

Model DX3004/DX3008/DX3010
 DX3020/DX3030

**Daqstation DX3000
User's Manual**

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Introduction

Thank you for purchasing the Daqstation DX3000 (hereafter referred to as the DX). This manual explains the specifications and functions of the DX3000 that are different from those of the DX2000.

How to Use the Manual

- This manual mainly explains the differences from the Daqstation DX2000 in the functions and operations. For the functions not described in this manual, please read each user's manual of DX2000 or DAQSTANDARD (DXA120).
- Download the electronic manuals from the YOKOGAWA website.
- In the manuals, read "DX2000" as "DX3000". For details, see the relevant DX2000 User's Manuals.
- To ensure correct use, please read this manual and the following manuals thoroughly before beginning operation.
- For specifications, refer to General Specifications.

DAQSTANDARD

Download the DAQSTANDARD (Application software) from the following URL.

URL: <https://www.yokogawa.com/ns/dxadv/download/>

Paper Manuals

Manual Title	Manual No.
Model DX3004/DX3008/DX3010/DX3020/DX3030 Daqstation DX3000 User's manual	IM 04L75B01-01EN (This manual)
Model DX2004/DX2008/DX2010/DX2020/DX2030/DX2040/DX2048 Daqstation DX2000 Operation Guide	IM 04L42B01-02E
Precaution on the use of the DX3000	IM 04L75B01-91EN

Electronic Manuals

You can download these manuals from the following web page:

www.yokogawa.com/ns/dx3000/im/

Manual Title	Manual No.
Model DX3004/DX3008/DX3010/DX3020/DX3030 Daqstation DX3000 User's manual	IM 04L75B01-01EN
Model DX2004/DX2008/DX2010/DX2020/DX2030/DX2040/DX2048 Daqstation DX2000 Operation Guide	IM 04L42B01-01E
Model DX2004/DX2008/DX2010/DX2020/DX2030/DX2040/DX2048 Daqstation DX2000 Operation Guide	IM 04L42B01-02E
Daqstation DX1000/DX1000N/DX2000 Multi Batch Function (/BT2) User's Manual	IM 04L41B01-03E
DX1000/DX1000N/DX2000 Custom Display	IM 04L41B01-04E
DX1000/DX1000N/DX2000 Advanced Security Function (/AS1)	IM 04L41B01-05E
DX1000/DX1000N/DX2000 Communication Interface	IM 04L41B01-17E
DX1000/DX1000N/DX2000 PLC Communication Protocol Communication Interface	IM 04L41B01-18E
DXA120 DAQSTANDARD Viewer	IM 04L41B01-63EN
DXA120 DAQSTANDARD Hardware Configurator	IM 04L41B01-64EN
DXA120 Installing DAQSTANDARD	IM 04L41B01-66EN
Precaution on the use of the DX3000	IM 04L75B01-91EN

DAQSTANDARD Manuals

Manual Title	Manual No.*
DAQSTANDARD Viewer User's Manual	IM 04L41B01-63EN
DAQSTANDARD Hardware Configurator User's Manual	IM 04L41B01-64EN
Installing DAQSTANDARD	IM 04L41B01-66EN

General Specifications

Title	General specifications No.
Paperless Recorder DX3000	GS 04L75B01-01EN

- * The last two characters of the manual number and general specification number indicate the language in which the manual is written.

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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For more details, please refer to the following URL.

<https://www.yokogawa.com/qr-code>

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Revisions

July 2015	1st Edition	May 2019	4th Edition
March 2016	2nd Edition	June 2020	5th Edition
November 2016	3rd Edition		

Safety Precautions

Read the precautions provided in the "Precaution on the use of the DX3000 (IM 04L75B01-91EN)", and use it correctly.

Conventions Used in This Manual

Markings



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 attentions 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.

About the Usage of Open Source Software Heimdal

The password-management function of the DX3000 uses Heimdal source code for AES authentication key generation.

In accordance with the Heimdal license agreement, the copyright notice, redistribution conditions, and license are listed below.

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Expat

The report template function of the DX3000 uses Expat source code for report creation. In accordance with the Heimdal license agreement, the copyright notice, redistribution conditions, and license are listed below.

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Specifications Different from the DX2000

The following specifications differ from those of the DX2000.

For detail, refer to General Specifications.

Options

The following options are not available
For details, refer to "MODEL and SUFFIX Codes".

Optional code	Description
/A1	Alarm output 2 points
/A2	Alarm output 4 points
/D5	VGA output
/H2	Clamped input terminal (detachable)
/H5	Desktop type(only for /P1 model, without power cable, M4 screw type power terminal)
/H5[]	Desktop type
/P1	24 VDC/AC power supply
/KB1	Easy Text Entry (with input terminal)
/KB2	Easy Text Entry (without input terminal)
/PM1	Pulse input (including remote control and mathematical function)
/CP1	PROFIBUS-DP

Safety and EMC Standards

The DX3000 does not comply with standards below .

