

DYNAMIC DATA RECORDING SOFTWARE

DCS-100A

INSTRUCTION MANUAL

(For EDX-100A Operation)

Thank you for purchasing KYOWA's product DCS-100A DYNAMIC DATA RECORDING SOFTWARE (For EDX-100A Operation).

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

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NOTATIONS USED IN THE INSTRUCTION MANUAL

For your convenience, the following notes and memos are stated in this Instruction Manual to attract customer's attention to informative reference items when using the DCS-100A Dynamic Data Recording Software (hereinafter referred to as the DCS-100A) for operating the EDX-100A Universal Recorder (hereinafter referred to as the EDX-100A).

Example:

NOTE

Describes essential instructions for handling the DCS-100A.

MEMO

Describes reference information for handling the DCS-100A.

ESSENTIAL PRECAUTIONS FOR USING THE DCS-100A

NOTE

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.

NOTE

The **34381**, **34385**, **34580** and **34581** ports are used for TCP-IP communication between the PC and the EDX-100A

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.

NOTE

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

This unsatisfactory state may generate especially when the IP address is changed.

- Turn OFF the EDX-100A and then, turn ON once again.
- Restart up the PC Windows.

NOTE

While controlling the EDX-100A using the DCS-100A, do not operate the EDX-100A switch.

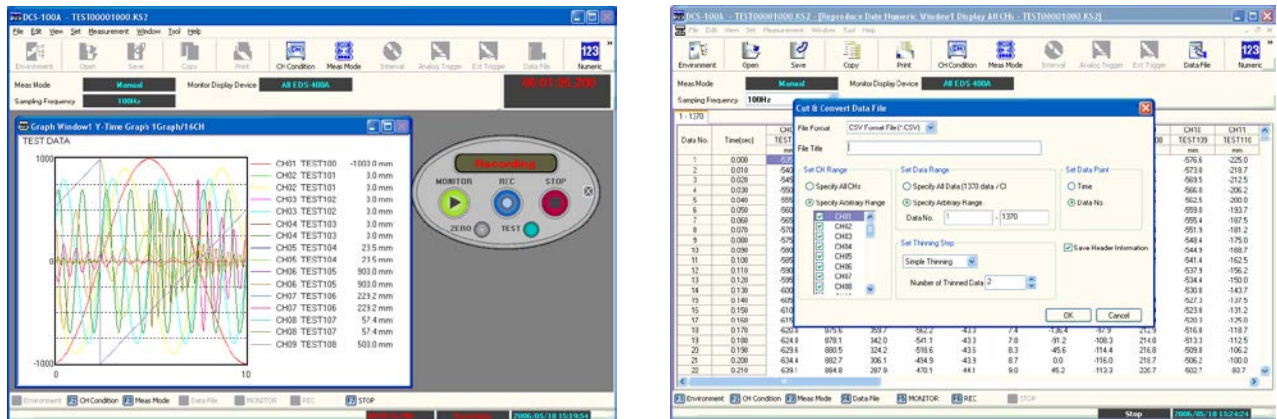
Or, the DCS-100A may be forcedly terminated while setting Meas conditions, recording data, collecting data, etc.

NOTE

When controlling the EDX-100A using the DCS-100A, the DCS-100A may be forcedly terminated for some reasons such as PC's poor performance (memory short). At this time, the EDX-100A is in the process of data recording. When the DCS-100A is restarted once again and measurement is restarted, if a state unable to stop data recording is generated, it is required to turn ON/OFF the EDX-100A.

1. OUTLINE

This Instruction Manual describes method for controlling the EDX-100A using the DCS-100A. For common operations of the DCS-100A for controlling dynamic meters, see separate volume of “DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (For Common Operation).”



The EDX-100A is capable of online measurement via the PC and the USB or LAN interface.

In addition, the EDX-100A is equipped with CF card to operate stand alone offline measurement without using the PC.

In the online measurement, a data file folder (data file saving destination) is set to **EDX-100A CF card** or **PC hard disk**. When the **EDX-100A CF card** is selected, data file is automatically collected to the PC from the EDX-100A CF card after the measurement.

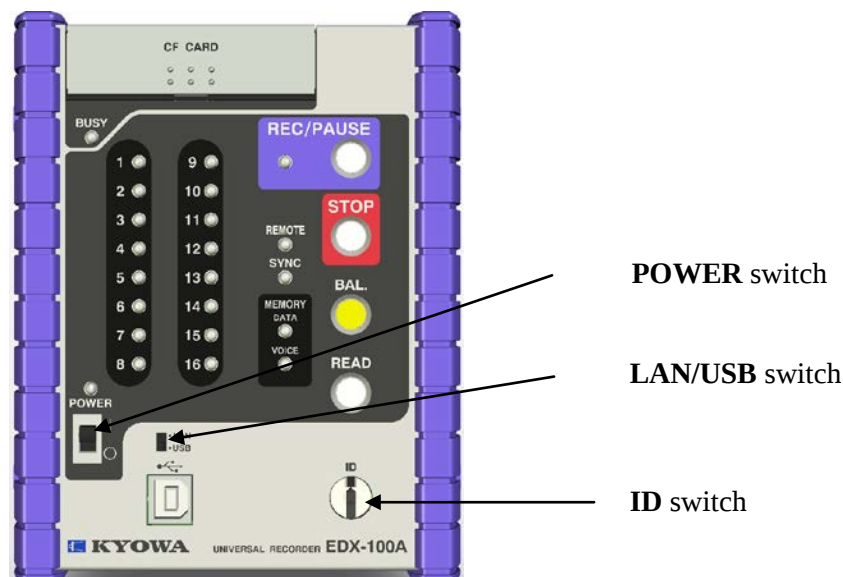
For the **PC hard disk**, the CF card is not necessary and the data file is directly saved in the PC's hard disk.

This Instruction Manual describes various items for operating the EDX-100A such as basic operation flow, setting environment for network connection, settings various CH and Meas conditions, online and offline mode measurements.



2. EDX-100A DEFAULT SETTINGS

Before using the EDX-100A for the first time, check the setting status of the **LAN/USB** switch and **ID** switch on the front panel.



2-1 SETTING LAN/USB SWITCH AND ID SWITCH

The **LAN/USB** switch and the **ID** switch are located on the front panel as shown in the figure above. Check to ensure that the **LAN/USB** switch is properly set for the interface in use. If it is not properly set, correctly set it according to the following operation method.

LAN/USB switch

Switch position	Interface
Upper side	LAN
Lower side	USB

■ Operation Method

- (1) Turn OFF the **POWER** switch of the EDX-100A.
- (2) Switchover the **LAN/USB** switch according to the interface used.
- (3) Set the **ID** switch.

When a single EDX-100A is connected: **'F'**
 When one or more EDX-100X units are connected: **'0,' '1,' ...**(Always set in serial numbers starting from '0.')
- (4) Turn ON the EDX-100A **POWER** switch.

NOTE

- Measurement is not available unless the **LAN/USB** switch is properly set.
- For synchronous operation, set the **ID** switch of the synchronous master EDX-100A to '0' and the **ID** switches of the slave EDX-100A units to serial numbers starting from '1.'
- Before switching the **LAN/USB** or **ID** switches, do not forget to turn OFF the EDX-100 **POWER** switch in advance.

3. BASIC OPERATION FLOW

This chapter explains the basic operating procedure for controlling the EDX-100A via the USB connection.

- (1) First, check the EDX-100A default settings. See “2. EDX-100A DEFAULT SETTINGS.” Connect the EDX-100A and the PC using the USB cable, then turn ON the EDX-100A. When connecting the EDX-100A the first time, it is necessary to install the USB driver. For the installation procedure, see “EDX-100A INSTRUCTION MANUAL FOR HARDWARE.”
- (2) Start up the DCS-100A.

Set Environment (Set the control interface and file destination)

See “4. SETTING ENVIRONMENT.”

- (3) Point to **File** on the menu bar and select **Environment** menu or select the **Environment** icon from the toolbar to open the **Environment** window
- (4) Select **EDX-100A** from the list box under **Set Connection > Set Device**.
Select **USB** from the list box under **Set Connection > Set Interface**.
- (5) Click the **Set Connection Configuration** button on the **Environment** window to open the **Set Connection Configuration** window.
Click the **Device Information Register** window to set the EDX-100A hardware configuration.
- (6) Close the **Set Connection Configuration** window and go back to the **Environment** window.
Click **Check Communication** on the **Environment** window, and perform a connection test in order to check whether communication is successful between the PC and the EDX-100A. If the connection test is performed successfully, close the **Environment** window.
- (7) Set a data file folder (data file save destination) on **Set Data File** window. According to the selected data file, put a check mark when it requires to automatically collect the data or automatically convert the recorded data into CSV format file.

Set CH Condition

See “5. SETTING CH CONDITION.”

- (8) Point to **Set** on the menu bar and select **Set CH Condition** menu or select the **Set CH Condition** icon from the toolbar to open the **Set CH Condition** window.
Set various CH conditions such as Meas mode, measuring range, CAL coefficient, offset, unit, etc. for every CH of the EDX-100A on the **Set CH Condition** window.
Then, close the **Set CH Condition** window.

Set Meas Mode

See “6. SETTING MEASURING MODE CONDITION.”

- (8) Point to **Set** on the menu bar and select **Set Meas Mode** menu or select the **Meas Mode** icon from the toolbar to open the **Set Meas Mode** window.
Set Meas mode and sampling frequency. Then, close the **Set Meas Mode** window.

(To be continued)

(Continued)

Set Data File

See “7. SETTING DATA FILE.”

- (10) Point to **Set** on the menu bar and select **Set Data File** menu or select the **Data File** icon from the toolbar to open the **Set Data File** window.
Select the data file destination, file name, file title, etc., on the **Set Data File** window.
Then, close the **Set Data File** window.

Executing Measurement

See “8-6 EXECUTING MEASUREMENT.”

- (11) After setting Meas conditions, press the **MONITOR** button to start the measurement and to monitor display the measured data on the window.
- (12) If the **REC/PAUSE** button is pressed, the recording of measured data starts according to the Meas mode.
- (13) Pressing the **STOP** button stops the recording of measured data and initiate the monitoring mode.
Pressing the **STOP** button once again in monitoring mode stops the monitoring.

Collecting Data

See “8-9 COLLECTING DATA FILE.”

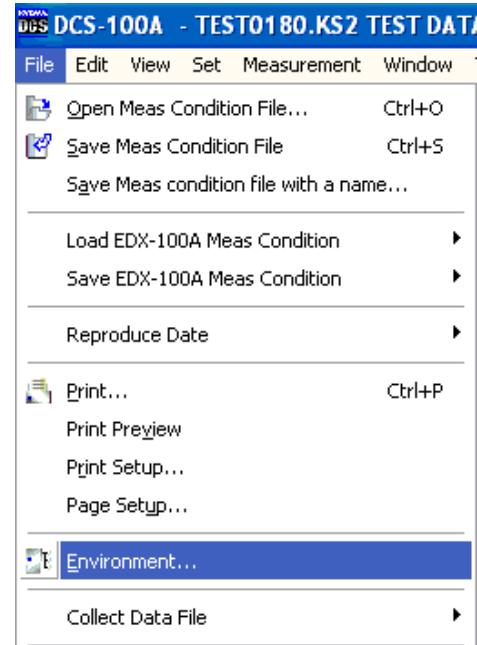
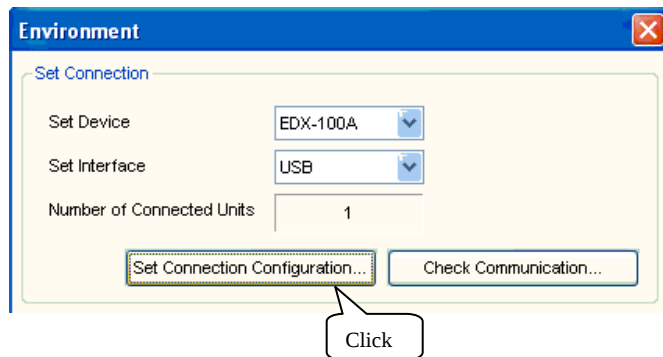
- (14) Collect the data file saved in the EDX-100A CF card.
Point to **File** on the menu bar and select **Collect Data File** menu or select the **Collect** icon from the toolbar to select the desired data file.

4. SETTING ENVIRONMENT

The **Environment** menu is used to set the following: network conditions for the EDX-100A to be connected to the PC; the configuration of the device to be connected; the beep sound produced by the EDX-100A; oscillator and so forth. For hardware connection procedures, see the “EDX-100A INSTRUCTION MANUAL FOR HARDWARE.”

Open the **Environment** window as described below:

- Point to **File** on the menu bar and select **Environment**.
- Select the **Environment** icon from the toolbar.



4-1 SET CONNECTION CONFIGURATION

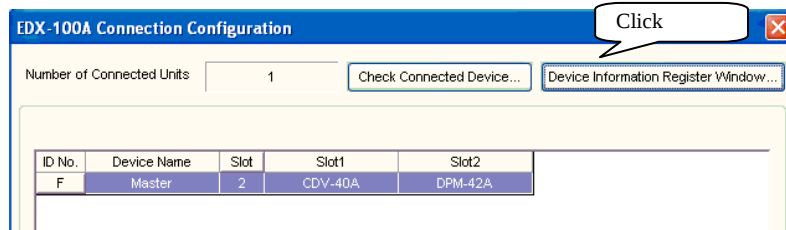
■ Operation Method

- (1) Under **Set Device**, select **EDX-100A** from the list box.
Under **Set Interface**, select the applicable interface from the list box.
- (2) Clicking the **Set Connection Configuration** button displays the **Set Connection Configuration** window.
- (3) Set the number of connected EDX-100A units (1 to 4).
- (4) Set connection configuration by following the procedure described in “4-1-1 Using the USB Interface,” or in “4-1-2 Using the LAN Interface”
- (5) After setting the connection configuration, switchover the oscillator, set beep sound and then, close the **Set Connection Configuration** window.

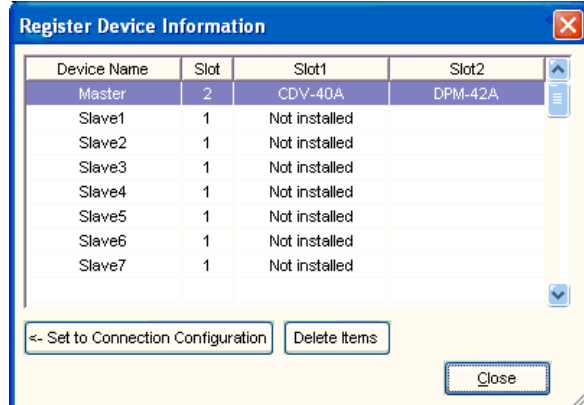
4-1-1 Using the USB Interface

■ Operation Method

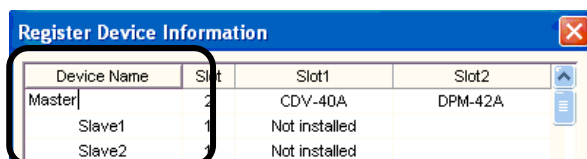
(1) Click the **Device Information Register Window**.



(2) The **Register Device Information** window appears. Set the device name, number of slots and card type.



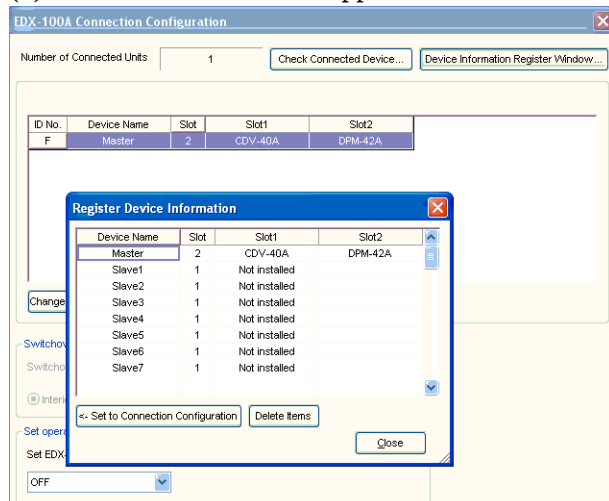
The device name can be changed as desired. The number of slots and the card type should be selected according to the hardware configuration of the EDX-100A being used.



NOTE

Measurement is not available if incorrect card type is selected.

(3) Move the cursor to the applicable device and click **<- Set to Connection Configuration** button.

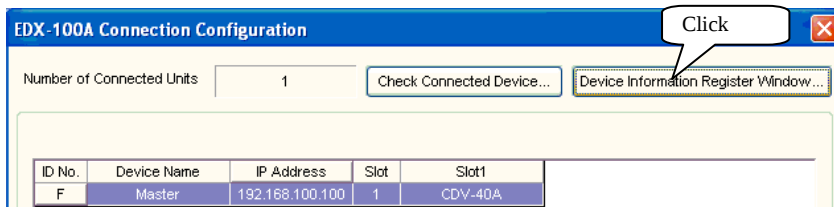


Click the **Close** button to close the **Register Device Information** window.

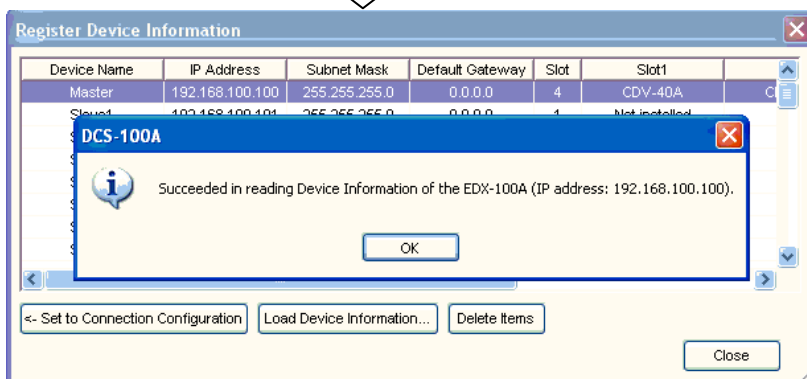
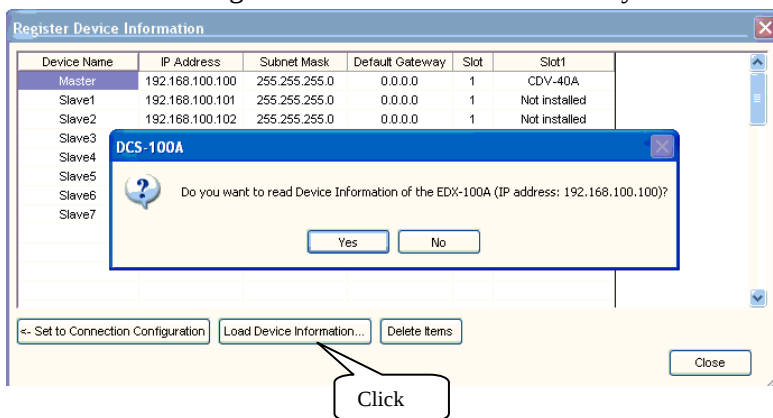
4-1-2 Using the LAN Interface

■ Operation Method

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



(2) The **Register Device Information** window is displayed. Set the device name, network conditions, number of slots and card type. When the EDX-100A network conditions are properly set and the EDX is connected to the PC, if you move the cursor to the target device and click **Load Device Information**, the EDX-100A hardware configuration can be read automatically.



When the device information is successfully loaded, the number of slots selected in the **Register Device Information** window and conditioner card information installed in each slot are registered in the memory.

