User's Manual

WX13
AddTrigger

vigilantplant.®

YOKOGAWA
Yokogawa Electric Corporation

IM WX13-01E
4th Edition

Foreword

Thank you for purchasing AddTrigger. This user's manual explains the operating procedures of the AddTrigger 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.

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How to Use This Manual

Structure of the Manual

This user's manual consists of the following chapters.

Chapter	Title	Description
1	Before Using AddTrigger	Gives an overview of the AddTrigger software. Lists the PC requirements for running AddTrigger, the installation procedures, and other information.
2	Entering Settings (Launcher)	Gives procedures for entering environment settings and conditions on AddTrigger.
3	Logging Data (Launcher)	Lists procedures for logging data. Also gives explanations for how to display the data logging status and display a list of saved files.
4	Monitoring Data (Data Monitor)	Describes how to display logged data using waveforms, numeric values, or meters, and how to change the displays.
5	Displaying Logged Data (Historical Viewer)	Describes how to display the logged data as waveforms or numeric values and how to change the displays. Also describes how to compute statistics over a specified area of measured data and how to convert the data format.
6	Error Messages and Corrective Actions	Lists error messages and their corrective actions.
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Scope of This Manual

This manual provides instructions on how perform basic operations with the software when running under Windows XP, Windows 2000, and Windows. For information regarding the basic operations of Windows, see the Windows user's manual.

Conventions Used in This Manual

Units

K	Denotes 1024.	Example: 100 KB
M	Denotes 1024 K.	Example: 10 MB
G	Denotes 1024 M.	Example: 2 GB

Boldface Type

Hardware and software controls that the user manipulates such as dialog boxes, buttons, and menu commands are often set in boldface type.

Subheadings

On pages in chapters 1 through 6 that describe operating procedures, the following subheadings are used to distinguish the procedure from their explanations.

Procedure This subsection contains the operating procedure used to carry out the function described in the current section. All procedures are written with inexperienced users in mind; experienced users may not need to carry out all the steps.

Note Calls attention to information that is important for proper operation of the instrument.

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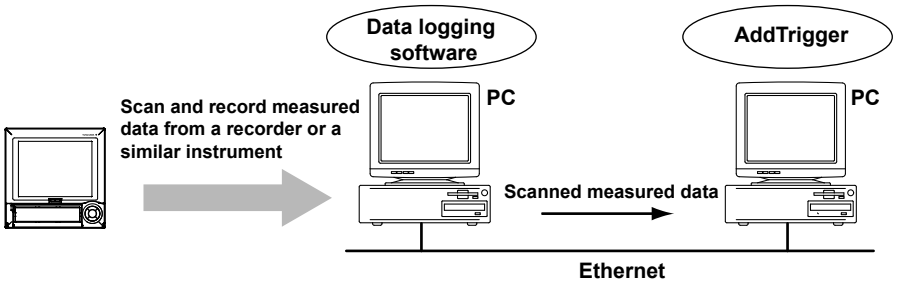
1.1 Overview of Functions

AddTrigger is a software program that performs data logging according to user-specified conditions.

System Configuration

The following hardware and software are required to use AddTrigger.

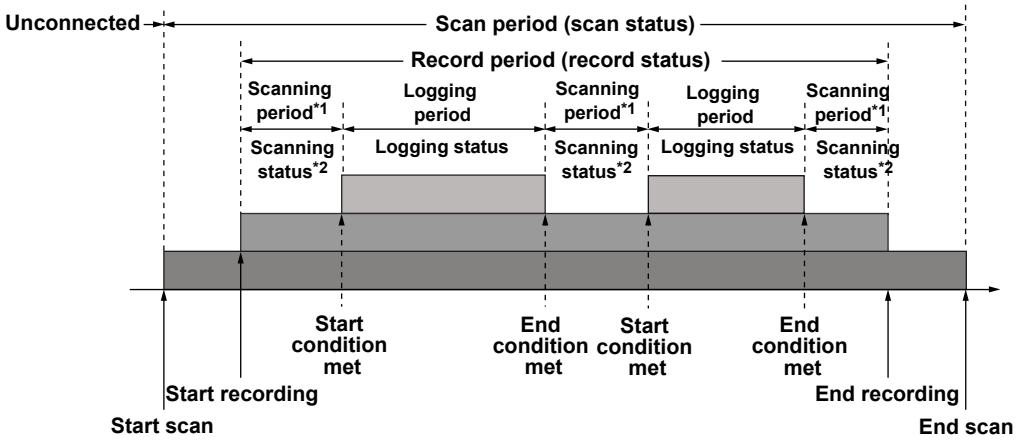
- A personal computer (PC) running AddTrigger.
- A data logging system.
- Data logging software (DAQLOGGER, DAQ32Plus, or MXLOGGER).
  - A PC.
  - A recorder or similar instrument.
- An Ethernet network.



Connect the PC on which the data logging software is running and the PC on which AddTrigger is running to the Ethernet network. AddTrigger is connected to the data logging software via the Ethernet network.
AddTrigger retrieves measured data that the data logging software is logging from a recorder or a similar instrument. AddTrigger operates based on the time information retrieved from the data logging software.
AddTrigger can only connect to a single PC with data logging software at any given time.

Data Logging Statuses and Terminology

AddTrigger has the following five statuses related to data logging as shown below.



***1 Scanning period within the recording period**
***2 Scanning status when in record status**

Unconnected

AddTrigger is not connected to the data logging software.

Scan

Scan refers to the act of retrieving the measured data from the data logging software at a predetermined interval (scan interval). The scan interval of AddTrigger is the same as that specified on the data logging software to which AddTrigger is connected.
Scan starts when AddTrigger is connected to the data logging software. Scan continues until the connection is dropped.
The fastest scan intervals are indicated below.

- When connected to DAQ32Plus: 0.5 s
- When connected to DAQLOGGER: 1 s
- When connected to MXLOGGER: 0.01 s

Scan is allowed on a maximum of 1600 channels.

Record

Record refers to the act of logging data according to the logging conditions. Record status is divided into scanning status and logging status.

Scanning

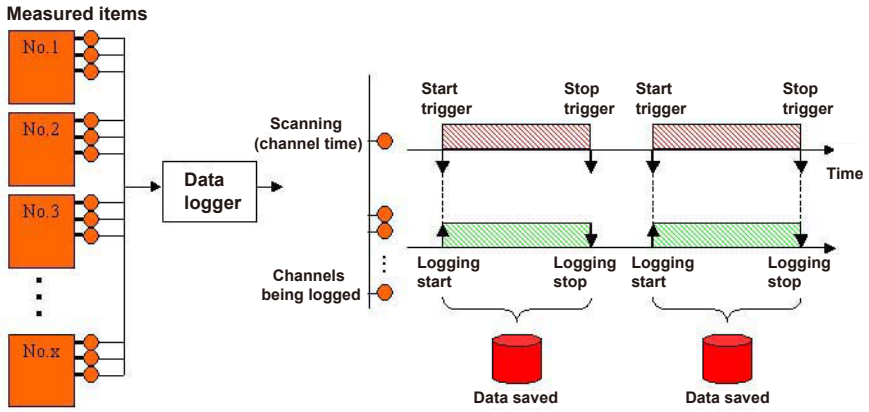
Scanning refers to the status in which AddTrigger monitors whether the logging start condition is met after recording is started. Logging starts when the logging start condition is met.

Logging

Logging refers to the act of saving the measured data to a file on the hard disk at a predetermined interval (logging interval). In the logging status, AddTrigger monitors whether the logging end condition is met. When the logging condition is met, AddTrigger stops recording or enters the scanning status in which the next logging start condition is monitored for.
The logging interval can be set equal to the scan interval or its integer multiple.
Logging is allowed on a maximum of 1600 channels.

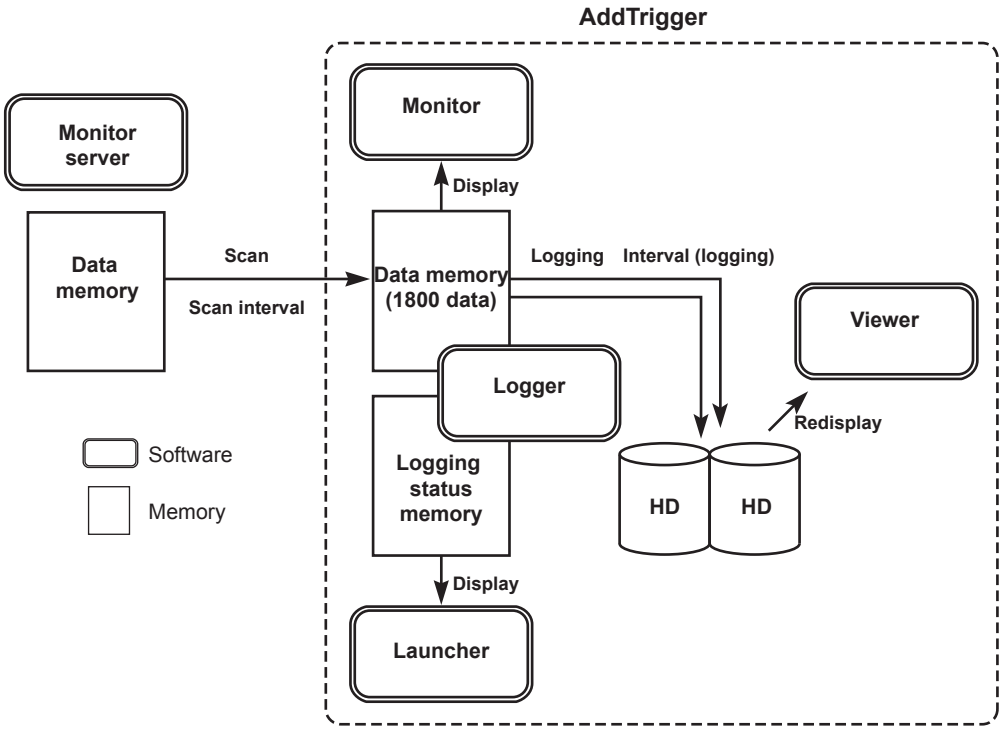
Logging Function

AddTrigger can start or stop logging of events occurring during data logging based on a trigger. The following can be set as trigger conditions: activation/cancellation of alarms on a channel (alarm trigger), channel data values (level trigger), at a given time during the day (time trigger), or the number of saved data.



AddTrigger Structure

The following figure shows the structure of AddTrigger.



AddTrigger connects to the monitor server of the data logging software.

- Data Monitor is a software program that displays the measured data retrieved from the monitor server at the scan interval.
- You can display up to 1800 data using the program.
- Historical Viewer is a software program for displaying measured data that has been saved.
- Logger is a software program that logs measured data. Logger runs according to the logging conditions that are specified on the Launcher. The program does not appear on the screen.
- Launcher is a software program that controls the operation of AddTrigger by maintaining the logging conditions, connecting to the monitor server, and starting various software programs.

Launcher

To use AddTrigger, you must run Launcher. Launcher has the following functions.

Project Management

- Project refers to a unit of AddTrigger settings that are grouped by user or purpose. You can create multiple projects and save them. For example, if you save the settings for logging the data of process A as Project 1, you only need to select Project 1 to recall the settings for logging the data of process A.
- You can limit user access to projects by assigning passwords to those projects (password protection).

Software	When Password Protection Is Enabled
Launcher	Operations related to data logging are not allowed.
Data Monitor	All operations are allowed.
Historical Viewer	All operations are allowed.

Note

The information included in a project are the data logging conditions, the monitor server to be connected to, and the settings for the Launcher, Overview, Data Monitor, and Historical Viewer.

Setting Up Logging Conditions

You can enter the connection destination and logging conditions.
The display conditions used when displaying the logged data using Historical Viewer can also be specified.
See page 1-6, “Data Logging Conditions.”

Starting and Stopping Scan/Record

You can start or stop the scan. Also, you can set AddTrigger to start the scan when Launcher is started.
You can also start or stop recording.
You can set AddTrigger to start recording when Launcher is started.

Starting Data Monitor, Overview, and Historical Viewer

You can start Data Monitor, Overview, and Historical Viewer.

Displaying the Logging Results and Logging Status

The recording status can be displayed.

- Recording status display
  The recording status is displayed using characters and colors. The recording statuses consist of Stopped, Scanning, Logging, and Error Stop.
- Detailed display of the recording status
  The details of the recording status are displayed. The information includes the logging start time/stop time, the trigger count,* the number of data points written (logging count), the name of the logging data file, free space on the save destination hard disk, and the status of automatic conversion.
  * See page 1-6, “Data Logging Conditions.”
- Data file list
  Lists information about the saved data files. The file number, the (current) trigger count, the file name, the time of the first data point, the time of the last data point, and the total number of data points are displayed.

Other Functions

- You can hide the icons displayed on the desktop and the Windows taskbar so that other programs cannot be started (desktop protection).
- This function prevents shutting down of your PC when AddTrigger is running. (shutting down protection)

For details on Launcher operation, see chapters 2 and 3.

Data Monitor

Data Monitor is started from the Launcher. Data Monitor displays the scanned data on the following six types of monitors.

- Trend monitor
  Displays the scanned data using waveforms. You can carry out operations such as expanding or reducing the time axis and changing the display zone of each channel.
- Numeric monitor
  Displays the scanned data using numeric values.
- Meter monitor
  Displays the scanned data using a meter. You can select bar meter, analog meter, or thermometer.

- Alarm monitor
  Displays the alarm status of all groups on a single screen (overview display).
  If an alarm occurs on any one of the channels in a group, the group shows an alarm indication.
  The alarm monitor also displays a log of alarm activations/cancellations for each channel including the alarm type, date and time of activation/cancellation, and channel name (alarm log display).
- Color graph monitor
  Displays the scanned data by assigning the following 5 colors in order. [1]
  Blue (minimum display scale), light blue, green, yellow, red (maximum display scale).
- Circular monitor
  Displays the scanned data using a circular graph.

Note

The channels that can be displayed in the monitor are those for which Scan was set to ON in the channel settings under Log Settings (see page 2-18).

- The displayed data is updated at the scan interval.
- You can change the display conditions by carrying out tasks such as changing the channels assigned to a group and turning ON/OFF the waveform display. The display conditions can also be saved.

Note

The display conditions can be set independently of the display conditions set on Launcher that are used when displaying the logged data on Historical Viewer.

See chapter 4 for information on how to operate Data Monitor.

Historical Viewer

Historical Viewer is started using Launcher or the Windows Start menu.
The viewer displays the measured data that has been logged. You can also convert the data format before saving.

- Historical Viewer can only process data that has been completely logged by AddTrigger. For data that are currently being logged, Historical Viewer can handle only the section that has been stored to the hard disk. The file name extension is .mld.
- You can change the display conditions by carrying out tasks such as changing the channels assigned to a group and turning ON/OFF the waveform display. You can also save the modified display conditions.
- You can connect to files containing divided data (see page 1-6, “**Data Logging Conditions**”) and display the results.
- You can calculate the maximum, minimum, P-P, mean, and rms values over the area that is specified by the cursor.
- Marks can be placed at arbitrary positions on the measured data.
- You can set search conditions and search for measured data, alarms, and marks.
- You can extract a section of the file to be stored to another file.
- The data can be converted to ASCII, Lotus, or Excel format.
- You can print the displayed data (separate printer required).

See chapter 5 for information on how to operate Historical Viewer.

Data Logging Conditions

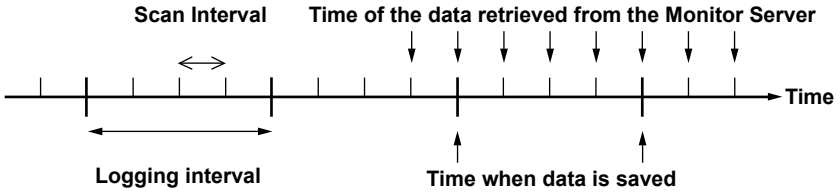
The data logging conditions are set using Launcher.
Settings are available for logging, channels, groups, comments, and automatic conversion.

Logging Settings

You can specify the recording rate, trigger repeat count, logging start/stop conditions, data file output destination, data file name, and the trigger confirmation count.

Logging Interval

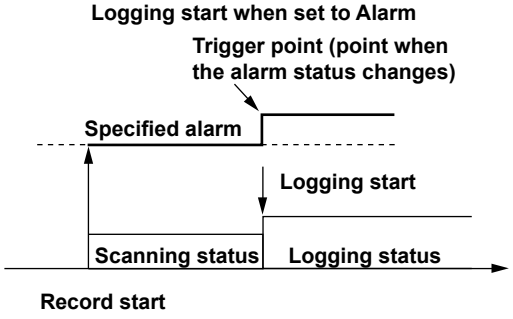
Set an integer multiple (recording rate) of the scan interval.

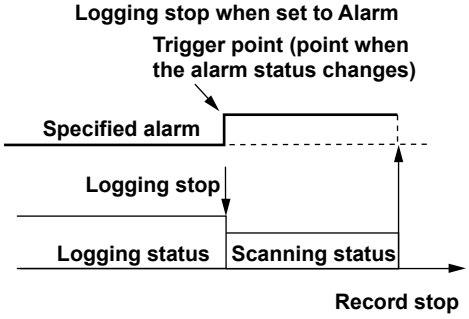


Example in which the recording rate is set to 4

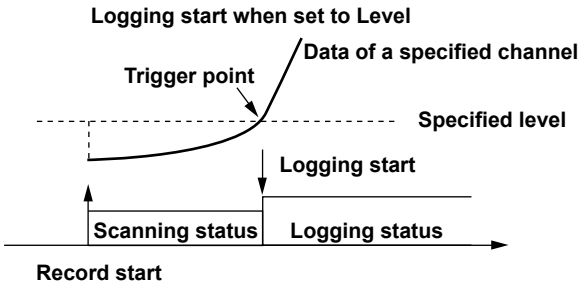
Logging Start/Stop Conditions

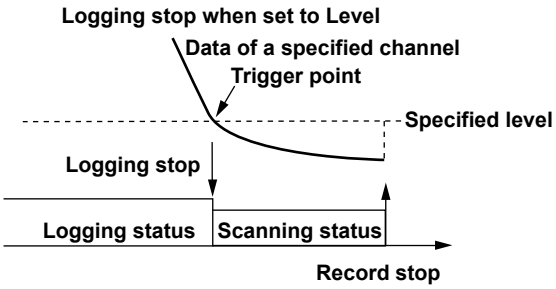
- Alarm (Start/Stop Conditions)
  You can select an arbitrary number of alarms from an arbitrary number of channels, and set the statuses and changes of those alarms to trigger activation conditions. Logging starts or stops when the trigger conditions are met. The trigger activation conditions that can be set to the selected alarms are AND or OR.





- Level (Start/Stop Conditions)
  Select arbitrary channels, and set triggers to activate depending on the relationship between those channels specified thresholds and measured values. Logging starts or stops when the trigger conditions are met. The trigger conditions between each specified channel are all AND or OR.





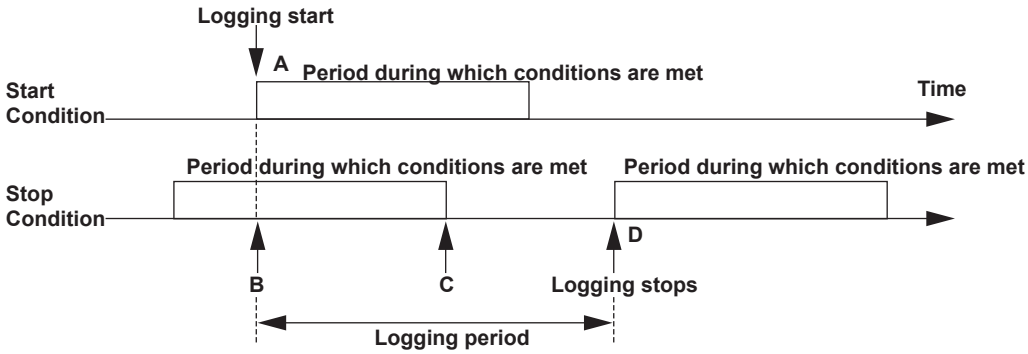
- Data Count (Stop Condition)
  Logging stops when a specified number of data points is logged.
  Logging interval = scan interval x recording rate x specified data count.

- Fixed Time (Start/Stop Conditions)
  A time within a 24-hour period (HH:MM:SS.SSS) can be specified. The times of the acquired data are scanned, and logging starts or stops when the time of the data retrieved from the monitor server is equal to or greater than the specified time.
  When logging, logging starts when the time of the data retrieved from the monitor server is equal to or greater than the specified time. Logging stops when the time of the data retrieved from the monitor server is equal to or less than the specified time (the specified stop time is not exceeded).

For example, if start and stop conditions are set to a fixed time trigger with the start time set to 5:00 am and the stop time set to 8:00 pm, logging occurs each day between 5:00 am and 8:00 pm.
If the start time were set to 8:00 pm and the stop time were set to 5:00 am, logging would take place from the evening of the first day to the morning of the second day.

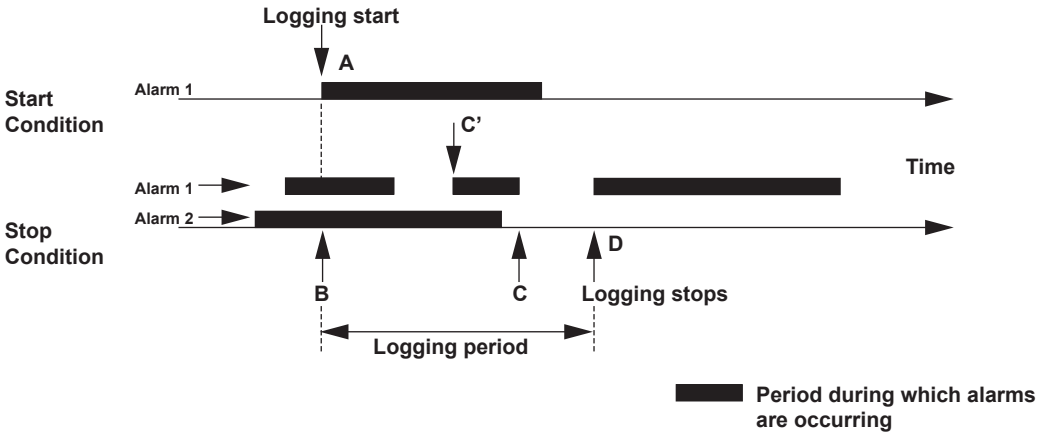
Notes Regarding the Start and Stop Conditions When Alarm or Level Triggers Are Specified

- **Operation if the stop conditions were already met at the point start conditions are met**
  Logging starts from the point at which start conditions were met (A), and stop condition scanning begins at the same time. At that point (B), stop conditions are met but logging is not stopped. Logging stops at point (D) in which stop conditions were met after point (C) prior to which stop conditions failed to be met the first time. (See the following figure for the letters referred to in the text above)



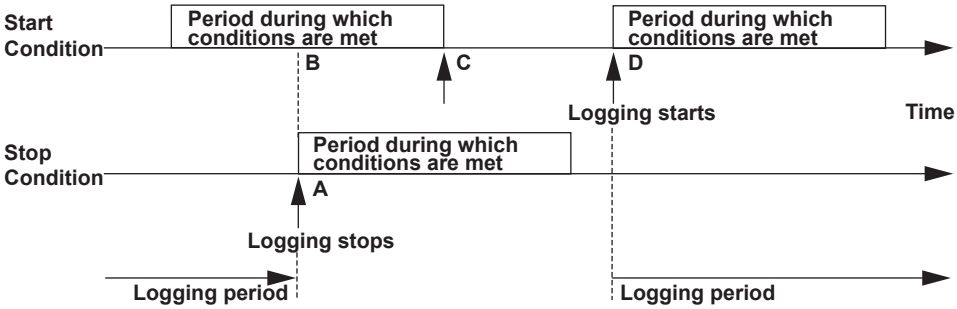
Example: When the start condition is to scan for 1 alarm and the stop condition is to scan for 2 alarms (OR condition)

Logging begins from the point the alarm occurs. At that point (B) the stop conditions are met (alarm 1 or 2 is occurring) but logging does not stop. The stop condition's alarm 1 is cleared and reactivated between points B and C', but logging does not stop because stop condition's alarm 2 is still occurring during that time, and the stop condition continues to be met. Both stop condition alarms are finally cleared for the first time at point C, making the stop conditions no longer met. Only after that, at point D, are stop conditions met again and logging stops. (See the following figure for the letters referred to in the text above.)



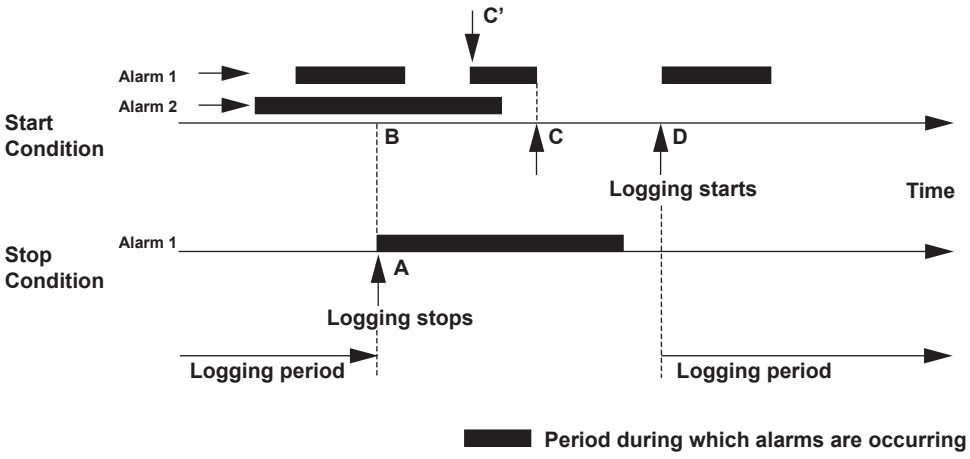
- **Operation if the start conditions were already met at the point stop conditions are met**

  Logging stops at the point at which stop conditions were met (A), and start condition scanning begins at the same time. At that point (B), start conditions are met but logging is not stopped. Logging starts at point (D) in which start conditions were met again after point (C) prior to which start conditions failed to be met the first time. (See the following figure for the letters referred to in the text above.)



Example: when the start condition is to scan for 2 alarms and the stop condition is to scan for 1 alarms (OR condition).

Logging stops at the point stop condition alarm 1 occurs. At that point (B) the start conditions are being met (alarm 1 or 2 is occurring) but logging does not start. The start condition's alarm 1 is cleared and reactivated between points B and C', but logging does not start because start condition's alarm 2 is still occurring during that time, and the start condition continues to be met. Both start condition alarms are cleared for the first time at point C, making the start conditions no longer met. Logging finally starts thereafter at point D, when the start condition is met again. (See the following figure for the letters referred to in the text above.)



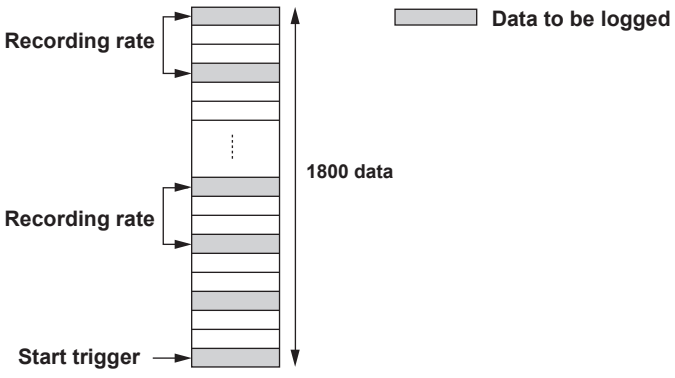
Pretrigger Function

If the start condition is an alarm trigger or level trigger, you can use a pretrigger function. The pretrigger function allows you to save only the specified number of data prior to the trigger start point. The number of data specified does not include the trigger point itself. The pretrigger function can be set in the range from 0 to 1799 data points. If you specify 0 data points, the pretrigger function is effectively disabled.

Number of Pretrigger Data Specified and the Recording Rate

When data is saved to a file, it is first thinned at the specified recording rate. The number of data specified for the pretrigger represents the number of data after thinning. The internal memory can save up to 1800 data acquired from the monitor server (see page 1-2, "AddTrigger Structure"). Because of this, the valid range for the data that can be specified for the pretrigger varies depending on the recording rate. That range is from 0 to (1800 ÷ the recording rate) - 1.

For example, the recording rate in the figure below is 3, so the valid range is from 0 to 599.



Terminology for the Period of Data That Is Saved When Setting the Pretrigger

Data held before the start trigger

The area held in the internal memory that is prior to the point when the start trigger condition is met.

Pretrigger width

The period including the number of pretrigger data specified in the start conditions.

Pretrigger width = scanning interval x recording rate x pretrigger count.

Data saving period

The period during which data is saved.

Start trigger point

The point in time at which the start condition changes from being unmet to being met.

Stop trigger point

The point in time at which the stop condition changes from being unmet to being met.

Start point of data saving

The first data of the data saving period.

Specified width for data saving

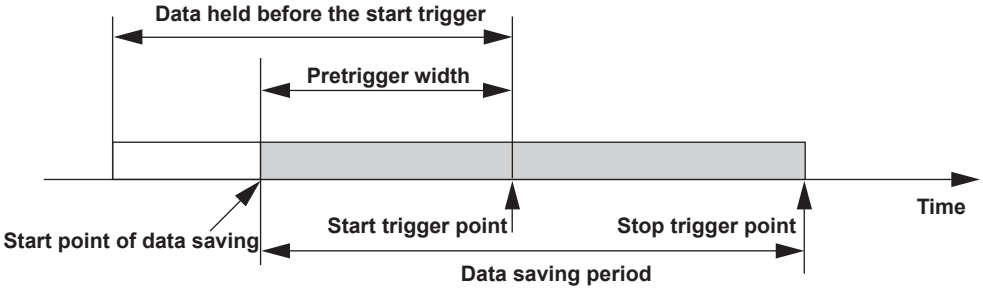
The period including the number of data specified in the stop conditions.

Specified width for data saving = scanning interval x recording rate x data count.

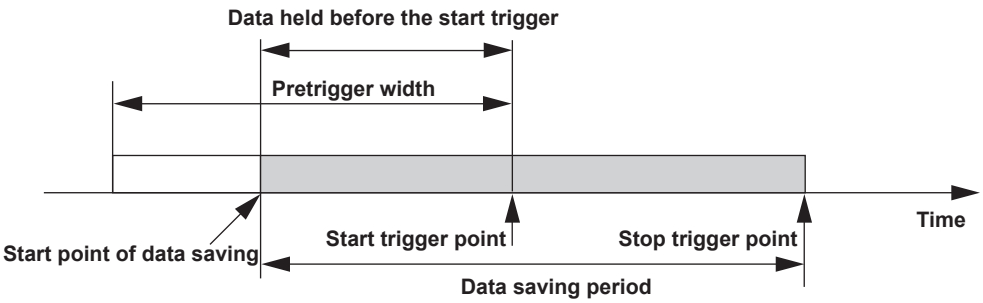
When the Stop Condition Is Set to Alarm Trigger, Level Trigger, or Fixed Time

When the stop condition is set to Alarm Trigger, Level Trigger, or Fixed Time, data are saved from the number of data specified for the pretrigger that are prior to the start trigger point (start point of data saving) up to the start trigger point. Then, scanning is performed on the data from the start trigger point up to the point specified in the stop conditions, and that data is saved. In this case, the relationships between the data held before the start trigger and the pretrigger width are shown in the figure below.