CE

EMC directive:	EN61326-1 Class A Table 2 (For use in industrial locations) compliant EN61000-3-2 compliant EN61000-3-3 compliant EN55011 Class A, Group 1 compliant
Low voltage directive:	EN61010-1, EN61010-2-030 compliant, Overvoltage Category II ^{*1} , Pollution Degree 2 ^{*2} , Measurement Category II ^{*3}
RoHS directive:	"2011/65/EU+(EU)2015/863" (10-Substances) Compliant EN50581:2012

- WEEE Directive: Compliant
- EMC Regulatory Arrangement in Australia and New Zealand: EN55011 Class A, Group 1 compliant
- KC marking: KN11, KN61000-6-2 compliance

Reference junction compensation accuracy

Types K, J, E, T, N, L, U: $\pm 0.7\text{ }^{\circ}\text{C}$

Types R, S, B*, W, WRe: $\pm 1.2\text{ }^{\circ}\text{C}$

(Above $0\text{ }^{\circ}\text{C}$, input terminal temperature is balanced)

* Reference junction compensation is fixed to the $0\text{ }^{\circ}\text{C}$.

LOG input function

A function used to measure the DC voltage input, convert to logarithmic scale, and display the data.

Simulation function

- A function used to stop the updating of the time, trend, digital values, and bar graph.
- A function used to clear the internal memory and the trend.
- A function used to disable the time display on the operation display.

Number of math channels and report channels

24 (DX3004, DX3008)

Display language

Select from English, German, French (Not support for Japanese, Chinese).

Dimension and Weight

See "External Dimensions and Panel Cut Dimensions".

Vibration

$5 \leq f < 8.4\text{ Hz}$ amplitude 3.5 mm (peak)

$8.4 \leq f \leq 160\text{ Hz}$ acceleration 9.8 m/s²

- **The accompanying software application
DAQSTANDARD for DXAdvanced**

DAQSTANDARD for DXAdvanced (DXA120-S2) is the special version for the DX3000 with Log input function and simulation function.

Checking the Package Contents

After receiving the product and opening the package, check the items described below. If the wrong items have been delivered, if items are missing, or if there is a problem with the appearance of the items, contact your nearest Yokogawa dealer.

Check that the product that you received is what you ordered by referring to the model name and suffix code given on the name plate on the DX3000.

NO. (Instrument Number)

When contacting the dealer from which you purchased the instrument, please give them the instrument number.

MODEL and SUFFIX Codes

Model Code	Suffix code	Optional Code	Description
DX3004			4ch, 125ms (Fast sampling mode: 25ms)
DX3008			8ch, 125ms (Fast sampling mode: 25ms)
DX3010			10ch, 1s (Fast sampling mode: 125ms)
DX3020			20ch, 1s (Fast sampling mode: 125ms)
DX3030			30ch, 1s (Fast sampling mode: 125ms)
Internal memory	-3		400MB
External media	-4		CF card (with media)
Display language		-2	English/German/French, degF, DST (summer/winter time)
Optionals		/A3	Alarm output 6 points ^{*1}
		/A4	Alarm output 12 points ^{*1 *7}
		/A5	Alarm output 24 points ^{*1 *2 *6}
		/C2	RS-232 interface ^{*3}
		/C3	RS-422/485 ^{*3}
		/F1	FAIL/Status output ^{*2 *4 *7}
		/F2	FAIL + Alarm output 22 points ^{*1 *4 *6}
		/M1	Mathematical functions
		/N1	Cu10,Cu25 RTD input/3 leg isolated RTD
		/N2	3 leg isolated RTD ^{*5}
		/N3	Extended input type (PR40-20, Pt50, etc.)
		/R1	Remote control
		/TPS4	24VDC transmitter power supply (4 loops) ^{*6}
		/TPS8	24VDC transmitter power supply (8 loops) ^{*6 *7}
		/USB1	USB interface
		/CC1	Calibration correction function
		/MC1	External input function ^{*8}
		/BT2	Multi-batch function ^{*9}
		/AS1	Advanced security function

*1 /A3, /A4, /A5, /F2 cannot be specified together.

*2 /A5 and /F1 cannot be specified together.

*3 /C2 and /C3 cannot be specified together.

*4 /F1 and /F2 cannot be specified together.

*5 /N2 can be specified for only DX3010, DX3020 and DX3030.

*6 /TPS4, /TPS8, /A5 and /F2 cannot be specified together.

*7 In case that /TPS8 is specified, combination of /A4/F1 cannot be specified together.

*8 /MC1 can be specified for only DX3010, DX3020 and DX3030.

*9 /BT2 can be specified for only DX3010, DX3020 and DX3030.

Standard Accessories

The instrument is shipped with the following accessories. Make sure that all accessories are present and undamaged.

No.	Name	Part Number/Model	Qty.	Notes
1	Mounting brackets	B9900BX	2	For panel mounting
2	Licence sheet	—	1	For DAQSTANDARD
3	Daqstation DX3000 User's manual	IM 4L75B01-01EN	1	A4 size
4	CF card	B8706NQ	1	128 MB (The size and model may change.)

Optional Accessories (Sold separately)

The following optional accessories are available for purchase separately. If you make an order, make sure that all contents are present and undamaged. For information about ordering accessories, contact the dealer from which you purchased the DX.

