

INSTRUCTION MANUAL
DCS-100A
DYNAMIC DATA RECORDING SOFTWARE
[FOR EDX-5000A OPERATION]

Thank you for purchasing KYOWA's product DCS-100A Dynamic Data Recording Software.

Read this Instruction Manual carefully in order to make full use of the high performance capabilities of the product.

Do not use the product in methods other than described in this Manual.

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NOTATIONS USED IN THE INSTRUCTION MANUAL

Certain notations are used as necessary to attract your attention to information that requires special care when handling the product, and to information provided for reference purposes.

Examples of Notations

NOTE

Essential precautions required when handling the DCS-100A.

MEMO

Reference items required when handling the DCS-100A.

IMPORTANT PRECAUTIONS WHEN USING DCS-100A

●For PC settings

- Do not set your PC to the following state. Or, the DCS-100A may not properly operate.
- Screen saver is set to activate.
- Power consumption function including System standby is set to activate.
- Application software such as virus check software, etc. is set to activate on the way.
- PC is receiving access from the network. Or the PC is accessing to the network.

●For LAN communications

The 34381, 34385, 34430, and 34431 ports are used for TCP-IP communication between the PC and the EDX-5000A.

MEMO

When the EDX-200A or EDX-3000A are used as the synchronous slave, the following ports are used for TCP-IP communication.

EDX-200A	: 34420, 34421
EDX-3000B	: 34410

When conducting communication through router, firewall, etc., check whether or not the above communication port is connected.

Set the router, firewall, etc. after confirming the Network Administrator.

When LAN communication is unsatisfactory, check the network setting contents. If it is normal, conduct the following operations.

- Turn OFF the EDX-5000A and then, turn ON once again.
- Restart the PC.

●For controlling

While controlling the EDX-5000A by using the DCS-100A, do not operate the EDX-5000A switch. Or, the DCS-100A may be forcibly terminated.

1. Outline

This Instruction Manual describes method for controlling the EDX-5000A by using the DCS-100A.

For the EDX-5000A, see separate volume of "INSTRUCTION MANUAL EDX-5000A MEMORY RECORDER/ANALYXER (FOR HARDWARE)."

For common operations of the DCS-100A, see separate volume of "DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (FOR COMMON OPERATION)."

The DCS-100A is measurement software that is capable of online measurement (such as displaying, recording, and analyzing data) on the PC with the EDX-5000A connected via the LAN interface.

- Maximum 10 EDX-5000A units (max. 800 channels).
- The measured data can be displayed in various formats such as number, Y-Time graph, Bar graph, X-Y graph, Circular meter and Bar meter.
- You can easily operate the EDX-5000A by using buttons on the Meas Operation Panel with a feeling like using a remote controller.
- The recorded measured data is saved in the Kyowa Standard Data File KS2 (.ks2) format.
- The digital filtering allows you to easily measure a low-noise data.
- The DCS-100A can conduct various real-time processions (recording moving image data, calculating procession, averaging procession, and FFT analysis) as well as recording/monitoring data with the optional software DCS-101A. Therefore, you can record the moving image data during testing and can check the calculation and analysis results in real-time.
- The DCS-100A can display the recorded data in numeric value or on graph, edit, cut out, convert, calculate, and analysis the recorded data after the measurement with the optional software Dynamic Data Acquisition Software DAS-200A.
You can load the recorded data by using the commercially available software since the DCS-100A can convert the recorded data into CSV format file.
- Measuring, calculation and analysis conditions are saved in a file. When you want to measure or analyze data with the same conditions later, the same conditions are set by loading the previous saved files.

2. Basic operation flow

This chapter explains the basic operating procedure for controlling the EDX-5000A by using the DCS-100A. For details of ①, ②, and ③, see separate volume of "INSTRUCTION MANUAL EDX-5000A MEMORY RECORDER/ANALYXER (FOR HARDWARE)."

Insert the conditioner cards.

- ① Insert the conditioner cards into the insertion slots of EDX-5000A.

Connect sensors.

- ② Connect a sensor to the dedicated input cable.
Connect the dedicated input cable to the EDX-5000A conditioner card.

Start the EDX-5000A.

- ③ Hold down the POWER button on the front of the EDX-5000A for two seconds or more to startup the EDX-5000A.

POWER button

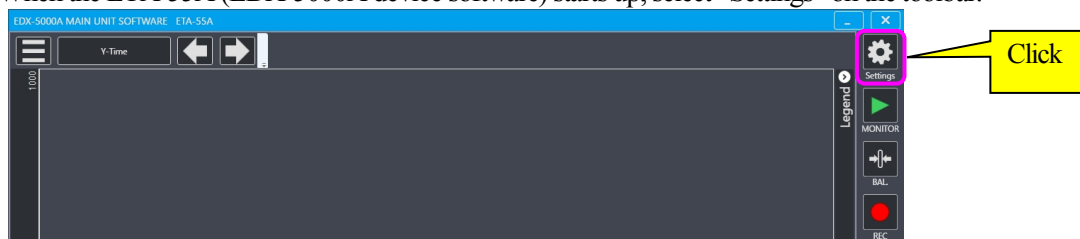


Set the network condition.

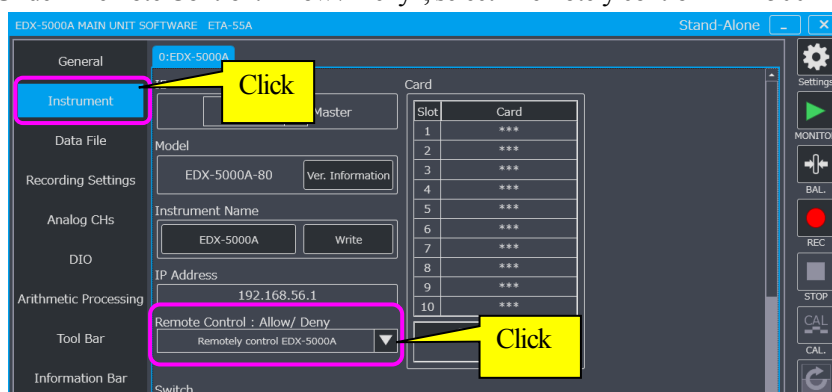
- ④ Set the network condition of PC and EDX-5000A.
(For details, see "3 TCP/IP setting")

Switch to the online mode.

- ⑤ When the ETA-55A (EDX-5000A device software) starts up, select "Settings" on the toolbar.



- ⑥ Select the "Instrument" tab to display the "General" screen.
Under "Remote Control : Allow / Deny", select "Remotely control EDX-500A".

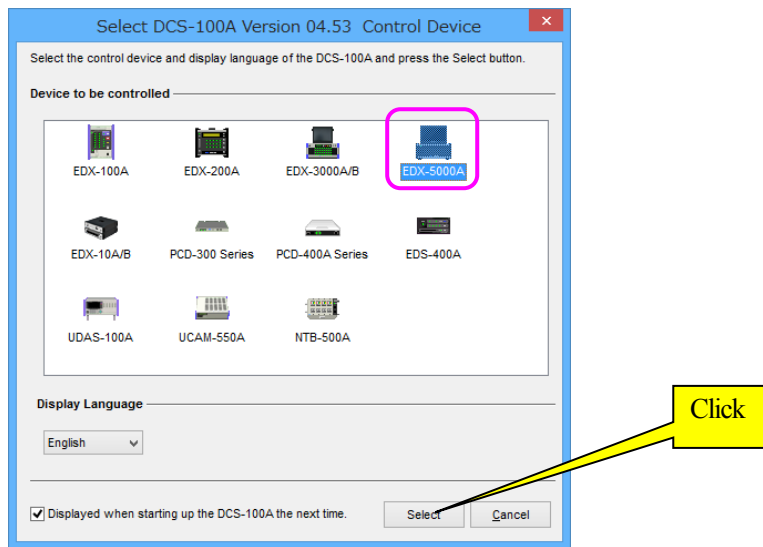


Start up the DCS-100A.

- ⑦ Start up the DCS-100A. The Device to be controlled window appears.

Click the **EDX-5000A** icon on the Device to be controlled window.

Click the **Select** button.



- ⑧ The main window of the DCS-100A appears.

Setting environment.

- ⑨ Click the File - Environment... or click the **Envr.** icon from the toolbar to open the Set Environment window.
(For details, see “4 Setting environment.”)

- ⑩ Click the [Configuration] tab on the Set Environment window.

Set the number of EDX-5000A units to be connected and card configurations.

(For details, see “4-2 [Configuration] tab.”)

- ⑪ Click **Connect...** button on the [Configuration] tab.

Perform a connection test in order to check whether communication is successful between the PC and the EDX-5000A.

If the connection test is performed successfully, close the Set Environment window.

Channel conditions.

- ⑫ Click the Set - Set CH Condition... or click the **CH Cond.** icon from the toolbar to open the Set CH Condition window.

(For details, see “5 Channel Conditions.”)

- ⑬ Set the Mode, Range, Calibr. const., Unit, etc. for every CH on the Set CH Condition window.

- ⑭ After setting the channel conditions, perform an internal sensitivity compensation.

(For details, see “5-1-3 Compensating internal sensitivity.”)

- ⑮ After the internal sensitivity compensation, click the **OK** button to close the window.

Measuring conditions.

- ⑩ Click the Set - Set Measure Condition... or select the **Meas. Cond.** icon from the toolbar to open the Set Measure Condition window.
(For details, see “6 Measureing conditions.”)
- ⑪ Click the **[Measure Mode]** tab.
Set Measure Mode, Sampling Frequency, and Number of data/CH on the **[Measure Mode]** tab.
(For details, see “6-1 [Measure Mode] tab.”)
- ⑫ Click the **[Data File]** tab.
Set the Data Save Folder, File Name, and File No. on the **[Data File]** tab.
(For details, see “6-7 Data file conditions.”)
- ⑬ Click the **[OK]** button to close the window.

Display windows.

- ⑭ Click the Window and a desired window or click the desired icon from the toolbar to display the target data window.

Measure data.

- ⑮ Click the **[MONITOR]** button on the Meas Operation Panel.
The measurement starts and the DCS-100A becomes monitoring state. The measured data appears on windows.
(For details, see “7 Measuring data.”)
- ⑯ Click the **[BAL]** button to execute the balance adjustment.
Close the Balance result window. The DCS-100A gets back to the monitoring state.
(For details, see “7-9 Balance adjustment.”)
- ⑰ If the **[REC]** button is pressed, the recording of measured data starts according to the Measure mode.
- ⑱ Click the **[STOP]** button or after finishing recording the data for the pre-set Number of data/CH, the DCS-100A gets back to monitoring state.
- ⑲ Press the **[STOP]** button once again in monitoring mode.
The DCS-100A stops the measurement and becomes stopped state.

Checking Data.

- ⑳ Click the Measurement – Latest Recorded Data File or click the **Check Data** icon from the toolbar to display the data checking dialog box.
- ㉑ For unnecessary data, click the Measurement – Delete the Latest Recorded Data File or click the **Del Data** icon from the tool bar for deleting.
For measuring the data again, click the **[MONITOR]** button.

Exit the DCS-100A and EDX-5000A.

- ㉒ Exit the DCS-100A. Turn OFF the EDX-5000A.

3. TCP/IP setting

Before controlling EDX-5000A units, set the network conditions of the units.

NOTE

When using in an existing network environment, please contact the network administrator for the setting such as IP address.

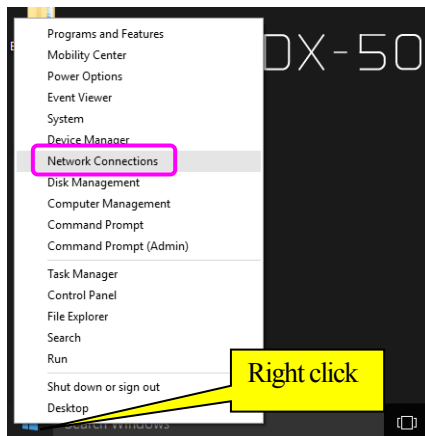
MEMO

The factory default settings of the EDX-5000A are as follows.

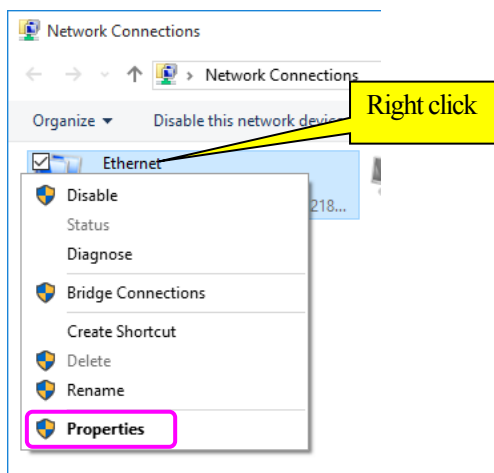
- Obtain an IP address automatically
- Obtain DNS server address automatically

3-1 To set a static IP address in EDX-5000A

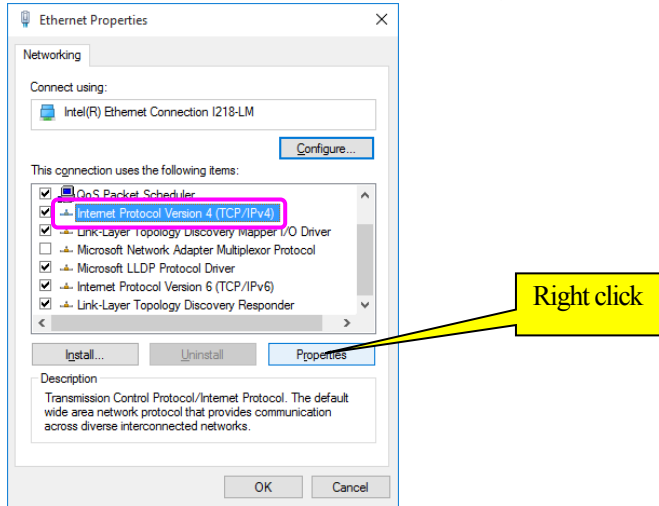
- (1) Close the ETA-55A or ELA-55A.
- (2) Right click the start button of Windows, and click the “Network Connections”.



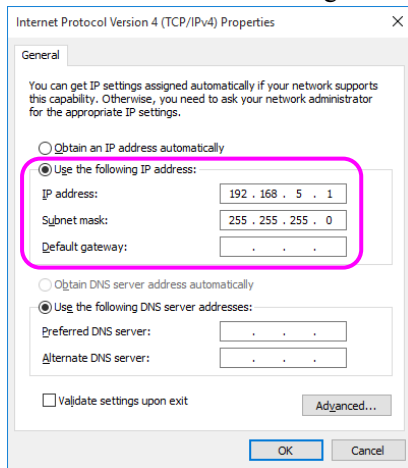
- (3) Right click the “Ethernet” on the Network Connections window, and click the “Properties”.



- (4) Click the “Internet Protocol Version 4 (TCP/IPv4)” on the Ethernet Properties window, and click the **Properties** button.



- (5) Put check the “Use the following IP address”, and set arbitrary IP address and Subnet mask.



- (6) Click the **OK** button on the Internet Protocol Version 4 (TCP/IPv4) Properties window.
- (7) Click the **OK** button on the Ethernet Properties window.
- (8) Launch the ETA-55A and click Settings – Instrument, or launch ELA-55A and click File – Environment... - Configuration, you can confirm the IP address.

NOTE

- If another PC or device are connected in the LAN, please check each IP address and set different address so as not to overlap each other.
- Please set the network prefix of PC and EDX-5000A to be the same value.

[Example]

When the IP address of PC is 192.168.5.3 and subnet mask is 255.255.255.0, you need the IP address 192.168.5. (24 bits) of the EDX-5000A for satisfying the network prefix.

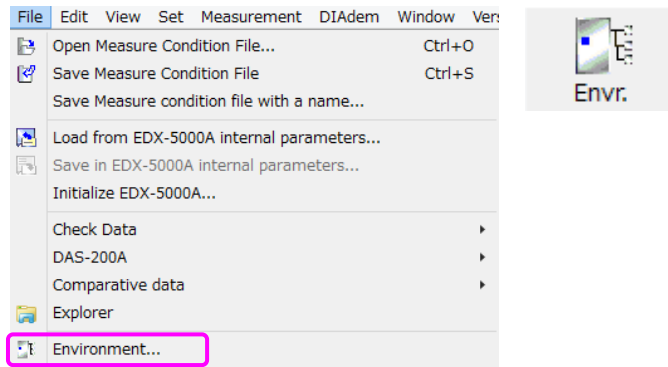
4. Setting environment

This section describes how to set the number of EDX-5000A units to be connected, the card configuration, and the real-time processions.

■How to display

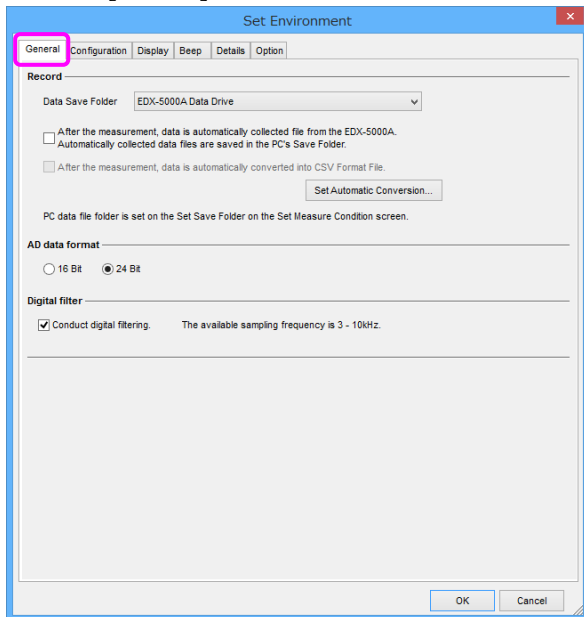
Open the Set Environment window by any of the following.

- Click the File - Environment....
- Click the **Envr.** icon from the toolbar.



4-1 [General] tab

This section describes how to set the Data Save Folder and real-time processions.
Click the [General] tab.



■Data Save Folder

Select the Data Save Folder for saving the collected data file.

EDX-5000A Data Drive Saves the recorded data in the in the EDX-5000A data storage.

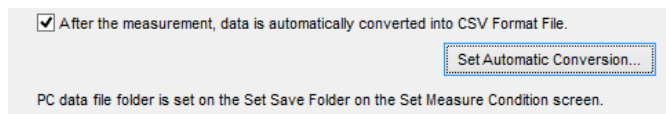
PC data file folder Saves the recorded data in the PC data file folder.

■Collecting the data file after the measurement

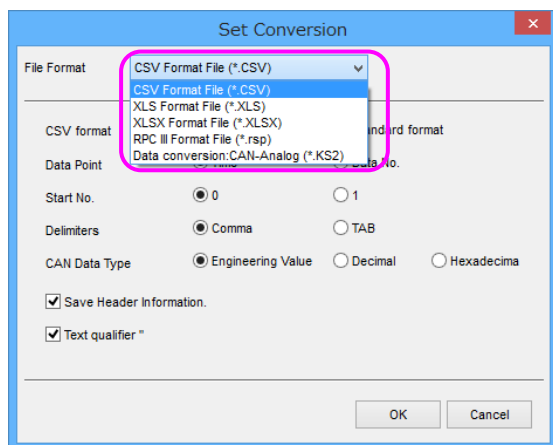
To automatically collect the data from the EDX-5000A data storage into the PC, put a check mark to the check box next to the "After the measurement, data is automatically collected from the EDX-5000A."

■Converting the data file after the measurement

To automatically convert the KS2 file format to another after the measurement, put a check mark to the check box next to the “After the measurement, data is automatically converted into CSV format file.”



Click the **Set Automatic Conversion...** button and the following Set Conversion window appears. Set conditions on the Set Conversion window.



NOTE

Before executing the CAN/analog data conversion, check the following.

The EGPC-50A is mounted in the EDX-5000A.

One or more check marks exists on the "Measurement" column on the ECAN Condition Setting window.

File conversion examples

File Format	Original file name	Data Save file name
CSV Format File	TEST0000.KS2	TEST0000.CSV (NOTE 1)
XLS Format File	TEST0000.KS2	TEST0000.XLS (NOTE 1)
XLSX Format File	TEST0000.KS2	TEST0000.XLSX (NOTE 1)
RPCIII Format File	TEST0000.KS2	TEST0000.rsp (NOTE 2)
Data conversion:CAN-Analog	TEST0000.KS2 TEST0000.E4A	TEST0000_CA.KS2 (NOTE 3)

(NOTE 1) When recording the ECAN data, the DCS-100A also saves the CAN data of the TEST0000.E4A in the same Data Save folder.

(NOTE 2) When recording the ECAN data, the DCS-100A does not save the CAN data of the TEST0000.E4A.

(NOTE 3) When recording the ECAN data, the DCS-100A also saves the CAN data of the TEST0000.E4A in the same Data Save folder.

The DCS-100A also saves the CAN data of the TEST0000.E4A as the analog channel data.

■AD data format

Select the AD data format.

16 Bits/24 Bits

■Conduct digital filtering.

The digital filtering allows you to easily measure a low-noise data.

To conduct the digital filtering, put a check mark to the check box next to the "Conduct digital filtering."

NOTE

- When conducting the digital filtering, the available sampling frequency is 3 Hz or more.

4-2 [Configuration] tab

On the [Configuration] tab, select the number of EDX-5000A units to be connected and configurations.
Click the [Configuration] tab on the Set Environment window.

ID No.	Model	Device Name	IP Address	Check Device	Slot	Card	Option Card	Oscillator
0	EDX-5000A	edx-5000a	172.17.34.179	Flash	10	DPM-42B Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed	Internal

■Configuration

Connect... button

Performs a connection test in order to check whether communication is succeeded between the PC and the EDX-5000A.

If the communication test is failed, the DCS-100A load the configuration automatically from the connected EDX-5000A.

Detailed information.. button

The Detailed information window appears.

Write device name.. button

Writes the device name, within 30 characters, into the EDX-5000A.

Device Information Register Window... button

The Register Device Information window appears.

Up/Down button

For moving the target item to up/down.

Choose the item you want to move, and click **Up/Down** button.

You can set the configuration of the EDX-5000A to be connected in the following 3 ways.

- **Manual configuration setting**

The DCS-100A manually searches the PC-connected EDX-5000A for setting the Number of Connected Units, Device Name, card configurations, option card configurations, and network conditions on the [Configuration] tab. (For details, see “4-2-1 Manual configuration setting.”)

- **Configuration setting by using the register device information window**

Sets the Number of Connected Units, Device Name, card configurations, option card configurations, and network conditions by using the Register Device Information window. (For details, see “4-2-2 Configuration setting by using the register device information window.”)

- **Automatic configuration setting by using Connect... button**

The DCS-100A automatically searches the PC-connected EDX-5000A for loading and setting the Number of Connected Units, Device Name, card configurations option card configurations, and network conditions on the [Configuration] tab. (For details, see “4-2-3 Connection test.”)

NOTE

Check that the network conditions between the PC and EDX-5000A are set correctly. Then, set the configuration.

For the Automatic Configuration Setting, you need the network sections of the IP addresses of the both PC and EDX-5000A. When you do not have the network sections of the both PC and EDX-5000A, manually set the configuration.

[Example]

When the EDX-5000A (IP address: 192.168.5.1, Subnet mask: 255.255.255.0) is used, you need the IP address 192.168.5. (24 bits) of the PC for satisfying the network section.

4-2-1 Manual configuration setting

■Operation method

(1) Select the number of EDX-5000A units to be connected.

Number of Connected Units		1	Up		Down	
ID No.	Model	Device Name	IP Address	Check Device	Slot	Card
0		edx-5000a	0.0.0.0	Flash	10	DPM-42B
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed

(2) Input the IP address of the target EDX-5000A.

Double-click the desired item or press the **SPACE** key.

Number of Connected Units		1	Up		Down	
ID No.	Model	Device Name	IP Address	Check Device	Slot	Card
0		edx-5000a	172.17.34.179	Flash	10	DPM-42B
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed
						Not installed

(3) Select the number of slots, card, and option card.

Number of Connected Units		1	Up		Down			
ID No.	Model	Device Name	IP Address	Check Device	Slot	Card	Option Card	Oscillator
0		edx-5000a	172.1.34.179	Flash	10	DPM-42B	Not installed	Internal
						Not installed		
						Not installed		
						Not installed		
						Not installed		
						Not installed		
						Not installed		
						Not installed		
						Not installed		
						Not installed		

(4) To record data with multiple EDX-5000A units (in synchronous operation), repeat the item (2) to item (3).

4-2-2 Configuration setting by using the register device information window

■Operation method

- (1) Click the **Device Information Register Window...** button.

Click

Write device name... Device Information Register Window...

- (2) The Register Device Information window appears.

Register Device Information

Model	Device Name	IP Address	Check Device	Slot	Card	Option Card
EDX-5000A		172.17.34.159	Flash	10	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed
EDX-5000A		172.17.34.160	Flash	10	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed
EDX-5000A		172.17.34.161	Flash	10	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed

<- Set to Connection Configuration Load Device Information... Delete Items Close

- (3) Input the IP address of the target EDX-5000A.

Double-click the desired item or press the **SPACE** key.

Register Device Information

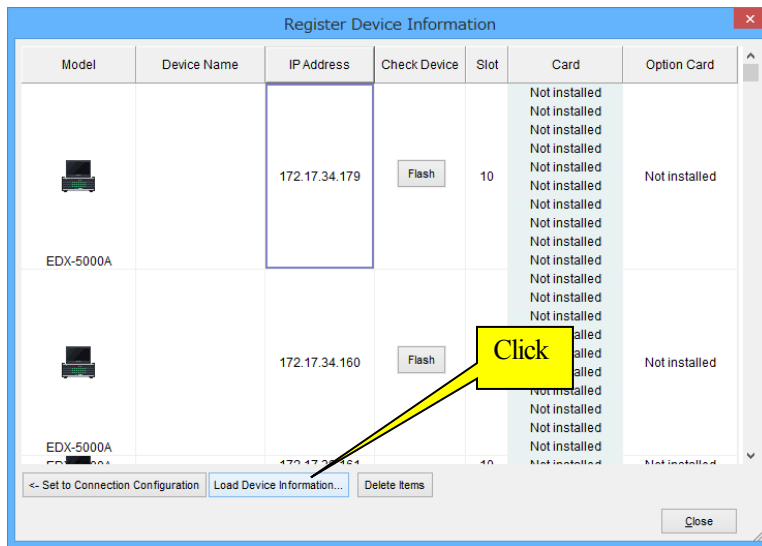
Model	Device Name	IP Address	Check Device	Slot	Card	Option Card
EDX-5000A		172.17.34.179	Flash	10	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed
EDX-5000A		172.17.34.160	Flash	10	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed
EDX-5000A		172.17.34.161	Flash	10	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed

<- Set to Connection Configuration Load Device Information... Delete Items Close

(4) Check that the network conditions between the PC and EDX-5000A are correct.

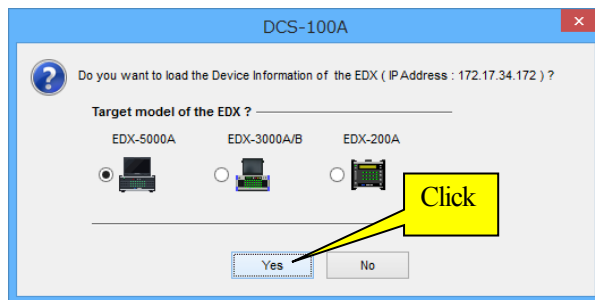
Point the target device for loading the card configurations and option card configurations.

Click the **Load Device Information...** button.



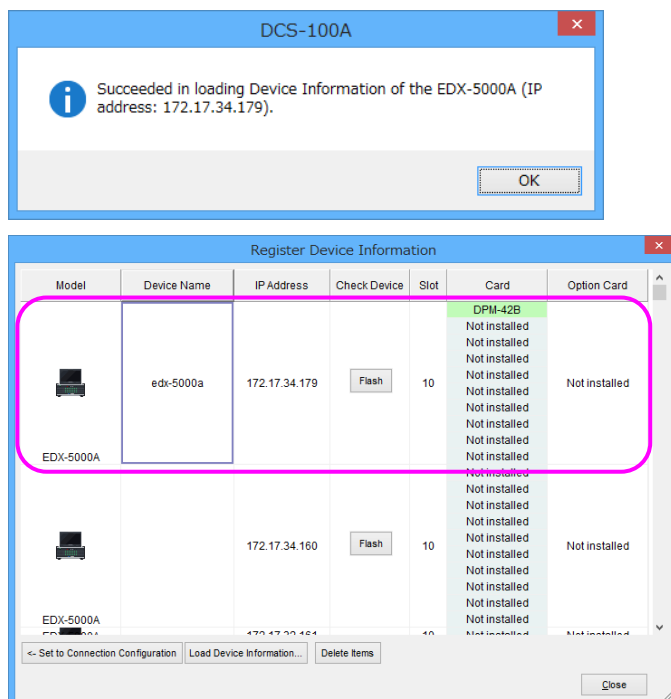
(5) The following message appears.

Click the **Yes** button.



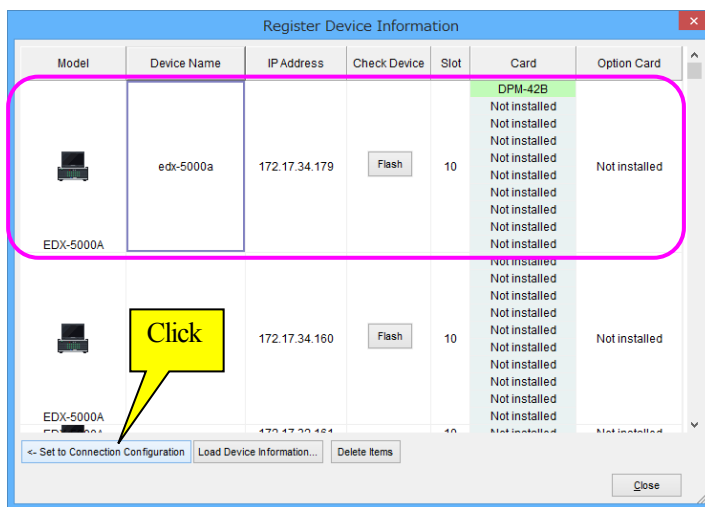
(6) When the device information has been loaded successfully, the following message appears.

The card configurations and option card configurations appear on the Register Device Information window.



(8) Point the target ID No. to be changed on the [Configuration] tab.

Number of Connected Units 1 ⌵								
ID No.	Model	Device Name	IP Address	Check Device	Slot	Card	Option Card	Oscillator
0	 EDX-5000A	sample	172.1.34.111	Flash	8	Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed *** ***	Not installed	Internal



Number of Connected Units 1									Up	Down
ID No.	Model	Device Name	IP Address	Check Device	Slot	Card	Option Card	Oscillator		
0	 EDX-5000A	edx-5000a	172.17.34.179	Flash	10	DPM-42B Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed	Internal		

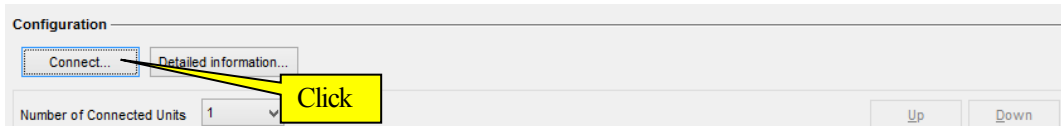
19

4-2-3 Connection test

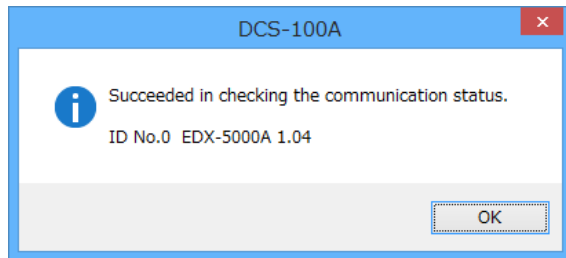
This section describes how to perform a connection test in order to check whether communication is succeeded between the PC and the EDX-5000A after setting the configuration.

■Operation method

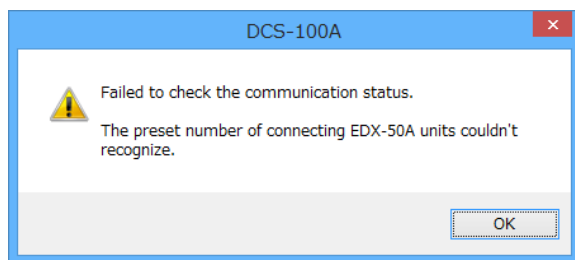
- (1) Click the **Connect...** button on the [Configuration] tab.



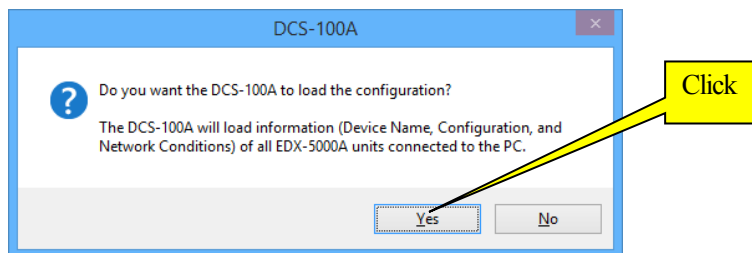
- (2) When the communication test has been performed successfully, the following message appears.



When the communication test has been performed unsuccessfully, the following message appears.

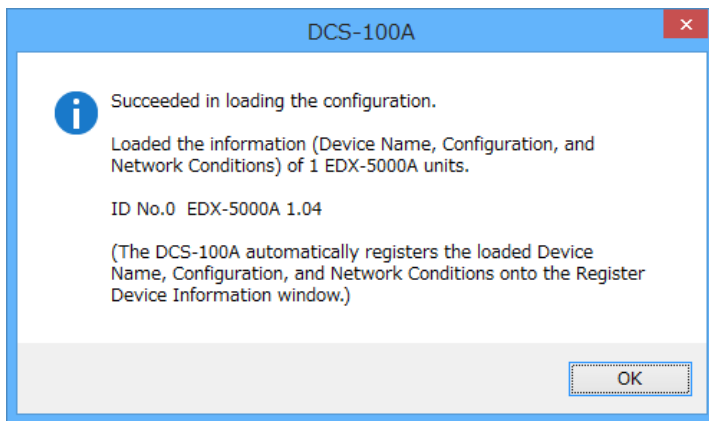


- (3) When the communication test been performed unsuccessfully, the following message appears.
Click the **Yes** button.



(4) The DCS-100A search the connected EDX-500A, and load the number of connected EDX-5000A units, the device name, configuration and the network conditions.

When the loading is successfully, the following message appears.



(5) Number of Connected Units is set automatically and display the loaded information.

Number of Connected Units		1							Up	Down
ID No.	Model	Device Name	IP Address	Check Device	Slot	Card	Option Card	Oscillator		
0	 EDX-5000A	edx-5000a	172.17.34.179	Flash	10	DPM-42B Not installed Not installed Not installed Not installed Not installed Not installed Not installed Not installed	Not installed	Internal		

NOTE

When the communication test has been performed unsuccessfully, check the followings.

- Check that the network conditions between the PC and EDX-5000A are correct.
- Verify the LAN cable between the PC and EDX-5000A is correctly connected.
- Verify the ID No., IP address, card configurations, and option card configurations on the [Configuration] tab match with that of the EDX-5000A.

4-2-4 Detailed information

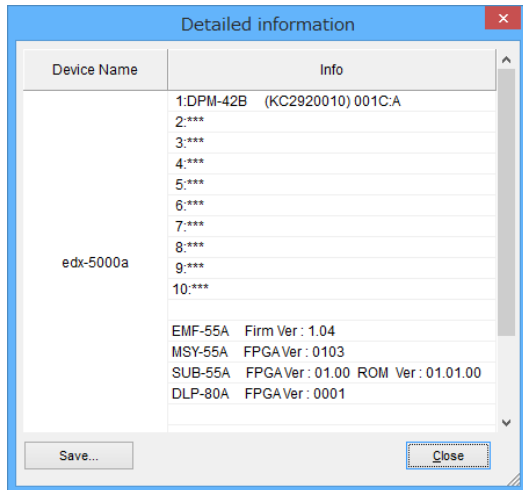
■Operation method

(1) Click the **Detailed information...** button.



(2) The following Detailed information window appears.

You are able to check the EDX-5000A information.



4-2-5 To switch the oscillator

When using the DPM card, switch the oscillator to Internal or External.

Internal/External



4-3 [Display] tab

This section describes how to set display conditions.

Click the [Display] tab.

■Background color of the conditioner card

Sets the background colors of every conditioner card on the Set CH Condition window.

Color setting... button Click the target color on the Color dialog box to set the background color of the target conditioner card.

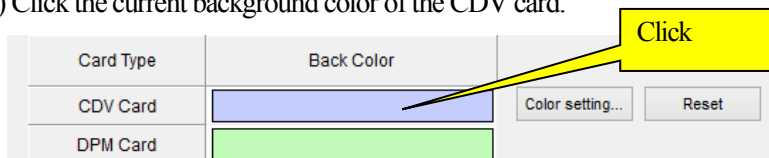
Reset button Resets the item to the default status.

To validate the settings of the background color on the Set CH Condition window, put a check mark to the check box next to the "Displays background color."

[Operation example 1]

This section describes how to change the background color of the CDV card by using the background color list.

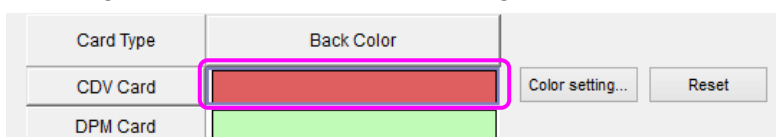
(1) Click the current background color of the CDV card.



(2) Click the target color from background color list.



(3) The background color of the CDV card is changed.



[Operation example 2]

This section describes how to change the background color of the CDV card by using the Color dialog box.

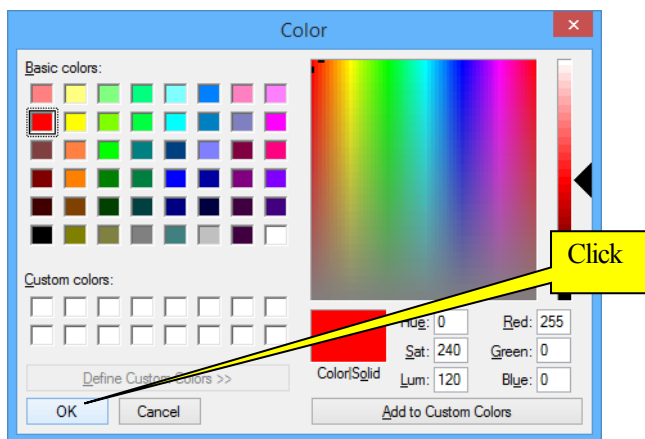
(1) Click the current background color of the CDV card.