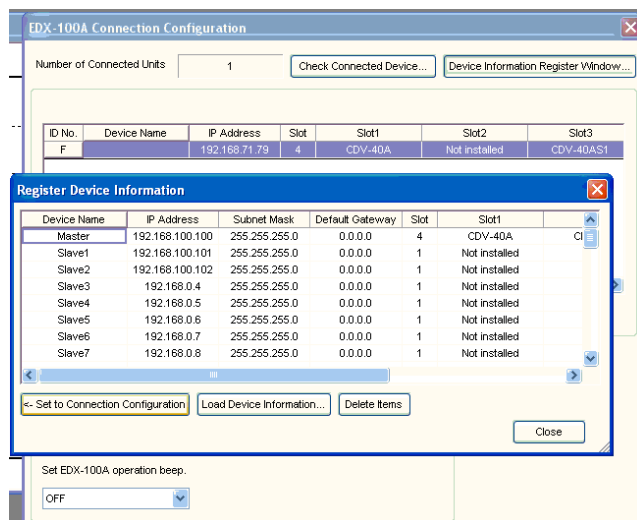
To change the device name or any network condition, double click the target cell you want to press the **SPACE** bar to make the cell ready for data entry. After entering the required data, press the **ENTER** key and determine the setting.

Right click the desired item to display the following menu, which allows you to copy or paste that item to other lines.

IP Address	Subnet Mask
192.168.100.100	255.255.255.0
192.168.100.101	255.255.255.0
192.168.100.102	255.255.255.0
192.168.100.4	255.255.255.0
192.168.100.5	255.255.255.0
192.168.100.6	255.255.255.0
192.168.100.7	255.255.255.0
192.168.100.8	255.255.255.0

Copy
Paste

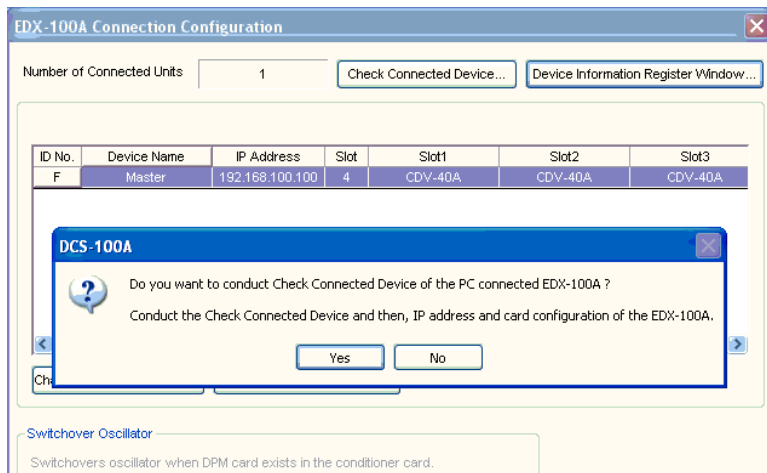
(3) Once the setting is made, move the cursor to the device to control and click the **<- Set to Connection Configuration**.



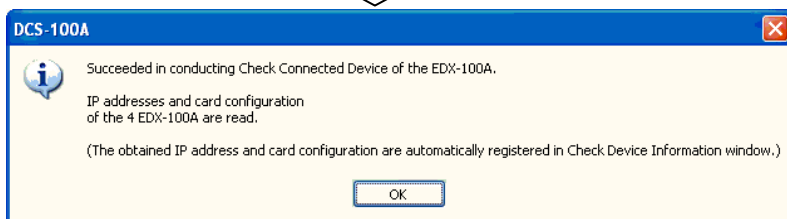
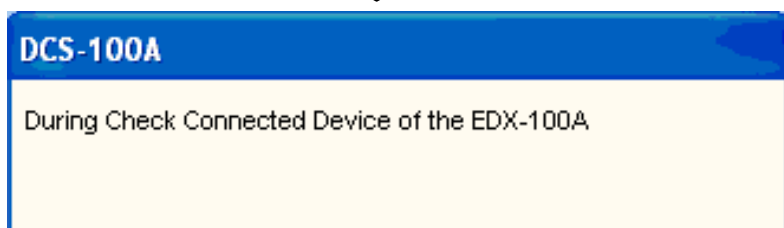
Click the **Close** button to close the **Register Device Information** window.

4-1-3 Checking Connected Devices

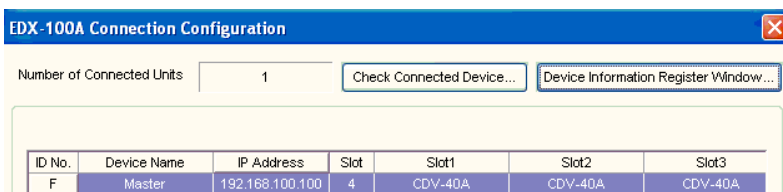
Click the **Check Connected Device** to search for the EDX-100A that is currently connected online and to read the hardware configuration. Prior to the above, check to ensure that the control interface and ID number for the EDX-100A are properly set.



The above message is displayed. Select the **Yes** button



Click the **OK** button to reflect the checked device in the **Set Connected Device** window.



MEMO

Hardware information loaded from the EDX100A is registered into **Register Device Information** window.

4-2 SETTING NETWORK CONDITION

The EDX-100A network conditions are set by the following methods: offline setup using the CF card, and online setup via the LAN interface.

4-2-1 Setting Network in Offline Mode

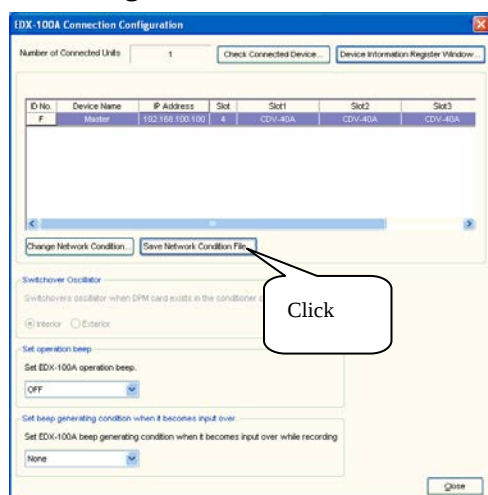
4-2-1-1 Saving Network Condition File

Network condition of the EDX-100A is changed in offline mode for every unit.

By directly loading a file stored with network conditions to the EDX-100A via CF card, EDX-100A's network conditions are changed.

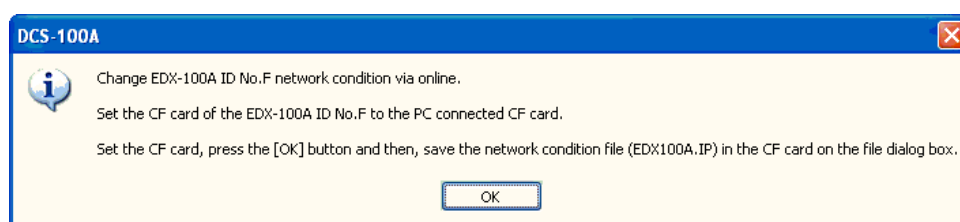
■ Operation Method

- (1) Click the **Set Connection Configuration** button on the **Environment** window to open the **Set Connection Configuration** window.

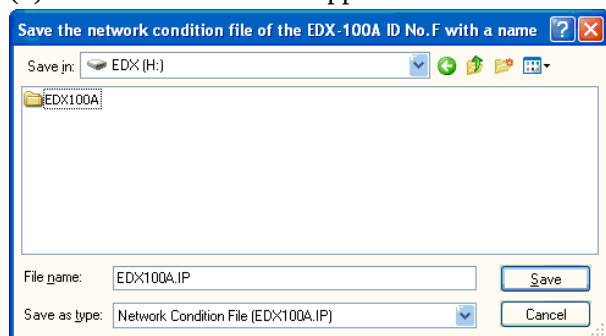


- (2) Click the **Save Network Condition File** button.

- (3) The following message appears. Set the CF card of the target device to PC connected CF card drive.



- (4) The **Save As** window appears. Select the CF card drive of the PC and click the **Save** button.



MEMO

The name of the network condition file is fixed as **EDX100A.IP** (Changing the name is not allowed.)

■ Format of Network Condition File

A network condition file can be created using Windows Notepad or any commercially available text editor. Save the file as EDX100A.IP. Data should be entered in single byte alphanumeric characters.

[EDX-100A]

IP_ADDRESS = 192.168.71.200

SUBNET_MASK = 255.255.255.0

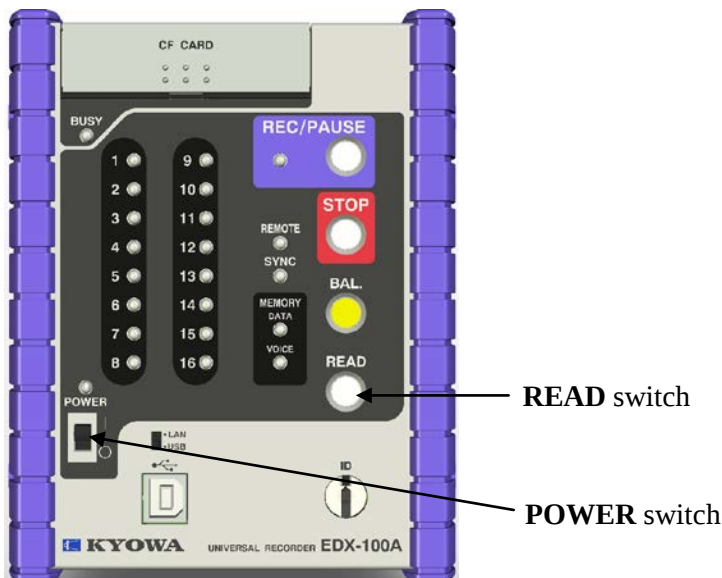
DEFAULT_GATEWAY = 0.0.0.0

IP address of the EDX-100A to be connected

4-2-1-2 Loading Network Condition File

Network condition file is loaded from the EDX-100A CF card and changed.

This function is used when the EDX-100A is used in environment in which changing the network condition from the PC to EDX-100A is not available in online mode.



■ Operation Method

- (1) Turn OFF the **POWER** switch of the EDX-100A, and insert the CF card in which the network condition file is saved.
- (2) If you turn ON the **POWER** switch while pressing the **READ** switch on the EDX-100A, the LED flashes in due order from yellow, red and orange. If you hear “beep, beep” (long) and the “bip” (short) sound, release the **READ** switch. Thereafter, if you hear “bip, bip, bip” (short) sound, it means that the network condition file is successfully read.
- (3) The network conditions can be changed by turning OFF/ON the **POWER** switch of the EDX-100A.

NOTE

- When loading the network condition file, take care and correctly set the CF card with the target network condition to the desired EDX-100A.
- If the network conditions are not successfully read, a warning beep continues to issue (beep, beep) sound. At this time, turn OFF the **POWER** switch and check the network condition file to see if it is the correct file.

4-2-2 Setting Network in Online Mode

4-2-2-1 Setting Network on the PC Side

To carry out communication between the PC and EDX-100A, it is required to set a network on the PC side in advance. Method of conducting communication with factory default network conditions of the EDX-100A is described.

■ Network condition on the EDX-100A (Factory default setting)

IP Address	192. 168. 100. 100
Subnet Mask	255. 255. 255. 0
Default Gateway	0. 0. 0. 0

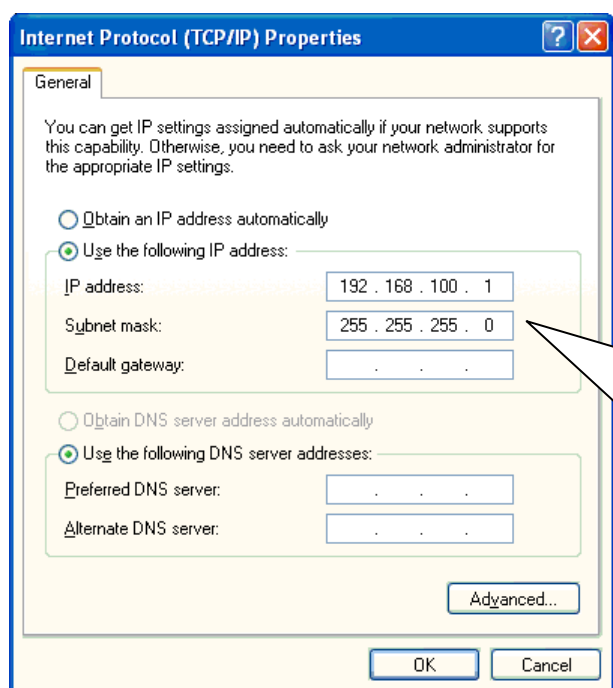
■ Network condition on the PC side

IP Address	192. 168. 100. 1
Subnet Mask	255. 255. 255. 0
Default Gateway	0. 0. 0. 0

In addition, if the PC is already connected to a different network, confirm the Network Administrator and set the network.

■ Operation Method (For WindowsXP)

- (1) Point to Windows **Start** and select **My Computer**.
- (2) Right-click the **My Network Places** on the **My Computer** window left side and select **Properties**.
- (3) Right-click the **Local Area Connection** from the **Network Connection** window and select **Properties**.
- (4) Select **Internet Protocol (TCP/ITP) Properties** from the **Local Area Connection Properties** window and click the **Properties** button.
- (5) Input required conditions on the **Internet Protocol (TCP/IP) Properties** window as follows.



IP address: 192.168.100.1
Subnet mask: 255.255.255.0

Press the **Delete** key to erase the numeric on the default gateway.
(‘0’ is not entered.)

- (6) Click the **OK** button on the **Local Area Connection Properties** window to close the window.
- (7) Reboot the PC.

NOTE

IP address on the PC side

Factory default IP address of the EDX-100A is '192. 168. 100. 100.'

At this time, set the PC's IP address with the same address up to '192. 168. 100.'

Set the rest of the IP address to any numbers from 1 to 254 that are not overlapping the IP address of the EDX-100A. In the example, it is set to '1.'

4-2-2-2 Changing Network Condition

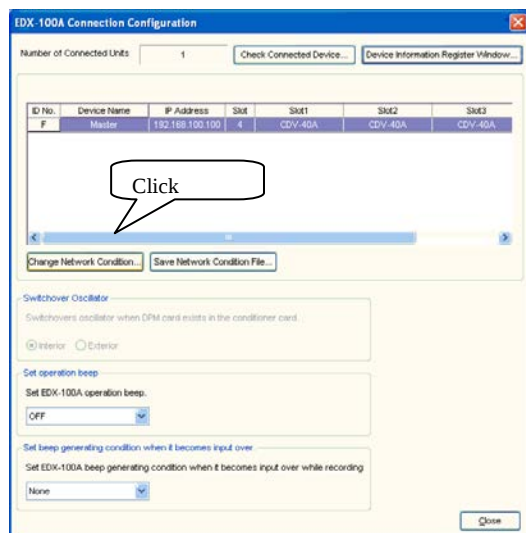
Network condition of the EDX-100A is changed in online mode for every unit.

NOTE

When using multiple EDX-100A units, it is required to change the IP address to avoid overlapping the IP addresses. Factory default IP address of the EDX-100A is '192. 168. 100. 100'

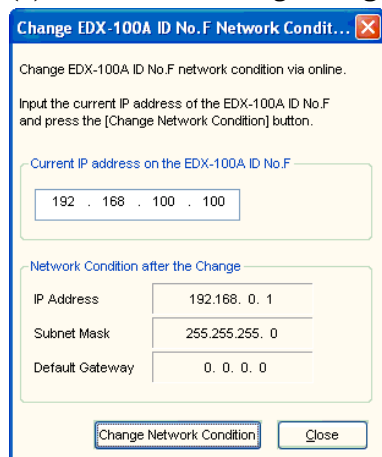
■ Operation Method

- (1) Click the **Set Connection Configuration** button on the **Environment** window to open the **Set Connection Configuration** window. Set network condition



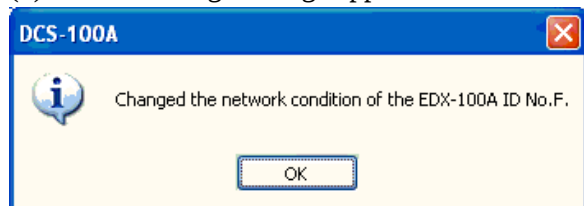
- (2) Click **Change Network Condition**.

- (3) Then, the following **Change network condition** window appears.



- (4) Click the **Change Network Condition** button to send the current network condition to the EDX-100A.

- (5) The following message appears to confirm the changed result. Click the **OK** button.



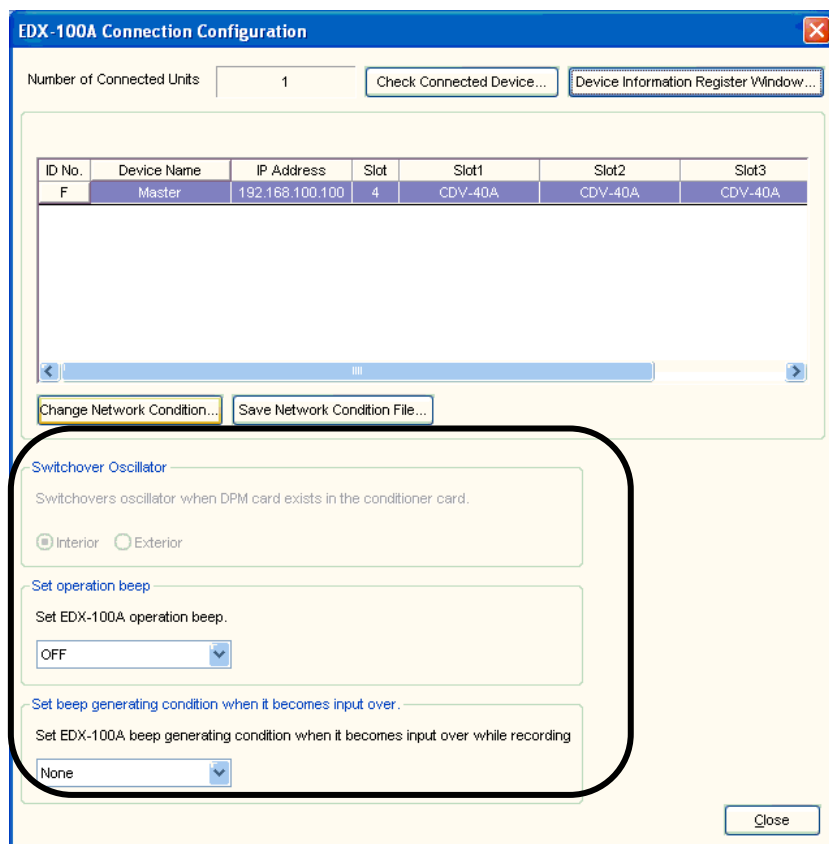
- (6) Lastly, click the **Close** button on the **Change network condition** window to close the window.

- (7) Then, set network on the PC side.

For details, see "4-2-2-1 Setting Network on the PC Side."

4-3 SETTING OSCILLATOR AND BEEP SOUND

This section describes settings of oscillator and beep sound while operating the EDX-100A.



Switchover OscillatorWhen the DPM card exists in the conditioner card, switchover the oscillator.

Options: Internal and external

Set operation beepThe beep sound is generated when panel buttons are pressed and during online control when MONITOR, RECORD, STOP, BALANCE, etc. actions are performed.

Options: OFF, ON (high pitch), and ON (low pitch)

Set beep generating condition when it becomes input overBeep sound is generated when data being recorded exceeds the specified range. No beep sound is generated even if the data being monitored exceeds the above specified range. If this item is set to other than OFF, a high pitched beep is generated regardless of how the operation beep sound is set.

Options: OFF (no beep is generated)

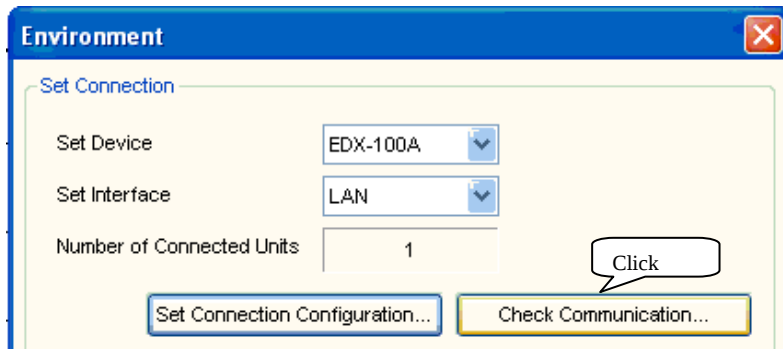
The beep sound is generated only in the event of input overflow.