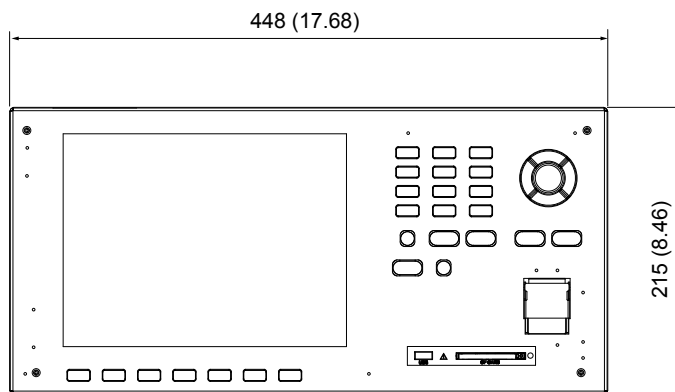
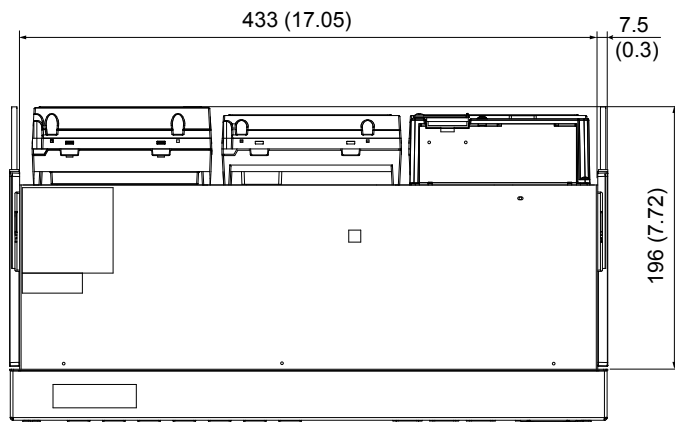
Name	Part Number/Model	Minimum Qty	Notes
CF card	772093	1	512 MB
	772094	1	1 GB
	772095	1	2 GB
Shunt resistor (for screw input terminal)	415920	1	250 Ω ± 0.1%
	415921	1	100 Ω ± 0.1%
	415922	1	10 Ω ± 0.1%
Mounting brackets	B9900BX	2	—

Recommended Replacement Periods for Worn Parts Maintenance

Item	Replacement period	Name	Part No.	Quantity Used	Notes
LCD	5 years	LCD	A1156VA	1	For DX3000, Style number H: 1 or over

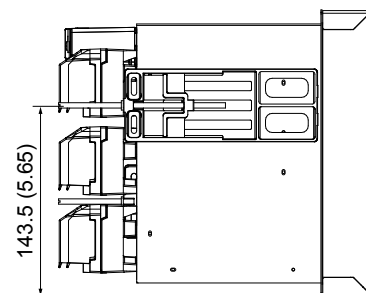
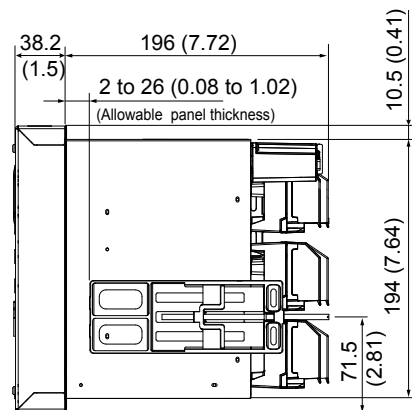
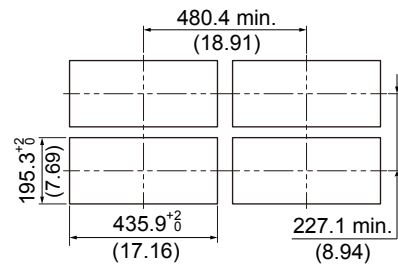
External Dimensions and Panel Cut Dimensions

Dimensions



Panel cut dimensions

Unit: mm
(approx. inch)



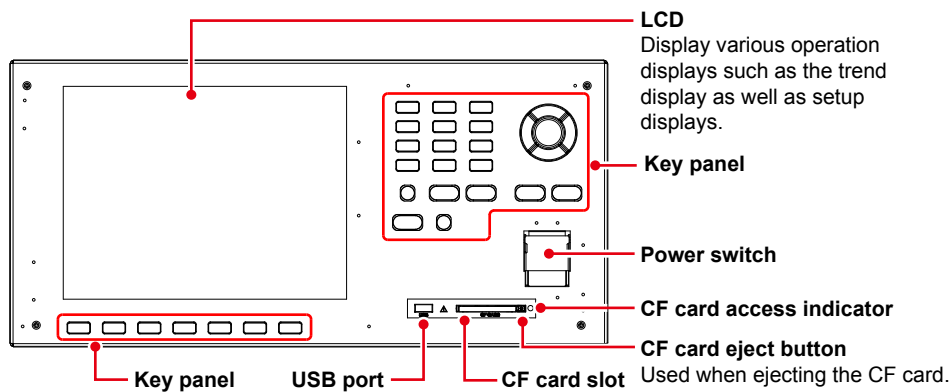
Unless otherwise specified, tolerance is $\pm 3\%$ (however, tolerance is ± 0.3 mm when below 10 mm).

