Thank you for purchasing the Daqstation DX1000, DX1000N, or DX2000 (hereafter referred to as the DX).

This manual describes the operating procedure for the DX Multi Batch function (IBT2 option). Please use this manual in conjunction with the DX User’s Manual (IM04L41B01-01E or IM04L42B01-01E).

Notes

• The contents of this manual are subject to change without prior notice as a result of continuing improvements to the instrument’s performance and functions.
• Every effort has been made in the preparation of this manual to ensure the accuracy of its contents. However, should you have any questions or find any errors, please contact your nearest YOKOGAWA dealer.
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Revisions

1st Edition: November 2008
2nd Edition: March 2010
Conventions Used in This Manual

Unit

<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>Denotes 1024. Example: 768 KB (file size)</td>
</tr>
<tr>
<td>k</td>
<td>Denotes 1000.</td>
</tr>
</tbody>
</table>

Markings

- **WARNING**  
  Improper handling or use can lead to injury to the user or damage to the instrument. This symbol appears on the instrument to indicate that the user must refer to the user’s manual for special instructions. The same symbol appears in the corresponding place in the user's manual to identify those instructions. In the manual, the symbol is used in conjunction with the word “WARNING” or “CAUTION.”

- **WARNING**  
  Calls attention to actions or conditions that could cause serious or fatal injury to the user, and precautions that can be taken to prevent such occurrences.

- **CAUTION**  
  Calls attention to actions or conditions that could cause light injury to the user or damage to the instrument or user’s data, and precautions that can be taken to prevent such occurrences.

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

Subheadings

- **Bold characters**  
  Denotes key or character strings that appear on the screen. Example: **Volt**

- **#**  
  Indicates character types that can be used.  
  - Uppercase alphabet, lowercase alphabet, symbols, numbers.

- **Procedure**  
  Carry out the procedure according to the step numbers.

- **Explanation**  
  All procedures are written with inexperienced users in mind; depending on the operation, not all steps need to be taken. Explanation gives information such as limitations related to the procedure.

- **Setup Screen**  
  Indicates the setup screen and explains the settings. A detailed description of the function is not provided in this section. For details on the function, see chapter 1.
Applicable Recorders

The models outlined in this section can be equipped with the Multi Batch function. In this manual, the terms “DX1000” and “DX2000” refer to the following models.
DX1000: DX1006, DX1012, DX1006N, and DX1012N
DX2000: DX2010, DX2020, DX2030, DX2040, and DX2048

What This Manual Explains

This manual explains the DX Multi Batch function. For details on the DX’s standard operations, see the DX1000/DX1000N User’s Manual (IM04L41B01-01E) or the DX2000 User’s Manual (IM04L42B01-01E).
For details on the DX’s communication functions, see the DX1000/DX1000N/DX2000 Communication Interface User’s Manual (IM04L41B01-17E).

This manual explains how to use the Multi Batch function on the DX1000. For the cases where the usage differs for the DX2000, this manual also explains how to use the Multi Batch function on the DX2000.

The following terms are used for references to other manuals:
Operation Guide: Refers to DX Operation Guide IM04L41B01-02E or IM04L42B01-02E.
Communication Manual: Refers to DX Communication Interface User’s Manual IM04L41B01-17E.
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### Index
1.1 Recording and Saving Data

The Multi Batch function allows you to record and save the measured data from multiple batches separately (per batch). You can also apply the Multi Batch function to multiple consecutive processes.

The diagram on the following page gives a general overview of the Multi Batch function.

### Number of Batches

The table below shows the number of batches supported by the DX1000 and DX2000. Each batch is known as a batch group.

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of Batches</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX1000</td>
<td>2 to 6</td>
</tr>
<tr>
<td>DX2000</td>
<td>Standard memory 2 to 6</td>
</tr>
<tr>
<td></td>
<td>Large memory 2 to 12</td>
</tr>
</tbody>
</table>

### Recordable Channels

On the trend, digital, and bar graph displays, channel data is displayed in preset groups. These groups are referred to as “display groups.”

The number of display groups that can be assigned to a batch group and the number of channels that can be assigned to a display group are indicated below. The same display groups are used for the trend, digital, and bar graph displays.

For each batch group, the measured data is displayed per display group. The DX records the data from the measurement channels, computation channels, or external input channels (only available on the DX2000) that are registered to the display groups.

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of Display Groups</th>
<th>Number of Channels You Can Register to a Single Display Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX1000</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>DX2000</td>
<td>12</td>
<td>10</td>
</tr>
</tbody>
</table>

The conditions for recording display or event data (scan interval, sampling interval, and data type) apply to all batch groups. Likewise, the conditions for saving data files (file save interval and save destination directory) apply to all batch groups.

You can start and stop recording for each batch group individually. Other actions such as writing messages and resetting the values calculated on computation channels (/M1 and /PM1 options) can also be carried out for each batch group individually.

The computation and report functions (/M1 and /PM1 options) each start and stop simultaneously across all batch groups.

Display data and event data are saved per batch group. Batch numbers, lot numbers, file headers, batch text, batch comments, and other batch information are saved to files along with measured data.

Manual sampled data, report data, and snapshot data are all saved to their own individual files with no distinction between batch groups.
1.1 Recording and Saving Data

Multi Batch Function

Conditions for Recording and Saving Display Data and Event Data

- Scan interval
- Data record: Display data or Event data
- Sampling interval
- File save interval
- Save destination directory

Manual sampled data file

Report file

Snapshot data file

Batch Group 1

Display groups

1

2

3

1

Data file (display data or event data)

Start recording

Writing messages

Computation reset

Stop recording

Batch Group 2

Display groups

1

2

3

1

Data file (display data or event data)

Start recording

Writing messages

Computation reset

Stop recording

represents user actions.
Recording and Saving

Starting and Stopping Recording (Memory Sample)
You can start and stop recording for each batch group individually. Or, you can start and stop recording across all batch groups simultaneously.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Operation Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording</td>
<td>Start and stop batch groups individually</td>
</tr>
<tr>
<td>Batch Group 1</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td>Batch Group 2</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td>Batch Group 3</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td>Simultaneous start and stop</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td>Report</td>
<td><img src="https://via.placeholder.com/150" alt="" /></td>
</tr>
<tr>
<td>Computation</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
<tr>
<td>Instrument information output</td>
<td><img src="https://via.placeholder.com/150" alt="Diagram" /></td>
</tr>
</tbody>
</table>

- **Starting and Stopping a Report (/M1 and /PM1 Option)**
The report feature starts when you start recording on any batch group and it stops when all batch groups stop recording.

- **Starting and Stopping Computation (/M1 and /PM1 Option)**
  - All computations start and stop together at the same time.
  - When computations are stopped, you can start recording and computation at the same time.

<table>
<thead>
<tr>
<th>Math Start Action</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>Starts computation.</td>
</tr>
<tr>
<td>Reset+Start</td>
<td>When starting each batch group separately</td>
</tr>
<tr>
<td></td>
<td>When starting all batch groups simultaneously</td>
</tr>
</tbody>
</table>

* The computation channels registered to that batch group’s display group.

- You can stop computation at any time.
1.1 Recording and Saving Data

- **Relay Output when Stopping Recording (/F1 and /F2 Options)**
  When the relay action is set to memory sampling on a DX with the /AS1 advanced security option, relay output starts when memory start occurs for any of the batches, and relay output stops when memory stop occurs for all the batches.
  For an explanation of this feature’s settings, see section 2.9 in the User’s Manual.

