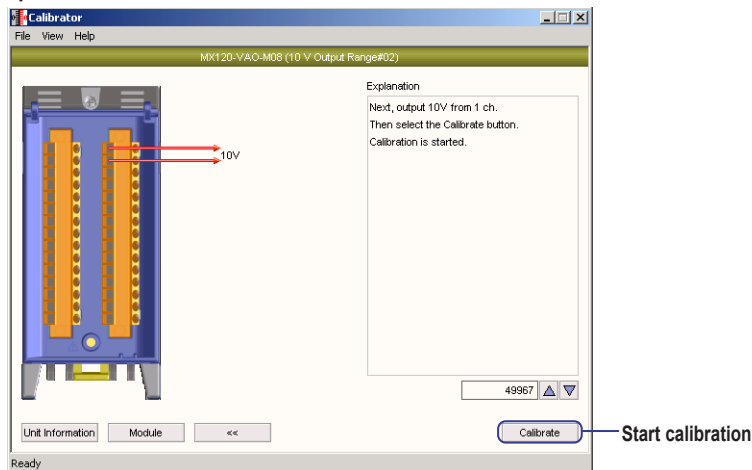
4. After making the connections according to the explanation given on the calibration execution screen 2, click the Calibrate button.
The figure below is an example of the 4-CH, High-Speed Universal Input Module.

Exp. Calibration execution screen 2



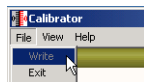
The figure below is an example of the 8-CH, Medium-Speed Analog Output Module.

Exp. Calibration execution screen 2



When you click the Calibrate button, a message “Please wait and do not perform any other operation.” appears.

5. Repeat steps 2 to 4 until all calibrations are completed.
6. When you return to the Unit Information screen, click **Write** from the **File** menu.
The calibration values are written to the calibrated modules.
To return to the Unit Information screen, click the **Unit Information** button or the << button.



Note

During calibration, do not perform any other operations (particularly turning OFF the MW100 or dropping the connection). Doing so may cause the MW100 to malfunction.

Explanation

Calibrated Parameters

- 4-CH, High-Speed Universal Input Module (MX110-UNV-H04)

Measurement Range to Be Calibrated	Input Value 1	Input Value 2
20 mV	0 mV	20 mV
60 mV	0 mV	60 mV
200 mV	0 mV	200 mV
1 V	0 V	1 V
2 V	0 V	2 V
6 V	0 V	6 V
20 V	0 V	20 V
100 V	0 V	100 V
RTD(1 mA)200 mV	0 Ω	200 Ω
RTD(1 mA)600 mV	0 Ω	300 Ω
RTD(1 mA)1 V	0 Ω	500 Ω
RTD(2 mA)60 mV	0 Ω	30 Ω
RTD(2 mA)200 mV	0 Ω	100 Ω
RTD(2 mA)600 mV	0 Ω	300 Ω
RTD(2 mA)1 V	0 Ω	250 Ω

- 10-CH, Medium-Speed Universal Input Module (MX110-UNV-M10)

Measurement Range to Be Calibrated	Input Value 1	Input Value 2
20 mV	0 mV on Ch1	20 mV on Ch2
60 mV	0 mV on Ch1	60 mV on Ch2
200 mV	0 mV on Ch1	200 mV on Ch2
1 V	0 V on Ch1	1 V on Ch2
2 V	0 V on Ch1	2 V on Ch2
6 V	0 V on Ch1	6 V on Ch2
20 V	0 V on Ch1	20 V on Ch2
100 V	0 V on Ch1	100 V on Ch2
RTD(1 mA)60 mV	0 Ω on Ch3	60 Ω on Ch6
RTD(1 mA)200 mV	0 Ω on Ch3	200 Ω on Ch4
RTD(1 mA)600 mV	0 Ω on Ch3	300 Ω on Ch5

- 30-CH, Medium-Speed DCV/TC/DI Input Module (MX110-VTD-L30)

Measurement Range to Be Calibrated	Input Value 1	Input Value 2
20 mV	0 mV on Ch1	20 mV on Ch2
60 mV	0 mV on Ch1	60 mV on Ch2
200 mV	0 mV on Ch1	200 mV on Ch2
1 V	0 V on Ch1	1 V on Ch2
2 V	0 V on Ch1	2 V on Ch2
6 V	0 V on Ch1	6 V on Ch2
20 V	0 V on Ch1	20 V on Ch2
100 V	0 V on Ch1	100 V on Ch2

- 6-Channel, Medium-Speed, Four-Wire RTD Resistance Input Module (MX110-V4R-M06)