(2) Click the **Color setting...** button or double-clicks the background color of the CDV card.

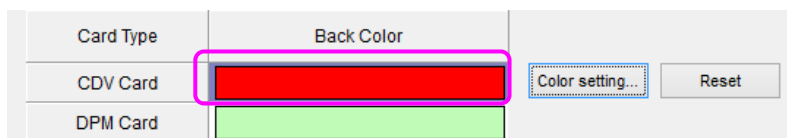
The Color dialog box appears.



(3) Click the target color on the Color dialog box and click the **OK** button.



(4) The background color of the CDV card is changed.



■The number of display digits

The Number of Display Digits Set the number of numeric digits to display graph scale, legends, and numeric value data on numeric or graph window.

Number of digits of the name

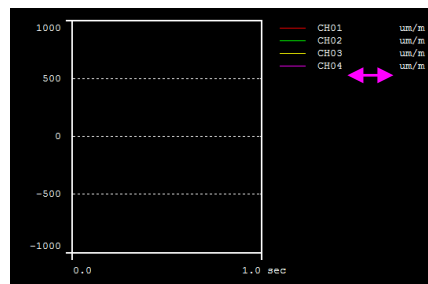
☒ When starting up the DCS-100A the next time, the Control Device window is displayed.

Set the number of numeric digits to display graph scale, legends, and numeric value data on Numeric windows/Graph windows. (Range: 6 to 11 digits)

If the number of numeric values exceeds the specified numeric display range, it shall be expressed in exponential notation.

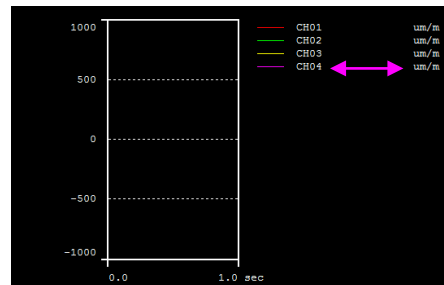
- The number of display digits: 6

CH01 um/m
CH02 um/m
CH03 um/m
CH04 um/m



- The number of display digits: 11

CH01 um/m
CH02 um/m
CH03 um/m
CH04 um/m



■Number of digits of the name

The Number of Display Digits Set the number of numeric digits to display graph scale, legends, and numeric value data on numeric or graph window.

Number of digits of the name

☒ When starting up the DCS-100A the next time, the Control Device window is displayed.

Sets the "number of digits of the name" on numeric windows' legend and graph windows' legend. (Range: 10, 20, 30, and 40 digits) When the channel name exceeds the "number of digits of the name", the channel name within the "number of digits of the name" appears.

[Example]

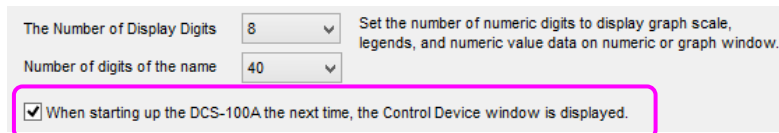
Channel name of CH01: ABCDEFGHIJKLMN

Number of digits of the name: 10 digits

The channel name of 10 digits (ABCDEFGHIJ) appears as follows.

CH01 ABCDEFGHIJ um/m
CH02 um/m
CH03 um/m
CH04 um/m

■Show or hide the device to be controlled window



The Number of Display Digits 8 Set the number of numeric digits to display graph scale, legends, and numeric value data on numeric or graph window.

Number of digits of the name 40

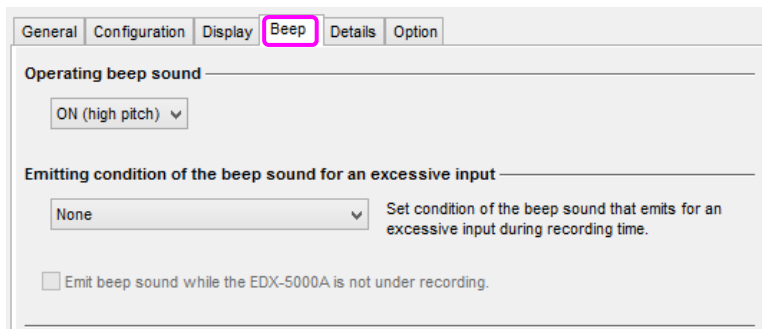
☒ When starting up the DCS-100A the next time, the Control Device window is displayed.

For displaying the Device to be controlled window when starting up the DCS-100A the next time, put a check mark to the check box next to the “When starting up the DCS-100A the next time, the Control Device window is displayed.”

4-4 [Beep] tab

This section describes how to set beep sound of the EDX-5000A.

Click the [Beep] tab.



General Configuration Display **Beep** Details Option

Operating beep sound —

ON (high pitch) ▾

Emitting condition of the beep sound for an excessive input —

None ▾ Set condition of the beep sound that emits for an excessive input during recording time.

☐ Emit beep sound while the EDX-5000A is not under recording.

■Operating beep sound

Selects the beep sound to be emitted while monitoring data, recording data, stopping, and executing balance adjustment.

OFF/ON (high pitch)/ON (low pitch)

■Emitting condition of the beep sound for an excessive input

Selects the beep sound to be emitted when an input of one CH exceeds the pre-set value (Chk. Val. (Up)/Chk. Val. (Down) pre-set on the Set CH Condition window).

Note that the beep sound for an excessive input is always the high-pitch beep sound.

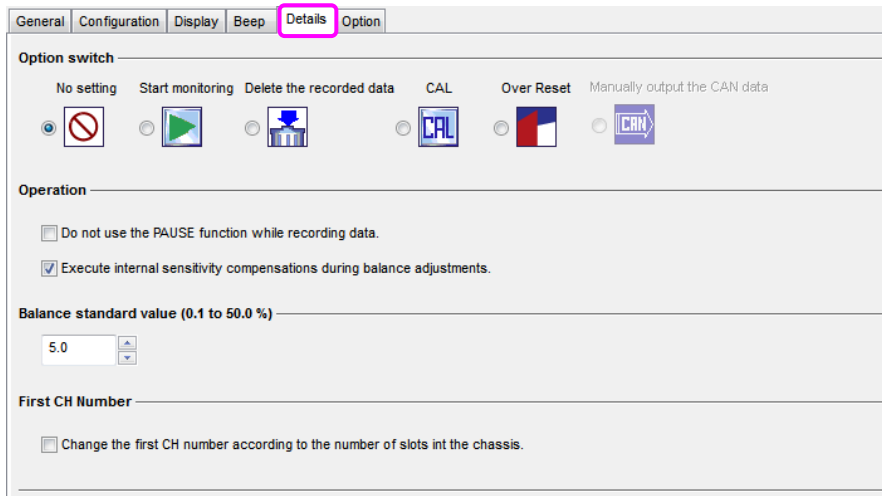
None/Beep is generated only when input over/Beep is generated until STOP/PAUSE

To emit the beep sound while not monitoring data, put a check mark to the check box next to the "Emit beep sound while the EDX-5000A is not under recording."

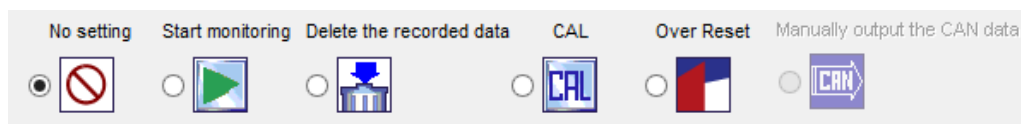
4-5 [Details] tab

This section describes how to set detailed conditions.

Click the [Details] tab.

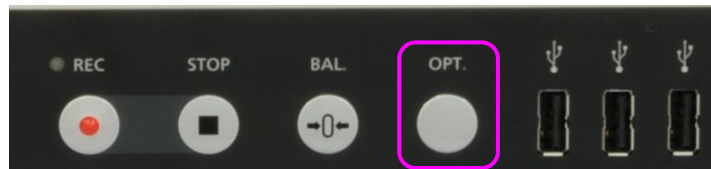


■Option switch



Select the operation of the "OPT." switch on the EDX-5000A front.

No setting	No operation is started.
Start monitoring	The DCS-100A starts monitoring data. The same operation is available by clicking the "Measurement" - "MONITOR."
Delete the recorded data	The DCS-100A deletes the latest data file after the measurement. The same operation is available by clicking the "Measurement" - "Delete the Latest Recorded Data File".
CAL	The DCS-100A outputs the CAL or stops outputting the CAL. The same operation is available by clicking the "Measurement" - "Output/Stop CAL."
Over Reset	Reset the exceeding state to the previous state [before exceeding the check value (up) or check value (down)]. The same operation is available by clicking the "Measurement" - "Over Reset."
Manually output the CAN data	Outputs the CAN data manually. This operation is same that click the Measurement – Manually output the CAN data.



■Operation

Operation

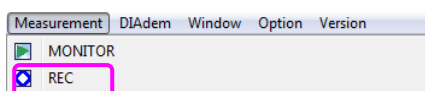
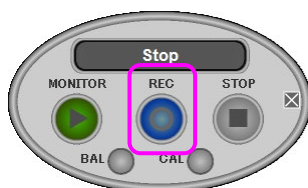
- ☒ Do not use the PAUSE function while recording data.
- ☒ Execute internal sensitivity compensations during balance adjustments.

To disable the PAUSE function, put a check mark to the check box next to the "Do not use the PAUSE function while recording data."

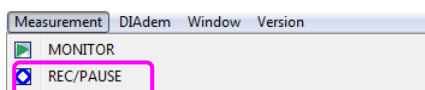
MEMO

The REC/PAUSE button on the Meas Operation Panel and the Measurement's drop-down menu varies with the PAUSE function state.

- PAUSE function: Disabled state



- PAUSE function: Enabled state



To execute internal sensitivity compensations during balance adjustments, put a check mark to the check box next to the "Execute internal sensitivity compensations during balance adjustments."

■Balance standard value (0.1 to 50.0%)

Set the balance standard value.

Balance standard value (0.1 to 50.0 %)

5.0

■First Channel Number

If you change the first channel number of the slave according to the number of slots in the chassis, turn on the check mark.

Check mark OFF (default settings) :

The first channel number is displayed in steps of 80 CH, regardless of the number of slots in the chassis.

Master : CH01 -

Slave 1: CH81 -

Slave 2: CH161 -

Check mark ON :

Adjust the first channel number of the slave to the number of slots of the chassis.

Example) When synchronous operation is performed on the master (8 slot chassis), slave 1 (8 slot chassis), and slave 2 (10 slot chassis), the first channel number is as follows.

Master : CH01 -

Slave 1: CH65 -

Slave 2: CH129 -

NOTE

The channel numbers of the arithmetic operations start from $(80 * \text{Number of Connected Units} + 1)$ CH irrespective of this setting.

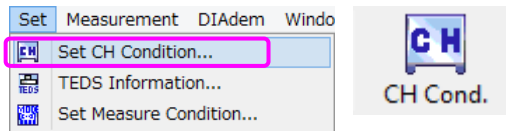
5. Channel Conditions

This section describes how to set the measurement ON/OFF, Mode, Range, Calibration constant, Unit, etc. for every CH.

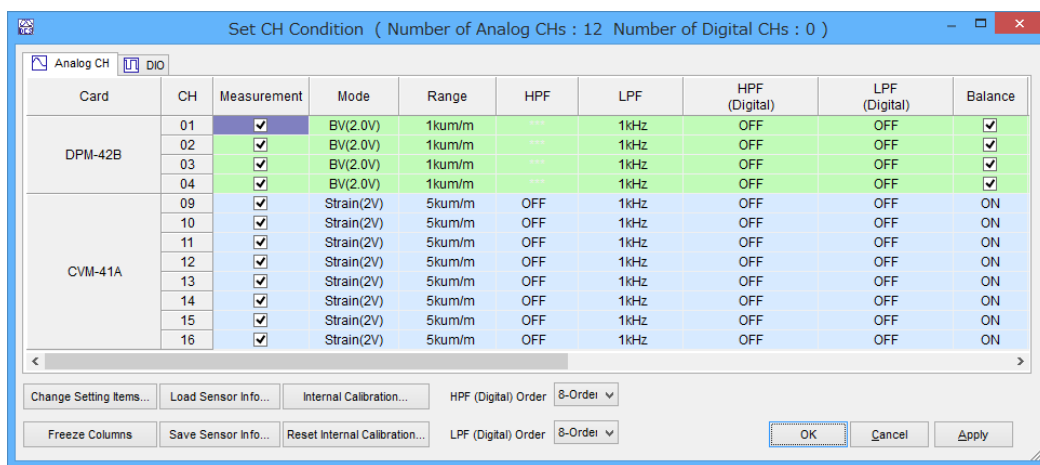
■How to display

Open the Set CH Condition window by any of the following.

- Click the Set - Set CH Condition....
- Click the **CH Cond.** icon from the toolbar.



■Set CH Condition window



Change Setting Items... button

Setting items displayed on the window are added, removed, or sorted.

Freeze Columns button

Freeze columns ON/OFF

It allows you to keep some of your data in the same place as you scroll through the rest of your spreadsheet.

Load Sensor Info... button

Loads the sensor information (Calibr. const., rated capacity, rated output, etc.) from the sensor information file (CSV format) for setting the channel conditions.

Save Sensor Info... button

Saves the sensor information (Calibr. const., rated capacity, rated output, etc.) as the sensor information file (CSV format).

Internal Calibration... button

Performs the internal sensitivity compensation.

Perform an internal sensitivity compensation when a sensor is connected.

Reset Internal Calibration... button

Initializes the compensated internal sensitivity.

HPF (Digital) Order

The order of high-pass filter (digital).

LPF (Digital) Order

The order of low-pass filter (digital).

OK button

Determines the pre-set contents and closes the window.

Cancel button

Cancels the pre-set contents and closes the window.

Apply button

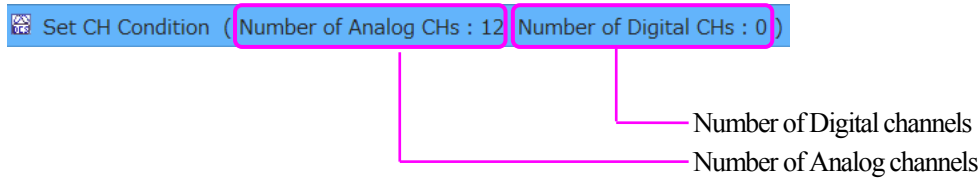
Determines the current set contents.

MEMO

For loading/saving the sensor information file, see separate volume of the "DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (FOR COMMON OPERATION)."

■Title bar

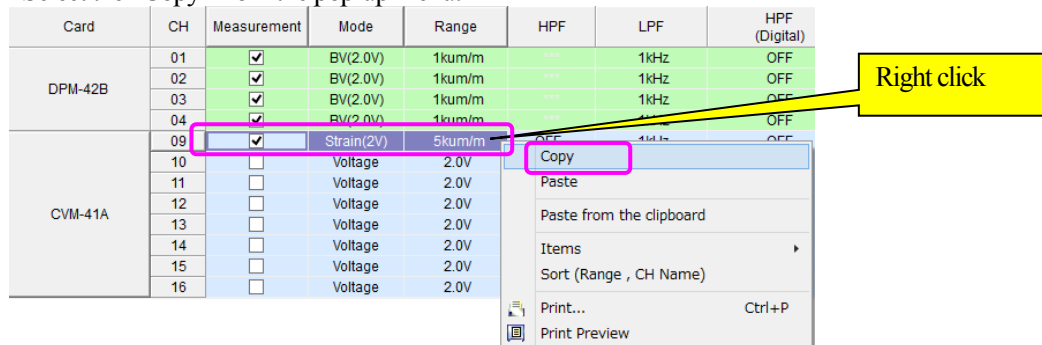
The number of analog channels and digital channels required to measure that are set on the current **Set CH Condition** dialog box are displayed on the title bar.



■Copy and Paste

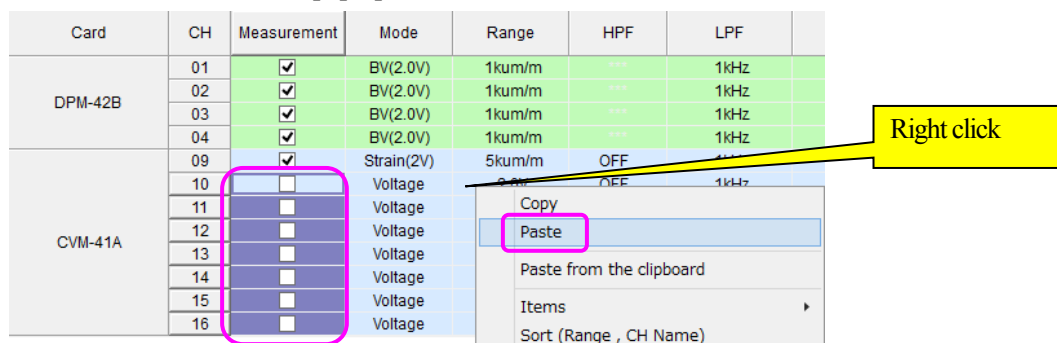
(1) Select the setting item of the copy source and right-click.

Select the “Copy” from the pop-up menu.



(2) Select the destination area to be pasted and right-click.

Select the “Paste” from the pop-up menu.



(3) The setting items of the copy source are pasted to the setting items of the destination.

Card	CH	Measurement	Mode	Range	HPF	LPF
DPM-42B	01	☒	BV(2.0V)	1kum/m	***	1kHz
	02	☒	BV(2.0V)	1kum/m	***	1kHz
	03	☒	BV(2.0V)	1kum/m	***	1kHz
	04	☒	BV(2.0V)	1kum/m	***	1kHz
	09	☒	Strain(2V)	5kum/m	OFF	1kHz
CVM-41A	10	☒	Strain(2V)	5kum/m	OFF	1kHz
	11	☒	Strain(2V)	5kum/m	OFF	1kHz
	12	☒	Strain(2V)	5kum/m	OFF	1kHz
	13	☒	Strain(2V)	5kum/m	OFF	1kHz
	14	☒	Strain(2V)	5kum/m	OFF	1kHz
	15	☒	Strain(2V)	5kum/m	OFF	1kHz
	16	☒	Strain(2V)	5kum/m	OFF	1kHz

5-1 Analog channel condition

This section describes how to set measurement ON/OFF of analog channels, mode, range, CAL coefficient, offset, and unit. Select the **Analog CH** tab on the **Set CH Condition** dialog box.

Card	CH	Measurement	Mode	Range	HPF	LPF	HPF (Digital)	LPF (Digital)	Balance	Int. CAL	In
DPM-42B	01	☒	BV(2.0V)	1kum/m	OFF	1kHz	OFF	OFF	☒	☒	ON
	02	☒	BV(2.0V)	1kum/m	OFF	1kHz	OFF	OFF	☒	☒	
	03	☒	BV(2.0V)	1kum/m	OFF	1kHz	OFF	OFF	☒	☒	
	04	☒	BV(2.0V)	1kum/m	OFF	1kHz	OFF	OFF	☒	☒	
CVM-41A	09	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	ON
	10	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	
	11	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	
	12	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	
	13	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	
	14	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	
	15	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	
	16	☒	Strain(2V)	5kum/m	OFF	1kHz	OFF	OFF	ON	☒	

5-1-1 Setting items

●ID-No.

The ID No. of the EDX-5000A

●Device Name

The device name of the EDX-5000A, pre-set on the Set Environment window.

●Card

The model of the conditioner card in the EDX-5000A.

●CH

The CH No.

The CH No. is assigned in serial numbers starting from CH01.

●ID-CH

The ID No. and channel number of the EDX-5000A. The CH No. is assigned in serial numbers starting from 01 for every ID No.

[Example]

The ID1-01 indicates the CH01 of the ID No.1.

●Measurement

Put a check mark to the check box next to the target channel.

The channels to be measured are displayed on the CH Disp bar on the main window.

The number of current measuring channels appears on the title bar on the Set CH Condition window.

●Mode

Select the channel mode.

The available items vary with the current conditioner cards in the EDX-5000A.

●Range

Select the range.

The available items vary with the current conditioner cards in the EDX-5000A.

Since the Range is coupled with Meas Range item, when changing the Range, the Meas Range is automatically changed.

●Meas Range

Select the Meas Range.

Numeric value of the Meas Range is obtained by multiplying the Range and the Calibr. const.

Since the Range is coupled with Meas. Range item, when changing the Meas. Range, the Range is automatically changed.

●HPF/LPF

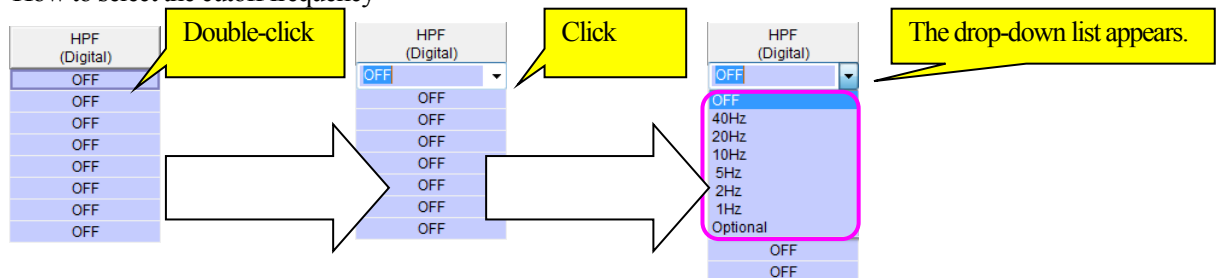
Select the cutoff frequency of the high-pass filter/low-pass filter.

The available items vary with the current conditioner cards in the EDX-5000A.

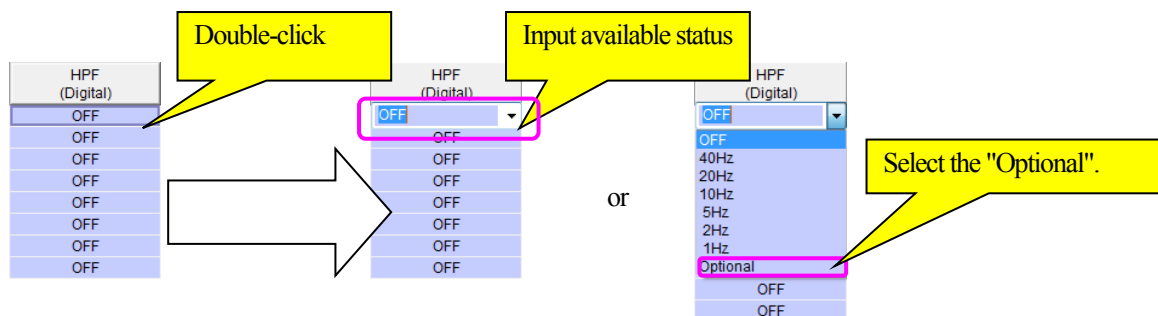
●HPF (Digital)/LPF (Digital)

Select/input the cutoff frequency for the digital filtering.

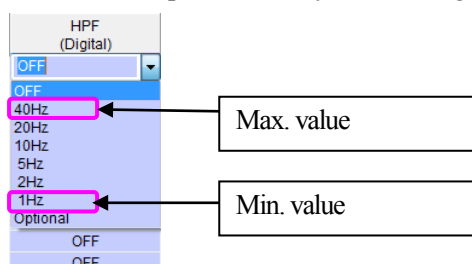
• How to select the cutoff frequency



• How to input the cutoff frequency



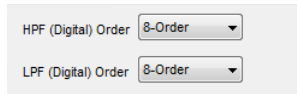
You can also input an arbitrary value during the input available status.



An arbitrary value should be within the Min. value and Max. value on the list.

Select the order of high-pass filter (digital)/low-pass filter (order), on the Set CH Condition window.

None/1-Order/2-Order/3-Order/4-Order/5-Order/6-Order/7-Order/8-Order



HPF (Digital) Order 8-Order
LPF (Digital) Order 8-Order

MEMO

- To conduct the digital filtering, put a check mark to the check box next to the "Conduct digital filtering, on the [General] tab on the Set Environment window. (For details, see "4-1 [General] tab")
- Before setting the digital filter, check whether the sampling frequency (Fs) and cutoff frequency (Fc) satisfy the following conditions.

$F_s/F_c = 2.5$ to 1000, F_s : 3Hz or larger, F_c : Integer

[Example]

$F_s = 5$ kHz,

$\text{Max}F_c = 5000[\text{Hz}]/2.5 = 2000 \lceil \text{Hz} \rceil$, $\text{Min}F_c = 5000[\text{Hz}]/1000 = 2.5[\text{Hz}]$

The range of the F_c : 5 to 2000 [Hz]

- When using the HPF (Digital) and LPF (Digital) in combination, the cutoff frequency (f_c) of the HPF (Digital) and that of the LPF (Digital) should be as follows.

$f_c(\text{HPF}) < f_c(\text{LPF})$

NOTE

To conduct the digital filtering, check the following items on the [General] tab on the Set Environment window.

- The AD data format is 24 bits.
- Release a check mark from the check box next to the "Conduct noise reduction."
(You cannot use the digital filtering and noise-reduction function at the same time.)

●Balance

Put a check mark to the check box next to the target channel.

Putting a check mark may be not available due to the conditioner card model and Mode.

●Offset Zero

Put a check mark to the check box next to the target channel.

The apparent measured value becomes 0 by setting the measured value, while monitoring data, as the offset value.

To initialize the offset value to 0, click the "Measurement" - "Initialize Offset Zero."

●CAL

Put a check mark to the check box next to the target channel.

Putting a check mark may be not available due to the conditioner card model and Mode.

●CAL Range

Select the output value of the CAL.

The available items vary with the current conditioner cards in the EDX-5000A.

●Int CAL

Put a check mark to the check box next to the target channel.

Putting a check mark may be not available due to the conditioner card model and Mode.

●**Input cable**

Select input cables.

Available items vary with conditioner cards.

For details, see the following table.

●**Cable correction value**

Enter cable correction values when using custom-made cables.

You are able to enter the cable correction values when selecting the “Custom Cable” in the “Input cables” column.

Table Input cables and cable correction value statuses

Conditioner cards	Input cables	Cable correction value statuses
CDV-40B series	U-40 to 48 (0.5m)	Invalid (unable to enter numbers, *** appears.)
	U-39 (1.0m)	
	U-38 (1.5m)	
	Custom Cable	Valid (able to enter numbers) ^{NOTE}
CVM-40A/41A series	U-121 (0.5m)	Invalid (unable to enter numbers, *** appears.)
	U-122 (1.0m)	
	U-123 (1.5m)	
	Custom Cable	Valid (able to enter numbers) ^{NOTE}
Other conditioner cards	***	Invalid (*** appears.)

NOTE) The available “cable correction values” are 0 to 50.

NOTE

- The internal sensitivity compensation uses the input cable No. and custom-made cable correction values. After changing the input cable No. and custom-made cable correction values, be sure to execute the internal sensitivity compensation again.

●**Rated Capacity (Sensor Phys. Value)**

Set the Rated Capacity of input sensors together with the Rated Output.

When changing the Rated Capacity, the Calibr. const. is automatically changed.

●**Rated Output (Sensor Output)**

Set the Rated Output of input sensors together with the Rated Output.

When changing the Rated Output, the Calibr. const. and Rated output (mV/V) are automatically changed.

●**Rated Output (mV/V)**

Input the Rated Output of input sensors. The item is valid when the Mode is "Strain."

When changing the Rated Output (mV/V), the Calibr. const. and Rated output are automatically changed.

●Calibr. const.

Set Calibr. const. to be multiplied to the measured data.

(Setting range: -1×10^8 to -1×10^{-8} , 1×10^{-8} to 1×10^8)

For Calibr. const., set coefficient that converts data into engineering value (physical quantity) corresponding to input sensors of CHs and compensation coefficient (lead wire compensation coefficient) to be used for gage compensation for gage factor compensation coefficient or extension cable in strain measurement.

When changing the Calibr. const., the Rated Capacity is automatically changed.

●Offset

Set Offset value in physical quantity (A value multiplied by the Calibr. const.).

(Setting range: -1×10^8 to -1×10^{-8} , 0, 1×10^{-8} to 1×10^8)

Set the offset value to shift the measured value at a certain amount.

MEMO

After setting the Calibr. const., and offset, the measured data is obtained as follows.

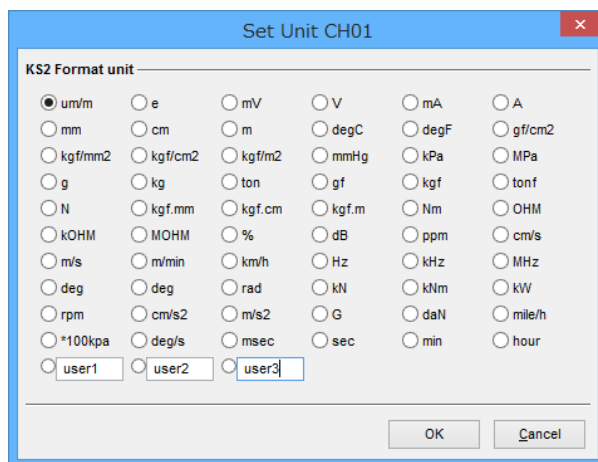
The measured data = The measured data (in range) $\times$ Calibr. const. + Offset

●Unit

Set the physical quantity unit according to input sensors.

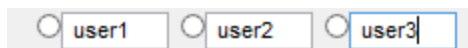
Double-click the target CH or press the **SPACE** key to display the Set Unit window.

Select the appropriate unit from the unit list.



MEMO

If the relevant unit is not on the Set Unit window, users can register up to 3 original units (User's unit).



●Chk. Val. (Up)

Set the Chk. Val. (Up) of the Range in percent figures. (Setting range: -100 to 100%)

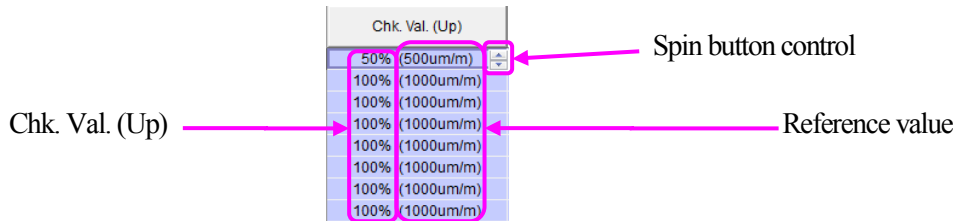
By setting the Chk. Val. (Up) and Chk. Val. (Down), you can detect erroneous status (the measured data of a CH exceeds the Check Values).

After exceeding the Chk. Val. (Up), numbers on numeric/graph windows will be displayed in red.

Double-click the target CH item or press the **SPACE** key to be in input available state.

In addition, use the spin button to change the value.

(For the exceeding values and over reset, see “7-12 To display the exceeding value.”)



●Chk. Val. (Down)

Set the Chk. Val. (down). (Setting range: -100 to 100%)

Set the Chk. Val. (Down) in the same manner as the Chk. Val. (Up).

(For the exceeding values and over reset, see “7-12 To display the exceeding value.”)

MEMO

Values described in parenthesis (), in the Chk. Val. (Up) Chk. Val. (Down), are reference physical quantities.

●Deci Digits

Select the number of digits below the decimal point.

See separate volume of the "DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (FOR COMMON OPERATION.)"

●CH Name

Input comments within 40 characters.

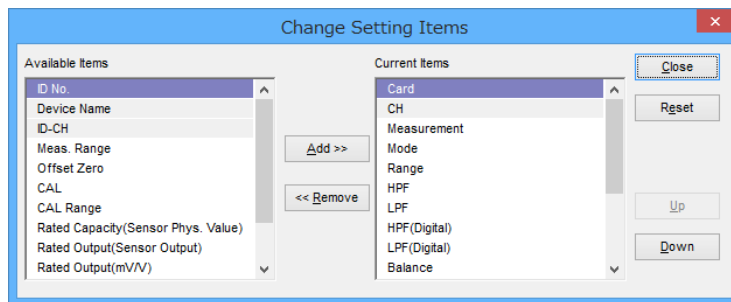
Double-click the target CH item or press the **SPACE** key to be in input available state.

Input the target comments.

5-1-2 Change Setting Items window

Click the **Change Setting Items...** button to display the following window.

You are able to add, remove, or sort the setting items displayed on the window.



Add button

The item currently not on the window is added to the window.

Remove button

The item currently on the window is removed from the window.

Close button

Determines the pre-set contents and closes the window.

Reset button

Resets the item to the default status.

Up/Down button

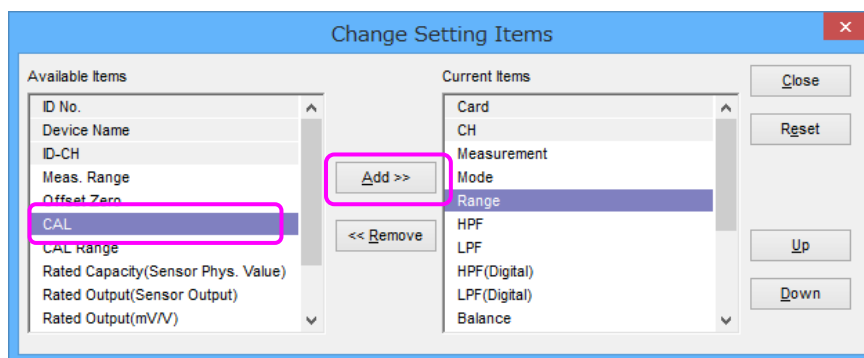
Sorts the current selecting items.

Choose the setting item you want to move, and click the **Up/Down** button.

■Operation example

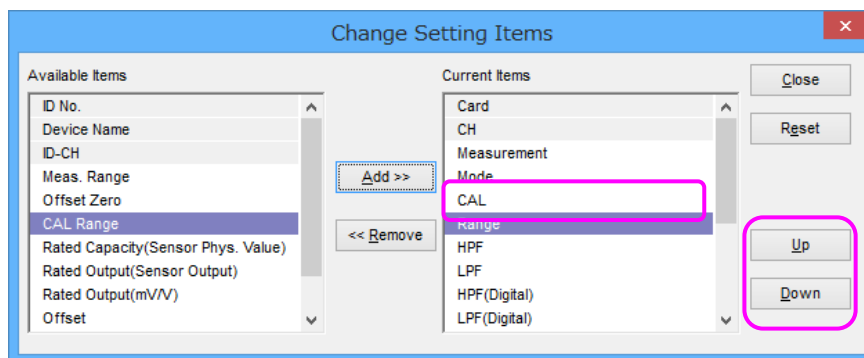
Procedures for adding the CAL ON/OFF setting item to the **Set CH Condition** dialog box are described below.

- (1) Select **CAL** in **Available Items**, move the cursor to a location in **Current items** where you want to inset the selected item and then, click the **Add >>** button.



- (2) The **CAL** is added to **Current Items**.

In addition, items in the **Current Items** can be moved to any location by clicking the **Up** or **Down** button.



- (3) Finally, click the **Close** to exit the **Change Setting Items** dialog box.

5-1-3 Compensating internal sensitivity

Always compensate the internal sensitivity after connecting sensors to the EDX-5000A units.

Compensate the internal sensitivity of every conditioner card as follows.

- CDV-40B (-F)

- ① Strain mode Check the bridge resistance of the strain gage (full bridge system) or bridge resistance of the strain gage transducer. Compensate the sensitivity.
- ② Voltage mode Compensate the internal zero point.

- DPM-42B (-F)

- ③ Check the bridge resistance of the strain gage (full bridge system) or bridge resistance of the strain gage transducer. Compensate the sensitivity.

Be sure to conduct the item ① and ③ with the actual sensor connected.

After mounting a new conditioner card or after changing the slot to be mounted, conduct the item ②.

■Operation method for the internal sensitivity compensation

- (1) Put a check mark to the check box next to the target channel.

Card	CH	Int. CAL
DPM-42B	01	☒
	02	☒
	03	☒
	04	☒
CVM-41A	09	☒
	10	☒
	11	☒
	12	☒
	13	☒
	14	☒
	15	☒
	16	☒

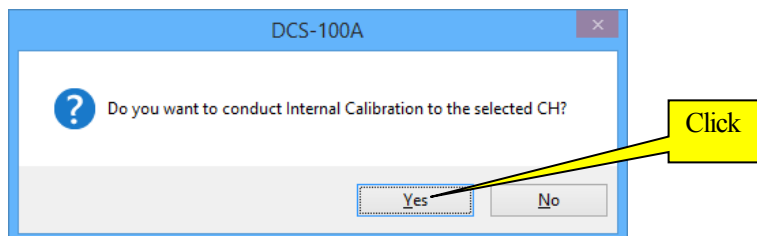
MEMO

When the *** appears on the “Int. CAL” column, you are not able to compensate the internal sensitivity of the target CH.

- (2)Click the Internal Calibration... button.

The following message appears.

Click the Yes button.



(3) The following window appears.

Result of Internal Calibration (OK : 4CH Error : 4CH Other : 8CH Total : 16CH)		
Card	CH	Result
DPM-42B	01	OK
	02	OK
	03	OK
	04	OK
	05	---
	06	---
	07	---
	08	---
CVM-41A	09	Sensor Error
	10	OFF
	11	Sensor Error

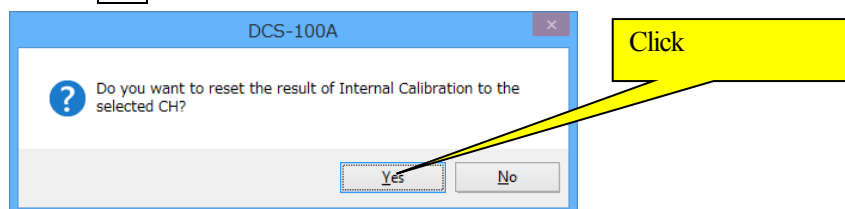
OK	Correctly compensated.
Sensor Error	In strain mode: Sensor is not connected, sensor is defective, the bridge resistance of the seosor is outside range of 120 ohm to 1,000 ohm. In voltage mode: The conditioner card may be defective. Please contact our sales office or private agent.
OFF	Not included

■Operation method for initializing the compensated internal sensitivity

(1)Click the **Reset Internal Calibration...** button.

The following message appears.

Click the **Yes** button.



(2) The following window appears.