Data held before the start trigger > pretrigger width (most common case)



Data held before the start trigger < pretrigger width

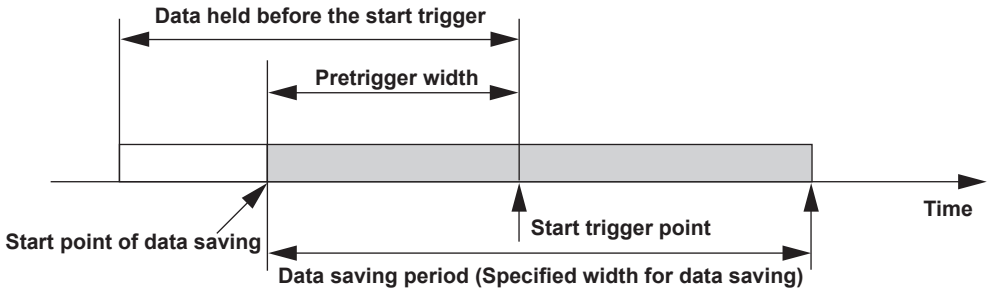


When the Stop Condition is Data Count

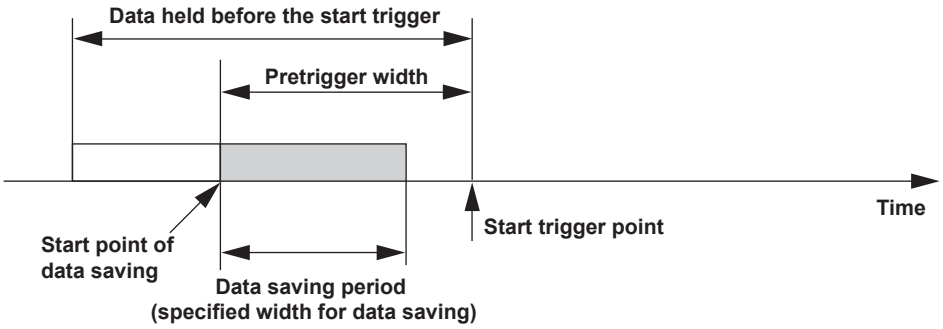
When the stop condition is set to Data Count, data are saved from the number of data specified for the pretrigger that are prior to the start trigger point (start point of data saving). Then, the specified number of data are saved, and logging stops. In this case, the relationships between the data held before the start trigger and the pretrigger width are shown in the figure below.

Data held before the start trigger > pretrigger width (most common case)

- **Pretrigger width < Specified width for data saving [2]**



- **Pretrigger width > Specified width for data saving**



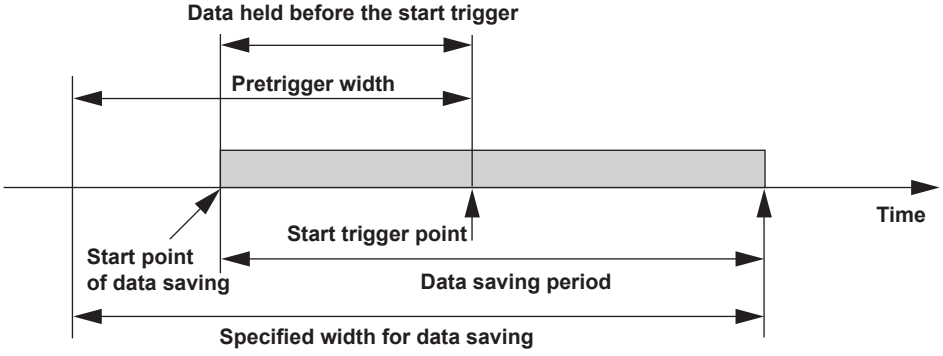
Data held before the start trigger < pretrigger width

Attempts to save the specified number of data starting from the point that is one pretrigger width behind the start trigger point. However, since that point does not satisfy the condition, data held before the start trigger < pretrigger width, no data is saved. In this case, the data at the start point of data saving lies beyond the starting point based on the pretrigger width. Because of this, the number of data saved is less than the specified number of data.
There are three periods for data saving:

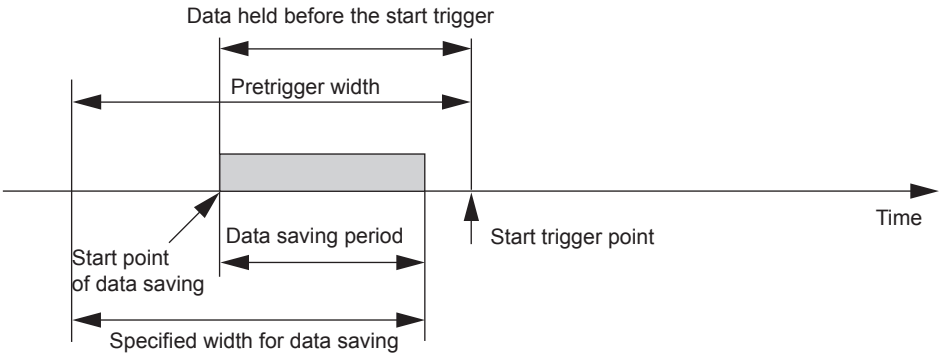
- When the data saving period exists (including the start trigger point)
- When the data saving period exists (not including the start trigger point)
- When the data saving period does not exist

Each case is shown in the figure.

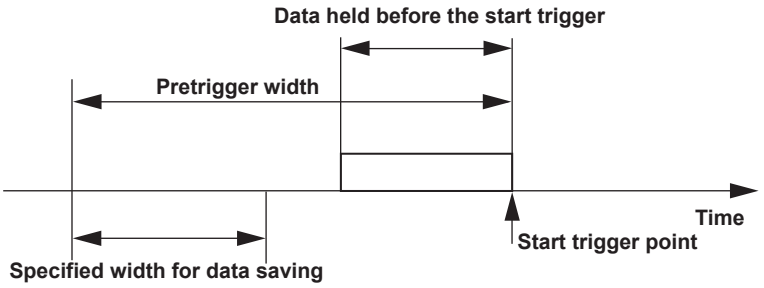
- **When the data saving period exists (including the start trigger point)**
  Pretrigger width < (specified width for data saving + data held before the start trigger) (most common case)



- **When the data saving period exists (not including the start trigger point)**
  Pretrigger width < (specified width for data saving + data held before the start trigger)

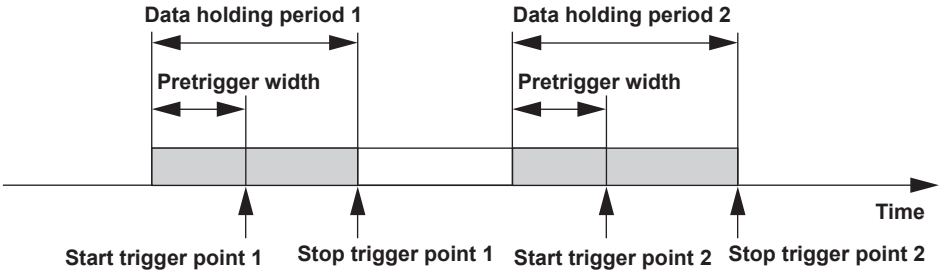


- **When the data saving period does not exist**
  Pretrigger width > (specified width for data saving + data held before the start trigger)
  Data is not saved.

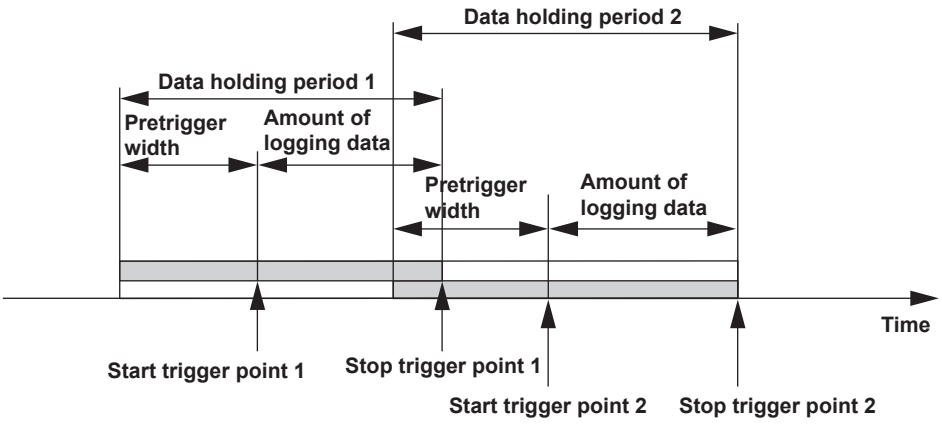


When specifying a pretrigger, depending on the gap in occurrence of the start trigger, the saving area in both triggers may overlap.

When the saving areas do not overlap



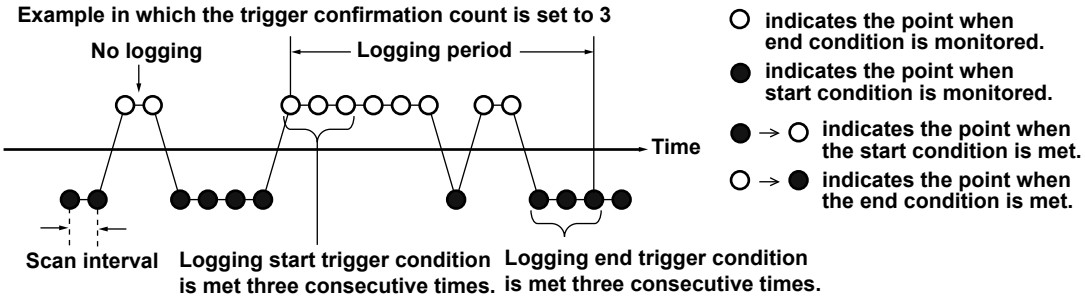
When the saving areas overlap
(both files contain overlapping saved areas)



Trigger Confirmation Count

When Alarm or Level is specified as the logging start/stop condition, you can set AddTrigger to start or stop logging when a trigger condition is detected consecutively the specified number of times (trigger confirmation count).

This allows you to prevent undesirable triggers from occurring due to changes in the measured data caused by noise and other factors.

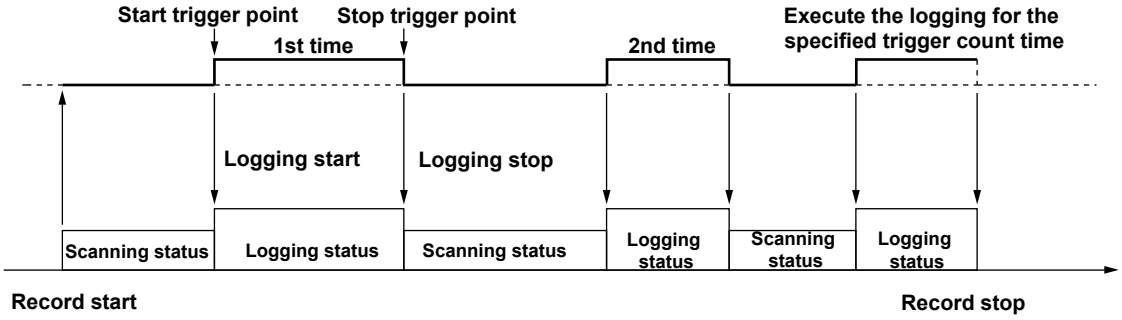


Trigger Repeat Count

For example, if logging is started after an alarm activates after record start, and logging is stopped after the alarm is cancelled, you can specify the number times to execute the logging start/stop operation (trigger count).

When the specified number of logging start/stop operations is executed, recording stops.

Logging by specifying the trigger count



Saving Data Files

- **File Name**

  File names are automatically assigned to data files. You can add a specified character string or date to the file name. The extension is .mld.

  Specified character string (when per Hour division is set) = YYYYMMDDHH-0000.mld (see description below for the per Hour setting).

  Specified character string (for settings other than per Hour) = YYYYMMDD-0000.mld.

  YYYYMMDD, YYYYMMDDHH: date and time logging started

  YYYY: year, MM: month, DD: date, HH: hour

  0000: sequence number. The sequence number increments by 1 every time a file is saved.

Note

- You can specify whether to add a character string or date to the file name. If neither is added, the file name becomes 0000.mld.
- If logging is started at 9 hours 10 min 25 seconds on February 26th, 2002, the YYYYMMDD section of the file name becomes 20020226. If set to per Hour, it becomes 2002022609.
- If a file with the same name exists, the sequence number is increased to create a unique file name. The sequence number following 9999 (4 digits) is 10000 (5 digits). The number following 99999 (5 digits) is 100000 (6 digits), and so on.

- **Saving the Data to a Single File or Multiple Files**

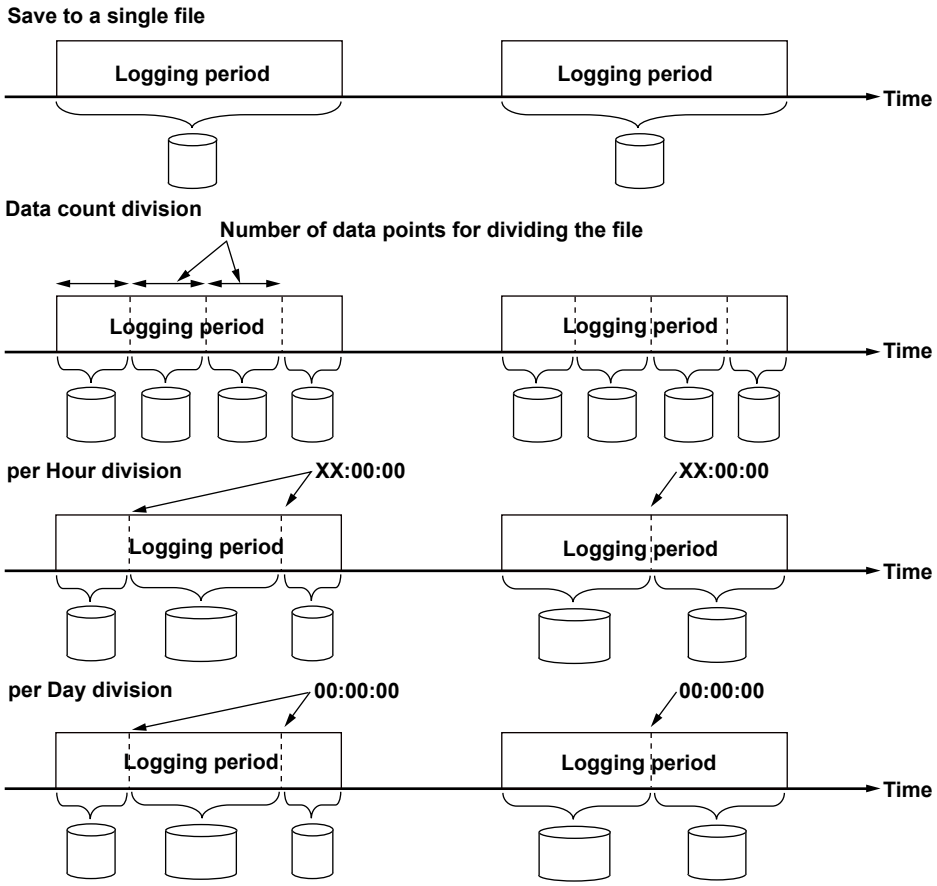
  The data in the logging period can be divided and saved in the following fashion.

  Data count: When a specified number of data points (logging count) is written to a file, AddTrigger starts writing data to a new data file. The number of data points of the last data file to which data is written may be less than the specified number of data points.

  per Day: AddTrigger starts writing data to a new data file at 0 hour 0 min 0s every day.

  per Hour: AddTrigger starts writing data to a new data file at 0 min 0s every hour.

Saving to a single file



Channel Settings

Information is gathered from the host, and the channel name, tag number, tag comments, min/max values, units, and alarm settings are displayed. You can also turn scanning and recording ON or OFF.

Group Settings

From the channels defined in the connected data logging software, you can assign the channels from which data will be logged to groups. Up to 32 channels can be assigned per group. A single channel can be assigned to multiple groups.

To use group settings already entered on the connection destination (the data logging software), obtain them from the connection destination's monitor server, and copy the channel assignments in the logging settings and their display settings to the logging start/stop settings.

You can select any number of the following items to copy.

- Display ON/OFF
- Channel/tag no./tag comment
- Y-axis show/hide and category
- Numerical display format (floating point or exponential display)
- Meter type
- Scale value setting method (obtain from monitor server/user-specified)
- Scale (min, max)
- Zone (min, max)
- Trip point
- Display color

Comment Settings

You can add up to eight comments. Comments include an item name and the comment itself. The number of allowed characters for each is as follows:

Item name: 16 alphanumeric characters
Comment: 64 alphanumeric characters

Comments are displayed as data file information.

Automatically Converting the Data Format

The file format for logged data can automatically be converted to ASCII, Lotus, or Excel format and saved as a separate file. Converted files are saved to a specified folder.

The names of the converted files are as follows:

- Converted to ASCII: original file name.txt
- Converted to Excel: original file name.xls
  The file can be opened on Excel version 4.0 or later.
- Converted to Lotus: original file name.wj2
  The file can be opened on Lotus1-2-3 version 2.0 or later.

Note

- If a file with the same name exists, the file name takes the following form.
  original file name_0000.extension
  0000: sequence number. The sequence number following 9999 (4 digits) is 10000 (5 digits). The number following 99999 (5 digits) is 100000 (6 digits), and so on.
- There is a limit in the number of data points that Excel and Lotus1-2-3 can handle. Note that even if the number of data points is within the limits, loading the converted data may not be possible if the available free memory on the PC is insufficient.

Miscellaneous

Relationship between the Logging Start/Stop Conditions and Special Data

The data that the data logging software scans and records contains the special data listed below. AddTrigger retrieves these types of data.

- +OVER: data exceeding the high limit of the measurement range
- –OVER: data below the low limit of the measurement range
- LACK: data dropout
- OFF: When data cannot be scanned and recorded because the communication with the recorder was cut off.

If the logging start condition/stop condition is set to Alarm or Level and the trigger monitoring channel contains special data, AddTrigger behaves as follows:

- Positive overflow and negative overflow are ignored by the trigger monitoring process.
- LACK and OFF are not used by the trigger monitoring process (trigger is not activated while LACK or OFF is present)

Reconnection Procedure with the Data Logging Software

If communication with the data logging software is cut off or the initial communication connection fails due to a network failure or other factors, AddTrigger attempts to reconnect. If an error occurs during communication, attempts to reconnect are made at the timing of the scan interval.

In the case of failure to connect initially, the attempt to reconnect is made 30 s after the communication failure. If communication in progress is cut off, the attempt to reconnect is made at the scan interval. Attempts to reconnect are made continuously until a connection is established, or until the user cancels the operation.

1.2 PC System Requirements and Data Logging Software That Can Be Connected

PC System

- **Supported Operating Systems (OS)**
  Run DAQWORX under any of the following operating systems.
  - Windows 2000 Professional SP4
  - Windows XP Home Edition SP2
  - Windows XP Professional SP2 (excluding Windows XP Professional x64 Edition)
  - Windows Vista Home Premium (excluding the 64-bit edition)
  - Windows Vista Business (excluding the 64-bit edition)

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

OS Language	Software Language
Japanese	Japanese
Other	English

- **File System**
  NTFS is recommended. With FAT32, the number of files that can be saved in a single folder is much smaller. If the limit is reached and additional files cannot be saved, the software will not function normally. To prevent this, please periodically stop recording by the software and move the data to a different folder.

- **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
  512 MB or more of memory

  When Using Windows Vista
  Pentium 4, 3 GHz or faster
  2 GB or more of memory

- **Hard disk**
  Free disk space: 200 MB or more (more may be required depending on the amount of data to be acquired.)

- **CD-ROM Drive (for Use during Installation)**

- **Mouse**
  A mouse supported by the OS.

- **Monitor**

  When Using Windows 2000 or Windows XP
  A monitor supported by the OS of 1024 × 768 dpi or higher and 65,536 colors or more.

  When Using Windows Vista
  A video card recommended for use with Vista and a monitor supported by the OS of 1024 × 768 dpi or higher and 65,536 colors or more.

- **Communication Port**
  Ethernet port supported by the OS.

- **Printer (Used When Printing)**
  Printer and printer driver supported by the OS

Note

- If you continuously perform multiple data logging operations simultaneously using this software, fragmentation occurs in the free space on the disk to which data is saved. As fragmentation progresses, contiguous free space decreases and large data files are divided into pieces when they are saved. As a result, the processing time of the OS increases and may degrade the performance of the data logging operation. To prevent this from happening, it is recommended that free space be defragmented periodically using a disk optimization tool such as the Windows Disk Defragmenter.
  The phenomenon described above occurs more often on Windows 98/Me systems.
- This software cannot process data after 2038.
- We recommend that you back up all saved data.

Connectable Data Logging Software

AddTrigger can connect to the following data logging software. We recommend that you use the newest version to lessen the data communication load and make high-speed communications possible.

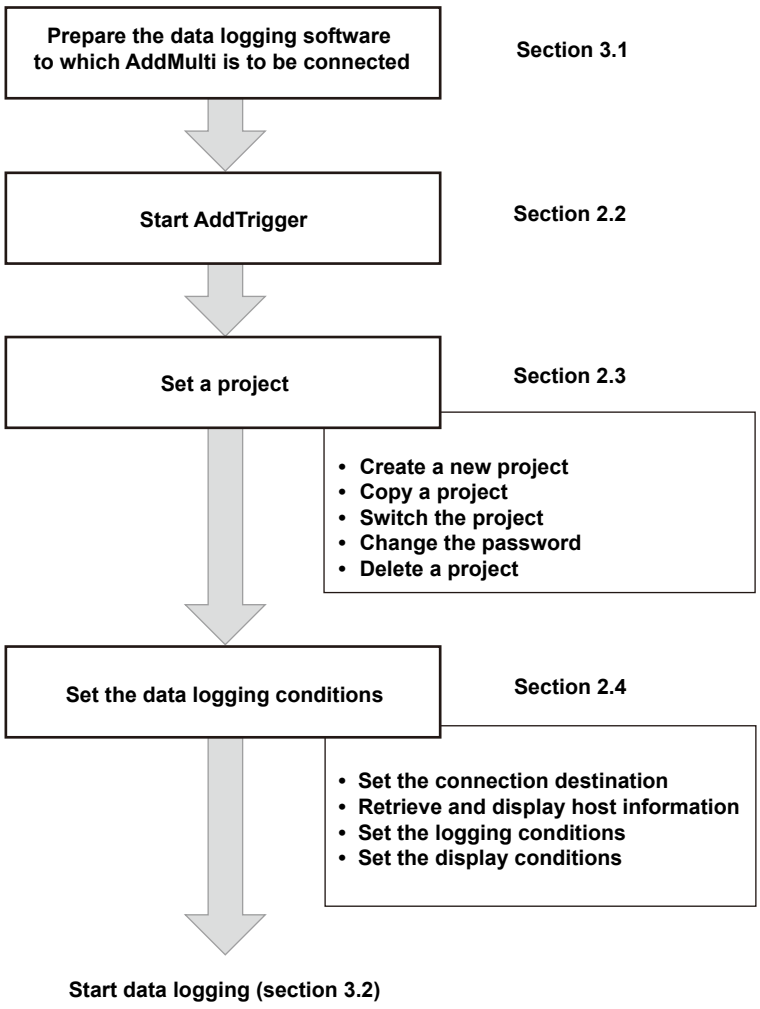
- DAQ32Plus R9.01 or later (R10.03 or later recommended)
- DAQLOGGER R3.01 or later (R5.01 or later recommended)
- MXLOGGER R1.01 or later

Note

Of the various types of systems, only one can be connected when connecting to MXLOGGER.

2.1 Setup Flow

A setup flow chart is shown below.

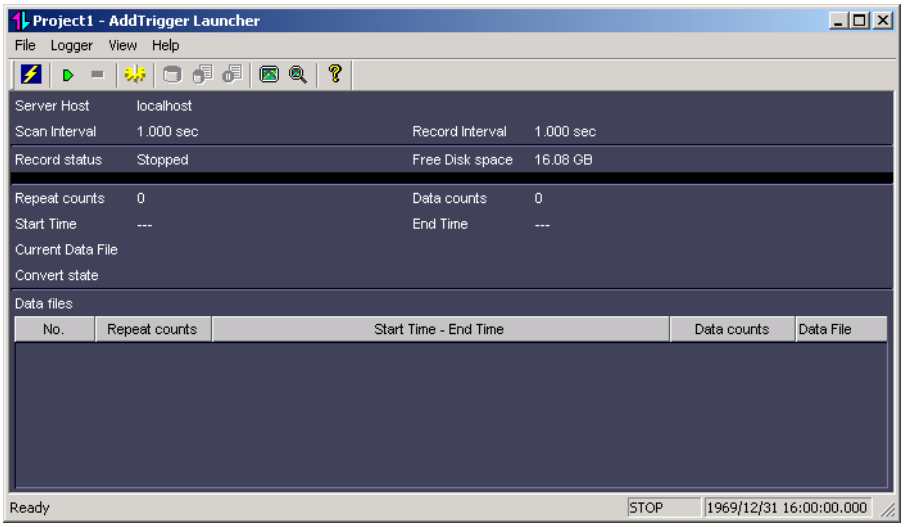


2.2 Starting and Exiting AddTrigger

Starting AddTrigger

Procedure

From the Windows Start menu, choose **Programs > YOKOGAWA DAQWORX > AddTrigger > Launcher**.
The Launcher window appears.



Note

- The project that opens when AddTrigger is started is the project that was open the last time you exited the program. If the file list was displayed the last time you exited the program, the file list appears when you start the program this time.
- If the Use Password Protection check box is selected for the project, the Launcher starts with password protection enabled. For the procedure for canceling the password protection, see section 3.4.
- For instructions on how to switch the project, see section 2.3.

Exiting AddTrigger

Note

Disconnect AddTrigger from the data logging software before exiting the Launcher.

Procedure

1. Choose **File > Exit**, or click the X button in the right corner of the title bar.
If no other software programs are running, AddTrigger closes.

When Other Programs Are Running

If programs other than Launcher are running, the following dialog box opens.

2. Click Yes or No.
Yes: Save the current settings and exit AddTrigger. When AddTrigger is started the next time, the current settings are restored.
No: Do not save the current settings, and exit AddTrigger.

2.3 Setting Up Projects

A project is a group of settings required for operating AddTrigger. You can create as many projects as you like and save them.
By switching projects, you can easily switch between different sets of AddTrigger settings.

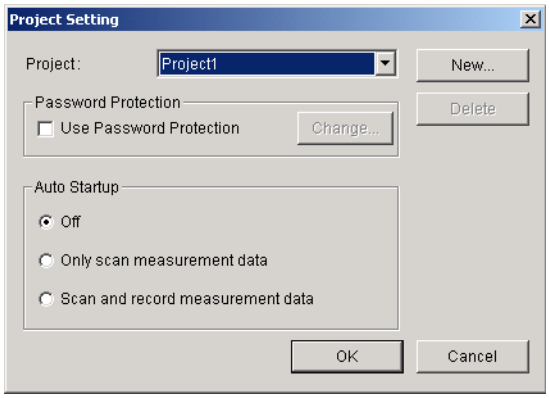
Note

You cannot carry out the operations described below if scanning is in progress or when Programs other than the Launcher are running.

Creating a New Project

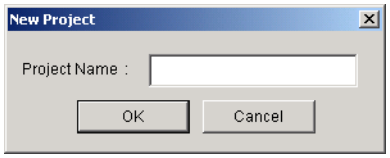
Procedure

1. Choose **File > Project Settings** from the Launcher menu bar. The Project Setting dialog box opens.



By default, the new project is registered under the name Project1.

2. Click New. The New Project dialog box opens.

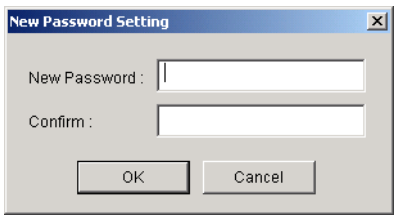


3. Enter a project name and click OK. A new project is created.

Note

- Enter a project name using up to 16 alphanumeric characters.
- The project name may not contain any of the following characters: **\ / : , ; * ? ”< > |**.
- A project name may not start with a period.
- You cannot create a project with the same name as another existing project.

4. To use password protection, select the Use Password Protection check box.
The New Password Setting dialog box opens.



5. Enter a password in the New Password and Confirm boxes and click OK.

Note

- The password is used to open the project and cancel the password protection (see section 3.4).
- Enter a password using up to 16 alphanumeric characters. There are no restrictions on the characters that can be used.
- Do not forget the password (we recommend writing it down for future reference).

Begin Scanning or Recording When Launcher Starts

6. Click one of the option buttons to select the auto startup function.

   Off: Disables the auto startup function.

   Only scan measurement data: Start scanning when the Launcher is started.

   Scan and record measurement data: Start scanning and recording when the Launcher is started.

7. Click OK.

   The settings are saved, and the dialog box closes. The changes you make to the settings after this point apply to the new project.

   Click Cancel to cancel the settings. A new project is not created in this case.

Note

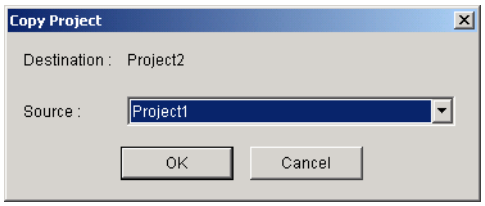
The settings that exist when you quit the Launcher or switch to another project are saved to the current project.

Copying a Project

Carry out the following procedure to copy the settings of another project to the currently Selected project.

1. Choose **Project Copy** from the File menu.

   The Copy Project dialog box opens.



2. Choose the copy source project from the list box.
3. Click OK.

   The settings of the copy source project are copied to the currently opened project.

Note

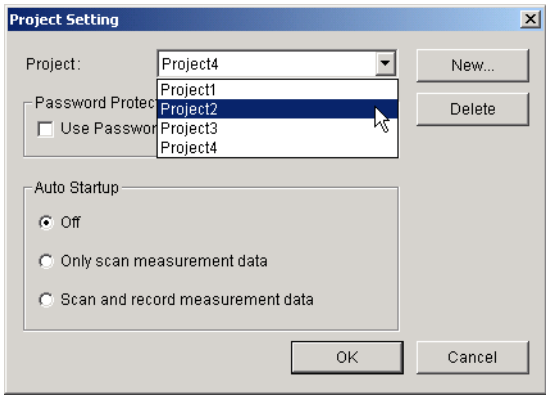
This menu cannot be selected if only 1 project has been created (such as the first time using the program).

Switching the Current Project

Carry out the following procedure to switch to a different project.

Procedure

1. Choose **File > Project Settings** from the Launcher menu bar. The Project Setting dialog box opens.
2. Choose the desired project from the Project list box.



3. If the Use Password Protection check box is selected in the project that you selected, the Password Input dialog box opens.

4. Enter the password and click OK. The dialog box closes.
5. Click OK. The Project Setting dialog box closes and the selected project is opened.

Note

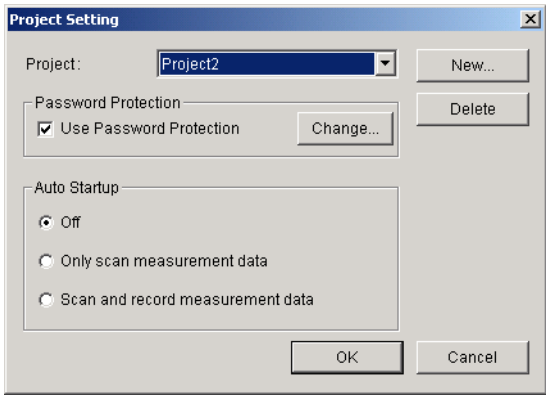
If the file list was displayed in the selected project the last time you exited the program, the file list appears when you start the program this time.

Changing the Password

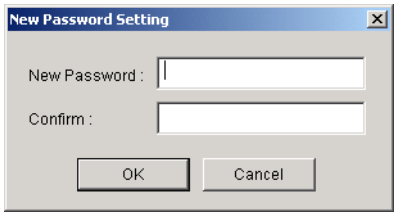
Carry out the following procedure to change the password when you are using the password protection.

Procedure

1. Choose **Project Settings** from the File menu. The Project Setting dialog box opens.



2. Click Change. The New Password Setting dialog box opens.



3. Enter a password in the New Password and Confirm boxes and click OK.

Note

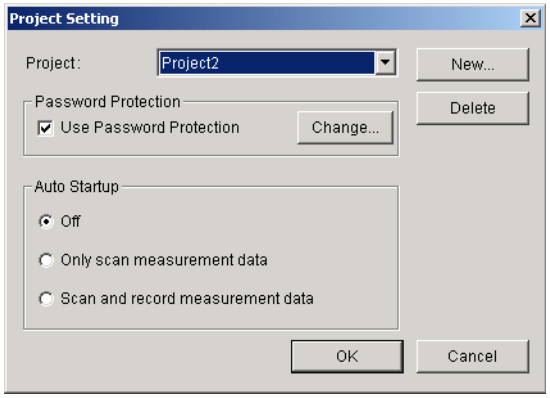
- Enter a password using up to 16 alphanumeric characters. There are no restrictions on the characters that can be used.
- Do not forget the password.

Deleting a Project

Carry out the following procedure to delete a project.

Procedure

1. Choose **Project Settings** from the File menu. The Project Setting dialog box opens.



2. Choose the desired project from the Project list box.
3. Click Delete.

Note

- If only a single project exists, you cannot delete the project.
- Even if you delete the project, the folder containing the setup file for the project remains (AddTrigger installation folder\project name). If you create a project with the same name as the deleted project, the remaining setup file is loaded and the information is displayed. If you wish to display the project in the default condition, change the folder name of the deleted project, move the folder to another folder, or delete the folder using the Windows Explorer or a similar utility.