The beep sound is generated until STOP/PAUSE.

The LED for each channel flashes red in the event of input overflow, regardless of how this item is set.

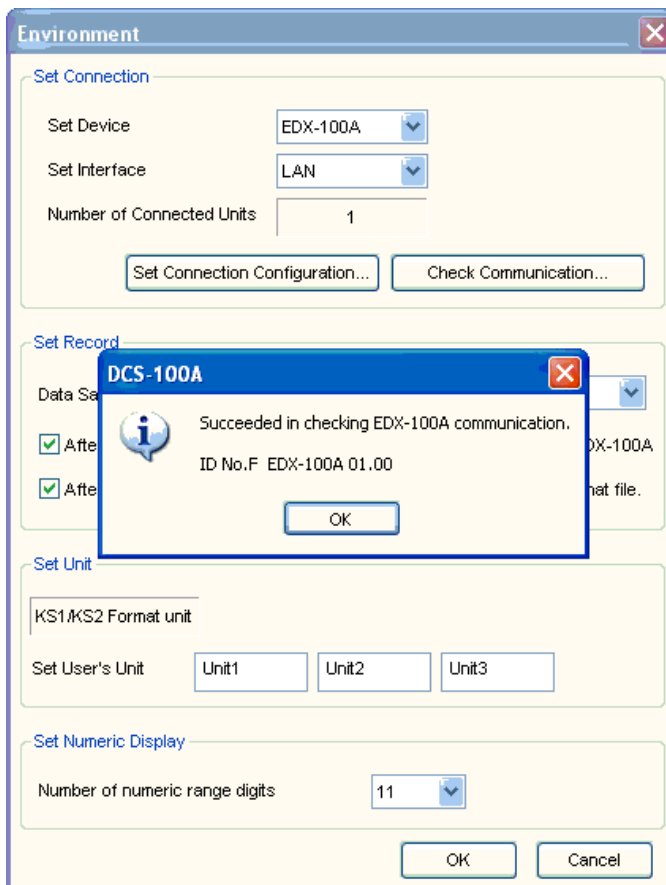
4-4 CHECKING COMMUNICATION

Conduct connection test to check whether or not normal communication is available between the PC and EDX-100A.



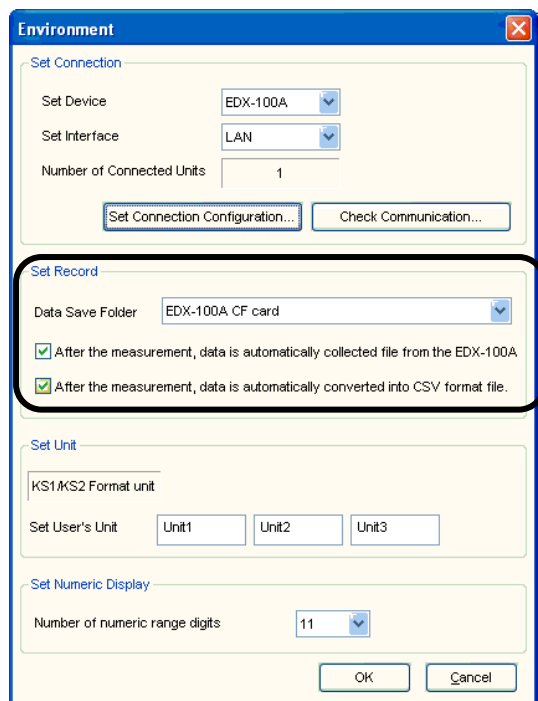
■ Operation Method

- (1) Click the **Check Communication** button on the **Environment** window.
- (2) The following check result appears.



4-5 SETTING RECORDING

A data file folder as well as data file related items after the measurement are set on the item **Set Record** on the **Environment** window.



■ Operation Method

(1) Select **Data Save Folder** (Data File Destination) from the list box **Set Record**.

■ Options

- EDX-100A CF card:

Choose this option when setting the offline Meas conditions and when saving recorded data in the CF card in the EDX-100A via online measurement.

- PC hard disk:

This is used for online measurement. There is no need to install a CF card in the EDX-100A in this mode.

- Both the EDX-100A CF card and the PC hard disk:

These are used for manual Meas mode. The data file saved on the PC should be used for backup purposes because the amount of data in the data file differs from that of data recorded by the EDX-100A, depending on when data is obtained

(2) After the measurement, when it is required to automatically collect data to PC specified folder from the EDX-100A, put a check mark. (Enabled only when **EDX-100A CF Card** is selected.)

In addition, when it is required to automatically CSV convert the recorded data and save it in PC specified folder, put a check mark.

(3) Click the **OK** button to determine the setting contents.

NOTE

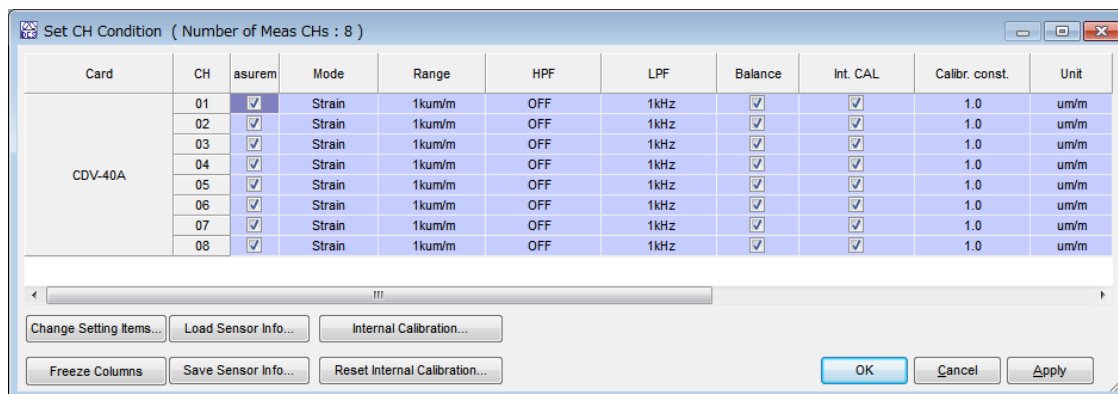
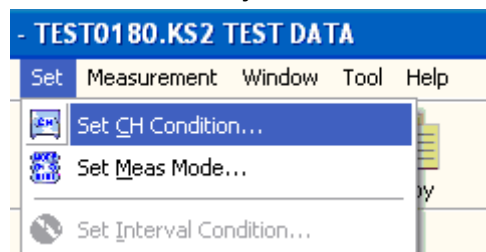
- When the **EDX-100A CF Card** is selected
Data file size that can be recorded into the EDX-100A CF card is maximum 2 GByte.
- When the **PC Hard Disk** is selected
Maximum data file size that can be recorded in the PC is up to the PC's hard disk capacity.

5. SETTING CH CONDITION

This chapter describes methods for setting various CH conditions such as CH mode, range, CAL coefficient, offset, unit, etc. for every channel of the EDX-100A.

Open the **Set CH Condition** window by the following and set Meas condition for every channel.

- Point to **Set** and select **Set CH Condition** menu.
- Select the **CH Condition** icon from the toolbar.



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).

Comp IntSense... button

Performs the internal sensitivity compensation.

Perform an internal sensitivity compensation when a sensor is connected.

Initialize the result of Comp IntSense... button

Initializes the compensated internal sensitivity.

OK button

Determines the pre-set contents and closes the window.

Cancel button

Cancels the pre-set contents and closes the window.

Apply button

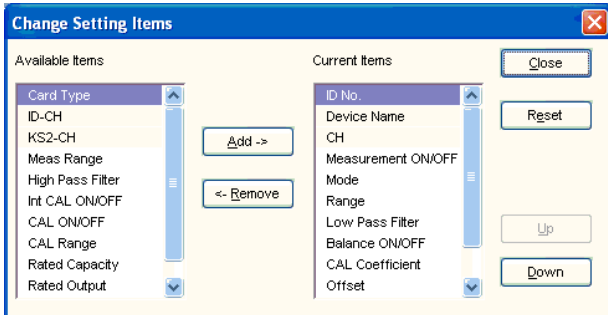
Determines the current set contents.

MEMO

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

■ Change Setting Items

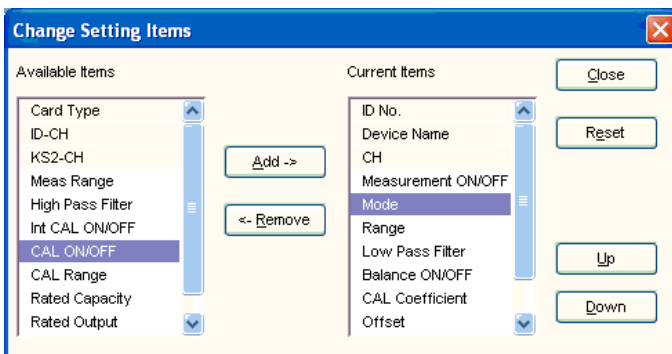
Click the **Change Setting Items** button to display the following window.
Setting items displayed on the **Set CH Condition** window are added, removed, or sorted.



- (1) **Add ->** buttonItem currently not on the window is added to the **Set CH Condition** window.
- (2) **<- Remove** buttonItem currently displayed on the window is removed from the **Set CH Condition** window.
- (3) **Close** buttonDetermines the setting item and closes the window.
- (4) **Reset** buttonResets the item to the default state.
- (5) **Up/Down** buttonSorts the current setting items.
Choose the setting item you want to move, and click **Up** or **Down**.

■ Operation Example

Procedures for adding the **CAL ON/OFF** setting item to the **Set CH Condition** window are described below:



- (1) Select **CAL ON/OFF** in Available Items, move the cursor to a location in Current Items where you want to insert the selected item and then, click the **Add ->** button.
- (2) **CAL ON/OFF** 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** window.

■ Setting Items

●ID-No.

Displays the ID number.

●Device Name

Displays the device name that is set under Environment > Device Information Register.

●Card

Displays the type of card currently installed.

●CH

Displays the CH No. The CH No. is assigned in serial numbers starting from CH1.

●ID-CH

Displays the EDX-100A ID No. and CH No. The channel number starts from 01 for every ID number. For example, ID0-CH01 indicates CH1 of the master EDX-100A.

●Measurement

Put a check mark on the measurement target CH box.

●Mode

Set the Meas mode.

Select the relevant mode from the list box.

●Range

Set measuring range.

Select the relevant range from the range list box.

In addition, since the **Range** is coupled with **Meas Range** item on the **Available Items**, when selecting and setting the **Meas Range**, the **Range** on the **Current Items** is automatically set.

●Meas Range

Set measuring range.

Numeric value of the **Meas Range** is in engineering value obtained by multiplying the Meas range by CAL coefficient and offset value.

Select the relevant item from the list box.

In addition, since the **Meas Range** is coupled with the **Range** of the Current Items, when selecting the **Meas Range**, the **Range** of the Current Items automatically changes.

●**High Pass**

Set cutoff frequency of the **High Pass Filter**.

Select the relevant item from the list box.

●**Low Pass**

Set cutoff frequency of the **Low Pass Filter**.

Select the relevant item from the list box.

●**Balance**

Put a check mark on the list box of the balance target CH.

Balance ON/OFF can be set only in **Strain** mode.

●**CAL**

Put a check mark on the CAL target channel check box.

●**CAL Range**

Set a calibration output.

Select the relevant item from the list box.

●**Compensating internal sensitivity ON/OFF**

Put a check mark on the target CH of internal sensitivity compensation.

This function is effective when using the Strain/Voltage card: CDV-40A(-F) or Dynamic Strain Meter card: DPM-42A(-F).

After it is checked, the internal sensitivity compensation is conducted as described in the following.

CDV-40A (-F)

1) Strain mode : Check the bridge resistance of the strain gage in 4-gage method or the strain gage transducer to compensate the sensitivity.

2) Voltage mode : Compensate the internal zero point.

DPM-42A(-F)

3) Check the bridge resistance of the strain gage in 4-gage method or strain gage transducer to compensate the sensitivity.

For items 1) and 3), always conduct this function with the sensor connected.

For item 2), conduct this function when mounting a new conditioner card or changing the mounted slot.

●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

- If you use this function, the EDX-3000A/B software version should be version 01.45 or higher.
- 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 sensors together with the **Rated Output**.

Obtain **CAL Coefficient** by calculating the **Rated Output** and **Rated Capacity**. However, not necessary to set the **Rated Capacity** if the CAL coefficient is directly entered.

Double-click the desired CH or press the **SPACE** key to be in input available state. Input desired numeric value.

●Rated Output(Sensor Output, mV/V)

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

Obtain **CAL Coefficient** by calculating the **Rated Output** and **Rated Capacity**. However, not necessary to set the rated output if the CAL coefficient is directly entered.

Double-click the desired CH or press the **SPACE** key to be in input available state. Input desired numeric value.

For strain measurement, input the rated output in the unit of mV/V.

●CAL Coefficient

Set **CAL Coefficient** to be multiplied to the measured data.

For CAL coefficient, set coefficient that converts data into engineering value (physical value) 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.

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

Double-click the desired CH item or press the **SPACE** key to be in numeric input available state. Input the desired numeric value.

Since the **CAL Coefficient** is coupled with **Rated Capacity** and **Rated Output** of the Available Items, when selecting and setting the CAL coefficient on the **Rated Capacity** or **Rated Output** item, the CAL Coefficient on the Current Items is automatically calculated.

●Offset

Set **Offset** value in engineering value (A value multiplied by the CAL coefficient).

Set the offset value when it requires to parallel move the measured value at a certain amount.

Initial value of the offset is '0.'

Double-click the target CH and input the desired value.

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

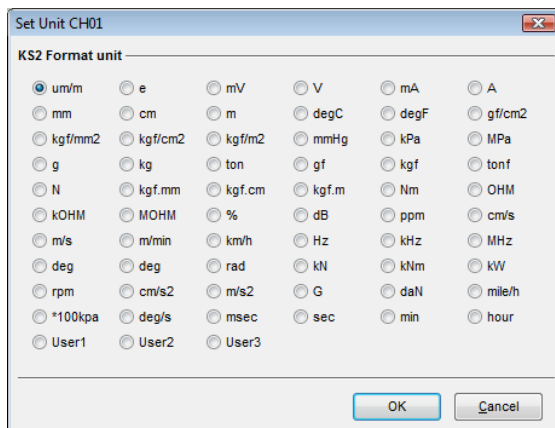
Double-click the desired CH item or press the **SPACE** key to be in numeric input available state. Input the desired numeric value.

Since the **Offset** is coupled with **Meas Range** of the Available Items, when changing the **Offset**, the **Meas Range** is automatically changed.

●Unit

Set engineering value unit according to input sensors.

Double click the target CH or press the **SPACE** key to display the **Set Unit** window. Select the relevant unit from the unit list.



MEMO

If the relevant unit is not on the unit list, users can register up to 3 original units (User's unit). At this time, set the user's unit on the **Environment** window in advance.

●Deci Digits

Set the number of digits below decimal point of numeric value display.

On selecting the **Auto**, the numeric having 5 numbers with no sign is automatically displayed.

Example) -100.123 → -100.12

5001.57 → 5001.6

For details, see separate volume of the “DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (For Common Operation)”.

NOTE

(*) In the default state, the **Deci Digits** is not displayed on the **Set CH Condition** window.
At this time, add the item with the **Change Setting Items** button.

●CH Name

Input **CH Name** comment strings within 40 characters.

Double-click the desired CH or press the **SPACE** key

to be in input available state. Input desired comment character string.

■Copy and Paste

- Drag the setting item of the copy source CH and right-click.

CH	Measurement ON/OFF	Mode	CAL Range	CAL ON/OFF
01	☒	Voltage	100%	☒
02	☒	Strain	10	☒
03	☒	Strain	10	☒
04	☒	Strain	100%	☒
05	☒	Strain	100%	☒

- Select the **Copy** from the menu and then, copy contents of the setting item of the copy source
- Drag the **CH Range** of the paste destination and right-click.

CH	Measurement ON/OFF	Mode	CAL Range	CAL ON/OFF
01	☒	Voltage	100%	☒
02	☒	Strain	100%	☒
03	☒	Strain	100%	☒
04	☒	Strain	100%	☒
05	☒	Strain	100%	☒
06	☒	Strain	100%	☒

- Select the **Paste** from the menu to paste the desired data.

CH	Measurement ON/OFF	Mode	CAL Range	CAL ON/OFF
01	☒	Voltage	100%	☒
02	☒	Voltage	100%	☒
03	☒	Voltage	100%	☒
04	☒	Voltage	100%	☒
05	☒	Strain	100%	☒

■ List of Channel Condition Parameter Options by Conditioner Card

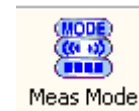
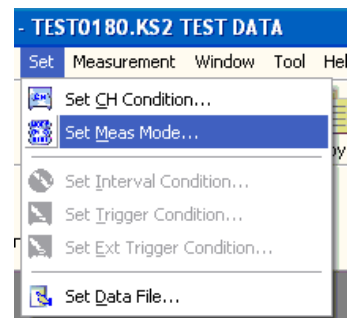
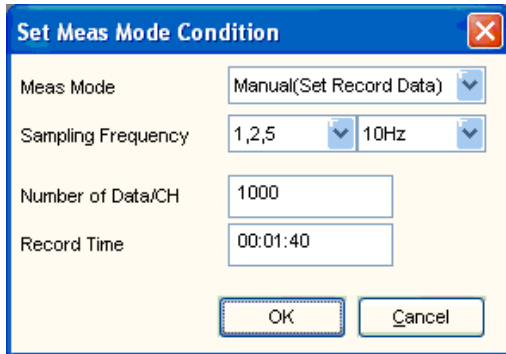
Card	Mode	Range	Low pass filter	High pass filter	CAL range
CDV-40A CDV-40A-F	Strain	500 $\mu\text{m}/\text{m}$ 1 $\text{k}\mu\text{m}/\text{m}$ 2 $\text{k}\mu\text{m}/\text{m}$ 5 $\text{k}\mu\text{m}/\text{m}$ 10 $\text{k}\mu\text{m}/\text{m}$ 20 $\text{k}\mu\text{m}/\text{m}$ 50 $\text{k}\mu\text{m}/\text{m}$ OFF	FLAT 10 kHz 3 kHz 1 kHz 300 Hz 100 Hz 30 Hz 10 Hz AUTO*	OFF 0.2 Hz 1 Hz	100% 50% SHUNT
	Voltage	0.1 V 0.2 V 0.5 V 1.0 V 2.0 V 5.0 V 10.0 V OFF	AUTO* * CDV-40A-F only		100% 50%
CFV-40A	ZC/S ZC/N TTL	50 Hz 100 Hz 500 Hz 1 kHz 2 kHz 5 kHz 10 kHz 20 kHz OFF	None	OFF ON	100% 50%
CTA-40A	K (ON) K (OFF)	240° C 480° C 1230° C OFF	None	None	100% 50% CHECK
	T (ON) T (OFF)	210° C 400° C OFF			
CCA-40A CCA-40A-F	Voltage Reserve	20 mV 50 mV 100 mV 200 mV 500 mV 1000 mV 2000 mV 5000 mV OFF	FLAT 10 kHz 3 kHz 1 kHz 300 Hz AUTO* * CCA-40A-F only	None	DC100% DC50% AC100% AC50%
DPM-42A DPM-42A-F	BV (2.0 V)	200 $\mu\text{m}/\text{m}$ 500 $\mu\text{m}/\text{m}$ 1 $\text{k}\mu\text{m}/\text{m}$ 2 $\text{k}\mu\text{m}/\text{m}$ 5 $\text{k}\mu\text{m}/\text{m}$ 10 $\text{k}\mu\text{m}/\text{m}$ 20 $\text{k}\mu\text{m}/\text{m}$ OFF	FLAT 1 kHz 300 Hz 100 Hz 30 Hz 10 Hz AUTO*	None	100% 50% SHUNT
	BV (0.5 V)	1 $\text{k}\mu\text{m}/\text{m}$ 2 $\text{k}\mu\text{m}/\text{m}$ 5 $\text{k}\mu\text{m}/\text{m}$ 10 $\text{k}\mu\text{m}/\text{m}$ 20 $\text{k}\mu\text{m}/\text{m}$ 50 $\text{k}\mu\text{m}/\text{m}$ OFF	* DPM-42A-F only		

6. SETTING MEASURING MODE CONDITION

This Chapter describes settings of Meas mode and sampling frequency.