- **Recording Conditions for Each Batch Group**
  You can use each batch group’s recording status as variables (M01 to M12) in computations (/M1 and /PM1 options).
  For an explanation of this feature, see section 1.8 in the User’s Manual.
1.1 Recording and Saving Data

Recording Display Data and Event Data
The following recording conditions are common to all batch groups. For details on the recording operation, see section 1.4 in the User’s Manual.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scan interval</td>
<td>1 second, 2 seconds, or 5 seconds. The same scan interval is used for all batch groups.</td>
</tr>
<tr>
<td>Data record</td>
<td>One of either display data or event data. The same type of data is recorded for all batch groups.</td>
</tr>
<tr>
<td>Display data</td>
<td>The same display data sampling interval (trend interval) is used for all batch groups.</td>
</tr>
<tr>
<td>Event data</td>
<td>Use Free mode when recording event data. You cannot select Trigger mode. The same event data sampling interval (sample rate) is used for all batch groups.</td>
</tr>
</tbody>
</table>

Recording Manual Sampled Data and Report Data (/M1 and /PM1 options)
The settings and behavior of these features are common to all batch groups. For details on manual sampled data and report data, see section 1.4 in the User’s Manual.

Saving Measured Data to Storage Media
This section briefly explains how the DX saves various types of measured data to storage media. For shaded entries, the DX performs the same operation as a DX without the Multi Batch function. For details on saving measured data to storage media, see section 1.4 in the User’s Manual.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto save</td>
<td>Display data Saves the data from all batch groups to the specified save destination directory. The same file save interval for display data is used for all batch groups.</td>
</tr>
<tr>
<td>Event data</td>
<td>Saves the data from all batch groups to the specified save destination directory. The same file save interval for event data (data length) is used for all batch groups.</td>
</tr>
<tr>
<td>Manual sampled data</td>
<td>Saves the data to the specified save destination directory.</td>
</tr>
<tr>
<td>Manual save</td>
<td>Display data Saves the data from all unsaved batch groups to the specified save destination directory.</td>
</tr>
<tr>
<td>Event data</td>
<td>Saves the unsaved data to the specified save destination directory.</td>
</tr>
<tr>
<td>Report data</td>
<td></td>
</tr>
<tr>
<td>Saving data by pressing FUNC</td>
<td>Save display data Saves the source batch group’s display data that the DX is currently recording to files on the inserted CF card.</td>
</tr>
<tr>
<td>Save event data</td>
<td>Saves the source batch group’s event data that the DX is currently recording to files on the inserted CF card.</td>
</tr>
<tr>
<td>Manual save</td>
<td>Display data Saves the data from all unsaved batch groups to the specified save destination directory.</td>
</tr>
<tr>
<td>Event data</td>
<td>Saves the unsaved data to the specified save destination directory.</td>
</tr>
<tr>
<td>Manual sampled data</td>
<td></td>
</tr>
<tr>
<td>Report data</td>
<td></td>
</tr>
<tr>
<td>Saving data using keys</td>
<td>This operation is applicable when you insert a USB flash memory device or when you display the DX’s memory summary and save data. For details, see section 3.10 in this manual or section 4.8 in the User’s Manual.</td>
</tr>
<tr>
<td>Snapshot</td>
<td>Saves the screen image data to the inserted CF card.</td>
</tr>
<tr>
<td>Saving data via FTP</td>
<td>Display data and event data Transfers the data for all batch groups to the specified initial path.</td>
</tr>
<tr>
<td>Report data</td>
<td>Transfers the data to the specified initial path.</td>
</tr>
<tr>
<td>Snapshot data</td>
<td></td>
</tr>
</tbody>
</table>

Media FIFO
The DX performs a FIFO operation only when the following files are saved. Display or event data files for all batch groups, manual sampled data files, report files, and snapshot data files.
1.1 Recording and Saving Data

Data file
This section briefly explains the makeup of the data files. Shaded entries are the same as with DXs without the Multi Batch function.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data and event data</td>
<td>Measured data: Saves the data from each batch group to a separate file. Each batch group’s alarm and message information is also saved. <strong>File header:</strong> The string specified for each batch group. <strong>Batch text:</strong> The string specified for each batch group. <strong>Batch comment:</strong> The string specified for each batch group.</td>
</tr>
<tr>
<td>Manual sampled data</td>
<td>Measured data: The measured data from all source channels. <strong>File header:</strong> Uses batch group 1’s file header.</td>
</tr>
<tr>
<td>Report data</td>
<td><strong>Report data:</strong> The source channel depends on the DX settings. <strong>File header:</strong> Uses batch group 1’s file header.</td>
</tr>
<tr>
<td>Snapshot data file</td>
<td><strong>The screen image data.</strong></td>
</tr>
</tbody>
</table>

File Name
You can specify a different file name configuration for each batch group. For example, you can specify that batch group 1’s file name is in the date configuration, and batch group 2’s file name is in the batch configuration.

The file names for manual sampled data, snapshot data, and report data all follow the same configuration as that specified for batch group 1.

For all file name configurations, the sequence number portion of the file name for display data and event data differs from that used with a DX without the Multi Batch function. For details on file names, see section 1.4 in the User’s Manual.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Display data: One character in the file name <em>sequence number</em> is allocated to identify the batch group. You can specify a different string to use in the file name per batch group. Other file name details are the same as with a DX without the Multi Batch function. <strong>Event data:</strong> The string used in the file name is the one specified for batch group 1. Other file name details are the same as with a DX without the Multi Batch function.</td>
</tr>
<tr>
<td>Manual sampled data</td>
<td>The string used in the file name is the one specified for batch group 1. Other file name details are the same as with a DX without the Multi Batch function.</td>
</tr>
<tr>
<td>Snapshot data</td>
<td></td>
</tr>
<tr>
<td>Report data</td>
<td></td>
</tr>
<tr>
<td>Serial</td>
<td>Display data: One character in the file name <em>sequence number</em> is allocated to identify the batch group. You can specify a different string to use in the file name per batch group. Other file name details are the same as with a DX without the Multi Batch function. <strong>Event data:</strong> The string used in the file name is the one specified for batch group 1. Other file name details are the same as with a DX without the Multi Batch function.</td>
</tr>
<tr>
<td>Manual sampled data</td>
<td>The string used in the file name is the one specified for batch group 1. Other file name details are the same as with a DX without the Multi Batch function.</td>
</tr>
<tr>
<td>Snapshot data</td>
<td></td>
</tr>
<tr>
<td>Report data</td>
<td></td>
</tr>
<tr>
<td>Batch</td>
<td>Display data: One character in the file name <em>sequence number</em> is allocated to identify the batch group. A separate batch name for each batch group is used. Other file name details are the same as with a DX without the Multi Batch function. <strong>Event data:</strong> File name details are the same as with a DX without the Multi Batch function. <strong>Manual sampled data:</strong> File name details are the same as with a DX without the Multi Batch function.</td>
</tr>
</tbody>
</table>
1.1 Recording and Saving Data

File name sequence number for display data and event data

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>File name sequence</td>
<td></td>
</tr>
<tr>
<td>number</td>
<td></td>
</tr>
<tr>
<td>Batch group identifier</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>Delimiter</td>
<td></td>
</tr>
</tbody>
</table>

File name examples

The following are file name examples for display data files.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Example File Name for a Display Data File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>A00123_AAAAA081201_173524.DAD</td>
</tr>
<tr>
<td></td>
<td>Batch group 1. The sequence number is “A00123_.” The specified string is “AAAAA.”</td>
</tr>
<tr>
<td>Serial</td>
<td>B00123_AAAAA.DAD</td>
</tr>
<tr>
<td></td>
<td>Batch group 2. The sequence number is “B00123_.” The specified string is “AAAAA.”</td>
</tr>
<tr>
<td>Batch</td>
<td>C00123_SAMPLE-1.DAD</td>
</tr>
<tr>
<td></td>
<td>Batch group 3. The sequence number is “C00123_.” The batch name is “SAMPLE-1.”</td>
</tr>
</tbody>
</table>

Operations You Can Perform on Each Batch

Writing Messages and Writing Free Messages

You can write different messages for each batch group.