Weight

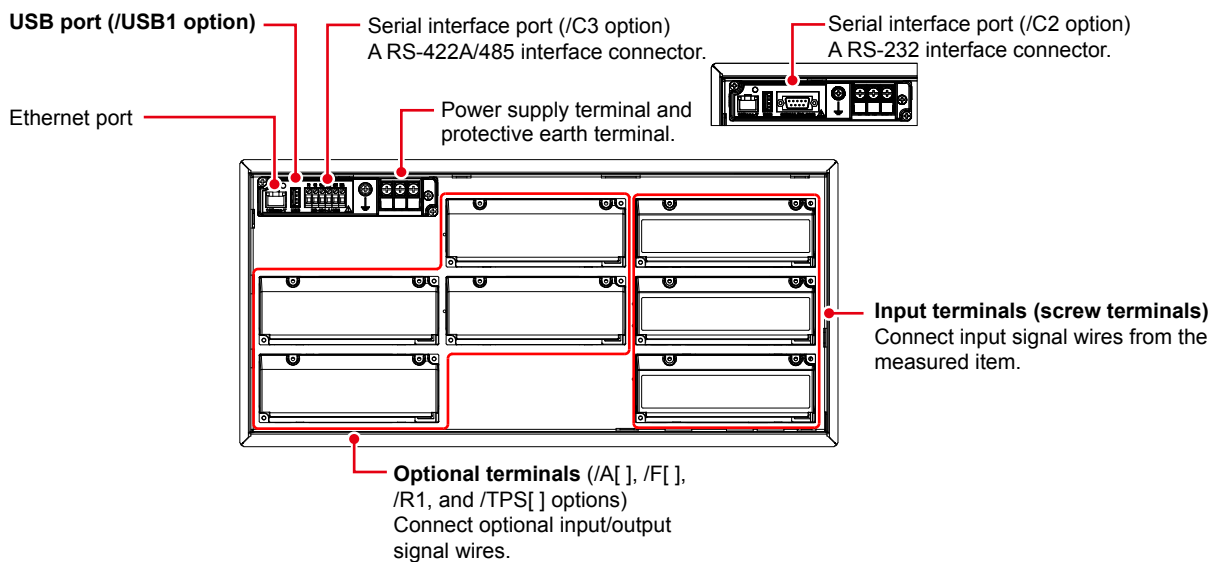
DX3004, DX3010 : approx. 6.96Kg*
 DX3008, DX3020 : approx. 7.24Kg*
 DX3030 : approx. 7.52Kg*
 *without optional features

Names of Parts

Front View



Rear Panel



LOG Input Function

Foreword

This section explains the **LOG input function**. For a description of other standard functions, see the DX2000 User's Manual (IM04L42B01-01E) and the Communication Interface User's Manual (IM04L41B01-17E).

- * The accompanying software application DAQSTANDARD for DXAdvanced is the special version for the DX3000 with these special functions. The setting function for these special functions and the saving setting data by ASCII or Excel format are available on this special software.

LOG Input Specifications

■ Converting the LOG Input (Relationship between the Input Voltage and Digital Display)

Trend display : Displays the input voltage on a logarithmic (logarithmic scale) scale.
Digital display : Displays the result obtained by converting the input voltage using the equation below.

The relationship between the input voltage of special LOG range and digital display value is shown below.

Input voltage : X
Lower limit of display span : VL Upper limit of display span : VU
Scale lower limit : SL Scale upper limit : SU

$$\text{Digital display value } Y = 10^{(SU-SL) \cdot (X-VL) / (VU-VL) + SL}$$

■ LOG Input Mode

- This mode allows you to measure the DC voltage input (DCV: 20 mV, 60 mV, 200 mV, 2 V, 6 V, 20 V, and 50 V), convert to logarithmic scale, and display the data.
- Selectable span range: Same range as the DC voltage input
Span Lower must be less than Span Upper.
- Selectable scale range: 1.0E-15 to 1.0E+15 (15 decades maximum)
Scale Lower must be less than Scale Upper.
- Select two or three digits for the mantissa.
- You can set the unit.

Setting the LOG Input

1. Press **MENU** (switch to the setting mode).
2. Select **Meas channel > Range, Alarm**.
3. Select the channels in **First-CH** and **Last-CH**.
4. Set **Mode** to Log.
5. Set the measurement range, the span, and the exponents of the scale lower and upper limits.



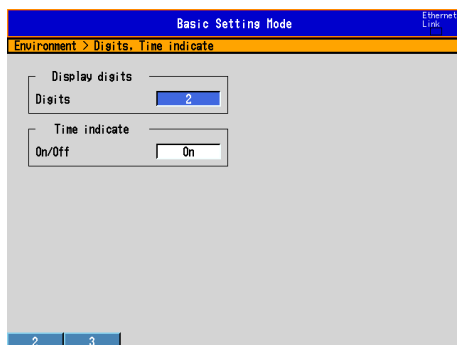
LOG Input Setup Screen Example

Setup Item	Selectable Items (Selectable Range)	Description
Range	Same as the DCV range	Sets the range.
Span Lower	Varies depending on the input type	Sets the span lower limit.
Span Upper	Varies depending on the input type	Sets the span upper limit. * Span Lower must be less than Span Upper.
Scale Lower	1.0E-15 to 1.0E+15	Sets the scale lower limit. 1.00E-15 to 1.00E+15 when the number of displayed mantissa digits is 3.
Scale Upper	1.0E-15 to 1.0E+15	Sets the scale upper limit. * 15 decades maximum. * Scale Lower must be less than Scale Upper. 1.00E-15 to 1.00E+15 when the number of displayed mantissa digits is 3.
Unit	Up to 6 characters	Up to 6 characters