Open the **Set Meas Mode Condition** window by the following.

- Point to **Set** and select **Set Meas Mode** menu.
- Select **Meas Mode** icon from the toolbar.



■ Operation Method

(1) Select the desired **Meas Mode**.

Manual

Manual (Set Record Data.)

Interval

Analog Trigger

External Trigger (Enabled when **Save in EDX-100A CF Card** is selected.)

Complex Trigger (Enabled when **Save in EDX-100A CF Card** is selected.)

For details, see “8. ONLINE MEASUREMENT.”

(2) Select the relevant sampling frequency from the list box.

The sampling frequency is set in common for all CHs.

■ Selection

Sampling frequency	Selection
1-,2-, and 5-system clock	1, 2, 5, 10, 20, 50, 100, 200, 500 [Hz], 1, 2, 5, 10, 20, 50, 100 [kHz] (*1)
2n system clock(*2)	2, 4, 8, 16, 32, 64, 128, 256, 512 [Hz], 1.024, 2.048, 4.096, 8.192, 16.384, 32.768, 65.536 [kHz]
External clock	Input sampling frequency relevant to external clock

NOTE

(*1)

There are the following restrictions on the sampling frequency and the maximum number of measuring channels

5 kHz or less	32 CHs
10 kHz	16 CHs
20 kHz	8 CHs
50 kHz	3 CHs
100 kHz	1 CH

MEMO

(*2)

Sampling frequency of 2n system clock is set and used when frequency resolution of the FFT analysis result is set to a number that is easy to work with.

Sampling frequency	Resolution of FFT (2048) analysis results
4.096 kHz	1.0000 Hz
5.000 kHz	1.2207 Hz

(3) When selecting the Meas mode other than the **Manual** mode, input the **Number of Data** or **Record Time**.

Since the **Number of Data** and **Record Time** are coupled with each other, you can set the either of the two.

Number of Data/CH	1000
Record Time	00:01:40

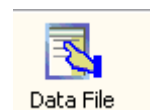
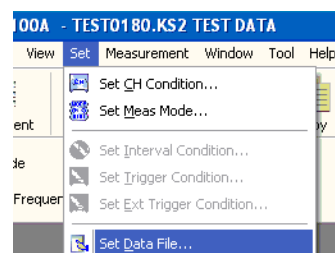
(4) Click the **OK** button to set the Meas mode conditions.

7. SETTING DATA FILE

This menu is used to select the destination folder for saving the data file, file name, file title and file No.

Open the **Set Data File** window by either of the following.

- Point to **Set** on the menu bar and select **Set Data File** menu.
- Select **Data File** icon from the toolbar.



■ Operation Method

(1) Set **Set Save Folder** of the data file.

Clicking **Browse** displays a **Browse** window. Click the relevant folder, select the desired folder and click the **OK** button to close the window.

(2) Set the file name within 16 characters. Default is 'TEST.'

(3) Arbitrarily set a file title within 40 characters.

(4) Set the file No. (0 to 9999)

(5) Click **OK** to determine the setting contents.

NOTE

- For the file No., select a number that is larger than the data file number in the data file destination. If the file number selected here is already used for a file in the file destination, or if it is smaller than the largest file number in the file destination, a number that is larger than the selected number is automatically set.
- Once the file number reaches 9999, measurement cannot be made. At this time, set a new data file name.

7-1 DATA FILE NAME

Data file names are specified as shown below.

The file name in this section is enclosed by the for convenience.

■ When storing to PC's hard disk

Meas Mode	Data File Name
Manual Manual (Set Record Data)	TEST 0000 . KS2 (1) (2)
Interval	TEST 0000 _ 0000 . KS2 (1) (2) (3)
Analog Trigger	

(1) File Name A file name with up to 16 single byte alphanumeric characters is assigned.

(2) File No A file number between 0000 and 9999 is assigned.

The file number is incremented by one after every recording. Once the file number reaches 9999, measurement can no longer be made.

(3) Repeat Times Repeat times between 0000 and 9999 is assigned.

The repeat times is automatically incremented by one after every recording. According to the Meas mode, alphabet is added before the 4-dig repeat times.

I: Interval measurement, A: Analog trigger measurement

■ When storing to EDX-100A CF card

Meas Mode	Data File Name
Manual Manual (Set Record Data)	TEST 0000 . KS2 (1) (2)
Interval	TEST 0000 _ □ . 0000 . KS2 (1) (2) (3)
Analog Trigger	
External Trigger	
Complex Trigger	TEST 0000 _ ■ . KS2 (4) TEST 0000 _ □ 0000 _ ■ . KS2 (4)
When Synchronous Operation (Master, Slave)	

(1) File Name A file name.

(2) File No Check data files in the EDX-100A CF card and set a file No. that does not overlap with each other.

The file No. is incremented by one every time data recording is started.

(3) Repeat Times Set the number of repeat times. Default is '0000.'

According to the Meas mode, alphabet □ is added before the 4-dig repeat times

I: Interval measurement, A: Analog trigger measurement,

E: External trigger measurement, C: Complex trigger measurement

(4) ID No. EDX-ID No. (0 to 3) is set for synchronous operation.

0: Synchronous master, 1 to 3: Synchronous slave

When the DCS-100A collected the KS2 file that is recorded by synchronous operation, ID No. of the file name is deleted after it is collected.

Example) Suppose when data of TEST0000_0.KS2 (Master) and TEST0000_1.KS2 (Slave) are collected, the data file name shall be TEST0000.KS2.

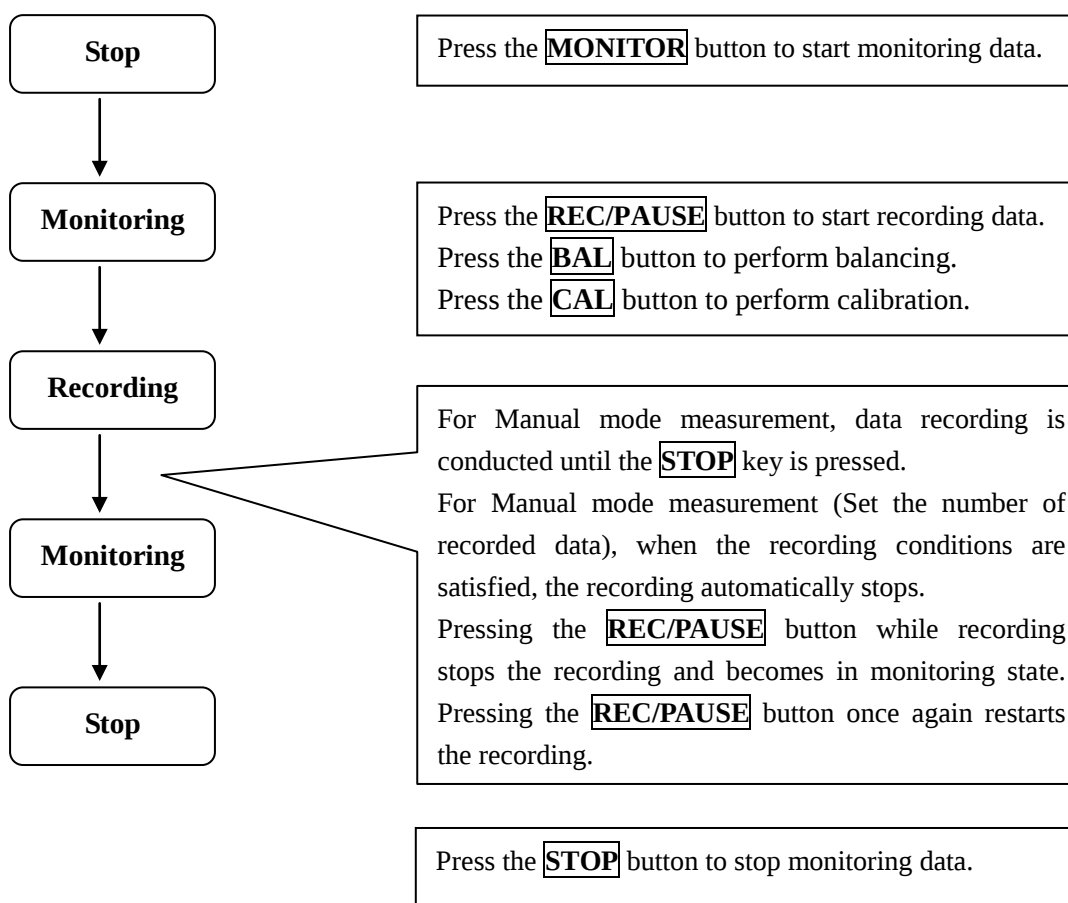
8. ONLINE MEASUREMENT

8-1 MANUAL MEASUREMENT

This section describes measurement flow when Meas mode is set to **Manual** or **Manual (Set the number of recorded data)**.

The Manual mode measurement starts by manually pressing the **REC/PAUSE** button. Thereafter, press the **STOP** button to stop recording the measured data and to be in monitoring state.

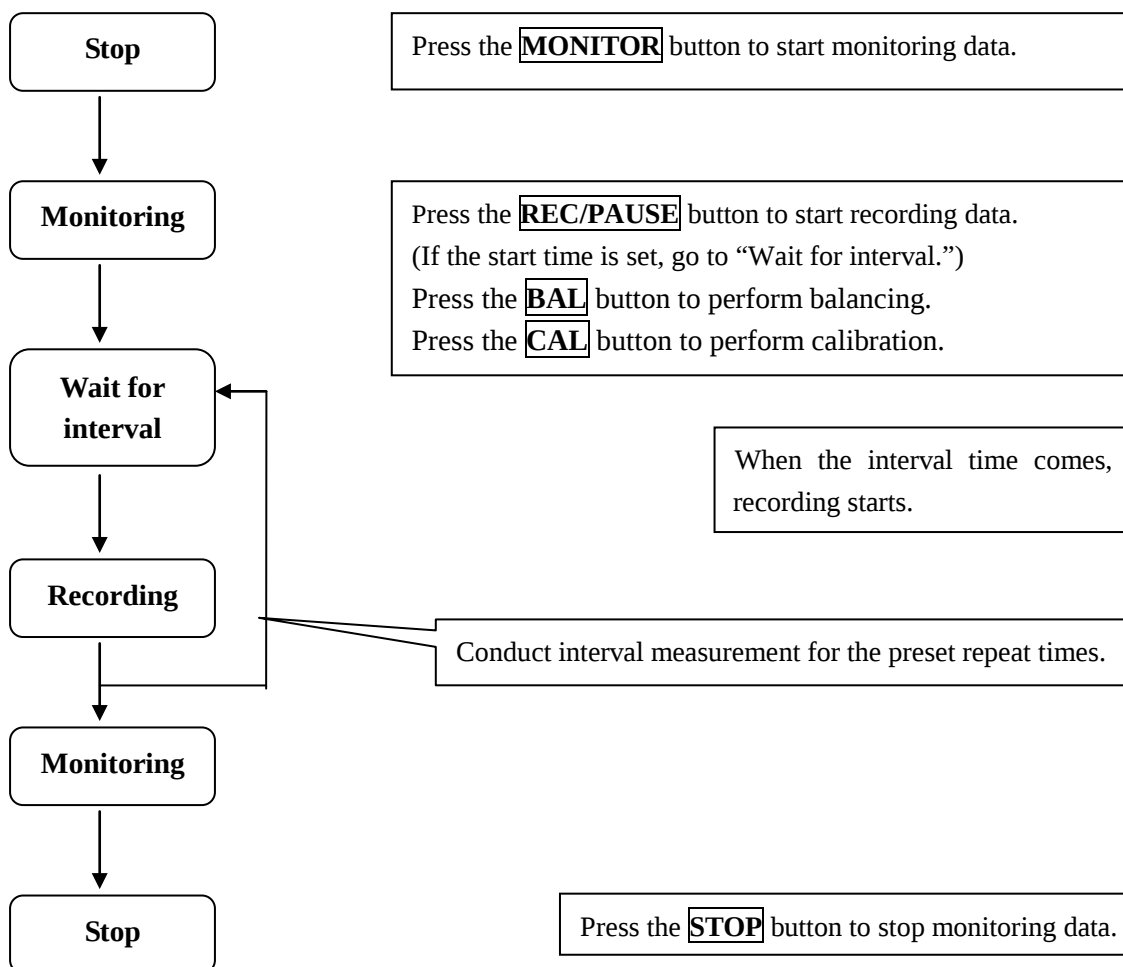
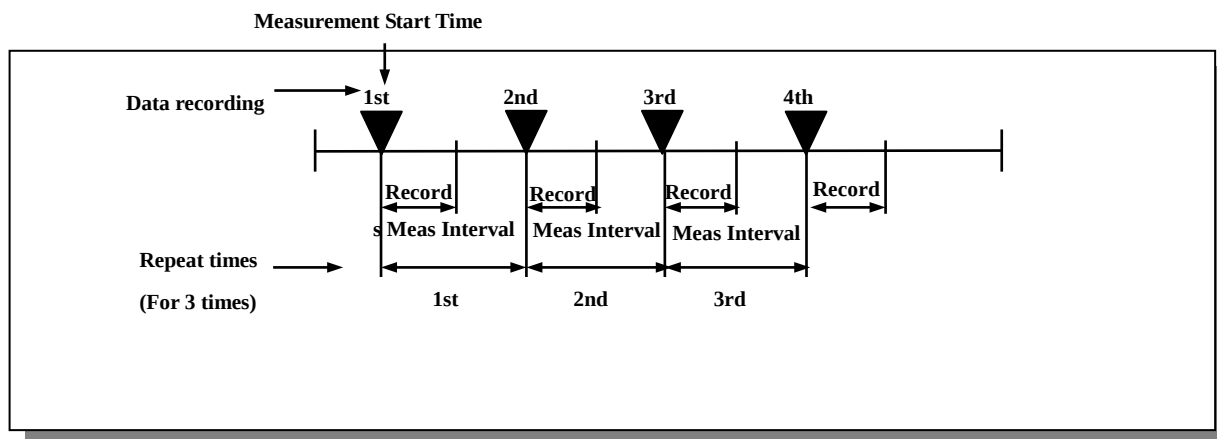
In addition, the Manual mode measurement (Set the number of recording data) is capable of setting recording time and the number of recorded data. Manually press the **REC/PAUSE** button to start recording the measured data. After satisfying the Meas conditions, the EDX-100A automatically stops recording data and becomes in monitoring state.



8-2 INTERVAL MEASUREMENT

This section describes a measurement flow when Meas mode is set to **Interval** mode.

The Interval mode measurement automatically records data at preset set time intervals. After finishing the interval measurement, the EDX-100A becomes in monitoring state.

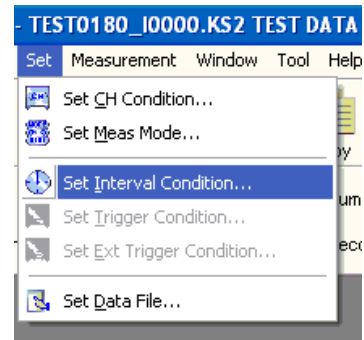
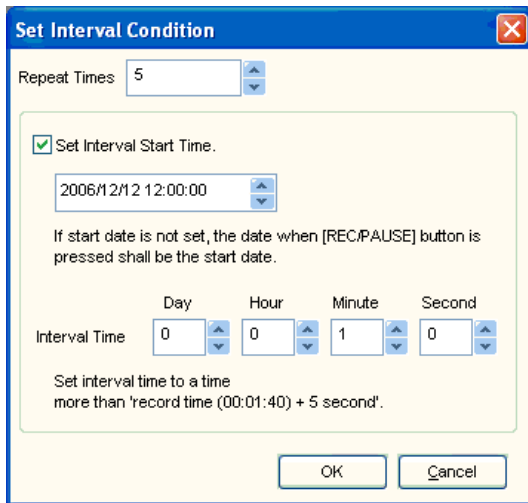


8-2-1 Setting Interval Measurement Conditions

Set various conditions for interval measurement such as repeat times, start time, interval time.

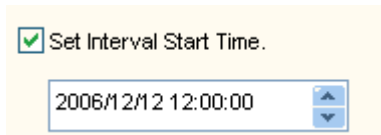
Open the **Set Interval Condition** window by the following.

- Point to **Set** on the menu bar and select **Set Interval Condition** menu.
- Select **Interval** icon from the toolbar.



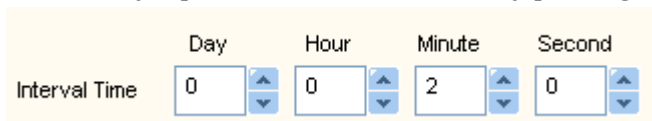
■ Operation Method

- (1) Select the **Repeat Times**. Setting range is from 1 to 9999.
- (2) To set the interval start date and time, put a check mark on the **Set Interval Start Time** box and set the date.



- (3) Set the **Interval Time**.

Directly input or set the interval time by pressing the spin buttons.



NOTE

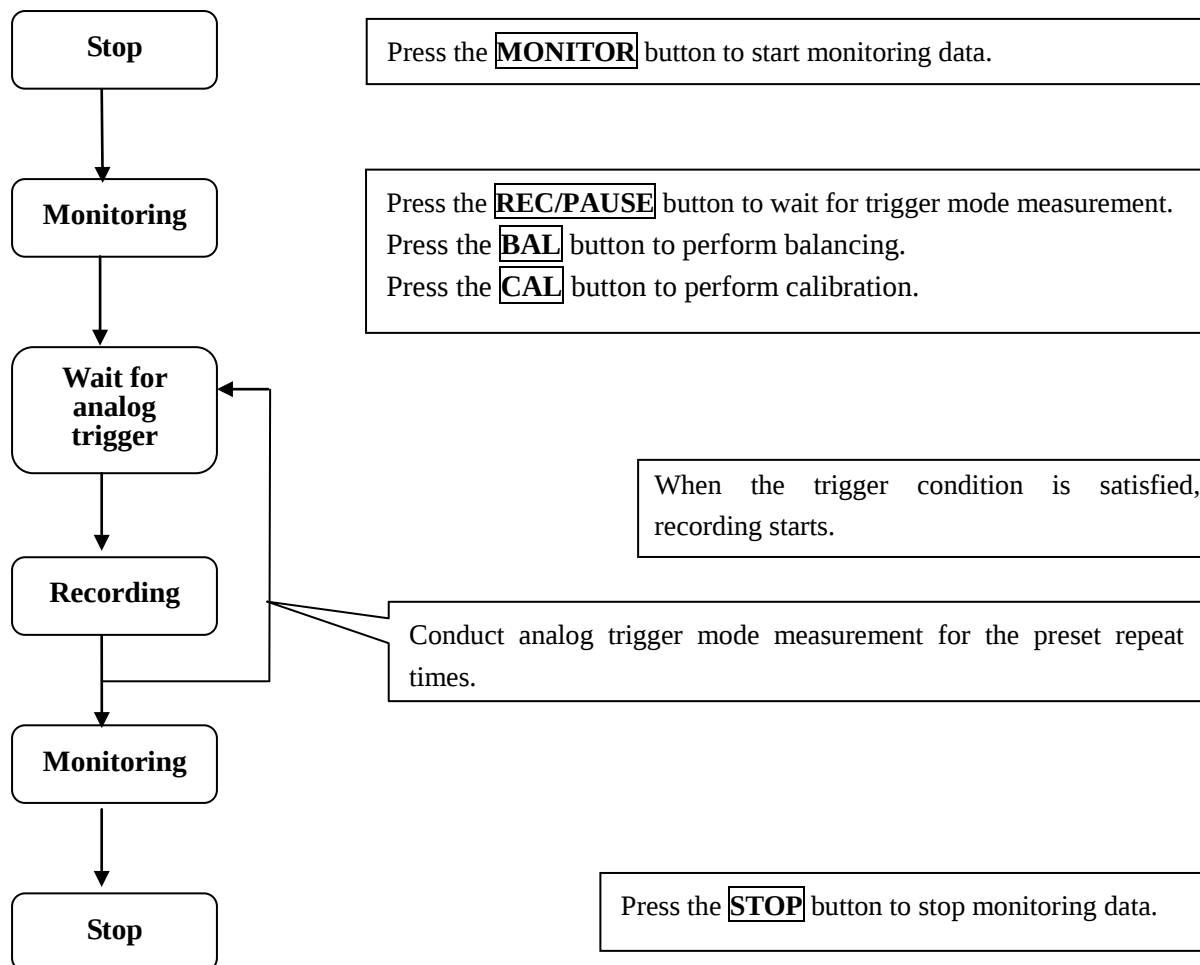
- Set the interval time to a time 'Recording time + 10 sec or more.'
- Set the interval time to +30 sec for synchronous operation.
- When the interval start time is not set, the start time will be several seconds after the **REC/PAUSE** button is pressed.
- If the **REC/PAUSE** button is pressed after passing the interval start time, interval time and repeat times are automatically calculated from the current time and if the repeat times is left, the interval measurement is continued.