Measurement Range to Be Calibrated	Input Value 1	Input Value 2
20 mV	0 mV on Ch1	20 mV on Ch2
60 mV	0 mV on Ch1	60 mV on Ch2
200 mV	0 mV on Ch1	200 mV on Ch2
1 V	0 V on Ch1	1 V on Ch2
2 V	0 V on Ch1	2 V on Ch2
6 V	0 V on Ch1	6 V on Ch2
20 V	0 V on Ch1	20 V on Ch2
100 V	0 V on Ch1	100 V on Ch2
RTD(1 mA)20 mV	0 Ω on Ch3	20 Ω on Ch4
RTD(1 mA)60 mV	0 Ω on Ch3	60 Ω on Ch5
RTD(1 mA)200 mV	0 Ω on Ch3	200 Ω on Ch6
RTD(1 mA)600 mV	0 Ω on Ch3	300 Ω on Ch4
RTD(0.25 mA)600 mV	0 Ω on Ch3	2400 Ω on Ch5
RTD(0.25 mA)1 V	0 Ω on Ch3	3000 Ω on Ch6

- 4-CH, Medium-Speed Strain Input Module (MX112-B12-M04, MX112-B35-M04, MX112-NDI-M04)

Measurement Range to Be Calibrated	Connection Value 1	Connection Value 2
2000 μ STR (strain)	120.000 Ω on Ch2	117.154 Ω on Ch2
20000 μ STR (strain)	120.000 Ω on Ch2	113.010 Ω on Ch2
200000 μ STR (strain)	120.000 Ω on Ch2	80.000 Ω on Ch2

Use a 4-gauge method connection when performing calibration. For information on this connection, see section 2.4 of the MW100 Data Acquisition Unit User's Manual (IM MW100-01E).

- 8-CH, Medium-Speed Analog Output Module (MX120-VAO-M08)

Adjust so that all channels output 0 V and 10 V. This differs from other input modules.

Range to Be Calibrated	Output Value 1	Output Value 2
10 V	0 V	10 V

Note

- For a description of the measurement range and accuracy of each input module, see chapter 5 in the MW100 Data Acquisition Unit User's Manual (IM MW100-01E).
- For procedures and wiring for calibration, see the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E), section 4.4.

5.1 Troubleshooting

If servicing is necessary, or if the instrument is not operating correctly after performing the corrective actions below, contact your nearest YOKOGAWA dealer for repairs.

The 7-segment LED does not illuminate.

Probable Cause	Corrective Action/Description	Reference Page
The power switch is not ON.	Turn ON the power switch.	*
The supply voltage is too low.	Check whether the voltage is within the supply voltage rating range.	*
The fuse is blown.	Servicing required.	-
The power supply is broken.	Servicing required.	-

* See the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E).

The 7-segment LED blinks repeatedly.

Probable Cause	Corrective Action	Reference Page
The power supply is shorted inside the input/output module.	Remove the module one by one and determine which module is broken. (Servicing required.)	*
The power supply is shorted inside the main module.	Replace the main module. (Servicing required.)	*

* See the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E).

After power up, the 7-segment LED displays something other than 00 (when the unit number is 00).

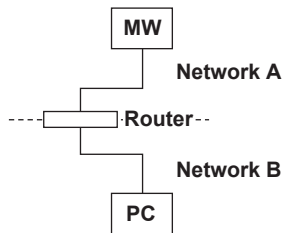
Probable Cause	Corrective Action/Description	Reference Page
The display is b* (* is any character other than F). The dipswitch settings are not correct.	Turn OFF the power, remove the CF card, turn ON all dip switches, and power up again. If the situation does not change, servicing is required.	*
The display is bF. The dipswitch settings are not correct.	Powering up in setup reset mode. Turn OFF the power, turn ON all dip switches, and power up again. Since all settings such as the IP address are initialized, reconfiguration is necessary.	*
The display is F* (where * is any character). Hardware error on the main module.	Servicing required.	-
The display is U* (where * is any character). Hardware error on the input/output module.	The slot number is indicated by * in the n* display following the E* * display. Remove the relevant module and power up again. The relevant module must be serviced.	*

* See the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E).

5.1 Troubleshooting

The MX100 cannot be detected from the PC or cannot be detected with the Search button.

Probable Cause	Corrective Action/Description	Reference Page
The LINK LED does not turn ON. The cable is broken.	Replace the Ethernet cable.	*
The LINK LED does not turn ON. There is a problem with the hub.	Check the hub's power supply. If it still does not work, replace the hub and check the hub's operation.	*
The LINK LED does not turn ON. There is a problem with the PC.	Check whether the PC can connect to the network. Replace the PC's NIC.	*
The ACT LED does not turn ON. There is a problem in the connection between the hub and the MW100.	Check the hub's power supply. If it still does not work, replace the hub and check the hub's operation.	*
The ACT LED does not turn ON. There is a problem with the PC.	Check whether the PC can connect to the network. Replace the PC's NIC.	*
There is a problem in the network configuration. The settings are not correct.	Check that the IP address, subnet mask, and default gateway settings of the PC correspond to the MW100 settings.	2-3
There is a problem in the network configuration. The setting changes have not taken effect.	Turn OFF the power to the PC and the MW100, and carry out reconnection.	2-3
PC and the MW100 are not in the same segment.	Connect the PC and the MW100 in the same network segment. If the PC and the MW100 are connected as shown in the following figure, the Search button cannot be used to detect the MW100. However, you can make a connection manually by specifying the IP address.	2-3



When using Windows XP, Windows Vista, or Windows 7, check the firewall function. 2-3, App-1

* See the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E).