For operating instructions, see section 3.6.

Computation Reset (/M1 and /PM1 Options)

You can reset the computed result on the computation channels in use for each batch group.

For operating instructions, see section 3.2.

Text Field Display

You can display text fields for each batch group.

For operating instructions, see section 3.8.

4-Panel Display (Only for the DX2000)

You can register and display four screens for each batch group.

For operating instructions, see section 4.10 in the DX2000 User’s Manual.

Saving Display Data and Event Data

For operating instructions, see section 3.1.

Changes to Features

The following standard features differ between a DX with the Multi Batch function and a DX without it.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timer</td>
<td>You can use 12 timers.</td>
</tr>
<tr>
<td>Match time timer</td>
<td>You can use 12 match time timers.</td>
</tr>
<tr>
<td>Switching the trend interval</td>
<td>When the Multi Batch function is enabled, you cannot switch the trend interval (you cannot switch to the secondary trend interval).</td>
</tr>
<tr>
<td>Trend clear</td>
<td>When the Multi Batch function is enabled, the DX always clears the displayed waveform when recording starts.</td>
</tr>
</tbody>
</table>
1.2 Display

There is a batch overview mode and a batch single mode. In batch overview mode, information common to all batch groups is displayed. In batch single mode, information for each batch such as measured data and alarms is displayed.

### Batch Overview Mode

This section outlines the information displayed in batch overview mode.

<table>
<thead>
<tr>
<th>Name</th>
<th>Display Details</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status display section</td>
<td>See the following figure.</td>
<td>Section 1.3 in the User’s Manual.</td>
</tr>
<tr>
<td>BATCH OVERVIEW</td>
<td>Shows the status of all batch groups. See the figure on the following page.</td>
<td>Section 3.3 in this manual.</td>
</tr>
<tr>
<td>CUSTOM DISPLAY</td>
<td>Customized display screen.</td>
<td>IM04L41B01-04E.</td>
</tr>
<tr>
<td>OVERVIEW</td>
<td>Shows the status of all channels.</td>
<td>Sections 1.3 and 4.4 in the User’s Manual.</td>
</tr>
<tr>
<td>INFORMATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODBUS CLIENT</td>
<td>Shows the status of the MODBUS client.</td>
<td>Section 1.10 in the Communication Manual.</td>
</tr>
<tr>
<td>MODBUS MASTER</td>
<td>Shows the status of the MODBUS master.</td>
<td>Section 2.6 in the Communication Manual.</td>
</tr>
<tr>
<td>RELAY</td>
<td>Shows the status of the alarm output relays and internal switches.</td>
<td>Section 4.5 in the User’s Manual.</td>
</tr>
<tr>
<td>EVENT SWITCH</td>
<td>Shows the status of the event level switches.</td>
<td>Sections 1.3 and 4.5 in the User’s Manual.</td>
</tr>
<tr>
<td>LOG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOGIN</td>
<td>Displays the history of the respective operation.</td>
<td>Section 4.9 in the User’s Manual.</td>
</tr>
<tr>
<td>ERROR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNTP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DHCP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODBUS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Status Display Section**

With the following exception, items shown in the status display section are the same as with a DX without the Multi Batch function.

Displays the batch mode.

**ALL BATCH** refers to batch overview mode.

For details on the status display section, see section 1.3 in the User’s Manual.
1.2 Display

Batch Overview

Batch identification bar
Displays the batch identification number and file header. Blue: Selected (by using the arrow keys).

Recording status
Green: Recording
White or Black: Not recording
* Based on the background display settings.
For more details, see section 5.12 in the DX1000/DX1000N User’s Manual and section 5.13 in the DX2000 User’s Manual.

Alarm icon
Alarm status for the channels registered to the batch group.
Red: At least one alarm is activated.
Green: No alarms are activated.
Blinks the same way as the alarm icon on the status display section blinks.

Display Layout

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of Batch Groups</th>
<th>Display Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Vertical × Horizontal</td>
</tr>
<tr>
<td>DX1000</td>
<td>2</td>
<td>1 × 2</td>
</tr>
<tr>
<td></td>
<td>3 to 4</td>
<td>2 × 2</td>
</tr>
<tr>
<td></td>
<td>5 to 6</td>
<td>2 × 3</td>
</tr>
<tr>
<td>DX2000</td>
<td>2 to 4</td>
<td>2 × 2</td>
</tr>
<tr>
<td></td>
<td>5 to 6</td>
<td>2 × 3</td>
</tr>
<tr>
<td></td>
<td>7 to 8</td>
<td>2 × 4</td>
</tr>
<tr>
<td></td>
<td>9 to 12</td>
<td>3 × 4</td>
</tr>
</tbody>
</table>

Batch groups are assigned to windows starting with the left column. Batch groups are assigned in ascending order by their group number. The following example shows the case for six batch groups.
1.2 Display

Batch Single Mode

This section outlines the information displayed in batch single mode.

<table>
<thead>
<tr>
<th>Name</th>
<th>Display Details</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status display section</td>
<td>See the following figure.</td>
<td>Section 1.3 in the User’s Manual.</td>
</tr>
<tr>
<td>TREND</td>
<td>The target batch group’s trend display.</td>
<td>Sections 1.3 and 4.2 in the User’s Manual.</td>
</tr>
<tr>
<td>TREND HISTORY</td>
<td>The target batch group’s historical trend display.</td>
<td>Sections 1.3 and 4.3 in the User’s Manual.</td>
</tr>
<tr>
<td>DIGITAL</td>
<td>The target batch group’s digital display.</td>
<td>Sections 1.3 and 4.2 in the User’s Manual.</td>
</tr>
<tr>
<td>BAR</td>
<td>The target batch group’s bar graph display.</td>
<td>Sections 1.3 and 4.2 in the User’s Manual.</td>
</tr>
<tr>
<td>CUSTOM DISPLAY</td>
<td>Customized display screen.</td>
<td>IM04L41B01-04E.</td>
</tr>
<tr>
<td>OVERVIEW</td>
<td>Shows the status of all channels for the target batch group.</td>
<td>Sections 1.3 and 4.4 in the User’s Manual.</td>
</tr>
<tr>
<td>4-PANEL</td>
<td>4-Panel display for the target batch group.</td>
<td>Sections 1.3 and 4.10 in the DX2000 User’s Manual.</td>
</tr>
<tr>
<td>INFORMATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALARM SUMMARY</td>
<td>Information regarding the alarm that occurred in the target batch group.</td>
<td>Sections 1.3 and 4.6 in the User’s Manual.</td>
</tr>
<tr>
<td>MESSAGE SUMMARY</td>
<td>Information regarding the messages written for the target batch group.</td>
<td>Sections 1.3 and 4.7 in the User’s Manual.</td>
</tr>
<tr>
<td>MEMORY SUMMARY</td>
<td>Information regarding data files saved to internal memory for the target batch group.</td>
<td>Sections 1.3 and 4.8 in the User’s Manual.</td>
</tr>
</tbody>
</table>

Status Display Section

With the following exception, items shown in the status display section are the same as with a DX without the Multi Batch function.