Table 1 Log Input Mode Settings

Setting the Number of Displayed Mantissa Digits

1. Press **MENU** (switch to the setting mode).
2. Hold down **FUNC** for 3 s to switch to the basic setting mode.
3. Select **Environment > Digits, Time indicate**.
4. Set **Digits** to 2 or 3.



Setup Screen Example for the Number of Displayed Mantissa Digits

■ Alarm

- Alarm types in LOG input mode
H, L, T, and t only.
- Set the alarm value using a voltage.
- Computing method of alarm values
Computing equation of the digital display value
From $Y = 10^{(SU-SL) \cdot (X-VL) / (VU-VL) + SL}$
 $\log Y = (SU-SL) \cdot (X-VL) / (VU-VL) + SL$
 $X = (\log Y - SL) \cdot (VU-VL) / (SU-SL) + VL$
For a computation example, see Table 2.
- Alarm hysteresis fixed to 0%.
The alarm hysteresis settings specified in the basic setting mode for the measurement channel are invalid.

Span Lower	Span Upper	Lower Limit of Exponent	Upper Limit of Exponent	Alarm Value	
				Equivalent Display	Voltage Equivalent
1	5	2	8	5.0E+6	4.133
1	5	2	8	1.0E+6	3.667

Table 2 Computation Example of Alarm Values

■ Computation Function (Option)

When a channel set to LOG is used in a computation, error data is used as its measured value.

■ Report Function

Report computation results in error if a channel set to LOG is assigned to a report channel.

■ Functions That Cannot Be Used

- Partial expanded display
Partial expanded display cannot be specified on a channel in LOG input mode.
- Difference computation between channels
 - There is no limitation on setting a channel in LOG input mode as a reference channel in a difference computation.
 - However, if such difference computation is executed, the measured result of the difference channel is error.
- Calibration correction function
Calibration correction cannot be specified on a channel in LOG input mode.

■ Number of Grids (Number of Divisions of the Scale Display)

- The number of grids can be set in the range of 4 to 12 or auto (same as the standard model).
- If the number of grids is set to auto on a target channel set to LOG range, the number of grids is equal to the number of decades. The display shows a LOG grid in this case.
- Channels set to LOG input mode is automatically set to LOG scale.

■ Communication Output and Binary Data Output Format

- The binary data is an A/D normalized value of the channel set to LOG.
 - Measured data output (FD command)
 - FIFO data output (FF command)

(Example)

If the input is 3.000 V measuring in the 6-V range, the binary data is 10000 (0x2710).

- If the measured result is -OVER, the value is set to 0x8001. If the measured result is +OVER, the value is set to 0x7FFF.

Note

Converting from binary data to LOG value

- 1 The binary data is output in A/D normalized value. The A/D normalized value is a scaled value taking the full span value of the range to be 20000.
The full span value of the range is the maximum value that can be set in the range. It is 6 V in the 6-V range. For example, the A/D normalized values in the 6-V range are as follows: 6 V = 20000, -6 V = -20000, 1 V = $20000 \cdot 1/6 = 3333.3$.
- 2 The A/D normalized value is converted to voltage using the following equation.
 $\text{Voltage} = (\text{A/D normalized value}) \cdot (\text{full span value of the range}) / 20000$
- 3 The voltage is converted to a LOG value using the equation given in section 2.1, "Converting the LOG Input."

■ Communication Output and ASCII Data Output Format

- Measured/computed data
±DDDDD E±AA
 - ±DDDDD: Data mantissa (sign + 5 digits)
 - ±AA : Data exponent (sign + 2 digits)
 Value with the number of displayed mantissa digits corrected with respect to the exponent of the display data.

(Example)

When the number of displayed mantissa digits is 3 and the measured result (display value) is 3.16E+02, the ASCII output is equal to +00316E+00.

- Handling of over data
When the measured result is -OVER : -99999E+99
When the measured result is +OVER: +99999E+99

■ Communication Commands

Setting the LOG Range

Setting mode setting

SR p1,p2,p3,p4,p5,p6,p7,p8,p9 <terminator>

p1: Channel number (001 to 030)

p2: Setting type (Log)

p3: Measurement range (20 mV, 60 mV, 200 mV, 2 V, 6 V, 20 V, or 50 V)

p4: Span lower limit

p5: Span upper limit p4 < p5

p6: Lower limit of exponent (-15 to 15)

p7: Upper limit of exponent (-15 to 15) p6 < p7 and (p7-p6) ≤ 15

p8: Decimal place (fixed to 0) * Decimal place of the exponent

p9: Unit (up to 6 characters)

Specifying the Number of Displayed Mantissa Digits

Basic setting mode setting

QA p1 <terminator>

p1: Number of displayed digits (2: 2 digits or 3: 3 digits)

■ Manual Sample Function

- Stored data when a channel set to LOG is assigned
The data is stored in the same format as with the digital value display (mantissa + exponent).
- Events that cause the manual sampled data to be divided
If the number of displayed mantissa digits of the LOG input range is changed, the data file is divided the next time manual sample is executed.