2.4 Entering Data Logging Conditions

This section describes how to enter the data logging conditions such as the connection destination, logging interval, and logging start/stop conditions.
The display conditions used when displaying the logged data using Historical Viewer are also described.

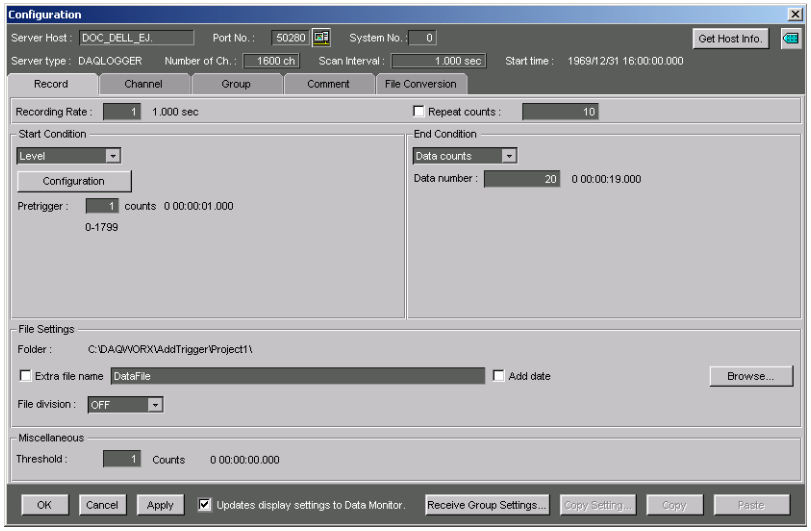
Logging Settings

You can enter the host name, port number, and system number of the PC running the monitor server. The server type, number of channels, scanning interval, and start time are downloaded and displayed.

Procedure

1. Click Configuration on the toolbar or choose **Logger > Configuration** from the menu bar.

The Configuration dialog box opens.



Entering the Host Name

2. Click the Server Host text box, then enter the host name of the PC running the monitor server.

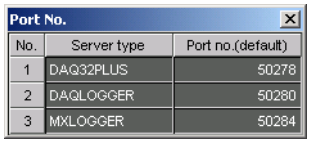
Entering the Port Number

3. If the server is DAQ32Plus, DAQLOGGER, or MXLOGGER, click the Port No. text box and enter the port number.

If the server is DAQ32Plus, DAQLOGGER, or MXLOGGER, click the Select Port Number button.

Port number selection button

A dialog box used to select the port number appears. Click the desired port number.



The port number is entered in the text box.

Entering the System Number

The system number is used to identify data sources when more than one source is being accessed by the monitor server. To determine whether a system number is required for the monitor server being used, see the user's manual for that monitor server.

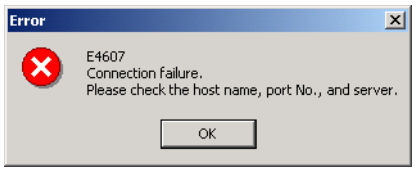
4. Click the System No. text box and enter the number.

Retrieving and Displaying Host Information

5. Click Get Host Info.
The Information dialog box opens.

The user type, number of channels, scan interval, and scan start time are displayed in the upper part of the Configuration dialog box.

If a connection could not be made to the monitor server, an error message dialog box appears. Check the connection settings to confirm that they are correct.



Note

When you click Get Host Info., a connection is made with the monitor server, the following information is downloaded, and then the connection closes.

- Channels
- Number of channels
- Scan interval
- Scan start time
- Tag numbers
- Tag comments
- Max./min. values
- Units
- Server type
- Alarm settings (level, type, value)

Basic Operation

Restrictions When Using the Configuration Dialog Box

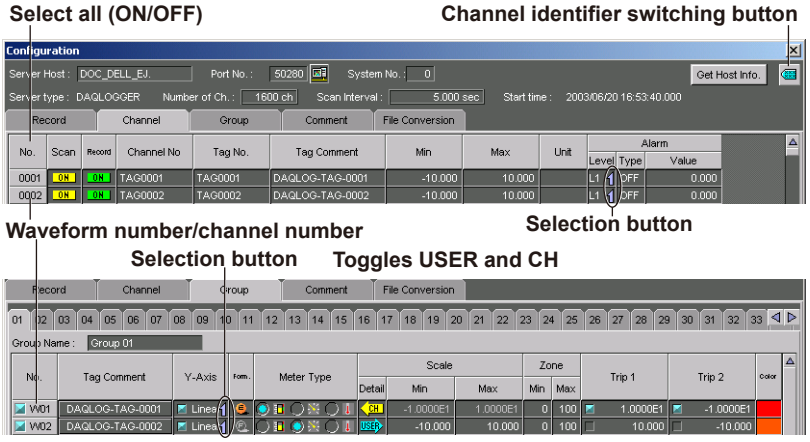
The following restrictions apply when using the Configuration dialog box.

- If password protection is ON, all operations are disallowed.
- If password protection is OFF and scanning is in progress, only the host name and port number can be changed.
- If password protection is OFF and recording is in progress, all operations are disallowed.

Note

You can select a channel identifier of Channel No., Tag No., or Tag Comment. In the explanations below, the channel identifier is set to Channel, but you can substitute Tag No. or Tag Comment according to your situation.

Procedure



Click the channel identifier switching button to switch the display in these cells

Switching the Channel Identifier

Click the button at the upper right corner to switch between Channel No., Tag No., and Tag Comment.

Selecting the Waveform Number or Channel Number

- To select a range of waveform or channel numbers consecutively, click the first waveform cell, and then hold down the SHIFT key while clicking the last cell. You can also drag the cursor from the first waveform number to the last.
- To select all waveform numbers or channel numbers, click the No. cell. The waveform or channel numbers are displayed in blue. To cancel the selection, click the No. cell again.

Note

Clicking the shortcut button when no waveform/channel numbers are selected achieves the same result (selects all).

Switching the Display ON/OFF, and Selecting/Clearing Items

When you click a check box, the box's color switches from blue to Gray.
Blue: display ON, selected
Gray: display OFF, cleared

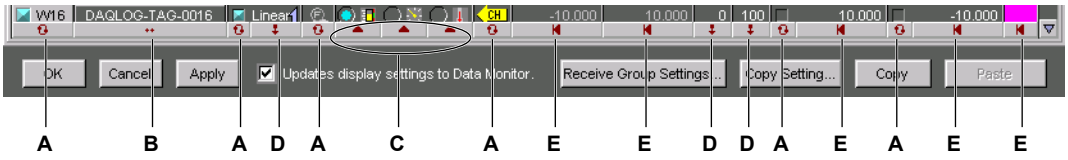
Clicking to Change Settings

For the setting items in the figure below, clicking the cell causes the setting item to change.

You can change the alarm trigger under logging settings, the direction under level trigger settings, the Y-axis under group settings, the alarm level under channel settings, and others.

Using the Shortcut Buttons (Operation When Setting the Display Conditions)

There are five types of shortcut buttons.



Short cut buttons allow you to enter settings into each item of a range of selected waveform numbers. If a range of waveform numbers is not selected, the action applies to all waveform numbers.
A: Shows, hides, or sets the selected items in the column.
B: Channel numbers are filled from the first cell in the selection to the last, each channel being assigned a number 1 higher than the last.
C: Switches the meter type of the selected range.
D: Copies the first value in the selected range to all items in the selected range.
E: Sets the selected values to their defaults.

Applying the Display Condition Settings to the Display Conditions of Data Monitor

Select the Updates display settings to Data Monitor check box. The settings are applied to Data Monitor when you click Apply or OK. However, Data Monitor must be running in this case.

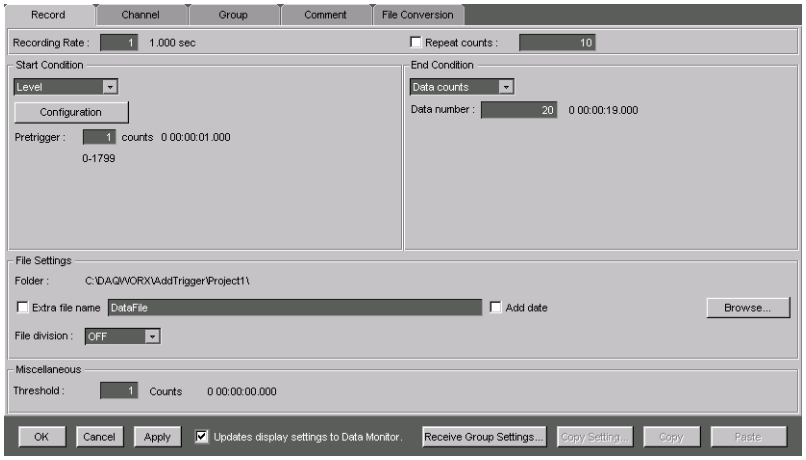
Saving the Settings

Click Apply to save the settings. In this case, the Configuration dialog box remains open.
Click OK to save the settings and close the Configuration dialog box.
Click Cancel to cancel the settings and close the Configuration dialog box.

Entering Logging Settings

Procedure

Click the Record tab.



Recording Rate

The logging interval is specified in integral multiples of the scanning interval. An integer from 1-120 is specified for the recording rate setting. The logging interval is the product of the integer specified here and the scanning interval, and is shown in the right of the text box.

1. Click the Recording rate box and enter an integer value.

Repeat Counts

You can specify the number of times logging is performed.

1. Click the Repeat counts box and enter the number of times to perform logging. You must enter a number of 1 or larger.

2. Select the Repeat counts check box. Logging ends after the specified number of times.

If the check box is clear, the trigger count is unlimited. In this case, the user must stop logging manually.

Note

If you stop recording manually while in progress, logging occurs right up to the point where the operation was stopped.

Start Condition

1. Click to display the list, then select Alarm, Level, or Daily fixed time.

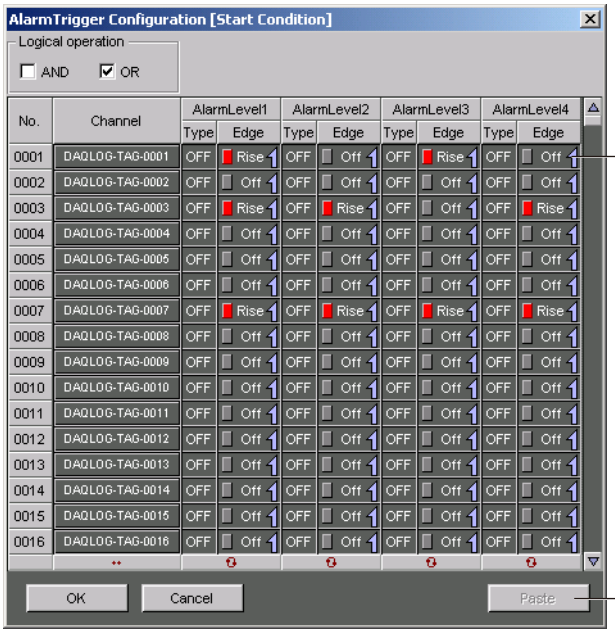
Alarm: The specified alarms on the specified channels are scanned, the trigger is activated if the conditions are met according to the statuses of those alarms, and logging begins.

Level: The data on the specified channels is scanned, the trigger is activated if the conditions are met according to the relationship between the level values specified for those data, and logging begins.

Daily fixed time: AddTrigger scans the time of the logged data, and when the time specified for each day is reached or exceeded, the trigger is activated and logging begins.

Configuring the Alarm Trigger

2. Click Configuration to open the Alarm Trigger Configuration dialog box.



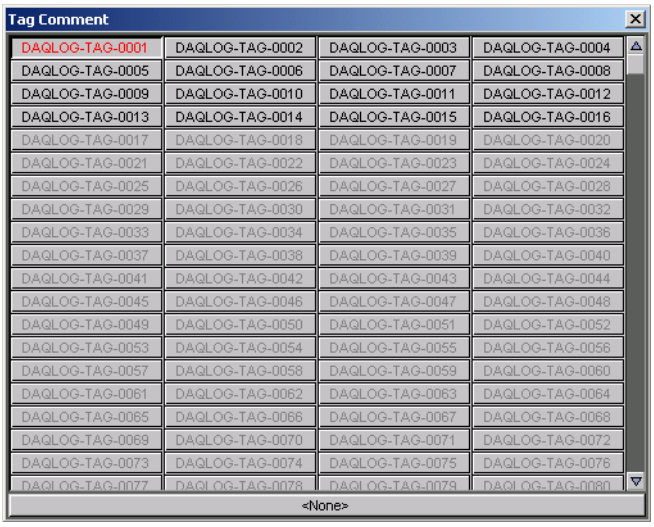
3. Select AND or OR for the calculation.

AND: Activate a trigger and begin logging if all of the specified alarm trigger conditions are met.

OR: Activate a trigger and begin logging if at least 1 of the specified alarm trigger conditions are met.

4. Click the channel to scan.

The Channel No. dialog box opens.



5. Click the channel for which you wish to set an alarm. In this dialog box, if the channel information of the currently downloaded monitor server information applies to the selected scanning channel, the channel is displayed in black. If it does not apply, or if it does apply but scanning for that channel is turned OFF (see page 2-18, “Channel Settings”), the channel is displayed in Gray.

6. Set alarm levels 1 through 4. Click an item to select one of the following settings.

Rise: Make the alarm activation the trigger

REL: Make the alarm cancellation the trigger

Off: Do not scan the scan channel.

Each type of alarm level displays the channel information from the currently downloading monitor server information.

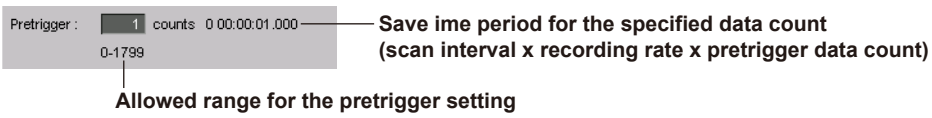
Paste

This button pastes the channel assignments copied when clicking the Copy button under Group Settings (see page 2-19) into the Alarm Trigger Configuration dialog box. If channels being simultaneously scanned are separated into groups, this Paste function instantly copies channels assigned to certain groups to the Alarm Trigger Configuration dialog box as scan channels.

Note

- If all scan channel alarm level settings are set to Off, those channels are not scanned. This is the same as if they had not been registered as scan channels.
- If scan channels are not active, or if scan is OFF (colored Gray) and the alarm level is set to Rise or REL, those channels’ conditions are always considered to be unmet. A scan channel is inactive when scan is turned OFF in the channel settings, or data is not being logged by the data logging software on the monitor server.
- If the scan channel is active and the alarm level is set to Rise or REL, and if that channel’s alarm level is not set on the data logging software, the alarm level condition is always considered to be unmet.

7. Click the Pretrigger box, and enter the number of data prior to the point at which the trigger conditions are met from which you wish to begin saving data.

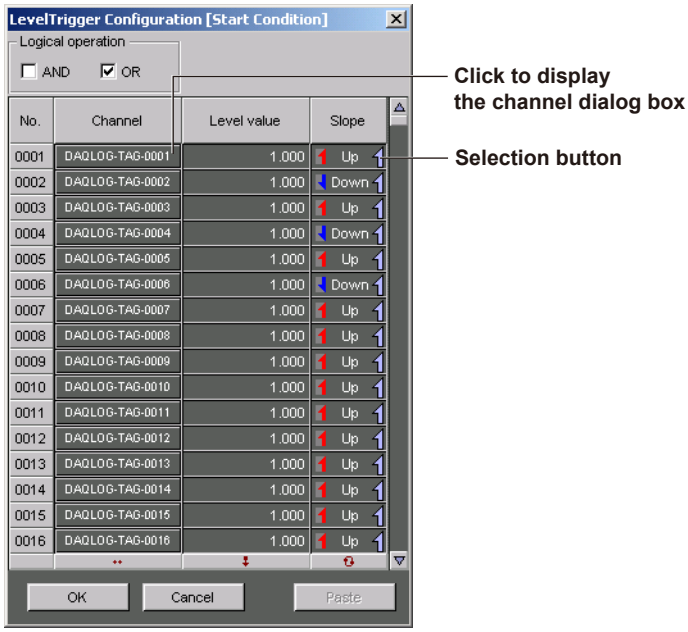


The setting range is from 0 to 1799 (see page 1-7, "**Pretrigger Function**"). The save time for the specified data is shown in the right of the box.

This value is calculated based on the downloaded scan interval (see page 2-8, "**Retrieving and Displaying Host Information**"). If you click Get Host Info. again after changing the scan interval for the connected monitor server, this value also is changed.

Configuring the Level Trigger

2. Click Configuration to open the Level Trigger Configuration dialog box.



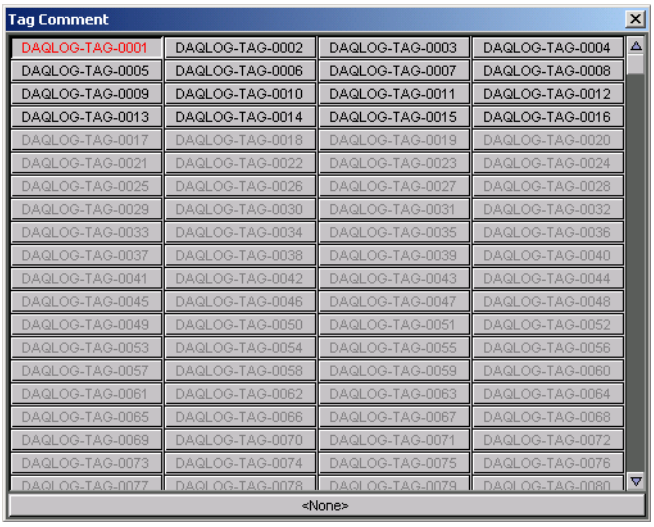
3. Select AND or OR for the calculation.

AND: Activate a trigger and begin logging if all of the specified level trigger conditions are met.

OR: Activate a trigger and begin logging if at least one of the specified level trigger conditions are met.

4. Click a channel to scan.

   The Channel No. dialog box opens.



5. Click the channel of the level you wish to scan. Here, if the channel settings from the currently downloaded monitor server information applies to the selected scanning channel, the channel is displayed in black. If it does not apply, or if it does apply but scanning for that channel is turned OFF (see page 1-13, “Channel Settings”), the channel is displayed in Gray.
6. Click a Level value box and enter the value for the reference level.
7. Click the Slope box and choose UP or DOWN.

   UP: Starts logging when data from the scanned channel exceeds the level.

   DOWN: Starts logging when data from the scanned channel falls below the level.

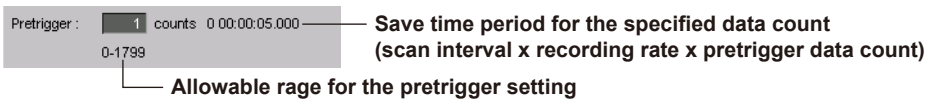
Paste

This button pastes the channel assignments copied when clicking the Copy button under Group Setting Information (see page 2-19) into the Alarm Trigger Configuration dialog box. If channels being simultaneously scanned are separated into groups, this Paste function instantly copies channels assigned to certain groups to the Alarm Trigger Configuration dialog box as scan channels.

Note

- If scan channels are not active and if scan is OFF (colored Gray), those channels’ conditions are always considered to be unmet.
- If an overrange occurs on the scanned channel (+OVER or –OVER), the value for the channel condition is considered to be positive infinity or negative infinity. In other words, the level is always considered to have been exceeded on a +OVER, and not reached on a –OVER regardless of the scanned channel’s specified level.

8. Click the Pretrigger box, and enter the number of data prior to the point at which the trigger conditions are met from which you wish to begin saving data.

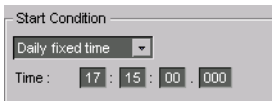


The setting range is from 0 to 1799 (see page 1-7, “Pretrigger Function”). The save time for the specified number of data is shown in the right of the box.

This value is calculated based on the downloaded scan interval (see page 2-8, “Retrieving and Displaying Host Information”). If you click Get Host Info. again after changing the scan interval for the connected monitor server, this value also is changed.

Fixed Time Trigger Settings

2. Click the Time boxes and enter the times at which the trigger activates within a 24-hour period.



The trigger activates when the specified time is reached or exceeded, and logging begins.

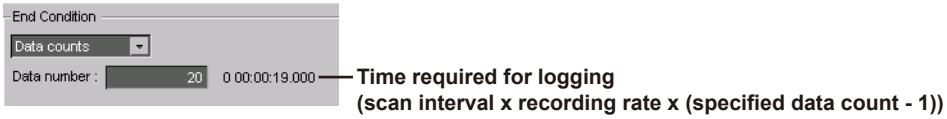
End Condition

1. Click to display the list box, then select Alarm, Level, Daily fixed time, or Data counts.

Settings for the alarm trigger, level trigger, and daily fixed time are the same as in the start conditions.

Setting the Data Count

2. Click the Data Counts box and enter a number.



Logging starts, then stops when the specified number of data points is logged.

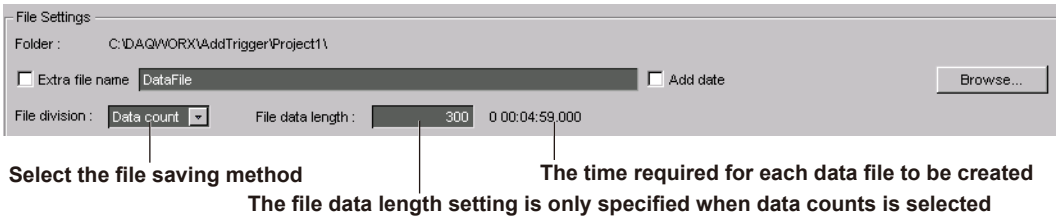
The time that is required for logging the specified number of data is shown to the right of the number of data. It is calculated as the scan interval x recording rate x (specified number of data - 1). Therefore if the recording rate or scan interval are changed, the logging time also changes.

Note

See page 1-7, “Pretrigger Function” for information about the logging stop point when a pretrigger is set (to a value other than 0).

File Settings

You can specify the data file name, save destination, and how the file is to be saved.



Naming Convention (File Name Extension .mld)

	File name not specified	File name specified
Date not added	0000.mld	file name-0000.mld
Add date (file division: per hour)	YYYYMMDDHH-0000.mld	file name-YYYYMMDDHH-0000.mld
Add date (file division: other than per hour)	YYYYMMDD-0000.mld	file name-YYYYMMDD-0000.mld

YYYY is the four-digit year, MM is the month, DD is the date, and HH is the hour. 0000 is the sequence number. The sequence number increments by 1 when logging is performed.
If a file of the same name already exists, 1 is calculated for the 4-digit sequence number. The sequence number following 9999 (4 digits) is 10000 (5 digits). The number following 99999 (5 digits) is 100000 (6 digits), and so on.

File Division Types

OFF: Saves all the data in the logging period to a single file.
Data count: When a specified number of data points (logging count) is written to a file, AddTrigger begins writing to a new data file. Enter the number of data per division. The time required to create a data file is displayed to the right of the number of data per division.
per Day: AddTrigger writes data to a new data file at 0 hour 0 min 0s every day.
per Hour: AddTrigger writes data to a new data file at 0 min 0s every hour.

Specifying an Output Destination

1. Click the Browse button.
2. Select a folder in which to save data, or create a new folder. The new location of the output folder is registered.

   Entering a File Name

3. Select the Extra File Name check box. If the box is not selected, no name will be registered even if one is entered.
4. Click the Extra File Name box and enter the desired file name. The file name must not contain any of the following characters: **\ / : , ; * ? ”< > |**.
5. Select the Add date check box. No date will be added unless the check box is selected.

   Selecting the File Saving Method

6. Click to display the File division list and select the division method.
7. If Data count is selected, enter the number of data per division.

Trigger Confirmation Count

Logging starts/stops when a trigger condition is met consecutively the specified number of times (trigger confirmation count).
This item is available only when Alarm or Level is specified for the start condition.

1. Click the Threshold text input box and enter the confirmation count.

   The time required for the confirmation is shown to the right of the count.

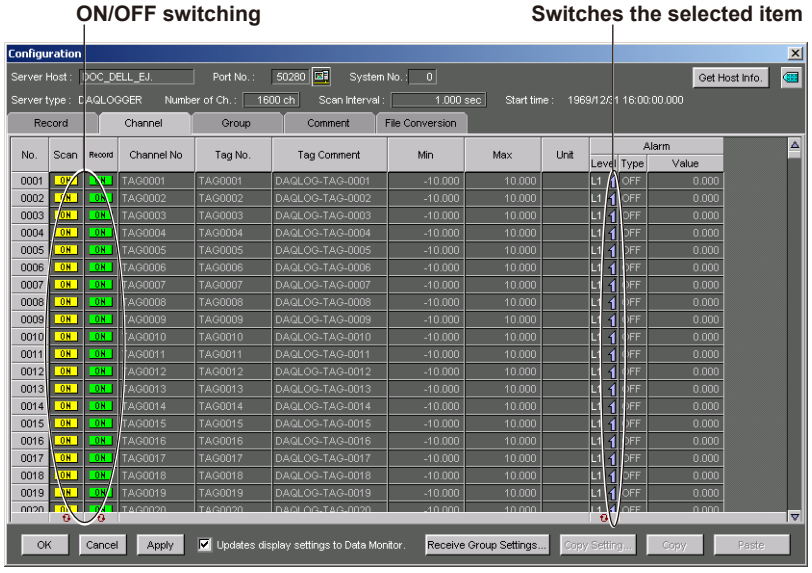
Confirmation time = scan interval x (trigger confirmation count - 1)

Channel Settings

Select channels to which channels and data files acquired from the monitor server are saved. Also, the channel information (channel name, tag number, tag comment, max value, min value, units, and alarm settings) obtained using the procedure described in Retrieving and Displaying Host Information (see page 2-8) is displayed.

Procedure

Click the Channel tab.



Turning Scanning ON/OFF on Selected Channels

1. Click the cell for a channel to turn scanning ON or OFF.

   Channels set to ON are loaded from the monitor server.

Turning Recording ON/OFF on Selected Channels

2. Click the cell for the channel to turn recording ON or OFF.

   Data from channels set to ON are saved to a file.

Note

- When you turn recording ON, scanning for that channel is turned ON automatically.
- When you turn scanning OFF, recording for that channel is turned OFF automatically.

Switching the Alarm Setting

Each time you click the cell for the level of the alarm information, the setting scrolls through the following options: **L1->L2->L3->L4->L1**.

Turning Scanning and Recording ON/OFF, and Switching All Alarm Levels at Once

1. After selecting channel numbers, click the shortcut button to switch the channels and levels.

   See page 2-9, "**Basic Operation**" for details.

Note

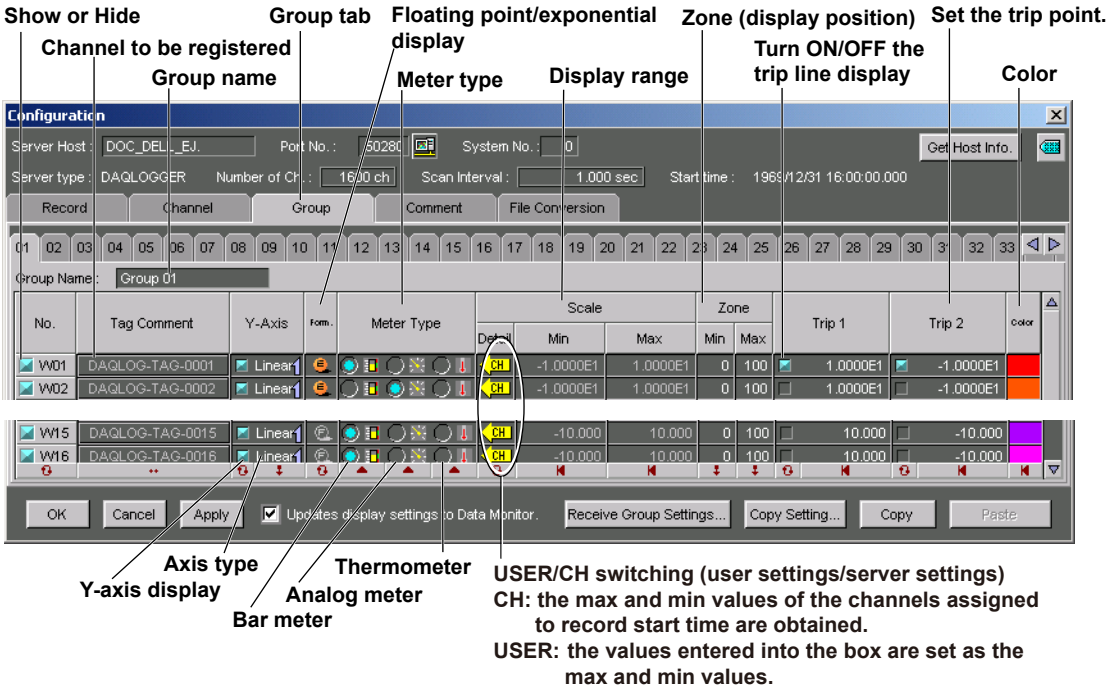
Channel setting items other than ON/OFF for scanning and recording are not changed. They are simply displayed for your reference.

Group Settings

These group settings are saved to data files, and when data files are displayed on data viewer (see chapter 5) these settings are also displayed. You can also apply the display conditions modified here to Data Monitor (see chapter 4).

Procedure

Click the Group tab.



Selecting a Group

Click a group tab to select the group.

Group Name

Click the Group Name box and enter the group name using up to 16 alphanumeric characters.

Showing/Hiding the Waveform

Select the No. check box.

Blue: Shows the waveform.
Gray: Hides the waveform.

Y-Axis

You can specify whether to show or hide the Y-Axis (scale) when Multi-Axis Zone is selected. Click the check box.

Blue: Shows the Y-axis.
Gray: Hides the Y-axis.

Specifies the axis type. Linear and Log toggle each time the box is clicked.

Linear: Linear scale.
Log: Logarithmic scale.

Display
Set the display format for numeric values. Select floating-point (100.0) or exponential (1.000E2). Floating-point and exponential toggle each time the box is clicked.

Meter Type
Click one of the option buttons to select the type of meter to be displayed on the meter monitor of Data Monitor from bar meter, analog meter, and thermometer. The setting is not used on Historical Viewer.

Scale
- **Detail**
  Select whether to use user settings or server settings for the scale settings.
  CH: The max and min values of the channels assigned to the recording start time are obtained from the monitor server and set to the scale max and min values.
  USER: The values entered into the box are set as the max and min values. When selecting USER, you can change the max and min value settings.
- **Max. value, min. value**
  Click the value boxes to enter the maximum and minimum values of the scale. The range of values that can be entered is from –999999999 to 999999999 excluding the decimal point.
  If you set the minimum value larger than the maximum value, the waveform is inverted.

Note

The decimal point position of the entered value is adjusted according to the number of significant digits to the right of the decimal point.

Zone
Click the value boxes to enter the maximum and minimum values of the waveform display zone. The range of values that can be entered is 0 to 99% for the minimum value and 1 to 100% for the maximum value.

Trip 1 and Trip 2
Click the value box and enter the position of the trip line within the scale range.
When you enter a value, the check box turns blue. If you do not wish to use the trip line, clear the check box.
Blue: Enable.
Gray: Disabled.

Note

Trip line 1 and 2 are displayed in red and blue, respectively.

Color

Set the waveform display color.

1. Click the Color box.

   The Color dialog box opens.

2. Click a color to select it. Click OK to confirm the new color. The dialog box closes.

Note

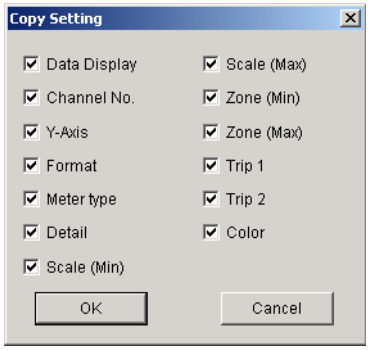
To create a new color, click Define Custom Colors. Use the palette that appears to create the new color.

Copying the Group Settings

Carry out the following procedure to copy the logging conditions and display conditions of a group to another group.

1. Click Copy Setting in the Configuration dialog box.

   The Copy Setting dialog box opens.



2. Select the check boxes for the items to be copied and click OK. The dialog box closes.
3. Click the tab corresponding to the copy source group.
4. Click Copy.
5. Click the tab corresponding to the copy destination group.
6. Click Paste.