The MW100 is detected by clicking the Search button, but connection cannot be made from the browser.

Probable Cause	Corrective Action/Description	Reference Page
The IP address is set to the default value. The default value cannot be used to make the connection.	Enter the correct IP address.	2-3
There is a problem in the network configuration.	Check that the IP address, subnet mask, and default gateway settings of the PC and the MW100 settings are correct.	2-3
The PC software, main module style number, and release number rule is not upheld.	Check the PC software release number and main module style number before upgrading the version. [PC software release no.] ≥ [main module style no.]	**

** See the *MW100 Data Acquisition Unit Operation Guide* (IM MW100-02E).

The Calibrator cannot connect to the MW100.

Probable Cause	Corrective Action/Description	Reference Page
Attempting to make multiple connections.	Exit all other software programs.	-
The main module and input/output module style number rule is not upheld.	Check the release number of the PC software and the main module style number, then upgrade the version. [PC software release no.] ≥ [main module style no.] ≥ [input/output module style no.]	**

** See the *MW100 Data Acquisition Unit Operation Guide* (IM MW100-02E).

The connected input/output module is not detected.

Probable Cause	Corrective Action/Description	Reference Page
Module connection or module startup error. Attached the module while the power was ON.	Turn OFF the power. Detach the input/output module once and attach it again.	*
The PC software, main module, and input/output module style and release number rule is not upheld.	Check the PC software release number and main module style number before upgrading the version. [PC software release no.] ≥ [main module style no.] ≥ [input/output module style no.]	**
Carried out an incorrect calibration.	Recalibrate.	4-2

* See the *MW100 Data Acquisition Unit User's Manual* (IM MW100-01E).

** See the *MW100 Data Acquisition Unit Operation Guide* (IM MW100-01E).

5.2 Error Messages and Their Corrective Actions

Error Messages on the Address Setting Software

Error Code	Message	Corrective Action/Description	Reference Page
-	IP address is invalid.	Enter the correct IP address.	2-3
-	Subnet mask is invalid.	Enter the correct subnet mask.	2-3
-	Default gateway is invalid.	Enter the correct gateway address.	2-3
W5000	Address setting failed.	Attempted to change IP address while connection established, or MW100 whose setting was attempted to be changed is connected to other software. Disconnect the MW100 before changing settings.	-

Error Messages on the Viewer

Error Code	Message	Corrective Action/Description	Reference Page
E0004	File write error.	The file cannot be created for some reason.	-
E0212	Can't read file.	The target file cannot be loaded, or was deleted.	3-2
E3111	Channels of the specified recording interval do not exist.	Channels with the specified measurement interval do not exist in the conversion of the data format. Change to the correct setting.	3-22
E3114	Sampling data number is over the Viewer display limit of 5 M.	Attempting to load a file containing 5 million or more data points.	3-2
E3120	Not a data file.	The file cannot be read, or it is corrupt.	3-2
W3115	Exceeded the range of the Excel sheet. Convert to Excel?	Change the range to be converted so that it is within the allowed range of Excel.	3-23
W3116	Exceeded the range of the Lotus 1-2-3 sheet. Convert to Lotus?	Change the range to be converted such that it lies within the allowable range for Lotus 1-2-3.	3-23

Error Messages on the Calibrator

Error Code	Message	Corrective Action/Description	Reference Page
W4700	Connection failure. Check the IP Address/Host Name.	The MW100 main unit to connect to is not in Calibration mode. Place the MW100 main unit in Calibration mode. To change the network settings such as the IP address, start the Address Setting software.	4-1 2-1
W4701	Failed to write the calibrated value.	Recalibrate. If the message is still displayed, service required.	4-4 to 4-11
W4702	Failed to calibrate.	Recalibrate. If the message is still displayed, service required.	4-4 to 4-11

Appendix 1 Configuring/Removing the Firewall

Check the following before attempting to configure or remove a firewall.

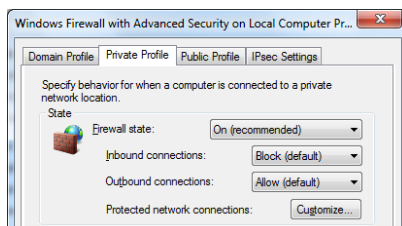
- Check the internet connection status using the ping command. If the ping fails, check the cables, hub, IP address settings, and other factors to determine the cause.
- Check that procedures performed on the software are correct.