Measurement and Display Accuracy

■ Measurement and Display Accuracy (Digital Display)

- Computing method of the display value accuracy
Input voltage : X
Lower limit of : VL Upper limit of : VU
display span : display span
Scale lower limit : SL Scale upper limit : SU
Digital display value : Y

1) Converting equation for the input voltage (setting)

$$Y = 10^{(SU-SL) \cdot (X-VL)/(VU-VL)+SL}$$

2) Measurement accuracy of input voltage X (uses the negative side due to the LOG characteristic)

$$X_{err} = X - (\text{measurement accuracy of the voltage range})$$

3) Hardware error of the display value

$$Y' = Y - Y_{err}$$

The difference from the true value Y is hardware error Y' when display value Y_{err} corresponds to input voltage X_{err}.

4) Display accuracy of the mantissa

$$\text{Display accuracy} = Y' \cdot 1.1 + 1 \text{ digit}$$

- Computing example of the display value accuracy

Integration time : 50 Hz

2 V range : Voltage span 0.0000 to 1.0000 V

LOG span : -2 to 3

1) Determine the converting equation for the setting.

$$Y = 10^{(SU-SL) \cdot (X-VL)/(VU-VL)+SL}$$

$$= 10^{(3-(-2)) \cdot (X-0)/(1-0)+(-2)}$$

$$= 10^{(5X-2)}$$

2) Determine the measurement error with respect to the input voltage.

Measurement accuracy of the 2 V range = ±(0.05% of rdg + 12 digits)

$$= \pm(0.0005 \cdot 10000 + 12)$$

$$= \pm 17 \text{ digits}$$

Therefore, for an input voltage of 1 V, the value will fall within the range between 0.9983 V and 1.0017 V.

Since the computation is performed on the negative side with large error in the LOG characteristics, we obtain X_{err} = 0.9983 V.

3) Determine the hardware error of the display value.

Substitute X_{err}, the value determined in 2), into the equation of 1).

$$Y_{err} = 10^{(5 \cdot 0.9983 - 2)}$$

$$= 9.8 \cdot 10^2 \text{ (truncate values below the one-hundredths place)}$$

Since the true value is Y = 1.0 * 10³, the error is 2 digits.

Therefore, the hardware error of the display value is given by Y' = ±2 digits.

4) Display value accuracy of the mantissa

As a final error, we add the software error to the hardware error.

$$\text{Software error} = \text{Hardware error} \cdot 1.1 + 1 \text{ digit}$$

$$\text{Display value accuracy} = \pm(2 \text{ digits} \cdot 1.1 + 1 \text{ digit})$$

$$= \pm(3.2 \text{ digits})$$

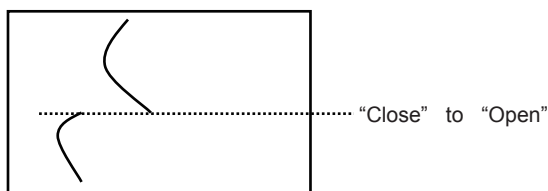
The fraction is rounded up. When the mantissa is 2 digits, the display accuracy is ±4 digits.

Simulation Function

Display Freeze Function

■ Specifications

- A function used to stop the updating of the time, trend, digital values, and bar graph.
 - The display freeze function is controlled through the event action function or communication commands.
 - Alarm summary, message summary, and various log displays are also not updated if they are displayed.
- While the display is frozen, display data is also not updated.
- Key operation is possible while the display is frozen. Display operations such as switching the display group are possible.
- When recovering from the display freeze condition to normal operation, the trend display is resumed from where it left off.



Screen image of the operation

- The time display can be enabled or disabled in the basic setting mode. For details, see the "■ Enabling/Disabling the Time Display" on page 10.
- Event Action Function**
 - You can freeze or activate the display using the event action function. The "Display Freeze/Activate" action can be specified only when the event is set to "Remote."
 - The "Display Freeze/Activate" action operates as a level action.
 - The display freeze action is executed when an open-to-close event (rising edge) is detected.
 - The display activate action (normal operation) is executed when a close-to-open event (falling edge) is detected.



- Event action functions that do not operate while the display is frozen. See Table 3.
- If a level action such as Memory start/stop is executed due to a level event such as remote while the display is frozen, the DX operation may become mismatched with the event state.

Example)

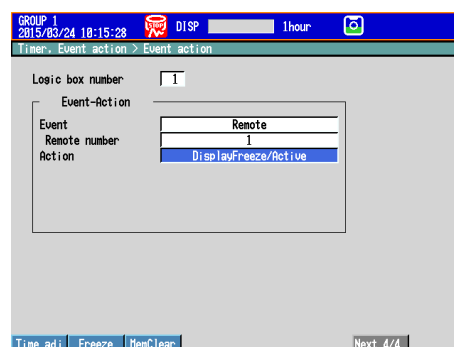
If Memory start/stop using remote is specified and the remote control input is switched from closed to open while the display is frozen, the memory stop operation is not executed. If display freeze is released in this condition, the remote control input terminal will be open even though the memory is in a start condition.