- (4) Press the **OK** button to determine the set conditions.

8-3 ANALOG TRIGGER MEASUREMENT

This section describes a measurement flow when Meas mode is set to **Analog Trigger** mode.

The Analog trigger mode measurement automatically starts recording data when measured value of the specified analog CH satisfies the trigger conditions and records data for the preset number of repeat times (recording time). After finishing the analog trigger measurement, the EDX-100A becomes in monitoring state.



NOTE

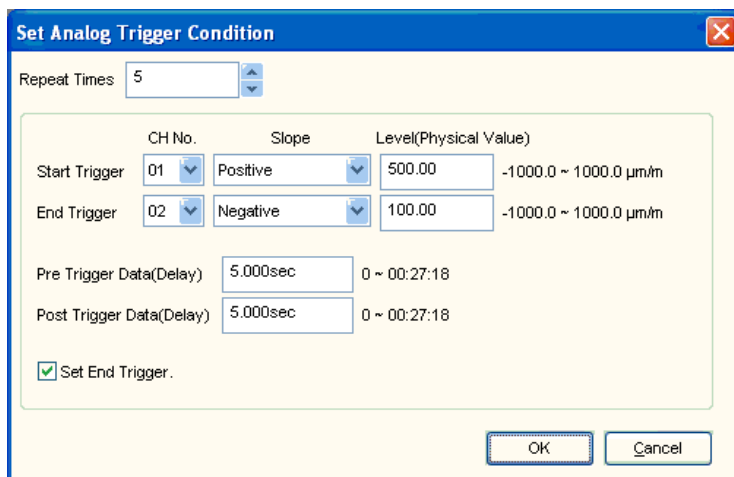
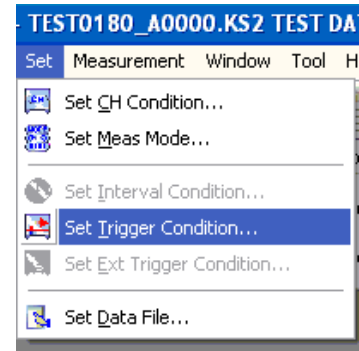
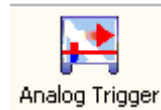
- Suppose data is stored into the EDX-100A CF card, the trigger conducting analog CH is an arbitrary channel of stand-alone or master EDX-100A.

8-3-1 Setting Analog Trigger Measurement Conditions

Set various conditions for analog trigger mode measurement such as repeat times, trigger conditions, etc.

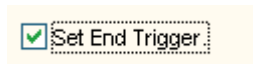
Open the **Set Analog Trigger Condition** window by either of the following.

- Point to **Set** and select **Set Trigger Condition** menu.
- Select **Analog Trigger** icon from the toolbar.



■ Operation Method

- (1) Set the **Repeat Times**. Setting range is from 1 to 9999.
Directly input or set the repeat times by pressing the spin buttons.
- (2) To set the end trigger, put a check mark on the **Set End Trigger** box.



- (3) Select trigger **CH No.** that starts and ends recording data from the list box.
- (4) Set **Slope**. Set how to cross the data on the slope for the trigger level.
Select the relevant item from the list box.
For details, see “8-3-2 Trigger Slope.”

■ Selection

Positive
Negative

- (5) Input **Level**. The level value is a measured value to be triggered.
Input an engineering value within a value relevant to engineering value of the setting range (Setting range × CAL coefficient + Offset).
- (6) To record the Pre-data before recording, input **Prev Trigger data Delay** with time. (Unit: sec)
To record Post data after recording, input **Post Trigger Data Delay** with time. (Unit: sec)
For reference, delay amount setting available range is shown on the right of the data entry field.

$$\text{Delay(sec)} = \frac{262144 \text{ data}}{\text{Number of Meas CHs}} \div \text{Sampling frequency (Hz)}$$

- (7) Click the **OK** button to set trigger conditions.

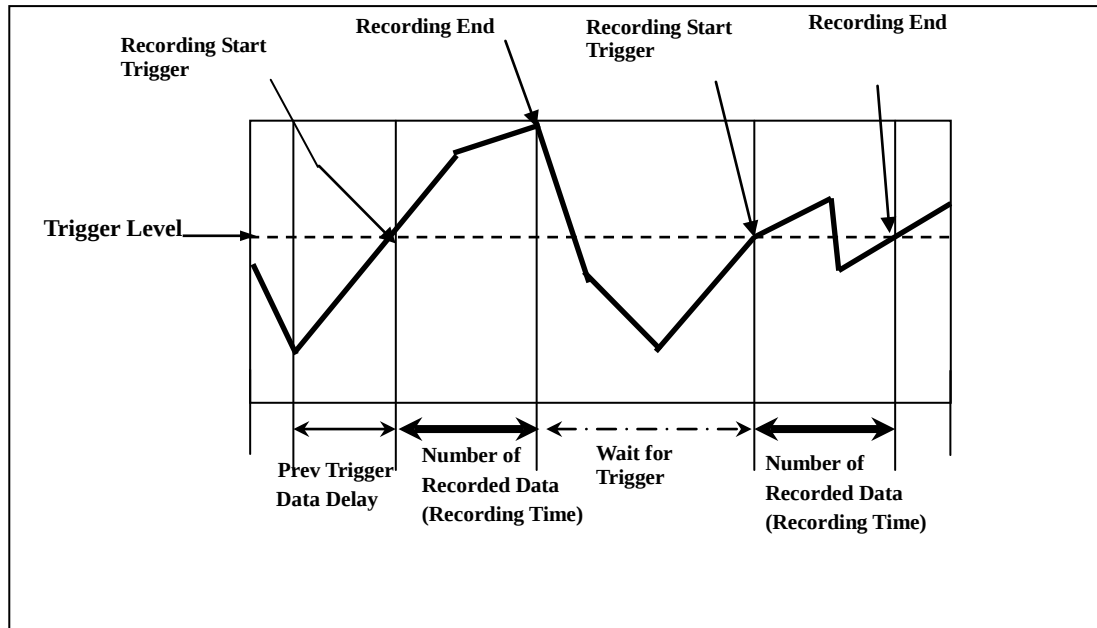
8-3-2 Trigger Slope

In analog trigger mode measurement, data recording starts from the following position according to **Trigger Slope** and **Trigger Level** and records data for the preset number of times.

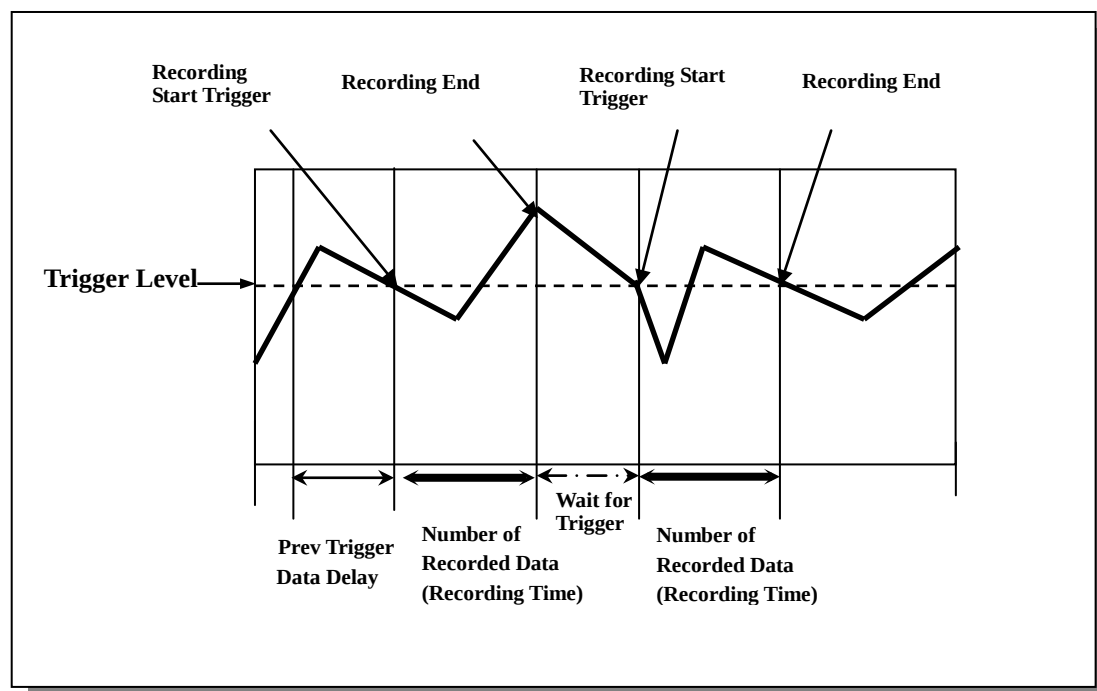
Trigger slope are classified into the following 2 types.

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.

■ Start Trigger: Positive

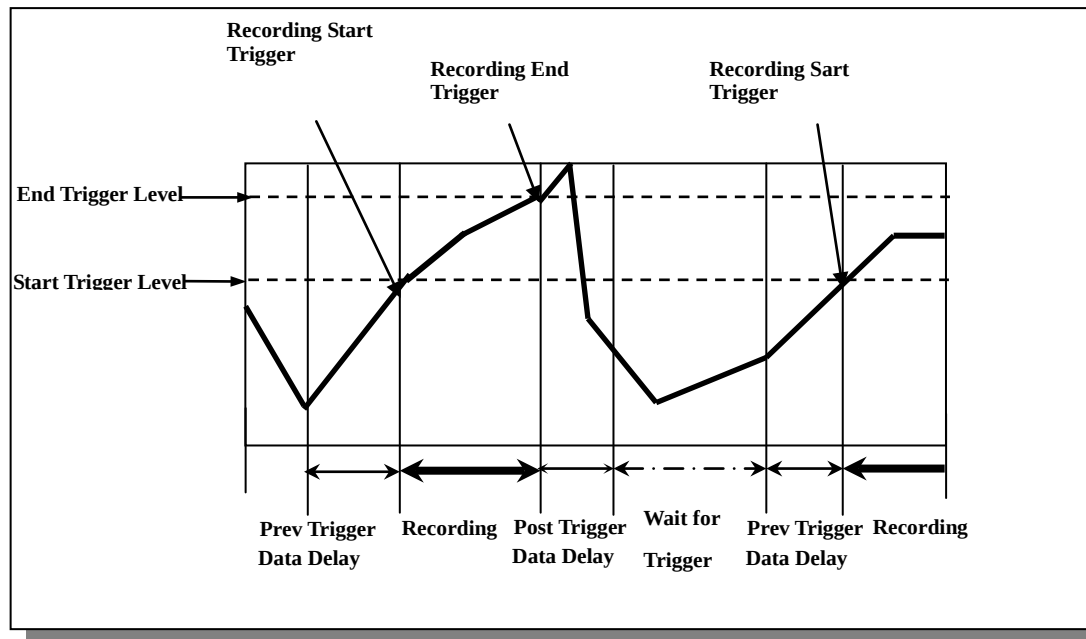


■ End Trigger: Negative

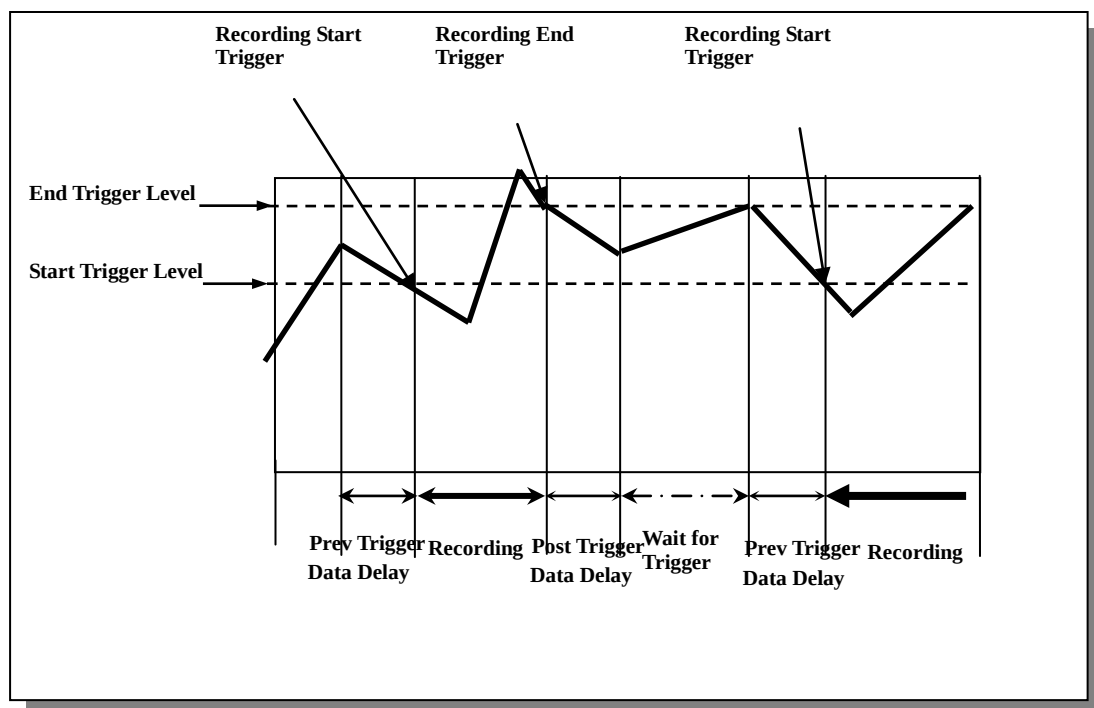


Example of trigger slope with end trigger.

■ Start Trigger, End Trigger: Positive

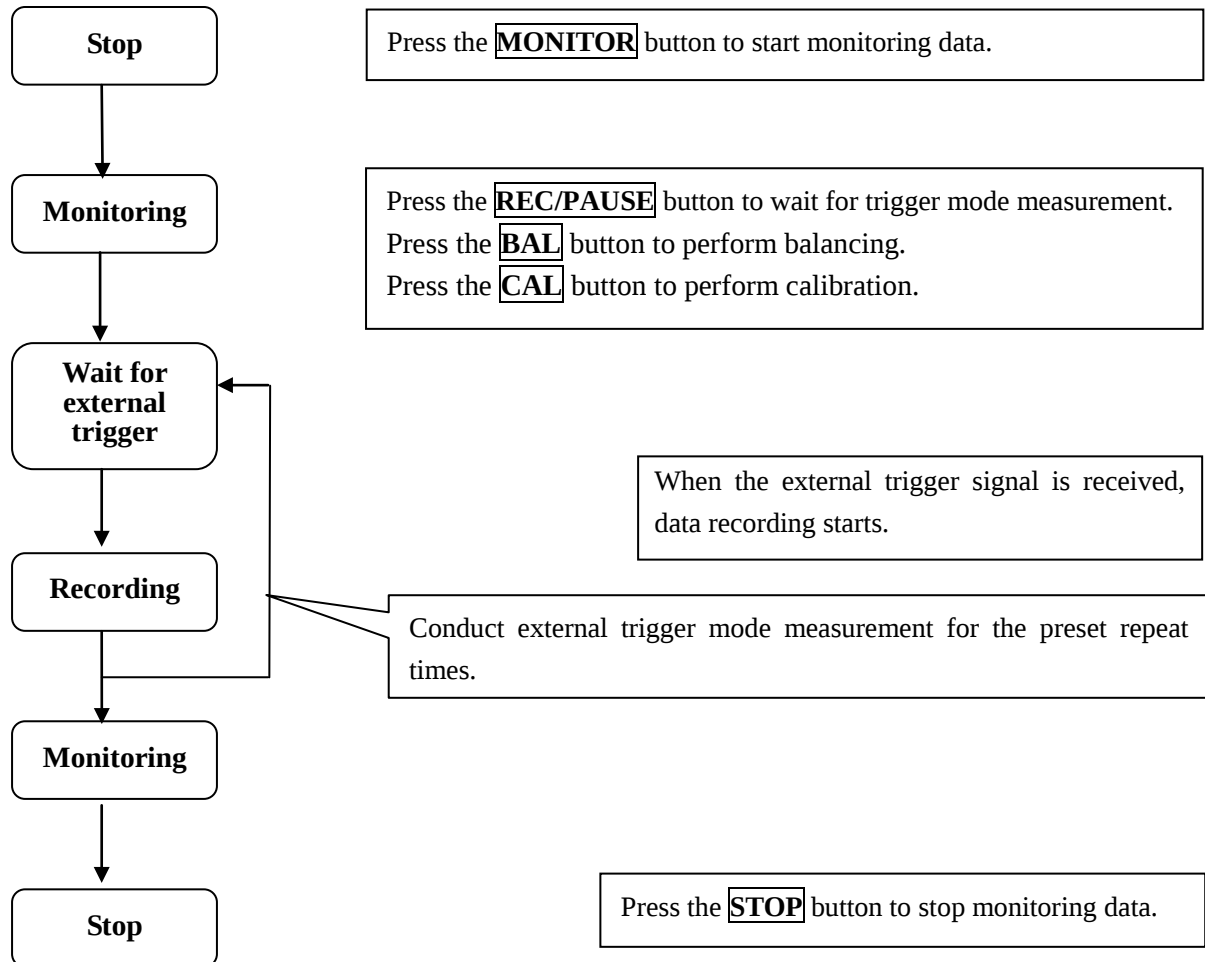


■ Start Trigger, End Trigger: Negative



8-4 EXTERNAL TRIGGER MEASUREMENT

This section describes a measurement flow when Meas mode is set to **External Trigger** mode.
The External trigger mode measurement starts recording data when the external trigger signal is received. For how to connect the external trigger signal, refer to the Instruction Manual for Hardware.
It is enabled when the file is saved in EDX-100A CF card.