If the problem cannot be solved after taking the above measures, it is likely that there will be problems with the firewall settings. Configure or remove the firewall according to the following procedure.

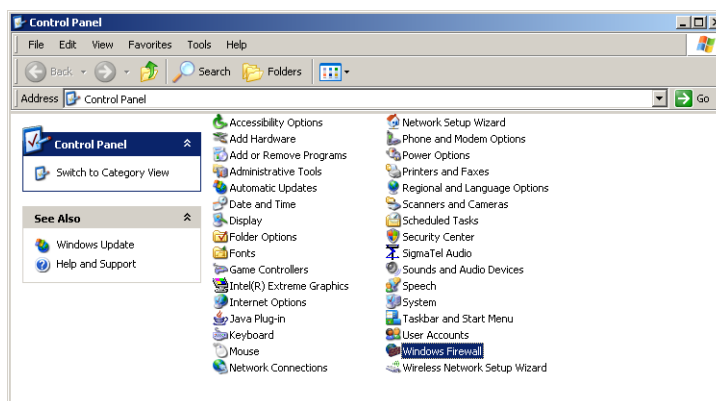
Note that the following procedure describes the MW100 IP Setting Software, but it applies to the MW100 Calibration Software as well.

On Windows XP SP3

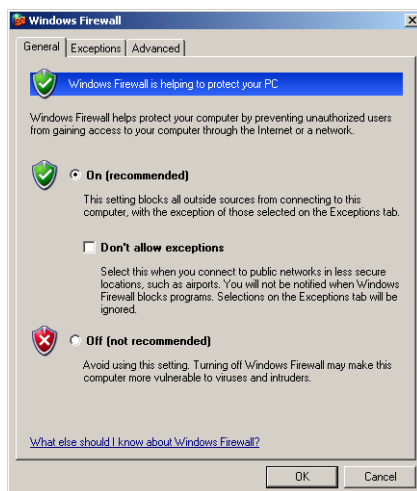
1. From the Start menu, choose **Control Panel**.
The **Control Panel** window appears.



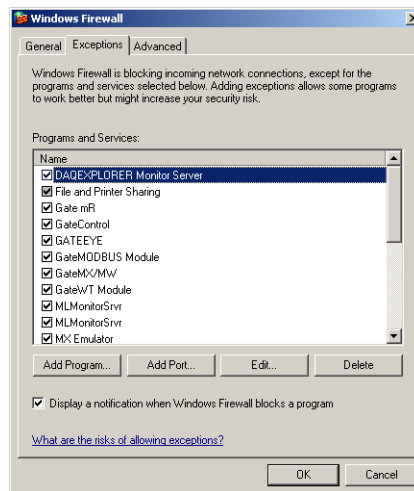
2. Double-click **Windows Firewall**.
The **Windows Firewall** dialog box opens.



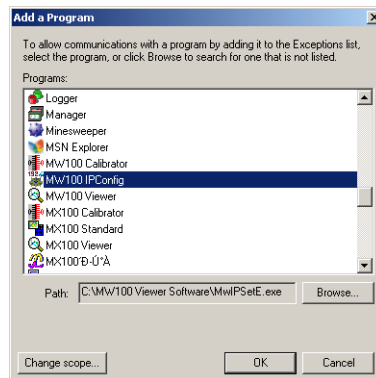
3. If **Off** is selected, click **Cancel** to exit.
If **On** is selected, clear the **Don't allow exceptions** check box.



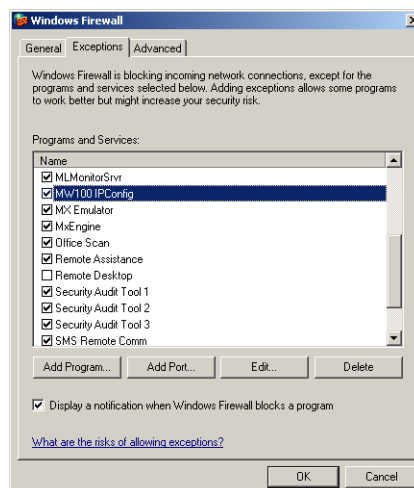
4. Click the **Exceptions** tab, then click the **Add Program** button.



5. Select **MW100 IP Config** and click **OK**.

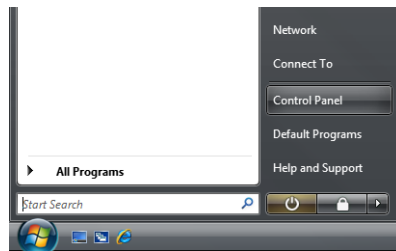


6. Click the **Exceptions** tab, check that **MW100 IP Config** has been added, select the **MW100 IP Config** check box, and click **OK**.