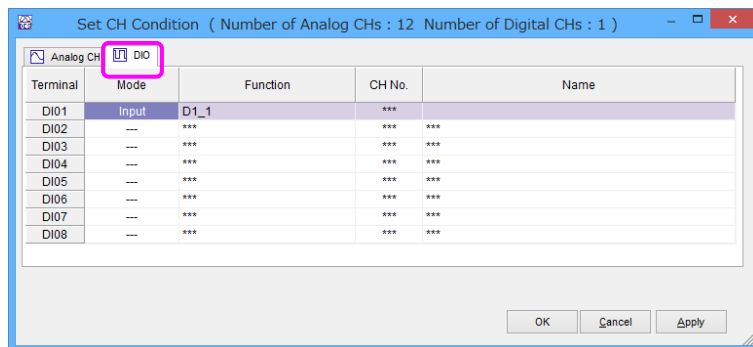
Reset the result of Internal Calibration (OK : 8CH Other : 8CH Total : 16CH)		
Card	CH	Result
DPM-42B	01	OK
	02	OK
	03	OK
	04	OK
	05	---
	06	---
	07	---
	08	---
CVM-41A	09	OK
	10	OFF
	11	OK

5-2 DIO conditions

Since the EDX-5000A has the digital input/output port (DIO port), the EDX-5000A is able to input/output the 8-bit digital signal. The DCS-100A is able to assign the remote control function (start, stop, balance adjustment, etc.) by using the digital signal inputs.

The DCS-100A assigns the input/output to 8 terminals of the DIO port.

Select the **DIO** tab on the **Set CH Condition** dialog box.



5-2-1 Setting items

●Terminal

The terminal name of the DIO.

●Mode

Select the target item from the following.

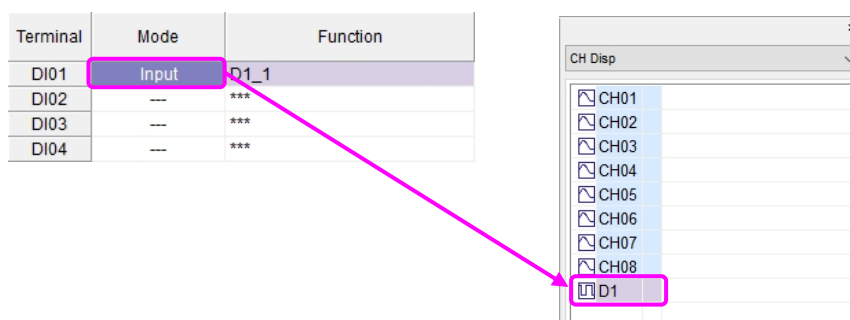
“Input”

When a Mode is "Input"

The DCS-100A enables the digital channels.

The DCS-100A is able to monitor/record the digital signals.

The channels to be measured appear on the CH Disp bar on the main window.



“Output”

When the Mode is "Output"

Outputs the digital signal based on the timing, pre-set on the “Function” column.

“Remote control”

When the Mode is "Remote control"

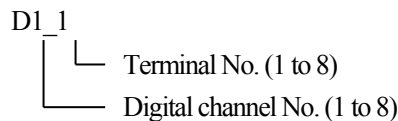
As you input the digital signal, the DCS-100A works based on the setting, pre-set on the “Function” column.

●Function

Set the function. The function varies with the "Mode".

When the Mode is "Input"

The Bit No.



When the Mode is "Output"

Select the output timing of the digital signal.

"Recording"	Output the digital signal during the recording.
"Trigger Signal"	Output the digital signal during the trigger recording.
"BUSY"	Outputs the digital signal during the Balance adjustment.
"AD"	Outputs the digital signal during the A/D conversion.

When an analog channel exists

"While exceeding (Anlg-CH)"	Outputs the digital signal while the analog channel exceeds the pre-set Chk. Val. (Up)/Chk. Val. (Down).
"Anlg-CH exceeded"	Outputs the digital signal after the analog channel exceeds the pre-set Chk. Val. (Up)/Chk. Val. (Down) once.

When an ECAN-CH exists

"While exceeding (ECAN-CH)"	Outputs the digital signal while the ECAN-CH exceeds the pre-set Maximum/Minimum.
"ECAN-CH exceeded"	Outputs the digital signal after the ECAN-CH exceeds the pre-set Maximum/Minimum once.

When the Mode is "Remote control"

Select the operation when inputting the digital signal.

"MONITOR"	Starts monitoring data.
"STOP"	Executes the same operation as the "STOP" switch on the EDX-5000A.
"REC/PAUSE"	Executes the same operation as the "REC/PAUSE" switch on the EDX-5000A.
"Balance"	Executes the same operation as the "BAL" switch on the EDX-5000A.
"Option switch"	Executes the same operation as the "OPT." switch on the EDX-5000A.

●Name

When the Mode is "Input", input the Name within 40 characters.

Double-click the target item or press the SPACE key to be in input available state.

Input the target names.

NOTE

To select the "Remote control" mode, make sure the EDX-5000A is 1 stand-alone or is master unit in synchronous operation.

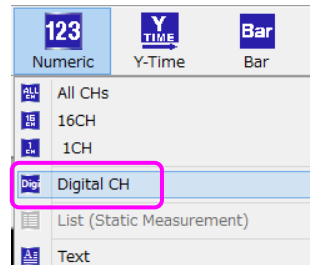
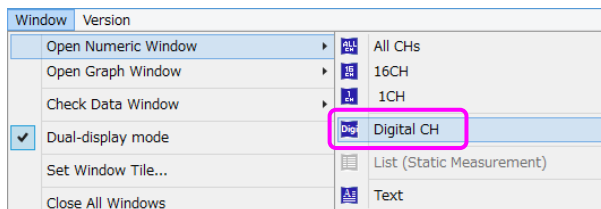
5-2-2 To display the digital channels on the numeric windows/graph windows

The DCS-100A displays the digital channels on the Numeric windows/Graph windows.

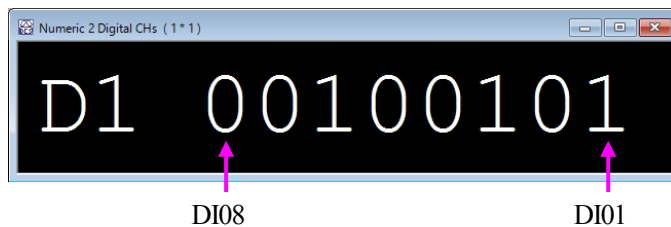
■To display the numeric window

Open the Numeric window (digital channel) by any of the following.

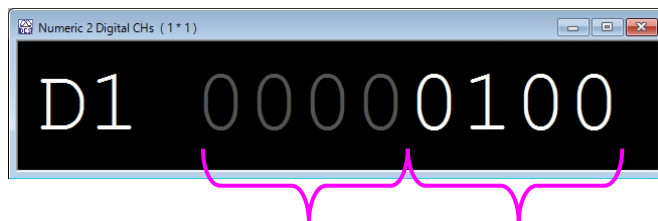
- Click the Window - Open Numeric Window - Digital CH.
- Click the **Numeric** icon from the toolbar. Click the Digital CH.



■Numeric window



When the Mode is "Output" or "Remote control", the bit appears in a neutral color between the character color and background color.



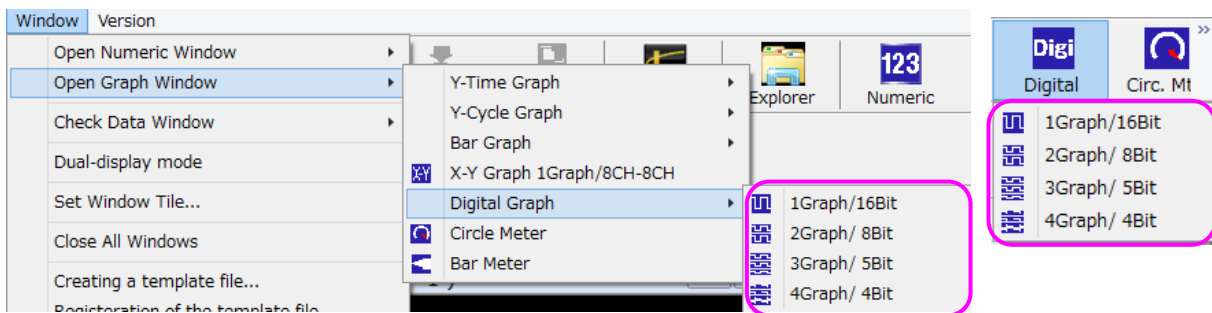
“Output” Mode or “Remote control” Mode

“Input” Mode

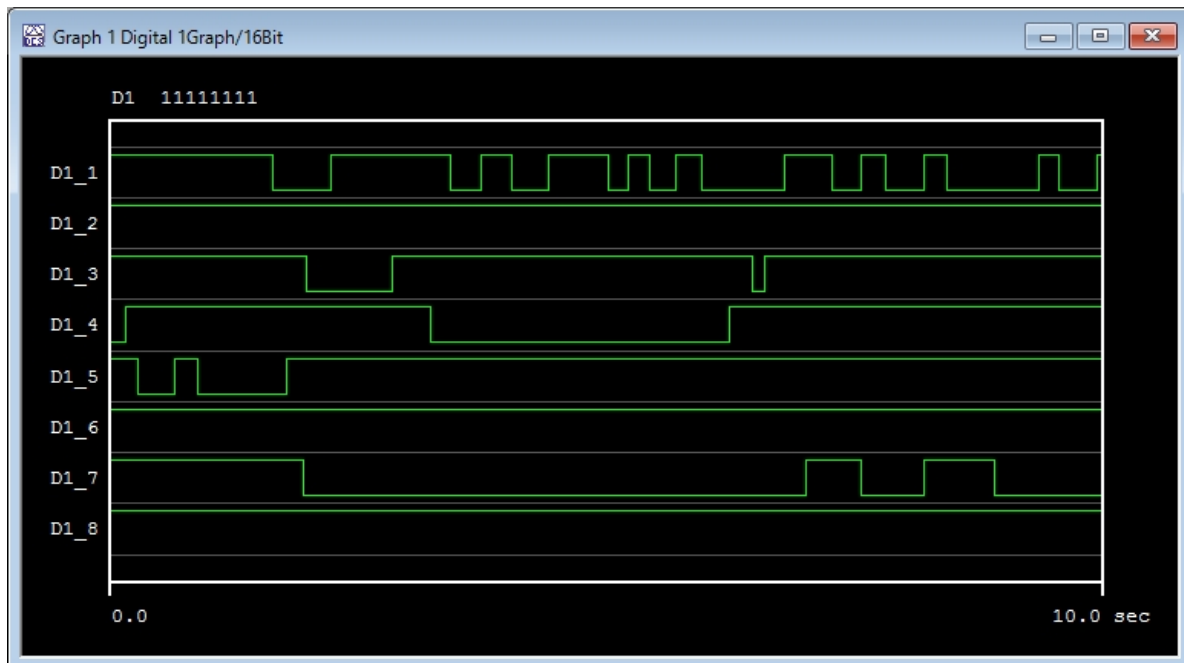
■To display the graph

Open the Graph window (digital channel) by any of the following.

- Click the Window - Open Graph Window - Digital Graph.
- Click the **Digital** icon from the toolbar. Click the target graph.



■Digital graph



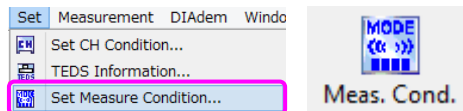
6. Measureing conditions

This section describes how to set the measure mode conditions (Meas Mode, Sampling Frequency, and Number of data/CH, etc.) and Data File.

■How to display

Open the Set Measure Condition window by any of the following.

- Click the Set - Set Measure Condition....
- Click the **Meas. Cond.** icon from the toolbar.



6-1 [Measure Mode] tab

This section describes how to set Measure Mode, Sampling Frequency, and Number of data/CH on the [Measure Mode] tab.

Click the [Measure Mode] tab.

The image shows the 'Measure Mode' tab of the 'Set Measure Condition' window. The window has a sidebar on the left with 'Measure Mode' and 'Data File' tabs, where 'Measure Mode' is selected and highlighted with a pink rectangle. The main area contains several sections: 'Measure Mode' with a dropdown menu set to 'Manual (Set Record Data)'; 'Sampling Frequency' with dropdowns for '1,2,5' and '500Hz', a note about CH restrictions, a 'Clockout frequency dividing' spinner set to '1000' with a note '(Frequency that is output from the EDX-5000A : 0.5Hz)', and radio buttons for 'Clockout Mode' (selected: 'always', others: 'during recording', 'reverse'); 'Record Data' with spinners for 'Number of Data/CH' (set to '2') and 'Record Time' (set to '0.004sec'); 'Repeat Times' with a spinner set to '1'; 'EGPC-50A' with checkboxes for 'Records GPS data.' and 'Records data by using the time data received through the GPS sensor.'; and 'Static Measurement' with a checkbox for 'Performs the static measurement (in CSV format file).' and a note 'Sampling frequency : 1kHz and the number of record data/CH : 1 fixed.'. At the bottom right are 'OK' and 'Cancel' buttons.

OK button

Determines the pre-set contents and closes the window.

Cancel button

Cancels the pre-set contents and closes the window.

■Measure Mode

Select the target item from the following.

Manual	Manually starts and stops the data recording.
Manual (Set Record Data)	Manually starts the data recording and records data for the pre-set Number of data/CH.
Interval	Automatically records data at the pre-set time interval.
Analog Trigger	Automatically starts recording data when measured value of the specified analog channel satisfies the analog trigger conditions.
Digital Trigger	Automatically starts recording data when measured value of the specified CH satisfies the digital trigger conditions.
Ext trigger	Automatically starts recording data when the external trigger signal is input.
Complex trigger	Automatically starts recording data when the trigger conditions, including the 4 channels of analog trigger, external trigger manual trigger, digital trigger, and ECAN trigger are satisfied.

Modes vary with the Data Save Folder as follows.

Data Save Folder	Available modes
EDX-5000A Data Drive	Manual, Manual (Set Record Data), Interval, Analog Trigger, Digital Trigger, External Trigger, and Complex Trigger
PC data file folder	Manual, Manual (Set Record Data), Interval, and Analog Trigger

NOTE

To use the Digital Trigger, make sure the single "Input" Mode exist on the Set DIO Condition window.
To use the Digital Trigger in the synchronous operation, make sure the single "Input" Mode exist on the Set DIO Condition window on the master unit.

■Sampling Frequency

Select the sampling frequency.

The selected sampling frequency is common to all channels.

Sampling Frequency	Selections
1, 2, 5 system	1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz, 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1k Hz, 2k Hz, 5k Hz, 10k Hz, 20k Hz, 50k Hz, 100k Hz, 200k Hz
2n system:	2 Hz, 4 Hz, 8 Hz, 16 Hz, 32 Hz, 64 Hz, 128 Hz, 256 Hz, 512 Hz, 1.024k Hz, 2.048k Hz, 4.096k Hz, 8.192k Hz, 16.384k Hz, 32.768k Hz, 65.536k Hz, 131.072k Hz
External clock	Input the sampling frequency of the external clock signal.

MEMO

The sampling frequency of 2n system is used for making the frequency resolution of the FFT analysis result to the nice round numeric value.

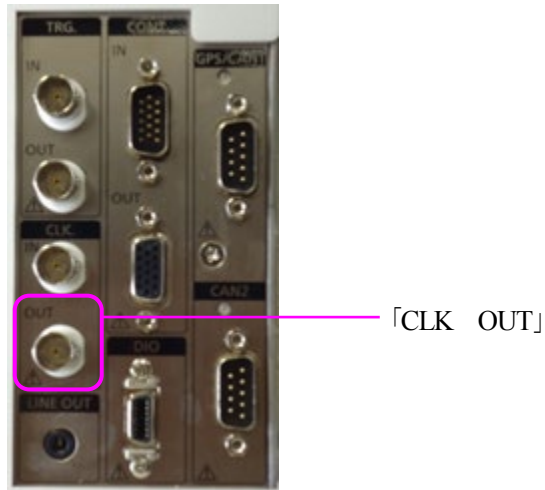
Sampling Frequency	Resolution of FFT (2048) analysis result
4.096kHz	1.0000Hz

- Set the clock out frequency dividing. (Setting range: : 1 to 65534)

The EDX-5000A can output clock (arbitrary divided internal sampling clock).

It allows the EDX-5000A and the external device (other manufacture made logger, high speed camera, etc) work together in measuring data.

The EDX-5000A outputs the external clock output from the CLK OUT terminal on the rear panel of the EDX-5000A in the following.



MEMO

For the setting clockout mode, see separate volume of "EDX-5000A MEMORY RECORDER/ANALYZER INSTRUCTION MANUAL (FOR HARDWARE)."

■Record Data

If you click other than Manual in the Measure Mode, input the Number of Data/CH or Record Time.

Since the Number of Data/CH is coupled with Record Time item, when changing the Number of Data/CH, the Record Time automatically changed.

■Repeat Times

Set the repeat times. (Setting range: 1 to 9999)

■EGPC-50A

Set the condition of GPS data recording.

(For details, see "9-3 GPS conditions.")

■Static Measurement

To perform the static measurement, put a check mark to the check box next to the "Performs the static measurement (in CSV format file)." (For details, see "7-14 Static measurement.")

6-2 [Interval] tab

This section describes how to set the interval conditions.

■How to display

- (1) Select the “Interval” on the Set Meas Condition window to display the [Interval] tab in the left.
- (2) Click the [Interval] tab.

Measure Mode
Interval
Data File

Start Time

☒ Set Interval Start Time.

2017/10/12 09:04:26

If start date is not set, the date when [REC] button is pressed shall be the start date.

Interval Time

Day Hour Minute Second

0 0 1 0

Set interval time to a time more than 'record time (1.000sec) + 10 second'.

Repeat Times

1

■How to operate

- (1) To set the interval start date and time, put a check mark to the box next to the “Set Interval Start Time” and set the date.
The start time will be several seconds after the **REC/PAUSE** button is pressed if putting no check mark.
- (2) Set the interval time.
- (3) Input the number of repeat times.

MEMO

If the **REC/PAUSE** button is pressed after the interval start time, the interval time and repeat times are automatically calculated from the current time and if the repeat time is left, the interval measurement is continued.

When the interval measurement is already finished for the pre-set repeat times, a message appears and the interval measurement finishes.

NOTE

To record data with 1 unit (stand-alone), set "recording time +10 seconds or longer" intervals.

To record data with multiple units (in synchronous operation), set "recording time +30 seconds or longer" intervals.

6-3 [Analog trigger] tab

This section describes how to set the analog trigger conditions.

■How to display

- (1) Select the “Analog Trigger” on the Set Meas Condition window to display the [Analog Trigger] tab in the left.
- (2) Click the [Analog Trigger] tab.

Measure Mode		
Analog Trigger		
Data File		
CH No.	Slope	Level (Physical Value)
Start Trigger	01 v Positive v	0.0 -1000 - 1000 um/m
End Trigger	01 v Positive v	0.0 -1000 - 1000 um/m
Pre Trigger Data(Delay)	Number of Data/CH	1000 v 0 - 161319
	Time	1.000sec v 0 - 00:02:41
Post Trigger Data(Delay)	Number of Data/CH	1000 v 0 - 161319
	Time	1.000sec v 0 - 00:02:41
☒ Set End Trigger		
Repeat Times		
1 v		

■How to operate

- (1) Select trigger CH that you want to record from.

Channels to be triggered vary with the Data Save Folder as follows.

Data Save Folder	Channels to be triggered
EDX-5000A Data Drive	One unit (stand-alone): Measurement ON channels (channels with check mark on the “Measurement” column) Multiple units (synchronous operation): Measurement ON channels (channels with check mark on the “Measurement” column) of the master unit
PC data file folder	Measurement ON channels (channels with check mark on the “Measurement” column) and Calculation ON channels (channels with check mark on the “Calculation” column) of all the EDX-5000A units

- (2) Select the target item from the following.

Positive	Triggered when the measured value of the trigger CH crosses the trigger level upward.
----------	---

Negative	Triggered when the measured value of the trigger CH crosses the trigger level downward.
----------	---

MEMO

- Trigger slope: Positive, Trigger level value: 100
Triggered when the measured data (less than 100) increases 100 or more.
 . . 96 97 98 99 100 101 102 103 104 105 . . .
 └─ Measured data which satisfies the trigger conditions.
- Trigger slope: Negative, Trigger level value: 100
Triggered when the measured data (more than 100) decreases 100 or less.
 . . . 103 102 101 100 99 98 97 96 95 94 . . .
 └─ Measured data which satisfies the trigger conditions.

(3) Input the trigger level value (value to be triggered) in physical quantity.

Input available range is displayed on the right.

(4) To record data before starting the recording, set the Pre Trigger Data Delay in time or number of data/CH.

Input available range is displayed on the right.

MEMO

The maximum value of the pre-trigger data delay and post-trigger data delay are obtained as follows.

Maximum value of the data delay = $8,388,608 / (\text{Data size} \times \text{The number of channels})$

The number of data bytes can be calculated using the following formulas.

- When the AD data format is 16 bits :
The number of data bytes = $(\text{the number of measuring channels} \times 2) \times \text{the sampling frequency}$
- When the AD data format is 24 bits :
The number of data bytes = $(\text{the number of measuring channels} \times 4) \times \text{the sampling frequency}$
- When performing arithmetic processing in real time :
The number of data bytes = $(\text{the number of measuring channels} \times 8) \times \text{the sampling frequency}$

*The number of measuring channels is the total of the number of analog channels and digital channels, and the number of arithmetic channels.

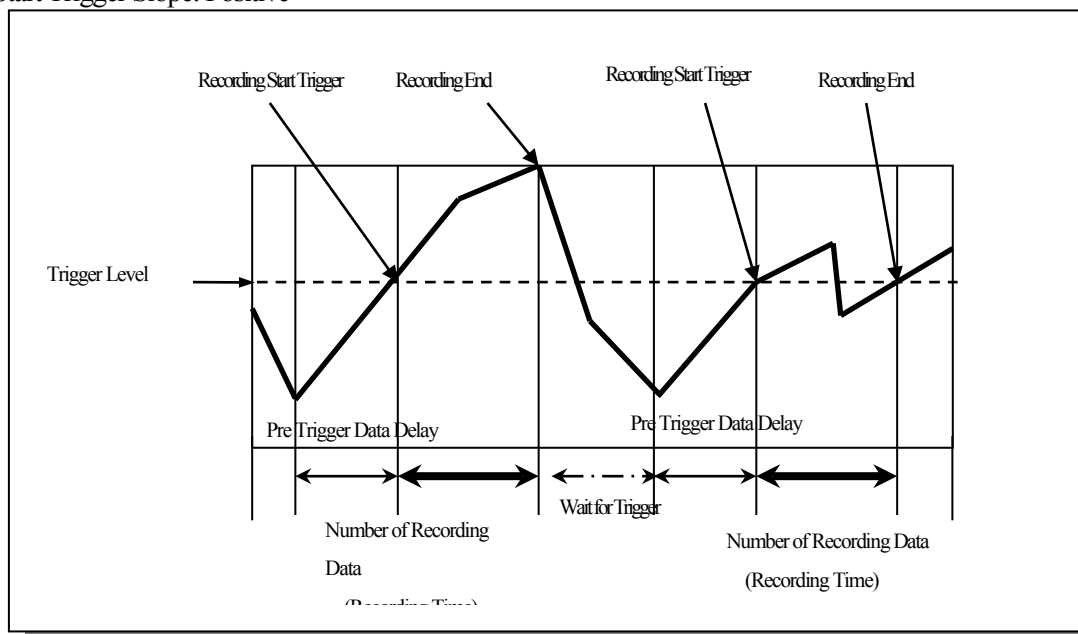
(5) To set the end trigger, put a check mark to the check box next to the "Set End Trigger." Set the conditions of the End Trigger in a same manner as the Start Trigger.

(6) Input the number of repeat times.

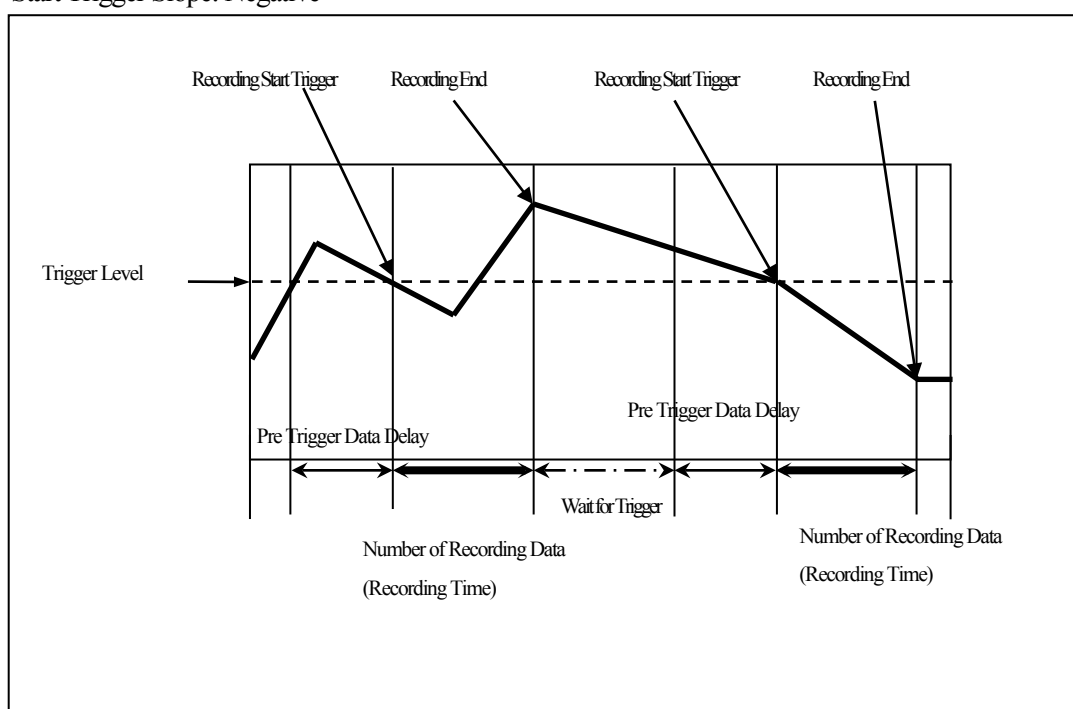
■Example of trigger slope with start trigger.

After satisfying the start trigger conditions, the DCS-100A starts recording and records the pre-set Number of data/CH.

Start Trigger Slope: Positive



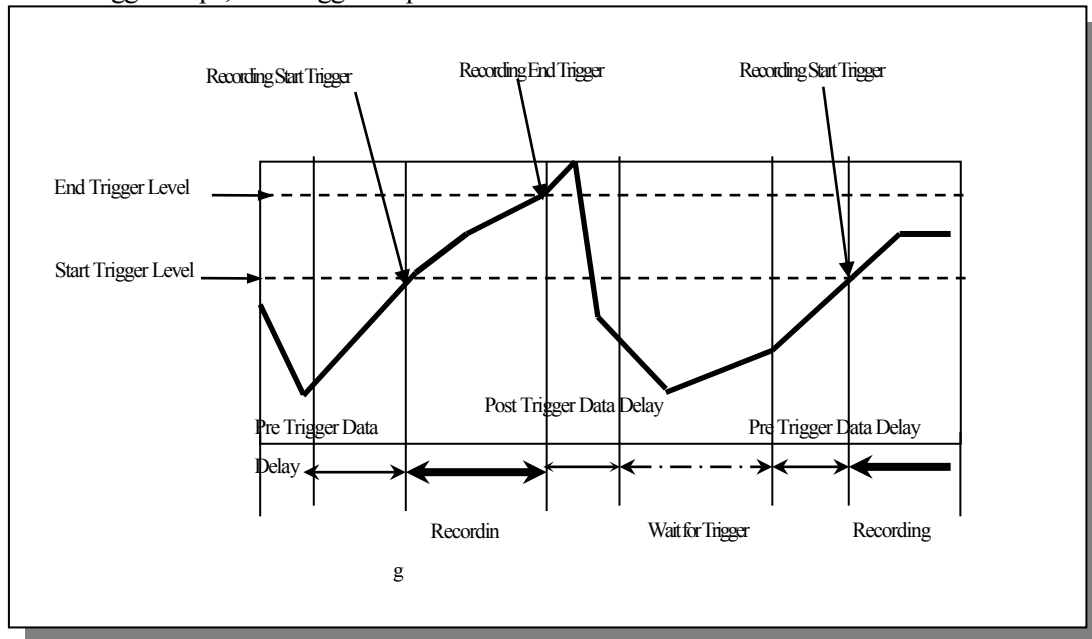
Start Trigger Slope: Negative



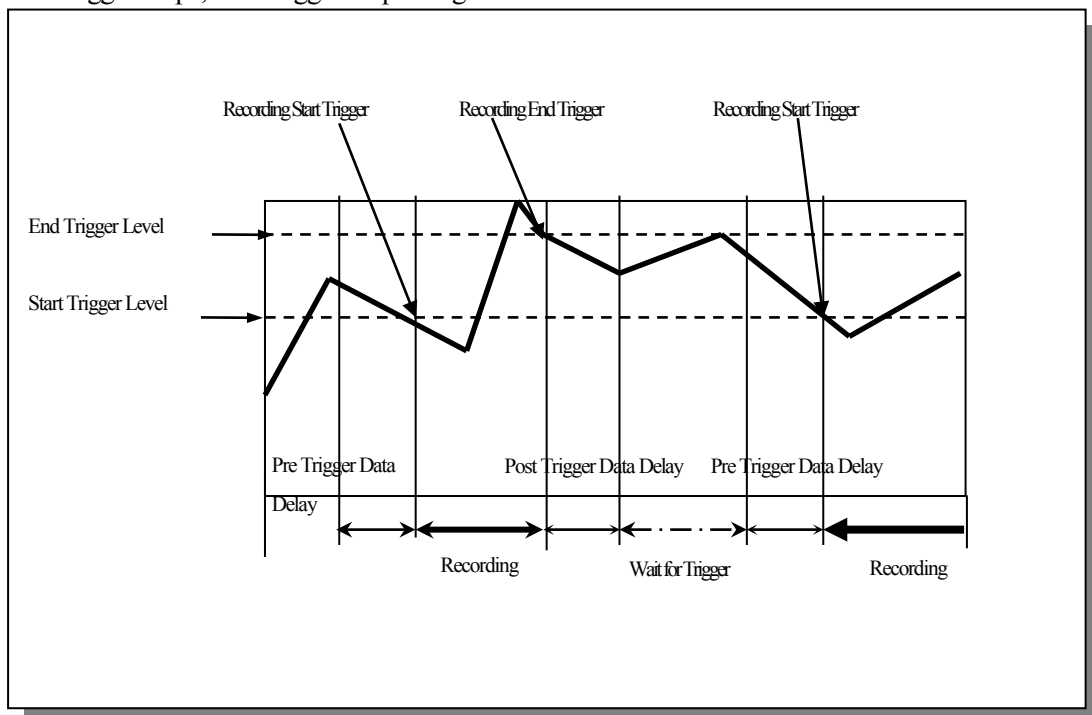
■ **Example of trigger slope with end trigger.**

After satisfying the start trigger conditions, the DCS-100A starts recording and records data until satisfying the end trigger conditions.

Start Trigger Slope, End Trigger Slope: Positive



Start Trigger Slope, End Trigger Slope: Negative



6-4 [Digital trigger] tab

This section describes how to set the digital trigger conditions.

■How to display

- (1) Select the "Digital Trigger" on the Set Meas Condition window to display the [Digital Trigger] tab in the left.

MEMO

The "Digital Trigger" appears, on the Set Meas Condition window, when a digital channel is included in the target.
(For the digital channels, see "5-2 DIO conditions.")

- (2) Click the [Digital Trigger] tab.

The screenshot shows the 'Digital Trigger' configuration window. On the left, a sidebar lists 'Measure Mode', 'Digital Trigger' (which is selected and highlighted with a pink box), and 'Data File'. The main panel is titled 'Digital Trigger' and contains the following settings:

- Start Trigger:** Bit 'D1_1', Level '1'.
- End Trigger:** Bit 'D1_1', Level '1'.
- Pre Trigger Data (Delay):** Number of Data/CH '1000' (range 0 - 161319), Time '1.000sec' (range 0 - 00:02:41).
- Post Trigger Data (Delay):** Number of Data/CH '1000' (range 0 - 161319), Time '1.000sec' (range 0 - 00:02:41).
- Set End Trigger:** A checked checkbox.
- Repeat Times:** A spinner box set to '1'.

■Operation method

- (1) Select the target bit to be triggered.

You are able to select the Input Mode bit, pre-set on the Set DIO Condition window.

In the synchronous operation, you are able to select the Input Mode bit, pre-set on the Set DIO Condition window of the synchronous master unit.

- (2) Select the trigger level value (value to be triggered).

0/1

- (3) To record data before starting the recording, set the Pre Trigger Data (Delay) in time (sec) or number of data/CH. Input available range is displayed on the right.

- (4) To set the end trigger, put a check mark to the check box next to the "Set End Trigger."

Set the conditions of the End Trigger in a same manner as the Start Trigger.

NOTE

To use the Digital Trigger, make sure the single "Input" Mode exist on the Set DIO Condition window.
To use the Digital Trigger in the synchronous operation, make sure the single "Input" Mode exist on the Set DIO Condition window on the master unit.

- (5) Input the number of repeat times.

6-5 External trigger conditions

This section describes how to set the external trigger conditions.

■How to display

(1) Select the Ext Trigger on the Set Meas Condition window to display the [Ext Trigger] tab in the left.

(2) Click the [Ext Trigger] tab.

Measure Mode
Ext Trigger
Data File

Ext Trigger

Start Trigger Slope: Positive

End Trigger Slope: Positive

Pre Trigger Data(Delay) Number of Data/CH: 1000 (0 - 161319)
Time: 1.000sec (0 - 00:02:41)

Post Trigger Data(Delay) Number of Data/CH: 1000 (0 - 161319)
Time: 1.000sec (0 - 00:02:41)

☒ Set End Trigger.

Repeat Times: 1

■Operation method

(1) Select the trigger slope (how to cross the trigger level) from the following.

Positive/Negative

(2) To record data before starting the recording, set the Pre Trigger Data (Delay) in time (sec) or number of data/CH.

Input available range is displayed on the right.

(3) To set the end trigger, put a check mark to the check box next to the "Set End Trigger."

Set the conditions of the End Trigger in a same manner as the Start Trigger.

(4) Input the number of repeat times.

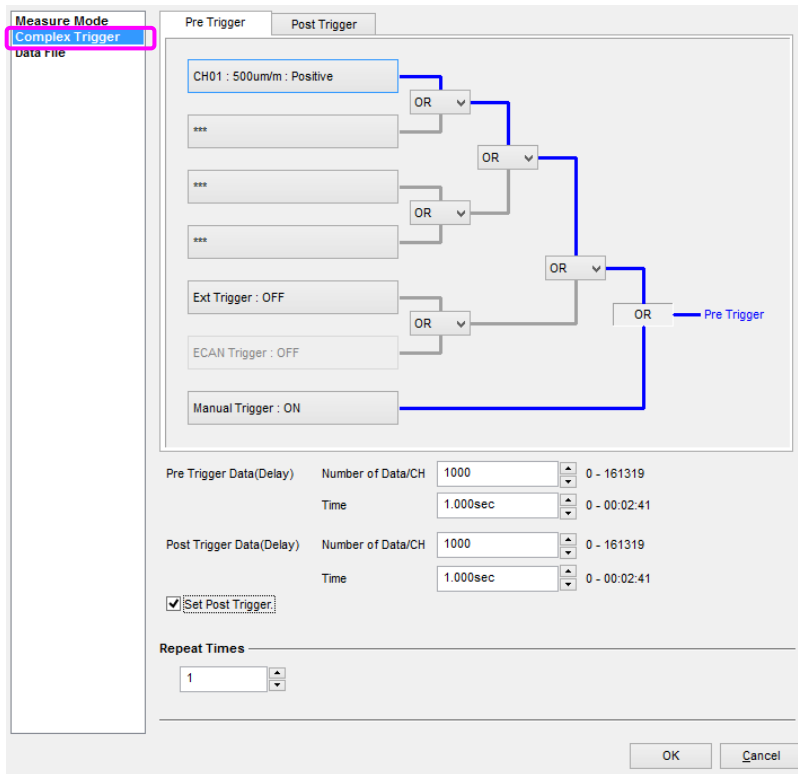
6-6 Complex trigger conditions

This section describes how to set the complex trigger conditions.

■How to display

(1) Select the Complex Trigger on the Set Meas Condition window to display the [Complex Trigger] tab in the left.

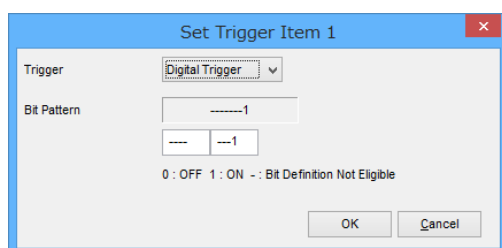
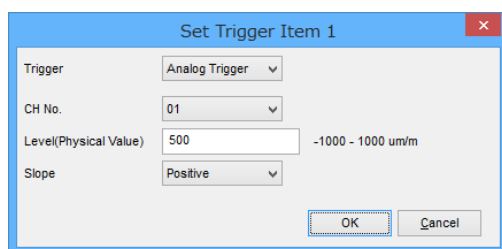
(2) Click the [Complex Trigger] tab.



■Operation method

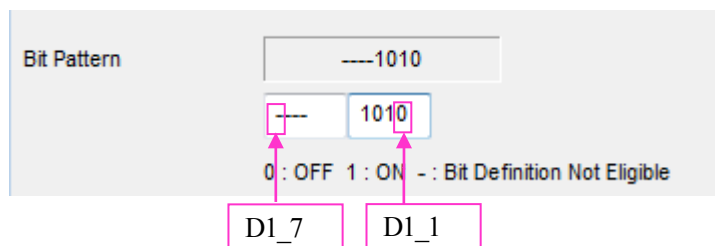
(1) Set logical AND OR conditions for the 4 channels of the analog trigger and digital trigger, external trigger, ECAN trigger, and manual trigger.

● Click the **Analog trigger** button or **Digital trigger** button to open the following window.



Select the "None", "Analog Trigger", "Digital Trigger" for setting the conditions.

When the Trigger is "None", the EDX-5000A is triggered when the measured value of the digital channel is the same value as the pre-set "Bit Pattern".



On the above window, the EDX-5000A is triggered when the digital channel is D1_1=0, D1_2=1, D1_3=0, and D1_4=1.

- Click the **Ext Trigger** button. The external trigger condition changes in due order from the "Ext Trigger: ON: Positive" - "Ext Trigger: ON: Negative" - "Ext Trigger: OFF."
- Click the **ECAN Trigger** button. The ECAN trigger condition changes in due order from the ""ECAN Trigger: ON" - "ECAN-Trigger: OFF".
For details, see "6-6-1 ECAN trigger condition."
- Click the **Manual Trigger** button. The Manual trigger condition changes in due order from the "Manual Trigger: ON" - "Manual-Trigger: OFF".
To record data, with the "Manual Trigger: ON", click the **REC** button during the "waiting to be triggered" status.
- Select the logical AND operator or logical OR operator.
The series of valid trigger conditions are displayed in blue line.