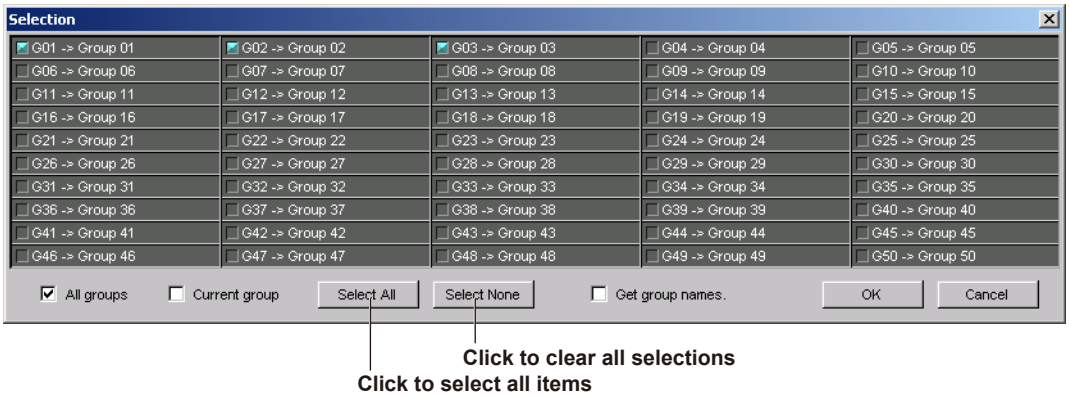
Copying the Group Settings from the Data Logging Software

Carry out the following procedure to copy the group settings from the data logging software on the monitor server to AddTrigger groups.

1. Click Receive Group Settings. The Selection dialog box opens.
2. To also copy the group name, select the Get group names check box.

Copying between the Same Group Numbers

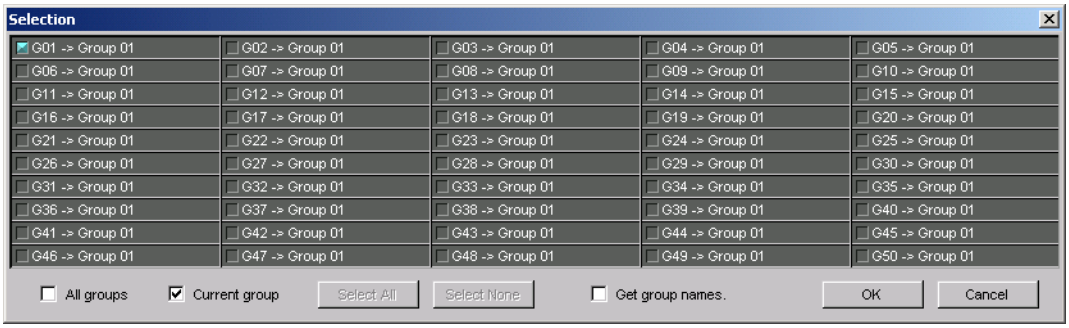
3. Select the All groups check box.



4. Select the check boxes for the groups to be copied.
5. Click OK.

Copying the Information to the Displayed Group

3. Select the Current group check box.



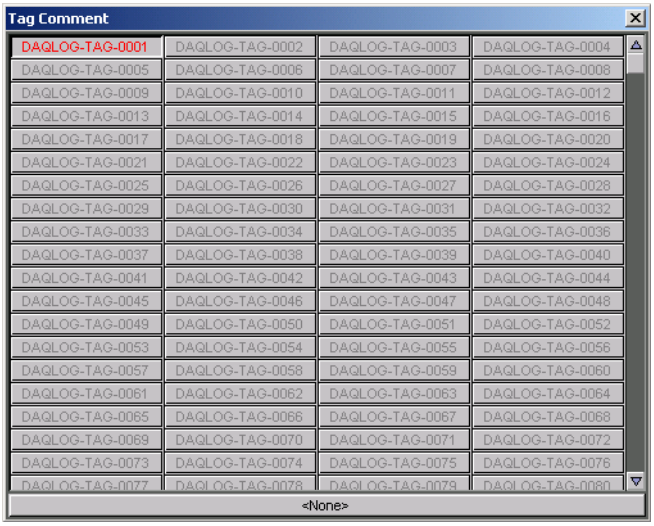
4. Select the check boxes for the groups to be copied.
5. Click OK.

Changing Settings

1. Click the group number for the settings you wish to change.
2. Select the channels you wish to change using the No. check boxes.

Specifying Channels

3. Click a channel cell. The Channel No. dialog box opens.



Note

Channels not active in the channel settings being downloaded from the monitor server are dimmed in the channel information dialog box.

4. Select the desired channels.

   Up to 32 channels can be specified for a group.

Entering a Group Name

5. Click the Group Name box and enter the group name using up to 16 alphanumeric characters.

The group settings are applied to Data Monitor and data viewer.

The settings entered here are used by data viewer when redisplaying data files. Also, you can apply display conditions to Data Monitor.

Applying Display Settings to Data Monitor

1. Click the Updates display settings to Data Monitor check box.

2. Click Apply or OK.

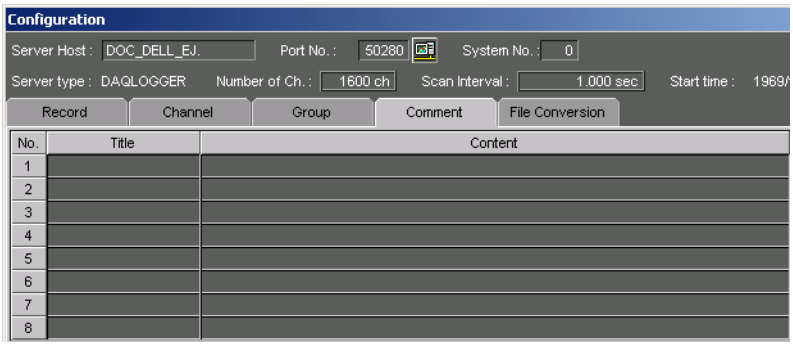
   The settings are applied to Data Monitor.

Comment Settings

Comments related to data logging can be saved to a file. Comments are displayed as file information when opening a file on data viewer. They are also written to files when converting them to Text, Lotus, or Excel format.
The name of the comment may contain up to 16 alphanumeric characters, and the comment itself may contain up to 64 characters.
Up to 8 comments can be entered.

Procedure

1. Click the Comment tab.



2. Click the name and contents boxes, then enter the necessary information.

Automatically Converting the Data Format

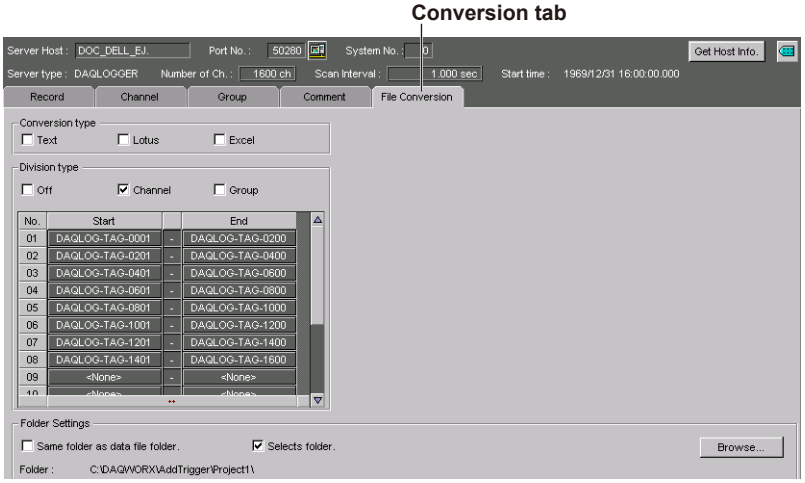
Logged files can be automatically converted every time they are saved. After files are saved, no data can be recorded in them.
The available conversion formats are ASCII, Lotus, and Excel, and multiple formats can be selected together. You can also specify the division type. A single division type of All, channel division, or group division can be selected.
If you select Channel division, the conversion range can also be specified.

Channel Division Settings

Channels can be divided into divisions of 16 or less prior to saving.

Procedure

Click the Conversion tab.



Selecting the Conversion and Division Types

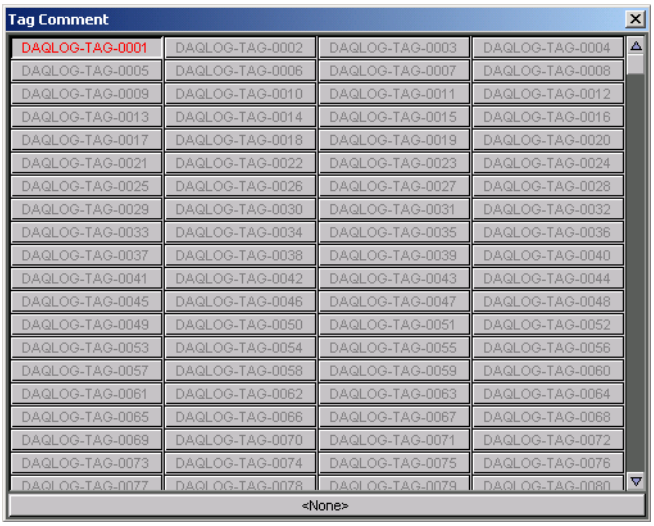
1. Select any number of conversion types. If you do not wish to convert files, clear all check boxes.
2. Select a division type. If you select Channel, proceeded to Channel Division Settings.

Channel Division Settings

- **Entering Settings One at a Time**

1. Click the first or last channel number.

   The Channel No. dialog box opens.



2. Specify the first or last channel number.
3. Repeat steps 1 to 2 to set channel divisions.

- **Set All Items at Once with the Shortcut Buttons**

  Settings are filled to all items in the selected range based on the start and end setting of the first item in the range.

  If the line number of the first channel is start, and the line number of the last channel is end, and N is the number of lines, then the following formula determines the start and end channels for the last selected item:

  start(N) = start + (end – start + 1) x N

  end(N) = start(N) + (end – start)

  The channel name/tag number/tag comment assigned to start(N) and end(N) are displayed. However, if start exceeds 1600, all lines thereafter are set to NONE. Also, if end(N) exceeds 1600, the end channel for that line reverts to 1600. Line numbers here are the positions (No. xxxx) of the channel tab settings.

1. You can drag in the No. column to select multiple lines.

Note

- If no range is selected for items to be set all at once, all lines are considered to be selected. Settings are filled to all items in the range based on the start and end setting of the first item in the range.
- You can change the channel identifier display by clicking Switch Channel Identifier in the upper right of the Configuration dialog box.

2. Set the start and end channels for the top line number (see steps 1 and 2 in, “Entering Settings One at a Time.”)
3. Click the shortcut button.

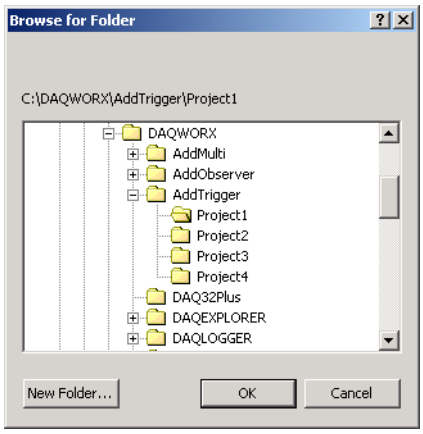
   All settings are filled down through the selection.

Saving Modified Files

- **Specifying an Output Folder**

  Specify the same folder (the output folder specified in the logging setting screen), or a separate folder in which to save data files. If you specify a separate folder, you can select an existing folder, or create a new folder.

1. Select the Same folder as Data File folder or Selects folder check box. If you select Same folder as Data File folder, the settings are complete. If you select Selects folder, proceed to the next step.
2. Click Browse. The Browse folders dialog box opens.

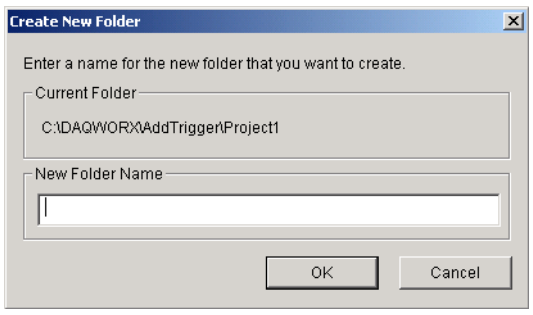


- **Selecting an Existing Folder for the Output Folder**

3. Select an existing folder.

- **Creating a New Output Folder**

3. Click the location in which you wish to create a folder.
4. Click New Folder. The Create New Folder dialog box opens.



5. Confirm the current folder, enter a folder name, and click OK. Up to 256 characters can be input for folder names. The dialog box closes, and the folder is created.

2.5 Changing the Port Number Used by Data Monitor

You can change the port number that Data Monitor uses. The new port number is activated the next time AddTrigger is started.
The default port number is 50283.
If other applications are not using this port number, you do not have to change it.

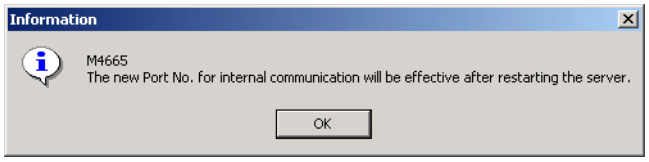
Note

- Set a value different from port numbers that other applications use.
- This port number is not the port number used by the monitor server of the data logging software. The port number that the monitor server of the data logging software uses is set in "Setting the Connection Destination" in section 2.8.
- The port number cannot be changed while scanning is in progress.

Procedure

1. Choose **File > Port No. for the internal communication**. The Port No. for the internal communication dialog box opens.

2. Enter the port number and click OK. The following message appears.

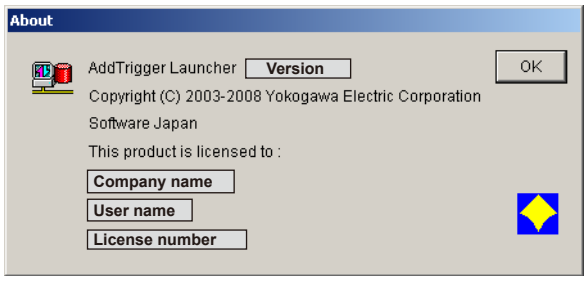


3. Click OK.
4. To activate the new port number, exit AddTrigger and restart it.

2.6 Displaying the Version and Other Information

Click the About Launcher button on the toolbar or choose Help > About.

The About dialog box opens.



Click OK to close the dialog box.

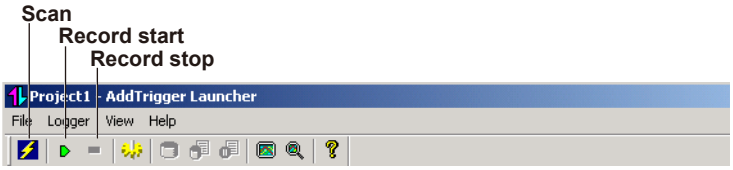
3.1 Preparing the Data Logging Software to Which AddTrigger Is to Be Connected

Check the following items on the data logging software to which AddTrigger is to be connected.

- That the monitor server of the data logging software is running.
- That the data logging software is scanning.

3.2 Scanning and Recording

For the procedure for starting AddTrigger, see section 2.2.
For the procedure for selecting the project, see section 2.3.



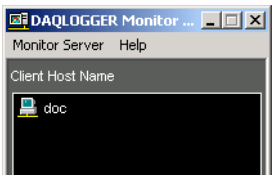
Starting the Scanning Operation

Procedure

Click Scan start/stop on the Launcher's toolbar or choose **Scan** from the Logger menu.
AddTrigger retrieves all the data of the related channels that is scanned and held by the data logging software.
Scanning starts.

Note

- When scanning is started, the monitor server of the data logging software displays the host name of the PC on which AddTrigger is running.



- If initial communication with the device to be connected fails, a reattempt is made within 30 seconds after the communication failure was recognized. Additional time is required from the start of communication until failure is recognized.

Automatically Starting the Scan Operation

If Only scan measurement data is selected in the project, scanning starts when the Launcher is started (see section 2.3).

Stopping the Scanning Operation

Procedure

While scanning is in progress, click Scan start/stop on the Launcher's toolbar or choose **Scan** from the Logger menu.
Scanning stops.

Note

- When scanning is stopped, the host name (of the PC on which AddTrigger is running) that is displayed on the monitor server of the data logging software disappears.
- You cannot stop the scan operation while recording is in progress.

Starting the Recording Operation

Procedure

1. Click Start on the Launcher's toolbar or choose **Start** from the Logger menu.
   Recording starts.

Note

If you carry out the operation to start recording when scanning is not in progress, scanning is started first and then recording is started.

Automatically Starting the Recording Operation

If Scan and record measurement data is selected in the project, scanning and recording start on the specified groups when the Launcher is started (see section 2.3).

Stopping the Recording Operation

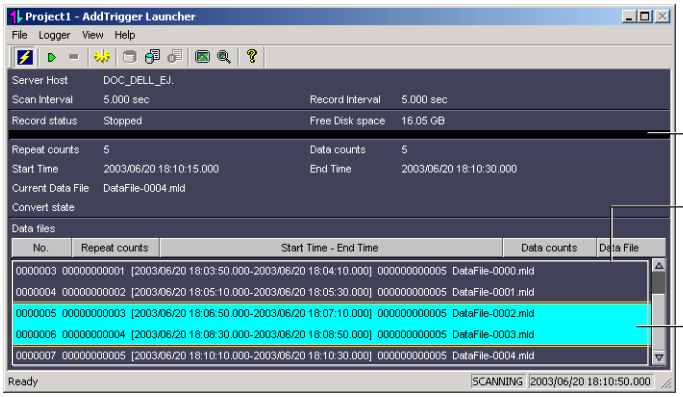
Procedure

1. Click Record Stop on the Launcher's toolbar or choose **Stop** from the Logger menu. A confirmation dialog box appears.

2. Click OK or Cancel.
   OK: Stop recording of the group.
   Cancel: Do not stop recording.

3.3 Displaying the Data Logging Status, and Deleting the Data File List

You can display the logging status on the launcher. The current data logging status is displayed in the upper part of the screen.



The recording status is displayed using colors.

If you exit while the data file list is displayed, the list is redisplayed the next time you start the program.

You can drag to select the files you wish to display.

The displayed items are as follows:

Server Host: The connection destination of the currently displayed project.

Scan Interval: Data logging interval for the currently connected monitor server.

Record Interval: The interval at which data is downloaded from the monitor server and saved, which is the product of the scan interval and the recording rate.

Record Status: Stopped, Scanning, Logging, or Error Stop is displayed. Each status is indicated by a colored bar.
Stopped: black
Scanning: yellow
Logging: green
Error stop: red

Free disk space: Shows the currently available space on the data file save destination medium.

Repeat counts: After recording starts, logging start conditions are met and the count at which data saving starts is displayed. When recording starts again after stopping, the count is reset to 0.

Data counts: The number of data saved when the logging start conditions are met. The count is reset to 0 every time saving begins.

Start time: The date and time data was saved when logging start conditions were met, or the date and time when it is set to start is displayed.

End time: The date and time data was saved when logging stop conditions were met, or the date and time when it is set to stop is displayed.

Current Data File: The name of the data file to which logging data is currently being written.

Convert state: The current automatic conversion status is displayed.

Data file list: The information for the data file saved when the launcher was started is displayed. When the data file is finished saving, the information is added to the display. Information is displayed in the order in which it was saved. Up to 200 lines can be displayed. If the number of displayed lines exceeds 200, lines are deleted starting with the oldest lines to make room for new lines. The list displayed before exiting the Launcher is redisplayed when the Launcher is restarted and the corresponding project is selected. If data files appearing in the list are not present in the folder, that file's information is dimmed.

Displaying the Logging Status

Procedure

You can select a file from the data file list to view the data file currently being logged or files that are finished being logged. Also, when browsing the data file list you can stop the data from updating so that the screen does not scroll and prevent you from viewing the data files that are finished being logged.

Viewing Data Files Being Logged

You can view a data file at the moment it is being saved on Data Viewer. If the data being saved was already displayed on Data Viewer, only the data at the point of saving is updated and displayed. If the data to be saved changes to a separate data file, the new data file is displayed along with all past data files.

Displaying Selected Data Files That Were Previously Logged

You can select any number of files from the list of data files that were previously logged and display them on Data Viewer.

Stop Updating of the List of Files That Were Previously Logged

When you stop the updating, newly logged data is not added while browsing logged data. Data may be added to the list of logged data files while browsing, causing the display to scroll. Stopping the updating prevents this problem.

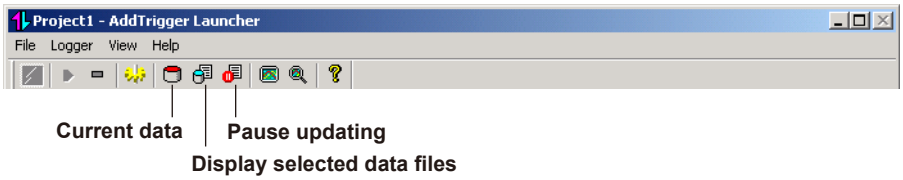
Clearing the Data File List

Procedure

You can clear the currently displayed data file list from the Launcher window.

Displaying the Logging Data

Procedure



Stop Updating of the List of Logged Files

1. Click Updating pause on the toolbar or choose **View > Updating pause of the data file list** from the menu bar.

   Even if the logging status of the data files currently being logged is Stop, those files do not appear in the list of logged files.

Restart Updating of the List of Logged Files

2. If you repeat step 1, the logged data files after stopping the update are displayed in the list of logged data files.

Displaying Data Files Currently Being Logged in Data Viewer

1. Click Current Data on the toolbar or choose **View > Current Data File** from the menu bar.

   Data Viewer starts, and only the data being saved at that point is displayed.

Displaying Logged Data Files in Data Viewer

1. Drag in the list of logged data files to select the items you wish to display.
2. Click Display selected Data files on the toolbar or choose **View > Selected Data Files** from the menu bar.

   The selected data files are all displayed in the viewer.

Note

You can quickly display a file in the viewer by double-clicking the data file (see chapter 5).

Clearing the Data File List

1. Choose **View > Erase** the data file list.

   The data file list is cleared. The list cannot be redisplayed once it has been cleared.

3.4 Using Password Protection

You can use password protection to prevent accidental execution of operations.

Note

Password protection can only be used on a project that is configured to use password protection.

Enabling Password Protection

Procedure

Choose **Password Protection** from the File menu. Password protection is enabled.

Disabling Password Protection

Procedure

Carry out the following procedure to disable password protection.

1. Choose **Password Protection** from the File menu. The Input Password dialog box opens.

2. Enter the password and click OK.

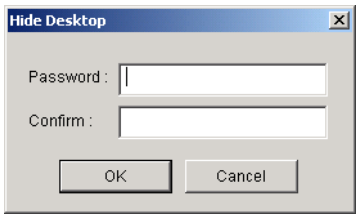
3.5 Using Desktop Protection

The desktop protection is a function used to hide the Windows Start menu and icon on the desktop.
When the desktop protection is enabled, other programs cannot be started. This function prevents accidental execution of Windows functions that might interrupt AddTrigger operations.

Enabling the Desktop Protection

Procedure

1. Choose Desktop Protection from the File menu. The Hide Desktop dialog box opens.



2. Enter a password in the Password and Confirm boxes and click OK.

Note

- Enter a password using up to 16 alphanumeric characters. There are no restrictions on the characters that can be used.
- You can set a different password from the default password.
- Do not forget the password.

Disabling the Desktop Protection

Procedure

1. Choose **Desktop Protection** from the File menu. The Input Password dialog box opens.

2. Enter the password and click OK.

4.1 Displaying Waveforms on Monitor Screens

Data Monitor displays the data that is retrieved from the host at the scan interval. The following six types of monitor screens are available: Trend, Numeric, Meter, Alarm, Color Graph, and Circular. Data Monitor is started from the Launcher.

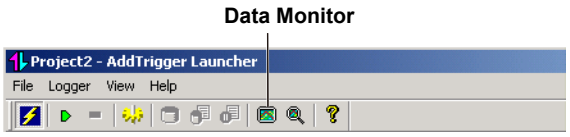
Note

To change the port number that Data Monitor uses, see section 2.5.

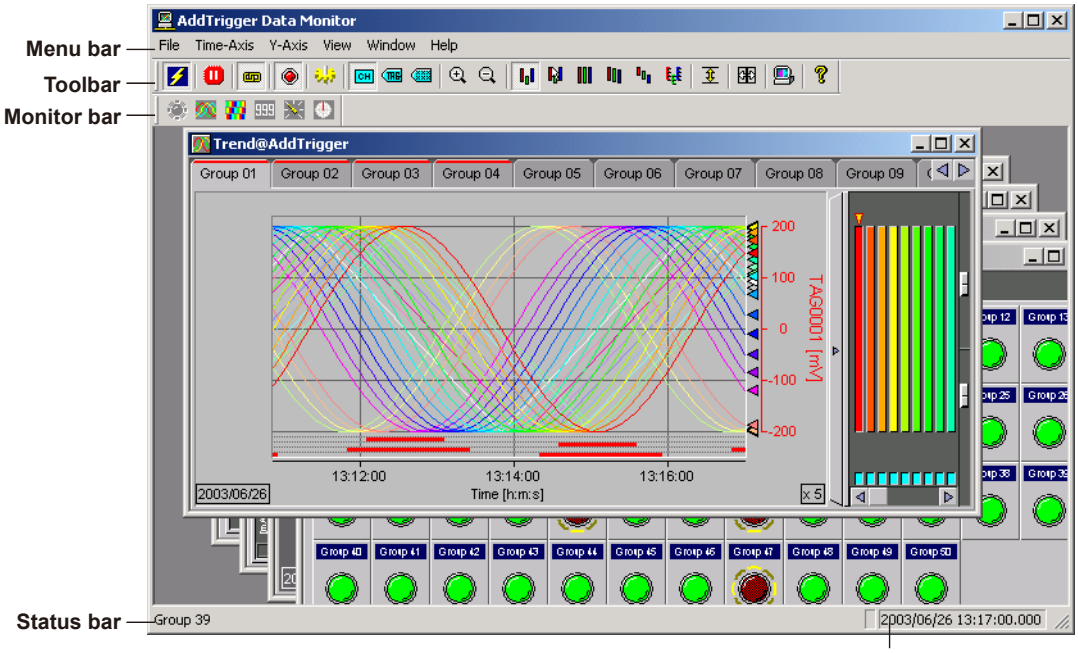
Starting Data Monitor

Procedure

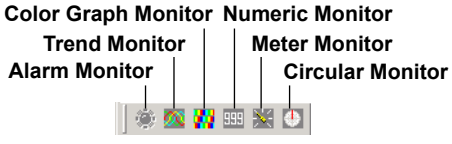
1. Click Data Monitor on the Launcher's toolbar or choose **Data Monitor** from the View menu.



Data Monitor starts and a monitor screen appears.



2. Click an icon on the monitor bar to open a new monitor screen. You can also choose a monitor name from the **Window** menu to display the monitor screen.



Note

- The contents of the menu bar vary depending on the selected monitor screen. The toolbar displays all the tool buttons. However, only the buttons related to the selected monitor screen can be used.
- The number of monitor screens that can be opened is as follows:
  Alarm monitor: 1
  Trend monitor: Up to 4
  Color Graph monitor: Up to 4
  Numeric monitor: Up to 4
  Meter monitor: Up to 4
  Circular monitor: Up to 4
  However, opening multiple monitor screens may degrade the performance.
- If for some reason Data Monitor cannot update the scan data, click Connect/Disconnect on the toolbar or choose **Connect** from the File menu. The condition will be recovered. Conversely, if you click Connect/Disconnect on the toolbar or choose **Disconnect** from the File menu when Data Monitor is updating the scan data, Data Monitor stops updating.

- The original project file information is displayed until connection of the initial communication with the device to be connected succeeds. When the connection succeeds, the information is updated.

Common Operations

Procedure

Linking with Other Monitors

When you change the displayed group on one monitor screen or change the channel identifier (channel, tag number, or tag comment), you can reflect the changes on the other monitors.

Click Link on the toolbar or choose **Link** from the File menu.

Switching the Displayed Group

Click the Group tab.
The selected group is displayed.

Switching the Channel Identifier (Channel No., Tag No., or Tag Comment)

Click Channel No., Tag No., or Tag Comment from the toolbar, or choose **Channel No.**, **Tag No.**, or **Tag Comment** from the View menu.

Pausing Data Monitor

Click Pause on the toolbar or choose **Pause** from the File menu. The updating of the display of the monitor screen is paused.

Click Pause again or choose **Pause** from the File menu to resume the updating of the monitor screen.

Note

Data is retrieved even when the display updating is paused. When you resume the display updating, the data that was scanned while the monitor screen was paused is displayed.

Arranging the Monitor Screens

Choose **Tile** or **Cascade** from the Window menu. The multiple monitor screens that are displayed are arranged accordingly.

Showing/Hiding the Toolbar, Monitor Bar, or Status Bar

Choose **Tool Bar**, **Monitor Bar**, or **Status Bar** from the View menu. The check mark next to the item disappears and the relevant bar is hidden. To show the bar, select the command again.

Displaying the Launcher in Front

Click Launcher on the toolbar or choose **Launcher** from the View menu. The Launcher is displayed in front.

Closing the Monitor Screen

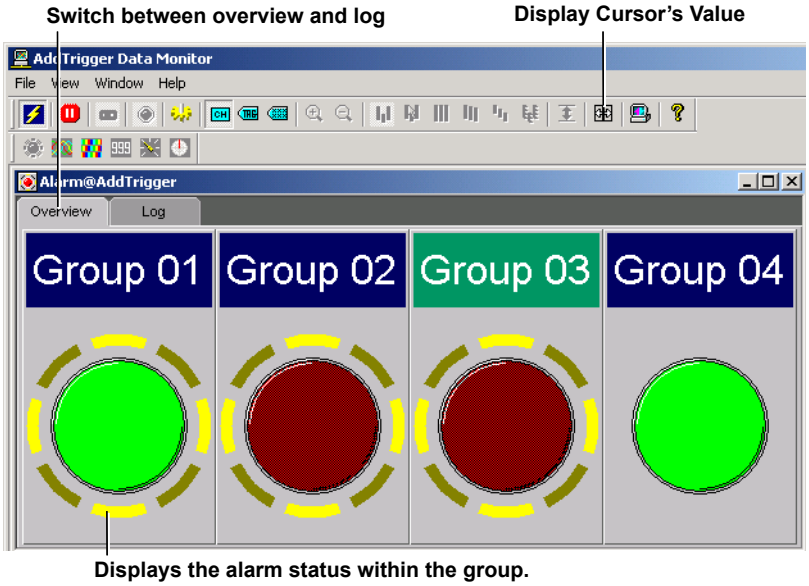
Click the X button at the right corner of the title bar. The monitor screen closes.

Alarm Monitor

You can switch between Overview and Log by clicking the tab.

Overview Display

Displays the alarm conditions by groups.



Alarm Status Display

Green lamp: No alarm is activated in the channels registered in the group whose waveform display is turned ON. Or, no alarm is specified in any of the channels.

Red lamp: Alarm is activated in at least one of the channels registered in the group whose waveform display is turned ON.

Blinking yellow ring: Unacknowledged alarms exist.

Acknowledging Alarms

If a blinking yellow ring is displayed around the alarm lamp, there are unacknowledged alarms.

Procedure

You can clear the ring by carrying out one of the following procedures.

- Click the group on which the blinking ring is displayed.
- Choose Alarm Hold Reset from the View menu to clear all the rings that are displayed.

Sounding Alarms and Stopping the Alarm Sound

You can have AddTrigger generate an alarm sound whenever an alarm is activated. An alarm is sounded only when all the following conditions are met.

- The alarm monitor is displayed.
- The alarm sound function is turned ON.
- Of the channels displayed in the monitor, at least one alarm is activated.

Procedure

Setting the Alarm Sound Function

Choose **Alarm Sound** from the File menu to place a check mark next to the command. The alarm sound function is enabled. To disable the alarm sound function, choose Alarm Sound from the File menu again to clear the check mark.

Stopping the Alarm Sound

You can stop the alarm sound by carrying out any of the following procedures.