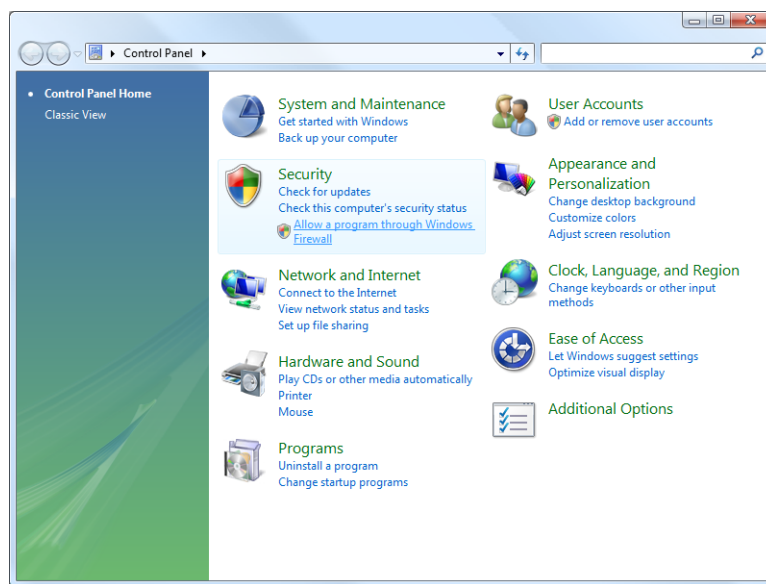


On Windows Vista

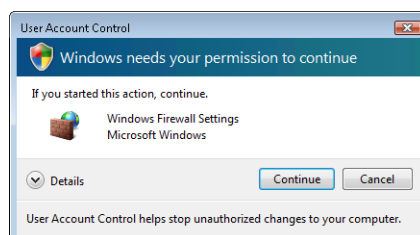
1. Click **Control Panel** on the Windows Start menu.
The **Control Panel** appears.



2. Click **Allow a program through Windows Firewall**.
The **User Account Control** dialog box appears.



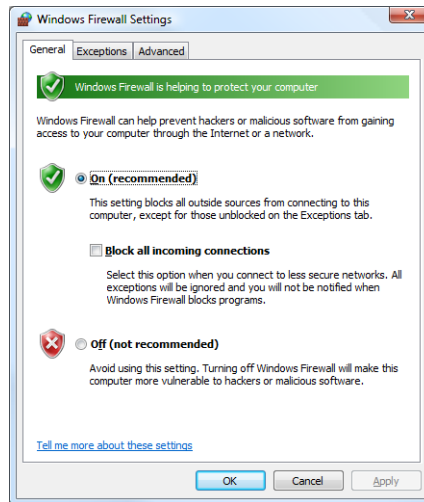
3. Click **Continue**.
The **Windows Firewall Settings** dialog box is displayed.



4. Click the **General** tab.

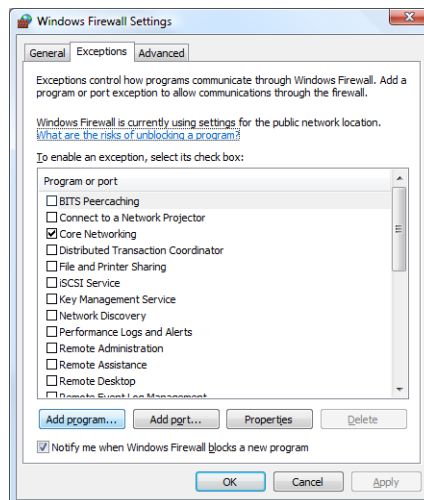
If **Off** is selected, click **Cancel** to exit.

If **On** is selected, clear the **Block all incoming connections** check box.

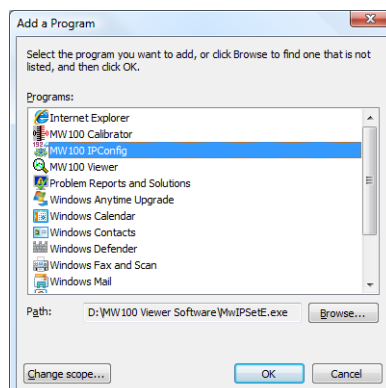


5. Click the **Exceptions** tab, then click the **Add program** button.

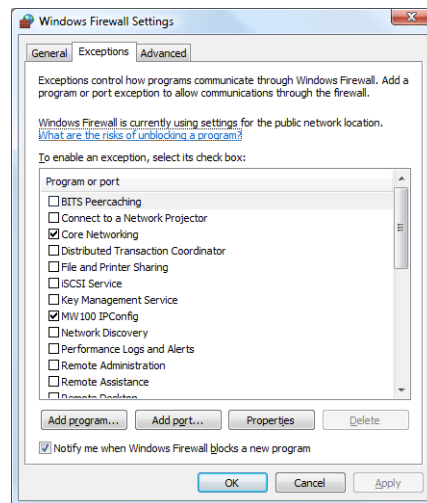
The **Add a program** dialog box is displayed.