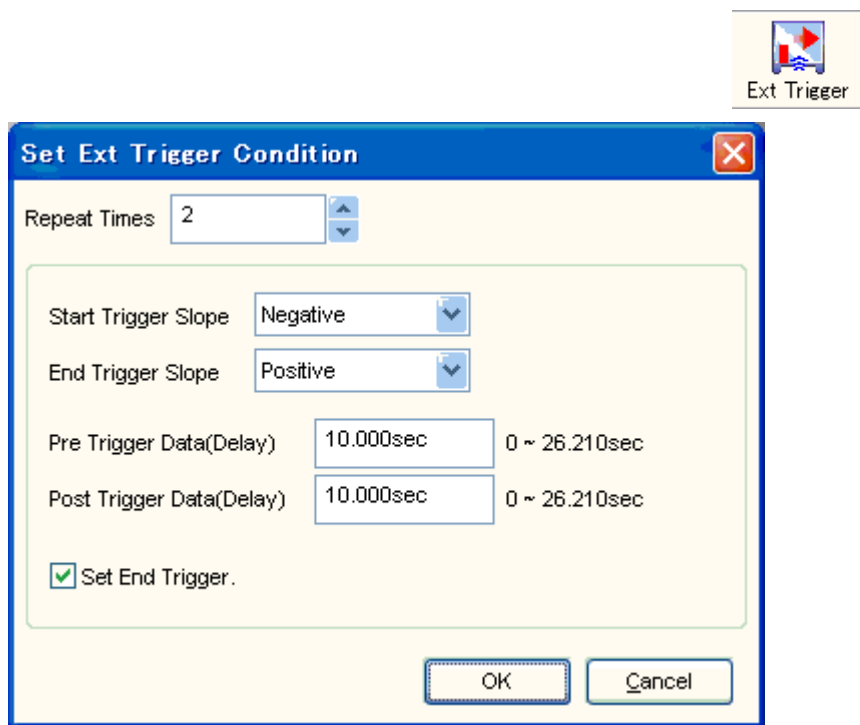


8-4-1 Setting External Trigger Measurement Conditions

Set various conditions for external trigger mode measurement such as repeat times, delay amount, etc.

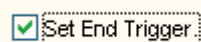
Open the **Set Ext Trigger Condition** window by either of the following.

- Point to **Set** and select **Set Ext Trigger Condition** menu.
- Select **Ext Trigger** icon from the toolbar.



■ Operation Method

- (1) Set the **Repeat Times**. Setting range is from 1 to 9999.
Directly input or set the repeat times by pressing the spin buttons.
- (2) To set the end trigger, put a check mark on the **Set End Trigger** box.



- (3) Set **Slope**.
Select the relevant item from the list box.
For details, see “8-3-2 Trigger Slope.”

■ Selection

Positive
Negative

- (4) To record the Pre-data before recording, input **Prev Trigger data Delay** with time. (Unit: sec)
To record Post data after recording, input **Post Trigger Data Delay** with time. (Unit: sec)
For the allowable delay range is shown to the right of the data entry field.
- (5) Click the **OK** button to set trigger conditions.

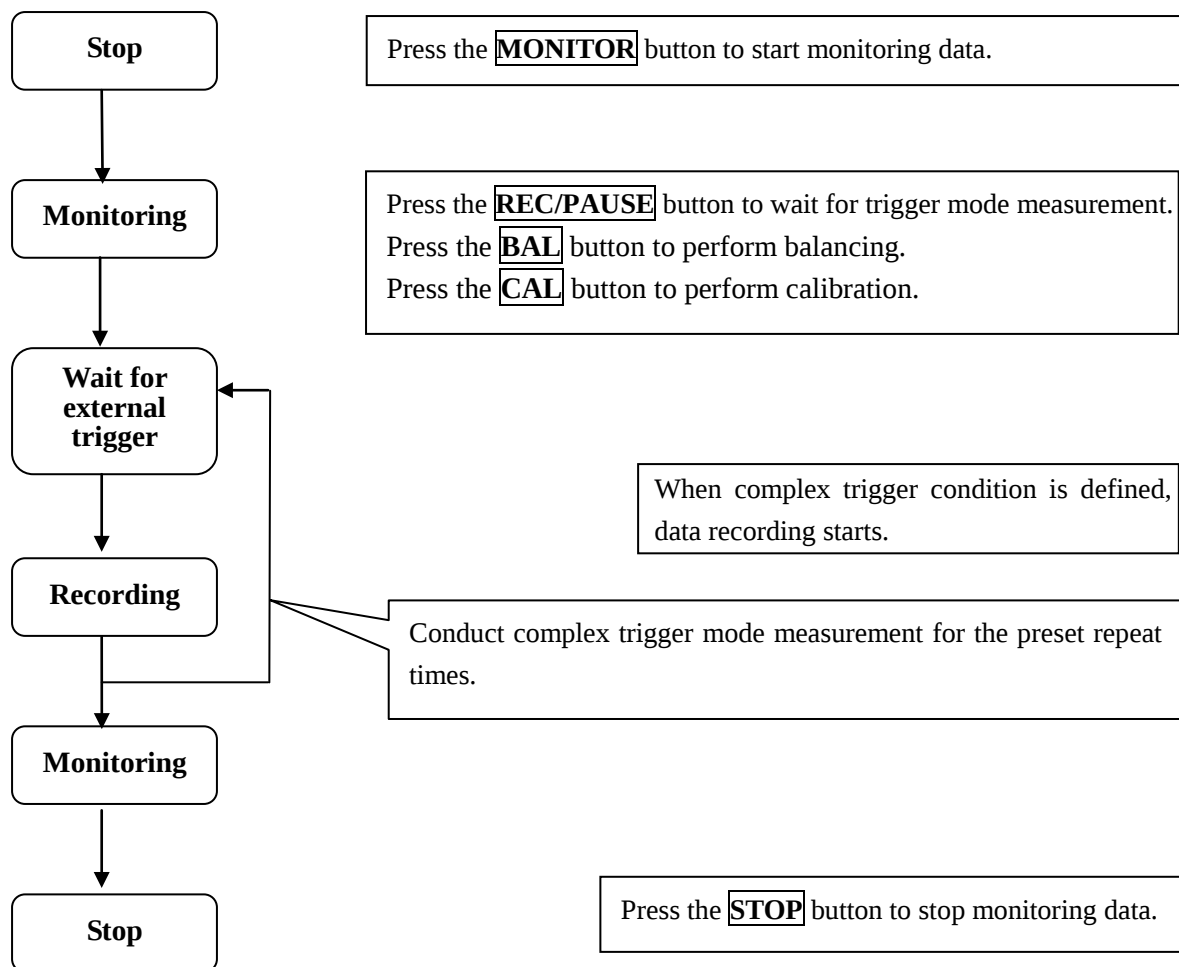
8-5 COMPLEX TRIGGER MEASUREMENT

This section describes a measurement flow when Meas mode is set to **Complex Trigger** mode.

The Complex trigger mode measurement starts recording data when 2-CH analog trigger conditions and 1-CH AND/OR trigger conditions are satisfied.

For trigger specifications of the analog trigger and external trigger, see previous sections “8-3 ANALOG TRIGGER MEASUREMENT” and “8-4 EXTERNAL TRIGGER MEASUREMENT.”

It is enabled when the file is saved in EDX-100A CF card.



NOTE

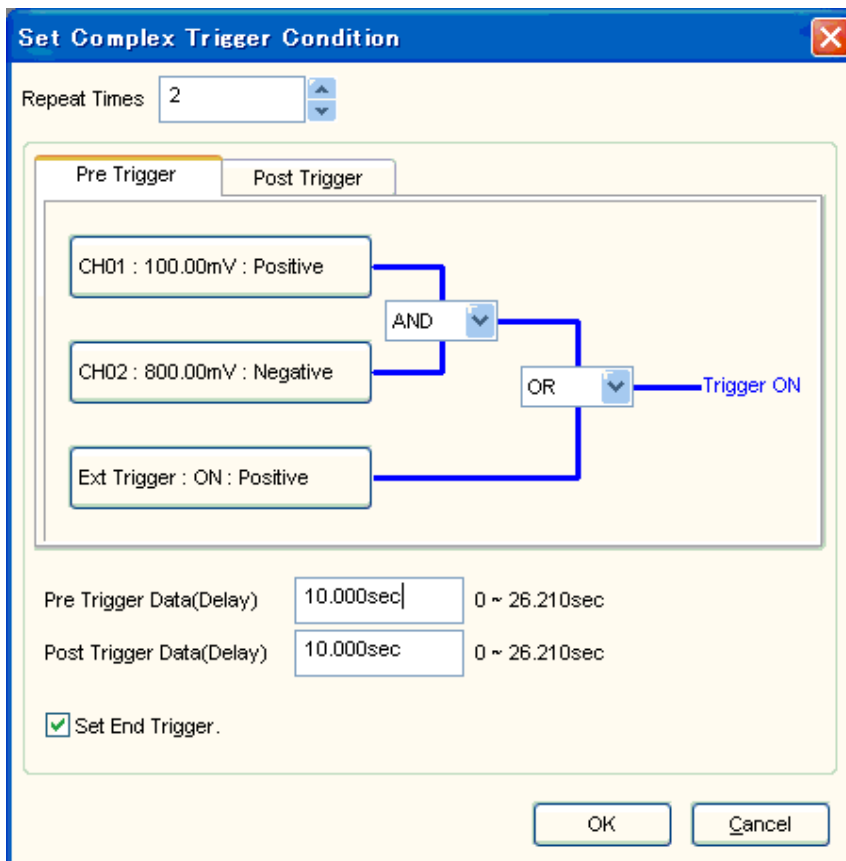
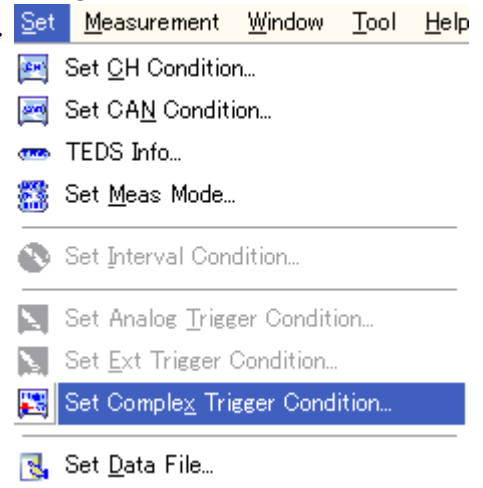
- Analog CHs of trigger mode measurement are arbitrary 2 CHs of stand-alone or master EDX-100A.

8-5-1 Setting Complex Trigger Measurement Conditions

Set various conditions for complex trigger mode measurement such as repeat times, delay amount, etc.

Open the **Set Complex Trigger Condition** window by either of the following.

- Point to **Set** and select **Set Complex Trigger Condition** menu.
- Select **Complex Trigger** icon from the toolbar.

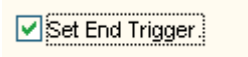


■ Operation Method

- (1) Set the **Repeat Times**. Setting range is from 1 to 9999.

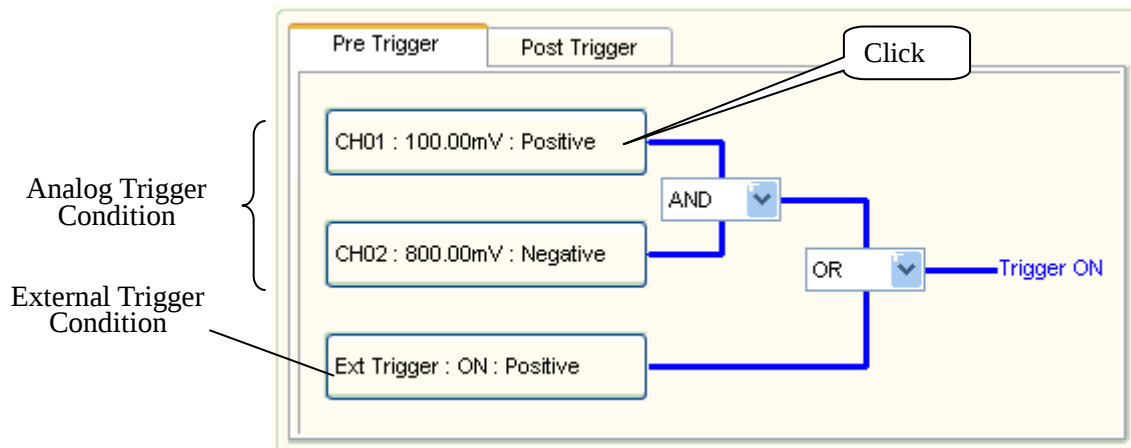
Directly input or set the repeat times by pressing the spin buttons.

- (2) To set the end trigger, put a check mark on the **Set End Trigger** box.



(3) Set trigger conditions.

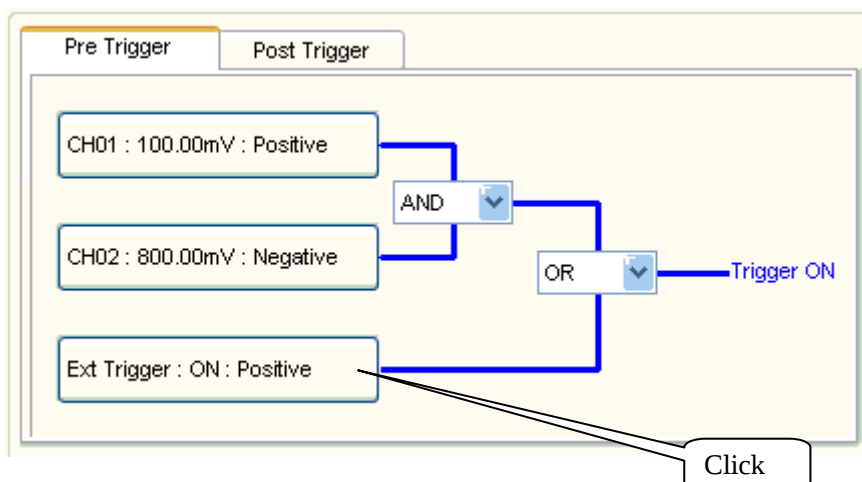
Set 2 analog trigger conditions and AND/OR condition of external trigger measurement.



Click the Analog Trigger Condition button to display the following dialog box.

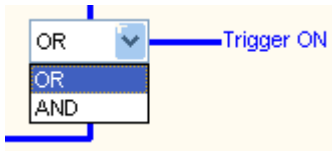
To specify the desired trigger, select None of Analog Trigger.

Set CH No., Level (Physical Value), and Slope. (As same as setting analog trigger conditions.)



Click the Ext Trigger Condition button.

And the menu changes in due order Ext Trigger: ON: Positive → Ext Trigger: ON: Negative → Ext Trigger: OFF. (Positive/Negative is as same as the external trigger conditions.)



Specify AND/OR.

Enabled trigger conditions until starting the trigger measurement is displayed with blue line.

(4) To record the Pre-data before recording, input **Prev Trigger data Delay** with time. (Unit: sec)

To record Post data after recording, input **Post Trigger Data Delay** with time. (Unit: sec)

For the allowable delay range is shown to the right of the data entry field.

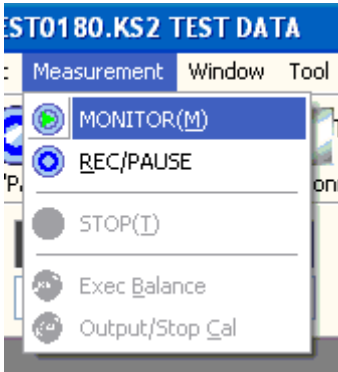
(5) Click the **OK** button to set trigger conditions.

8-6 EXECUTING MEASUREMENT

While conducting monitor measurement, measured data is recorded according to the preset Meas mode conditions.

Conduct measurement related operations by any of the following.

- Select desired menu from the **Measurement** menu.
- Select desired icon from the toolbar.



- Operate the DCS-100A from the **Meas Operation Panel**.

NOTE

If a large number of files (Approximately 1000 files) exist in the EDX-100A CF card, communication error is generated to disable the monitor operation. At this time, before starting monitoring, delete files from the CF card or format the CF card.

If the **Meas Operation Panel** is not displayed, point to **View** and select **Meas Operation Panel** menu.

■ Meas Operation Panel



(1) Display stateDisplays the measurement state.

Stop	Stopping the measurement
Monitoring	In the process of monitor measurement
Recording	Recording data
Stopping record	Pausing recording with the PAUSE button pressed.
Wait for Intvl	Interval measurement condition is not satisfied.
Wait for ■■■ Trg	A state that required conditions of each trigger measurement are not satisfied. ■■■:Analog trigger/External trigger/Complex trigger

(2) **X** buttonCloses the Meas Operation Panel.

(3) **MONITOR** buttonStarts monitor measurement.

(4) **REC/PAUSE** buttonStarts recording data.

(5) **STOP** buttonStops recording/monitoring data.

(6) **BAL** buttonPerforms balancing and displays the balancing result.

(7) **CAL** buttonPerforms calibration in the order of +CAL output, -CAL output and CAL stop.

8-6-1 Manual Mode Measurement

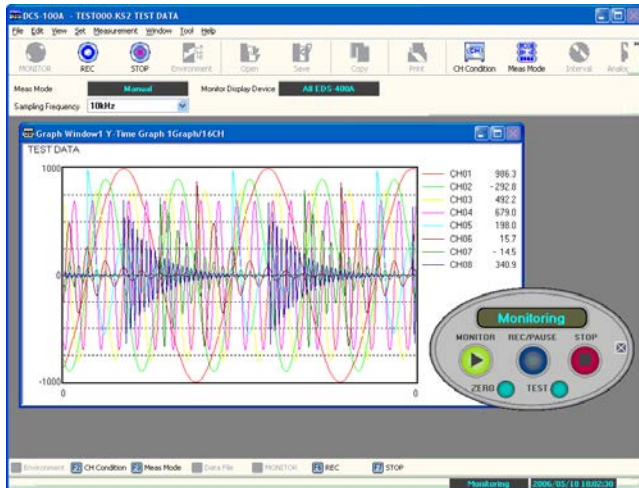
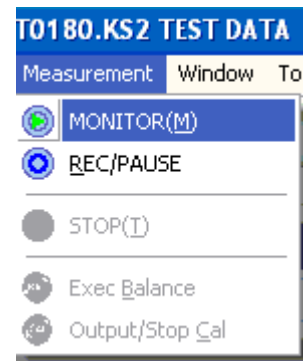
■ Operation Method

(1) Starts monitor mode measurement by any of the following.

- Point to **Measurement** on the menu bar and select **MONITOR** menu.
- Select **MONITOR** icon from the toolbar.



- Click **MONITOR** on the Meas Operation Panel.

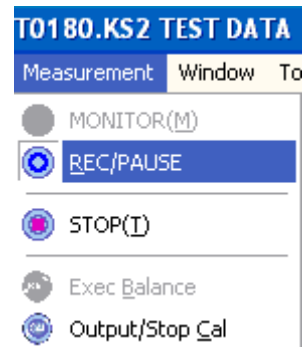


(2) Starts recording data by any of the following.

- Point to **Measurement** and select **REC/PAUSE** menu.
- Select **REC** icon from the toolbar.



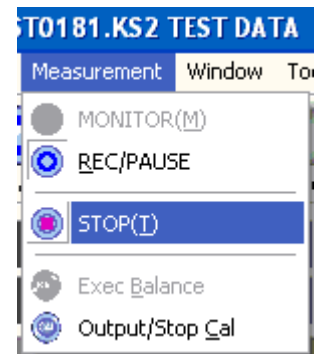
- Click **REC/PAUSE** on the Meas Operation Panel.



- Click the **REC/PAUSE** once again to stop recording and becomes in monitoring state. Select the **REC/PAUSE** to re-start the data recording.

(3) Ends recording data by any of the following.

- Point to **Measurement** and select **STOP** menu.
- Select the **STOP** icon from the toolbar.
- Click **STOP** on the **Meas Operation Panel**.



When the Meas mode is set to **Manual (Set the number of recorded data)**, after satisfying the recording conditions, the DCS-100A automatically ends data recording.

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

- Point to **Measurement** and select **STOP** menu.
- Select the **STOP** icon from the toolbar.
- Click **STOP** on the **Meas Operation Panel**.