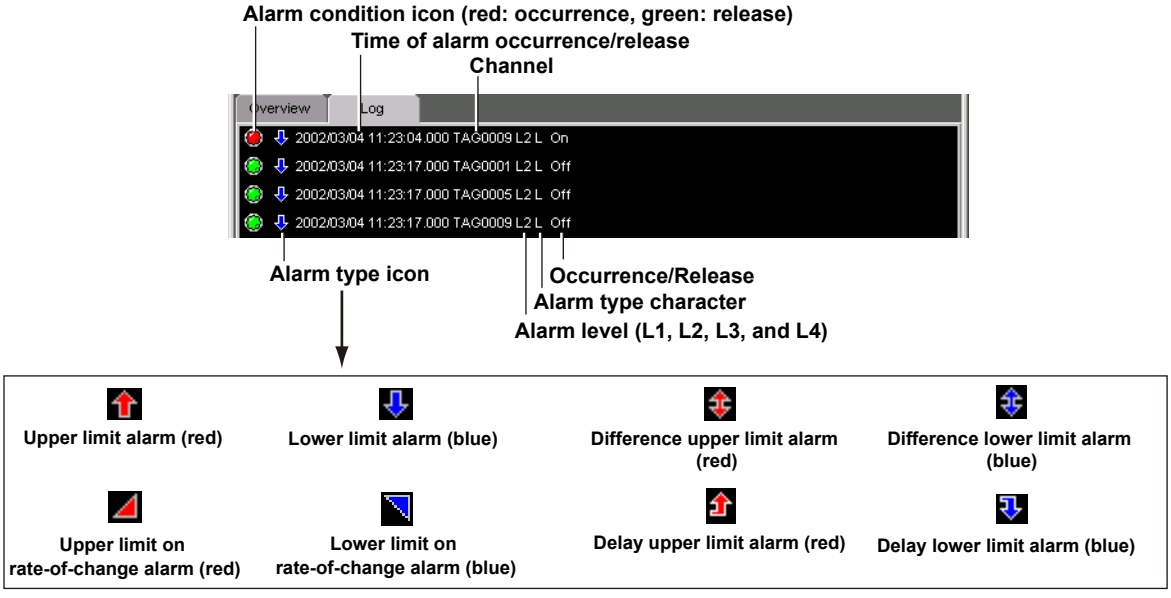
- Click all the groups on which alarms are occurring.
- Choose **Alarm Hold Reset** from the View menu.

Note

- Once an alarm starts sounding, the sound continues until it is stopped even if all alarm conditions are cleared.
- A sound source is required to sound an alarm.

Log Display

Displays a list of the type and the time of activation and cancellation of the alarms that occurred in the past. The newest log is displayed on the last line.
Up to 100 incidents can be displayed. You can scroll the log when display updating of Data Monitor is paused.
For operations using the cursor, see section 4.4, "**Using Cursors**."



Hiding/Showing the Alarm Type Icons

Procedure

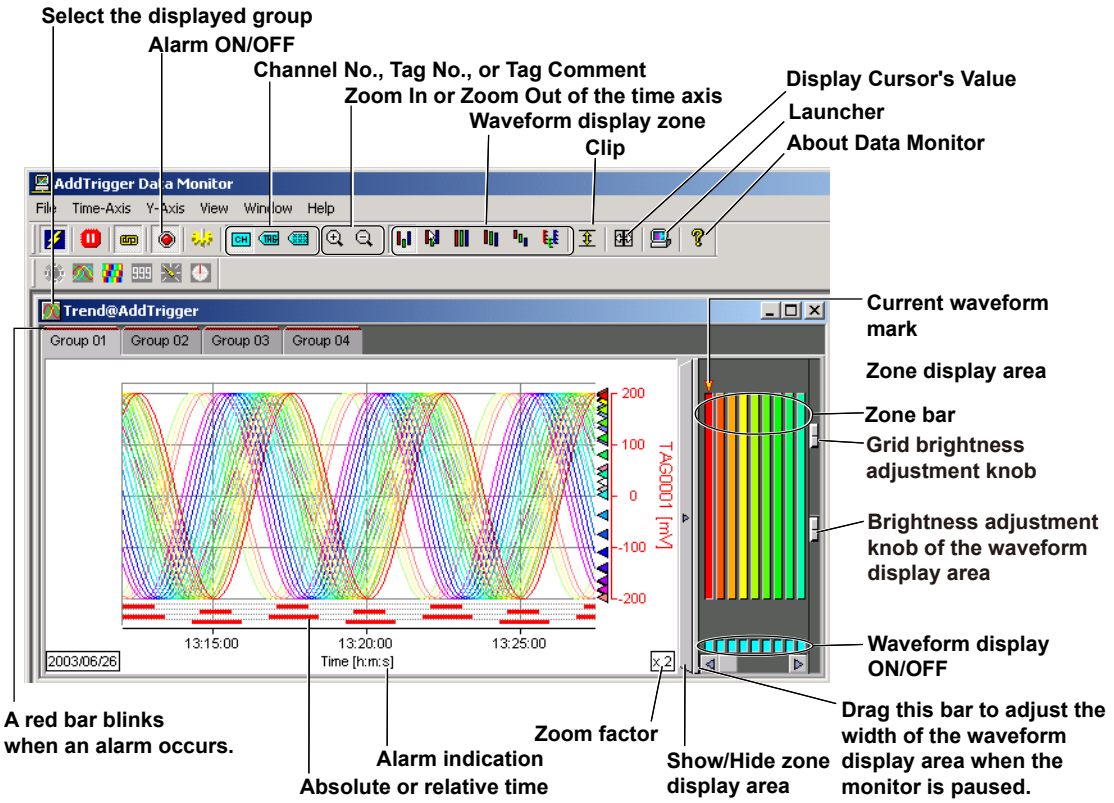
Choose **Alarm Type Icon** from the View menu to clear the alarm type icons on the log display. To display the icons, choose **Alarm Type Icon** from the View menu again.

Trend Monitor

For the operating procedure, see section 4.3, “**Changing the Waveform Display**.”
For operations using the cursor, see section 4.4, “**Using Cursors**.”

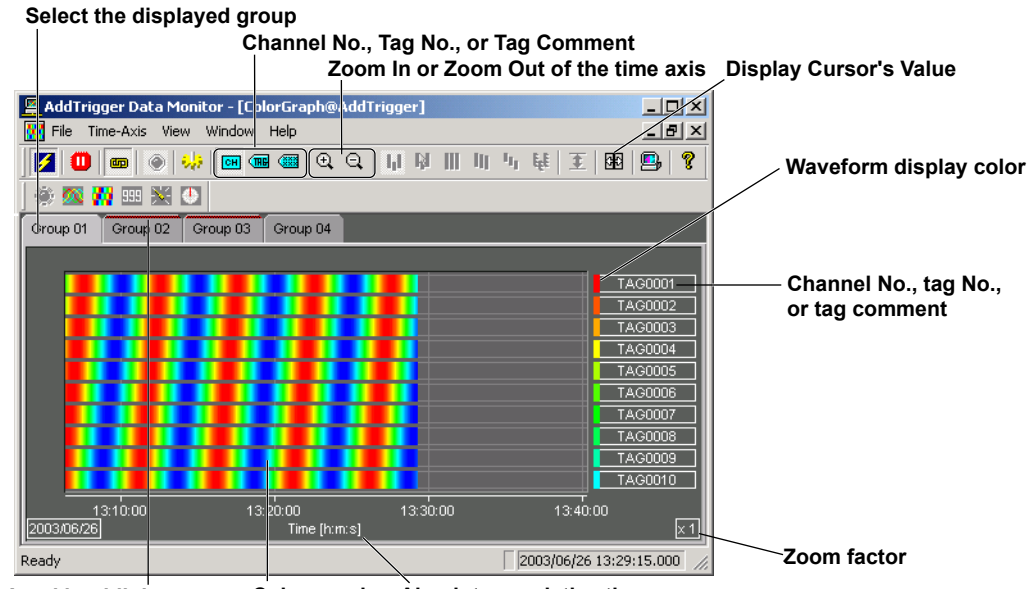
Note

Up to 1800 points of data can be displayed (30 minutes when the scan interval is set to 1 s).



Color graph monitor

For operations using the cursor, see section 4.4, “**Using Cursors**.”



Displays the data by using the 50 different colors that are assigned between the minimum and maximum values of the scale. Assigned in the following order: blue (minimum), light blue, green, yellow, and red (maximum).

Changing the Time Axis

You can change the time axis display. On the absolute time display, the date is displayed at the left end.

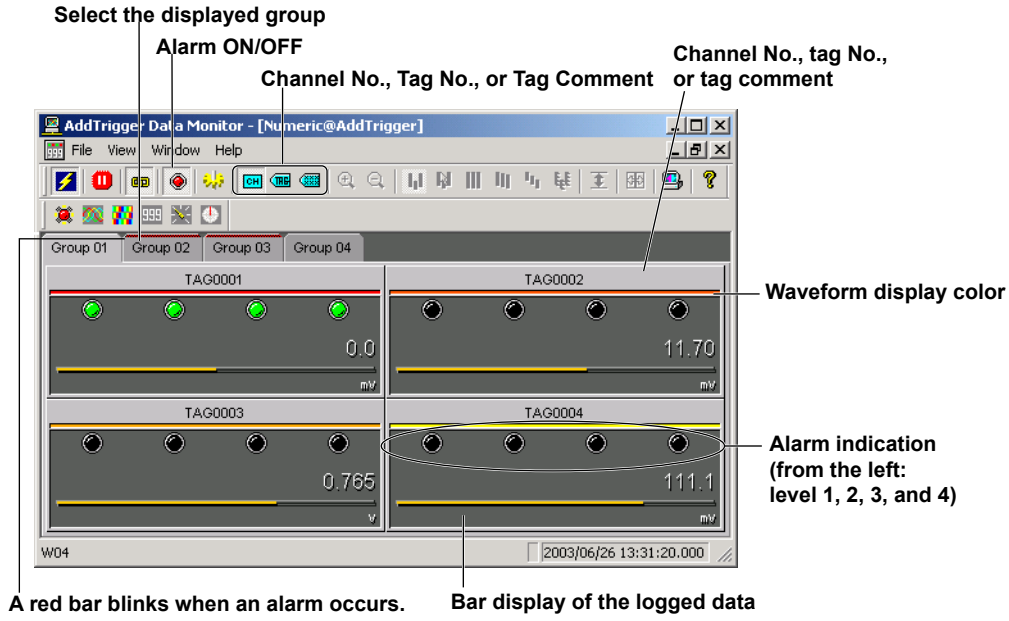
Procedure

Choose **Absolute Time** or **Relative Time** from the Time-Axis menu.

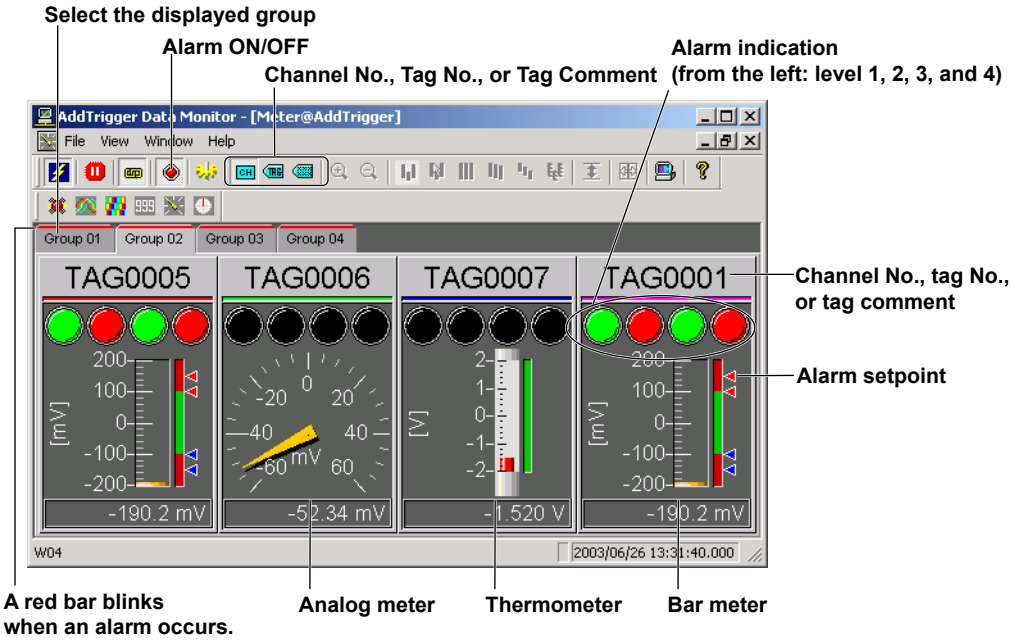
Absolute Time: Displays the time.

Relative Time: Displays the elapsed time from the first data point.

Numeric Monitor

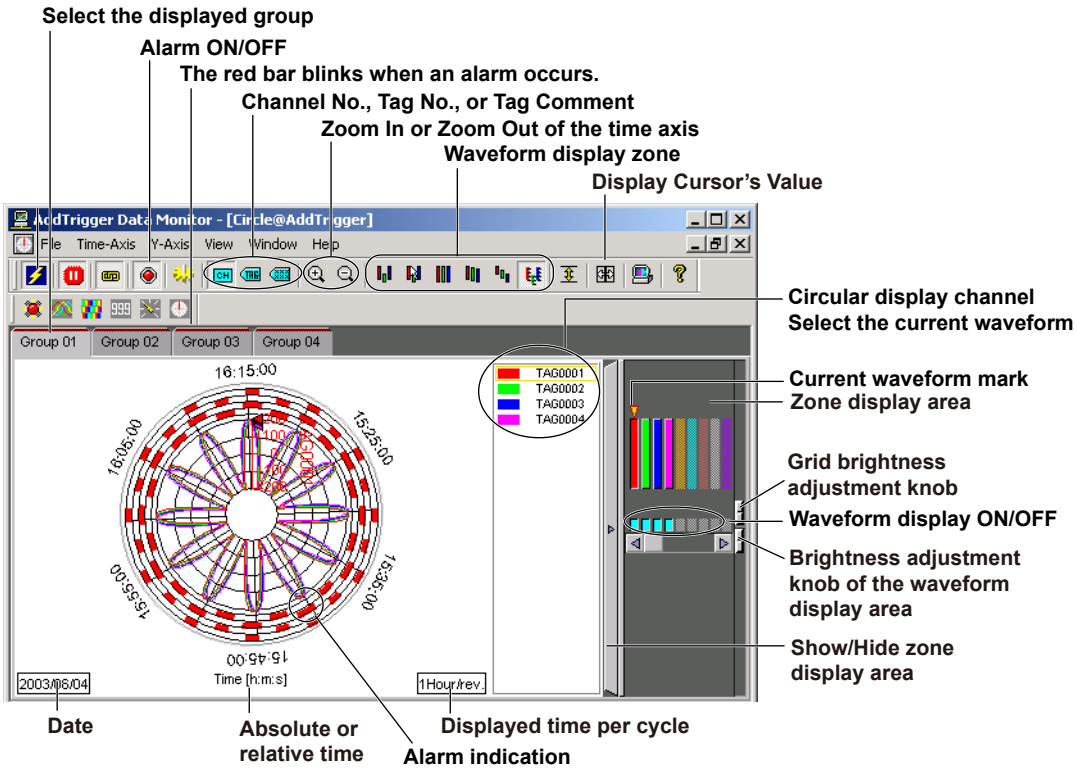


Meter Monitor



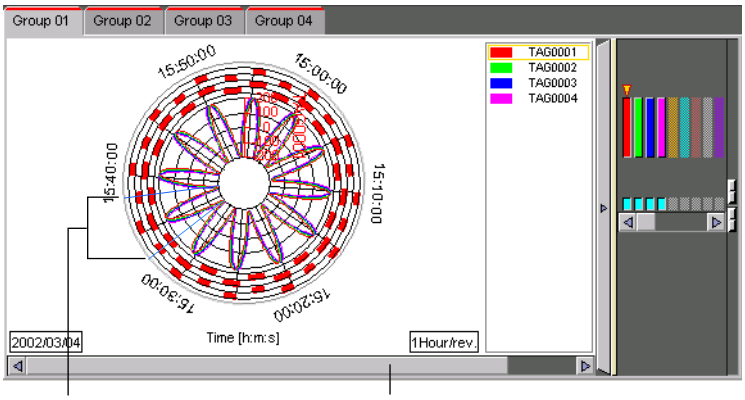
Circular Monitor

You can display one hour to four weeks worth of data on a circular graph. On the circular graph, the radius corresponds to the Y-axis of the trend display, and the circumference corresponds to the time axis.



When monitor paused

When the monitor is paused



For the operating procedures listed below, see section 4.3, "**Changing the Waveform Display**."

For operations using the cursor, see section 4.4, "**Using Cursors**."

- Using the waveform display zones (user zone, edit zone, full zone, slide zone, auto zone, multi-axis zone).
- Showing/hiding alarms.
- Specifying the thickness of the waveform display lines.
- Changing the time axis display (absolute or relative).
- Adjusting the brightness of the waveform display area and grid.
- Using cursors.

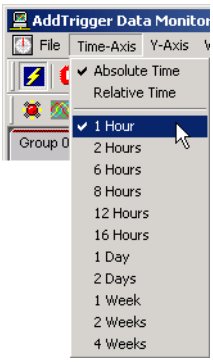
Note

- Dragging the Trip Line
  You cannot drag the trip line on the circular monitor (page 4-17). To change the position of the trip line, change the value in the General Display Settings dialog box.
- Waveform Display Limit
  When the measured data is below the minimum display range, the waveform is displayed at the minimum value position; when the measured data is above the maximum value, the waveform is displayed at the maximum display position.

Setting the Time Axis

Procedure

Choose the time per cycle from the **Time-Axis** menu.



Note

Up to 1800 points of data can be displayed (30 minutes when the scan interval is set to 1 s and 5 hours when the scan interval is set to 10 s).

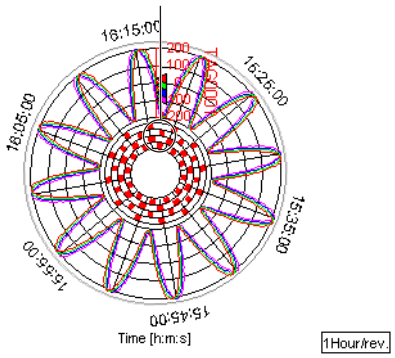
Changing the Alarm Indication Position

You can select whether alarms are displayed on the inside or the outside of the waveform display section of the circular screen.

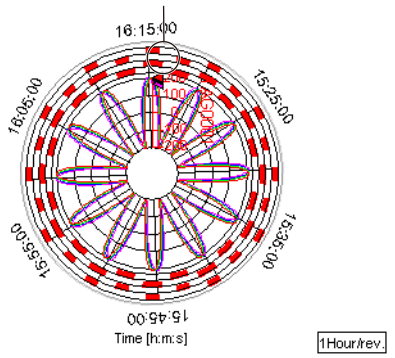
Procedure

Choose **Alarm Inside** or **Alarm Outside** from the View menu.

Alarm Inside



Alarm Outside



4.2 Setting the Display Conditions

Set the display conditions for each group.

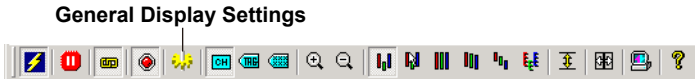
Note

You can select a channel identifier of Channel No., Tag No., or Tag Comment. In the explanations below, the channel identifier is set to Channel, but you can substitute Tag No. or Tag Comment according to your situation.

Opening Setting Screens

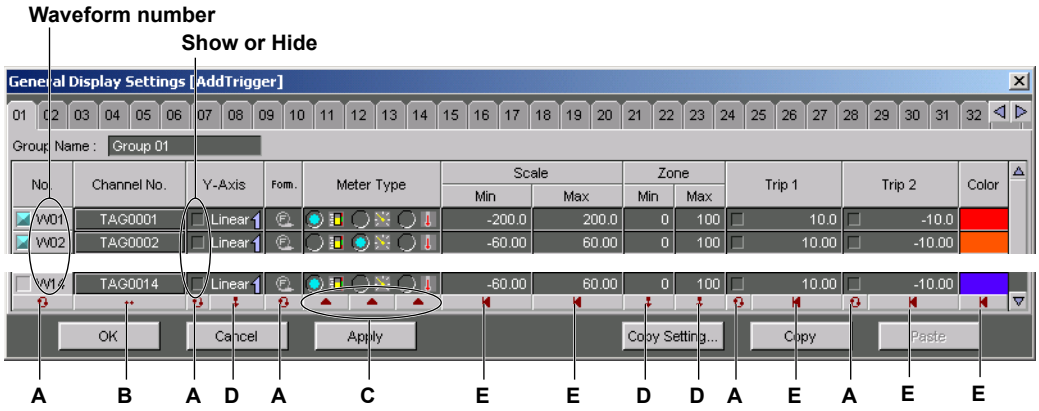
Procedure

Click General Display Settings on the toolbar or choose **General Display Settings** from the View menu. The General Display Settings dialog box opens.



Basic Operation

Procedure



A to E are the collective setup buttons (see the next page).

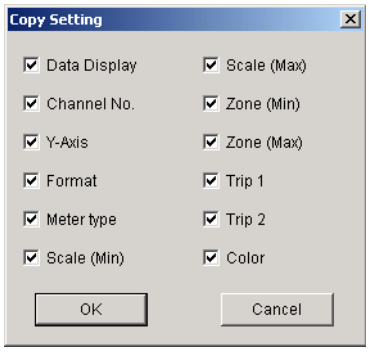
Selecting the Waveform Number

- Click the waveform number (in the No. column).
- To select waveform numbers consecutively, click the first waveform cell, and then click the last cell number while holding down the SHIFT key. You can also drag the cursor from the first waveform to the last.

Copying the Group Settings

Carry out the following procedure to copy the display conditions from one group to another group.

1. Click Copy Setting in the General Display Settings dialog box.
The Copy Setting dialog box opens.



2. Select the check boxes for the items to be copied and click OK. The dialog box closes.
3. Click the tab corresponding to the copy source group.
4. Click Copy.
5. Click the tab corresponding to the copy destination group.
6. Click Paste.

Showing/Hiding the Waveform, Y-Axis, Trip 1, and Trip 2

- Click the waveform number, Y-axis, trip 1, and trip 2 check boxes to switch between show (blue) and hide.
- If consecutive cells are selected, you can click the shortcut tool at the bottom of the screen to switch the show/hide setting of all the cells in the selected range.

Using the Shortcut Buttons

There are five kinds of shortcut buttons.
You can enter a setting on every cell in a selected range all at once. If a range of items is not selected, the action applies to all items.
A: Shows or hides the selected items in the column.
B: Channel numbers are filled from the first cell in the selection to the last, each channel being assigned a number 1 higher than the last.
C: Switches the meter type of the selected range.
D: Copies the first value in the selected range to all items in the selected range.
E: Sets the selected values to their defaults.

Saving the Settings

Click Apply to save the settings. In this case, the General Display Settings dialog box remains opened.
Click OK to save the settings and close the General Display Settings dialog box.
Click Cancel to cancel the settings and close the General Display Settings dialog box.

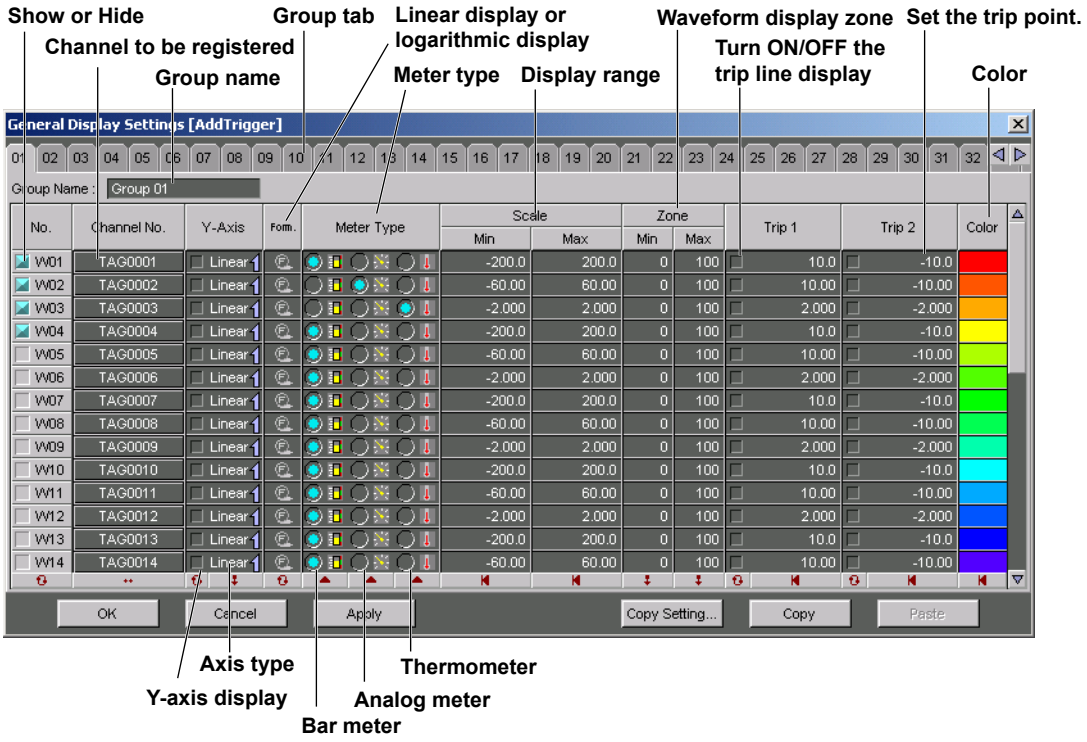
Note

If Data Monitor is running, the display settings entered on the Launcher can automatically be copied to the general display settings of Data Monitor (see "**Basic Operation**" in section 2.4).

Setting the Display Conditions for Each Group

Up to 32 channels can be assigned to a group. A maximum of 50 groups can be used.

Procedure



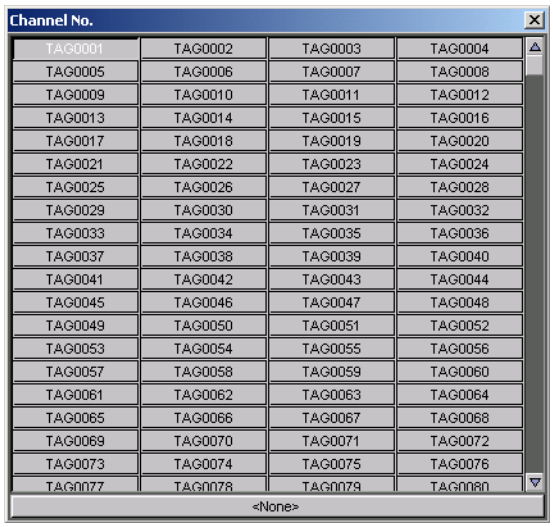
Click a group tab to select the group.

Group Name

Click the Group Name box and enter the group name using up to 16 alphanumeric characters.

Channel

1. Click a channel cell. The Channel No. dialog box opens.



2. Click the desired channel. The channel is selected and the dialog box closes.
   To not assign a channel, click None at the bottom.

Showing/Hiding the Waveform
Select the No. check box.
Blue: Shows the waveform.
Gray: Hides the waveform.

Y-Axis
Set whether to show or hide the Y-Axis when multi-axis zone is selected. Click the check box.
Blue: Shows the Y-axis.
Gray: Hides the Y-axis.
Specifies the axis type. Linear and Log toggle each time the box is clicked.
Linear: Linear scale.
Log: Logarithmic scale.

Display
Set the display format for numeric values. Select floating-point (100.0) or exponential (1.000E2). Floating-point and exponential toggle each time the box is clicked.

Meter Type
Click one of the option buttons to select the type of meter to be displayed on the meter monitor from bar meter, analog meter, and thermometer.

Scale
Click the value box and enter the maximum and minimum values of the scale.
The range of values that can be entered is from -999999999 to 999999999 excluding the decimal point.
If you set the minimum value larger than the maximum value, the waveform is inverted.

Note

The decimal point position of the entered value is adjusted according to the number of significant digits to the right of the decimal point.

Zone
Click the value box and enter the maximum and minimum values of the waveform display zone. The range of values that can be entered is 0 to 99% for the minimum value and 1 to 100% for the maximum value.

Trip 1 and Trip 2
Click the value box and enter the position of the trip line within the scale range.
When you enter a value, the check box turns blue. If you do not wish to use the trip line, clear the check box.
Blue: Enable.
Gray: Disabled.

Note

Trip line 1 and 2 are displayed in red and blue, respectively.

Color

Set the waveform display color.

1. Click the Color box.

   The Color dialog box opens.

2. Click a color to select it. The Color dialog box closes.

Note

To create a new color, click Define Custom Colors. Use the palette that appears to create the new color.

4.3 Changing the Waveform Display

This section describes how to change the display on the trend monitor screen and the circular monitor screen.

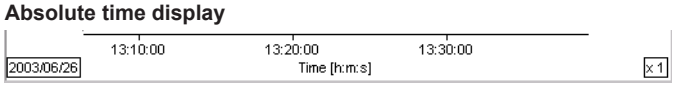
Changing the Time Axis

You can change the time axis display. On the absolute time display, the date is displayed at the left end.

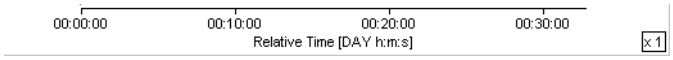
Procedure

Choose **Absolute Time** or **Relative Time** from the Time-Axis menu.
Absolute Time: Displays the time.
Relative Time: Displays the elapsed time from the first data point.

Absolute time display



Relative time display

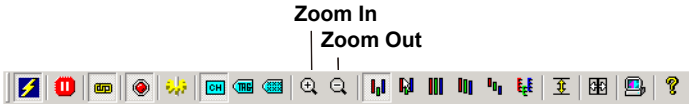


Zooming In or Out on the Time Axis

You can adjust the time span. The zoom factor of the time axis is displayed at the lower right corner.

Procedure

Click Zoom In or Zoom Out on the toolbar or choose **Zoom In** or **Zoom Out** from the Time-Axis menu.



The waveform is displayed by zooming in or out of the time axis.

Note

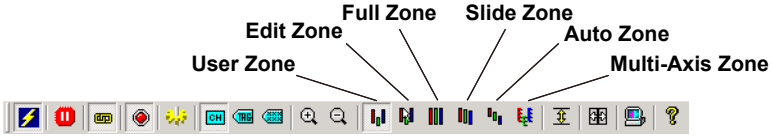
- There are 14 zoom factors: 1/1000, 1/500, 1/200, 1/100, 1/50, 1/20, 1/10, 1/5, 1/2, 1, 2, 5, 10, and 20.
  However, the minimum zoom factor that can be displayed varies depending on the number of pixels in the waveform display area. Therefore, the minimum zoom factor that can be displayed varies depending on the monitor screen size.
- The absolute and relative time format (example: MM/DD HH:MM or HH:MM:SS) automatically switches depending on the zoom factor.

Selecting the Waveform Display Zone

You can change the display zone of the waveform.

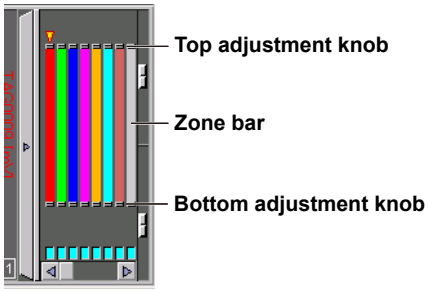
Procedure

Click an icon for the waveform display zone on the toolbar or choose waveform display zone from the Y-Axis menu.

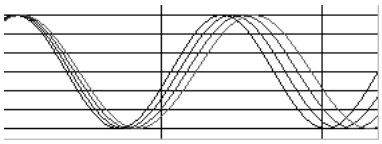


- **User Zone**
  Displays the waveform using the zone specified in the General Display Settings.

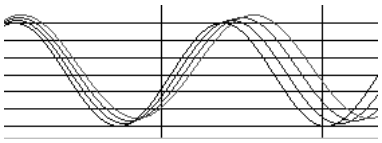
- **Edit Zone**
  You can change the zone in the zone display area of the trend monitor screen.
  In the zone display area, drag the slider at the top and bottom ends of the zone bar to change the zone. The zone setting specified in the zone display area is reflected in the General Display Settings dialog box.



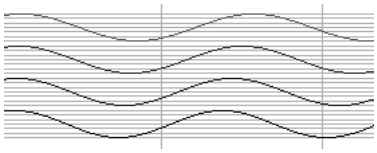
- **Full Zone**
  Assigns a full zone to all the displayed waveforms.



- **Slide Zone**
  The zone width of each waveform is made equal, and the start position of the display zone is offset slightly for each waveform.