6. Select **MW100 IP Config**, then click the **OK** button.

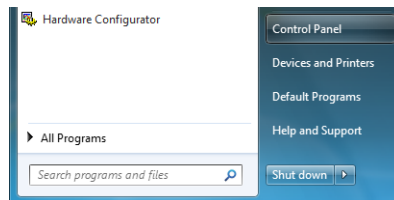


7. Click the **Exceptions** tab. Confirm that the **MW100 IP Config** item was added, then select the **MW100 IP Config** check box and click the **OK** button.

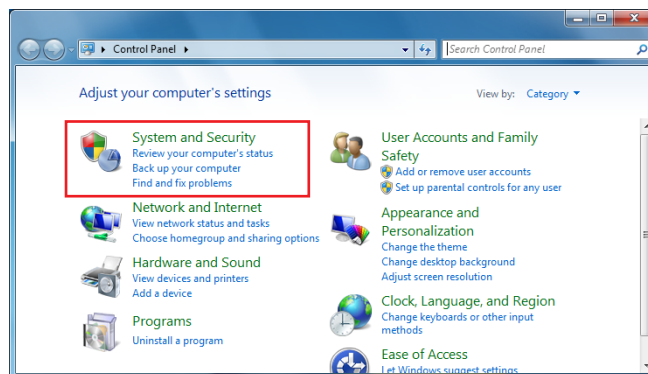


On Windows 7

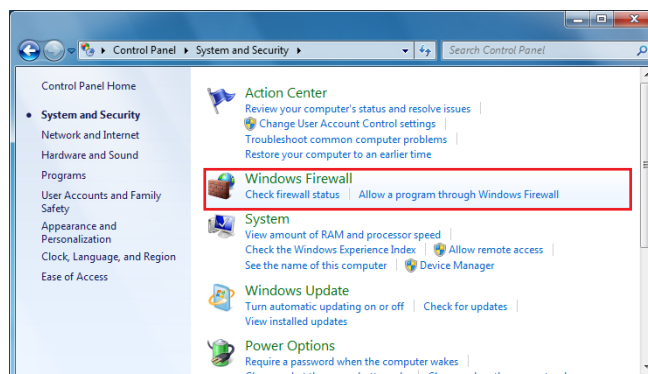
1. Click the **control panel** on the Windows Start menu.
The **Control Panel** appears.



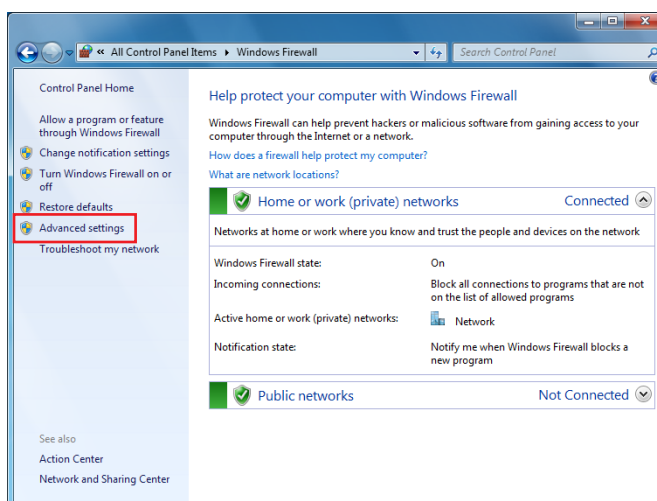
2. Click **System and Security**.



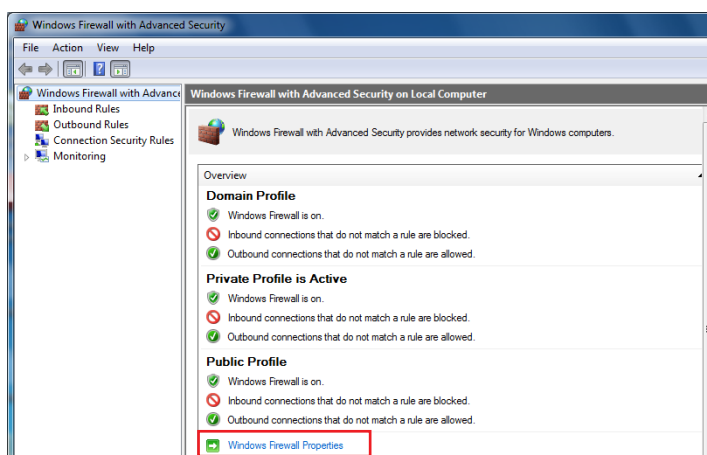
3. Click **Windows Firewall**.
The **Windows Firewall Settings** dialog box is displayed.