(2) To record data before starting the recording, set the Pre Trigger Data Delay in time or number of data/CH.
Input available range is displayed on the right.

(3) To set the end trigger, put a check mark to the check box next to the "Set End Trigger."
Set the conditions of the End Trigger in a same manner as the Start Trigger.

NOTE

Before using the **ECAN Trigger** button, check the followings.

The EGPC-50A is mounted in the EDX-5000A.

One or more check marks exists on the "Measurement" column on the ECAN Condition Setting window.

(4) Input the number of repeat times.

6-6-1 ECAN trigger condition

■How to display

(1) To display the [ECAN Trigger] tab in the left, select the "ECAN Trigger: ON".

Measure Mode
Complex Trigger
ECAN Trigger
Data File

Pre Trigger Post Trigger

CH01 : 500um/m : Positive

Ext Trigger : OFF
ECAN Trigger : ON
Manual Trigger : ON

Pre Trigger Data(Delay) Number of Data/CH 1000 0 - 322638
Time 1.000sec 0 - 00:05:22
Post Trigger Data(Delay) Number of Data/CH 1000 0 - 322638
Time 1.000sec 0 - 00:05:22
☒ Set Post Trigger.
Repeat Times
1

OK Cancel

(2) Click the [Complex Trigger] tab.

Measure Mode
Complex Trigger
ECAN Trigger
Data File

Start Trigger

Trigger Analog Trigger

CH No. Slope Level (Physical Value)
E0_001 Positive 0.0

End Trigger

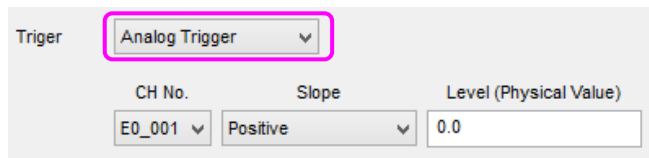
Trigger Analog Trigger

CH No. Slope Level (Physical Value)
E0_001 Positive 0.0

OK Cancel

6-6-1-1 Analog trigger conditions

This section describes how to set the analog trigger conditions on the [ECAN Trigger] tab.
Select the "Analog Trigger" from the "Trigger list" in the Start Trigger section.



Trigger	CH No.	Slope	Level (Physical Value)
Analog Trigger	EQ_001	Positive	0.0

■How to operate

(1) Select trigger CH that you want to record from.

You are able to select the ECAN-CHs, with a check mark on the "Measurement" column on the ECAN Condition Setting window.

In the synchronous operation, you are able to select the ECAN-CHs, with a check mark on the "Measurement" column on the ECAN Condition Setting window of the synchronous master unit.

For details, see "9-2 CAN conditions."

(2) Select the target item from the following.

Positive Triggered when the measured value of the trigger CH crosses the trigger level upward.

Negative Triggered when the measured value of the trigger CH crosses the trigger level downward.

(3) Input the trigger level value (value to be triggered) in physical quantity.

Input available range is displayed on the right.

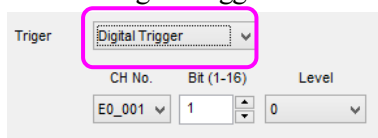
(4) To valid the End Trigger on the [ECAN Trigger] tab, set the "ECAN Trigger: ON" on the [Post Trigger] tab on the [Complex Trigger] tab.

Set the conditions of the End Trigger in a same manner as the Start Trigger.

6-6-1-2 Digital trigger conditions

This section describes how to set the digital trigger conditions on the [ECAN Trigger] tab.

Select the "Digital Trigger" from the "Trigger list" in the Start Trigger section.



Trigger	CH No.	Bit (1-16)	Level
Digital Trigger	E0_001	1	0

■How to operate

- (1) Select trigger CH that you want to record from.

You are able to select the ECAN-CHs, with a check mark on the "Measurement" column on the ECAN Condition Setting window.

In the synchronous operation, you are able to select the ECAN-CHs, with a check mark on the "Measurement" column on the ECAN Condition Setting window of the synchronous master unit.

For details, see "9-2 CAN conditions."

- (2) Set the target bit.

The range of the target bit varies with the "Bit Length" of the trigger channel.

- (3) Input the trigger level value (value to be triggered).

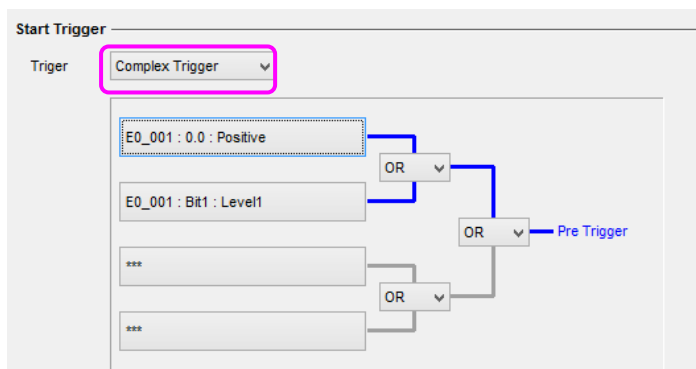
0/1

- (4) To valid the End Trigger on the [ECAN Trigger] tab, set the "ECAN Trigger: ON" on the [Post Trigger] tab on the [Complex Trigger] tab.

Set the conditions of the End Trigger in a same manner as the Start Trigger.

6-6-1-3 Complex trigger conditions

This section describes how to set the complex trigger conditions on the [ECAN Trigger] tab. Select the "Complex Trigger" from the "Trigger list" in the Start Trigger section.



■Operation method

(1) Set logical AND OR conditions for the 4 channels of the analog trigger and digital trigger.

- Click the **Analog trigger** button or **Digital trigger** button to open the following window.

The 'Set Trigger Item 1' dialog box is shown. It has a 'Trigger' dropdown set to 'Analog Trigger', a 'CH No.' dropdown set to 'E0_001', a 'Level (Physical Value)' text box containing '0.0', and a 'Slope' dropdown set to 'Positive'. There are 'OK' and 'Cancel' buttons at the bottom.

The 'Set Trigger Item 2' dialog box is shown. It has a 'Trigger' dropdown set to 'Digital Trigger', a 'CH No.' dropdown set to 'E0_001', a 'Bit (1-16)' dropdown set to '1', and a 'Level' dropdown set to '1'. There are 'OK' and 'Cancel' buttons at the bottom.

Select the "None", "Analog Trigger", "Digital Trigger" for setting the conditions.

For details, see “6-6-1-1 Analog trigger conditions” and “6-6-1-2 Digital trigger conditions.”

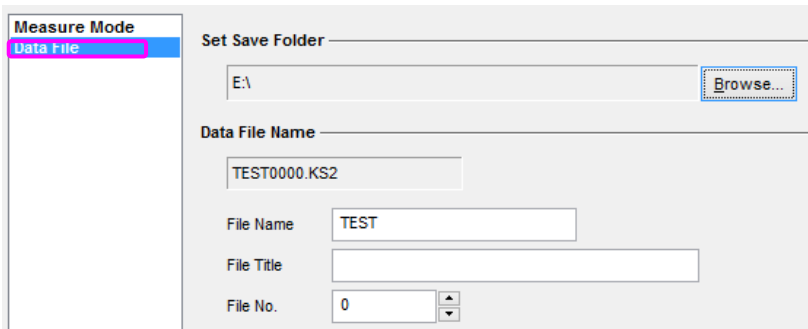
- Select the logical AND operator or logical OR operator.
The series of valid trigger conditions are displayed in blue line.

(2) To valid the End Trigger on the [ECAN Trigger] tab, set the "ECAN Trigger: ON" on the [Post Trigger] tab on the [Complex Trigger] tab.

Set the conditions of the End Trigger in a same manner as the Start Trigger.

6-7 Data file conditions

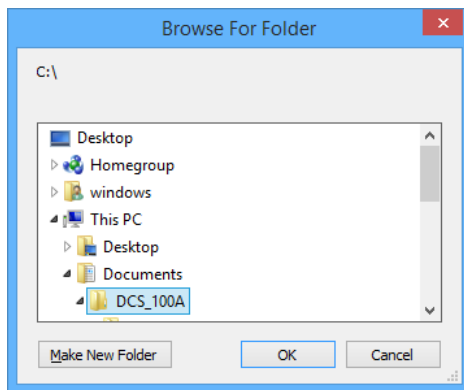
This section describes how to set relating items of data files.
Click the [Data File] tab.



The screenshot shows the 'Measure Mode' dialog box with the 'Data File' tab selected. The 'Set Save Folder' section has a text box containing 'E:\' and a 'Browse...' button. The 'Data File Name' section has a text box containing 'TEST0000.KS2'. Below this, there are three fields: 'File Name' with 'TEST', 'File Title' (empty), and 'File No.' with '0' and up/down arrows.

■Set Save Folder

Set the Set Save Folder for saving the collected data file.
Click the **Browse...** button to display the Browse For Folder.
Select the target folder.



■File Name

Set a file name within 20 characters.

■File Title

Set a file name within 40 characters.

■File No.

Set a file No. (Setting range: 0 to 9999)
You are able to record data up to File No. 9999.

■Data File Name

Data file names are specified as shown below.

Measure Mode	Data File Name
Manual	TEST 0000 . KS2 ① ②
Manual (Set Record Data) when the repeat time is 1.	
Manual (Set Record Data) when the repeat times is 2 or larger.	TEST 0000 _Δ 0000 . KS2 ① ② ③
Interval	
Analog Trigger	
Digital trigger	
External trigger	
Complex Trigger	

①File Name

②File No.

③The repeat time

The file number is incremented by one after every recording

The repeat times is automatically incremented by one after every recording

According to the Measure mode, alphabet is added in the Δ part before the 4-dig repeat times.

M: Manual (Set Record Data),

I: Interval

A: Analog Trigger

D: Digital Trigger

E: External Trigger,

C: Complex Trigger

NOTE

When the Data Save Folder is set “EDX-5000A Data Drive”, since the KS2 format data file existing at the save destination of the acquired data file is not overwritten, it may be automatically changed to a number higher than the set file number.

Example:

Name:”TEST”,No.:”0001”

(1) If the file “TEST0000.KS2” exists:0001(No change)

(2) If the file “TEST0001.KS2” exists:0002(Changed)

(3) If the file “TEST1000.KS2” exists:1001(Changed)

(4) If the file “TEST9999.KS2” exists:0001(Cannot start monitor)

The above process applies only the KS2 format data file in the master unit.

Other data files may be overwritten with the same name.

Data files that may be over written:

(1) KS2 format data file in the slave unit

(2) E4A format data file (CAN)

(3) NMEA format data file(GPS)

(4)CSV format data file

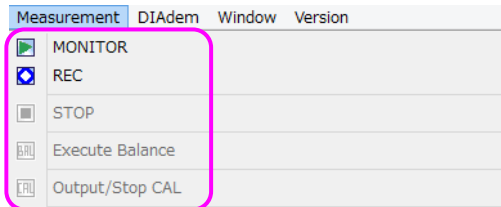
(5)RSP format data file(RPCIII)

(6)AVI format data file(movie)

7. Measuring data

Execute measurements by any of the following.

- Click the Measurement's drop-down menu.
- Click the Measurement's icon from the toolbar.
- Click the Measurement's button from the Meas Operation Panel.

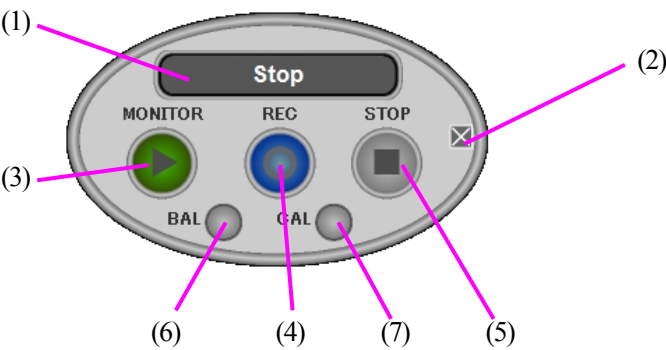


MEMO

On the default state, icons related to the measurements are not displayed on the toolbar.

For displaying the buttons, select the "View" - "Control Bar" - "Tool Bar" - "Customize..." to display the Customize Toolbar dialog box.

7-1 Meas operation panel



(1) Display state	Displays the measurement state.
-------------------	---------------------------------

Stop	Stopping the measurement.
Monitoring	In the process of monitor measurement.
Recording	Recording data.
Pausing	Pausing recording during the manual measurement.
Wait for Intvl	Interval measurement condition is not satisfied
Wait for Trg	Trigger measurement condition is not satisfied

(2) button	Closes the Meas Operation Panel.
(3) MONITOR button	Starts monitoring data. The same operation is available by clicking the "Measurement" - "MONITOR."
(4) REC button	Manual measurement: Starts recording. Interval measurements: Waiting for the interval measurement. Trigger measurement: Waiting for the trigger. The same operation is available by clicking the "Measurement" - "REC"
(5) STOP button	Stops recording data or stops monitoring data. The same operation is available by clicking the "Measurement" - "STOP."
(6) BAL button	Executes balance and displays the Balance result window. The same operation is available by clicking the "Measurement" - "Execute Balance."
(7) CAL button	Outputs the CAL in the order of Output +CAL → Output -CAL → Stop. The same operation is available by clicking the "Measurement" - "Output/Stop CAL."

MEMO

To hide the Meas Operation Panel, click the View - Control Bar - Meas Operation Panel - Disp to release a check mark.

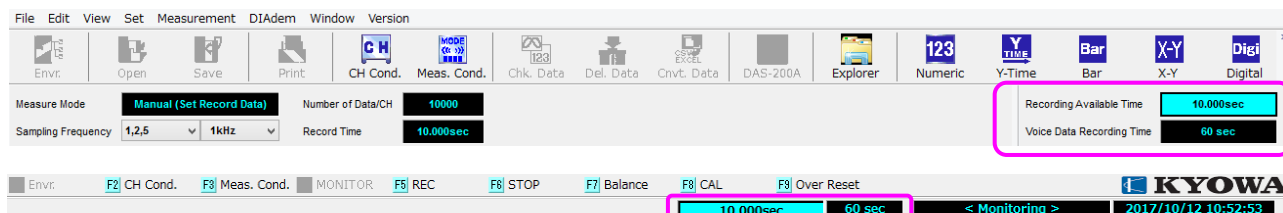
To show the Meas Operation Panel, click the View - Control Bar - Meas Operation Panel - Disp to put a check mark.

7-2 Measuring mode bar and status bar

Various items are displayed on the measuring mode bar and status bar.

■Recording available time and voice data recording time

When the DCS-100A starts monitoring data, the "recording available time" and "voice data recording time" appear on the measuring mode bar and status bar.



- The "recording available time" is as follows.

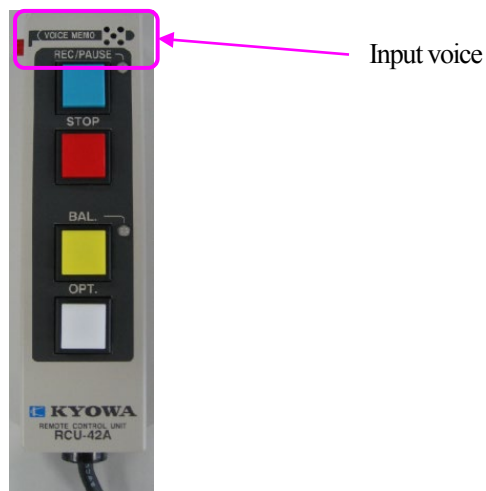
When the number of recording data is specified, by using the number of recording data and sampling frequency, the "recording available time" is calculated.

When the number of recording data is not specified, the maximum recording available time appears.

- When you start recording data, the "recording available time" starts decreasing.



- The "voice data recording time" indicates the remaining time of the voice recording available time.
(Use the remote controller for recording voice.)



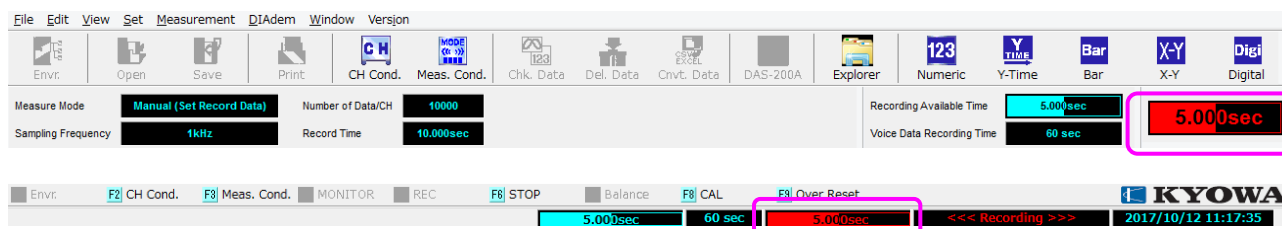
MEMO

- When selecting the "Manual (Set Record Data)" and "Interval" or when executing trigger measurements without setting the end trigger, the number of recording data is specified.
- When selecting the "Manual" or when executing measurements with setting the end trigger, the number of recording data is not specified.
- When executing trigger measurements without setting the end trigger, the "recording available time" is obtained as follows.

"Recording Available Time" = (The number of recording data + Pre Trigger Data Delay)/Sampling frequency

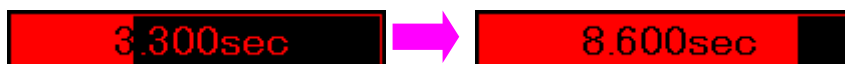
■Recording time

When the DCS-100A starts monitoring data, the "recording time" (elapsed time after the recording starts) appears on the measuring mode bar and status bar.



- When the number of recording data is specified, the bar indicates the "recording time."

When you start recording data, the "recording time" starts increasing.



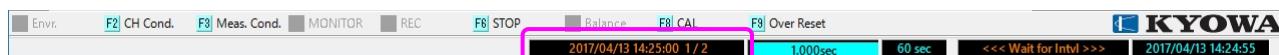
MEMO

When executing trigger measurements without setting the end trigger, the "recording available time" is obtained as follows.

"Recording Available Time" = (The number of recording data + Pre Trigger Data Delay)/Sampling frequency

■Measuring conditions

When the DCS-100A becomes "Wait for Intvl (Waiting for the interval measurement) during interval measurements or "Wait for Trg (Waiting for the trigger) during the trigger measurements, measuring conditions appear on the status bar.



●Interval conditions

2017/04/13 14:26:30 1 / 2

The "data recording start time" and "the number of repeat times" appear.

●Analog trigger conditions

CH01 > 2500.00um/m 1 / 10

The "trigger CH", "trigger level", and "the number of repeat times" appear.

●Digital trigger conditions

D1_1 Level:0 1 / 10

The "trigger bit", "trigger level", and "the number of repeat times" appear.

●External trigger conditions

Ext Trigger Signal Positive 1 / 10

The number of repeat times appears.

●Complex trigger conditions

Complex Trigger 1 / 10

The number of repeat times appears.

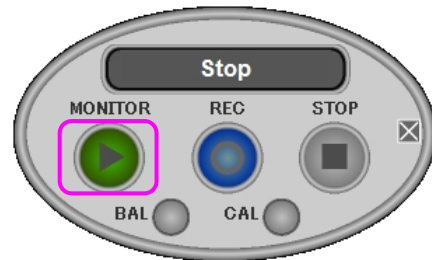
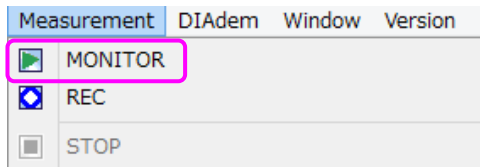
7-3 Manual measurement

This section describes measurement flow when the Measure mode is “Manual” mode or “Manual (Set Record Data)” mode.

■Operation method

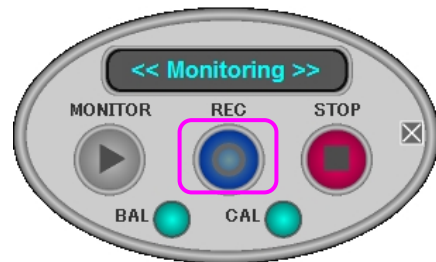
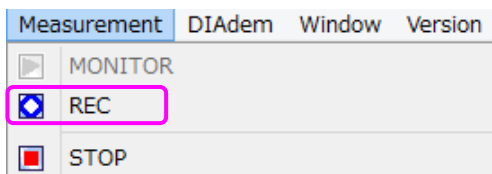
(1) Starts monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.



(2) Starts recording data by any of the following.

- Click the Measurement - REC.
- Click the **Record** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.



(3) Recording starts and the recording status appears on the status bar.



(4) To pause the data recording, with the PAUSE function in enabled state, execute any of the following operation during recording data.

To restart the data recording, execute any of the following operation during pausing.

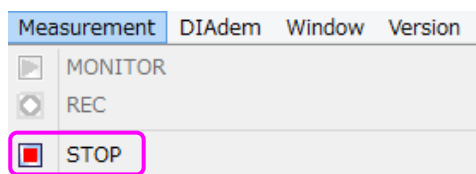
- Click the Measurement - REC/PAUSE.
- Click the **REC/PAUSE** icon from the toolbar.
- Click the **REC/PAUSE** button from the Meas Operation Panel.

MEMO

Enable/Disable the PAUSE function on the [Detail] tab on the Set Environment window.

(5) Stops recording data by any of the following.

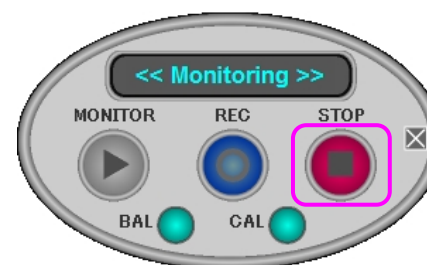
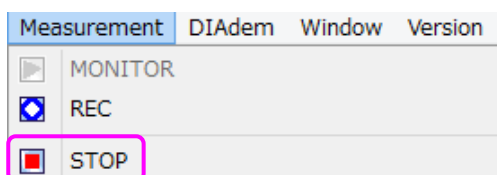
- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.



When Measure mode is the "Manual (Set Record Data)" mode, the DCS-100A records data until satisfying the Record Data on the Measure Mode window.

(6) Stops monitoring data by any of the following.

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.



7-3-1 Repeated recording

When selecting the "Manual (Set Record Data)", you are able to execute the repeated recording by setting the number of repeat times.

When recording data for a long time, a data file is created by every pre-set number data (or by every pre-set time) by executing the repeated recording.

■Measuring conditions

- The Meas mode is "Manual (Set Record Data)."
- You are not able to pause the recording operation (by clicking the Measurement - REC/PAUSE or **REC/PAUSE** icon) while recording data

NOTE

For the repeated recording, you need to set 5 seconds or longer as the record time.

■Operation method

(1) Open the Set Measure Condition window by any of the following.

- Click the Set - Set Measure Condition...
- Click the **Meas. Cond.** icon from the toolbar.

(2) Select the [Measure Mode] tab.

Select the "Manual (Set Record Data)".

Select the Number of Data/CH or Record Time.

The number of recording data or data-recording time saved in one file is determined.

Measure Mode

Manual (Set Record Data)

Sampling Frequency

1,2,5 100Hz

The number of measuring CHs of EDX-5000A units are listricted by the selected sampling frequency.

Clockout frequency dividing 1 (Frequency that is output from the EDX-5000A : 100Hz)

Record Data

Number of Data/CH 8640000

Record Time 24:00:00

(3) Select the Repeat Times. (Setting range: 1 to 9999)

The DCS-100A records data by every pre-set number data (or by every pre-set time) for the number of repeat times.

When the "Repeat Times" is 2 or larger, the "Total Recording Time" appears next to the "Repeat Times."

Repeat Times (Total Recording Time : 2day 00:00:00)

2

Total Recording Time

2 days = Record Time 24:00:00 × Record Time 2

(4) The DCS-100A starts recording as follows.

(Suppose the recording starts at 8:00, data file name is DATA, and File No. is 0000.)

First day, The recording starts at 8:00.

Saved in the DATA0000_M0000.KS2.

Second day, 8:00

Saved in the DATA0000_M0001.KS2.

Third day, The recording ends at 8:00.

After executing the measurement for the pre-set number of repeat times, the DCS-100A becomes monitoring state.

If you stop the repeated recording by clicking the Measurement - REC/PAUSE or **REC/PAUSE** icon during the repeated recording, the DCS-100A becomes monitoring state.

■Data File Name

The "Data File Name" is determined by using the items and the "Repeat Times" on the Set Meas Condition window.

- When the Repeat Times is 1.

Data File Name: File name + File No.KS2

- When the Repeat Times is 2 to 9999.

Data File Name: File name + File No._M Repeat Times.KS2

Data File Name

TEST0000_M0000.KS2

File Name: TEST

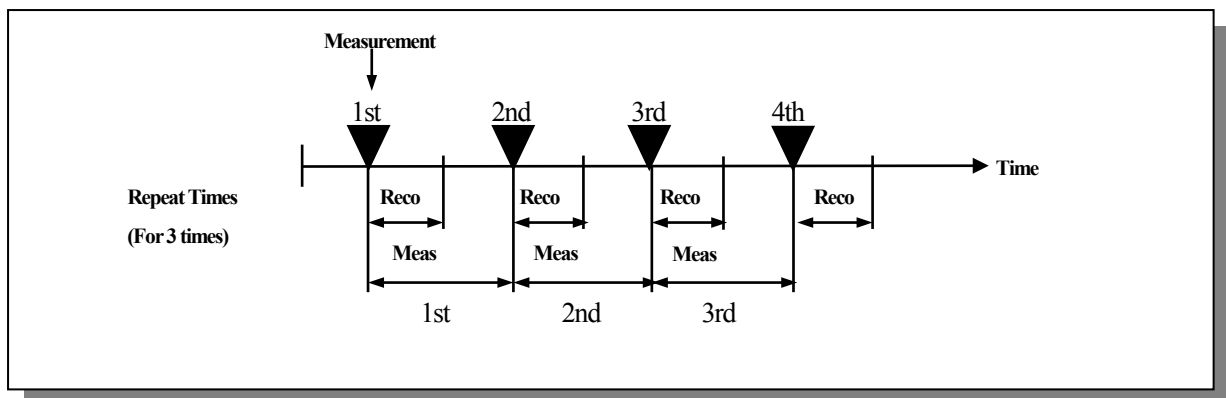
File Title:

File No.: 0

7-4 Interval measurement

This section describes measurement flow when the Measure mode is "Interval" mode.

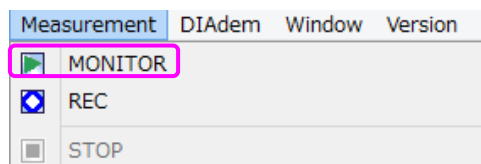
The Interval measurement automatically records data at the pre-set time interval until satisfying the Record Data on the Measure Mode window.



■Operation method

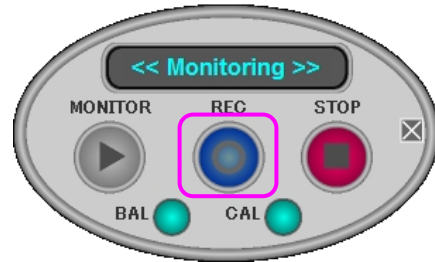
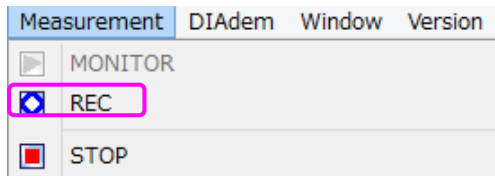
- (1) Starts monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.



- (2) Displays the "Wait for Intvl" by any of the following.

- Click the Measurement - REC/PAUSE.
- Click the **REC/PAUSE** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.



On the status bar, interval measurement start date, the number of repeat times, and measurement state appear.



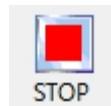
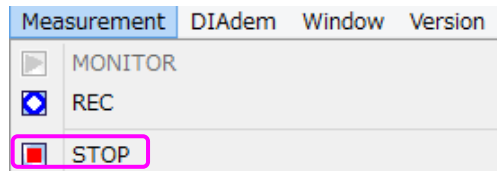
(3) Recording starts and the recording status appears on the status bar.



(4) After executing the measurement for the pre-set repeat times, the DCS-100A becomes monitoring state.

(5) Stops monitoring data by any of the following.

- Click the Measurement - STOP
- Click the Stop icon from the toolbar.
- Click the STOP button from the Meas Operation Panel.



7-5 Analog trigger measurement

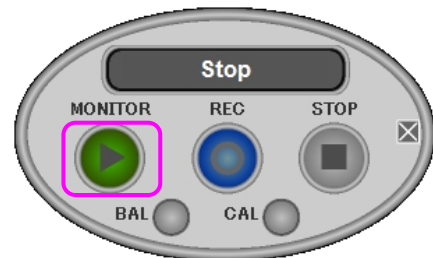
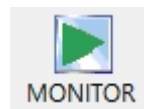
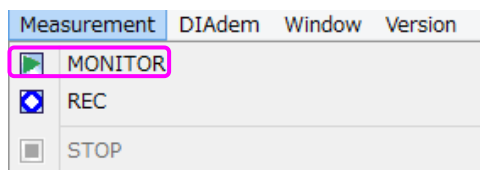
This section describes measurement flow when the Measure mode is “Analog Trigger” mode.

The “Analog trigger” mode measurement automatically starts recording data when measured value of the specified analog channel satisfies the start trigger conditions and records data until satisfying the Record Data on the Measure Mode window or until satisfying the end trigger conditions.

■Operation method

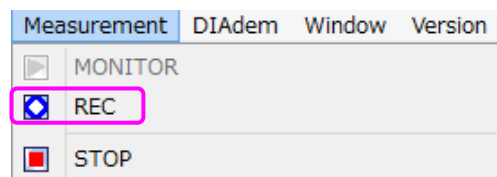
(1) Starts monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.



(2) Displays the "Wait for Trg" by any of the following.

- Click the Measurement - REC/PAUSE.
- Click the **REC/PAUSE** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.



On the status bar, trigger CH, trigger level, the number of repeat times, and measurement state appear.



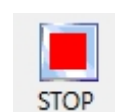
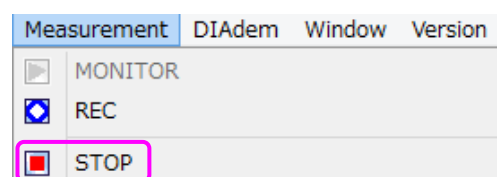
(3) Recording starts and the recording status appears on the status bar.



(4) After executing the measurement for the pre-set repeat times, the DCS-100A becomes monitoring state.

(5) Stops monitoring data by any of the following.

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.



7-6 Digital trigger measurement

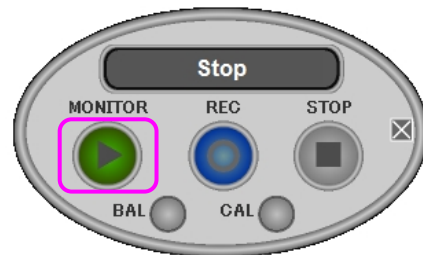
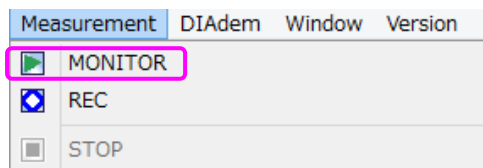
This section describes measurement flow when the Meas mode is “Digital Trigger” mode.

The “Digital Trigger” mode measurement automatically starts recording data when measured value of the specified analog channel satisfies the start trigger conditions and records data until satisfying the Record Data on the Measure Mode window or until satisfying the end trigger conditions.

■Operation method

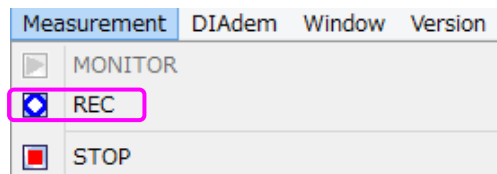
(1) Starts monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel



(2) Displays the "Wait for Trg" by any of the following.

- Click the Measurement - REC/PAUSE.
- Click the **REC/PAUSE** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.



On the status bar, trigger CH, trigger level, the number of repeat times, and measurement state appear.



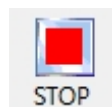
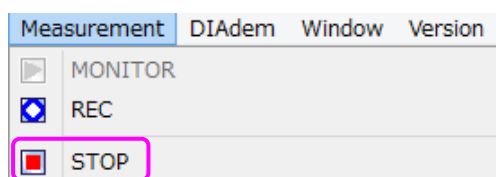
(3) Recording starts and the recording status appears on the status bar.



(4) After executing the measurement for the pre-set repeat times, the DCS-100A becomes monitoring state.

(5) Stops monitoring data by any of the following.

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.



7-7 External trigger measurement

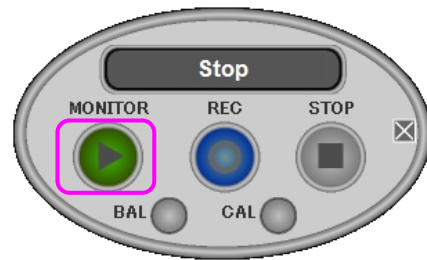
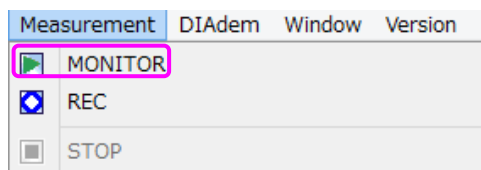
This section describes measurement flow when the Meas mode is “External Trigger” mode.

The “External Trigger” mode measurement automatically starts recording data when the external trigger signal is input and records data until satisfying the Record Data on the Measure Mode window or until satisfying the end trigger conditions.

■Operation method

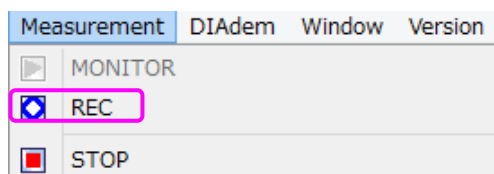
(1) Starts monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.



(2) Displays the "Wait for Trg" by any of the following.

- Click the Measurement - REC/PAUSE.
- Click the **REC/PAUSE** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.



On the status bar, the number of repeat times and measurement state appear.



(3) When the external trigger signal is input, the DCS-100A starts recording data.

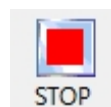
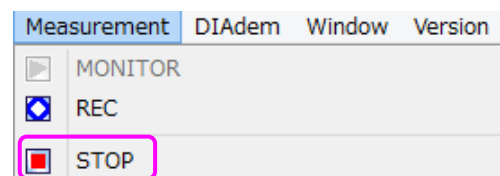
The recording status appears on the status bar.



(4) After executing the measurement for the pre-set repeat times, the DCS-100A becomes monitoring state.

(5) Stops monitoring data by any of the following.

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.



7-8 Complex trigger measurement

This section describes measurement flow when the Meas mode is "Complex Trigger" mode.

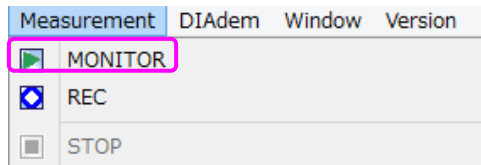
The "Complex Trigger" measurement automatically starts recording data when the trigger conditions, including 4 channels of analog triggers, external trigger, and manual trigger, are satisfied and records data until satisfying the Record Data on the Measure Mode window or until satisfying the end trigger conditions.

For the analog trigger specifications and external trigger specifications, see "7-5 Analog trigger measurement" and "7-7 External trigger measurement"

■Operation method

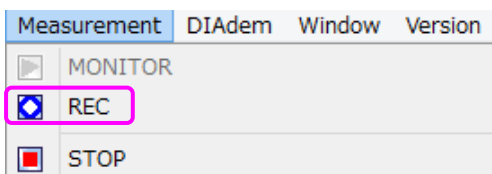
(1) Starts monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.



(2) Displays the "Wait for Trig" by any of the following.

- Click the Measurement - REC/PAUSE.
- Click the **REC/PAUSE** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.



On the status bar, the number of repeat times and measurement state appear.



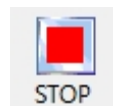
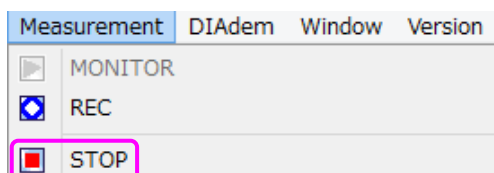
(3) Recording starts and the recording status appears on the status bar.



(4) After executing the measurement for the pre-set repeat times, the DCS-100A becomes monitoring state.

(5) Stops monitoring data by any of the following.

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.



7-9 Balance adjustment

Balancing should be performed during monitoring data or during pausing.

Balancing cannot be performed while the DCS-100A is in stopped state and is recording data.

■Operation method

(1) Open the Set CH Condition window by any of the following.

- Click the Set - Set CH Condition...
- Click the **CH Cond** icon from the toolbar.

(2) Put a check mark to the target channel on the “Balance” column on the Set CH Condition window.



MEMO

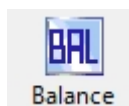
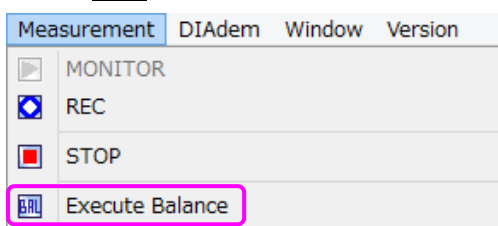
When the *** appears on the “Balance” column, you are not able to compensate the balancing of the target CH.

(3) Start monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.

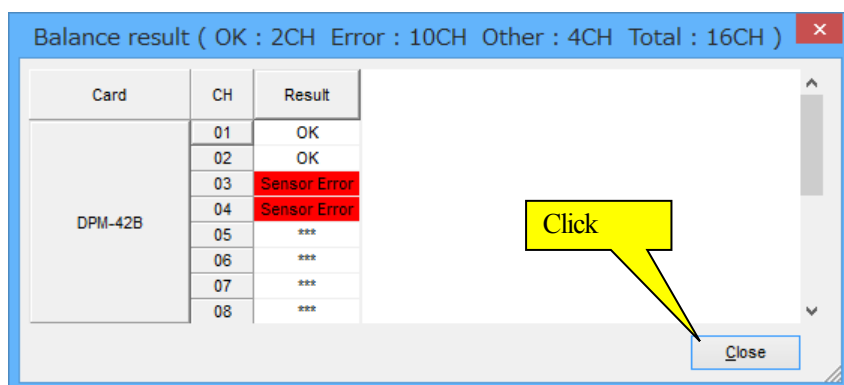
(4) Execute the balance adjustment by any of the following.