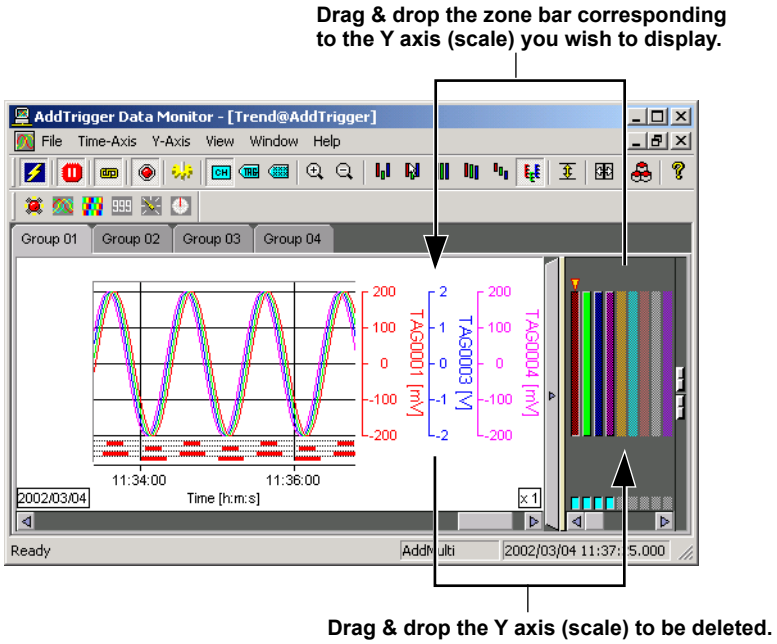


- **Auto Zone**
  Displays the waveforms by equally dividing the waveform display area according to the number of displayed waveforms.



- **Multi-Axis Zone**
  Displays the waveforms and multiple Y-axis (scale) in the zone specified in the General Display Settings.
  When Data Monitor display updating is paused, you can add/delete the Y-axis by carrying out the following procedure.*

  When adding a Y-axis: In the zone display area, drag the zone bar to be displayed to the waveform display area.
  When deleting a Y-axis: In the waveform display area, drag the Y-axis to be deleted to the zone display area.



Note

The waveform display area shows a grid that corresponds to the left-most Y-axis (scale). In addition, only the trip lines of the channels that have the left-most Y-axis are displayed.

Assigning Display Limits

You can specify how to display the waveform outside the display range.

Procedure

Click Clip on the toolbar or choose Clip from the Y-Axis menu.

The waveform display range along the Y-axis is limited to the minimum and maximum values of the scale specified in the General Display Settings. Measured data that is smaller than the scale (minimum) is displayed as a minimum value on the scale; measured data that is greater than the scale (maximum) is displayed as a maximum value on the scale.

- **Display example when display limits are assigned on the displayed waveform**

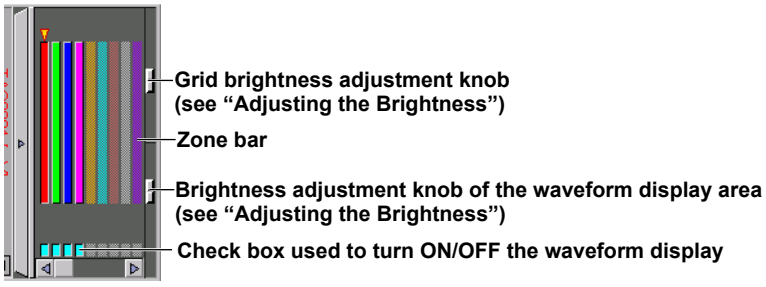
- **Display example when display limits are not assigned on the displayed waveform**

Turning ON/OFF the Waveform Display

To make a specific waveform stand out, you can hide other waveforms.

Procedure

Click the check box below the zone bar to turn ON (blue)/OFF the waveform display.



Specifying the Thickness of the Waveform Display Lines (Trend and Circular Monitor Screen)

Procedure

Choose **Normal Line**, **Medium Line**, or **Thick Line** from the View menu.

Adjusting the Brightness

You can adjust the brightness of the grid and background.

Procedure

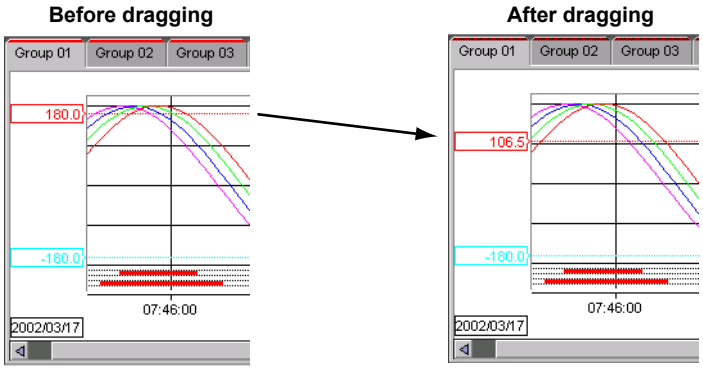
Drag the grid brightness adjustment slider to change the grid brightness.
Drag the brightness adjustment slider of the waveform display area to change the are brightness.

Moving the Trip Line

You can move the trip line when display updating of Data Monitor is paused.

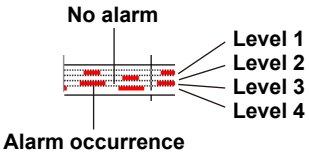
Procedure

1. Click **Pause** on the toolbar or choose Pause from the File menu.
   The updating of the display on the monitor screen is paused.
2. Drag and drop the trip line to the desired position.



Showing/Hiding Alarms

The alarm status is indicated at the bottom section of the waveform display area on the trend monitor.
When an alarm occurs, the time span during which alarm is activated is displayed using the waveform display color.
Level 1 to Level 4 alarms are shown in order from the top.
When multiple alarms occur simultaneously, the alarm corresponding to the current waveform (with a current waveform mark) is displayed on top.



Procedure

Click Alarm ON/OFF on the toolbar or choose **Alarm** from the View menu.
The alarms are shown or hidden.

4.4 Using Cursors

Cursors can be used on the trend monitor, color graph monitor, circular monitor, and alarm monitor.

- On the trend monitor, color graph monitor, and circular monitor, the measured data at the cursor position can be read out.
- On the alarm monitor, you can specify the alarm log using the cursor and read the measured data numerically at that point.
- When Link is turned ON, the cursor movement is reflected on the trend monitor, color graph monitor, circular monitor, and alarm monitor.

There are two cursors, cursor A and cursor B.

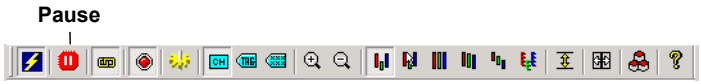
The Cursor's Value dialog box displays the measured data numerically at the positions of cursor A and cursor B and the difference between the two.

Showing the Cursors and Reading the Values at the Cursor Positions

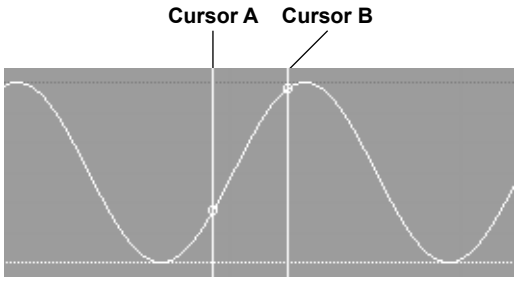
You can move the cursor when display updating of Data Monitor is paused.

Procedure

1. Click Pause on the toolbar or choose **Pause** from the File menu. The updating of the display on the monitor screen is paused.



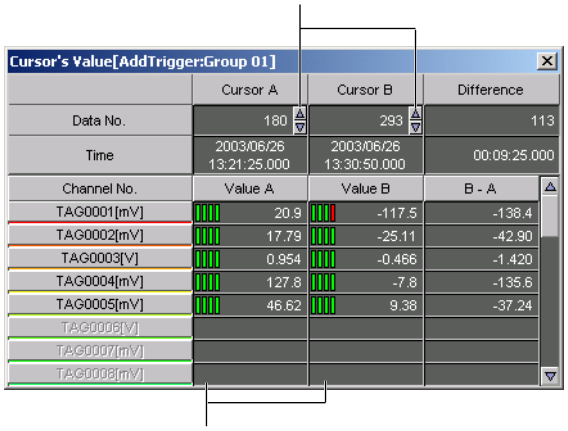
2. On the waveform display area, point to the position where measured data is to be read and drag the mouse to the other position. The first position is cursor A; the second position is cursor B.



3. Click Display Cursor's Value on the toolbar or choose **Display Cursor's Value** from the View menu.

The Cursor's Value dialog box opens. The log date/time and values at the positions of cursor A and B are displayed.
To finely adjust the cursor position, click the cursor adjustment buttons to the right of the data number. Click once to move the cursor by one data point.
When you move the cursor on the monitor screen, the result is reflected in the Cursor's Value dialog box. This behavior is also true the other way around.

Cursor movement button



Alarm indication (from the left: level 1, 2, 3, and 4)
Alarm occurring: Red
No alarm: Green

Displaying the Cursor Value from the Alarm Log Display

You can move the cursor when display updating of Data Monitor is paused.

Procedure

1. Click Pause on the toolbar or choose **Pause** from the File menu.

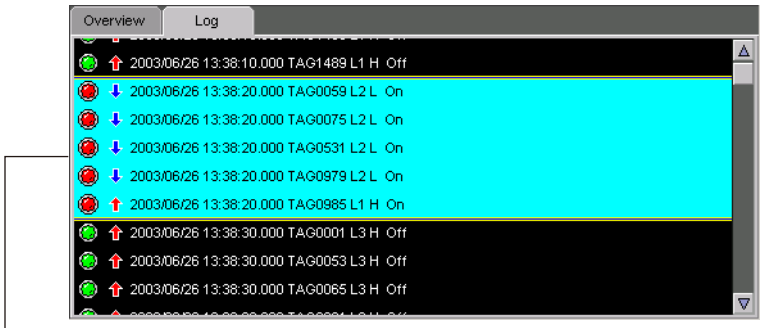
   The updating of the display on the monitor screen is paused.

2. Click Display Cursor's Value on the toolbar or choose **Display Cursor's Value** from the View menu.

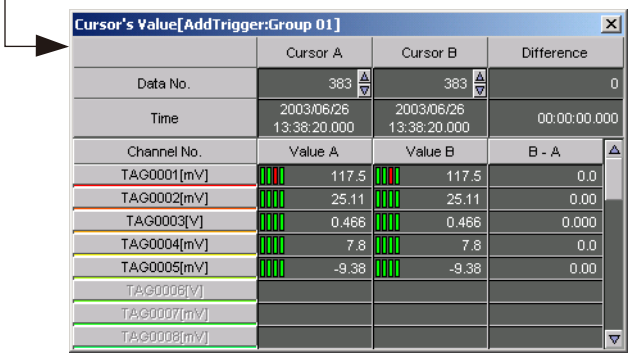
   The Cursor's Value dialog box opens.

3. On the Log page of the alarm monitor, point to an alarm log and drag the mouse to the alarm log. The first position is cursor A; the second position is cursor B.

The log time and values at the positions of cursor A and B are displayed in the Cursor's Value dialog box.



Display the values at the start and end points of the cursor selection area.



Clearing Cursors

Carry out the following procedure to clear the displayed cursors.
Cursors are also cleared when you resume the display updating.

Procedure

Choose **Hide Cursor** from the View menu.
When you clear the cursors, nothing is displayed on the Cursor's Value dialog box.

4.5 Saving the Connection Settings and Exiting the Monitor

Saving the Connection Settings

Connection settings refers to the display conditions of Data Monitor. If you save the connection settings before exiting Data Monitor, the condition is restored the next time Data Monitor is started.

Procedure

Select **Save** from the File menu. The connection settings are saved to AddTrigger installation folder\project name\folder.rmt).

Exiting Data Monitor

Procedure

Choose **Exit** from the File menu or click the X button at the upper right corner of the title bar.
Data Monitor closes.

5.1 Displaying Waveforms on Historical Viewer

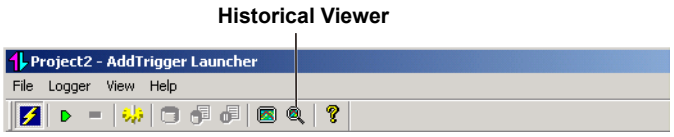
Historical viewer displays the data that has been logged using waveforms or values. You can start Historical Viewer from the Launcher or the Windows Start menu.

Starting Historical Viewer

Procedure

Start Historical Viewer using one of the following methods.

- Click Historical Viewer on the Launcher's toolbar or choose **Historical Viewer** from the View menu.

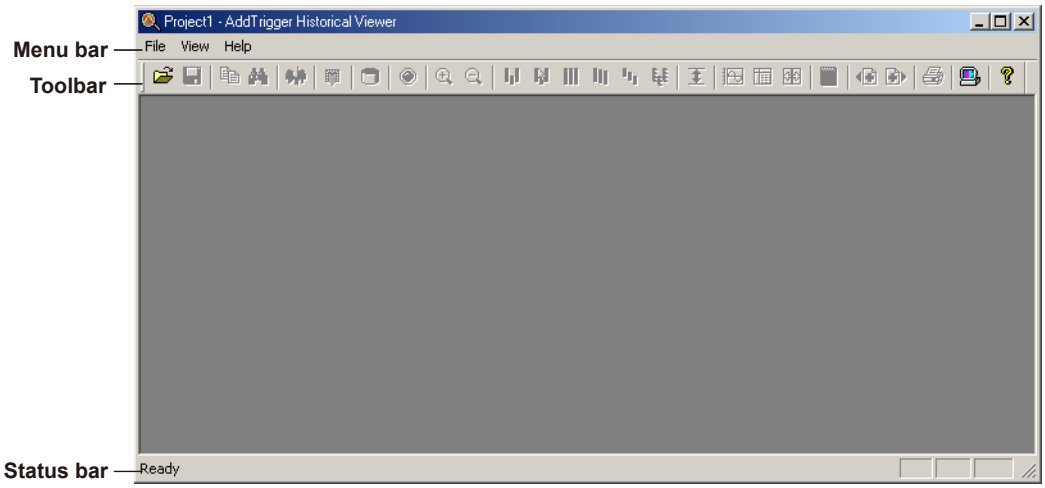


- From the Windows Start menu, choose **Programs > YOKOGAWA DAQWORX > AddTrigger > Historical Viewer**.

Note

If you started Historical Viewer from the Launcher, you can display data that is currently being logged. If you started Historical Viewer from the Windows Start menu, you cannot.

Historical viewer starts and the following screen appears.

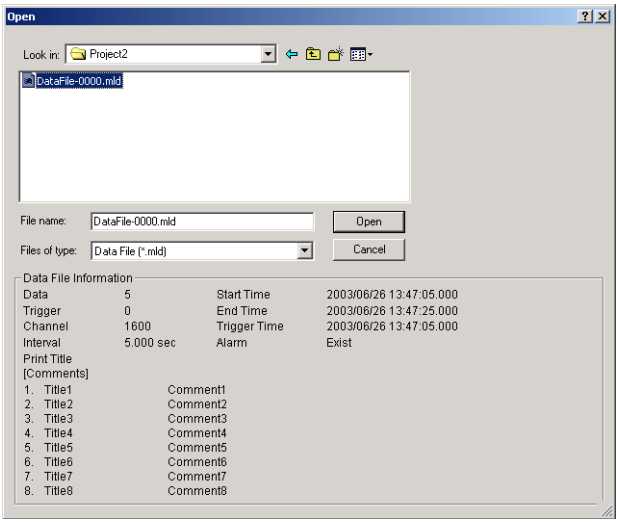


Opening Data Files

Procedure

1. Click Open on the toolbar or choose **Open** from the File menu.

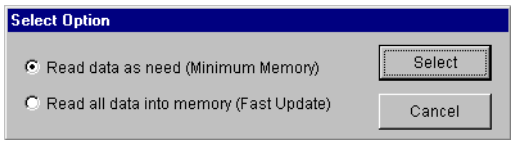
The Open dialog box appears.



2. Select the desired file (the information about the selected file is displayed at the bottom section of the dialog box) and click Open. Waveforms are displayed.

Note

- Historical viewer can only display data that has been logged using AddTrigger. The extension is .mld.
- You can open multiple data files simultaneously. The number of data files that can be opened simultaneously varies depending on the memory size of the PC and the free disk space.
- If the file size is large (the number of data points that are logged is greater than or equal to 8 K and the size is 10 MB or more), the Select Option (file loading condition) dialog box appears for you to decide how to load the file's contents.

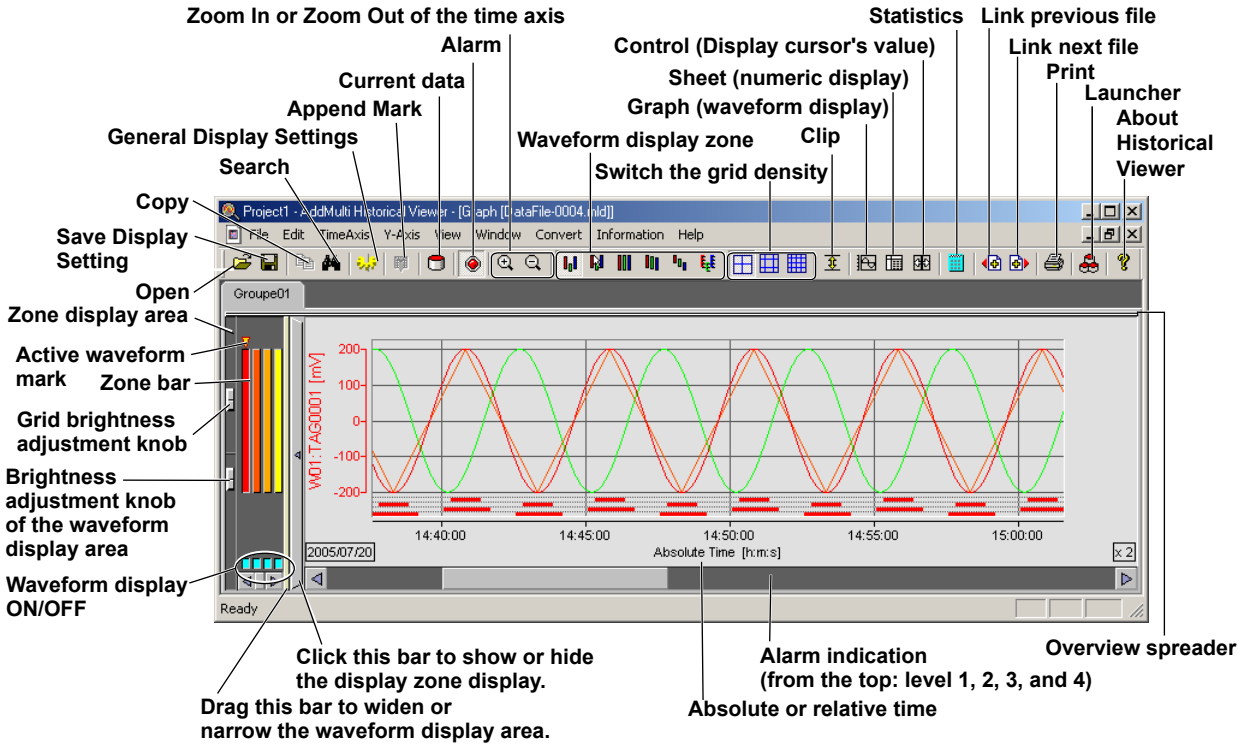


Select either of the following methods and click Select. The waveforms appear.

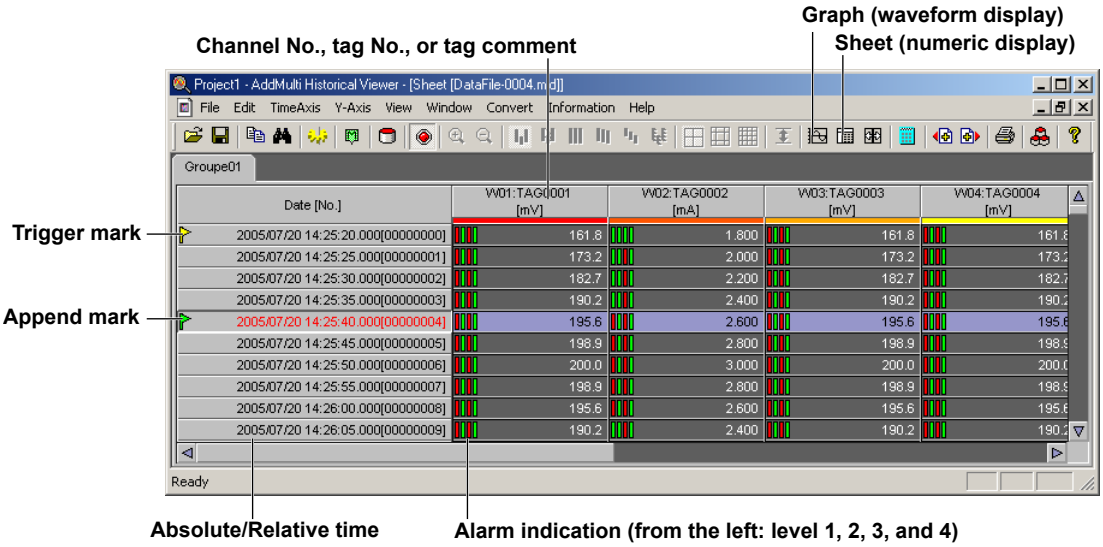
- When Read data as need (Minimum Memory) is selected
  Displays the data so that the size of the used memory is minimized. The display speed is slower, but the size of the used memory can be minimized.
- When Read all data into memory (Fast Update) is selected
  Displays the data by loading all the data into the memory. The amount of used memory is large, but the display speed is faster.

3. Carry out the following procedure to switch between waveform display and numeric display.
   - Click Waveform Display on the toolbar or choose **Window > Waveform Display** from the menu bar.
   - Click Digital Value Display on the toolbar or choose **Window > Digital Value Display** from the menu bar.

Waveform Display Screen



Digital value display screen



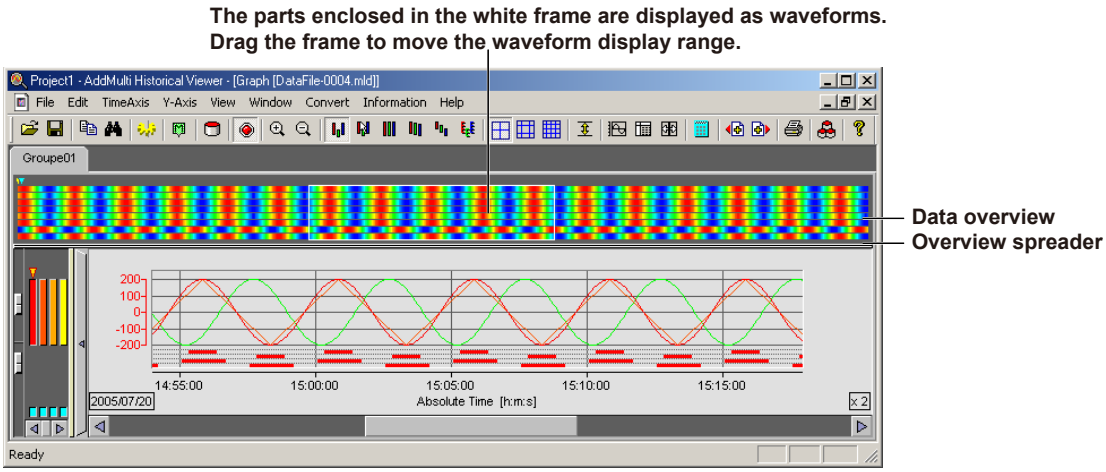
Data Overview

When set to waveform display, dragging the Overview spreader downward shows the Data Overview.

The Data Overview displays the measured data by assigning the following 50 colors in order.

Blue (minimum display scale), light blue, green, yellow, red (maximum display scale).

The waveforms in the section enclosed in the white frame on the Data Overview are displayed.



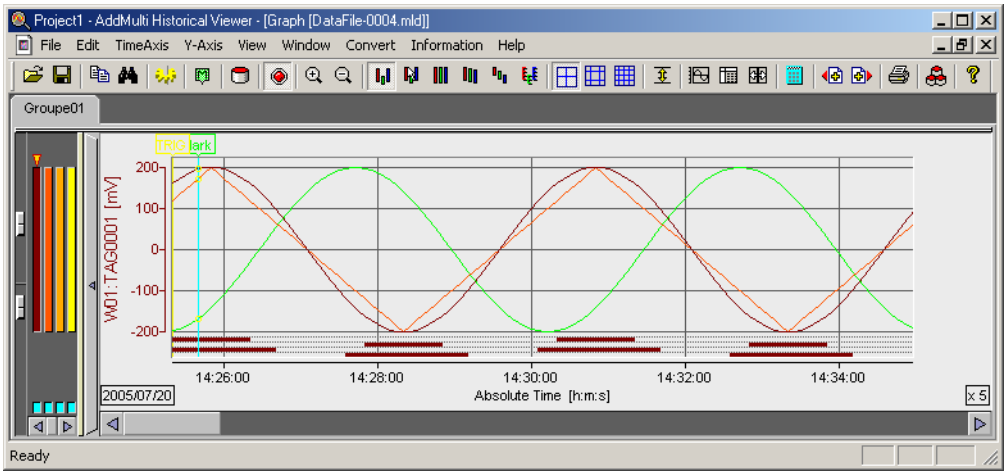
Displaying the Waveforms That Are Currently Being Logged

You can display the data that is currently being logged. This operation is possible only when Historical Viewer is started from the Launcher.

Procedure

1. Click Current Data on the toolbar or choose **Current Data** from the View menu.

The data file currently being logged is displayed.



Note

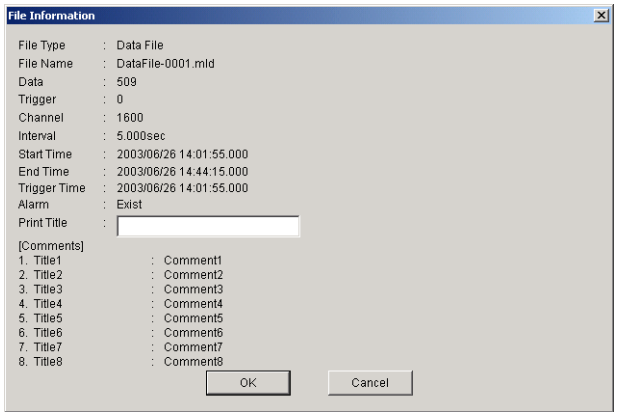
- Each time you click Current Data, the logging data up to that point is redisplayed.
- Do not display data being logged when starting the Historical Viewer from the PC's Start menu. Operation cannot be guaranteed. Data errors may occur.

Viewing Information about the Loaded File

You can view the information about the data file in the active window.

Procedure

1. Choose **About Document** from the Information menu to display the File Information dialog box.



2. You can enter or change the header for the data printout (Print Title in the above figure).

   Click Print Title and enter the character string (up to 32 alphanumeric characters).

Note

- You can also enter or change the print title in the Printout Setup dialog box.
- When you enter or change the print title, the print title in the Printout Setup dialog box is changed accordingly.

Common Operations

Procedure

Arranging the Monitor Screens

Choose **Tile** or **Cascade** from the Window menu. The multiple monitor screens that are displayed are arranged accordingly.

Showing/Hiding the Toolbar or Status Bar

Choose **Tool Bar** or **Status Bar** from the View menu. A check mark appears next to or is cleared from the menu command and the relevant bar is shown/hidden.

Displaying the Launcher in Front

Click Launcher on the toolbar or choose **Launcher** from the View menu. The Launcher is displayed in front.

Closing the Monitor Screen

Click the X button at the right end of the title bar. Or, activate the group screen you wish to close and choose **Close** from the File menu.

The message, “Save changes to xxx•” (where xxx is the file name) appears. Click Yes, No, or Cancel.

Yes: Saves the display settings and closes the group screen.

No: Does not save the display settings and closes the group screen.

Cancel: Cancels the operation of closing the group screen.

5.2 Setting the Display Conditions

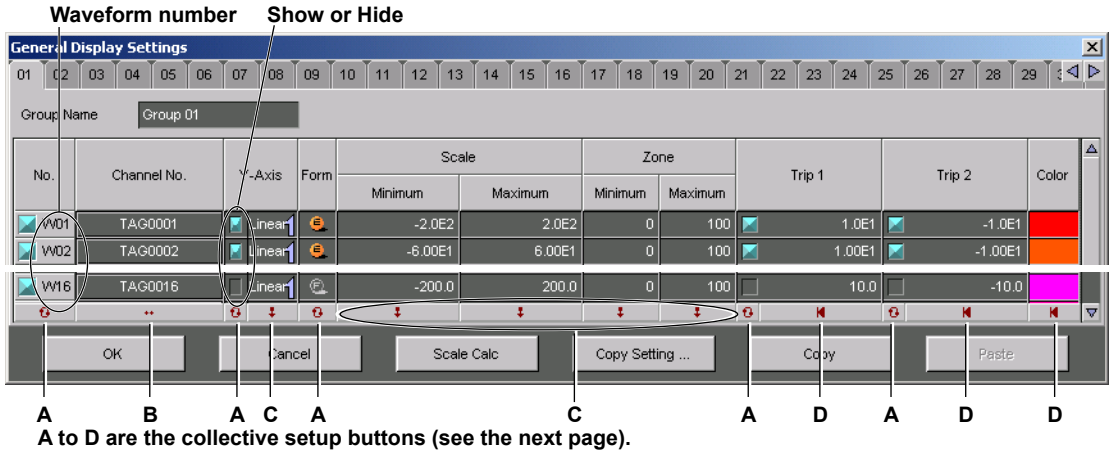
You can specify the display conditions for each group.

Note

You can select a channel identifier of Channel No., Tag No., or Tag Comment. In the explanations below, the channel identifier is set to Channel, but you can substitute Tag No. or Tag Comment according to your situation.

Basic Operation

Procedure



A to D are the collective setup buttons (see the next page).

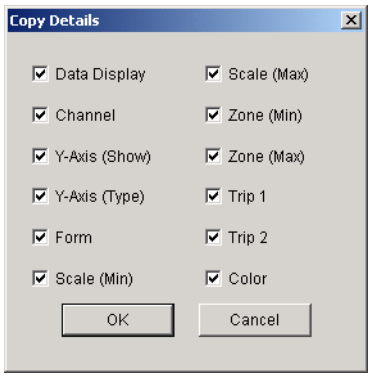
Selecting the Waveform Number

- Click a waveform number in the No. column.
- To select waveform numbers consecutively, click the first waveform cell, and then click the last cell number while holding down the SHIFT key. You can also drag the cursor from the first waveform to the last.

Copying the Group Settings

Carry out the following procedure to copy the detailed settings of one group to another group.

1. Click Copy Setting in the General Display Settings dialog box.
   The Copy Setting dialog box opens.



2. Select the check boxes for the items to be copied and click OK. The dialog box closes.
3. Click the tab corresponding to the copy source group.
4. Click Copy.
5. Click the tab corresponding to the copy destination group.
6. Click Paste.

Showing/Hiding the Waveform, Y-Axis, Trip 1, and Trip 2

- Click the waveform number, y-axis, trip 1, and trip 2 check boxes to switch between show (blue) and hide.
- If consecutive cells are selected, you can click the tool cell at the bottom to collectively switch the show/hide setting of all the cells in the selected range.

Using the Shortcut Buttons

There are four kinds of shortcut buttons.

You can enter a setting on every cell in the range all at once. If a range of waveform numbers is not selected, the action applies to all waveform numbers.

A: Shows or hides the selected items in the column.

B: Channel numbers are filled from the first cell in the selection to the last, each channel being assigned a number 1 higher than the last.

C: Copies the first value in the selected range to all items in the selected range.

D: Restores the default values.

Saving the Settings

Click OK to save the settings and close the General Display Settings dialog box.

Click Cancel to cancel the settings and close the General Display Settings dialog box.