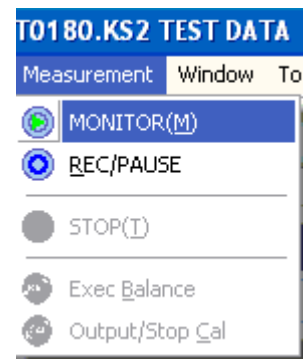
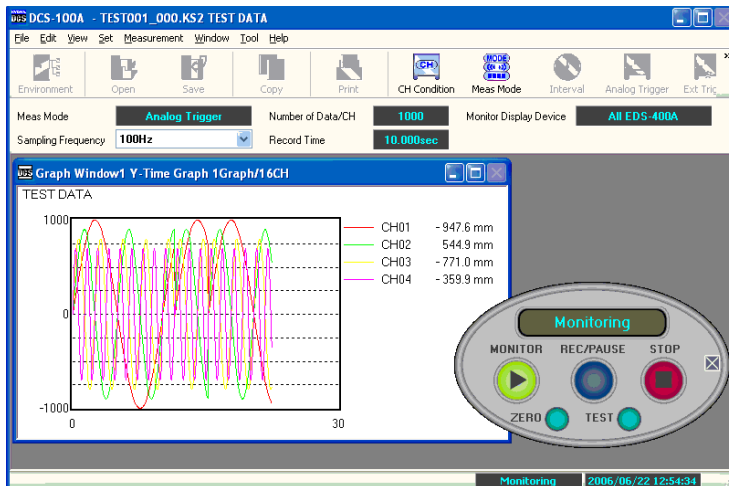
8-6-2 Interval/Analog Trigger/External Trigger/Complex Trigger Measurement

■ Operation Method

- (1) Starts monitor mode measurement by any of the following.
 - z• Point to **Measurement** and select **MONITOR** menu.
 - Select **MONITOR** icon from the toolbar.



- Click the **MONITOR** button on the **Meas Operation Panel**.

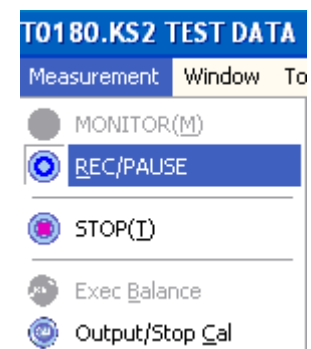
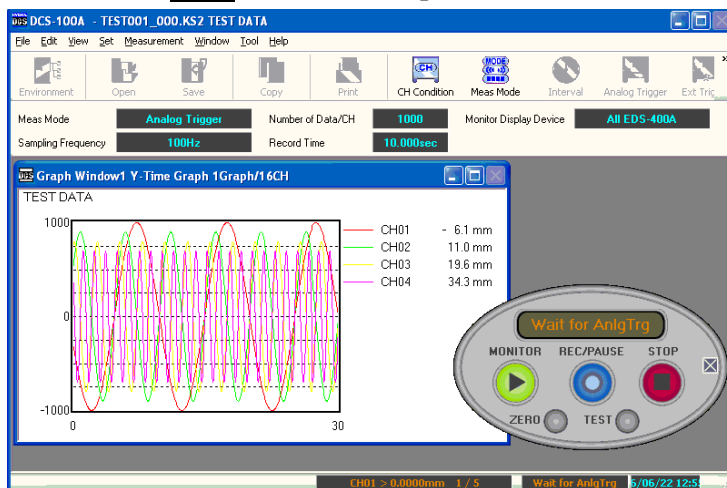


- (2) Obtain a state for waiting for various conditions by either of the following.

- Point to **Measurement** and select **REC** menu.
- Select the **REC** icon from the toolbar.



- Click **REC** on the **Meas Operation Panel**.



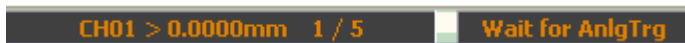
<Interval mode measurement>

On the status bar, interval measurement start date, measurement repeat times, and measurement state are displayed



<Analog trigger mode measurement>

On the status bar, trigger CH, trigger level, measurement repeat times, and measurement state are displayed.



(External trigger mode measurement>

On the status bar, waiting for Ext trigger is displayed.

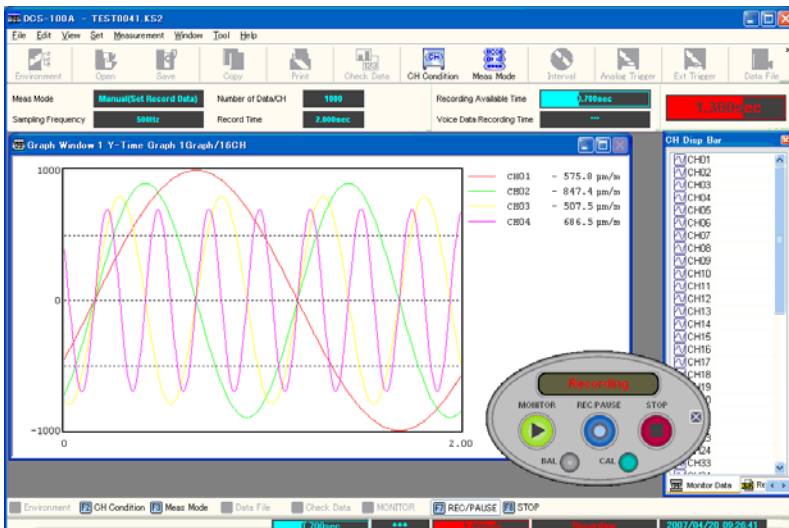


<Complex trigger mode measurement>

On the status bar, waiting for Complex trigger is displayed.



(3) After satisfying various conditions, data recording starts.



On the status bar, recording progress is displayed.



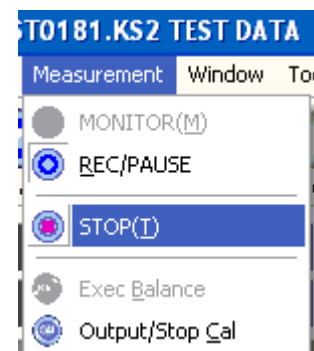
(4) After conducting the measurement for the preset repeat times, the DCS-100A becomes in monitoring state.

(5) Lastly, end the monitoring by any of the following.

- Point to **Measurement** and select **STOP** menu.
- Select the **STOP** icon from the toolbar.



- Click **STOP** on the **Meas Operation Panel**.



8-7 BALANCING

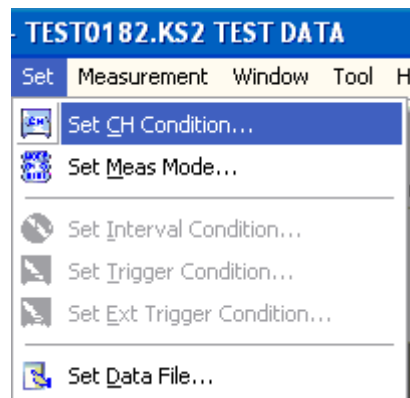
Balancing should be performed during monitoring or while the operation is pausing. Balancing cannot be performed while monitoring is stopping or during recording. Balancing can be enabled only in strain mode.

■ Operation Method

(1) Select the channels for which you want to perform balancing.

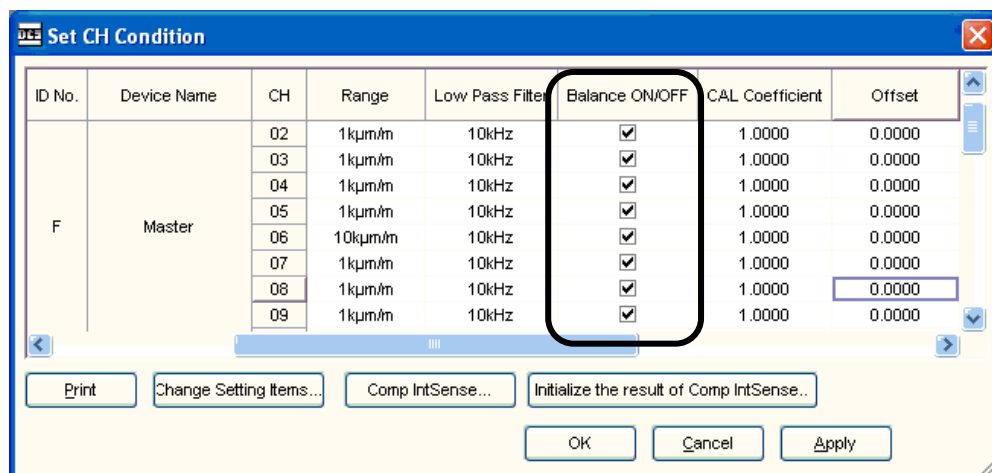
Open the **Set CH Condition** window by either of the following.

- Point to **Measurement** and select **Set CH Condition** menu.
- Select **CH Condition** icon from the toolbar.



Put check marks on target CHs in the **Balance ON/OFF** check box.

For how to set the CH condition, see “5. SETTING CH CONDITION.”



(2) Start monitoring data.

Click **MONITOR** on the **Meas Operation Panel**.

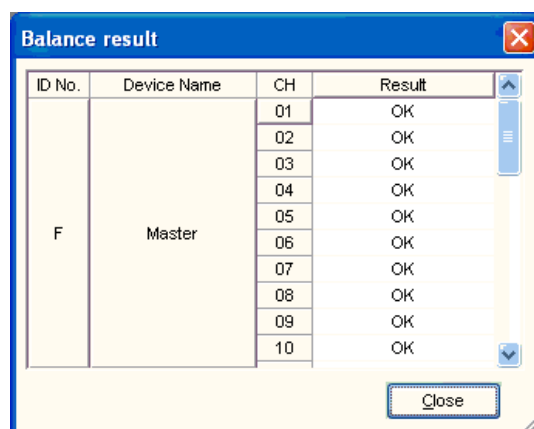
(3) Execute the Balance.

Click **BAL** on the **Meas Operation Panel**.

(4) The following balance results are displayed.

Click **CLOSE** to restart monitoring.

OK	Normal
NG	Faulty
OFF	Balancing not applicable
**	Measurement not applicable



MEMO

Even while monitoring/pausing, you can change balance target channels in **Set CH Condition**.

8-8 CALIBRATION (CAL)

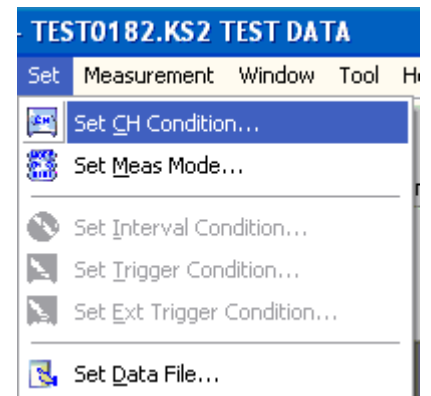
Calibration is a function that forcibly input analog that is equivalent to 50% or 100% of the specified range to channels in order to confirm that channels are properly operating. As the calibration value is entered with sensors connected, the calibration value is added to the sensor output.

■ Operation Method

(1) Set CAL target channel and CAL range.

Open the **Set CH Condition** window by either of the following.

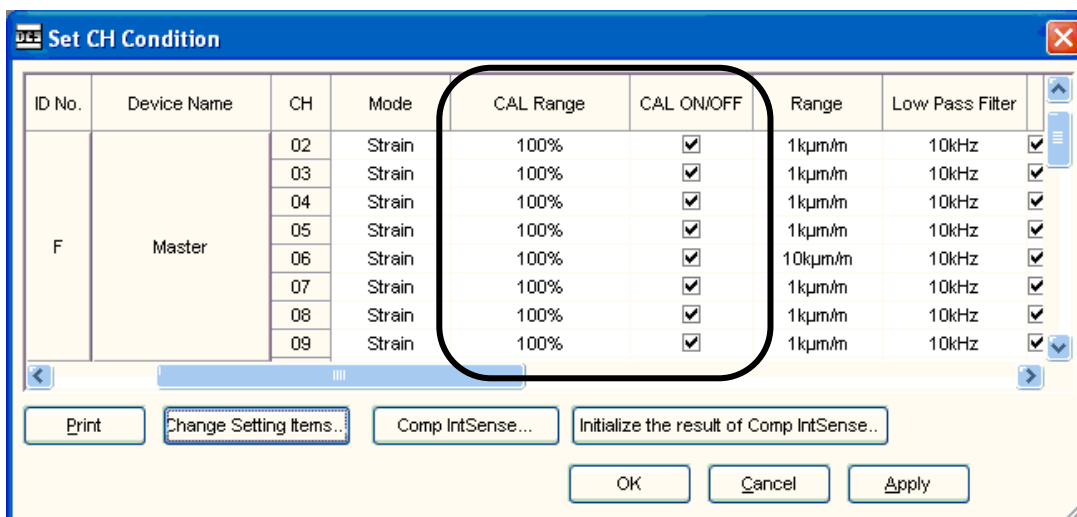
- Point to **Set** and select **Set CH Condition** menu.
- Select **CH Condition** icon from the toolbar.



Put a check mark on the CAL target CH in the **CAL ON/OFF** check box.

Select a calibration output value from the list box of the **CAL Range** column.

For how to set CH conditions, see “5. SETTING CH CONDITION.”

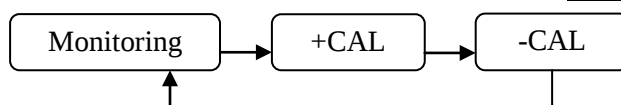


(2) Start monitoring data.

Click **MONITOR** on the **Meas Operation Panel**.

(3) Perform calibration.

The following actions are repeated every time when the **CAL** on the **Meas Operation Panel** is clicked:



The status bar displays the signal output status.



MEMO

In **Manual** measuring mode, calibration can be performed even during recording data.

8-9 COLLECTING DATA FILE

A data file can be collected by the following 2 methods: collected from the CF card in the EDX-100A, or collected from the PC's CF card drive. This section explains how to collect data file(s) from the EDX-100A CF card.

For collecting the data file from the PC's CF card drive, see "9-2 COLLECTING DATA FROM PC CONNECTED CF CARD."

If the check box for "Data file will be automatically collected from the EDX-100A after measurement" is selected in the **Environment** menu, data is automatically collected in the destination folder. In this case, there is no need to perform the procedure described below:

8-9-1 Selecting Data File

When selecting the desired data file, a common operation is provided as to put a check mark on the target file. How to put a check mark on the target file is described.

■ Selecting 1 file

- Select and click the check box of the target file **Name**.

Name	
☒	TEST0165.KS2
☐	TEST0166.KS2
☐	TEST0167.KS2

- Right-click the target file and select **Check** from the pop-up menu.

Name		Size
☒	TEST0165.KS2	71706 byte
☐	TEST0166.KS2	100506 byte
☐	TEST0167.KS2	62106 byte
☐	TEST0168.KS2	132586 byte
☐	TEST0169.KS2	123786 byte

■ Selecting All files

- Click any one of the **Name**, **Size** or **Date & Time** to select all files. Select **Check** from the popup menu.

Collect EDX-100A CF card			
Name		Size	Date & Time
☐	TEST0165.KS2	71706 byte	2006/12/08 10:53:58
☐	TEST0166.KS2	100506 byte	2006/12/08 11:45:44
☐	TEST0167.KS2	62106 byte	2006/12/08 11:45:50
☐	TEST0168.KS2	132586 byte	2006/12/08 11:46:20
☐	TEST0169.KS2	123786 byte	2006/12/08 11:46:34

- Click the **Select All** button to check the check boxes of all files.

Collect EDX-100A CF card			
Name		Size	Date & Time
☒	TEST0161.KS2	84506 byte	2006/12/08 10:53:30
☒	TEST0162.KS2	130906 byte	2006/12/08 10:53:40
☒	TEST0163.KS2	102986 byte	2006/12/08 10:54:10
☒	TEST0164.KS2	49346 byte	2006/12/08 10:54:28
☒	TEST0165.KS2	71706 byte	2006/12/08 10:54:58
☒	TEST0166.KS2	100506 byte	2006/12/08 11:45:44
☒	TEST0167.KS2	62106 byte	2006/12/08 11:45:50
☒	TEST0168.KS2	132586 byte	2006/12/08 11:46:20
☒	TEST0169.KS2	123786 byte	2006/12/08 11:46:34
☒	TEST0170.KS2	98986 byte	2006/12/08 11:46:42
☒	TEST0171.KS2	78146 byte	2006/12/08 11:54:50
☒	TEST0172.KS2	54946 byte	2006/12/08 11:56:02

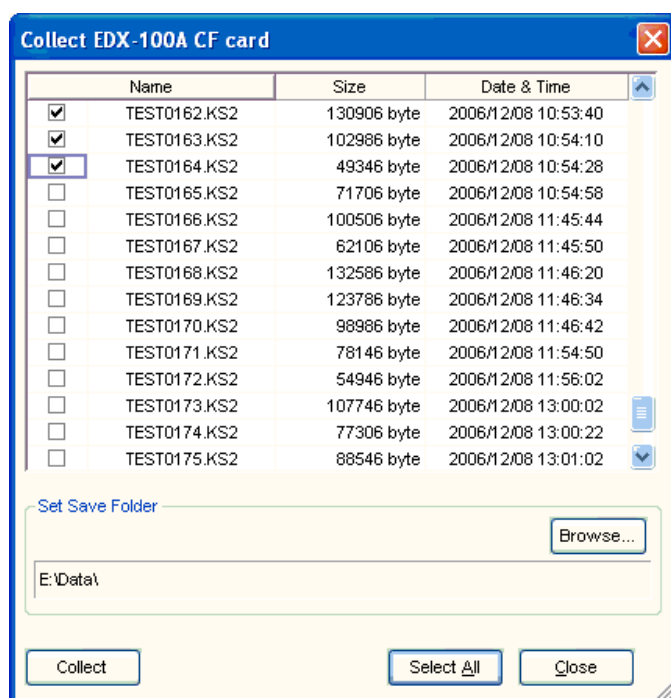
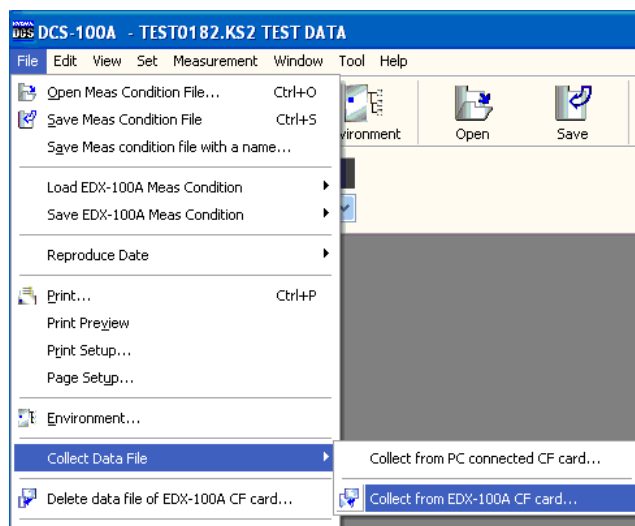
Set Save Folder
[E:\Data\]
[Browse...]
[Collect] [Select All] [Close]

8-9-2 Collecting Data from EDX-100A CF CARD

Method of collecting data from CF card in the EDX-100A is described.

When data is recorded by connecting multiple EDX-100A units, data is combined and collected into 1 data file.

Point to **File** on the menu bar and select menus in due order from **Collect Data File** and **Collect from EDX-100A CF Card**.



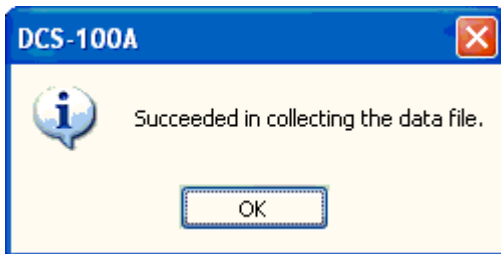
- (1) **Name**Data file name
Put a check mark on the target file box for collecting data.
- (2) **Size**Data file size
- (3) **Date & Time**Date and time of the data file
- (4) **Set Save Folder**Set save folder destination for saving the collected data file
- (5) **Collect** buttonCollect check marked CF card data file to PC's save destination folder.
- (6) **Select all** buttonChecks all data files in the CF card to be collect target files.
- (7) **Close** buttonClose the **Collect Data File** window.

■ Operation Method

- (1) Select the check boxes for the files you want to collect, select a data file destination from **Browse**, and click the **Collect** button.

For how to put a check mark, see “8-9-1 Selecting Data File.”

- (2) After collecting data, the following message appears. Press the **OK** button to close the message.



- (3) Click the **Close** button on the **Collect Meas Data File window**.