- Click the Measurement – Execute Balance.
- Click the **Balance** icon from the toolbar.
- Click the **BAL** button from the Meas Operation Panel.



(5) The following Balance result window appears.

Click the **Close** button to monitor data again.



OK	Correctly compensated.
Sensor Error	Sensor Error
OFF	Not included.
***	Not available.

MEMO

While the DCS-100A is monitoring data, you are able to change settings on the “Balance” column on the Set CH Condition window.

7-10 To output CAL / To stop CAL

Calibration (CAL) is a function that forcibly input analog, equivalent to 50% or 100% specified range, to every channel in order to confirm that channels are properly operating.

The DCS-100A inputs the CAL value with a sensor connected.

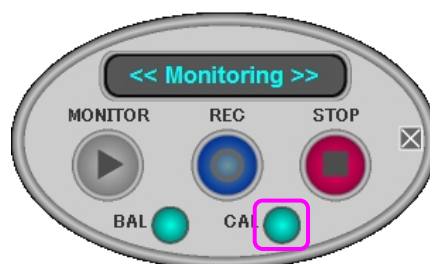
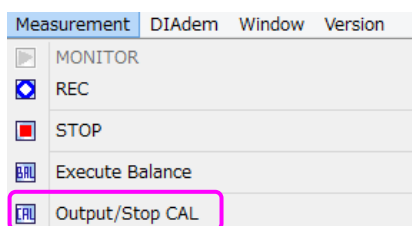
The measured data while outputting the CAL is the output value of each channel + CAL value

■Operation method

- (1) Open the Set CH Condition window by any of the following.
 - Click the Set - Set CH Condition....
 - Click the **CH Cond** icon from the toolbar.
- (2) Put a check mark to the check box next to the target channel on the “CAL” column on the Set CH Condition window.
Select the output value of the CAL on the CAL Range.

CAL	CAL Range
☒	100%
☒	100%
☒	100%
☒	100%
☒	100%
☒	100%
☒	100%
☒	100%
☒	100%

- (3) Start monitoring data by any of the following.
 - Click the Measurement - MONITOR.
 - Click the **Monitor** icon from the toolbar.
 - Click the **MONITOR** button from the Meas Operation Panel.
- (4) Output the CAL by any of the following.
 - Click the Measurement - Output/Stop CAL.
 - Click the **CAL** icon from the toolbar.
 - Click the **CAL** button from the Meas Operation Panel.



The DCS-100A outputs the CAL in the order of Stop → Output +CAL → Output -CAL → Stop.

- (5) The outputting state appears on the status bar.



MEMO

While the DCS-100A is monitoring data or is in stopped state, you are able to put a check mark or remove a check mark on the “CAL” column and on the CAL Range on the Set CH Condition window.

7-11 Offset zero

Offset Zero is a function that substitute the current measured data into the offset value on the Set CH Condition window for canceling the apparent measured value (to 0).

When the "Mode" is strain, by conducting the balance adjustment, the measured is around 0.

When the "Mode" is not strain, substitute the current measured value into the offset value for cancellation (to 0).

By using the offset zero function, you are able to easily substitute the current measured value into the offset value.

■Operation method

(1) Open the Set CH Condition window by any of the following.

- Click the Set - Set CH Condition....
- Click the **CH Cond** icon from the toolbar.

(2) Put a check mark to the check box next to the target channel on the "Offset Zero" column on the Set CH Condition window.



MEMO

When the *** appears on the "Offset Zero" column, you are not able to compensate the offset zero of the target CH.

(3) Start monitoring data by any of the following.

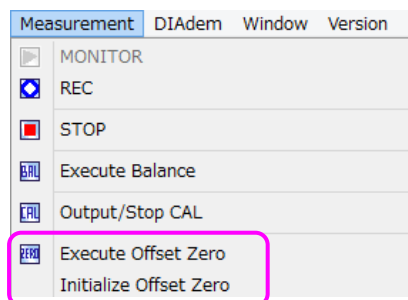
- Click the Measurement - MONITOR.
- Click the **MONITOR** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.

(4) Click the Measurement - Exec Offset Zero.

The current measured data changes to the offset value.

Click the Measurement - Initialize Offset Zero.

The offset value changes to 0.



7-12 To display the exceeding value

When the measured data exceeds the Chk. Val. (Up) or Chk. Val. (Down) once during monitoring and recording data, since then, the measured value on Numeric windows/Graph windows are displayed in red.

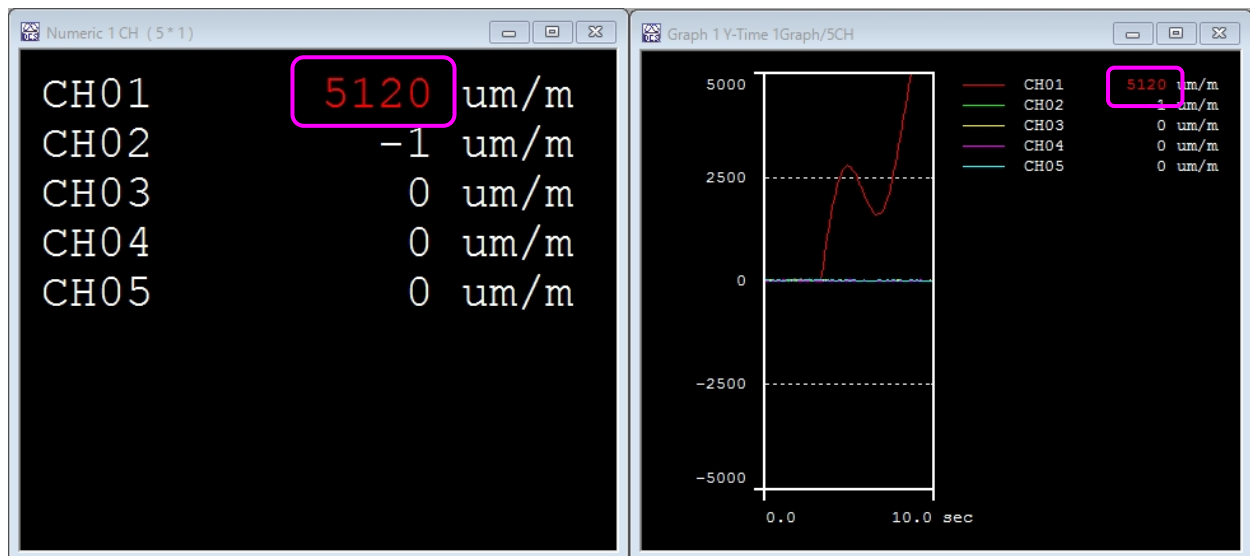
With this function, you are able to check that the input value of every channel is exceeding or not.

MEMO

- The state of exceeding value is cleared at the start of monitoring and returns to the normal state (state before exceeding value).

[Example]

The measured data of the CH01 exceeded the Chk. Val. (Up) value.



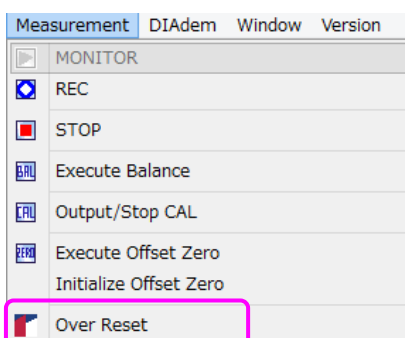
MEMO

- For setting the Chk. Val. (Up) and Chk. Val. (Down), click the Set - Set CH Condition... for displaying the Set CH Condition window.

■Operation method for the over reset

Reset the exceeding state to the previous state [before exceeding the check value (up) or check value (down)] by any of the following.

- Click the Measurement – Over Reset.
- Click the **Over Reset** icon from the toolbar.



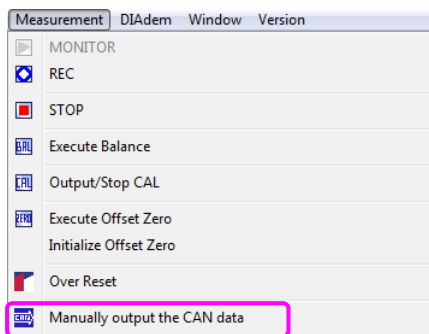
7-13 To output the CAN data manual

This section describes how to manually output the pre-set data frame on the ECAN Condition Setting window at the arbitrary timing.

■Operation method

Manually output the CAN data by any of the following.

- Click the Measurement - Manually output the CAN data.
- Click the **CAN Out** icon from the toolbar.



MEMO

- Make sure that one or more check mark exists on the "Output" column on the [Output Manual Cond] tab on the ECAN Condition Setting window.
- Make sure the EDX-5000A is not stopping.

7-14 Static measurement

The Measure mode is "Manual" and "Interval" modes only.

Every time you start a recording, the static measurement applies a moving-average function to measured data (averaging value data) and saves it to one CSV format file.

The averaging value data appears on the Numeric Lists of numeric windows and Y-Cycle graphs on graph windows.

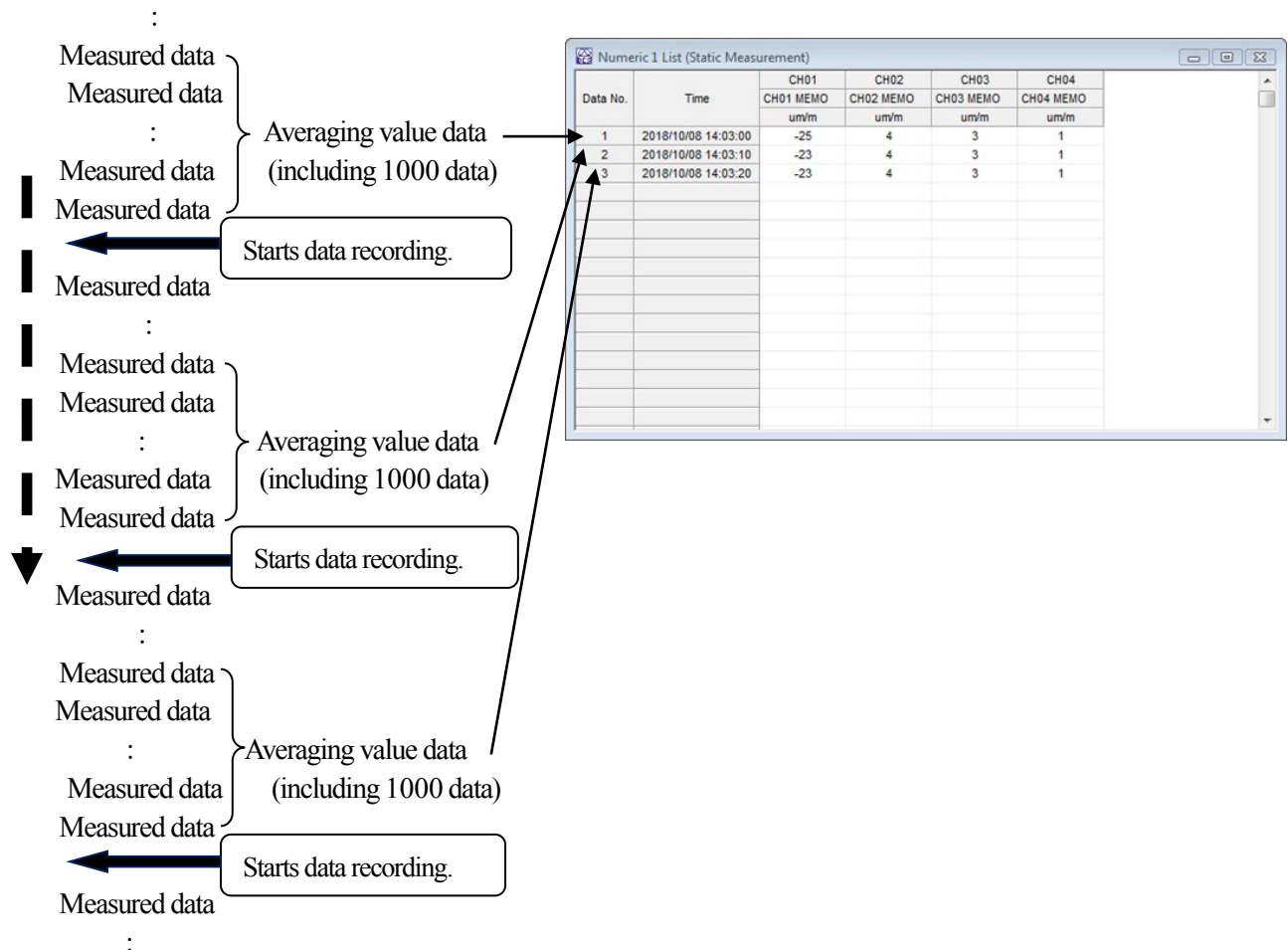
■Measuring conditions

- The Data Save Folder is "PC hard disk."
- The Meas mode is "Manual" and "Interval" modes only.
- The sampling frequency is 1 kHz fixed.

■Operation flow

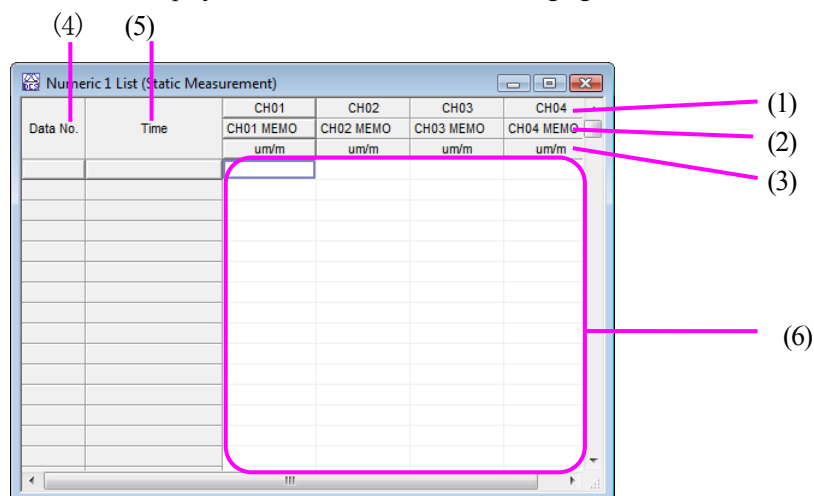
The averaging value data is the average value immediately after starting the recording.

The averaging value data indicates the average value of 1000 data immediately after starting the recording.



7-14-1 To display the list on numericid window

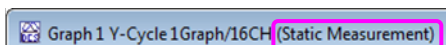
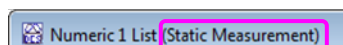
For the static measurement, the Numeric Lists on numeric windows are available.
You are able to display the latest 1000 items of the averaging value data on the list.



- (1)CH No.
- (2)The comment of the channel
- (3)The unit of the channel
- (4)Data No.
- (5)Time
- (6)The averaging value data of the channel

MEMO

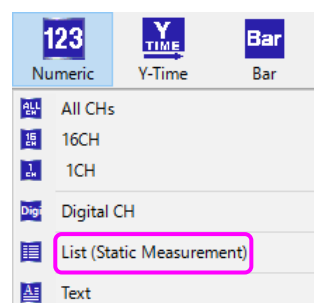
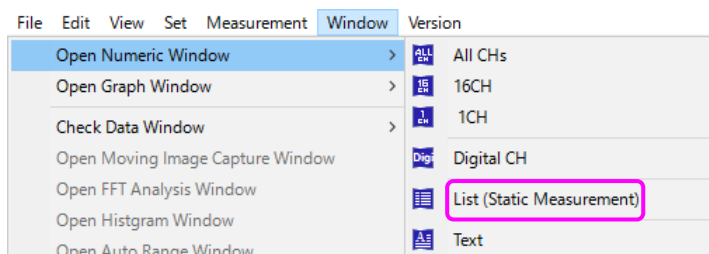
The "Static measurement" appears on the title on the Numeric Lists of numeric windows and Y-Cycle graphs on graph windows.



How to display

Open the numeric window by any of the following.

- Click the Window - Open Numeric Window - List (Static Measurement).
- Point to **Numeric** icon from the toolbar and select the List (Static Measurement).



●To hide the target CH column

To hide the target CH column, press the **Delete** key.

(1)Point a mouse cursor onto the target channel.

Data No.	Time	CH01	CH02	CH03	CH04
		CH01 MEMO	CH02 MEMO	CH03 MEMO	CH04 MEMO
		um/m	um/m	um/m	um/m

(2)Press the **Delete** key to hide the target CH column.

Data No.	Time	CH01	CH02	CH04
		CH01 MEMO	CH02 MEMO	CH04 MEMO
		um/m	um/m	um/m

●To change the order of channels

To change the order of channels, drag and drop the fixed cells.

(1)Drag the target fixed cells.

Data No.	Time	CH01	CH02	CH03	CH04
		CH01 MEMO	CH02 MEMO	CH03 MEMO	CH04 MEMO
		um/m	um/m	um/m	um/m

(2)Drop them to change the order of channels.

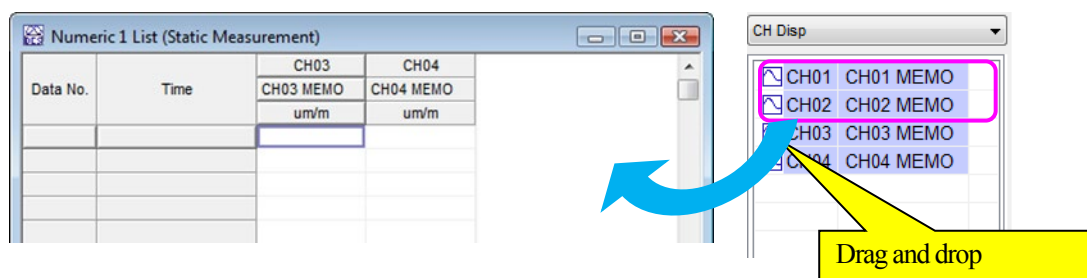
Data No.	Time	CH01	CH03	CH02	CH04
		CH01 MEMO	CH03 MEMO	CH02 MEMO	CH04 MEMO
		um/m	um/m	um/m	um/m

●To display the target channels.

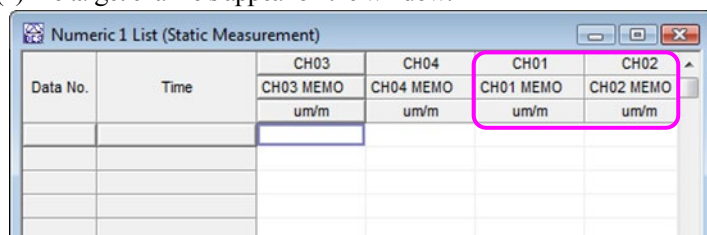
To display the target channels, drag and drop the channels on the CH Disp bar to the Numeric List window.

(1)Select the target channels on the CH Disp Bar.

Drag and drop them to the Numeric List window to display the target channels.



(2)The target channels appear on the window.



7-14-2 Data file name

The name of the CSV format file is determined by using the items on the Set Measure Condition window.

The name of the CSV format file: File name File No. . CSV

The screenshot shows the 'Set Measure Condition' window. It has two main sections: 'Set Save Folder' and 'Data File Name'. The 'Set Save Folder' section shows 'D:\Data\'. The 'Data File Name' section shows 'TEST0000.KS2'. Below this, there are three fields: 'File Name' (containing 'TEST'), 'File Title' (empty), and 'File No.' (containing '0'). The 'File Name' and 'File No.' fields are highlighted with pink boxes.

MEMO

If the CSV format file having the same name already exists in the destination folder, the averaging value data is added to the existing file.

NOTE

You cannot reproduce the CSV format files with the DCS-100A.
For reproducing the CSV format files, use the optional software DAS-200A.

7-14-3 Manual measurement

This section describes measurement flow when Meas mode is "Manual".

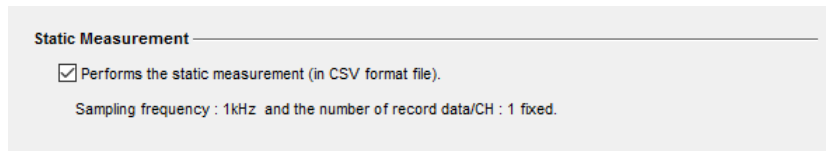
■ Operation method

(1) Open the Set Measure Condition window by any of the following.

- Click the Set - Set Measure Condition....
- Click the **Meas. Cond.** icon from the toolbar.

(2) Click the "Measure Mode" on the left and select "Manual."

(3) Put a check mark to the check box next to the "Performs the static measurement (in CSV format file)."



(4) Start monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.

The DCS-100A becomes the monitoring state.

The averaging value data appears on windows other than the Numeric Lists of numeric windows and Y-Cycle graphs of graph windows.

(5)Record data by any of the following.

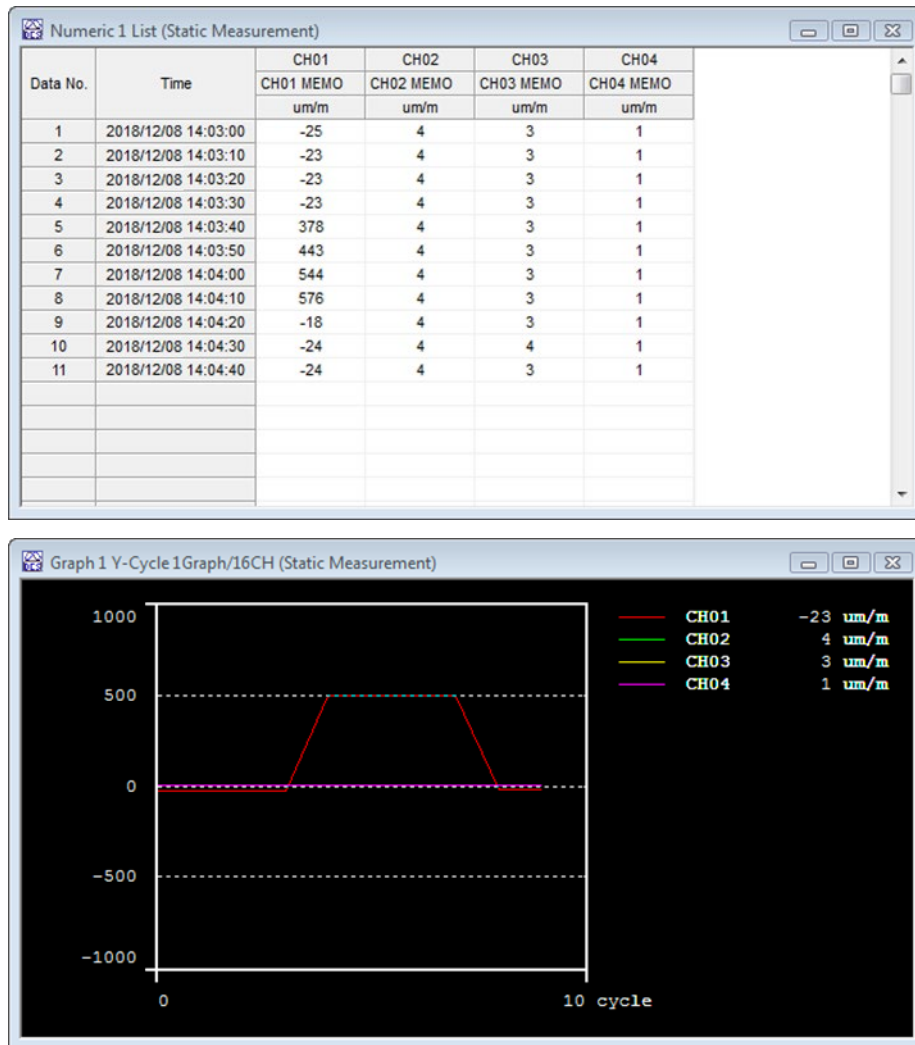
- Click the Measurement - REC.
- Click the **REC** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.

The averaging value data is saved in the CSV format file.

It appears on the Numeric Lists of numeric windows and Y-Cycle graphs of graph windows.

[Example]

Suppose the DCS-100A recorded data for 10 times.



(6)Stop monitoring data by any of the following.

(When recording data, the file No. is incremented by one after.)

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.

7-144 Interval measurement

This section describes measurement flow when the Measure mode is "Interval" mode.

(1) Open the Set Measure Condition window by any of the following.

- Click the Set - Set Measure Condition....
- Click the **Meas. Cond** icon from the toolbar.

(2) Click the "Measure Mode" on the left and select "Interval."

(3) Put a check mark to the check box next to the "Performs the static measurement (in CSV format file)."

(4) Click the Interval from the left and set the interval conditions.

NOTE

For the static measurement, you need to set 5 seconds or longer as the interval time.

(5) Start monitoring data by any of the following.

- Click the Measurement - MONITOR.
- Click the **Monitor** icon from the toolbar.
- Click the **MONITOR** button from the Meas Operation Panel.

The DCS-100A becomes the monitoring state.

The averaging value data appears on windows other than the Numeric Lists of numeric windows and Y-Cycle graphs of graph windows.

(6) Displays the "Wait for Trg" by any of the following.

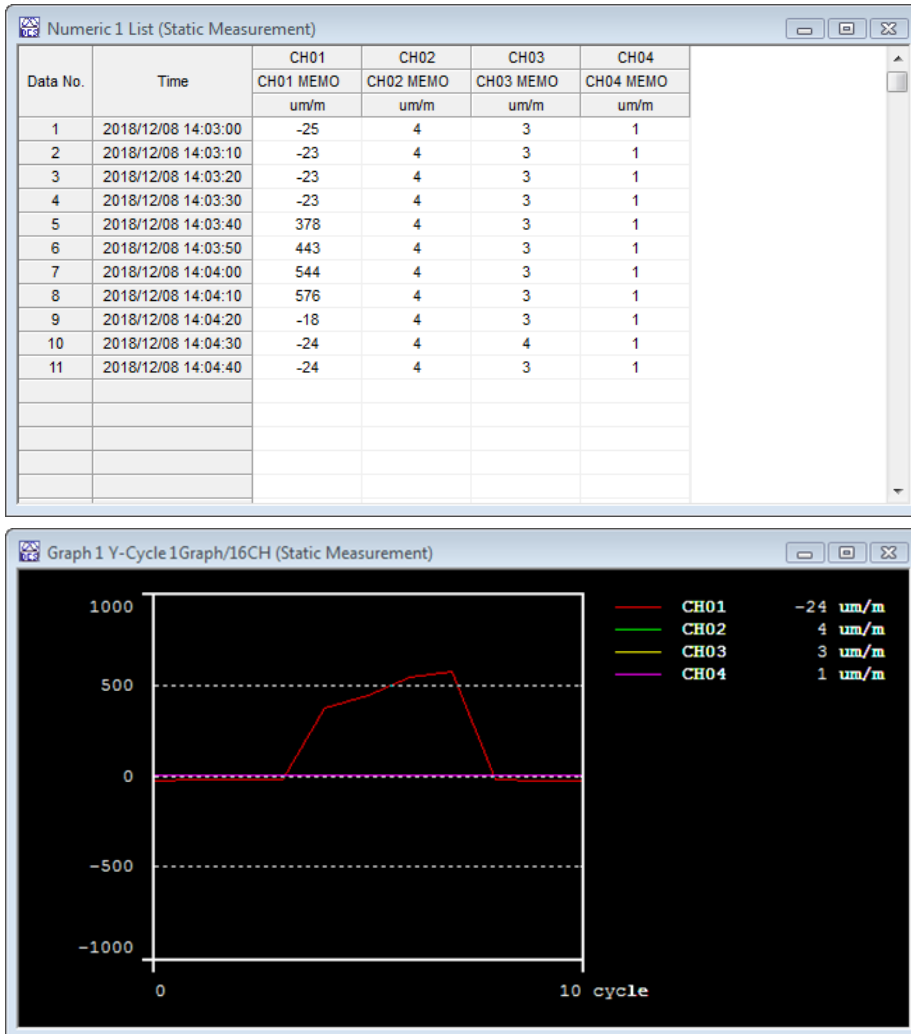
- Click the Measurement - REC.
- Click the **Record** icon from the toolbar.
- Click the **REC** button from the Meas Operation Panel.

Every time the recording start time will come, the averaging value data is saved in the CSV format file. It appears on the Numeric Lists of numeric windows and Y-Cycle graphs of graph windows.

[Example]

Suppose the DCS-100A recorded data with the following conditions.

Recording start time: 2018/12/08 14:03:00, the number of repeat times: 10, interval time: 10 seconds



After satisfying the Record Data on the Measure mode window or after executing the operations as described below, the DCS-100A becomes the monitoring state.

(When recording data, the file No. is incremented by one after.)

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.

(7) Stop monitoring data by any of the following.

- Click the Measurement - STOP
- Click the **Stop** icon from the toolbar.
- Click the **STOP** button from the Meas Operation Panel.

8. Loading TEDS sensor information

The EDX-5000A is capable of loading Transducer Electronic Data Sheet (TEDS) sensor information and capable of setting the most appropriate range, Calibr. const., unit, etc automatically.

(Note that the EDX-5000A is not able to load all the TEDS sensor information.)

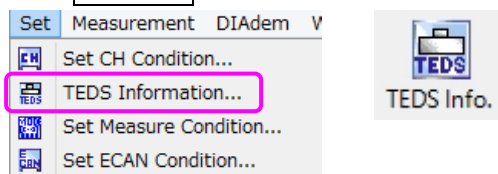
The available conditioner cards and available template IDs are as follows.

Conditioner Card	Template ID	Sensor Type
CDV-40B (-F)	30	Voltage-output sensor
	33	Strain Gage Sensor
DPM-42B (-F)	33	Strain Gage Sensor
CCA-40A (-F)	0	Piezoelectric accelerometer
	24	Piezoelectric accelerometer
	25	Piezoelectric accelerometer
CVM-40A	30	Voltage-output sensor
	33	Strain Gage Sensor
	0, 24, 25	Piezoelectric accelerometer

■How to display

Open the TEDS Information window by any of the following.

- Click the Set - TEDS information....
- Click the **TEDS Info.** icon from the toolbar.



Auto Set Items

Range(Meas. Range)	☒
LPF	☒
Calibr. const.	☒
Unit	☒

Card	CH	Set	Result	Mode	Range	Meas. Range	LPF	Calibr. const.	Unit
DPM-42B	01	☒	***	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
	02	☒	***	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
	03	☒	***	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
	04	☒	***	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
CVM-41A	09	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	10	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	11	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	12	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	13	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	14	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	15	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	16	☒	***	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m

Load TEDS Info...
Details of Sensor Info...
Save User Data...
Close

8-1 To load the TEDS sensor information

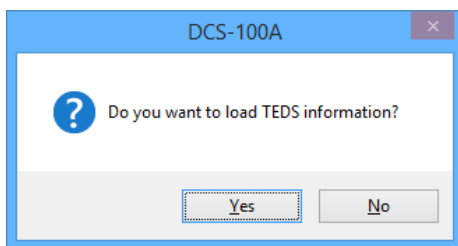
After executing the loading of the TEDS sensor information, the DCS-100A loads the TEDS information of all the sensor-mounted channels.

■Operation method

(1) Click the **Load TEDS info...** button.

(2) The following dialog appears.

Click the **Yes** button for loading.



(3) After completing the loading, the following window, indicating "OK" or "Error" appears.

Auto Set Items									
Range(Meas. Range)		☒							
LPF		☒							
Calibr. const.		☒							
Unit		☒							

Card	CH	Set	Result	Mode	Range	Meas. Range	LPF	Calibr. const.	Unit
DPM-42B	01	☒	OK	BV(2.0V)	5kum/m	-0.625 - 0.625 N	FLAT	1.25000E-4	N
	02	☒	Error	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
	03	☒	Error	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
	04	☒	Error	BV(2.0V)	1kum/m	-1000 - 1000 um/m	1kHz	1.00000	um/m
CVM-41A	09	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	10	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	11	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	12	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	13	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	14	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	15	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m
	16	☒	Error	Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz	1.00000	um/m

Buttons: Load TEDS Info... Details of Sensor Info... Save User Data... Close

8-1-1 To change the range and meas range

This section describes how to change the pre-set Range and Meas Range automatically after loading the TEDS information.

Mode	Range	Meas. Range	LPF
BV(2.0V)	2kum/m	-0.25 - 0.25 N	FLAT
BV(2.0V)	1kum/m	-0.025 - 0.025 N	1kHz
BV(2.0V)	1kum/m	-0.0625 - 0.0625 N	1kHz
BV(2.0V)	1kum/m	-0.125 - 0.125 N	1kHz
Strain(2V)	5kum/m	-0.25 - 0.25 N	1kHz
Strain(2V)	5kum/m	-0.625 - 0.625 N	1kHz
Strain(2V)	5kum/m	-1.25 - 1.25 N	1kHz
Strain(2V)	5kum/m	-2.5 - 2.5 N	1kHz
Strain(2V)	5kum/m	OFF	1kHz
Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz
Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz
Strain(2V)	5kum/m	-5000 - 5000 um/m	1kHz

MEMO

When the Range (Meas Range) is changed, the background color becomes yellow.

You are not able to change the Mode, Unit, LPF, Calibr. const., CH Name, etc. on this window.

You are able to change the above items on the Set CH Condition window.

8-1-2 To write user data

This section describes how to write the changed user data into the TEDS sensor (manufacture ID: KYOWA only) after loading the TEDS information.

■Operation method

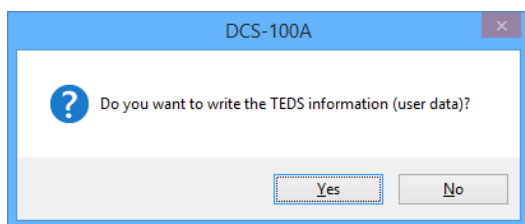
- (1) After loading the TEDS information, change the user data and put a check mark to the check box next to the target item.

When the user data is changed, the background color becomes yellow.

User Data	User Data Change
KYOWA	☒
***	☐
***	☐
***	☐
***	☐

- (2) Click the **Save User Data...** button.

The following message appears. Click the **Yes** button.



- (3) The DCS-100A writes the user data into the TEDS sensor.

8-1-3 Details of TEDS sensors

This section describes how to set detailed TEDS information of the target sensor.

MEMO

- You are able to press the **Details of Sensor Info...** button only when the TEDS information is correctly loaded.
- For details of items displayed on the Details of Sensor Information window, contact the TEDS sensor manufacturer.

■Operation method

Click the **Details of Sensor Info...** button.

The Details of Sensor Information window appears.

TEDS Properties	Values
CH No.	01
Unique Registration Number	0x130000001875362D
Manufacture ID	58
Model Number	1
Version Letter	A
Version Number	1
Serial Number	123456
Template ID	33
Physical Measurand	N
Minimum physical value	0.000
Maximum physical value	0.500000
Transducer Electrical Signal Type	Bridge Sensor
Minimum electrical output [V/V]	0.000
Maximum electrical output [V/V]	0.00200000
Mapping Method	Linear
Bridge Type	FULL
Bridge element impedance [Ohm]	350.000
Response Time [sec]	1.00000E-6
Excitation level, nominal [V]	5.00000
Excitation level, min [V]	1.00000
Excitation level, max [V]	10.0000
Calibration Date	2008/06/25
Calibration Initials	TED
Calibration Period [days]	365
Measurement location ID	0
User Data1	
User Data2	TEDS-CHECK,123456789,20080625,0

<< Prev CH

Next CH >>

Close

Prev CH button Displays the detailed information of the previous CH.

Next CH button Displays the detailed information of the next CH.

Close button Closes the window.

8-2 To apply TEDS information to the channel conditions

This section describes how to set the loaded TEDS information to the channel conditions, based on the pre-set conditions, after loading the TEDS information and closing the TEDS Information window.

8-2-1 The “Set” column

After loading the TEDS information, put a check mark to the target channel.

CH	Set
01	☒
02	☒
03	☒
04	☒

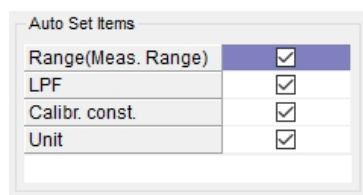
MEMO

After loading the TEDS information, irrespective of a check mark, the DCS-100A loads the TEDS information of all channels.

8-2-2 Setting items

After loading the TEDS information, put a check mark to the target item.

You are able to put a check mark or release a check mark before loading TEDS information and after loading TEDS information.



NOTE

The Auto Set Items window is for all channels. You are not able to set items of every channel.

■Range (Meas Range)

To set the Mode and Range to the channel conditions, put a check mark to the target item.

MEMO

- The Mode and Range are automatically calculated from the sensor type and rated capacity.
- The Meas Range is the maximum measuring range based on the Range and Calibr. const..
Check the Meas Range as a reference for selecting the Range.
- For a sensor with the rated capacity not stated on the TEDS information window, the Range is set to its maximum value.

[Example]

For a piezoelectronic accelerometer connected to the CCA-40A, since the rated capacity is not stated on the TEDS information window, the Range is set to its maximum value.

■LPF

To set the Mode and LPF to the channel conditions, put a check mark to the target item.

MEMO

To set the LPF, be sure to connect a TEDS sensor to the CDV-40B/DPM-42A.

Note that when a conditioner card with anti-aliasing filters (CDV-40B-F, DPM-42A-F, or CCA-40A-F) is used and the sampling frequency is set to 100 Hz or higher, the LPF is AUTO.

For TEDS sensors connected to conditioner cards other than the above, no low pass filter is set.

■Calibr. const.

To set the Calibr. const. to the channel conditions, put a check mark to the target item.

NOTE

The DCS-100A loads the Calibr. const. from the TEDS information. The DCS-100A does not load the Offset.

■Unit

To set the Unit to the channel conditions, put a check mark to the target item.

MEMO

- When the not available unit is stated in the TEDS information, the unit 'mm' is used.
- If the 'Pa' unit is stated in the TEDS information, convert values into 'kPa' or 'MPa' by using the rated capacity.
- For the CCA-40A, the unit is m/s².

■CH Name

To set the User data to the CH Name, included in the channel conditions, put a check mark to the target item.

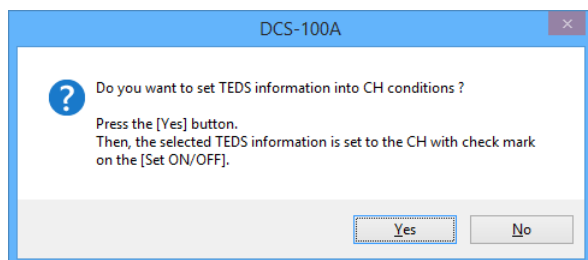
The CH Name is the user data of the ID=58 (Kyowa Electronic Instruments Co., Ltd.) TEDS sensor.

8-2-3 To apply TEDS information to the channel conditions

Click the **Close** button.