For details on the status display section, see section 1.3 in the User’s Manual.

DX1000

- Batch identification number [1] represents batch group 1.
- The display group name and batch name are displayed alternately.

DX2000

- Batch identification number and file header
- The display group name and batch name are displayed alternately.
Chapter 2  Settings

2.1  Settings for the Multi Batch Function

Specialized Settings for the Multi Batch Function

Enabling the Multi Batch Function
First, enable the Multi Batch function. The measured data in internal memory is cleared when you enable or disable the Multi Batch function. However, updating the number of batches used with the Multi Batch function does not clear the measured data in internal memory.

Settings for Each Batch Group
The settings you can change for each batch group are as follows. You can find these settings on the Multi batch tab in setting mode.
- Display group, Trip line, File header, Data file name, and Batch text

General Settings Other Than the Specialized Settings for the Multi Batch Function

The settings in setting mode excluding those on the Multi batch tab, and the settings in basic setting mode are common to all batch groups.

Scan Mode
You cannot set the scan mode to FAST.

Event Actions
When the Multi Batch function is enabled, a portion of the actions in the event action function requires the designation of a specific batch group. For those types of actions, a box containing all the batch groups for you to select from is displayed.

<table>
<thead>
<tr>
<th>Actions that require the designation of a specific batch group</th>
</tr>
</thead>
<tbody>
<tr>
<td>MemoryStart/Stop, MemoryStart, MemoryStop, Message, SaveDisplay, SaveEvent, MathReset, DisplayGroupChange</td>
</tr>
</tbody>
</table>

Timer and Match Time Timer
For DXs with the Multi Batch function, you can use 12 timers and 12 match time timers.

Fixed Features
You cannot change the following settings.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend rate switching</td>
<td>Fixed to Off.</td>
</tr>
<tr>
<td>Trend clear</td>
<td>Fixed to On.</td>
</tr>
</tbody>
</table>

Precautions:

If even one batch group is recording, the following settings cannot be changed.
- Measurement range and memory sample on/off for measurement channels.
- Expressions, constants, memory sample on/off, and TLOG for computation channels (/M1 and /PM1 options).
- Measurement range and memory sample on/off for external input channels (on DX2000s with the /MC1 option).
- Trend interval.
- Event data.

The following settings cannot be changed while their applicable batch group is recording.
- Batch text
- Display group
- Trip line

For information about changing settings during recording on DXs with the /AS1 advanced security option, see section 6.4 in the User’s Manual.
2.2 Setting the Multi Batch Function

This section explains the specialized settings for the Multi Batch function. For details on other settings, see the User’s Manual.

**Setup Screen**

- **Multi Batch Function**
  Press MENU (to switch to setting mode), hold down FUNC for 3 s (to switch to basic setting mode), and select the Environment tab > Batch.

![Multi Batch Function Settings](image)

- **Group Set, Trip Line**
  Settings for the DX1000
  Press MENU (to switch to setting mode), and select the Multi batch tab > Group set, Trip line > Group set.
  * You can also display the Multi batch tab’s setup screen by selecting the Menu tab > Group set, Trip line > Group set.

![Group Set, Trip Line Settings](image)

Press MENU (to switch to setting mode), and select the Multi batch tab > Group set, Trip line > Trip line.
* You can also display the Multi batch tab’s setup screen by selecting the Menu tab > Group set, Trip line > Trip line.
2.2 Setting the Multi Batch Function

Settings for the DX2000
Press MENU (to switch to setting mode), and select the Multi batch tab > Group set, Trip line.

* You can also display the Multi batch tab’s setup screen by selecting the Menu tab > Group set, Trip line.

• File Header and Data File Names
Press MENU (to switch to setting mode), and select the Multi batch tab > File header, File name. For the DX2000, select the Multi batch tab > File header, Data file name.

* You can also display the Multi batch tab’s setup screen by selecting the Menu tab > Data save > File header, File name.

• Batch Text
Press MENU (to switch to setting mode), and select the Multi batch tab > Batch text.

* You can also display the Multi batch tab’s setup screen by selecting the Menu tab > Data save > Batch text.
### Setup Items

#### Batch > On/Off
Select Multi Batch.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Enables the single batch feature. For details, see section 6.3 in the User’s Manual.</td>
</tr>
<tr>
<td>Off</td>
<td>Disables the batch feature.</td>
</tr>
<tr>
<td>MultiBatch</td>
<td>Enables the Multi Batch function.</td>
</tr>
</tbody>
</table>

#### Batch > Lot-No. digit
Set the lot number digits to 4, 6, or 8. Select Off to disable lot numbers.

#### Batch > Auto increment

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Automatically sets the lot number of the next measurement to the current lot number + 1.</td>
</tr>
<tr>
<td>Off</td>
<td>Turns auto increment off.</td>
</tr>
</tbody>
</table>

#### Batch > Batch operation qty
Specify the number of batches to use. The number of batches specified with this setting corresponds to the number of batch groups you can use.

<table>
<thead>
<tr>
<th>Model</th>
<th>Number of Batches Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX1000</td>
<td>2 to 6</td>
</tr>
<tr>
<td>DX2000</td>
<td>2 to 12</td>
</tr>
</tbody>
</table>

#### First Batch Group and Last Batch Group
Select the target batch groups.

#### Display Group No
Select the target display group number.

<table>
<thead>
<tr>
<th>Model</th>
<th>Display Group Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX1000</td>
<td>1 to 6</td>
</tr>
<tr>
<td>DX2000</td>
<td>1 to 12</td>
</tr>
</tbody>
</table>

#### Set Display Group > On/Off
Select On for the display groups that you want to display.

#### Set Display Group > Group name
Set the group name. (Up to 16 characters, A-Za-z1)

#### Set Display Group > CH set
Set the channel numbers for measurement, computation (/M1 and /PM1 options), and external input (on DX2000s with the /MC1 option) channels.

<table>
<thead>
<tr>
<th>Model</th>
<th>Maximum Number of Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX1000</td>
<td>6</td>
</tr>
<tr>
<td>DX2000</td>
<td>10</td>
</tr>
</tbody>
</table>

- Enter the channel number using two or three digits.
- Separate each channel with a period.
- To specify a range of consecutive channel numbers, use a hyphen. Example: To assign channels 1 and 5 to 8, enter “001.005-008.”
• **Trip line > 1, 2, 3, 4**
  Select On for the trip lines that you want to display.

• **Trip line > Position**
  Set the position in the range of 0 to 100% of the display width.

• **Trip line > Color**
  The default colors are red, green, blue, and yellow. If you want to change a color, you can select from 24 available colors.

• **Trip line > Width**
  Set the line width of the trip line in dots (1 to 3).