Action	Note
Memory start/stop	Does not operate while the display is frozen. Operates after the display freeze is released.
Memory start	Does not operate while the display is frozen. Operates after the display freeze is released.
Memory stop	Does not operate while the display is frozen. Operates after the display freeze is released.
Event trigger	Does not operate while the display is frozen. Operates after the display freeze is released. However, the action does not operate if the event is set to timer or match timer.
Save display data	Does not operate while the display is frozen. Does not operate even after the display freeze is released.
Save event data	Does not operate while the display is frozen. Does not operate even after the display freeze is released.
Manual sample	Does not operate while the display is frozen. Does not operate even after the display freeze is released.

Table 3 Event Action Functions That Do Not Operate While the Display Is Frozen

■ Setting the Display Freeze Function

- Press **MENU** (switch to the setting mode).
- Select **Timer, Event action > Event action**.
- Set the **Logic box number**, **Event** (set to Remote), and **Remote number**.
- In the **Action** box, press the **Freeze** soft key.



Setup Screen Example for the Display Freeze Function

■ Operation While the Display is frozen

- If the DX is in a state in which it can switch to the basic setting mode, the DX can switch to the mode even while the display is frozen.
 - The display freeze function is released when switching back to the operation screen from the basic setting mode.
- If the power turns OFF and then back ON such as due to a power failure while the display is frozen (closed state) through remote control, the display freeze function is released even if there is no change in the remote state (remains at the closed state).
- The automatic display revert function does not operate. The automatic revert timer is restarted when the display freeze function is released.

Memory and Trend Clear Function

■ Specifications

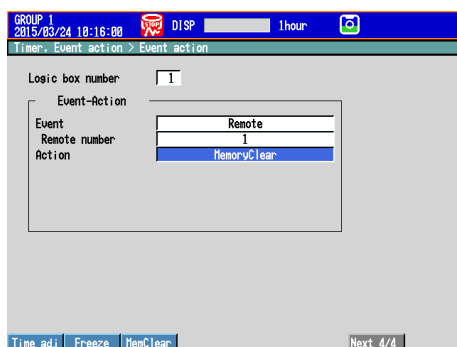
- A function used to clear the internal memory and the trend.
 - Clears the data area of the internal memory (data files that have been created are not cleared).
 - Can be executed while memory sample is in progress.
 - If you carry out the clear operation on the historical trend display, the display retains the condition before the operation.
 - If you execute memory and trend clear on a display other than the operation display, the screen automatically returns to the operation display.
- Methods for clearing the internal memory and trend display
 - Event action function
 - Communication command
 For details, see the “■ Communication Commands.”

■ Event Action Function

- You can use the event action function to clear the internal memory and trend display. The “Clear the internal memory and trend display” action can be specified only when the event is set to “Remote.”
- The “Clear the internal memory and trend display” action is executed only when an open-to-close event (rising edge) is detected.

■ Setting the Memory and Trend Clear Function

- Press **MENU** (switch to the setting mode).
- Select **Timer, Event action > Event action**.
- Set the **Logic box number**, **Event** (set to Remote), and **Remote number**.
- In the **Action** box, press the **MemClear** soft key.



Setup Screen Example for the Memory and Trend Clear Function

Communication Commands

The same command is used to control the display freeze function and memory and trend clear function.

QB p1 <terminator>

- p1: Switch the screen operation and clear the memory (0 to 2)
 - 0: Normal operation
 - 1: Freeze the display
 - 2: Clear the internal memory and trend display

Enabling/Disabling the Time Display

■ Specifications

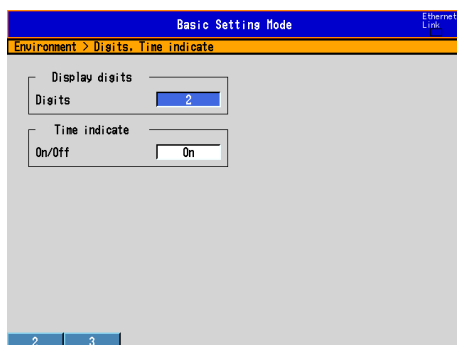
- A function used to disable the time display on the operation display.
- Displays on which the time display is disabled
See Table 4 Displays on Which the Time Display Is Enabled/Disabled and the Description.

Display Name		Description
Status display	Time display	Time
Trend display	Grid time display	Grid time
	Message display	Written time
Circular display	Grid time display	Grid time
	Message display	Written time
Historical trend display	Grid time display	Grid time
	Message display	Written time
	Alarm summary	Alarm time
	Message summary	Written time
	Memory information	Start time and stop time
		Batch comment time
	Cursor time display	Cursor time
Summary display	Memory summary	Start/Stop time
		Manual sample data time
		Report data time
	Message summary	Alarm time
	Alarm summary	Written time
Log display	Report data display	Start time
		Timeout time
	Login log	Time
	Error log	Time
	Communication log	Time
	FTP log	Time
	WEB log	Time
	E-mail log	Time
	SNTP log	Time
	DHCP log	Time
	MODBUS log	Time

Table 4 Displays on Which the Time Display Is Enabled/Disabled and the Description

■ Enabling/Disabling the Time Display

1. Press **MENU** (switch to the setting mode).
2. Hold down **FUNC** for 3 s to switch to the basic setting mode.
3. Select **Environment > Digits, Time indicate**.
4. Set **Time indicate on/off** to On or Off.