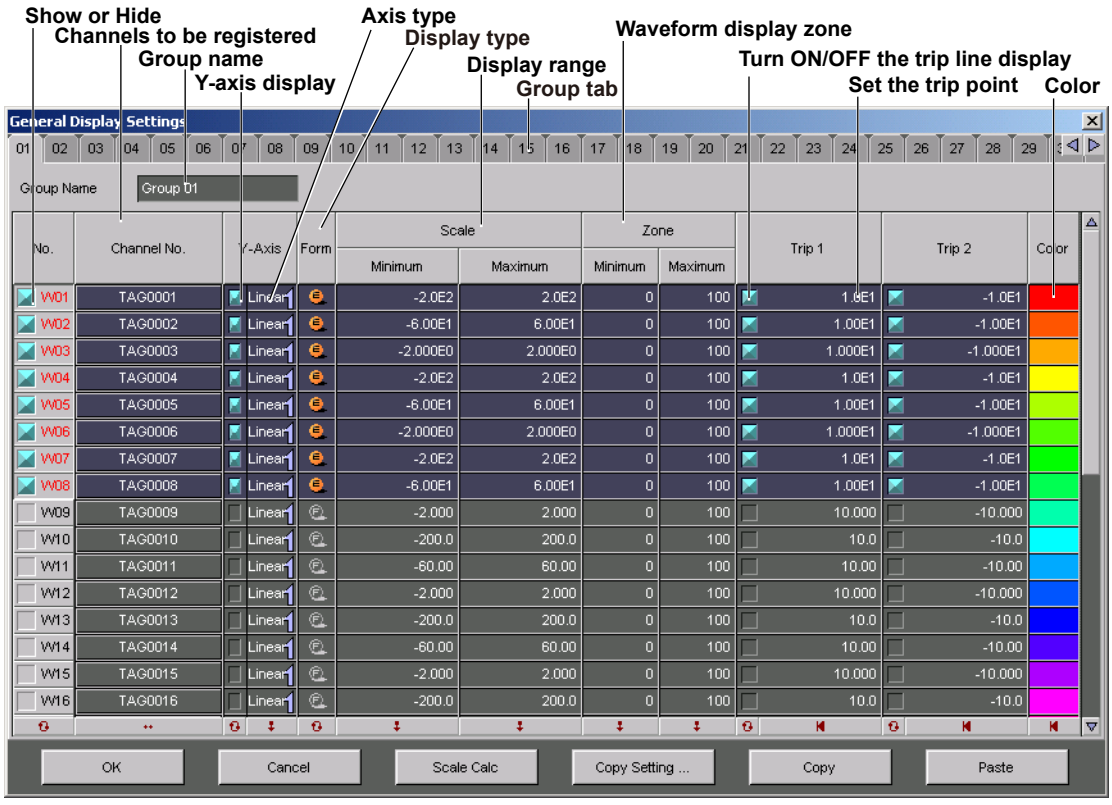
Entering the Display Conditions for Each Group

Up to 32 channels can be assigned to a group. A maximum of 50 groups can be used. The General Display Settings of Historical Viewer differ from that of Data Monitor in the following points.

- There is no Form item.
- There is no Meter Type item.
- There is no Apply button.
- There is a Scale Calc button.

Procedure

Click General Settings on the toolbar or choose View > General Settings from the menu bar. The Detailed Settings dialog box opens.



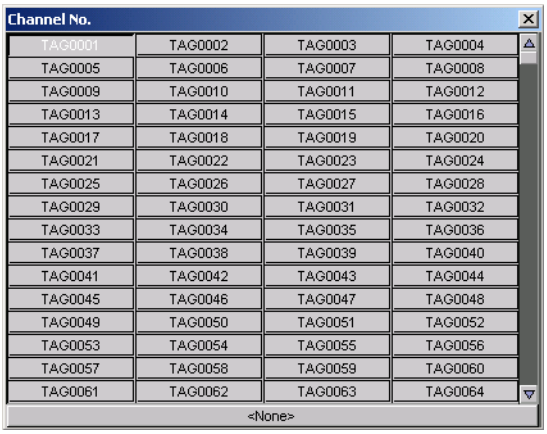
Click a group tab to select the group.

Group Name

Click the Group Name box and enter the group name using up to 16 alphanumeric characters.

Tag Number

1. Click a tag number box. The Tag Number dialog box opens.



2. Click the desired channel. The channel is selected and the dialog box closes. To assign no channel, click None at the bottom.

Showing/Hiding the Waveform

Select the No. check box to change the setting.

Blue: Shows the waveform.
Gray: Hides the waveform.

Y-Axis

Set whether to show or hide the Y-Axis when multi-axis zone is selected. Click the check box.

Blue: Shows the Y-axis.
Gray: Hides the Y-axis.

Specifies the axis type. Linear and Log toggle each time the box is clicked.

Linear: Linear scale.
Log: Logarithmic scale.

Display Format

Select Floating point or Exponential display. Floating point and exponential toggle each time the display box is clicked.

: Floating point display
: Exponential display

Scale

Click the value box and enter the maximum and minimum values of the scale.
The range of values that can be entered is from -999999999 to 999999999 excluding the decimal point.
If you set the minimum value larger than the maximum value, the waveform is inverted.

Note

The decimal point position of the entered value is adjusted according to the number of significant digits to the right of the decimal point.

If you select a waveform number and click Scale Calc, the scale of the selected waveform number is set as follows:

- Scale minimum = the minimum value of the logged data in the file
- Scale maximum = the maximum value of the logged data in the file

Zone

Click the value box and enter the maximum and minimum values of the waveform display zone. The range of values that can be entered is 0 to 99% for the minimum value and 1 to 100% for the maximum value.

Trip 1 and Trip 2

Click the value box and enter the position of the trip line within the scale range.
When you enter a value, the check box turns blue. If you do not wish to use the trip line, clear the check box.
Blue: Enable.
Gray: Disabled.

Note

Trip line 1 and 2 are displayed in red and blue, respectively.

Color

You can specify the waveform display color.

1. Click a Color box.

The Color dialog box opens.

2. Click a color to select it. The Color dialog box closes.

Note

To create a new color, click Define Custom Colors. Use the palette that appears to create the new color.

5.3 Changing the Waveform Display and Numerical Display

This section describes how to change the display on Historical Viewer screen.

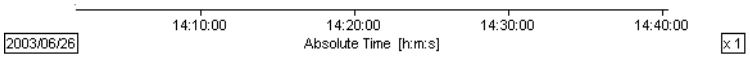
Changing the Time Axis

You can change the time axis display. On the absolute time display, the date is displayed at the left end.

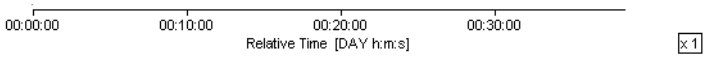
Procedure

Choose **Absolute Time** or **Relative Time** from the Time-Axis menu.
Absolute Time: Displays the time.
Relative Time: Displays the elapsed time from the first data point.

Absolute time display



Relative time display



Zooming In or Out on the Time Axis

You can adjust the time span. The zoom factor of the time axis is displayed at the lower right corner.

Procedure

Click Zoom In or Zoom Out on the toolbar or choose **Zoom In** or **Zoom Out** from the Time-Axis menu.

The waveform is displayed after zooming in or out of the time axis.

Note

- There are 14 zoom factors: 1/1000, 1/500, 1/200, 1/100, 1/50, 1/20, 1/10, 1/5, 1/2, 1, 2, 5, 10, and 20.
  However, the minimum zoom factor that can be displayed varies depending on the number of pixels in the waveform display area. Therefore, the minimum zoom factor that can be displayed varies depending on the monitor screen size.
- The absolute and relative time format (example: MM/DD HH:MM or HH:MM:SS) automatically switches depending on the zoom factor.

Choose **Time-Axis > Scale** from the menu bar to open the Time Axis Scale dialog box. You can expand or reduce the time axis at an arbitrary factor that you enter.

- Zoom in range: 1 to 20 (whole number)
- Zoom out range: 1/1 to 1/1000 (the denominator is a whole number)

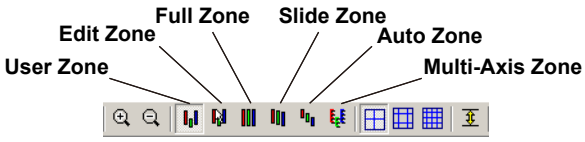
Choose **All** from the Time-Axis menu to adjust the zoom factor so that all the data can be displayed on the waveform display screen.

Selecting the Waveform Display Zone

You can change the display zone of the waveform.

Procedure

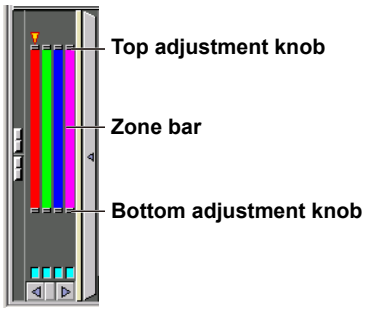
Click an icon for the waveform display zone on the toolbar or choose **Waveform display zone** from the Y-Axis menu.



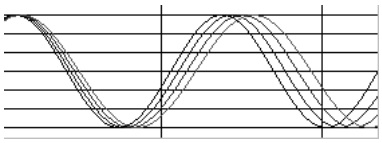
- **User Zone**
  Displays the waveform using the zone specified in the General Display Settings.

- **Edit Zone**
  You can change the zone in the zone display area of the graph screen.
  In the zone display area, drag the slider at the top and bottom ends of the zone bar to change the zone. The zone setting specified in the zone display area is reflected in the General Display Settings dialog box.

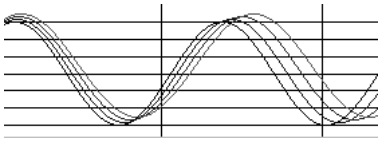
  Drag the top adjustment slider to move the top end of the zone.
  Likewise, drag the bottom adjustment slider to move the bottom end of the zone.
  The entire zone moves by dragging the zone bar itself.



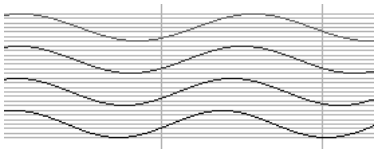
- **Full Zone**
  Assigns a full zone to all the displayed waveforms.



- **Slide Zone**
  The zone width of each waveform is made equal, and the start position of the display zone is offset slightly for each waveform.



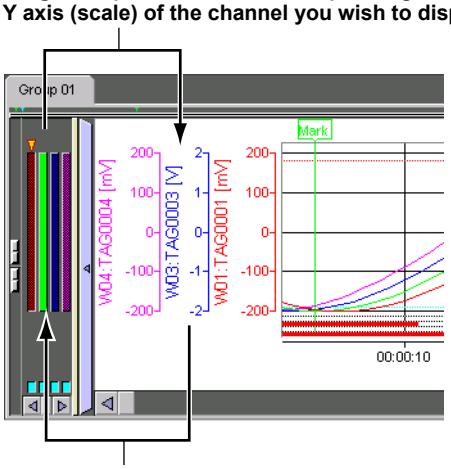
- **Auto Zone**
  Displays the waveforms by equally dividing the waveform display area according to the number of displayed waveforms.



- **Multi-Axis Zone**
  Displays the waveforms and multiple Y-axis (scale) in the zone specified in the General Display Settings.
  You can add/delete the Y-axis by carrying out the following procedure.

  When adding a Y-axis: In the zone display area, drag the zone bar to be displayed in the waveform display area.
  When deleting a Y-axis: In the waveform display area, drag the Y-axis to be deleted and drop it in the zone display area.

Drag & drop the zone bar corresponding to the Y axis (scale) of the channel you wish to display



Drag & drop the Y axis (scale) to be deleted

Note

The waveform display area shows a grid that corresponds to the right-most Y-axis (scale). In addition, only the trip lines of the channels that have the right-most Y-axis are displayed.

Assigning Display Limits

You can specify how to display the waveform outside the display range.

Procedure

Click Clip on the toolbar or choose **Clip** from the Y-Axis menu.

The waveform display range along the Y-axis is limited to the minimum and maximum values of the scale specified in the General Display Settings. Measured data that is smaller than the scale (minimum) is displayed as a minimum value on the scale; measured data that is greater than the scale (maximum) is displayed as a maximum value on the scale.

- **Display example when display limits are assigned on the displayed waveform**

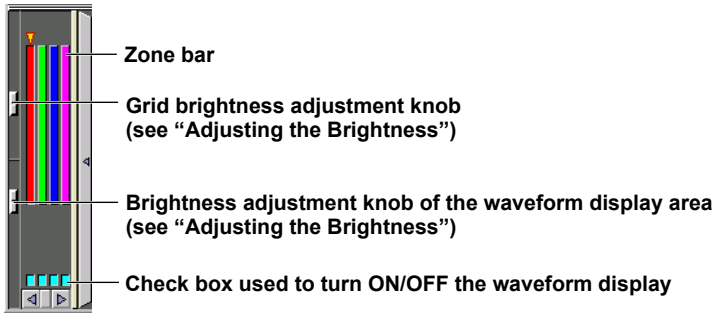
- **Display example when display limits are not assigned on the displayed waveform**

Turning ON/OFF the Waveform Display

To make a specific waveform stand out, you can hide other waveforms.

Procedure

Click the check box below the zone bar to turn ON (blue)/OFF the waveform display.



Adjusting the Brightness

You can adjust the brightness of the grid and background.

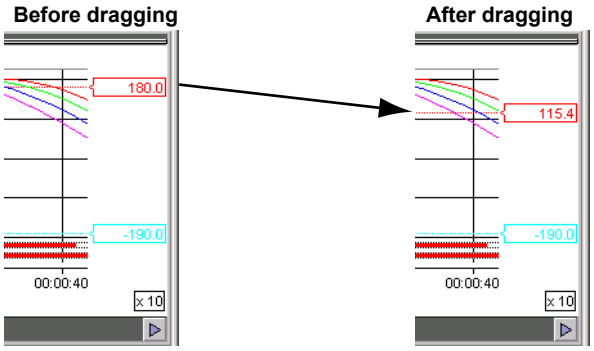
Procedure

Drag the grid brightness adjustment slider to change the grid brightness.
Drag the brightness adjustment slider of the waveform display area to change the area's brightness.

Moving the Trip Line

Procedure

Drag and drop the trip line to the desired position.



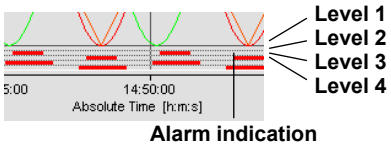
Showing/Hiding Alarms

Procedure

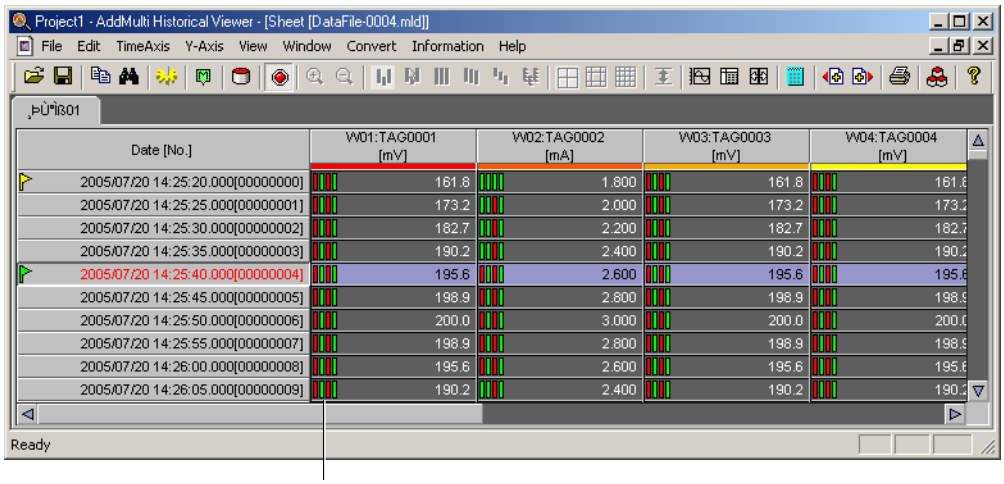
Click Show/Hide Alarms on the toolbar or choose **Alarm** from the View menu.

Alarm indication appears on the Waveform screen, Digital Value screen, and the Cursor's Value dialog box.
However, if there is no alarm data in the loaded data file, alarms are not displayed.

- **Waveform (Graph) Display Screen**
  The time span during which an alarm is activated is displayed using the waveform display color. Level 1 to Level 4 alarms are shown in order from the top. When multiple alarms occur simultaneously, the alarm corresponding to the active waveform (with an active mark) is displayed on top.

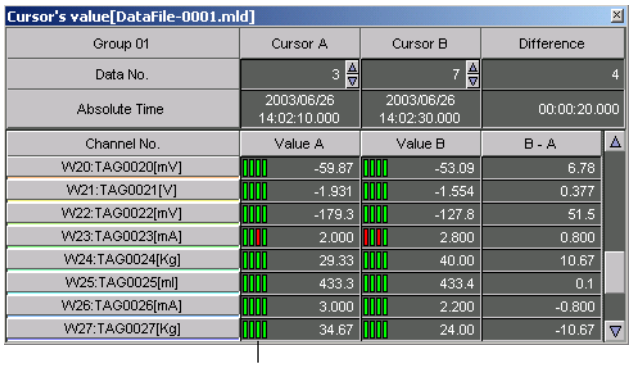


- **Numerical Value Display Screen**



Alarm indication (from the left: level 1, 2, 3, and 4)
Alarm occurring: red, no alarm: green

- **Cursor's Value Dialog Box**



Alarm indication (from the left: level 1, 2, 3, and 4)
Alarm occurring: red, no alarm: green

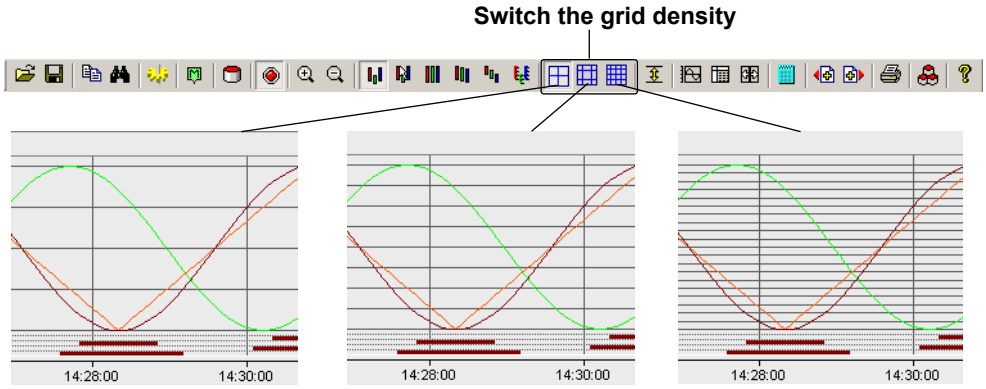
Note

- When the alarm display is turned ON/OFF on one of the screens above, the alarm display on the other two screens is also changed.
- When there is no alarm data in the loaded data file, Alarm on the View menu is unavailable.

Changing the Grid Display

Procedure

Select the grid type by clicking Grid density on the toolbar, or Y-axis on the menu bar.
Switch the grid density.



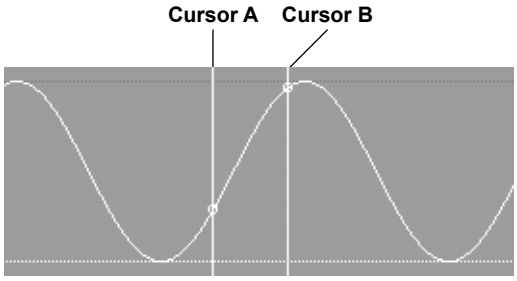
5.4 Using Cursors

On the Graph screen, the measured data at the cursor position can be read. There are two cursors, cursor A and cursor B.
The Cursor's Value dialog box displays the measured data numerically at the positions of cursor A and cursor B and the difference between the two.
You can specify an area using cursor A and cursor B and display the maximum value, minimum value, P-P value, average value, and rms value of the measured data in the area.

Showing the Cursors and Reading the Values at the Cursor Positions

Procedure

1. In the waveform display area, point to the position where measured data is to be read and drag the mouse to the other position. The first position is cursor A; the second position is cursor B.

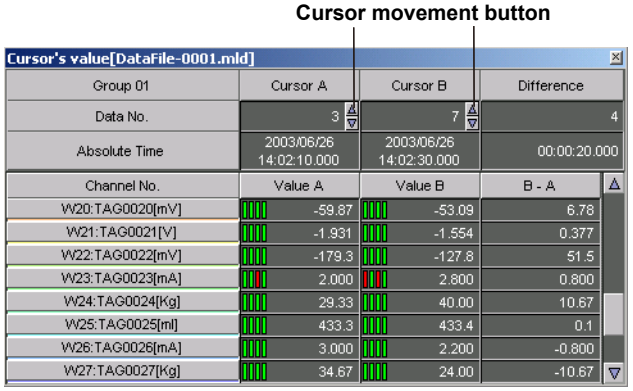


2. Click Cursor's Value on the toolbar.

The Cursor's Value dialog box opens. The log date/time and values at the positions of cursor A and B are displayed.

To finely adjust the cursor position, click the cursor adjustment buttons to the right of the data number. Click once to move the cursor by one data point.

The cursor operation and display apply to the Graph screen, Sheet screen, and Control dialog box.



Clearing Cursors

Carry out the following procedure to clear the displayed cursors.

Procedure

Choose Hide Cursor from the View menu.
When you clear the cursors, nothing is displayed in the Cursor's Value dialog box.

Copying the Data between the Cursors to the Clipboard

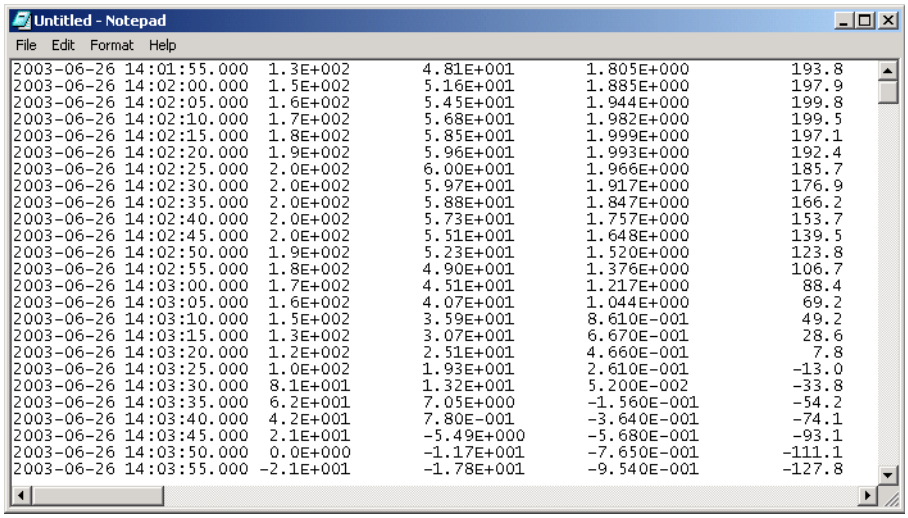
You can copy the data in the range specified Using Cursors to the clipboard for use in other applications.

Procedure

1. On the Graph screen or Sheet screen, drag the mouse to select the range (up to 1000 points) you wish to copy to the clipboard.
2. Click Copy on the toolbar or choose **Copy** from the Edit menu.
   The data in the selected range is copied to the Windows clipboard.
   Copy

3. Data that has been copied to the clipboard can be pasted in other applications for use.

- **Example of copying to the clipboard**



Note

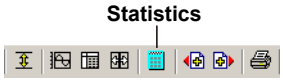
- You can copy up to 1000 data points to the clipboard.
- When the display mode of the time axis is set to Absolute Time, the absolute time is output.

Displaying Statistical Computation Results over an Area

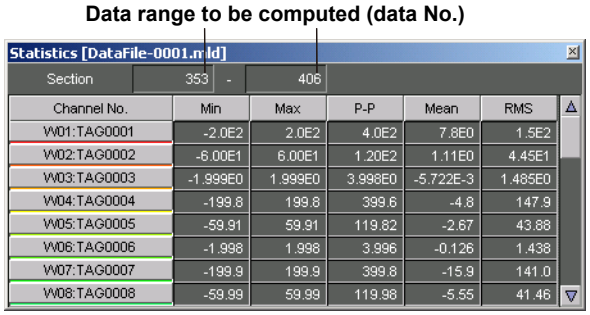
You can specify an area using cursor A and cursor B and display the maximum value, minimum value, P-P value, average value, and rms value of the measured data in the area.

Procedure

1. Specify the computation area by dragging the mouse on the Graph screen or Sheet screen.
2. Click Area Calculation on the toolbar or choose **Display Calculation Results** from the Window menu.



The Calculation Results dialog box shows the computed result.



Note

- If you change the computation area, carry out the above procedure again.
- If a computation area is not specified Using Cursors, the computation is performed over the entire area of the data file.
- The Statistics dialog box shows the computed results of the data displayed on the active viewer screen.
- The rms value is computed using the following equation.

$$rms = \sqrt{\frac{1}{n}\sum_{k=0}^{n-1}(x_k)^2}$$

n : Number of data
x_k: Value

5.5 Using Marks

Marks can be placed at the positions specified with the cursor.
By default, the following marks are placed.

- **TRIG**: Data at the logging start point (first data of the file)
- **BOUNDARY**: Data at the division point when the logged data is stored to divided files (first data point of files after the 1st file) and the first data point of the file that is created by data exporting (see section 5.9).

Placing Marks

Procedure

1. On the Graph screen, click the position where a mark is to be placed. Or, on the Sheet screen, click the Date [No] box where a mark is to be placed.

   One cursor is displayed.

2. Click Append Mark on the toolbar or choose **Append Mark** from the Edit menu.

   The Mark Setting dialog box opens.

Append mark

3. Click the option button to select the group on which a mark is to be placed.

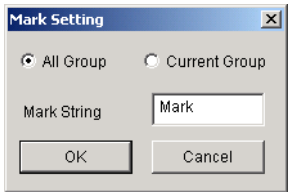
   All Groups: Places marks on all groups.

   Current Group: Places a mark on the displayed group.

Note

Make this selection when you create groups on Historical Viewer.

4. Click the text box and enter the character string (up to 16 alphanumeric characters).



5. Click OK.

   A mark is displayed at the cursor position.

Note

- To change the mark character string, double-click the mark. The Mark Setting dialog box opens.
- If two cursors are displayed, you cannot place marks.

Deleting Marks

Procedure

1. Place cursor A and cursor B so that the marks to be deleted are in between the cursors.
2. Choose **Delete Mark** from the Edit menu.

   The marks between cursor A and cursor B are deleted.

Setting the Marks to the Default Condition (Clearing All Marks Except TRIG and BOUNDARY)

Procedure

Choose **Reset Mark** from the Edit menu. All the added marks are deleted.

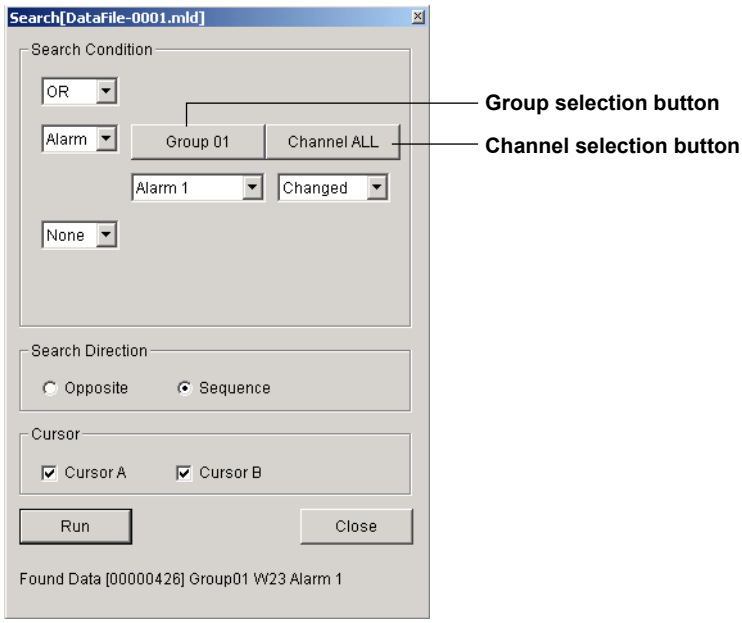
5.6 Searching for Measured Data, Alarms, and Marks

You can set search conditions and search for measured data, alarms, and marks. When the measured data, alarm, or mark is found, the cursor is displayed at that position.

Procedure

1. Select the search range Using Cursors.
2. Click Search on the toolbar or choose **Edit > Search** from the menu bar.

The Search dialog box opens.



3. Select OR or AND logic for the two conditions specified in steps 4 to 8.
   Click the list box and choose either one.
   OR: Search items where either condition is met.
   AND: Search items where both conditions are met.

Repeat steps 4 to 8 to set conditions 1 and 2.

4. Click the list box and select the search type.
   None: Set no conditions.
   Data: Search for special data (LACK, +OVER, -OVER, and OFF) (see the next page).
   Mark: Search for marks.
   Alarm: Search for alarms
   Value: Search for measured values

When Searching for Special Data

5. Select the groups to be searched.
   Click the group selection button to display the Group selection dialog box. Click a group name. Click ALL to select all groups for searching.
   The selected groups are displayed on the group selection button.

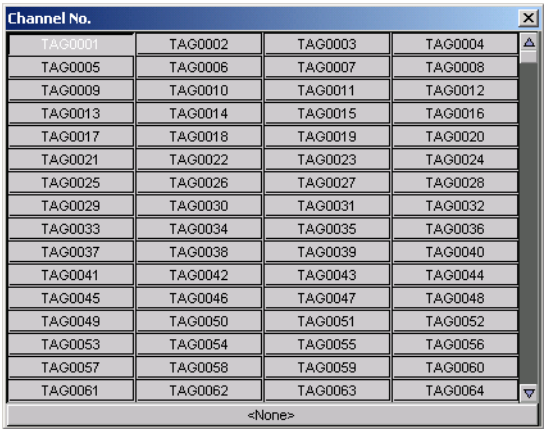
Note

Make this selection when you create groups on Historical Viewer.

6. Select the channels to be searched.

   Click the channel selection button. The Tag Number dialog box displays the channels that are contained in the group. Click a channel. Click ALL to select all the channels in the group to be searched.

   The selected channels are displayed on the channel selection button.



7. Click the list box and select the type of data to be searched.

   LACK: Search for data dropouts.

   +OVER: Search for data that is over the upper limit of the measurement range.

   –OVER: Search for data that is below the lower limit of the measurement range.

   OFF: Search for OFF data.*

   * OFF data refers to data that indicates the condition in which the communication to the recorder is disconnected and in which the data logging software cannot scan and record the data from the recorder.

When Searching for Marks

5. Select the groups to be searched.
   The operating procedure is the same as that in "**When Searching Special Data**."
6. Enter a search string.
   AddTrigger searches for marks containing the specified string in their names. The search is not case-sensitive. If you enter only an asterisk, AddTrigger searches for all marks.

When Searching Alarms

5. Select the groups to be searched.
   The operating procedure is the same as that in "**When Searching for Special Data**."
6. Select the channels to be searched.
   The operating procedure is the same as that in "**When Searching for Special Data**."
7. Select the alarm type.
   Click the list box and select the alarm type.
   Alarm All: Search for all alarms.
   Alarm 1, **Alarm 2**, **Alarm 3**, **or Alarm 4**: Search for the specified Alarm No. (alarm level).
8. Set the alarm condition to be searched.
   Click the list box and select the alarm status.
   Changed:Data position where the alarm changed from ON to OFF or OFF to ON.
   Start: Data position where the alarm ON status started.
   End: Data position where the alarm ON status ended (data position immediately before the alarm turned OFF).

ON: Data position where the alarm is ON.

OFF: Data position where the alarm is OFF.

When Searching for Measured Data

5. Select the groups to be searched.

The operating procedure is the same as that in "**When Searching for Special Data**."

6. Select the channels to be searched.

The operating procedure is the same as that in "**When Searching for Special Data**."

7. Set the type of comparison. The reference value is set in step 8.

Select the type of comparison from the list box.

==: Search for data that are equal to the reference value.

>: Search for data that are greater than the reference value.

<: Search for data that are less than the reference value.

>=: Search for data that are greater than or equal to the reference value.

<=: Search for data that are less than or equal to the reference value.

!=: Search for data that are not equal to the reference value.

8. Set the reference value.

Click the box and enter the value.

The range of values is from -9999999999 to 9999999999. You can also use exponential notation (for example, 32E+5).

Search Direction

9. Select the Opposite (reverse direction) or Sequence (forward direction) option button. The search direction depends on the number of cursors that are displayed and the Opposite or Sequence setting as follows:

Number of Cursors Displayed	Opposite/Sequence	Search Direction
None	Sequence	From the first data point to the last data point
	Opposite	From the first data point to the last data point
1	Sequence	From the cursor position to the last data point
(A and B are at the same position)	Opposite	From the cursor position to the last data point
2	Sequence	From cursor A to cursor B
(A is in front of B on the time axis)	Opposite	From cursor B to cursor A

10. Specify the cursor to be displayed at the data position that matched the search conditions. You can specify Cursor A, Cursor B, or Cursor A and B.