• **File header > Characters**
  Enter a header comment to write into data files. The file header is displayed on the batch overview screen’s batch identification bars, the status display section for batch single mode (only for the DX2000), and the title bar for the start and stop recording screens. (Up to 50 characters, a #, 1)

• **Data file name > Structure**
  Sets the structure of the file name when saving data.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Sequence number + user-assigned character string + date</td>
</tr>
<tr>
<td>Serial</td>
<td>Sequence number + user-assigned character string</td>
</tr>
<tr>
<td>Batch</td>
<td>Sequence number + batch name</td>
</tr>
</tbody>
</table>

• **Data file name > Identified strings**
  Set the user-assigned character string. (Up to 16 characters, #, %, ( ), +, –, ., @, °, _)
  For an explanation of data file names, see section 1.1.

• **Text field number**
  Select the text field number from 1 to 24.

• **Text field > Title of field, and Text field > Characters**
  Enter a character string.
  Title of field: you can enter up to 20 characters for the field title.
  Characters: you can enter up to 30 characters for the field information.
2.3 Using the Event Action Function

The event action function performs a specified action when a specified event occurs. For example, you can use the event action function to write a message when an alarm occurs. When you use the multi batch function, you have to specify the batch group to perform the action on. In the above example, you could configure the DX to write a message to batch group 2 when an alarm occurs. When you configure an action that requires you to specify a batch group, a box for selecting the batch group is displayed.

Setup Example: Starting and Stopping the Recording of Batch Group 2

In the example below, the remote control function (/R1 and /PM1 options) is used to start and stop the recording of batch group 2 according to the input received by remote control input 1. Logic box number 1 is used.

- **Setup Screen and Setup Items**
  Press MENU (to switch to setting mode), and select the **Menu tab > Timer, Event action > Event action**

  ![Setup Screen](image)

  - **Logic box number**
  - **Event**
  - **Remote number**
  - **Action**
  - **Target Action**
  - **Batch Group No.**

  * Setting **Target Action** to All specifies all the batch groups.

  

  **<Operation>**
  Starts and stops the recording of batch group 2 according to the input signal received by remote control input terminal 1.
3.1 Starting/Stopping Recording, and Saving Data

**Procedure**

- **Starting Recording from Batch Overview Mode**
  Follow the procedure below when the batch overview mode screen is displayed.

  1. Press START.
     The batch group selection window appears.
     * On DXs with the /AS1 advanced security option, recording will not start, even if you press START in setting mode.
  2. Press the numeric **soft keys** that represent the batch groups you want to start recording.

```
<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3, ...</td>
<td>The batch group number.</td>
</tr>
<tr>
<td>All</td>
<td>All batch groups currently not recording.</td>
</tr>
</tbody>
</table>
```

Green: Recording
White or Black: Not recording

The start recording screen appears.

- **When You Select a Single Batch Group**
  3. Confirm or change the batch number (Batch name-No.) and lot number, and enter comments for the batch.

```
To edit the contents of a text field, proceed to step 4.
```
4. Select Input, and press DISP/ENTER. The text field screen of the specified batch group appears (release numbers 4 and later).

Select a text field number, enter text, and press DISP/ENTER. The start recording screen will appear.

The text fields that you specify here will only be saved to the measured data file whose recording you are starting. The text fields that you set in setting mode (see page 6-6) will not change.

5. Move the cursor (blue) to START, and press DISP/ENTER.

Recording starts for the selected batch group. The internal memory icon in the status display section changes from the icon that indicates that memory sampling is stopped to the icon that indicates that memory sampling has started.

For details on starting reports and computations, see section 1.1.

When You Select All

3. Select Yes, and press DISP/ENTER.

The DX starts recording.

For details on starting reports and computations, see section 1.1.
3.1 Starting/Stopping Recording, and Saving Data

- **Starting Recording from Batch Single Mode**
  Follow the procedure below when the batch single mode screen is displayed.

  1. Press **START**.
     The start recording screen appears.
     * On DXs with the /AS1 advanced security option, recording will not start, even if you press **START** in setting mode.

  2. Confirm or change the batch number (Batch name-No.) and lot number, and enter comments for the batch.

     ![Start Recording Screen](image)

     To edit the contents of a text field, proceed to step 3.

  3. Select **Input** and press **DISP/ENTER**. The text field screen of the specified batch group appears (release numbers 4 and later).

     ![Text Field Screen](image)

     Select a text field number, enter text, and press **DISP/ENTER**. The start recording screen will appear.

     The text fields that you specify here will only be saved to the measured data file whose recording you are starting. The text fields that you set in setting mode (see page 6-6) will not change.

  4. Move the cursor (blue) to **START**, and press **DISP/ENTER**.
     Recording starts for the selected batch group. The internal memory icon in the status display section changes from the icon that indicates that memory sampling is stopped to the icon that indicates that memory sampling has started.

     For details on starting reports and computations, see section 1.1.
3.1 Starting/Stopping Recording, and Saving Data

- Stopping Recording from Batch Overview Mode

1. Press **STOP**.
   The batch group selection window appears.

2. Press the numeric **soft keys** that represent the batch groups you want to stop recording.

   ![Image showing the batch group selection window with options to stop recording]

   - Green: Recording
   - White or Black: Not recording

   **Setting** | **Description**
   --- | ---
   1, 2, 3 ... | The batch group number.
   All | All batch groups currently recording.

   The stop recording screen appears.

   **When You Select a Single Batch Group**

3. Use the **arrow keys** to move the cursor to **Yes**, and press **DISP/ENTER**.
   Recording stops for the selected batch group. When all batch groups stop recording, the report function (/M1 and /PM1 options) also stops.

   ![Image showing the stop recording screen for a single batch group]

   **When You Select All**

3. Use the **arrow keys** to move the cursor to **Yes**, and press **DISP/ENTER**.
   Recording stops for all batch groups. The report function (/M1 and /PM1 options) also stops.

   ![Image showing the stop recording screen for all batch groups]
3.1 Starting/Stopping Recording, and Saving Data

- **Stopping Recording from Batch Single Mode**
  1. Press **STOP**.
     The stop recording screen appears.
  2. Use the **arrow keys** to move the cursor to **Yes**, and press **DISP/ENTER**.
     Recording stops for the batch group. When all batches stop recording, the report function (/M1 and /PM1 options) also stops.

- **Automatically Saving Data**
  For information on automatically saving data with the Multi Batch function, see section 1.1.
  For details on the operating procedure, see section 6.4 in the User’s Manual.

- **Manually Saving Data**
  For information on manually saving data with the Multi Batch function, see section 1.1.
  For details on the operating procedure, see section 6.4 in the User’s Manual.

- **Saving Selected Data or All Data Stored in Internal Memory by Using Keys**
  For information on saving selected data or all data stored in internal memory by using keys with the Multi Batch function, see section 1.1.
  For details on the operating procedure, see section 4.8 in the User’s Manual.
### 3.2 Starting, Stopping, and Resetting Computations (/M1 and /PM1 Options)

- All computations start and stop together at the same time. You cannot start or stop computations for each batch group separately.
- You can reset the values calculated on computation channels separately for each batch group.
- When you reset a calculated value, the flags in use are also reset to zero.

#### Procedure

- **Starting Recording and Computation Simultaneously**
  You can start recording and computation simultaneously by using the START key (Math start action) when Math start is set to Start or Reset+Start. For the operating procedure, see section 9.4 in the User’s Manual.

  When recording is started (see section 3.1), computation also starts at the same time.

- **Starting Only the Computation**
  Follow the procedure below when the batch overview mode screen is displayed.

  1. In operation mode, press **FUNC**.
     The FUNC key menu appears.
  2. Press the **Math start** soft key.
     Computation starts, and the computation icon is displayed in the status display section.