Setup Screen Example for Enabling/Disabling the Time Display

Setup Item	Selectable Items (Selectable Range)	Description
Time display	On/Off	Enables/disables the time display. Off: Disable On: Enable

Table 5 Setting the Time Display

■ Communication Commands

QC p1 <terminator>

- p1: Enables/disables the time display (On/Off).
On: Enable
Off: Disable

Special Current Value Mark Function

■ Specifications

- A function used to display the channel using two digits for the current value mark (see Fig. 1, "Current Value Mark") that is displayed in the scale display position on the trend/historical trend display. For the channel display, see Table 6. If you set the display to two digits, you will not be able to distinguish between measurement, computation, and external input channels. In addition, the external input channels will overlap.
- The current value mark setting is in AUX setting of the basic setting mode. See Table 6.



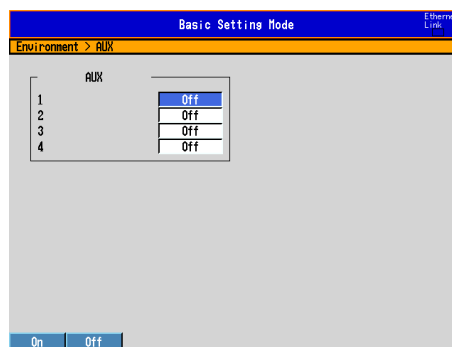
Fig. 1 Current Value Mark

Channel Type	Channel Display of the Current Value Mark	
	Three Digits (Standard)	Two Digits (Special Setting)
Measurement channel	1 to 30	1 to 30
Computation channel	101 to 160	1 to 60
External input channel	201 to 299	1 to 99
	300 to 399	0 to 99
	400 to 440	0 to 40

Table 6 Channel Display of the Current Value Mark

■ Setting the Channel Display of the Current Value Mark

1. Press **MENU** (switch to the setting mode).
2. Hold down **FUNC** for 3 s to switch to the basic setting mode.
3. Select **Environment > AUX**.
4. Set item 1 under **AUX** to On (two digits, special setting) or Off (three digits, standard setting).



Setup Screen Example for the Channel Display of the Current Value Mark

AUX Setting	Selectable Items (Selectable Range)	Description
1	On/Off	Channel display of the current value mark Off: Three digits (standard setting) On: Two digits (Special setting)
2	On/Off	Not used
3	On/Off	Not used
4	On/Off	Not used

Table 7 Setting the Channel Display of the Current Value Mark

■ Communication Commands

WU p1,p2,p3,p4,p5 <terminator>

- p1: Setup type (AUX)
p2: Channel display of the current value mark (On: two digits, Off: three digits)
p3: Not used (On/Off)
p4: Not used (On/Off)
p5: Not used (On/Off)

DAQSTANDARD for DXAdvanced

Foreword

This section explains the special functions below of DAQSTANDARD for DXAdvanced, a dedicated PC software application for the DX3000 special specifications (log input and simulation function). For a description of other standard functions, see the DXA120 DAQSTANDARD for DXAdvanced User's Manual (IM04L41B01-61E).

▲ Setup function for the log input and simulation functions

▲ Setup file export function

Setup Function for the Log Input and Simulation Functions

■ Setup Function for the Log Input Function

The following setup items are added.

Setup Items That Are Added	Setup Page (Tab)
Log range setting	Measure channel
Setting of the number of displayed digits of the mantissa	Basic setting

Setup Function for the Log Input Function

- "LOG" is added to the Delta/Scale/Sqrt area of the measure channel setup page (tab).
- "LOG Scale" is added to the measure channel setup page (tab).
- For details on the settings, see the "LOG Input Function" on page 7.

Setup Function for the Number of Displayed Mantissa Digits

- The setting for the number of displayed mantissa digits is added to the Aux area of the Basic Setting page (tab).
- For details on the settings, see the "LOG Input Function" on page 7.

■ Setup Function for the Simulation Function

The following setup items are added.

Setup Items That Are Added	Setup Page (Tab)
Time indicate ON/OFF setting	Basic setting
Settings for display freeze and memory clear	General setting

Setup Function for Turning ON/OFF the Time Display

- The setting for turning ON/OFF the time indicate is added to the Aux area of the Basic Setting page (tab).
- For details on the settings, see the "LOG Input Function" on page 7.

Setup Function for Display Freeze and Memory Clear

- "Display Freeze/Active" and "Memory Clear" are added as actions when the event source is set to Remote in the Event Action area of the General Setting page (tab).
- For details on the settings, see the "LOG Input Function" on page 7.

Setup File Export Function

- The setup file can be exported (saved) to an Excel file or tab-separated text file.
- From the **File** menu, point to Export and click **Excel** or **Text**.
- Specify the destination folder and file name and save the file.

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