The following message appears.

Click the **Yes** button to set the channel conditions.



NOTE

To set the channel conditions, put a check mark on the "Set" column of the target CH as well as put a check mark next to the target item on the Auto Set Items window.

Make sure the target channel conditions have check marks on the "Set" column and on the Auto Set Items window.

9. Functions when the EGPC-50A is mounted

9-1 To confirm the configuration

This section describes how to confirm the EGPC-50A configuration.

(1) Open the Set Environment window by any of the following.

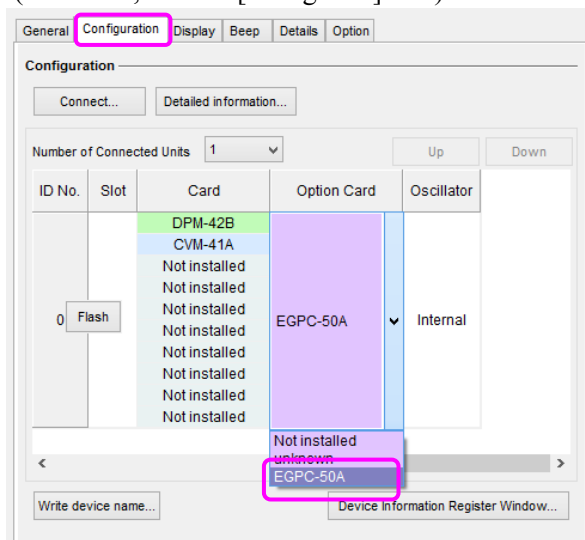
- Click the File - Environment....
- Click the  icon from the toolbar.

(2) Click the [Configuration] tab on the Set Environment window.

Make sure the EGPC-50A appears on the “Option Card” column on the [Configuration] tab.

When the EGPC-50A does not appear, select the EGPC-50A on the “Option Card” column on the [Configuration] tab.

(For details, see “4-2 [Configuration] tab.”)



(3) Click the [General] tab.

Make sure the Data Save Folder is "EDX-5000A Data Drive" on the [General] tab.

(4) Click the  button to close the window.

9-2 CAN conditions

NOTE

You are not able to use the CAN under the following conditions.

- The EGPC-50A is not installed in the standalone operation.
- The EGPC-50A is not installed in the master unit in the synchronous operation.
- The Data Save Folder is not set “EDX-5000A Data Drive” on the Environment window.
- The sampling frequency is “Ext. Clock” on the Set Measure Condition window.

The ECAN Condition Setting window includes the following conditions of the EGPC-50A.

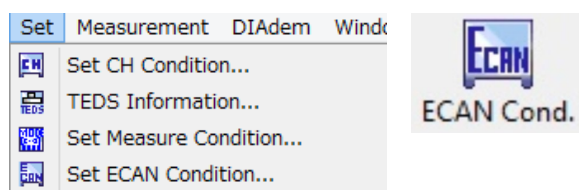
- | | |
|------------------------|---|
| • Receiving Cond | Sets the conditions of the data frame to be received. |
| • Output Start Cond | Sets the conditions of the data frame to be transmitted when the A/D conversion starts. |
| • Output Stop Cond | Sets the conditions of the data frame to be transmitted when the A/D conversion stops. |
| • Output Interval Cond | Sets the conditions of the data frame to be transmitted at the pre-set interval. |
| • Output Manual Cond | Sets the conditions of the data frame to be transmitted at the arbitrary timing. |
| • Comm Cond | Sets the communication conditions of the CAN communication. |

MEMO

- The data frame indicates the data packet of the CAN communication.
 - The [Output Start Cond] tab, [Output Stop Cond] tab, [Output Interval Cond] tab, and [Output Manual Cond] tab is the condition setting tabs for outputting the CAN data.
- For details, see separate volume of "EDX-5000A MEMORY RECORDER/ANALYZER INSTRUCTION MANUAL (FOR HARDWARE)."

Open the Set ECAN Condition Setting window by any of the following.

- Click the Set - Set ECAN Condition....
- Click the **ECAN Cond** icon from the toolbar.



Receiving Cond Output Start Cond Output Stop Cond Output Interval Cond Output Manual Cond Comm Cond

Insert Up Filter by: Nothing Bit Assignment...

Delete Down Word ☐ Merge cells

CAN-CH E0-***	Measurement	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian
001	☐		1	Standard	---	8		0	16	Signed	Big
002	☐		1	Standard	---	8		0	16	Signed	Big
003	☐		1	Standard	---	8		0	16	Signed	Big
004	☐		1	Standard	---	8		0	16	Signed	Big
005	☐		1	Standard	---	8		0	16	Signed	Big
006	☐		1	Standard	---	8		0	16	Signed	Big
007	☐		1	Standard	---	8		0	16	Signed	Big
008	☐		1	Standard	---	8		0	16	Signed	Big
009	☐		1	Standard	---	8		0	16	Signed	Big
010	☐		1	Standard	---	8		0	16	Signed	Big
011	☐		1	Standard	---	8		0	16	Signed	Big
012	☐		1	Standard	---	8		0	16	Signed	Big
013	☐		1	Standard	---	8		0	16	Signed	Big
014	☐		1	Standard	---	8		0	16	Signed	Big
015	☐		1	Standard	---	8		0	16	Signed	Big
016	☐		1	Standard	---	8		0	16	Signed	Big
017	☐		1	Standard	---	8		0	16	Signed	Big
018	☐		1	Standard	---	8		0	16	Signed	Big
019	☐		1	Standard	---	8		0	16	Signed	Big
020	☐		1	Standard	---	8		0	16	Signed	Big
021	☐		1	Standard	---	8		0	16	Signed	Big
022	☐		1	Standard	---	8		0	16	Signed	Big
023	☐		1	Standard	---	8		0	16	Signed	Big

Change Setting Items... Load Condition... Load CANdb File...

Freeze Columns Save Condition... OK Cancel Apply

Change Setting Items.. button

Setting items displayed on the window are added, removed, or sorted.
(For details, See “5-1-2 Change Setting Items window”)

Freeze Columns button

Freeze columns ON/OFF

It allows you to keep some of your data in the same place as you scroll through the rest of your spreadsheet.

Load Condition... button

Loads the previously saved condition file (.ECF and .CAN).

ECF file: ECAN condition file

CAN file: CAN condition file

Save Condition... button

Saves the current ECAN conditions into the ECAN condition file (.ECF).

Load CANdb File... button

Loads the CANdb file (.DBC) for setting the CAN conditions.

(For details, see separate volume of "INSTRUCTION MANUAL DCS-105A [For Loading CANdb File]")

OK button

Determines the pre-set contents and closes the window.

Cancel button

Cancels the pre-set contents and closes the window.

Apply button

Determines the current set contents.

■Common buttons

Insert button

Inserts the rows.

Delete button

Deletes the rows.

Up/Down button

Moves the target row upward/downward.

Filter by list

Select the filter item.

Word box

Input the character string for filtering data.

■CAN conditions, common operations

For coping setting items, pasting setting items, and pasting from the clipboard, see “5-1 Analog channel condition.”

• Clear

The DCS-100A is able to initialize the selected items into the initial value.

(1) Select the items and right-click.

Select the “Clear” from the pop-up menu.

Shortcut: **DELETE** key

CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard				16	32	Float	Big	
002	☒	Sample-ID01	1	Standard				0	16	Signed	Big	
003	☒	Sample-ID01	1	Standard				0	1	Signed	Big	
004	☒	Sample-ID01	1	Standard				0	1	Signed	Big	
005	☒	Sample-ID01	1	Standard				0	1	Signed	Big	
006	☐	Sample-ID01	1	Standard				0	1	Signed	Big	
007	☐	Sample-ID01	1	Standard				0	1	Signed	Big	
008	☐	Sample-ID01	1	Standard				0	1	Signed	Big	
009	☐	Sample-ID01	1	Standard				0	1	Signed	Big	

(2) The initial value appears.

CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☐		1	Standard	---	8		0	1	Signed	Little	
002	☐		1	Standard	---	8		0	1	Signed	Little	
003	☒	Sample-ID01	1	Standard	000	8	ECAN-CH03	0	16	Signed	Big	
004	☒	Sample-ID01	1	Standard	000	8	ECAN-CH04	0	16	Signed	Big	
005	☐	Sample-ID01	1	Standard	---	8		0	1	Signed	Big	
006	☐	Sample-ID01	1	Standard	---	8		0	1	Signed	Big	
007	☐	Sample-ID01	1	Standard	---	8		0	1	Signed	Big	

• Insert

The DCS-100A is able to insert the rows.

(1) Select the rows.

Right-click the window and select the "Insert" from the pop-up menu or click the **Insert** button.

Shortcut: **INSERT** key

Receiving Cond Click Output Interval Cond Output Manual Cond Comm Cond												
Insert Up Down Word Bit Assignment... ✓ Merge cells												
CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
002	☒	Sample-ID01	1	Standard	100	8	ECAN-CH02	0	16	Signed	Big	
003	☒	Sample-ID02	1	Standard	---	8	ECAN-CH03	0	16	Signed	Big	
004	☒	Sample-ID02	1	Standard	---	8	ECAN-CH04	0	16	Signed	Big	
005	☐		1	Standard	---	8		0	1	Signed	Little	
006	☐		1	Standard	---	8		0	1	Signed	Little	
007	☐		1	Standard	---	8		0	1	Signed	Little	
008	☐		1	Standard	---	8		0	1	Signed	Little	
009	☐		1	Standard	---	8		0	1	Signed	Little	
010	☐		1	Standard	---	8		0	1	Signed	Little	
011	☐		1	Standard	---	8		0	1	Signed	Little	

(2) The DCS-100A inserts the rows in front of the selection.

CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
002	☒	Sample-ID01	1	Standard	100	8	ECAN-CH02	0	16	Signed	Big	
003	☐		1	Standard	---	8		0	1	Signed	Little	
004	☐		1	Standard	---	8		0	1	Signed	Little	
005	☒	Sample-ID02	1	Standard	200	8	ECAN-CH03	0	16	Signed	Big	
006	☒	Sample-ID02	1	Standard	200	8	ECAN-CH04	0	16	Signed	Big	

Note that the DCS-100A does not add rows.

As you insert the rows, the data moves downward for the number of rows.

Note that the CAN-CH No. changes.

[Example]

Suppose the last channel data is data frame.

505	☐		1	Standard	---	8		0	1	Signed	Big
506	☐		1	Standard	---	8		0	1	Signed	Big
507	☐		1	Standard	---	8		0	1	Signed	Big
508	☐		1	Standard	---	8		0	1	Signed	Big
509	☒	Sample-ID03	1	Standard	300	8	ECAN-CH05	0	1	Signed	Big
510	☒	Sample-ID03	1	Standard	300	8	ECAN-CH05	0	1	Signed	Big
511	☒	Sample-ID04	1	Standard	400	8	ECAN-CH05	0	1	Signed	Big
512	☒	Sample-ID04	1	Standard	400	8	ECAN-CH05	0	1	Signed	Big

As you select 2 rows, the DCS-100A inserts 2 rows.

As you select 2 rows, the data moves downward for 2 rows.

The Sample-ID04 disappears.

505	☐		1	Standard	---	8		0	1	Signed	Big
506	☐		1	Standard	---	8		0	1	Signed	Big
507	☐		1	Standard	---	8		0	1	Signed	Big
508	☐		1	Standard	---	8		0	1	Signed	Big
509	☐		1	Standard	---	8		0	1	Signed	Big
510	☐		1	Standard	---	8		0	1	Signed	Big
511	☒	Sample-ID03	1	Standard	300	8	ECAN-CH05	0	1	Signed	Big
512	☒	Sample-ID03	1	Standard	300	8	ECAN-CH05	0	1	Signed	Big

• Delete

The DCS-100A is able to delete the rows.

(1) Select the rows.

Right-click the window and select the "Delete" from the pop-up menu or click the **Delete** button.

Shortcut: **CTRL** key + **DELETE** key

Insert

Up

Filter

Click

Delete

Down

Work

Bit Assignment...

Merge cells

CAN-CH EO-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒		1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
002	☒	Sample-ID01	1	Standard	100	8	ECAN-CH02	0	16	Signed	Big	
003	☒		1	Standard	---	8	ECAN-CH03	0	16	Signed	Big	
004	☒	Sample-ID02	1	Standard	---	8	ECAN-CH04	0	16	Signed	Big	
005	☐		1	Standard	---	8		0	1	Signed	Big	
006	☐		1	Standard	---	8		0	1	Signed	Big	
007	☐		1	Standard	---	8		0	1	Signed	Big	
008	☐		1	Standard	---	8		0	1	Signed	Big	
009	☐		1	Standard	---	8		0	1	Signed	Big	
010	☐		1	Standard	---	8		0	1	Signed	Big	
011	☐		1	Standard	---	8		0	1	Signed	Big	

Copy

Paste

Paste from the clipboard

Insert

Delete

Clear

Right click

(2) The DCS-100A deletes the selected rows.

CAN-CH EO-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒		1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
002	☒	Sample-ID01	1	Standard	100	8	ECAN-CH02	0	16	Signed	Big	
003	☐		1	Standard	---	8		0	1	Signed	Big	
004	☐		1	Standard	---	8		0	1	Signed	Big	
005	☐		1	Standard	---	8		0	1	Signed	Big	
006	☐		1	Standard	---	8		0	1	Signed	Big	

As you delete the rows, the data moves upward for the number of rows.

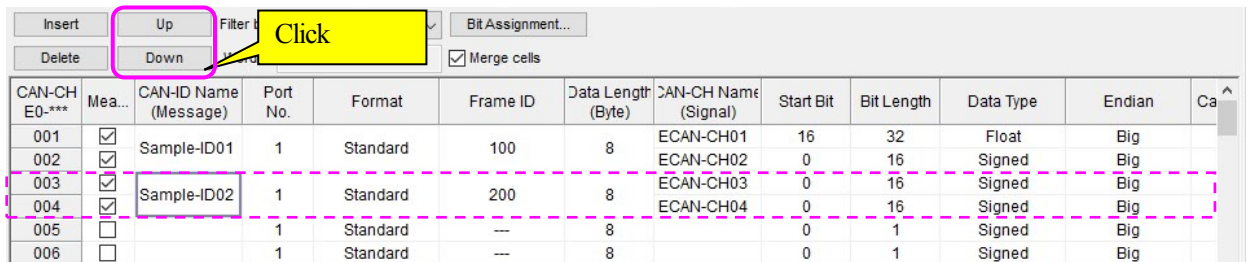
Note that the CAN-CH No. changes.

• Up/Down

The DCS-100A is able to move the target channel/data frame upward/downward.

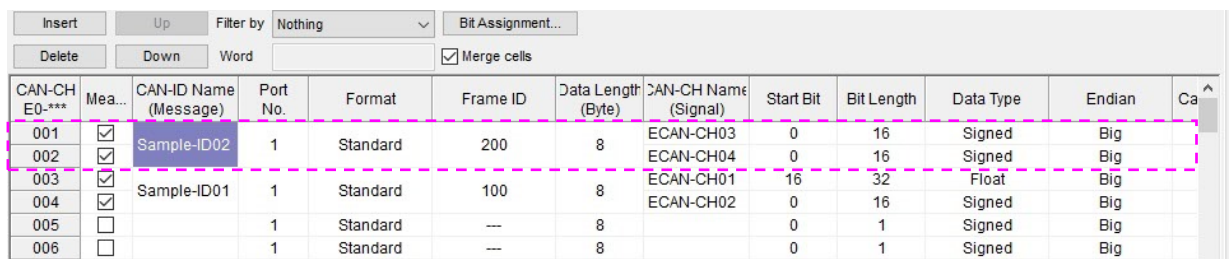
(1) Select the target channel or data frame.

Click the **Up** button or **Down** button.



CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
002	☒						ECAN-CH02	0	16	Signed	Big	
003	☒	Sample-ID02	1	Standard	200	8	ECAN-CH03	0	16	Signed	Big	
004	☒						ECAN-CH04	0	16	Signed	Big	
005	☐		1	Standard	---	8		0	1	Signed	Big	
006	☐		1	Standard	---	8		0	1	Signed	Big	

(2) The channel/data frame moves.



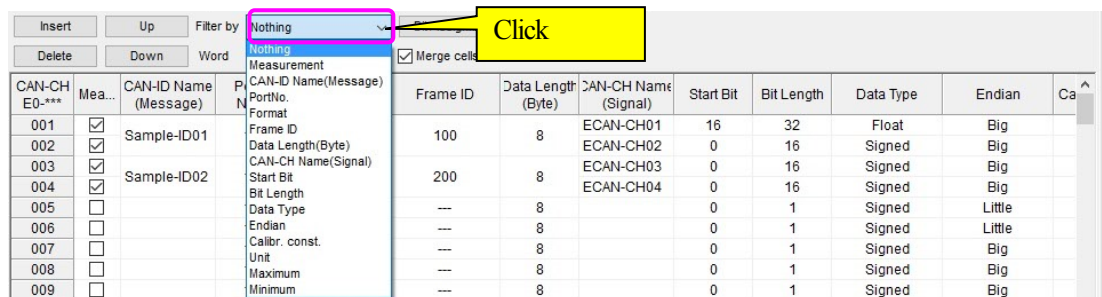
CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID02	1	Standard	200	8	ECAN-CH03	0	16	Signed	Big	
002	☒						ECAN-CH04	0	16	Signed	Big	
003	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
004	☒						ECAN-CH02	0	16	Signed	Big	
005	☐		1	Standard	---	8		0	1	Signed	Big	
006	☐		1	Standard	---	8		0	1	Signed	Big	

When you select the merged cell, the merged cell (data frame) moves.

• Filtering

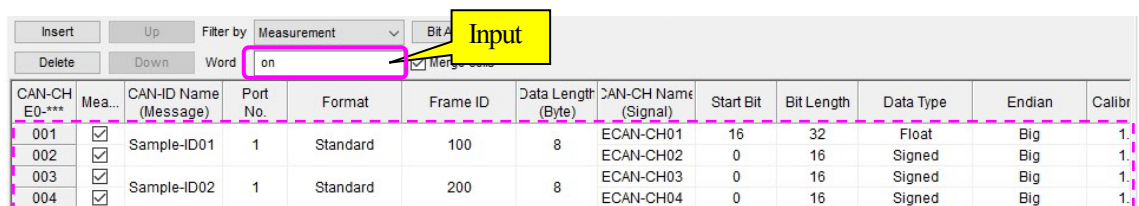
The DCS-100A is able to search the target channel by using the Filter by list and Word box.

(1) Select the filter item from the Filter by list.



CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	16	32	Float	Big	
002	☒						ECAN-CH02	0	16	Signed	Big	
003	☒	Sample-ID02	1	Standard	200	8	ECAN-CH03	0	16	Signed	Big	
004	☒						ECAN-CH04	0	16	Signed	Big	
005	☐				---	8		0	1	Signed	Little	
006	☐				---	8		0	1	Signed	Little	
007	☐				---	8		0	1	Signed	Big	
008	☐				---	8		0	1	Signed	Big	
009	☐				---	8		0	1	Signed	Big	

(2) Input the character string in the Word box for filtering data.



CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Calibr
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	16	32	Float	Big	1
002	☒						ECAN-CH02	0	16	Signed	Big	1
003	☒	Sample-ID02	1	Standard	200	8	ECAN-CH03	0	16	Signed	Big	1
004	☒						ECAN-CH04	0	16	Signed	Big	1

The Word box is ignoring case.

The Word box is able to input a single word. The Word box is not able to use AND and OR between search words.

When the Filter by is "Measurement", "Output", or "Confirmation", input ON or OFF in the Word box.

ON: Channels with a check mark appear.

OFF: Channels without a check mark appear.

NOTE

The DCS-100A is not able to use the **Up** button/**Down** button while using Filter by.

9-2-1 Communication conditions

Select the [Comm Cond] tab on the ECAN Condition Setting window for settings.

Port No.	CAN Comm Std	Comm Speed (kbps)	Sample Point	Sample Times	Resync Jump Width	Term Res...
1	High Speed CAN	500	87.5%(TSEG1:13, TSEG2:2, 48MHz)	1	2	OFF
2	High Speed CAN	500	87.5%(TSEG1:13, TSEG2:2, 48MHz)	1	2	OFF

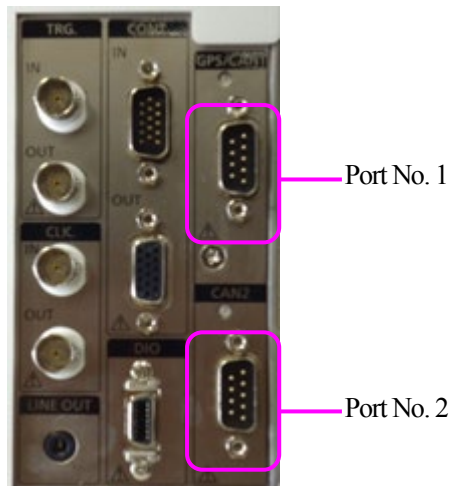
■Setting Items

(1) EDX-ID No.

The ID No. of the EDX-5000A with the EGPC-50A.

(2) Port No.

The communication port No.



(3) CAN Comm Std

High Speed CAN/Low Speed CAN

After changing the CAN communication standard, communication conditions are set as follows at first.

Item/CAN Comm Std	High Speed CAN	Low Speed CAN
Communication speed (kbps)	500	125
Sample Point	87.5 %(TSEG1:13, TSEG2:2, 48 MHz)	
Sample Times	1	
Resync Jump Width (SJW)	2	

(4) Comm Speed (kbps)

Select the communication speed.

The communication speed varies with the CAN communication standard.

High Speed CAN

1000, 800, 500, 250, 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, 10

Low Speed CAN

125, 100, 83.3, 62.5, 50, 33.3, 25, 20, 10

(5) Sample Point

The sample point.

The pre-set communication speed changes the sample point automatically.

Communication speed	Sample point
1000kbps	75% (TSEG1:11, TSEG2:4, 48MHz)
800kbps	80 % (TSEG1:15, TSEG2:4, 48MHz)
Others	87.5 %(TSEG1:13, TSEG2:2, 48 MHz)

(6) Sample Times

The sample times. The sample times is a fixed value.

(7) Resync Jump Width

The resync jump width. The Resync jump width is a fixed value.

(8) Term Resist

Select the Term Resist ON/OFF.

9-2-2 Receiving conditions

Select the [Receiving Cond] tab on the ECAN Condition Setting window for settings.

The DCS-100A is able to set up to 512 channels on the EGPC-50A.

CAN-CH E0-***	Measurement	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian
001	☐		1	Standard	---	8		0	16	Signed	Big
002	☐		1	Standard	---	8		0	16	Signed	Big
003	☐		1	Standard	---	8		0	16	Signed	Big
004	☐		1	Standard	---	8		0	16	Signed	Big
005	☐		1	Standard	---	8		0	16	Signed	Big
006	☐		1	Standard	---	8		0	16	Signed	Big
007	☐		1	Standard	---	8		0	16	Signed	Big
008	☐		1	Standard	---	8		0	16	Signed	Big
009	☐		1	Standard	---	8		0	16	Signed	Big
010	☐		1	Standard	---	8		0	16	Signed	Big
011	☐		1	Standard	---	8		0	16	Signed	Big
012	☐		1	Standard	---	8		0	16	Signed	Big
013	☐		1	Standard	---	8		0	16	Signed	Big
014	☐		1	Standard	---	8		0	16	Signed	Big
015	☐		1	Standard	---	8		0	16	Signed	Big
016	☐		1	Standard	---	8		0	16	Signed	Big
017	☐		1	Standard	---	8		0	16	Signed	Big
018	☐		1	Standard	---	8		0	16	Signed	Big
019	☐		1	Standard	---	8		0	16	Signed	Big
020	☐		1	Standard	---	8		0	16	Signed	Big
021	☐		1	Standard	---	8		0	16	Signed	Big
022	☐		1	Standard	---	8		0	16	Signed	Big
023	☐		1	Standard	---	8		0	16	Signed	Big

Title bar

Number of channels are displayed on the title bar.

Merge cells button

Merges the rows of the same Frame ID.

(For details, see “9-2-2-1 To merge cell.”)

Bit assignment... button

The Bit Assignment window appears for displaying the data field status.

(For details, see “9-2-2-2 Bit assignment window.”)

■Setting Items

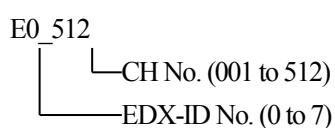
The [Receiving Cond] tab has the following items.

The [Receiving Cond] tab has the minimum items for measurements at the default status.

To add, remove, or sort the setting items, click the **Change Setting Items..** button.

(1) CAN-CH (E*-***)

The CH No. The CH No. of the EGPC-50A appears on graphs as "E*-***".



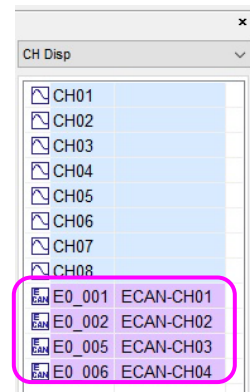
[Example]

Suppose the EDX-ID No. is 2 and the CH No. is 10.

The CAN-CH is E2-010.

(2) Measurement

The DCS-100A measures channels with a check mark on the “Measurement” column.
The ECAN-CHs to be measured are displayed on the CH Disp bar on the main window.



As you put a check mark to the check box in the “Measurement” column, the Frame ID appears automatically.
The same value of the adjacent Frame ID cell or 0 appears.

(3) Node Name

Input the Node No. (Within 40 characters).

Since the node indicates a device on the CAN network, the node is a device which transmits the data frame to the EDX-5000A.

(4) CAN-ID Name (Message)

Input the name of the data frame. (Within 40 characters).

(5) Port No.

Select the port No. for receiving the data frame.

1 to 2

(6) Format

Select the data frame format.

The data frame format is "Standard format" or "Extended format".

Select the target item from the following.

Standard (Standard format)/Extended (Extended format)

As you select the "Extended", the extension Frame ID appears automatically.

(7) Frame ID

Set the data frame ID. The Frame ID is hexadecimal number.

The Frame ID varies with the Format.

When the Format is standard: 0x0 to 0x7FF (11 bits)

When the Format is extended: 0x0 to 0x1FFFFFFF (29 bits)

To not use the Frame ID, select "---".

Before selecting "---", make sure the "Measurement" is OFF.

Be sure to set the same Frame ID value in the adjacent cells. Or, the DCS-100A automatically moves the channel to set the same Frame ID value in the adjacent cells.

[Example]

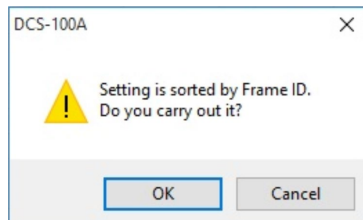
Suppose the settings are as follows.

Click the **OK** button or **Apply** button on the ECAN Condition Setting window.

Insert	Up	Filter by	Nothing	Bit Assignment...
Delete	Down	Word		☒ Merge cells

CAN-CH E0-***	Mes...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	0	32	Float	Big	
002	☒						ECAN-CH02	0	32	Float	Big	
003	☐		1	Standard	---	8		0	1	Signed	Big	
004	☒	Sample-ID02	1	Standard	100	8	ECAN-CH03	0	32	Float	Big	
005	☒						ECAN-CH04	0	32	Float	Big	
006	☐		1	Standard	---	8		0	1	Signed	Big	
007	☒	Sample-ID03	1	Extended	00000100	8	ECAN-CH05	0	32	Float	Big	
008	☐						ECAN-CH05	0	32	Float	Big	
009	☐		1	Standard	---	8		0	1	Signed	Big	
010	☒	Sample-ID04	2	Standard	100	8	ECAN-CH07	0	32	Float	Big	
011	☒						ECAN-CH08	0	32	Float	Big	
012	☐		1	Standard	---	8		0	1	Signed	Big	

The following message appears.



Click the **OK** button on the message window.

Insert		Up	Filter by	Nothing	Bit Assignment...							
Delete		Down	Word		☒ Merge cells							
CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH01	0	32	Float	Big	
002	☒						ECAN-CH02	0	32	Float	Big	
003	☒						ECAN-CH03	0	32	Float	Big	
004	☒						ECAN-CH04	0	32	Float	Big	
005	☐		1	Standard	---	8		0	16	Signed	Big	
006	☐		1	Standard	---	8		0	16	Signed	Big	
007	☒	Sample-ID03	1	Extended	00000100	8	ECAN-CH05	0	32	Float	Big	
008	☒						ECAN-CH06	0	32	Float	Big	
009	☐		1	Standard	100	8		0	16	Signed	Big	
010	☒	Sample-ID04	2	Standard	100	8	ECAN-CH07	0	32	Float	Big	
011	☒						ECAN-CH08	0	32	Float	Big	

Merged the cells of the Frame ID 100.

The Extension Frame ID is different from the Standard Frame ID.

Although the Frame ID is 100, the Port No. is different.

Click the **Cancel** button on the message window.

Insert	Up	Filter by	Nothing	▼	Bit Assignment...							
Delete	Down	Word		☒ Merge cells								
CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length	CAN-CH Name	Start Bit	Bit Length	Data Type	Endian	Ca
001	☒	Sample-ID01	1	Standard	100	8	ECAN-CH03	0	32	Float	Big	
002	☒		1	Standard	---	8	ECAN-CH04	0	32	Float	Big	
003	☐		1	Standard	---	8	ECAN-CH05	0	1	Signed	Big	
004	☒	Sample-ID02	1	Standard	100	8	ECAN-CH03	0	32	Float	Big	
005	☒		1	Standard	---	8	ECAN-CH04	0	32	Float	Big	
006	☐	Sample-ID03	1	Standard	---	8	ECAN-CH05	0	1	Signed	Big	
007	☒		1	Extended	00000100	8	ECAN-CH05	0	32	Float	Big	
008	☐		1	Extended	00000100	8	ECAN-CH05	0	32	Float	Big	

Appears in red.

The target cell, having the same Frame ID value, appears in red.

When the [Receiving Cond] tab has a red cell, you are not able to apply the settings.

To apply the settings, change the settings or click the **OK** button on the message window to move the channels.

(8) CAN-CH Name (Signal)

Input the name of the CAN-CH. (Within 40 characters).

(9) Data Length (Byte)

Set the data field's data size of the data frame.

1 byte to 8 bytes

The DCS-100A handles each data in the data field as a channel.

(10) Start Bit

The head position of the channel data in the data field. The Start Bit is binary digit.

0 bit to 63 bits

The Start Bit varies with the "Endian".

(11) Bit Length

Set the data size of the channel.

1 bit to 64 bits

NOTE

The Bit Length varies with the "Start Bit" and "Data Length (Byte)".

The setting range is as follows.

$\text{Data Length (Byte)} \times 8 \geq \text{Start Bit} + \text{Bit Length}$

[Example] Suppose the Start bit is 0 and Bit Length is 32.

The Data Length (Byte) is 4 to 8.

(12) Start Point

Set the head position of the channel data in the data field.

Although the Start Point is the same as the Start Bit, the formats are not the same.

The Start Point is XY (X: Byte No., Y: Bit No.).

00 to 77

As you change the Start Point, the new Start Bit appears automatically.

(13) End Point

Set the end position of the channel data in the data field.

The End Point is XY (X: Byte No., Y: Bit No.).

00 to 77

As you change the End Point, the new Bit Length appears automatically.

(14) Data Type

Select the type of the channel.

Signed	Signed integer-type data (1 to 64 bits)
Unsigned	Unsigned integer-type data (1 to 64 bits)
Float	Real type data (32 bits fixed)
Double	Real type data (64 bits fixed)

(15) Endian

Select the Endian of the channel.

Big/Little

(16) Calibr. const.

Set the constant for converting the channel value into the physical quantity.

Use the following formula.

$$\text{Physical quantity} = \text{Channel value} \times \text{Calibr. const.} + \text{offset}$$

The DCS-100A uses the Calibr. const. automatically.

To not use the Calibr. const., input "1.0".

(17) Offset

Set the offset to be added.

The DCS-100A uses the Offset automatically.

To not use the Offset, input "0.0".

(18) Unit

Select/input the appropriate unit.

Double-click the target CH or press the **ENTER** key to display the Set Unit window.

The image shows a dialog box titled "Set Unit CH81" with a close button (X) in the top right corner. Below the title bar is a section labeled "KS2 Format unit". It contains a grid of radio button options for various units. The first row has ☒ um/m, ☐ e, ☐ mV, ☐ V, ☐ mA, and ☐ A. The second row has ☐ mm, ☐ cm, ☐ m, ☐ degC, ☐ degF, and ☐ gf/cm2. The third row has ☐ kgf/mm2, ☐ kgf/cm2, ☐ kgf/m2, ☐ mmHg, ☐ kPa, and ☐ MPa. The fourth row has ☐ g, ☐ kg, ☐ ton, ☐ gf, ☐ kgf, and ☐ tonf. The fifth row has ☐ N, ☐ kgf.mm, ☐ kgf.cm, ☐ kgf.m, ☐ Nm, and ☐ OHM. The sixth row has ☐ kOHM, ☐ MOHM, ☐ %, ☐ dB, ☐ ppm, and ☐ cm/s. The seventh row has ☐ m/s, ☐ m/min, ☐ km/h, ☐ Hz, ☐ kHz, and ☐ MHz. The eighth row has ☐ deg, ☐ deg, ☐ rad, ☐ kN, ☐ kNm, and ☐ kW. The ninth row has ☐ rpm, ☐ cm/s2, ☐ m/s2, ☐ G, ☐ daN, and ☐ mile/h. The tenth row has ☐ *100kpa, ☐ deg/s, ☐ msec, ☐ sec, ☐ min, and ☐ hour. There are three empty radio button slots at the bottom left. At the bottom right, there are "OK" and "Cancel" buttons.

Press the **SPACE** key to be in input available state.

Input the target unit.

Input the user arbitrary unit within 7 characters.

(19) Deci Digits

Select the number of digits below the decimal point.

When selecting the Auto, a number consisting of 5 digits (a sign not included) appears automatically.

(20) Maximum/Minimum

Set the CAN threshold values.

For details, see “5-2 DIO conditions.”

9-2-2-1 To merge cell

To merge cells of the same Frame ID, put a check mark to the check box next to the "Merge cells".

Merging cells enables you to view the data frame configuration much easily.

Initial State:

CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)
001	☒	Velocity	1	Standard	100	6	Velocity-X
002	☒	Velocity	1	Standard	100	6	Velocity-Y
003	☒	Velocity	1	Standard	100	6	Velocity-Z
004	☒	Engine	1	Extended	00000200	8	rpm
005	☒	Engine	1	Extended	00000200	8	temprature
006	☐		1	Standard	---	8	

Callouts for initial state:

- Click (points to the 'Merge cells' checkbox)
- Frame ID 0x100 (points to the first three rows)
- Frame ID 0x00000200 (points to the next two rows)

Merged State:

CAN-CH E0-***	Mea...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	CAN-CH Name (Signal)
001	☒	Velocity	1	Standard	100	6	Velocity-X
002	☒	Velocity	1	Standard	100	6	Velocity-Y
003	☒	Velocity	1	Standard	100	6	Velocity-Z
004	☒	Engine	1	Extended	00000200	8	rpm
005	☒	Engine	1	Extended	00000200	8	temprature
006	☐		1	Standard	---	8	

Callouts for merged state:

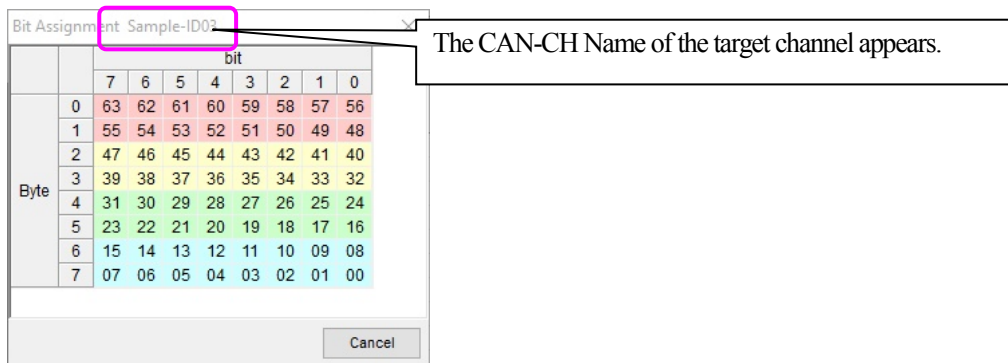
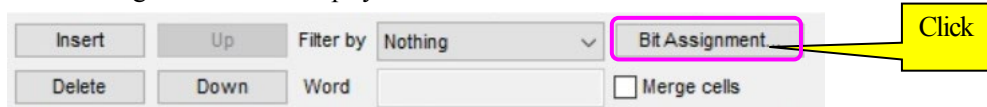
- Merged the cells of the same Frame ID. (points to the merged cells for Frame ID 100 and 00000200)

9-2-2-2 Bit assignment window

To open the Bit Assignment window, click the **Bit assignment...** button.

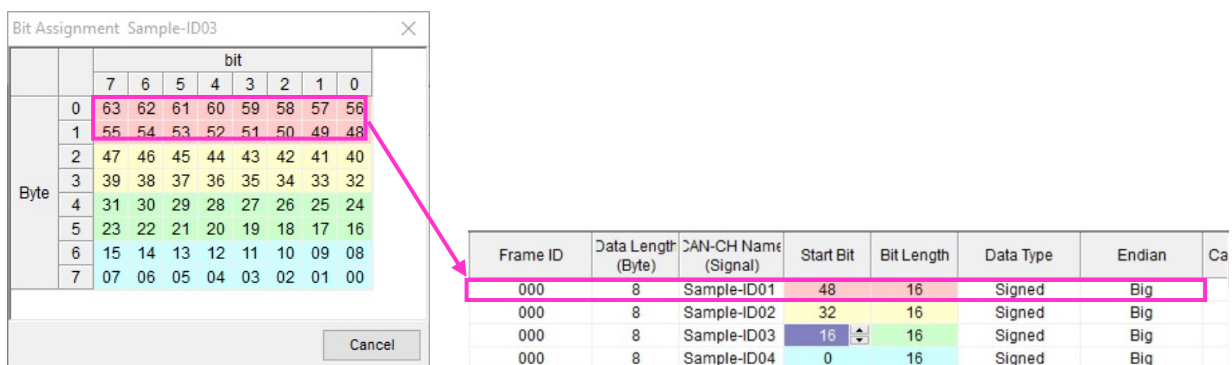
To close the Bit Assignment window, click the **Bit assignment...** button.

The Bit Assignment window displays the data field status.



Bit Assignment window

The cell colors of the Bit Assignment window are the same as that of the [Receiving Cond] tab.