- **Stopping the Computation**
  Follow the procedure below when the batch overview mode screen is displayed.

  1. In operation mode, press **FUNC**.
     The FUNC key menu appears.
  2. Press the **Math stop** soft key.
     Computation stops, and the computation icon in the status display section disappears.

#### Note

- Stopping recording does not simultaneously stop computations.
- When you stop computations, the calculated value for computation channels is retained as the value held immediately prior to computation stopping. When recording, this retained value is recorded.

- **Resetting Calculated Values**
  Starting Recording and Resetting and Starting a Computation All at the Same Time
  For information on starting recording and resetting and starting a computation all at the same time, see section 1.1.

- **Resetting the Values Calculated on All Computation Channels**
  Follow the procedure below when the batch overview mode screen is displayed.

  1. Press **FUNC**.
     The FUNC key menu appears.
  2. Press the **Math reset** soft key.
     The values calculated on all computation channels are reset, and all flags are cleared to zero.
3.2 Starting, Stopping, and Resetting Computations (/M1 and /PM1 Options)

Resetting the Values Calculated on the Selected Batch Group’s Computation Channels
Follow the procedure below when the batch single mode screen is displayed.

1. Press **FUNC**.
   The FUNC key menu appears.

2. Press the **Math reset** soft key.
   The values calculated on all computation channels for the displayed batch group are reset.
   Only the flags being used on the computation channels are cleared to zero.
   * The computation channels registered to the batch group’s display group.
3.3 Switching Between Batch Overview Mode and Batch Single Mode

Procedure

- Switching From Batch Overview Mode to Batch Single Mode
  When Batch Overview Is Displayed
  1. Use the arrow keys to select a batch group.
     The selected batch group’s batch identification bar is displayed in blue.
     ![Batch Overview Example]
  2. Press DISP/ENTER to open the display selection menu.
  3. Use the arrow keys to select BATCH VIEW.
  4. Press the right arrow key to open the submenu.
  5. Use the up and down arrow keys to select a display type, and press DISP/ENTER.
     The display changes to show only the selected batch group in the display type selected from the submenu.
     ![Batch View Example]

When Any Screen Other Than Batch Overview in Batch Overview Mode Is Displayed
You cannot perform step 1 of this procedure. Instead, the batch group already selected on the batch overview is used for steps 2 to 5.

- Switching From Batch Single Mode to Batch Overview Mode
  Follow the procedure below when the batch single mode screen is displayed.
  1. Press DISP/ENTER to open the display selection menu.
  2. Use the arrow keys to select BATCH OVERVIEW, and press DISP/ENTER.
     The batch overview is displayed.
     ![Batch Overview Example]
3.4 Using Batch Overview Mode

Follow the procedure below when the batch overview mode screen is displayed.

**Procedure**

- **Opening the Display**
  1. Press **DISP/ENTER** to open the display selection menu.
  2. Use the **arrow keys** to select a menu item. When there is a submenu, select a submenu item, and press **DISP/ENTER**.

BATCH OVERVIEW

For operating instructions, see section 3.3.

CUSTOM DISPLAY

For operating instructions, see IM04L41B01-04E.

OVERVIEW

Displays the status of all channels.

For operating instructions, see section 4.4 in the User’s Manual.

ANNUNCIATOR

For operating instructions, see section 3.12 in the User’s Manual.

INFORMATION

The following items can be selected from the submenu.

MODBUS CLIENT, MODBUS MASTER, RELAY, REPORT DATA, COLUMN BAR, and EVENT SWITCH.


You can also select the following methods to save data from the information submenu.

M.SAMPLE SAVE, REPORT SAVE, and ALL SAVE.

For operating instructions, see section 4.8 in the User’s Manual.

LOG

The following logs can be selected from the submenu and displayed.

Login log, *1 error log, communication log, FTP log, e-mail log, web log, SNTP log, DHCP log, modbus status log, operation log, *2 and change settings log. *2

*1 Only on DXs without the /AS1 advanced security option
*2 Only on DXs with the /AS1 advanced security option

For display information, see section 4.9 in the User’s Manual.
3.4 Using Batch Overview Mode

- **Loading Display and Event Data**
  Even when in batch overview mode, you can use the following procedure to load display or event data and display the corresponding historical trend.
  
  **MENU** (to switch to setting mode), and select the **File** tab > **Load display data** or **Load event data** > press the **CF** or **USB** soft key > select the file and press **DISP/ENTER**

  Take note of the following points regarding loading of data.
  - You can load any batch group’s data.
  - The historical trend is displayed on batch group 1’s historical trend screen. When the display is split into two windows, batch group 1’s trend is displayed as the current trend.
  - If you select Exit from the display selection menu and finish displaying the historical trend, the DX returns to batch overview mode.

- **Using the FUNC Key**
  You can use the FUNC key for the following operations. For operating procedures, see the reference for each respective operation. Entries marked with a * function the same as in batch single mode.

<table>
<thead>
<tr>
<th>Operation Name</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm ACK</td>
<td>Executes alarm acknowledgement for all activated alarms.</td>
<td>Section 3.8 in the User’s Manual.</td>
</tr>
<tr>
<td>Alarm display reset</td>
<td>Resets the alarm display.</td>
<td>Section 3.12 in the User’s Manual.</td>
</tr>
<tr>
<td>Media eject</td>
<td>Puts the external memory into a state in which it can be safely removed from the DX.</td>
<td>The Operation Guide</td>
</tr>
<tr>
<td>Snapshot</td>
<td>Saves the screen image data from the active display to a CF card (in PNG format).</td>
<td>Section 6.6 in the User’s Manual.</td>
</tr>
<tr>
<td>Manual sample</td>
<td>Saves the instantaneous values of all channels.</td>
<td>Section 6.5 in the User’s Manual.</td>
</tr>
<tr>
<td>Save stop</td>
<td>Aborts the manual data saving operation in progress.</td>
<td>Section 4.8 in the User’s Manual.</td>
</tr>
<tr>
<td>Math start/stop</td>
<td>Starts or stops computations on all computation channels.</td>
<td>Section 3.2 in this manual.</td>
</tr>
<tr>
<td>Computation reset</td>
<td>Resets computed results for all computation channels.</td>
<td>Section 3.2 in this manual.</td>
</tr>
<tr>
<td>Math ACK</td>
<td>Clears the computation data dropout display.</td>
<td>Section 9.4 in the User’s Manual.</td>
</tr>
<tr>
<td>Edge switch</td>
<td>Sets the event edge switch to on.</td>
<td>Section 7.1 in the User’s Manual.</td>
</tr>
<tr>
<td>Timer reset</td>
<td>Resets the relative timer.</td>
<td>Section 7.1 in the User’s Manual.</td>
</tr>
<tr>
<td>Match timer reset</td>
<td>Resets the single match time timer.</td>
<td>Section 7.1 in the User’s Manual.</td>
</tr>
<tr>
<td>Key lock</td>
<td>Locks or unlocks keys.</td>
<td>Section 8.1 in the User’s Manual.</td>
</tr>
<tr>
<td>Logout</td>
<td>Logs off from the DX.</td>
<td>Section 8.3 in the User’s Manual.</td>
</tr>
<tr>
<td>Locked ACK</td>
<td>Executes the Locked ACK operation.</td>
<td>IM04L41B01-05EN.</td>
</tr>
<tr>
<td>Password change</td>
<td>Changes the password used to log on to the DX.</td>
<td>Section 8.3 in the User’s Manual.</td>
</tr>
<tr>
<td>Text field</td>
<td>Displays the text field for the batch group that you select.</td>
<td>Section 3.8 in this manual.</td>
</tr>
<tr>
<td>Builder screen</td>
<td>Displays the custom display’s builder screen.</td>
<td>IM04L41B01-04E.</td>
</tr>
<tr>
<td>Favorite registration</td>
<td>Registers the current display as a favorite.</td>
<td>Section 3.7 in this manual.</td>
</tr>
<tr>
<td>Standard display</td>
<td>Registers the current display as the standard DX display.</td>
<td>Section 5.14 (DX1000) Section 5.15 (DX2000) in the User’s Manual.</td>
</tr>
<tr>
<td>System info</td>
<td>Displays the system information screen.</td>
<td>Section 2.5 in the User’s Manual.</td>
</tr>
<tr>
<td>Network info</td>
<td>Displays the network information screen.</td>
<td>Section 2.5 in the User’s Manual.</td>
</tr>
<tr>
<td>SNTP</td>
<td>Synchronizes the DX’s time with an SNTP server.</td>
<td>Section 1.8 in the Communication Manual.</td>
</tr>
<tr>
<td>E-Mail start/stop</td>
<td>Starts or stops e-mail transmission.</td>
<td>Section 1.4 in the Communication Manual.</td>
</tr>
<tr>
<td>E-Mail test</td>
<td>Confirms sending of e-mail and the details of the transmission.</td>
<td>Section 1.4 in the Communication Manual.</td>
</tr>
<tr>
<td>FTP test</td>
<td>Checks the connection between the DX and the FTP server.</td>
<td>Section 1.7 in the Communication Manual.</td>
</tr>
</tbody>
</table>
3.5 Using Batch Single Mode