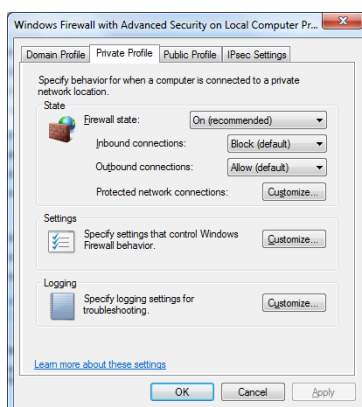
4. Click **Advanced settings**.



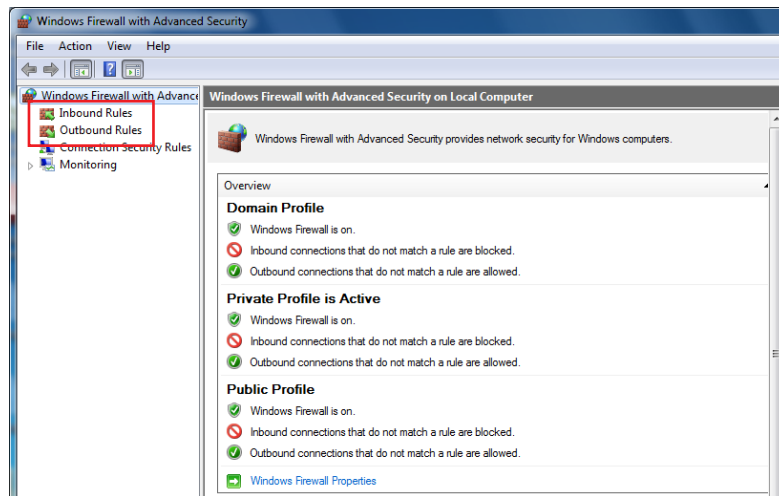
5. Click **Windows Firewall Properties**.



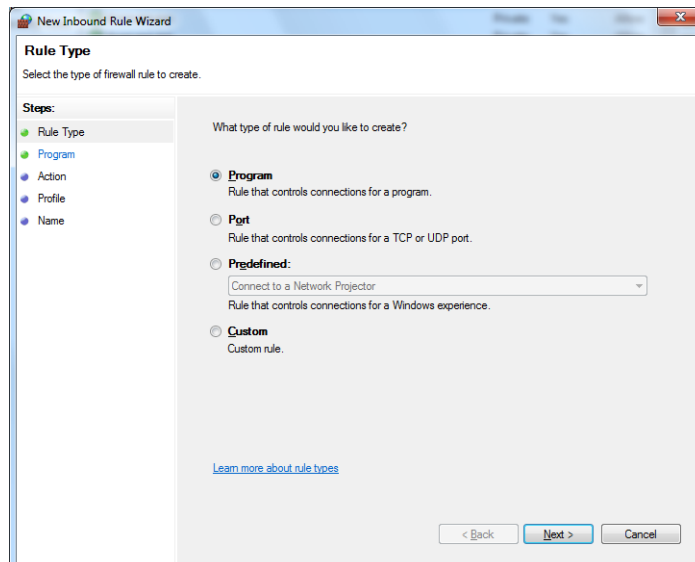
6. Click the tab of the profile appropriate for your operating environment. When the **Firewall state** is **Off**, click **Cancel** to exit. When the **Firewall state** is **On**, and **Inbound connections** or **Outbound connections** is **Block**, proceed to next step.



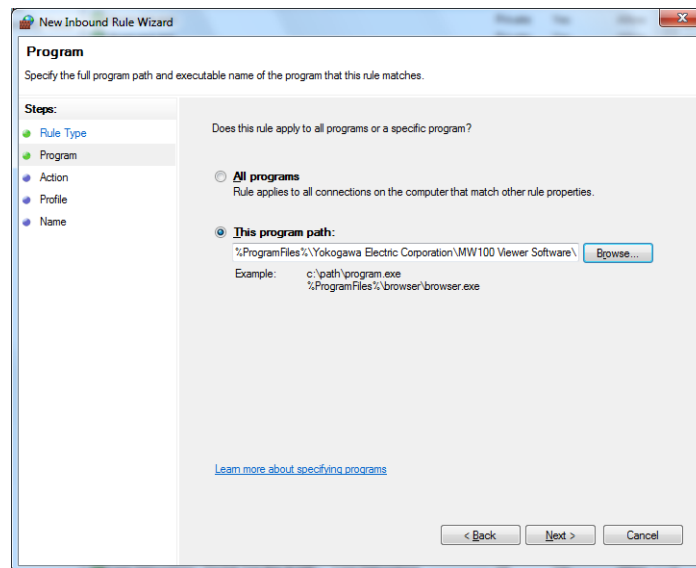
7. Click Inbound Rules.