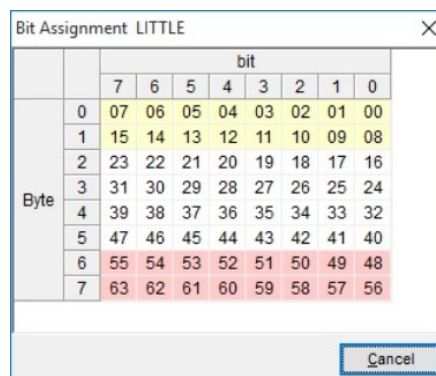
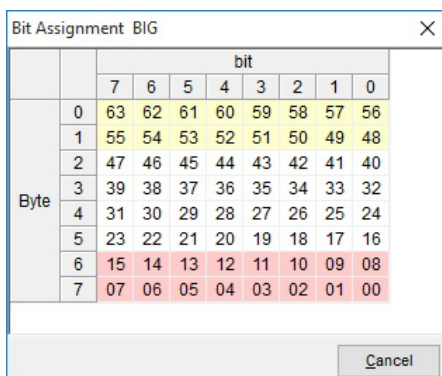


When the both Big Endian and Little Endian exist in the data frame, the Bit Assignment window appears based on the Endian of the target channel.

Frame ID	Data Length (Byte)	CAN-CH Name (Signal)	Start Bit	Bit Length	Data Type	Endian
000	8	BIG	0	16	Signed	Big
000	8	LITTLE	0	16	Signed	Little
---	8	SampleCH03	0	16	Signed	Big
---	8	SampleCH04	0	16	Signed	Big

CAN-CH Name (Signal) : Big

CAN-CH Name (Signal): Little



9-2-3 Output operations

Select the [Output Start Cond] tab, [Output Stop Cond] tab, [Output Interval Cond] tab, and [Output Manual Cond] tab on the ECAN Condition Setting window for setting the data frame.

The DCS-100A has 4 output operations.

The setting operations are common in [Output Start Cond] tab, [Output Stop Cond] tab, [Output Interval Cond] tab, and [Output Manual Cond] tab.

*The [Output Interval Cond] tab includes the Cycle.

The DCS-100A is able to set up to 32 data frames on each output operation.

No.	Output	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	B0	B1	B2	B3	B4	B5	B6	B7	Confirm
1	☒		1	Standard	001	8	01	00	00	00	00	00	00	00	☒
2	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
3	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
4	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
5	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
6	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
7	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
8	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
9	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
10	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
11	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
12	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
13	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
14	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
15	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
16	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
17	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
18	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
19	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
20	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
21	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
22	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
23	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
24	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
25	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
26	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
27	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐
28	☐		1	Standard	---	8	00	00	00	00	00	00	00	00	☐

Title bar

The "Number of Output IDs" appears.

Output test button

The CAN Output Test window appears.

(For details, see "9-2-3-2 Output test.")

Cycle box

Set the interval of the Interval output. ([Output Interval Cond] tab only.)

●Cycle box ([Output Interval Cond] tab only.)

The Interval output outputs the data frame at the pre-set cycle.

Set the cycle on the Cycle box.

0.1 to 100.0 sec.

For details, see "9-2-3-1 Output operations and output timing."

■Setting Items

(1) No.

The data frame No. to be output.

No.1 to No. 32

(2) Output

Set the data frame to be output.

The DCS-100A outputs the data frame with a check mark at the timing of each output operation.

(3) CAN-ID Name (Message)

Input the name of the data frame. (Within 40 characters).

(4) Port No.

Select the port No. to output the data frame.

1 to 2

(5) Format

Select the data frame format.

The data frame format is "Standard format" or "Extended format".

Select the target item from the following.

"Standard" (Standard format)

"Extended" (Extended format)

As you select the "Extended", the extension Frame ID appears automatically.

(6) Frame ID

Set the data frame ID. The Frame ID is hexadecimal number.

The Frame ID varies with the Format.

When the Format is standard: 0x0 to 0x7FF (11 bits)

When the Format is extended: 0x0 to 0xFFFFFFFF (29 bits)

To not use the Frame ID, select "---".

Before selecting "---", make sure the "Output" is OFF.

(7) Data Length (Byte)

Set the data field's data size of the data frame.

1 byte to 8 bytes

The Data Length (Byte) may limits the B0 to B7 settings.

[Example]

Suppose the Data Length (Byte) is 3. B0 to B2: Available

B3 to B7: Not available

Suppose the Data Length (Byte) is 8. B0 to B7: Available

(8) B0 to B7 (B: Byte)

Set the data field of the data frame.

The B0 to B7 is hexadecimal number.

0x00 to 0xFF

(9) Confirmation

To confirm the response after outputting the data frame, put a check mark to the check box in the “Confirmation” column.
The confirmation ON/OFF is whether the EDX-5000A receives the pre-set Rx Frame ID.
When the EDX-5000A does not receive the RX Frame ID, the EDX-5000A waits for the pre-set Time out (msec).
After the pre-set Time out (msec) has elapsed, the EDX-5000A outputs the next CAN data.
For details, see “9-2-3-1 Output operations and output timing.”

(10) Rx Frame ID

Set the Rx Frame ID.
The range of the Rx Frame ID is the same as that of the Frame ID.
The data frame format of the Rx Frame ID is the same as that of the Format.

(11) Time out (msec)

The confirmation ON/OFF is whether the EDX-5000A receives the pre-set Rx Frame ID.
When the EDX-5000A does not receive the RX Frame ID, the EDX-5000A waits for the pre-set Time out (msec).
After the pre-set Time out (msec) has elapsed, the EDX-5000A outputs the next CAN data.

(12) Result

The result of the transmission test appears.
For details, see “9-2-3-2 Output test.”

9-2-3-1 Output operations and output timing

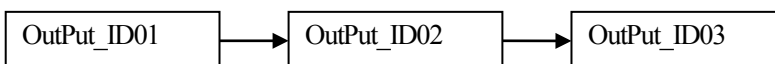
This section describes the output timing of each output operation.

The EDX-5000A does not output the all Output ON IDs at the same time.

The EDX-5000A outputs the Output ON IDs from the No.1.

Receiving Cond		Output Start Cond	Output Stop Cond	Output Interval Cond	Output Manual Cond	Comm Cond										
Insert		Up	Filter by	Nothing	Output test											
Delete		Down	Word													
No.	Outp...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)	B0	B1	B2	B3	B4	B5	B6	B7	C	
1	☒	OutPut_ID01	1	Standard	100	2	00	01	...	...	...	...	...	...		
2	☒	OutPut_ID02	1	Standard	200	4	12	34	56	78	...	...	...	...		
3	☒	OutPut_ID03	2	Standard	300	6	AA	BB	CC	DD	EE	FF	...	...		
4	☐		1	Standard	000	8	00	00	00	00	00	00	00	00		

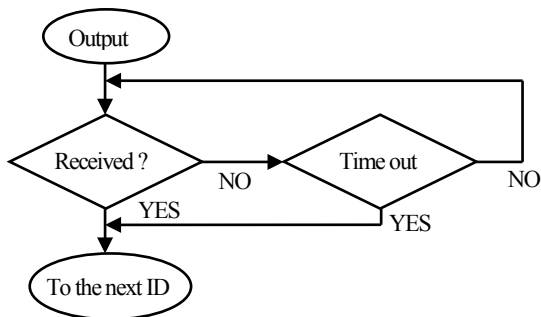
Suppose the settings are described as above. The EDX-5000A outputs the Output ON IDs as follows.



The EDX-5000A automatically adjusts the output interval of each ID.

The EDX-5000A outputs the Output ON IDs from the No.1.

The EDX-5000A outputs the next ID after receiving the pre-set Rx Frame ID or after the pre-set Time out (msec) has elapsed.

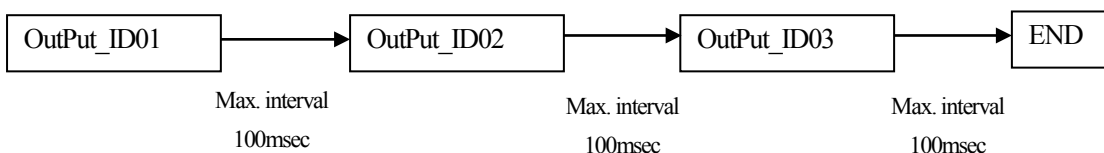


Receiving Cond Output Start Cond Output Stop Cond Output Interval Cond Output Manual Cond Comm Cond																
Insert		Up		Filter by		Nothing				Output test						
Delete		Down		Word												
No.	Format	Frame ID	Data Length (Byte)	B0	B1	B2	B3	B4	B5	B6	B7	Confirmat...	Rx Frame ID	Time c ^		
1	Standard	100	2	00	01							☒	010	100		
2	Standard	200	4	12	34	56	78					☒	020	100		
3	Standard	300	6	AA	BB	CC	DD	EE	FF			☒	030	100		
4	Standard	---	8	00	00	00	00	00	00	00	00	☐				

[Example]

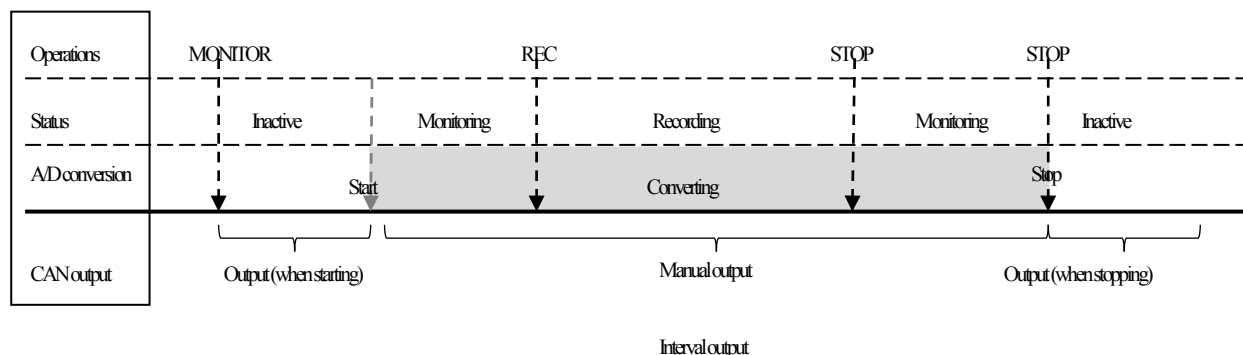
Suppose the settings are described as above.

When the EDX-5000A does not receive the RX Frame ID and waits for the pre-set Time out (msec), the total time is approx. 300 msec.

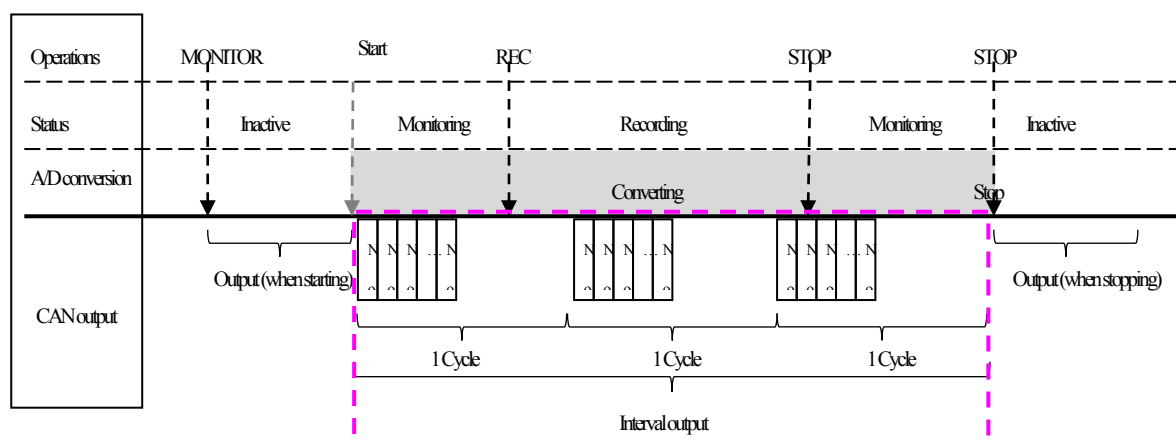


The output timing and output operations are as follows. The output timing may vary with the Measure Mode.

For details, see separate volume of "EDX-5000A MEMORY RECORDER/ANALYZER INSTRUCTION MANUAL (FOR HARDWARE)."



- Output (when starting)
Outputs the CAN data before starting the A/D conversion.
- Output (when stopping)
Outputs the CAN data after stopping the A/D conversion.
- Interval output
Outputs the CAN data at the pre-set cycle.
The output timing of the interval output is as follows.

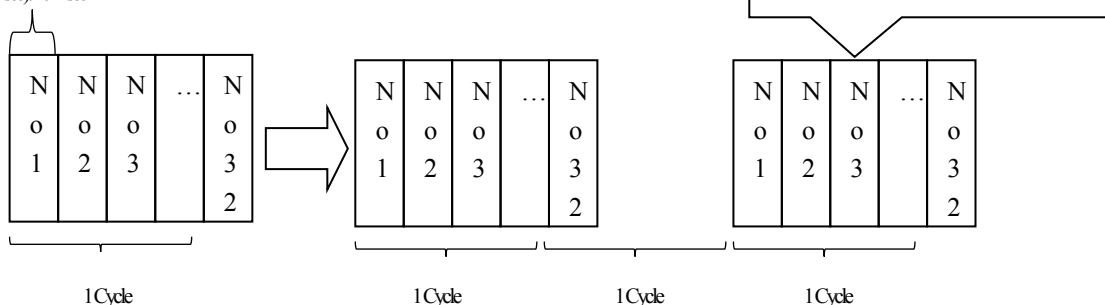


When the total Time out (msec) is longer than the pre-set cycle, the EDX-5000A outputs data as follows.

[Example]

Suppose the Number of Output IDs is 32, Time out (msec) is 100 msec, and Cycle is 2.0 sec.

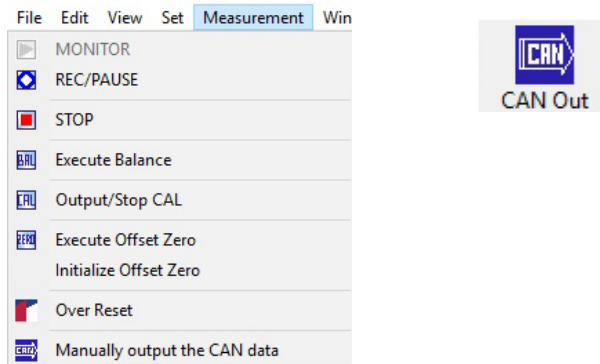
Time out(msec): 100 msec



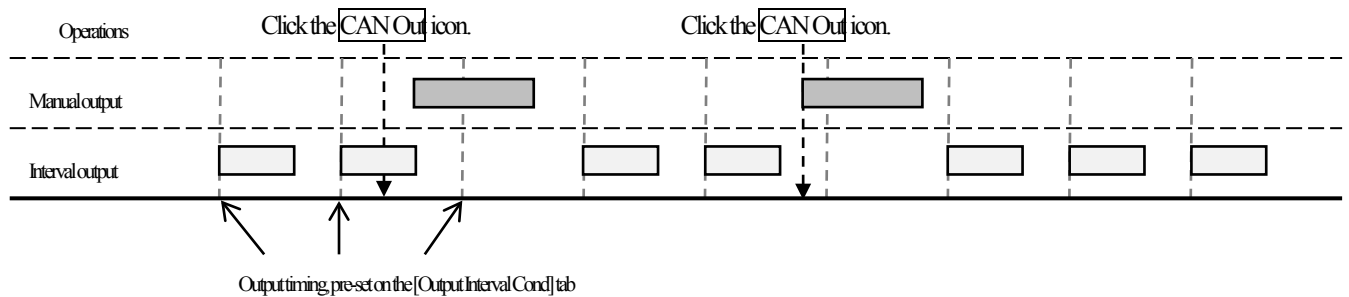
- Manual output

Outputs the CAN data manually.

Click the **CAN Out** icon from the toolbar or click the Measurement - Manually output the CAN data.



When you set the manual output and interval output at the same time, the EDX-5000A does not output the 2 CAN data at the same time. After outputting the CAN data of either output operation, the DCS-100A outputs the CAN data of another output operation.



9-2-3-2 Output test

The Output test confirms whether the EDX-5000A receives the pre-set Rx Frame ID.

- (1) To enable the **Output test** button, make sure the "Output" is ON and "Confirmation" is ON on the [Output Start Cond] tab, [Output Stop Cond] tab, [Output Interval Cond] tab, or [Output Manual Cond] tab.

Click the **Output test** button.

The CAN Output Test window appears.

No.	Outp...	CAN-ID Name (Message)	Port No.	Format	Frame ID	Data Length (Byte)
1	☒	OutPut_ID01	1	Standard	100	2
2	☒	OutPut_ID02	1	Standard	200	4
3	☒	OutPut_ID03	2	Standard	300	6
4	☐		1	Standard	000	8

Confirmation	Rx Frame ID	Time out (msec)	Result
☒	010	100	***
☒	020	100	***
☒	030	100	***

- (2) Click the **Check** button to execute the Output test.

The DCS-100A executes the output test with a check mark on the "Confirmation" column.

- (3) The output test results appear as follows.

OK: The EDX-5000A received the all pre-set Rx Frame IDs.
 Error: The EDX-5000A did not receive the all pre-set Rx Frame IDs.
 Communication error: The communication failed due to the communication conditions.

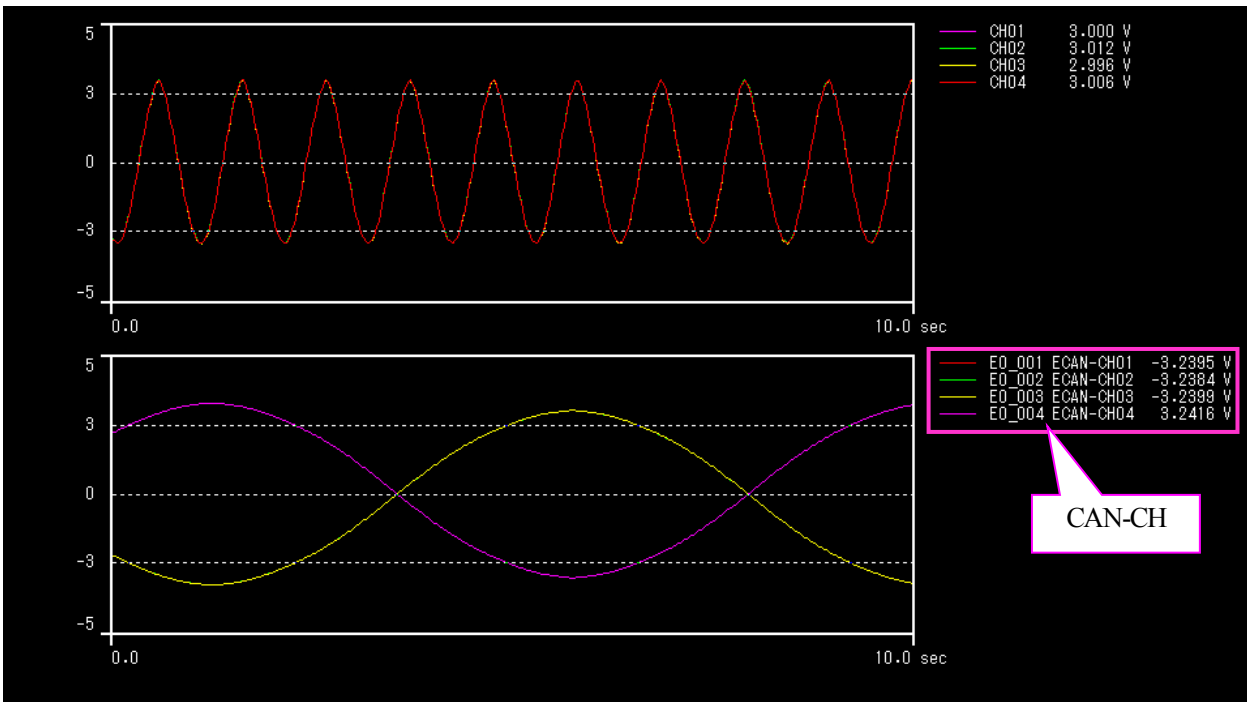
- (4) To check the output test result of each ID, see the "Result" column on the [Output Start Cond] tab, [Output Stop Cond] tab, [Output Interval Cond] tab, or [Output Manual Cond] tab.

Confirmation	Rx Frame ID	Time out (msec)	Result
☒	010	100	OK
☒	020	100	NG

OK: The EDX-5000A received the pre-set Rx Frame ID.
 Error: The EDX-5000A did not receive the pre-set Rx Frame ID.
 Communication error: The communication failed due to the communication conditions.

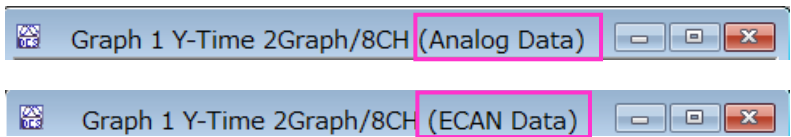
9-2-4 To monitor the CAN data

The DCS-100A displays the CAN data on the Numeric windows/Graph windows.

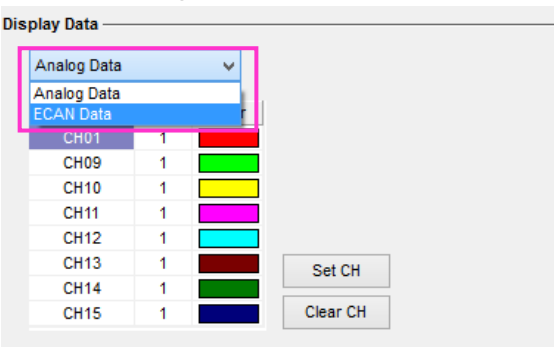


When the number of CAN-CH satisfies the following equation, the DCS-100A is not able to display the analog data and ECAN data on the same window. Select the target data (Analog data or ECAN data) on each window. At this time, the DCS-100A thins the ECAN data automatically.

The number of CAN-CH × Sampling frequency > 131,072



Select the "Analog data" or "ECAN data" on the Set Display Condition... window.



MEMO

When the DCS-100A does not update the ECAN data after start monitoring data or when the ECAN data is not correct after start monitoring data, check the following items.

- Make sure the communication standard and communication speed are correct.

When the communication conditions are not correct.

The EGPC-50A LED lights up in red. (The EGPC-50A LED lights up in green when the communication conditions are correct.)

The ECAN bus status of the EDX-5000A is Error.

For details, see separate volume of "EDX-5000A MEMORY RECORDER/ANALYZER INSTRUCTION MANUAL (FOR HARDWARE)."

- The EGPC-50A has 2 ports. Make sure the Port No. are correct.
 - The DCS-100A converts the received data into values, based on the Data Length (Byte), Start Bit, Bit Length, Data Type, and Endian on the [Receiving Cond] tab.
- Make sure the items on the [Receiving Cond] tab are correct.

9-3 GPS conditions

This section describes how to record the GPS data/how to record data by using the GPS time data with the accessory GPS sensor.

NOTE

- (1) You are not able to use the GPS sensor under the following conditions.
- The EGPC-50A is not installed in the standalone operation.
 - The EGPC-50A is not installed in the master unit in the synchronous operation.
 - The data save folder is "PC data file folder" on the Set Measure Condition window.
 - The sampling frequency is "Ext Clock" on the Set Measure Condition window.
- (2) Before using the "time synchronization function", make sure the time zone, date and time on the PC are correct.

9-3-1 To connect the GPS sensor

Connect the accessory GPS sensor as follows.



Connect the accessory GPS sensor into the GPS/CAN 1 port.

9-3-2 To record the GPS data

When recording the GPS data, the DCS-100A monitors/records the GPS data (latitude, longitude, speed, azimuth, etc.) as well as the measured data.

The DCS-100A saves the GPS data in the EDX-5000A data drive (in the NMEA format).

■Operation method

- (1) Connect the accessory GPS sensor.
(For details, see “9-3-1 To connect the GPS sensor.”)
- (2) Make sure the EGPC-50A appears on the “Option Card” column on the [Configuration] tab.
(For details, see “9-1 To confirm the configuration”)
- (3) Open the Set Measure Condition window by any of the following.
 - Click the Set - Set Measure Condition....
 - Click the Meas. Cond. icon from the toolbar.
- (4) Click the [Measure Mode] tab.
Put a check mark to the check box next to the "Records GPS data."

The screenshot shows the 'Measure Mode' window. The 'EGPC-50A' section at the bottom has a checkbox labeled 'Records GPS data.' which is checked and highlighted with a red rectangle. Other settings include Sampling Frequency (1,2,5 and 500Hz), Clockout frequency dividing (1), Clockout Mode (always), Record Data (Number of Data/CH: 1000, Record Time: 2.000sec), and Repeat Times (1).

- (5) Click the OK button to close the window.
- (6) Go to “7 Measuring data.”

9-3-3 To record the data by using the GPS time data

The DCS-100A records the data by using the GPS time data in the following 2 methods.

Point ZERO (manual) measurement

Starts the manual measurement at 0 msec by using the time data, received from the GPS satellite.

Interval (GPS synchronization) measurement

Starts the interval measurement at 0 msec by using the time data, received from the GPS satellite.

For details, see separate volume of "EDX-5000A MEMORY RECORDER/ANALYZER INSTRUCTION MANUAL (FOR HARDWARE)."

9-3-3-1 Point ZERO (manual) measurement

This section describes how to execute the Point ZERO (manual) measurement.

■Operation method

(1) Connect the accessory GPS sensor.

(For details, see "9-3-1 To connect the GPS sensor")

(2) Make sure the EGPC-50A appears on the "Option Card" column on the [Configuration] tab.

(For details, see "9-1 To confirm the configuration")

(3) Open the Set Measure Condition window by any of the following.

- Click the Set - Set Measure Condition....
- Click the **Meas. Cond.** icon from the toolbar.

(4) Click the [Measure Mode] tab.

Put a check mark to the check box next to the "Records data by using the time data received through the GPS sensor."

(5) The Point ZERO (Manual) and Point ZERO (Manual n. of data) appear.

Select the target item from the following.

Point ZERO (Manual) Manually starts and stops the data recording.

Point ZERO (Manual n. of data) Manually starts the data recording and records data for the pre-set Number of data/CH.

Measure Mode
Data File

Measure Mode

Point ZERO (Manual n. of data)

Sampling Frequency

1,2,5 500Hz

The number of measuring CHs of EDX-5000A units are listricted by the selected sampling frequency.

Clockout frequency dividing 1 (Frequency that is output from the EDX-5000A : 500Hz)

Clockout Mode

☒ always ☐ during recording

☐ reverse

Record Data

Number of Data/CH 1000

Record Time 2.000sec

Repeat Times

1

EGPC-50A

☐ Records GPS data.

☒ Records data by using the time data received through the GPS sensor.

(6) Click the **OK** button to close the window.

(7) Go to “7-3 Manual measurement.”

9-3-3-2 Interval (GPS synchronization) measurement

This section describes how to execute the Interval (GPS synchronization) measurement.

■Operation method

(1) Connect the accessory GPS sensor.

(For details, see “9-3-1 To connect the GPS sensor.”)

(2) Make sure the EGPC-50A appears on the “Option Card” column on the [Configuration] tab.

(For details, see “9-1 To confirm the configuration”)

(3) Open the Set Measure Condition window by any of the following.

- Click the Set - Set Measure Condition....
- Click the **Meas. Cond.** icon from the toolbar.

(4) Click the [Measure Mode] tab.

Put a check mark to the check box next to the "Records data by using the time data received through the GPS sensor."

(5) The “Interval (GPS sync) appears.

The screenshot shows the 'Measure Mode' window with the 'Interval' tab selected. The 'Measure Mode' dropdown is set to 'Interval(GPS sync)'. The 'Sampling Frequency' is set to '1,2,5' and '500Hz'. The 'Clockout frequency dividing' is set to '1'. The 'Clockout Mode' is set to 'always'. The 'Record Data' section shows 'Number of Data/CH' as '1000' and 'Record Time' as '2.000sec'. The 'Repeat Times' is set to '1'. The 'EGPC-50A' section has two checkboxes: 'Records GPS data.' (unchecked) and 'Records data by using the time data received through the GPS sensor.' (checked).

(6) Click the [Interval] tab .

Measure Mode
Interval
Data File

Start Time

☒ Set Interval Start Time.

2017/04/13 17:15:00 UTC Time 2017/04/13 08:15:00

If start date is not set, the date when [REC] button is pressed shall be the start date.

Interval Time

Day Hour Minute Second

0 0 1 0

Set interval time to a time more than 'record time (0.1000sec) + 10 second'.

Repeat Times

1

(7) Set the interval conditions (such as the Start Time, Interval Time, etc.)

(For details, see “7-4 Interval measurement.”)

Click the **OK** button to close the window.

MEMO

The DCS-100A is able to set the Start Time in the Local Time or UTC Time.
The Local Time and UTC Time are linked.

Start Time

☒ Set Interval Start Time.

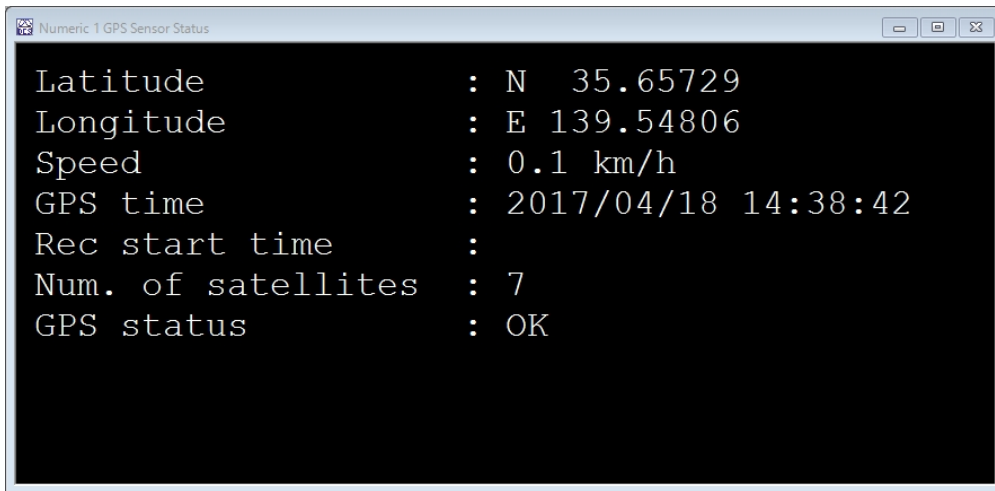
2017/04/13 17:15:00 UTC Time 2017/04/13 08:15:00

Local Time UTC Time

(8) Go to “7-4 Interval measurement.”

9-3-4 GPS sensor status window

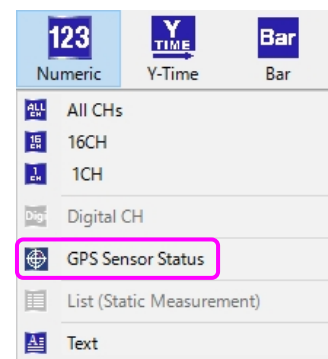
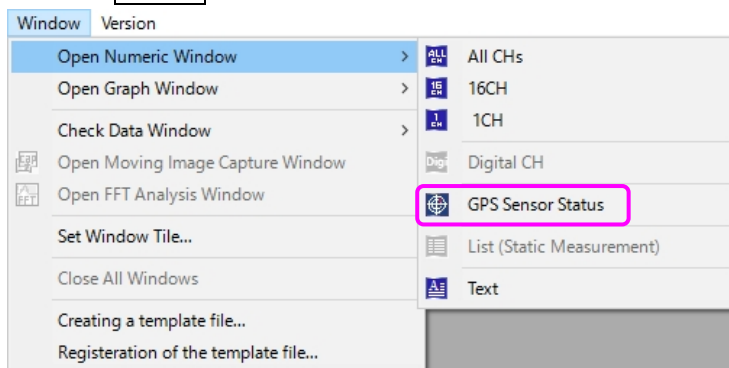
This section describes how to open the GPS sensor status window when recording the GPS data or when recording data by using the GPS time data.



■How to display

Open the GPS sensor status window by any of the following.

- Click the Window - Open Numeric Window - GPS sensor status.
- Click the **Numeric** icon from the toolbar. Click the GPS sensor status.

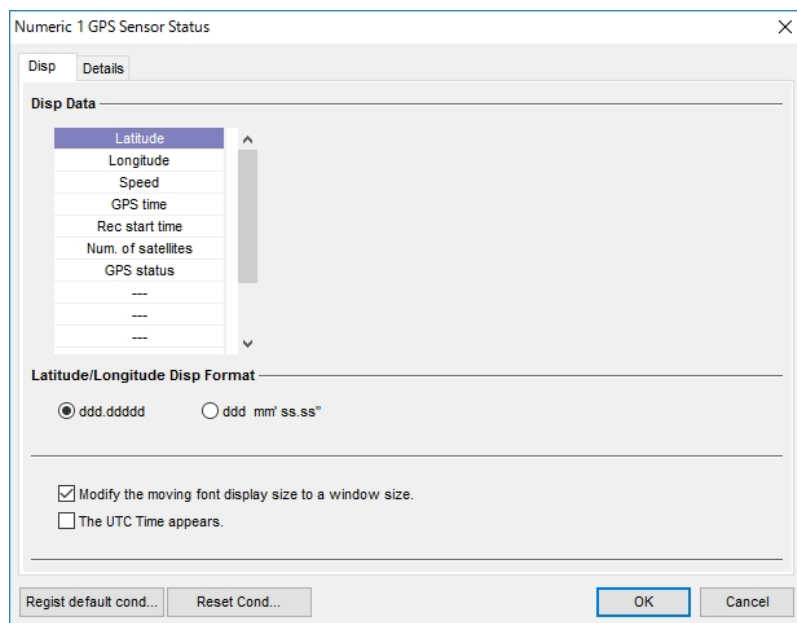


9-3-4-1 Set display condition... window

To set the display conditions of the GPS sensor status window, open the Set Display Condition... window.

Open the Set Display Condition... window by any of the following.

- Click the View - Set Display Condition....
- Right-click the window to display the pop-up-menu.
Click the Set Display Condition... on the pop-up-menu.
- Click the **Disp. Cond.** icon from the toolbar.
- Double-click the GPS sensor status window.



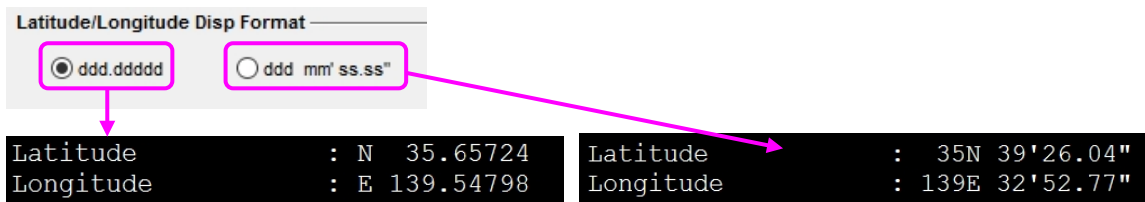
■Disp Data

Select the target item to be displayed on the GPS sensor status window.

Latitude	Latitude (N: North latitude, S: South latitude)
Longitude	Longitude (E: East longitude, W: West longitude)
Speed	Speed (km/h)
GPS time	Date and time of the GPS sensor
Rec start time	The next recording start time of the Point ZERO (manual) measurement/Interval (GPS synchronization) measurement.
Num. of satellites	The number of satellites in use Use the "Num. of satellites" as a guide when checking the receiving conditions.
GPS status	"OK" Non-differential GPS fix available The time synchronization function is available. "Error" Fix not available The time synchronization function is not available. NONE GPS sensor not connected.
Course	Traveling direction (°, TN: 0°)
Magnetic declination	Magnetic declination (+: East, -: West)
Sea level altitude	Altitude above sea level (m)
Geoid height	Geoid height (m)
Hrzn. dltn. of prec.	Horizontal dilution of precision
Posn. dltn. of prec.	Position dilution of precision
Vert. dltn. of prec.	Vertical dilution of precision

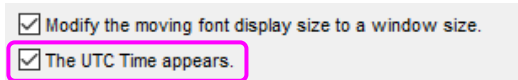
■To select the latitude format/longitude format

Select the latitude format/longitude format.

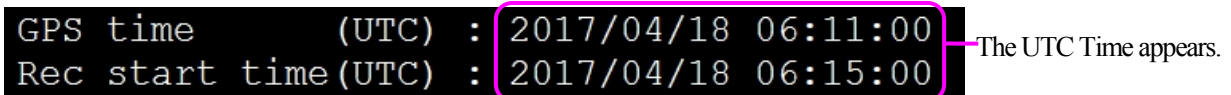


■To change the time format (UTC Time/Local Time)

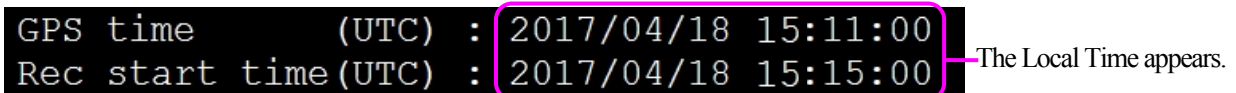
On the Set Display Condition... window, the DCS-100A is able to change the time format on the GPS sensor status window.



To display the UTC Time on the GPS sensor status window, put a check mark to the check box next to the "The UTC Time appears."



To display the Local Time on the GPS sensor status window, release a check mark from the box next to the "The UTC Time appears."



10. Collecting/deleting data files

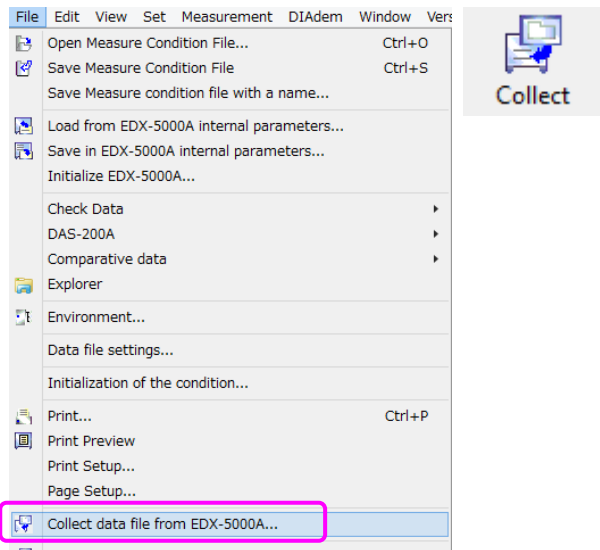
10-1 To collect the the data files

This section describes how to collect data files saved in the EDX-5000A data drive.