Follow the procedure below when the batch single mode screen is displayed. In batch single mode, only the selected batch group’s data is displayed.

**Procedure**

- **Opening the Display**
  1. Press DISP/ENTER to open the display selection menu.
  2. Use the arrow keys to select a menu item. When there is a submenu, select a submenu item, and press DISP/ENTER.

**TREND, DIGITAL, and BAR**
For operating instructions, see section 4.2 in the User’s Manual.

**CUSTOM DISPLAY**
For operating instructions, see IM04L41B01-04E.

**OVERVIEW**
Displays the status of all channels registered to the batch group.
For operating instructions, see section 4.4 in the User’s Manual.

**ALARM SUMMARY, MESSAGE SUMMARY, and MEMORY SUMMARY**
For operating instructions, see sections 4.6, 4.7, and 4.8 in the User’s Manual.

**4-PANEL**
For operating instructions, see section 4.10 in the DX2000’s User Manual.

- **Loading Display and Event Data**
  You can use the following procedure to load display or event data and display the corresponding historical trend.
  1. Press MENU (to switch to setting mode), and select the File tab > Load display data or Load event data > press the CF or USB soft key > select the file and press DISP/ENTER

Take note of the following points regarding loading of data.
- You can load any batch group’s data.
- Whether you load the data for the currently displayed batch group or another batch group, the currently displayed batch group does not change.
### 3.5 Using Batch Single Mode

- **Using the FUNC Key**
  
  You can use the FUNC key for the following operations. For operating procedures, see the reference for each respective operation. Entries marked with a † function the same as in batch overview mode.

<table>
<thead>
<tr>
<th>Operation Name</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>† Alarm ACK</td>
<td>Executes alarm acknowledgement for all activated alarms.</td>
<td>Section 3.8 in the User’s Manual.</td>
</tr>
<tr>
<td>† Alarm display reset</td>
<td>Resets the alarm display.</td>
<td>Section 3.12 in the User’s Manual.</td>
</tr>
<tr>
<td>Message</td>
<td>Writes messages for the selected batch group.</td>
<td>Section 3.6 in this manual.</td>
</tr>
<tr>
<td>Free message</td>
<td>Writes messages for the selected batch group.</td>
<td>Section 3.6 in this manual.</td>
</tr>
<tr>
<td>† Media eject</td>
<td>Puts the external memory into a state in which it can be safely removed from the DX.</td>
<td>The Operation Guide.</td>
</tr>
<tr>
<td>† Snapshot</td>
<td>Saves the screen image data from the active display to a CF card (in PNG format).</td>
<td>Section 6.6 in the User’s Manual.</td>
</tr>
<tr>
<td>† Manual sample</td>
<td>Saves the instantaneous values of all channels.</td>
<td>Section 6.5 in the User’s Manual.</td>
</tr>
<tr>
<td>Save display data</td>
<td>Saves display data for the selected batch group.</td>
<td>Section 3.1 in this manual.</td>
</tr>
<tr>
<td>Save event data</td>
<td>Saves event data for the selected batch group.</td>
<td>Section 3.1 in this manual.</td>
</tr>
<tr>
<td>† Save stop</td>
<td>Aborts the manual data saving operation in progress.</td>
<td>Section 4.8 in the User’s Manual.</td>
</tr>
<tr>
<td>Computation reset</td>
<td>Resets the computed results of all computation channels for the selected batch group.</td>
<td>Section 3.2 in this manual.</td>
</tr>
<tr>
<td>† Math ACK</td>
<td>Clears the computation data dropout display.</td>
<td>Section 9.4 in the User’s Manual.</td>
</tr>
<tr>
<td>† Edge switch</td>
<td>Sets the event edge switch to on.</td>
<td>Section 7.1 in the User’s Manual.</td>
</tr>
<tr>
<td>† Timer reset</td>
<td>Resets the relative timer.</td>
<td>Section 7.1 in the User’s Manual.</td>
</tr>
<tr>
<td>† Match timer reset</td>
<td>Resets the single match time timer.</td>
<td>Section 7.1 in the User’s Manual.</td>
</tr>
<tr>
<td>† Locked ACK</td>
<td>Executes the Locked ACK operation.</td>
<td>IM04L41B01-05EN.</td>
</tr>
<tr>
<td>† Key lock</td>
<td>Locks or unlocks keys.</td>
<td>Section 8.1 in the User’s Manual.</td>
</tr>
<tr>
<td>Logout</td>
<td>Logs off from the DX.</td>
<td>Section 8.3 in the User’s Manual.</td>
</tr>
<tr>
<td>† Password change</td>
<td>Changes the password used to log on to the DX.</td>
<td>Section 8.3 in the User’s Manual.</td>
</tr>
<tr>
<td>Batch</td>
<td>Sets the batch name and comment for the selected batch group.</td>
<td>Section 6.3 in the User’s Manual.</td>
</tr>
<tr>
<td>Text field</td>
<td>Displays the text field for the batch group that you select.</td>
<td>Section 3.8 in this manual.</td>
</tr>
<tr>
<td>Builder screen</td>
<td>Switches to builder screen mode.</td>
<td>IM04L41B01-04E.</td>
</tr>
<tr>
<td>† Favorite registration</td>
<td>Registers the current display as a favorite.</td>
<td>Section 3.7 in this manual.</td>
</tr>
<tr>
<td>4-Panel</td>
<td>Registers the 4-panel configuration and changes the 4-panel display names.</td>
<td>Section 4.10 in the DX2000 User’s Manual.</td>
</tr>
<tr>
<td>† Standard display</td>
<td>Registers the current display as the standard DX display.</td>
<td>Section 5.14 (DX1000) Section 5.15 (DX2000) in the User’s Manual</td>
</tr>
<tr>
<td>† SNTP</td>
<td>Synchronizes the DX's time with an SNTP server.</td>
<td>Section 1.8 in the Communication Manual.</td>
</tr>
<tr>
<td>† E-Mail start/stop</td>
<td>Starts or stops e-mail transmission.</td>
<td>Section 1.4 in the Communication Manual.</td>
</tr>
<tr>
<td>† E-Mail test</td>
<td>Confirms sending of e-mail and the details of the transmission.</td>
<td>Section 1.4 in the Communication Manual.</td>
</tr>
<tr>
<td>† FTP test</td>
<td>Checks the connection between the DX and the FTP server.</td>
<td>Section 1.7 in the Communication Manual.</td>
</tr>
</tbody>
</table>

* Only for the DX2000.
3.6 Writing Messages

This procedure shows how to write messages for batch groups.