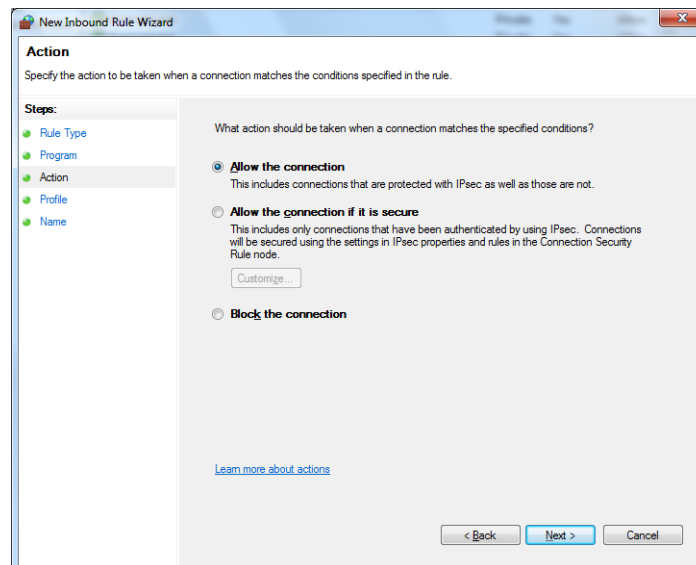
8. Select the **Program** check box. Click **Next**.



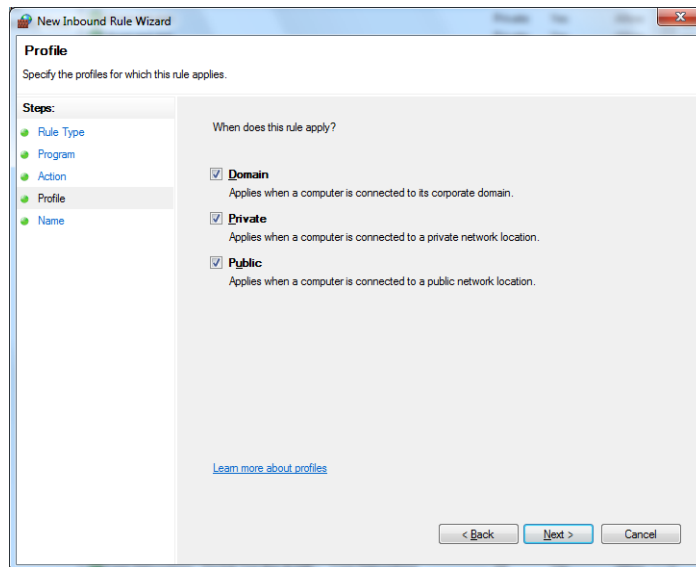
9. Select the **This program path** check box. Select **MWIPSetE.exe** from the software's installation folder and click **Next**.



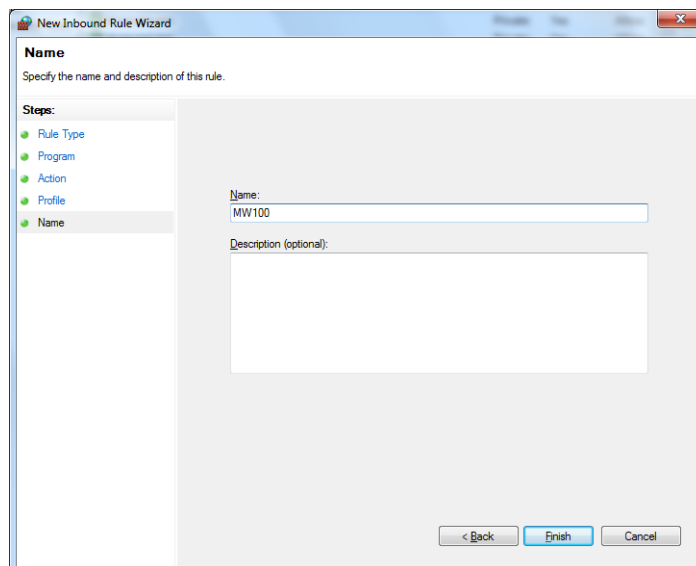
10. Select the **Allow the connection** check box. Click **Next**.



11. Specify the profiles for which this rule applies. Click **Next**.



12. Specify the name of this rule, and click **Finish**.



13. Follow the same procedure as the one in step 7 and select **MWCalibE.exe**.

14. For **Outbound Rules** as well, follow the same procedure as the one in step 7 and select **MWIPSetE.exe** and **MWCalibE.exe**.

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