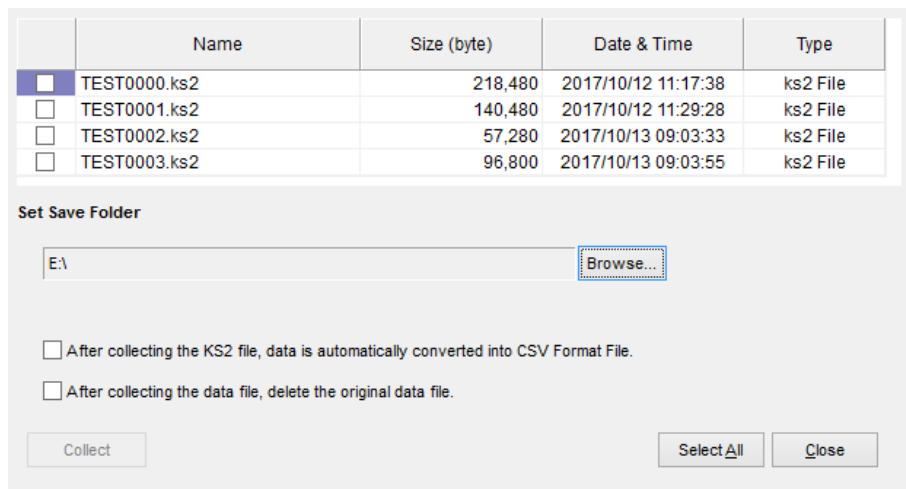
■Operation method

(1) Collect data by any of the following.

- Click the File- Collect data file from EDX-5000A...
- Click the **Collect** icon from the toolbar.



(2) The following window appears.



Collect button Collects the all data files with check marks.

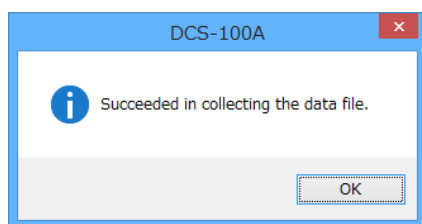
Select All button Puts a check mark to the check box next to every data file for collection.

Close button Closes the window.

(3) Put a check mark to the check box next to the target file.

Click the **Collect** button for collection.

(4) When the data collection succeeded, the following message appears.



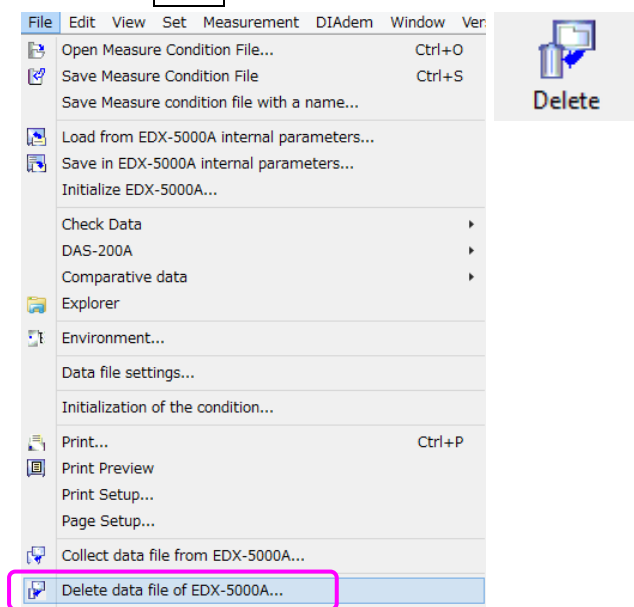
10-2 To delete the data files

This section describes how to delete data files saved in the EDX-5000A data drive.

■Operation method

(1) Delete data by any of the following.

- Click the File- Delete data file of EDX-5000A...
- Click the **Delete** icon from the toolbar.



(2)The following window appears.

Residue 30,477,905,920 byte Number of Files: 4				
	Name	Size (byte)	Date & Time	Type
☒	TEST0000.ks2	218,480	2017/10/12 11:17:38	ks2 File
☒	TEST0001.ks2	140,480	2017/10/12 11:29:28	ks2 File
☒	TEST0002.ks2	57,280	2017/10/13 09:03:33	ks2 File
☒	TEST0003.ks2	96,800	2017/10/13 09:03:55	ks2 File
Remove... Select All Close				

Remove button Deletes the all data files with check marks.

Select All button Puts a check mark to the check box next to every data file for deletion.

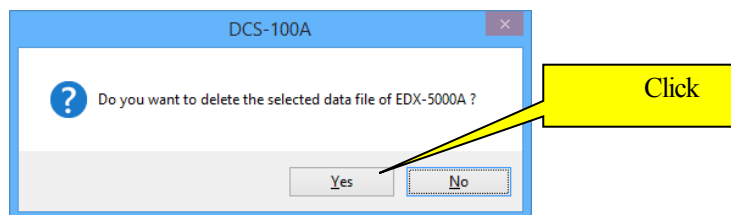
Close button Closes the window.

(3)Put a check mark to the check box next to the target file.

Click the **Remove** button for deleting.

(4)The following message appears.

Click the **Yes** button.



11. Saving and loading meas condition file

This section describes details of saving and loading Meas condition file.

11-1 To save the meas condition file with a file

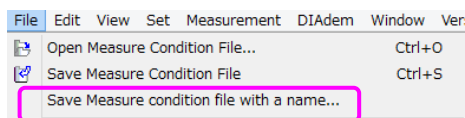
This section describes how to save the current Meas condition to the Meas condition file (Extension: E5D).

When the measurement is carried out with the same condition the next time, loading this Meas condition file enables to set Meas condition at a time.

The Meas condition file includes environment settings, channel conditions, measuring conditions, display conditions on graphs and on numeric windows, and arithmetic operation conditions (optional).

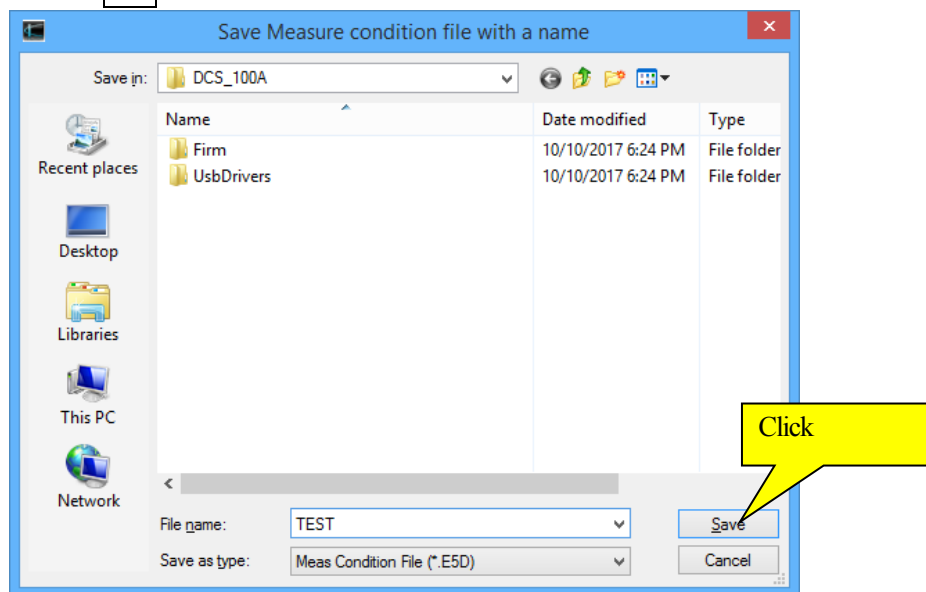
■Operation method

(1)Click the File - Save Meas Condition file with a name... to open the Save Meas Condition file with a name window.



(2)Select the Save in folder and input the File name.

Click the **Save** button.



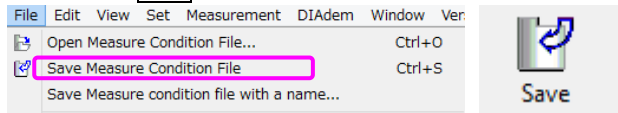
11-2 To save the meas condition file

This section describes how to save the current Meas condition to the existing Meas condition file (Extension: E5D).

■Operation method

Save the Meas condition file by any of the following.

- Click the File - Save Meas Condition File.
- Click the **Save** icon from the toolbar.



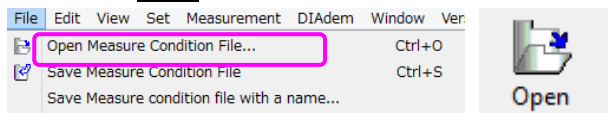
11-3 To open the meas condition file

This section describes how to load the previously saved Meas condition file (Extension: E5D).

■Operation method

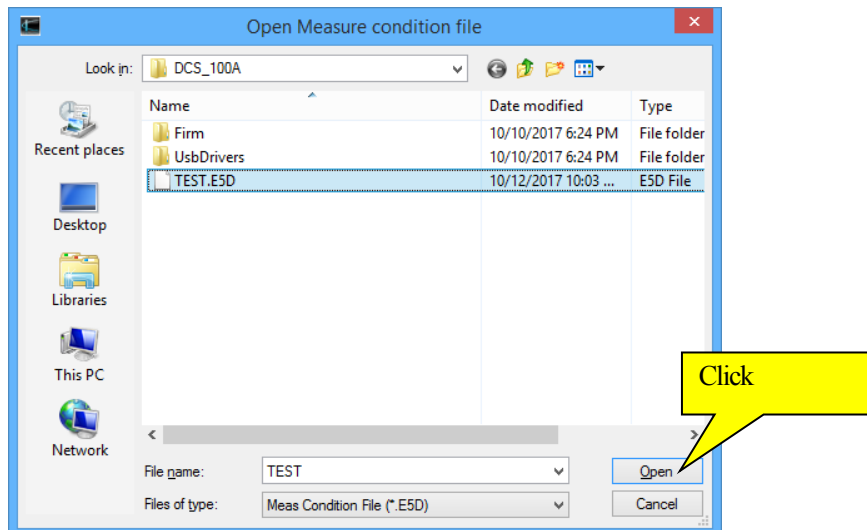
(1) Open the Open Measure Condition File window by any of the following.

- Click the File - Open Measure Condition File.
- Click the **Open** icon from the toolbar.



(2) Select the file name or folder name.

Click the **Open** button.



12. Saving and loading ME5 file

This section describes details of saving and loading ME5 file.

By loading ME5 file that created by DCS-100A to EDX-5000A, each conditions are set.

The ME5 file includes environment settings, channel conditions (excluding rated capacity and rated output), measuring conditions (excluding Data Save Folder), real-time processing conditions (excluding FFT and Webcam) and ECAN conditions.

Note that the displaycondition of ELA-55A is not included.

When the Data Save Folder is set “EDX-5000A Data Drive”, saving and loading the ME5 file is available.

To change the Data Save Folder, click the Environment window – [General] tab (For detail, see “4-1 [General] tab”).

When the Number of Connected Unit is set more than 1, saving multiple ME5 files and loading multiple ME5 files.

12-1 To use the ME5 file

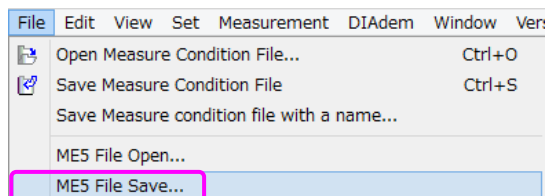
- (1) Set each conditions on DCS-100A according to measurement.
- (2) Save the ME5 file by DCS-100A.
- (3) Move the ME5 file to EDX-5000A from PC using USB, etc.
- (4) Loading the moved ME5 file by ETA-55A or ELA-55A, then each conditions that are set on DCS-100A are reflected on EDX-500A.

12-2 To save the ME5 file

This section describes how to save the current each conditions to the ME5 file (Extension:ME5).

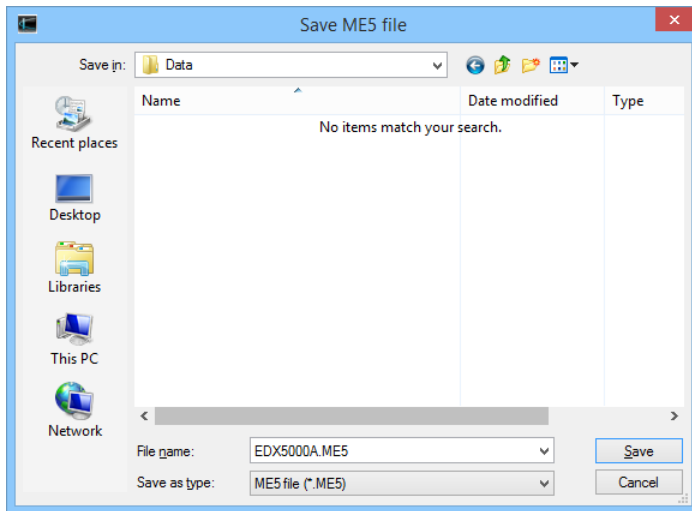
■Operation method

- (1)Click the File – ME5 File Save. . . to open the Save ME5 file window.



(2) Select the Save in folder and input the File name.

Click the **Save** button.



MEMO

The name of ME5 file to save is as follows by the current setting of the Number of Connected Units.

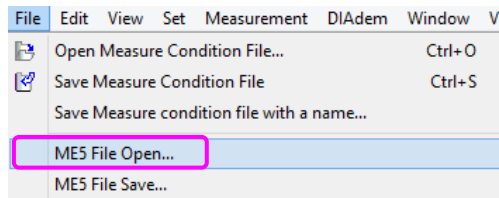
- 1 (standalone) **file name** . ME5
- More than 1 (multi units) **file name** _ △ . ME5 △ : 0 ~ 9 (ID No.)

12-3 To open the ME5 file

This section describes how to load the moved ME5 file (Extension:ME5).

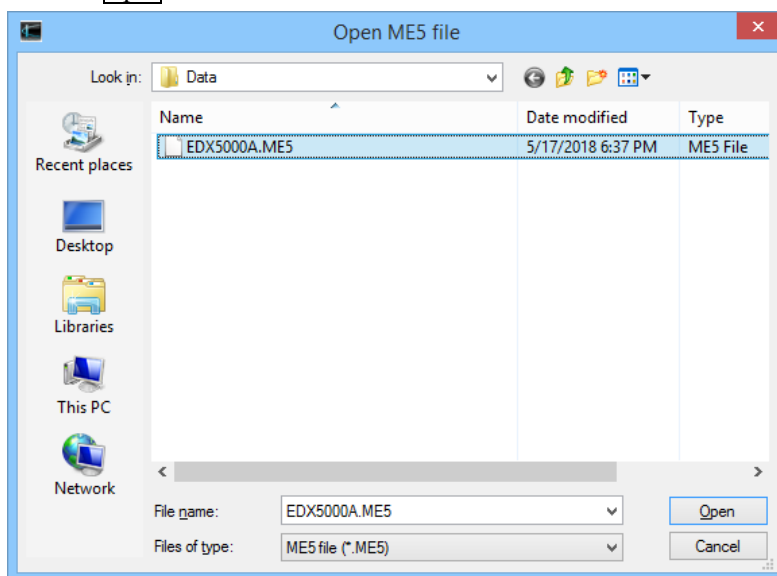
■Operation method

(1)Click the File – ME5 File Open... to open the Open ME5 file window.



(2)Select the file name of folder name.

Click the **Open** button.



MEMO

When set the Number of Connected Units more than 1 on DCS-100A, select the master unit's ME5 file (file name _ 0 . ME5).

13. Saving/loading the internal parameters of the EDX-5000A

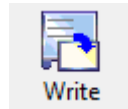
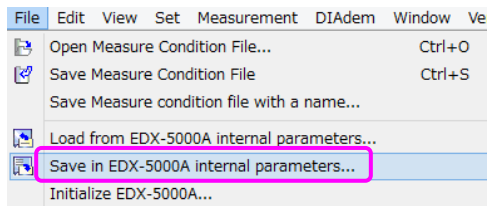
13-1 To save the internal parameters of the EDX-5000A

This section describes how to save the current measuring conditions as the internal parameters of the EDX-5000A. The internal parameters includes environmental settings, channel conditions, and measuring conditions.

■Operation method

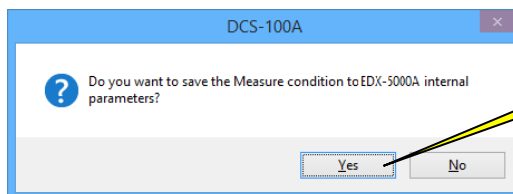
(1)Delete data by any of the following.

- Click the File - Save EDX-5000A Measure Condition - Save in EDX-5000A internal parameters...
- Click the **Write** icon from the toolbar.



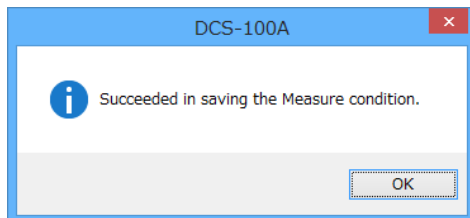
(2)The following message appears.

Click the **Yes** button.



Click

(3) After saving the measuring conditions in the internal parameters of the EDX-5000A, the following message appears. Click the **OK** button.



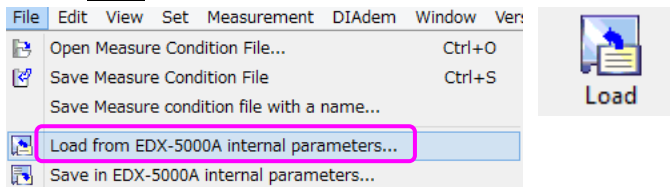
13-2 To load the data from the internal parameters of the EDX-5000A

This section describes how to load data from the internal parameters of the EDX-5000A.

■Operation method

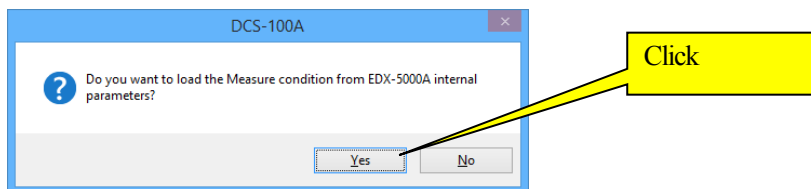
(1)Delete data by any of the following

- Click the File - Load EDX-5000A Measure Condition - Load from EDX-5000A internal parameters...
- Click the **Load** icon from the toolbar.



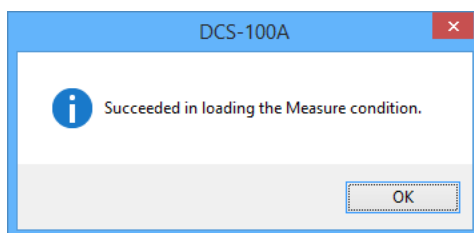
(2)The following message appears.

Click the **Yes** button.



(3)After loading the measuring conditions from the internal parameters of the EDX-5000A, the following message appears.

Click the **OK** button.



13-3 Initialize EDX-5000A

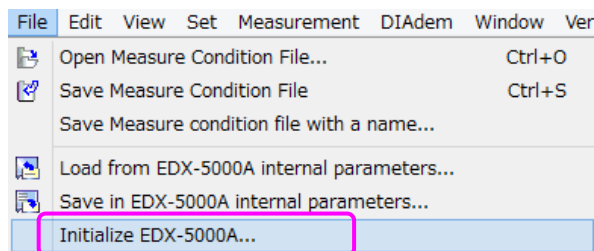
This section describes how to initialize the EDX-5000A.

When the EDX-5000A is initialized, the measure condition, the channel condition, the balance value and the compensated internal sensitivity are initialized.

■Operation method

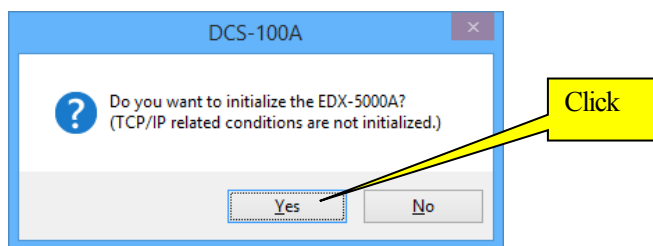
(1) Initialize EDX-5000A by any of the following.

- Click the File – Initialize EDX-5000A...



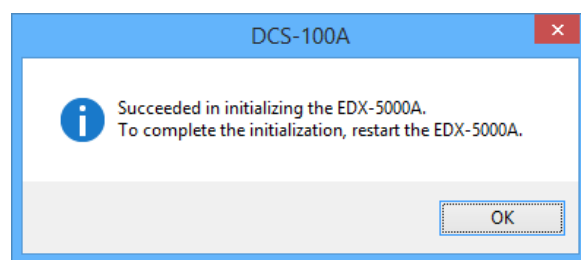
(2) The following message appears.

Click the **Yes** button.



(3) The following message appears.

Restart the EDX-5000A.



14. Appendix

14-1 Restrictions when saving the measured data in the EDX-5000A data drive

Measure mode	Manual	Manual (Set Record Data)	Interval	Analog Trigger Digital Trigger External Trigger Complex Trigger
Number of units	Up to 10 units			
Sampling Frequency	Limited by the number of channels. (For details, see “14-1-1 ”) *1			
The number of channels	Limited by the sampling frequency. (For details, see “14-1-1 ”)			
The number of repeat times	1 fixed	Setting range: 1 to 9999. If you set "0," the actual number of the repeat times is 65535.		
Repeated recording	Not available	Available (Record time : 5 seconds or longer)	Not available	
Digital filtering	Sampling frequency 3 to 10 kHz, (Not available hhen in the synchronous operation or using analog trigger / complex trigger (assign analog channel))			
Recording CAN data	Available			Available *2
Recording GPS data	Available			
DIO	Available (You can set the sampling frequency less than 5kHz when “DIO” mode is “Output”, and the function is “While exceeding (ECAN-CH)” or “ECAN-CH exceeded”.)			
Maximum data file size	Sampling frequencies 1 Hz to 10kHz : Up to remaining disk space of built-in memory Sampling frequencies 10001 Hz to 200kHz : Maximum. 4GB			
PAUSE function	Available *3		Not available	
Balance adjustment	Available while monitoring data and while pausing. (Not available while stopping/recording data.)		Available while monitoring data only (Not available while stopping / recording data.)	
Offset Zero	Available while monitoring data and while pausing. (Not available while stopping/recording data.)		Available while monitoring data only (Not available while stopping / recording data.)	
DCS-101A Recording moving image (with a Webcam)	Available (Sampling frequency : 10k Hz or less, the number of repeat times : 1 fixed.)		Not available	Available (Sampling frequency : 10k Hz or less, the number of repeat times : 1 fixed.)
DCS-101A Recording moving image (with a High speed camera)	Not available			Available (the number of repeat times : 1 fixed.)
DCS-101A Arithmetic operations	Available (Sampling frequency: 10k Hz or less) (Not available when in the synchronous operation)			
DCS-101A FFT analysis	Available (Sampling frequency : 10k Hz or less. Available while monitor mode is “Continuous monitor mode”. For details, see “14-3 ”.)			

*1 You cannot set the sampling frequency less than 100 Hz when using conditioner cards with antialiasing filter and when low pass filter is set to **AUTO**.

*2 You cannot set the sampling frequency less than 10 kHz when measure mode is “Complex Trigger”, and set “ECAN

Trigger : ON”.

*3 Not available when the number of repeat times is not 1.

Not available when using the DCS-101A (Recording moving image, Arithmetic operations).

Measure mode	Point ZERO measurement	Interval (GPS synchronization) measurement
	Point ZERO (manual) Point ZERO (manual n. of data)	Interval (GPS synchronization)
Number of units	Up to 10 units	
Sampling frequency	Limited by the number of channels. (For details, see “14-1-1 ”), External clock : Not available *1	
The number of channels	Limited by the sampling frequency. (For details, see “14-1-1 ”)	
Repeated recording	1 fixed	Setting range: 1 to 9999. If you set "0," the actual number of the repeat times is 65535.
Repeated recording	Not available	
Digital filtering	Sampling frequency 3 to 10 kHz (Not available when in the synchronous operation.)	
Recording CAN data	Available	
Recording GPS data	Available	
DIO	Available (You can set the sampling frequency less than 5kHz when “DIO” mode is “Output”, and the function is “While exceeding (ECAN-CH)” or “ECAN-CH exceeded”.)	
Maximum data file size	Sampling frequencies 1 Hz to 10kHz : Up to remaining disk space of built-in memory Sampling frequencies 10001 Hz to 200kHz : Maximum. 4GB	
PAUSE function	Not available	
Balance adjustment	Available while monitoring data only (Not available while stopping/recording data.)	
Offset Zero	Available while monitoring data only (Not available while stopping/recording data.)	
DCS-101A Recording moving image (with a Webcam)	Available (Sampling frequency : 10k Hz or less, the number of repeat times : 1 fixed.)	Not available
DCS-101A Recording moving image (with a High speed camera)	Not available	
DCS-101A Arithmetic operations	Available (Sampling frequency: 10k Hz or less),	
DCS-101A FFT analysis	Available (Sampling frequency : 10k Hz or less. Available while monitor mode is “Continuous monitor mode”. For details, see “14-3 ”.)	

*1 You cannot set the sampling frequency less than 100 Hz when using conditioner cards with antialiasing filter and when low pass filter is set to **AUTO**.

*2 You cannot set the sampling frequency less than 10 kHz when measure mode is “Complex Trigger”, and set “ECAN Trigger : ON”.

14-1-1 The sampling frequency and the number of channels

The sampling frequency and the maximum number of channels to be measured (per one EDX-5000A) are as follows.

Sampling frequency (1/2/5 system)	The maximum number of channels to be measured (AD data format : 16 Bits)	The maximum number of channels to be measured (AD data format : 24 Bits)
200k	32	16
100k	64	32
50k	80	64
20k or less	80	80

Sampling frequency (2n system)	The maximum number of channels to be measured (AD data format : 16 Bits)	The maximum number of channels to be measured (AD data format : 24 Bits)
131,072	32	16
65,536	64	32
32,768	80	64
16,384 or less	80	80

* The maximum number of channels to be measured do not include the number of digital channels, the number of arithmetic channels, and the number of CAN channels.

14-2 Restrictions when saving the measured data in the PC folder

Measure mode	Manual	Manual (Set Record Data)	Interval	Analog Trigger
Number of units	Up to 4 units			
Sampling Frequency	Limited by the number of channels. (For details, see “14-2-1 ”) *1			
The number of channels	Limited by the sampling frequency. (For details, see “14-2-2 ”)			
The number of repeat times	1 fixed	Setting range: 1 to 9999. If you set "0," the actual number of the repeat times is 65535.		
Repeated recording	Not available	Available (Record time : 5 seconds or longer)	Not available	
Digital filtering	Sampling frequency 3 to 10 kHz (Not available when in the synchronous operation or using analog trigger.)			
Recording CAN data	Not available			
Recording GPS data	Not available			
DIO	Available			
Maximum data file size	Up to remaining disk space of built-in memory			
PAUSE function	Available *2		Not available	
Balance adjustment	Available while monitoring data and while pausing. (Not available while stopping/recording data.)		Available while monitoring data only (Not available while stopping / recording data.)	
Offset Zero	Available while monitoring data only (Not available while stopping / recording data.)		Available while monitoring data only (Not available while stopping / recording data.)	
DCS-101A Recording moving image (with a Webcam)	Available (Sampling frequency : 10k Hz or less, the number of repeat times : 1 fixed.)		Not available	
DCS-101A Recording moving image (with a High speed camera)	Not available			Available
DCS-101A Arithmetic operations	Available (Sampling frequency: 5k Hz or less)			
DCS-101A FFT analysis	Available (Sampling frequency : 10k Hz or less. Available while monitor mode is “Continuous monitor mode”. For details, see “14-3 ”.)			

*1 You cannot set the sampling frequency less than 100 Hz when using conditioner cards with antialiasing filter and when low pass filter is set to **AUTO**.

*2 Not available when the number of repeat times is not 1.

Not available when using the DCS-101A (Recording moving image, Arithmetic operations).

Measure mode	Static measurement	
	Manual	Interval
Number of units	Up to 2 units	
Sampling Frequency	1kHz fixed	
The number of channels	No Limit	
The number of repeat times	1 fixed	Setting range: 1 to 9999. If you set "0," the actual number of the repeat times is 65535.
Repeated recording	Not available	
Digital filtering	Available	
Recording CAN data	Not available	
Recording GPS data	Not available	
DIO	Available	
Maximum data file size	Up to remaining disk space of built-in memory	
PAUSE function	Not available	
Balance adjustment	Available while monitoring data only (Not available while stopping / recording data.)	
Offset Zero	Available while monitoring data only (Not available while stopping / recording data.)	
DCS-101A Recording moving image (with a Webcam)	Not available	
DCS-101A Recording moving image (with a High speed camera)	Not available	
DCS-101A Arithmetic operations	Available	
DCS-101A FFT analysis	Not available	

14-2-1 The number of EDX-5000A units and sampling frequency

When the Data Save Folder is "PC hard disk" the number of EDX-5000A units and sampling frequency are as follows.

The number of EDX-5000A	Sampling frequency
1	10k or less (When using the DCS-101A (Arithmetic operation) : 5k or less)
2	5k or less (When using the DCS-101A (Arithmetic operation) : 2,048 or less)
3	2,048 or less (When using the DCS-101A (Arithmetic operation) : 1,024 or less)
4	1,024 or less (When using the DCS-101A (Arithmetic operation) : 1,024 or less)

MEMO

When the Data Save Folder is "EDX-5000A Data Drive," there is no limit for the sampling frequency.
To select the Data Save Folder, click the Environment window – [General] tab.

14-2-2 The sampling frequency and the number of channels

When the Data Save Folder is "PC hard disk" the maximum number of channels to be measured are as follows.

- AD data format 16Bits : The maximum number of channels to be measured = 640,000 / Sampling frequency
- AD data format 24Bits : The maximum number of channels to be measured = 320,000 / Sampling frequency

* The maximum number of channels to be measured do not include the number of digital channels, the number of arithmetic channels, and the number of CAN channels.

14-3 The maximum number of data

If the number of data bytes is $\leq 640,000$, the maximum number of data per one graph will be 50,000 and continuous monitor mode will be used.

If the number of data bytes is $> 640,000$ or the number of EDX-5000A units is 5 or more, the maximum number of data per one graph will equal the sampling frequency $\times 0.1$ and intermittent monitor mode will be used.

The number of data bytes can be calculated using the following formulas.

- When the AD data format is 16 bits :
The number of data bytes = (the number of measuring channels $\times 2$) $\times$ the sampling frequency
- When the AD data format is 24 bits :
The number of data bytes = (the number of measuring channels $\times 4$) $\times$ the sampling frequency
- When performing arithmetic processing in real time :
The number of data bytes = (the number of measuring channels $\times 8$) $\times$ the sampling frequency

*The number of measuring channels is the total of the number of analog channels and digital channels, and the number of arithmetic channels.

●Monitor mode

The monitor mode varies with the maximum number of data per one graph.

The maximum number of data per one graph: 50,000 Continuous monitor mode

The maximum number of data per one graph: Sampling frequency $\times 0.1$ Intermittent monitor mode

Continuous monitor mode: Records data continuously from the EDX-5000A.

Intermittent monitor mode: Records data intermittently from the EDX-5000A.

Note that the intermittent monitor mode records data for the maximum number of data per one graph continuously, stops recording data, and records data for the maximum number of data per one graph continuously.

[Example]

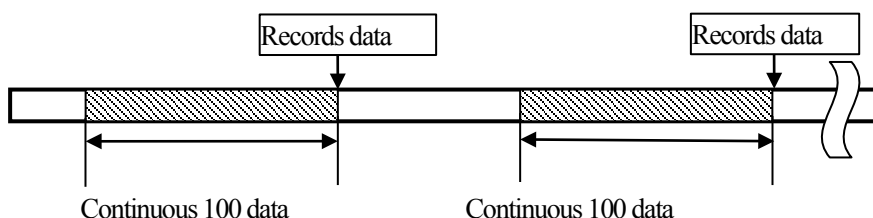
Intermittent monitor mode and recorded data

(The maximum number of data per one graph: 100)

 :Data buffer of the EDX-5000A

The data buffer saves data to the right direction.

 : Recorded data



15. SPECIFICATIONS

Number of units	Up to 10 units (up to 800 analog channels, up to 10 digital channels.) *EDX-5000A+EDX-3000B, EDX-5000A+EDX-200A available. Up to 8 units : EDX-5000A+EDX-200A
Interface	LAN (100BASE-TX, 1000BASE-T)
Saving format format file.	Saves the measured data in the EDX-5000A data drive or PC folder in the KS2
Channel conditions	Measuring ON/OFF, Measuring mode, Range, High-pass filter, Low-pass filter, Balance adjustment ON/OFF, CAL range, CAL ON/OFF, Calibr. const., Offset, Unit, Channel name, Measuring range, Rated capacity, Rated output, Deci Digits, Chk. Val. (Up), Chk. Val. (Down), Internal sensitivity compensation ON/OFF, Offset ZERO ON/OFF, Digital filter (High-pass filter: Any cutoff frequency, Low-pass filter: Any cutoff frequency) (Display items can freely be selected.)
Loading TEDS sensor information	Loads the TEDS information automatically and sets the channel conditions.
Setting parameter and loading parameter	Loads and sets the EDX-5000A internal parameter.
Collecting data file	PC collects the file (KS2, E4A, NMEA), saved in the EDX-5000A data drive.
Deleting data file	PC deletes the file (KS2, E4A, NMEA), saved in the EDX-5000A data drive.
Setting environment	
Setting hardware configuration	Sets the number of units and device names. Loads the hardware configurations from the EDX-5000A.
Communication check	Loads the EDX-5000A version.
Device confirmation	LEDs, on the EDX-5000A front panel, light up.
Others	Oscillator switching (internal/external), operating beep sound, balance standard value, A/D data format (16 bits/24 bits.)
Setting DIO	The number of input/output points Up to 8 Digital input/Digital output/Remote control (input) for every bit.

<When saving the measured data in the EDX-5000A data drive>

Sampling frequency	1 Hz to 200k Hz (1/2/5 system, 2n system, external clock) *Limited by the number of channels.						
File size	Up to remaining disk space of built-in memory.						
Measure mode	Manual, Manual (Set Record Data), Interval, Analog Trigger, Digital Trigger, External Trigger, Complex Trigger						
Manual measurement	Records data from REC to STOP or from REC to the number of data, specified on the Manual (Set Record Data).						
Interval measurement	Records data automatically based on the pre-set starting time and recording interval.						
Trigger measurement	Starts/stops recording data based on the pre-set trigger conditions.						
Common trigger conditions	<table> <tr> <td>End trigger</td><td>Settable</td></tr> <tr> <td>Delay</td><td>Up to 4,194,304 data for both start and end. The delay time varies with the number of channels.</td></tr> </table>	End trigger	Settable	Delay	Up to 4,194,304 data for both start and end. The delay time varies with the number of channels.		
End trigger	Settable						
Delay	Up to 4,194,304 data for both start and end. The delay time varies with the number of channels.						
Analog trigger conditions	<table> <tr> <td>Trigger channel</td><td>Any 1 channel of the master unit</td></tr> <tr> <td>Trigger level</td><td>Physical quantity</td></tr> <tr> <td>Trigger slope</td><td>Positive or Negative</td></tr> </table>	Trigger channel	Any 1 channel of the master unit	Trigger level	Physical quantity	Trigger slope	Positive or Negative
Trigger channel	Any 1 channel of the master unit						
Trigger level	Physical quantity						
Trigger slope	Positive or Negative						
Digital trigger conditions	<table> <tr> <td>Trigger bit</td><td>Any 1 channel of the master unit</td></tr> <tr> <td>Trigger level</td><td>0 or 1</td></tr> </table>	Trigger bit	Any 1 channel of the master unit	Trigger level	0 or 1		
Trigger bit	Any 1 channel of the master unit						
Trigger level	0 or 1						
External trigger conditions	<table> <tr> <td>Trigger slope</td><td>Positive or Negative</td></tr> </table>	Trigger slope	Positive or Negative				
Trigger slope	Positive or Negative						
Complex trigger conditions	<table> <tr> <td>Trigger source</td><td>Select from the analog channels (any 4 channels of the master unit), external trigger, or manual trigger. Capable of judging the trigger source by using the logical AND and OR operators.</td></tr> <tr> <td>Trigger level</td><td>Physical quantity</td></tr> <tr> <td>Trigger slope</td><td>Positive or Negative</td></tr> </table>	Trigger source	Select from the analog channels (any 4 channels of the master unit), external trigger, or manual trigger. Capable of judging the trigger source by using the logical AND and OR operators.	Trigger level	Physical quantity	Trigger slope	Positive or Negative
Trigger source	Select from the analog channels (any 4 channels of the master unit), external trigger, or manual trigger. Capable of judging the trigger source by using the logical AND and OR operators.						
Trigger level	Physical quantity						
Trigger slope	Positive or Negative						
Repeated recording	When recording data for a long time, the DCS-100A saves data, every pre-set number of data or every pre-set interval, in the KS2 format file. *Measure Mode: Manual (Set Record Data) only.						
EGPC-50A							
Recording CAN data	Records up to 512-channel CAN data per one unit. (In the EDX-5000A data drive, as the E4A file).						
Point ZERO (manual) measurement	Starts the manual measurements of multiple EDX-5000A units at 0 msec by using the time data, received from the GPS satellite.						
Interval (GPS synchronization) measurement	Starts the interval measurement of multiple EDX-5000A units at 0 msec by using the time data, received from the GPS satellite.						
Recording GPS data	Monitors/records the GPS data (latitude, longitude, speed, azimuth, etc.) The DCS-100A saves the GPS data in the EDX-5000A data drive (in the NMEA format).						

<When saving the measured data in the PC folder>

Sampling frequency	1 Hz to 10k Hz (1/2/5 system, 2n system, external clock) *Limited by the number of channels. Limited by the number of EDX-5000A units.
File size	Up to the data drive capacity.
Measure mode	Manual, Manual (Set Record Data), Interval, Analog Trigger
Manual measurement	Records data from REC to STOP or from REC to the number of data, specified on the Manual (Set Record Data).
Interval measurement	Records data automatically based on the pre-set starting time and recording interval.
Analog trigger measurement	Starts/stops recording data based on the pre-set trigger conditions. End trigger Settable Delay Up to 4,194,304 data for both start and end. The delay time varies with the number of channels. Trigger channel Any 1 channel Trigger level Physical quantity Trigger slope Positive or Negative
Repeated recording	When recording data for a long time, the DCS-100A saves data, every pre-set number of data or every pre-set interval, in the KS2 format file. *Measure Mode: Manual (Set Record Data) only.
Static measurement	Every time you start a recording, the static measurement applies a moving-average function to measured data (averaging value data) and saves it to one CSV format file. *Measure Mode: Manual and Interval only.