**Setup Screen**

- **How to Write Messages**
  Press MENU (to switch to setting mode), hold down FUNC for 3 s (to switch to basic setting mode), and select the Environment tab > View, Message.

- **Message Settings**
  For details on the message settings, see section 5.4 in the User’s Manual.

- **Writing a Message When the DX Recovers from a Power Failure**
  For details on writing a message when the DX recovers from a power failure, see section 5.16 in the DX1000 User’s Manual or section 5.17 in the DX2000 User’s Manual.

**Setup Items**

- **Message > Write group**
  This setting applies only for messages that are written using keys.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>Write the message to all the display groups for the batch group currently displayed.</td>
</tr>
<tr>
<td>Separate</td>
<td>Write the message only to the visible display group for the batch group currently displayed.</td>
</tr>
</tbody>
</table>

- **Message > Power-fail message**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>Automatically writes the message when the DX recovers from a power failure. The message is written to all batch groups that are recording. Example message: 15:12 Power Off 2005/10/25 15:12:57</td>
</tr>
<tr>
<td>Off</td>
<td>Disables the feature.</td>
</tr>
</tbody>
</table>

- **Message > Change message**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>On</td>
<td>On DXs with the /AS1 advanced security option, a message is written when the setting mode setup items are changed during memory sampling. On DXs without the /AS1 advanced security option, this setting is invalid.</td>
</tr>
<tr>
<td>Item</td>
<td>Message</td>
</tr>
<tr>
<td>Alarm setting change</td>
<td>AlarmSet</td>
</tr>
<tr>
<td>Alarm delay time change</td>
<td>AlmdlaySet</td>
</tr>
<tr>
<td>Calibration change</td>
<td>Calibration correction Setting</td>
</tr>
<tr>
<td>Off</td>
<td>Disables the feature.</td>
</tr>
</tbody>
</table>
3.6 Writing Messages

Procedure

- **Writing Messages or Free Messages**
  For the operating procedure when the batch single mode is displayed, see section 5.4 in the User’s Manual.
3.7 Using the Favorite Key

For details on the setup screen, settings, and operating procedures, see section 5.15 in the DX1000/DX1000N User’s Manual and section 5.16 in the DX2000 User’s Manual.

**When You Set Action to Favorite**
- You can register displays from both batch overview mode and batch single mode to the favorite key.
- If you register the historical trend’s alarm summary or message summary displays to the favorite key, register them so that they come after the historical trend display. If any other screen is registered before them, the DX shows the historical trend display instead of the alarm summary or message summary displays.
- If, due to changes to the DX’s settings after you register a display to the favorite key, the batch group number or display group number registered no longer exists, the DX shows the display belonging to the smallest available display group number of the smallest available batch group number.

**When You Set Action to History**

<table>
<thead>
<tr>
<th>Mode</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch overview</td>
<td>Does not switch to the historical trend display with the currently</td>
</tr>
<tr>
<td>mode</td>
<td>displayed data. Note that the DX does not display an error message.</td>
</tr>
<tr>
<td>Batch single mode</td>
<td>Switches to the historical trend display for the currently displayed</td>
</tr>
<tr>
<td></td>
<td>batch group.</td>
</tr>
</tbody>
</table>

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3.8 Displaying Text Field Settings

**Procedure**

- **Procedure in Batch Overview Mode**
  1. In operation mode, press **FUNC**.
     The FUNC key menu appears.
  2. Press the **Text field** soft key.
     The batch group number soft keys are displayed.
  3. Press a batch group number soft key.
     The text field settings appear.

- **Procedure in Batch Single Mode**
  1. In operation mode, press **FUNC**.
     The FUNC key menu appears.
  2. Press the **Text field** soft key.
     The text field settings for the currently displayed batch group appear.
3.9 Changing the FUNC Key Menu and the Display Selection Menu

You can change the contents of the FUNC key menu, which is displayed when you press the FUNC key, and the display selection menu, which is displayed when you press the DISP/ENTER key.

**Procedure**

- **Changing the FUNC Key Menu**
  For details on the FUNC key menu when the Multi Batch function is enabled, see sections 3.4 and 3.5, “Using the FUNC Key.”

  For the operating procedure to change the FUNC key menu, see section 5.17 in the DX1000/DX1000N User’s Manual and section 5.18 in the DX2000 User’s Manual. Settings are common to batch overview mode and batch single mode, as well as common to all batch groups.

- **Changing the Display Selection Menu**
  For details on the display selection menu, see section 5.17 in the DX1000/DX1000N User’s Manual and section 5.18 in the DX2000 User’s Manual. BATCH OVERVIEW, BATCH VIEW, and ALL BATCH are already displayed in the topmost section of the display selection menu. You can not change their positions.

  For the operating procedure to change the display selection menu, see section 5.17 in the DX1000/DX1000N User’s Manual and section 5.18 in the DX2000 User’s Manual. Settings are common to batch overview mode and batch single mode, as well as common to all batch groups.
3.10 Saving to USB Flash Memory (/USB1 Option)

Procedure

- Connecting USB Flash Memory
  1. Connect a USB flash memory device to the DX USB port.
     After the message, “USB device has been connected.” appears, you can use the USB flash memory device.
  2. In operation mode, the DX displays selectable memory operations. Use the arrow keys to select an operation, and then press DISP/ENTER.

<table>
<thead>
<tr>
<th>Batch Overview Mode</th>
<th>When set to auto save</th>
<th>When set to manual save</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td></td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Batch Single Mode</th>
<th>When set to auto save</th>
<th>When set to manual save</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td></td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All save</td>
<td>Saves all the saved data in internal memory to the USB flash memory device.</td>
</tr>
<tr>
<td>Save manual</td>
<td>Saves unsaved data in internal memory to the USB flash memory device.</td>
</tr>
<tr>
<td>Data save mode</td>
<td>Switches to the DATA SAVE MODE display. For instructions on how to save data in internal memory to an external storage medium, see section 4.8 in the User’s Manual. This option is only displayed when it is available. * When the DX is configured to display DATA SAVE MODE on the display selection menu. You can change the options shown on the display selection menu by using the menu customize function.</td>
</tr>
<tr>
<td>Load settings</td>
<td>Switches to the setup load display in setting mode. For instructions on how to load setup data, see section 6.9 in the User’s Manual.</td>
</tr>
<tr>
<td>Cancel</td>
<td>Closes the operation selection window.</td>
</tr>
</tbody>
</table>

- Removing the USB Flash Memory Device
  For the operating procedure to remove the USB flash memory device, see section 2.12 in the User’s Manual.
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