11. Click Run to execute the search, and the cursor is displayed at the data position that matched the search conditions. The search result (group number, waveform number, and data number) is displayed at the bottom section of the dialog box.

12. If you click Run again, the cursor is displayed at the next data position that matched the search conditions, and the search result is displayed at the bottom section of the dialog box.

If there are no data that match the search conditions, Not Found is displayed at the bottom section of the dialog box.

13. Click Close to close the Search dialog box.

Example of an Alarm Search

This section explains the procedure for searching for the point of change of alarm level 1 of channel TAG0005 in the range specified by the cursors.

1. Display the waveform and specify a range Using Cursors.
2. Click Search on the toolbar. The Search dialog box opens.
3. Set the search conditions as follows.

   OR/AND: You do not have to change this, because only one condition will be specified.

   Search Type: Alarm:

   Group: You do not have to change this (leave as ALL)

   Tag: TAG0005

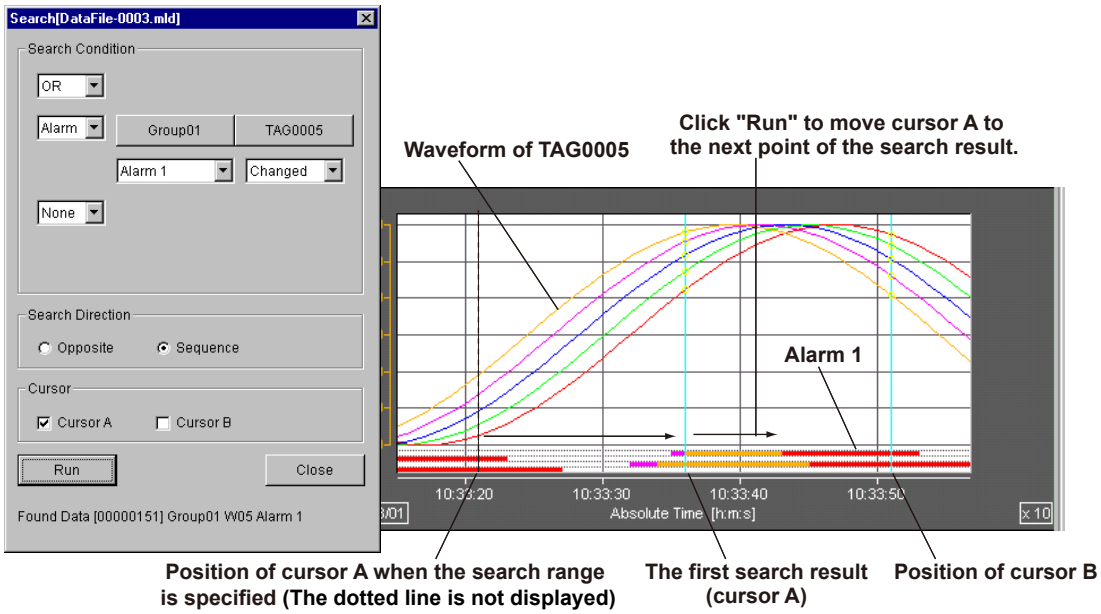
   Alarm Level: Alarm 1

   Alarm Condition: Point of Change

   2nd Condition: None
4. Set the search direction equal to the progression of time.

   Click the Sequence option button.
5. Display cursor A at the search result.

   Cursor: Select the cursor A check box.
6. Click Run to execute the search. Cursor A is displayed at the data position where the alarm changed. Data can be read in from the cursor's value display.
7. Click Run to execute the search again. Cursor A is displayed at the next data position where the alarm (that matches the conditions) changed.

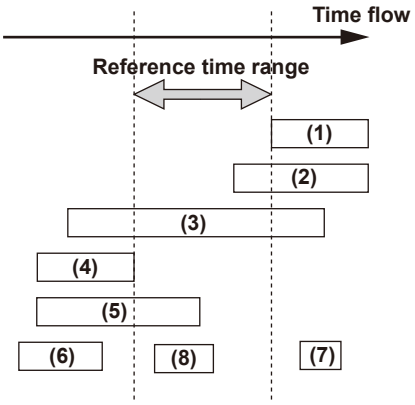


5.7 Linking and Displaying Data Files

File Link and Display Function

Data files that are continuous in time can be linked and displayed. Historical viewer can handle data files that have been saved to divided files as a single file.

Data files that are continuous in time



Files that are continuous in time

- **(1), (4) : Files containing data that does not overlap with the reference time range and is continuous with the reference time range.**
- **(2), (3), (5) : Files containing data that overlaps with the reference time range and data in the time range before, after, or both. (Files that are continuous in time must be data files that are created in a single session of logging start and logging end. Even if the above conditions are met, data files that were created during different logging start and logging end operations are not files that are continuous in time.)**

Files that are discontinuous in time

- **(6), (7) : Files that are not continuous with the reference time range**
- **(8) : Files that are contained in the reference time range**

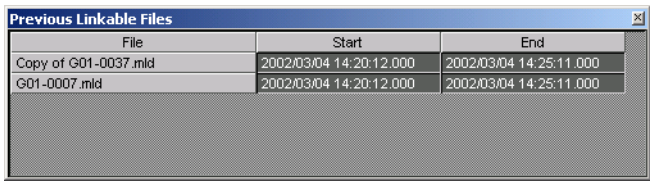
Linking Previous Files

You can search for files containing data that are continuous in time and that are before the time range that is currently displayed ((3), (4), and (5) in the above figure), and link the appropriate data file. The files are searched for within the same directory as the data file that is currently loaded and displayed.

Procedure

1. Click Link previous file on the toolbar or choose **Link Previous File** from the File menu. Data files that can be linked are searched.

2. The following three operations are executed depending on the search result.
   - If a file that can be linked does not exist, linking is not performed, and Link Previous File in the File menu and the toolbar button becomes unavailable.
   - If a single file that can be linked is found, the file is automatically linked.
   - If multiple files that can be linked are found, the Previous Linkable Files dialog box appears. A list of linkable files is displayed with the start and end times. When linking previous files, the files are displayed in order from those with the oldest start time. Click the name of the file you wish to link to perform the link.



3. When the name of the file you wish to link is selected, the Select Option dialog box may appear. Select either process, and click Select to perform the link.

Note

- The Select Option dialog box appears when adding the selected file causes the number of displayed data points to be 8 KB or more and the load size to be 10 MB or more. For details, see “Opening Data Files” in section 5.1.
- When data files are linked, the extension of the data file name that is displayed on the title bar changes from .mld to .lml (If the extension is already .lml, it is not changed).

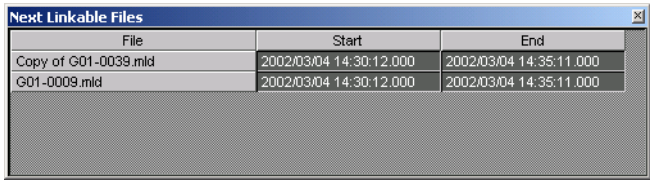
Linking Succeeding Files

You can search for a data file that is continuous in time that is after the time range that is currently displayed ((1), (2), and (3) in the figure on the previous page), and link the appropriate data file. The files are searched for within the same directory as the data file that is currently loaded and displayed.

Procedure

1. Click Link next file on the toolbar or choose **Link Next File** from the File menu. Data files that can be linked are searched.

2. The following three operations are executed depending on the search result.
   - If a file that can be linked does not exist, linking is not performed, and Link Next File in the File menu and the toolbar button becomes unavailable.
   - If a single file that can be linked is found, the file is automatically linked
   - If multiple files that can be linked are found, the Next Linkable Files dialog box appears. A list of linkable files is displayed with the start and end times. When linking succeeding files, the files are displayed in order from those with the oldest start time. Click the name of the file you wish to link to perform the link.



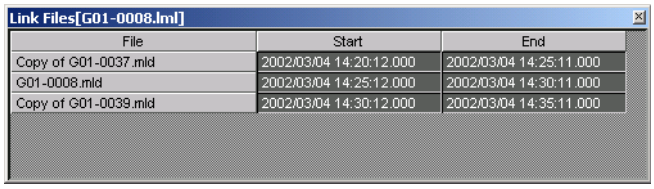
3. When the name of the file you wish to link is selected, a Select Option dialog box may appear. For details, see “Linking Previous Files” in the previous section.

Displaying a List of Linked Files

You can display a list of linked files and check the link condition of the current file.

Procedure

Select **Link Files** from the Window menu. The Link Files dialog box appears.



The displayed information consists of File, Start, and End. The list is displayed in order from the oldest start time.

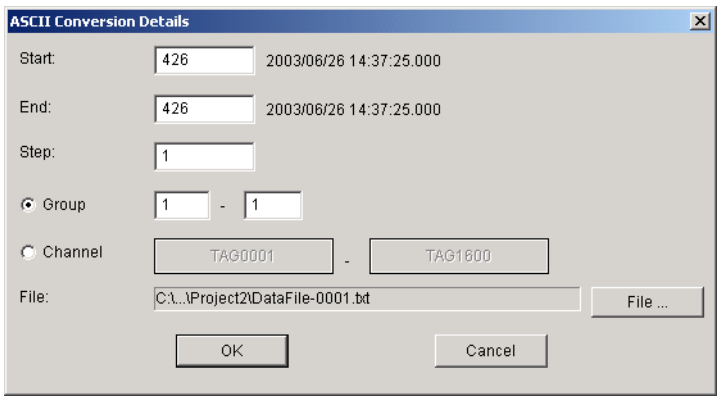
5.8 Converting the Data Format

You can convert data files to ASCII, Lotus, or Excel data format.
The names of the converted files are as follows:

- Converted to ASCII: original file name.txt
- Converted to Excel: original file name.xls
  The file can be opened on Excel version 4.0 or later.
- Converted to Lotus: original file name.wj2
  The file can be opened on Lotus1-2-3 version 2.0 or later.

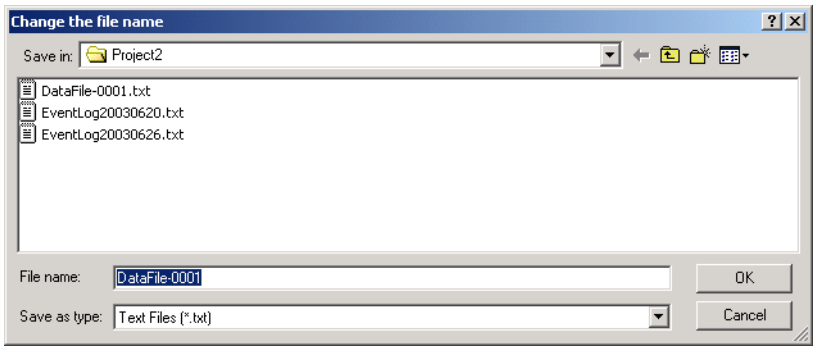
Procedure

1. Choose **To ASCII**, **To Lotus**, or **To Excel** from the Convert menu.
   The conversion dialog box appears.
2. Enter the range of data to be converted (data number for starting the conversion* and data number for ending the conversion*). The logging time is displayed to the right of the text box.
   * The data number is numbered from 0 from the first data point in the file.
3. Enter the step number (Step).
   To convert all the data in the specified range, set the step number (Step) to 1.



3. To specify the data to be converted using groups, click the Group option button to enter the group number in the text box.

   To specify the data to be converted using channel numbers, click the Tag option button to press the channel number button.
   A dialog box used to select the channel number appears. Click the desired channel number.
4. To change the destination folder or the name of the file containing the converted data, click the File button.
   The Change the file name dialog box appears.



5. Select the destination and the file type and enter the file name.
6. Click OK.
   The measured data is converted to the selected data format and saved to the file.

File Conversion Format of Logged Data

The Lotus 1-2-3, Excel, and ASCII file formats are indicated below.

Lotus 1-2-3 and Excel File Format

	A	B	C	D	E
1	AddTrigger R x.xx				License No.xxx-xxxx-x
2	Start Time		2005/07/20		15:50:20.000
3	End Time		2005/07/20		17:13:35.000
4	Trigger Time		2005/07/20		15:50:20.000
5	Sample Rate		5.000	Sec	
6	Data Count		1000		
7	Group		01	–	01
8	Comment 1		test1		comment1
9	Comment 2		test2		commnet2
10	Comment 3		test3		commnet3
11	Comment 4		test4		commnet4
12	Comment 5		test5		commnet5
13	Comment 6		test6		commnet6
14	Comment 7		test7		commnet7
15	Comment 8		test8		commnet8
16			Ch. No.	TAG0001	TAG0002
17			Tag No.	TAG0001	TAG0002
18			Tag Comment	DAQLOG-TAG-0001	DAQLOG-TAG-0002
19	Date	Time	Sec	mV	mA
20	07/20	15:50:20	0.000	161.8	1.800
21	07/20	15:50:25	0.000	173.2	2.000
22	07/20	15:50:30	0.000	182.7	2.200

ASCII File Format

Title	CR	LF
Date and time the first data point was logged	CR	LF
Date and time the last data point was logged	CR	LF
Data acquisition interval	CR	LF
Data count	CR	LF
Group	CR	LF
Comment (eight lines)	CR	LF
Channel	CR	LF
Tag No.	CR	LF
Tag comment	CR	LF
Unit	CR	LF
Date format	CR	LF
Time when the data was measured and the measured data (Repeat the number of data points)	CR	LF

- **Title**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
“	A	d	d	T	r	i	g	g	e	r	(	R		X	.	X	X	)	

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	S	o	f	t	w	a	r	e		I	D		x	x	x	-	x	x	x

41	42	43	44	45
x	x	”	CR	LF

RX.XX is the software revision number. SoftwareID is the license number.

- **Date and time the first data point was logged**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	S	t	a	r	t		T	I	m	e	"	,	"	2	0	0	2	/	0

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
3	/	3	1	"	,	"	0	1	:	0	2	:	0	0	.	5	0	0	"

41	42
CR	LF

- **Date and time the last data point was logged**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	E	n	d				T	i	m	e	"	,	"	2	0	0	2	/	0

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
3	/	3	1	"	,	"	2	3	:	5	9	:	5	9	.	0	0	0	"

41	42
CR	LF

- **Data acquisition interval**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	S	a	m	p	l	e		R	a	t	e		(	S	e	c	)	"	,

21	22	23	24	25	26	27	28	29	30	31
Data acquisition interval									CR	LF

Data acquisition interval example (top section: 0.5 s, bottom section: 60 s)

21	22	23	24	25	26	27	28	29
				0	.	5	0	0
			6	0	.	0	0	0

- **Data count**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	D	a	t	a		C	o	u	n	t	"	,	Data count						

21	22	23	24
		CR	LF

Data count example (top section: 100 points, bottom section: 120000 points)

15	16	17	18	19	20	21	22
					1	0	0
		1	2	0	0	0	0

- **Group**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
"	G	r	o	u	p	"	,	"	0	2	-	1	0	"

If you converted the data by specifying groups, the range of groups is displayed.
If you converted the data by specifying channels (tags), spaces are inserted for the group range.

- **Comment**

Example when the comment number is 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14 . . . 29	30	31
"	C	o	m	m	e	n	t		1	"	,	"	Title 16 characters	"	,

32	33 96	97
"	Comment 64 characters	"

- **Channel**

1	2	3	4	5	6	7	8	9 . . . . . ?
"	C	H	.		N	o	.	" Channel 1 " ,

? . . . . . ?		?	?
" Channel 2 " ,	. . . . .	CR	LF

The length occupied by a single channel varies depending on the length of the character string.
Each channel is enclosed in quotations. Thus, the length occupied by a single channel is
"the length of the channel character string + 2."

Channel example (when the first channels is "CH0001" and the second channel is "CH0002")

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
"	C	H	0	0	0	1	"	,	"	0	0	0	2	"	,

- **Tag no.**

1	2	3	4	5	6	7	8	9 . . . . . ?
"	T	a	g		N	o	.	" Tag No. 1 " ,

? . . . . . ?		?	?
" Tag No. 2 " ,	. . . . .	CR	LF

The length occupied by a single tag No. varies depending on the length of the character string.
Each tag No. is enclosed in quotations.
Thus, the length occupied by a single tag No. is "the length of the tag No. + 2."

Tag No. example (when the first tag No. is "TAGNO01" and the second tag No. is "002")

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
"	T	A	G	N	O	0	1	"	,	"	0	0	2	"	,

• Tag comment

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 . . . . ?
"	T	a	g		C	o	m	m	e	n	t	"	,	" Tag comment 1 " ,

? . . . . . ?		?	?
" Tag comment 2 " ,	. . . . .	CR	LF

The length occupied by a tag comment varies depending on the length of the character string.
Each tag comment is enclosed in quotations.
Thus, the length occupied by a single tag comment is "the length of the tag comment + 2."

Tag comment example (when the first tag comment is "TAG0001" and the second tag comment is "0002")

15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
"	T	A	G	0	0	0	1	"	,	"	0	0	0	2	"	,	"

• Units

1	2	3	4	5	6	7	8 . . . . ? . . . . .
"	U	n	i	t	"	,	" Unit 1 " , " Unit 2 "

?		?	?
,	. . . . .	CR	LF

The length occupied by a single unit varies depending on the length of the character string.
Each unit is enclosed in quotations.
Thus, the length occupied by a single unit is "the length of the unit + 2."

Unit example (when the first unit is "V" and the second unit is "mV")

8	9	10	11	12	13	14	15	16	17
"	V	"	,	"	m	V	"	,	"

• Date Format

For absolute time

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	Y	Y	Y	Y	/	M	M	/	D	D		H	H	:	m	m	:	S	S

21	22	23	24	25
.	S	S	S	"

For relative time

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
"	D	D	D		H	H	:	m	m	:	S	S	.	S	S	S	"

• Time Data Was Measured and the Measured Data

For absolute time

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	Y	Y	Y	Y	-	M	M	-	D	D		H	H	:	m	m	:	S	S

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
.	S	S	S	"	,	Measured value 1									,	Measured value 2			

41	42	43	44	45	46													?	?
					,	.	.	.	.	.	.	.	.	.	.	.	.	CR	LF

For relative time

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	D	D	D		H	H	:	m	m	:	S	S	.	S	S	S	"	,	

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Value						,	Value											,	

41	42	43	44	45	46	47	48											?	?
Value								,	.	.	.	.	.	.	.	.	.	CR	LF

The length occupied by an absolute time is fixed to 25 characters.
The length occupied by a relative time is fixed to 18 characters.
The length occupied by a single measured value is fixed to 9 characters.

Absolute time example (for 10:30:10.5 on March 31, 2002)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
"	2	0	0	2	/	0	3	/	3	1		1	0	:	3	0	:	1	0

21	22	23	24	25	26
.	5	0	0	"	,

Relative time example (for 10:30:10.5 on the third day)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
"	0	0	3		1	0	:	3	0	:	1	0	.	5	0	0	"

Measured data example (top section: 10.12, bottom section: 1200.0)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
				1	0	.	1	2	,
			1	2	0	0	.	0	,

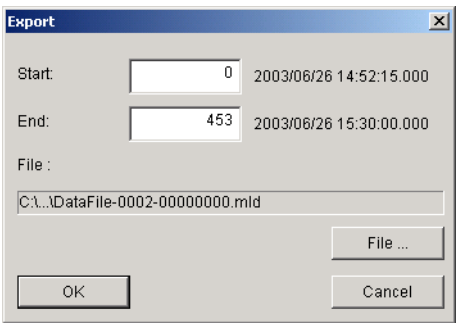
5.9 Exporting Data

You can extract (copy) a section of a data file and save the result. This operation does not change the original data.

Procedure

1. Select the range of data to be extracted by using cursors.
2. Choose **Export** from the Convert menu.

   The Export dialog box opens.



3. The range that was selected by the cursors is indicated in the Start and End boxes using data numbers. The logging time is displayed to the right of the text box.

   To change the data range to be exported, enter values in the appropriate boxes.
4. Click File to open the Change the file name dialog box. Change the file name and destination as necessary and click OK.

Note

The default file name is as follows:
Original file name-first data number (8 digits) of the range to be exported.mld.

5. Click OK to create the file and close the dialog box. Click Cancel to close the dialog box without creating the file.

5.10 Printing the Data

You can print out the measured data that is displayed on Historical Viewer.

Selecting the Printer

You can specify the printer used to print the data.
The printer setup operation is the same as that of the standard Windows print command.

Procedure

1. Choose **Print Setup** from the File menu.
   The Print Setup dialog box opens.
2. Change the items in the dialog box as needed, and then click OK.

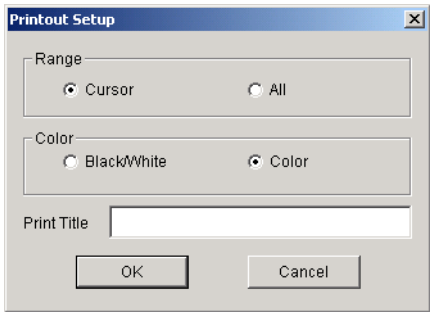
Note

Enter printer settings according to the environment of the system that you are using.

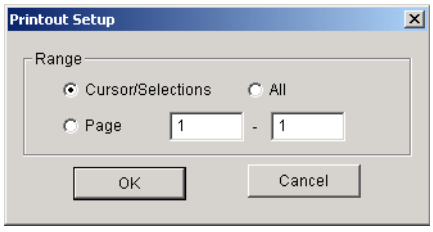
Previewing the Printout

Procedure

1. Select **Print Preview** from the File menu.
   The Printout Setup dialog box opens.
2. Specify the print range and other information.
   For graphs, click the option button to set the range and color. Enter a print title if desired.



For sheets, specify the print range.



3. Click OK.
   The print preview window is displayed.

Note

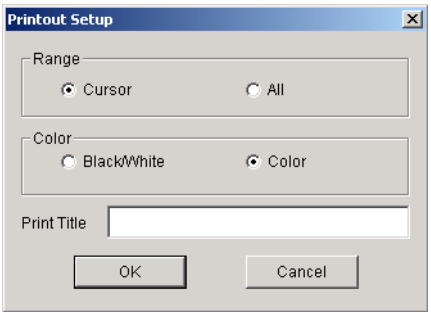
For the print preview operation, see the instruction manual that came with your operating system.

Printing the Data

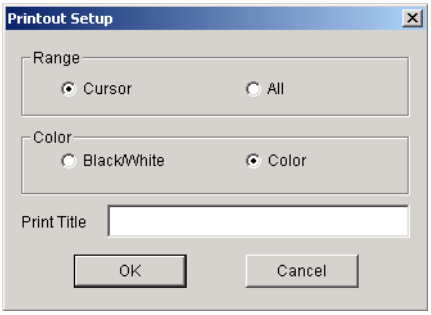
Procedure

1. Click Print on the toolbar or choose **Print** from the File menu.

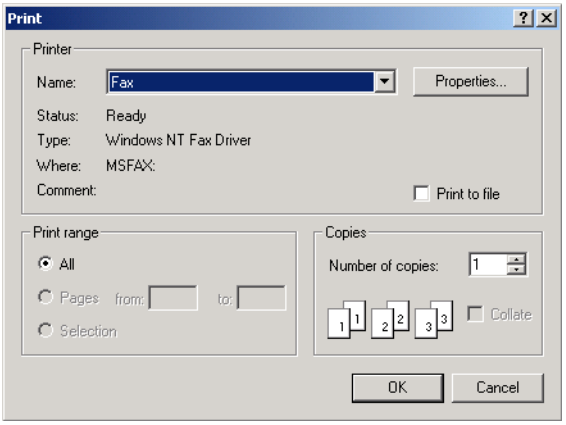
2. Specify the print range and other information.
   For graphs, click the option button to set the range and color. Enter a print title if desired.



   For sheets, specify the print range.



3. Click OK.
   The Print dialog box opens.



4. Select the printer name and number of copies, and click OK.
   Printing starts.

Note

The print range on the Print dialog box is void. The range specified on the Printout Setup dialog box is used.

5.11 Saving the Display Settings, Saving the Link Settings, and Exiting Historical Viewer

When exiting Historical Viewer, the display settings can be saved. The next time Historical Viewer is started the display settings are restored.
You can also save the display settings by choosing Save Display Setting from the File menu. When multiple data files are linked and displayed using the file link display function described in section 5.7, the display settings at that point are saved, and the link settings are saved as a link file. If the link file is loaded the next time Historical Viewer is started, the link settings are also restored and displayed.

The information that is saved to the display settings file is as follows:

- Print title
- Cursor A and Cursor B positions
- ON/OFF condition of the waveform display limiter
- Settings specified in the general display settings
- Mark information
- Zoom factor of the time axis
- Display mode of the time axis (absolute/relative)
- Waveform display area
- The background and grid color of the waveform display area
- Y-axis zone setting
- The active waveform
- Selected group
- ON/OFF condition of the alarm display
- Displayed channel identifier (channel, tag number, or tag comment)
- Group name
- Grid density

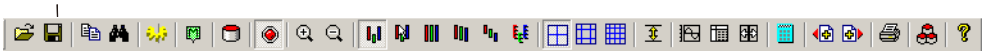
Saving the Display Settings

You can save the display settings of the data file. The display conditions are saved to a file with the .dml extension in the same folder as the data file. When multiple files are linked, the link status is saved to the link file (.lml extension) in addition to the display settings.

Procedure

Click Save Display Setting on the toolbar or choose **Save Display Setting** from the File menu. The display settings are saved.

Save Display Setting



Saving the Display Settings and Link Settings

Save the link file by specifying the file name. This operation is possible only when a linked data file is displayed.

Procedure

1. Choose **Save Display Setting As** from the File menu.
2. The Select File dialog box opens. Specify the destination and file name and click OK.
   The link file and display settings file are saved.

Note

When restoring links by loading a link file, the data files that are to be linked must reside in the same folder as the link file.

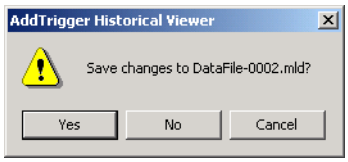
Exiting Historical Viewer

If there are any unsaved display settings, a message appears prompting you to choose whether or not to save the settings. Make a selection as to whether or not to save the settings.

Procedure

1. Choose **Exit** from the File menu or click the X button at the right end of the title bar.

   If there are unsaved display settings, a message appears prompting you to choose whether or not to save the settings.



2. Click Yes, No, or Cancel.

   Yes: Saves the display settings and closes Historical Viewer.

   No: Does not save the display settings and closes Historical Viewer.

   Cancel: Cancels the operation of exiting Historical Viewer.

6.1 Error Messages and Corrective Actions

A message may appear on the screen during operation. This section describes the meanings of the messages and their corrective actions.

Code	Message	Corrective Action
E0002	Insufficient memory. Please exit at once.	Exit all other programs and restart AddTrigger. Or, restart Widows.
E0003	Cannot open shared memory.	Exit all other programs and restart AddTrigger. Or, restart Widows.
E0004	Invalid serial number.	Reinstall AddTrigger.
E0101	Please open from the AddTrigger Launcher.	The program must be started from the Launcher.
E0213	Cannot open the file.	Check whether the file exists, whether the file is of a type that the software supports, and whether the file system is operating normally.
E0211	Cannot write to the file.	Check whether there is sufficient space on the hard disk, whether writing is permitted, and whether the file system is operating normally.
E4213	Failed to create folder.	Up to 256 characters can be input for folder names.
E4601	Different server type. Check the connected host name and port number.	The port number that is displayed when you choose Port No. for Data Monitor from the File menu on the Launcher is already in use by another program. Enter an unused port number.
E4602	The number of allowable client connections was exceeded.	The number of clients that are connected to the monitor server of the destination data logger software has been exceeded. Disconnect a client that is connected to the monitor server of the data logging software and connect AddTrigger.
E4603	A client with the same ID is connected from another PC.	A copy of AddTrigger with the same serial number is already connected to the monitor server of the data logging software. Reinstall the software using another serial number or disconnect the copy of AddTrigger that is currently connected.
E4605	Connection was dropped.	Check whether the monitor server of the destination data logging software is running and whether the network is connected properly.
E4606	Could not initialize communications.	Check whether TCP/IP is operating normally.
E4607	Connection failed. Check the connection host name and port number, and whether the monitor server is running.	Check whether the monitor server of the destination data logging software is running and whether the network is connected properly.
E4608	Time limit has passed.	Check whether the monitor server of the data logging software is running and whether the network is connected properly.
E4609	Maximum packet size exceeded.	The destination is not a monitor server that AddTrigger supports. Check whether the destination is a monitor server.
E4610	Invalid system number.	System number not entered correctly. See the user's manual for the connected data logging software.
E4611	Command not supported.	The destination is not a monitor server that AddTrigger supports.
E4613	Could not create folder.	Check whether the folder name is valid, write permissions were granted for the destination folder, sufficient disk space is available, and whether the file system is functioning properly.
E4614	Invalid folder name.	Folder name that starts with a period is not allowed. Enter a correct folder name.
E4615	Connection to this monitor server is not allowed.	Check whether the destination is a monitor server that AddTrigger supports.
E4619	Password and confirmation mismatch.	Enter the same characters for the password and password confirmation.
E4620	Invalid password.	Enter the correct password.
E4621	Cannot exit while scanning or recording is in progress.	Stop scanning first, then exit the Launcher.
E4622	Cannot contain any of the following characters: \ / : , ; * ? " < > |	¢\ / : , ; * ? “ < >. Please reenter using allowable characters only.
E4624	Cannot exit AddTrigger while desktop protection is active.	Disable desktop protection first, then exit the Launcher.
E4625	Cannot exit AddTrigger while password protection is active.	Disable password protection first, then exit the Launcher.

6.1 Error Messages and Corrective Actions

Code	Message	Corrective Action
E4626	Cannot shut down Windows while AddTrigger is running.	Shut down or log off after exiting Launcher.
E4627	A project with the same name already exists.	A name of a registered project cannot be used. Create a project with a different name.
E4633	Failed to start the logger.	The program was not correctly installed, or copied files were corrupted or deleted during installation. Reinstall. You can uninstall. the program without losing saved project information.
E4634	Failed to start the monitor server.	
E4635	Failed to start the file processor.	
E4637	Failed to start Data Monitor.	
E4638	Failed to start the data viewer.	
E4640	Invalid project name.	Project names that start with a period is not allowed. Enter a correct project name.
E4643	Could not create data file output folder.	Check the settings for the folder specified for data file output.
E4653	No effective logging channels.	Recording cannot be executed if channels are not assigned in the logging settings or if channels are assigned but valid channels do not exist. Assign a valid channel.
E4654	Recording was stopped since a monitor server setting may have been changed.	A setting was changed on the destination data logging. To restart recording, carry out the start recording procedure again on the Launcher.
E4656	Failed to open the data file.	Check whether the destination folder exists, write permissions were granted for the destination folder, sufficient disk space is available, and whether the file system is operating properly.
E4657	Failed to write to the data file.	Check whether the folder name is valid, write permissions were granted for the destination folder, sufficient disk space is available, and whether the file system is operating properly.
E4658	Invalid setting.	The setting file was not created by AddTrigger, or it was created by a different version of AddTrigger. Install the most recent version of AddTrigger.
E4659	Monitor server has no data.	Start data logging on the destination data logging software.
E4660	The monitor server is busy.	Start sending data on the monitor server in the data logging software, then log data using AddTrigger.
E4661	Monitor server stopped data logging.	Data logging on the destination data logging software was stopped, or data distribution stopped. To restart, start data logging on the data logging software, or start data distribution. Then, start logging using AddTrigger.
E4662	No effective recording channels.	Recording/scanning cannot be executed if channels are not assigned in the logging settings or if channels are assigned but valid channels do not exist. Check the logging settings, and assign valid recording channels.
E4663	Failed to reconnect the monitor server.	Couldn't reconnect during a given time (120 seconds) after the connection is dropped. Check whether the monitor server of the data logging software is running and whether the network is connected properly.
E4664	Port number for Data Monitor is already in use.	The port number that is displayed when you choose Port No. for Data Monitor from the File menu on the Launcher is already in use by another program. Enter an unused port number.
E4665	The new port number for Data Monitor will be effective after restarting the server.	To make the new port number for Data Monitor effective, restart the Launcher.
E4668	Failed to convert the data files.	Failed to automatically convert the file. Check whether the destination folder exists, write permissions were granted for the destination folder, sufficient disk space is available, and whether the file system is operating properly.
E4669	Could not create conversion file output folder.	Check the settings for the folder specified for conversion file output.
E4683	Connection failed.	Check whether the monitor server of the destination data logging software is running and whether the network is connected properly.

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