9. OFFLINE MEASUREMENT

9-1 SAVING & LOADING MEAS CONDITION

9-1-1 Saving Data in PC Connected CF Card

The current Meas conditions are saved into the PC connected CF card as EDX-100A dedicated Meas conditions file. For offline mode measurement, the following steps are required.

Insert the EDX-100A CF card into the CF card slot and set the desired Meas conditions.

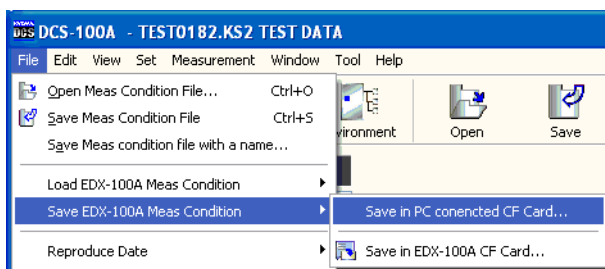
The file name shall be 'EDX100A.SET.'

In addition, if the measurement is conducted with the same conditions, the Meas conditions can be set at a time by loading the same Meas condition file the next time.

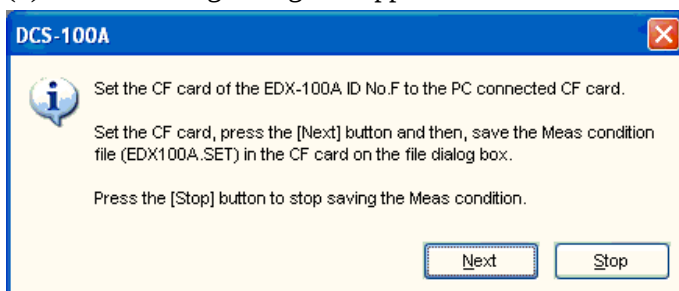
Hardware configuration, CH conditions, Meas conditions and data file conditions are saved in the Meas conditions. Especially for the hardware configuration, be sure to properly set the number of slots, conditioner card type, etc. Meas conditions can be saved on a CF card even with an incorrect setting, however an error occurs when the card is read by the EDX-100A.

■ Operation Method

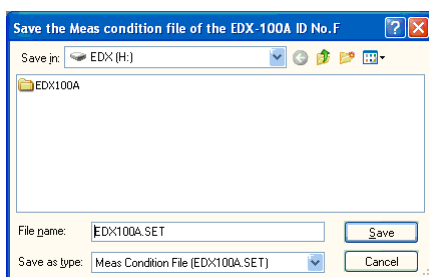
- (1) Point to **File** on the menu bar and select menus in due order from **Save EDX-100A Meas Condition** and **PC Connected CF Card**.



- (2) The following dialog box appears. Insert a CF card in the PC's CF card drive and click the **Next** button.



- (3) The Save the Meas condition file dialog box appears. Select the PC's CF card drive and click **Save** to save the file.



- (4) Insert the CF card on with the Meas condition file into the card slot of the EDX-100A, and press the **READ** switch on the EDX-100A. When the card is successfully read, the BUSY LED lights out. For details, refer to "EDX-100A INSTRUCTION MANUAL FOR HARDWARE".

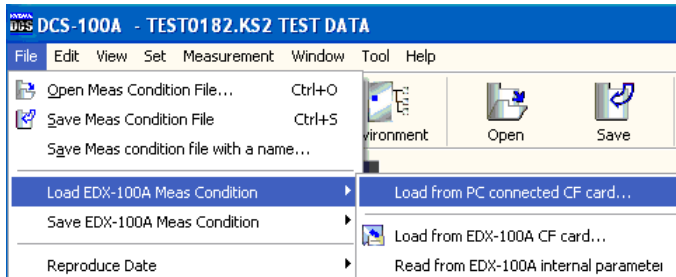
9-1-2 Loading Meas Condition File from PC Connected CF Card

Meas condition file is loaded from the PC's CF card drive.

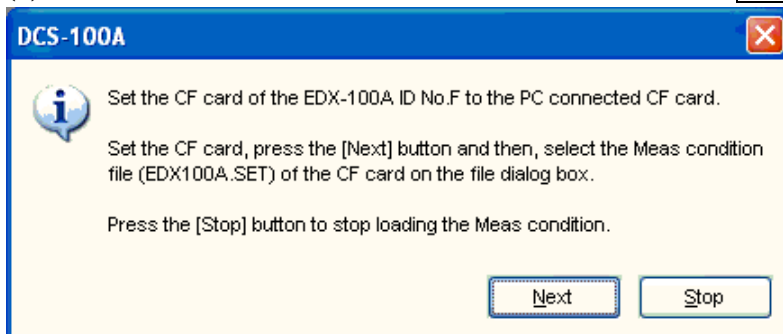
The data loaded from the CF card includes device name and all items (CH conditions, Meas conditions, number of slots, conditioner card type, data file name, beep sound, etc.) except network conditions. Therefore, when the CF card is successfully loaded, the newly loaded Meas conditions are overwritten on the current set Meas conditions.

■ Operation Method

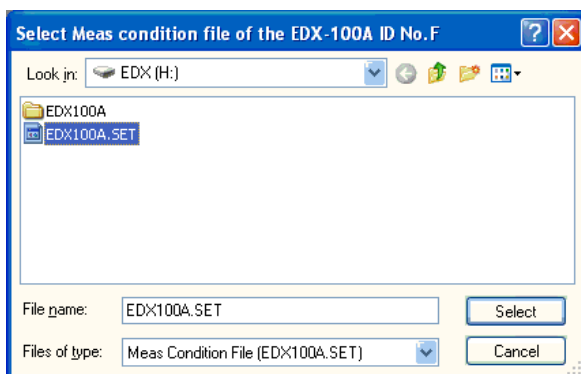
- (1) Point to **File** on the menu bar and select menus in due order from **Load EDX-100A Meas Condition** and **Load From PC Connected CF Card**.



- (2) Insert a CF card into the PC's CF card drive and click the **Next** button.

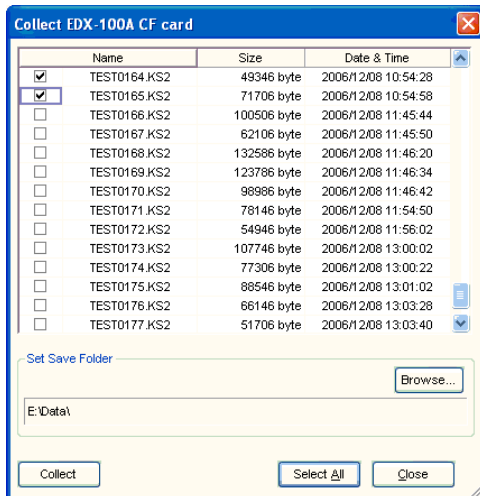


- (3) The Select Meas condition file dialog box appears. Select **EDX100A.SET** and click the **Select** button to load the Meas condition file.



9-2 COLLECTING DATA FROM PC CONNECTED CF CARD

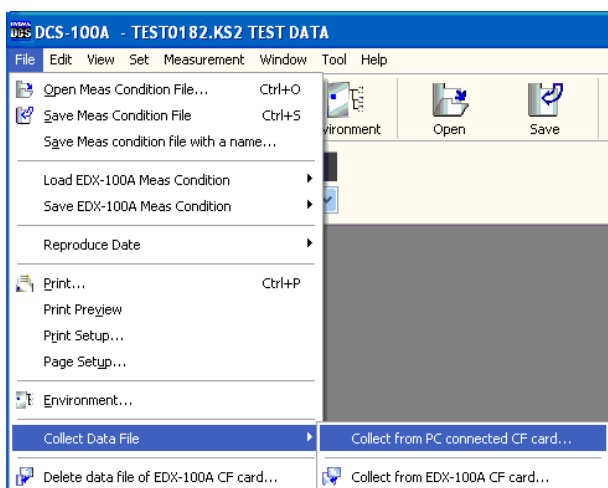
Data is collected from the PC connected CF card.



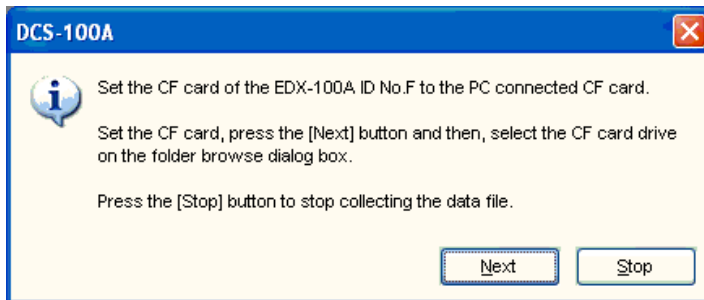
- (1) **Name**Data file name
Put a check mark on the target file box for collecting data.
- (2) **Size**Data file size
- (3) **Date & Time**Date and time of the data file
- (4) **Set Save Folder**Set save folder destination for saving collected data file
- (5) **Collect** buttonCollect check marked CF card data file to PC save destination folder.
- (6) **Select all** buttonChecks all data files in the CF card to be collect target files.
- (7) **Close** buttonClose the **Collect Data File** window.

■ Operation Method

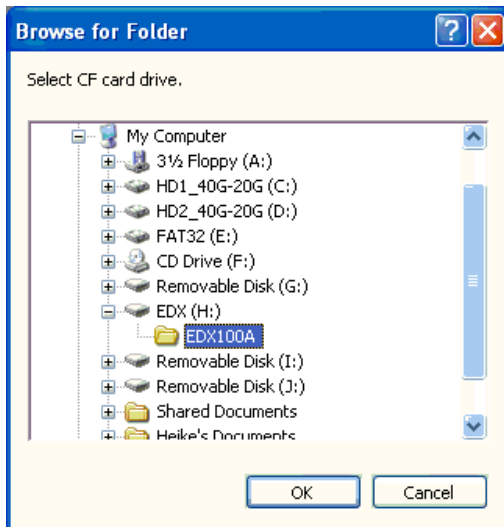
- (1) Point to **File** and select menus in due order from **Collect Data File**, and **Collect from PC Connected CF Card**.



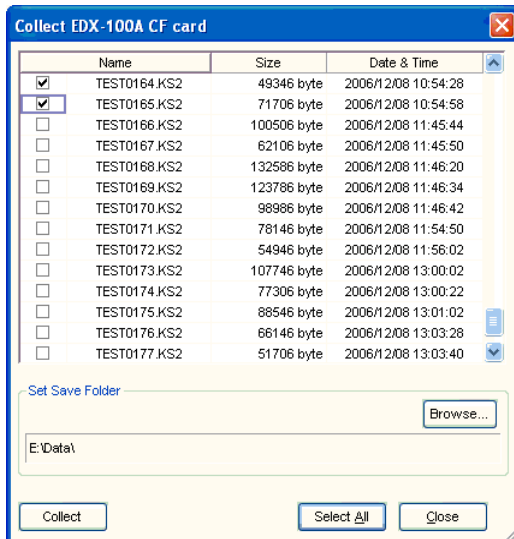
(2) Insert a CF card into the PC's CF card drive and click the **Next** button



(3) The **Browse for Folder** window appears. Select the PC's CF card drive and click the **OK** button

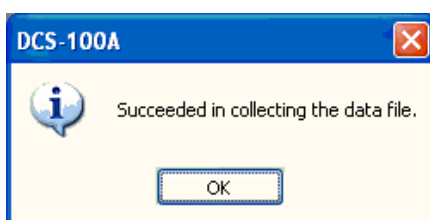


(4) **Collect EDX-100A CF Card** measured data file collecting window appears.



(5) Put check marks on the target files, select the data file destination from **Browse**, and click the **Collect** button. For how to put a check mark, see “8-9-1 Selecting Data File.”

(6) After collecting the data, the following message appears. Press the **OK** button to close the message.



9-3 SUPPLEMENTARY EXPLANATION FOR SETTING MEAS CONDITION OF OFFLINE MEASUREMENT

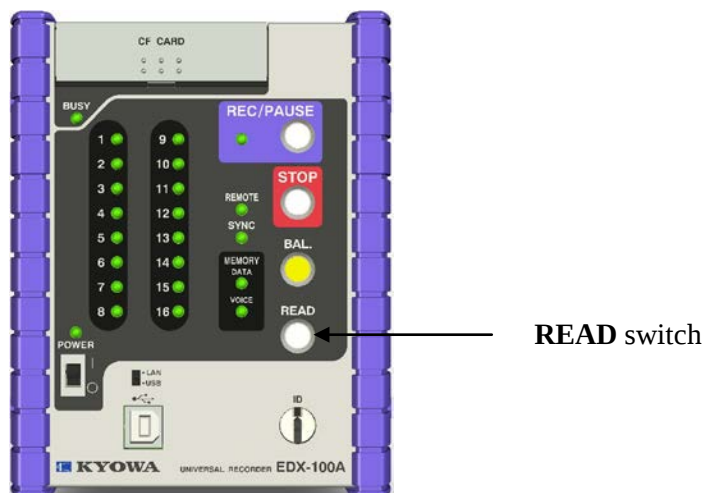
To carry out stand-alone off line measurement by the EDX-100A, it is required to set various Meas conditions such as CH condition, Meas mode, data file name, etc. to the EDX-100A from the DCS-100A.

These Meas conditions can be set by the following 2 methods: One is to set the Meas conditions in the EDX-100A inserted CF card via USB or LAN interface and the other is to save the Meas conditions in the CF card medium itself in removable disk and then, insert the CF card into the EDX-100A.

Here, supplementary explanation is made on setting and measurement using the CF card media itself.
(There is no need to set USB or LAN interface related network.)

- (1) On the **Environment** window, select **EDX-100A CF card** for the data file destination.
- (2) Set data file name on the **Set Data File** window. See “7. SETTING DATA FILE.”
- (3) Set various CH conditions Meas conditions, etc. as same as set for online measurement.
Save Meas condition to PC inserted CF card.
See “9-1-1 Saving Data in PC Connected CF Card.”
- (4) Extract the CF card, insert it into the EDX-100A and press the **READ** switch to set the Meas conditions.
- (5) Stand-alone offline measurement is carried out solely by the EDX-100A and the recording data file is saved in the CF card.
- (6) Extract the EDX-100A CF card and insert it into the PC card slot.
- (7) For how to collect data, see “9-2 COLLECTING DATA FROM PC CONNECTED CF CARD.”

For how to set online Meas conditions from the PC, see “10-3-1 Saving Data in EDX-100A CF Card.”



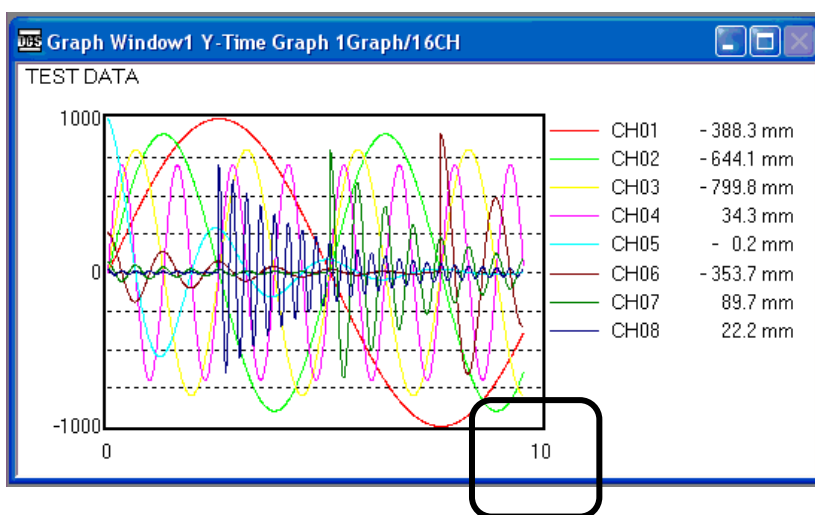
10. OTHERS

10-1 SETTING SCALE VALUE

In the **Y-Time graphic** window, up to 50,000 data points can be plotted on the X-axis scale. Therefore, the scale value is set as shown below:

For how to set the scale value, see the attached “DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (For Common Operation).”

Sampling Frequency	Set Value (sec)
100 kHz	0.5
50 kHz	1
20 kHz	2.5
10 kHz	5
5 kHz	10
2 kHz	25
1 kHz	50
•	•
•	•
•	•
5 Hz	10000
2 Hz	25000
1 Hz	50000



10-2 SAVING AND LOADING MEAS CONDITION FILE

This section describes details of saving and loading Meas condition file.

10-2-1 Saving Meas Condition File with a Name

The current Meas condition is saved into the PC as a DCS-100A dedicated Meas condition file.

Extension of the Meas condition file shall be 'E1H.'

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 conditions include currently monitoring graph display condition besides CH condition, Meas condition, and data file condition.

NOTE

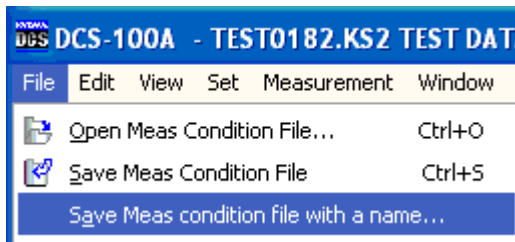
This Meas condition file is dedicated for the DCS-100A.

Save offline Meas conditions by selecting menus in due order from **File - Save EDX-100A Meas Condition**.

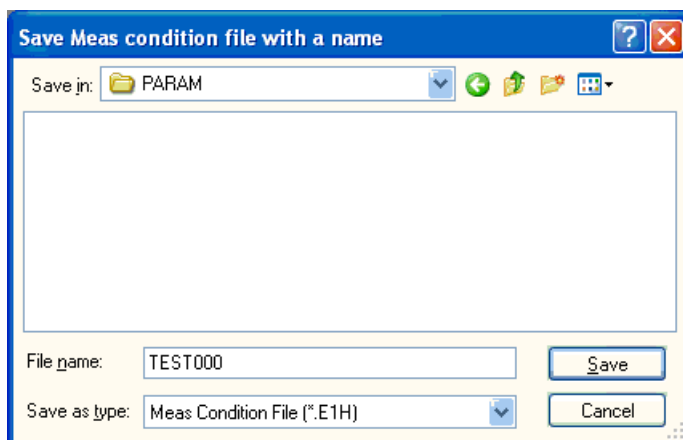
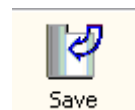
■ Operation Method

Open the **Save Meas Condition File with a name** window by either of the following.

- Point to **File** on the menu bar and select **Save Meas condition file with a name** menu.



- Select the **Save** icon from the toolbar.



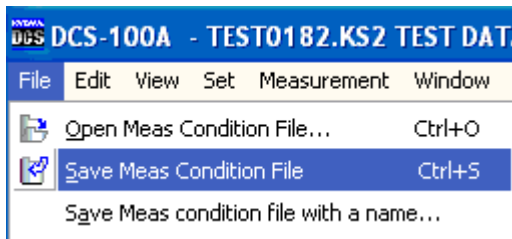
Select **Save in** (file saving destination), input a file name, and click the **Save** button.

10-2-2 Saving Meas Condition File

The current Meas condition is saved to the DCS-100A dedicated Meas condition file (Extension: E1H).

■ Operation Method

Point to **File** on the menu bar and select **Save Meas Condition File** menu.



If the current Meas condition is not yet saved, the **Save Meas Condition file with a name** window appears. For details, see “10-2-1 Saving Meas Condition File with a Name.”

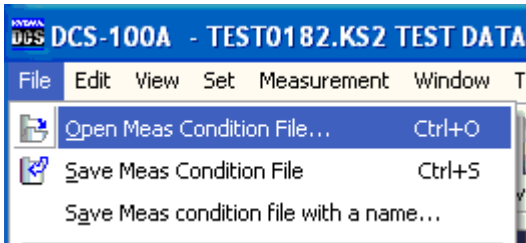
10-2-3 Opening Meas Condition File

Previously saved DCS-100A dedicated Meas condition file (Extension: E1H) is loaded.

■ Operation Method

The **Open Meas Condition File** window is opened by the following 3 method.

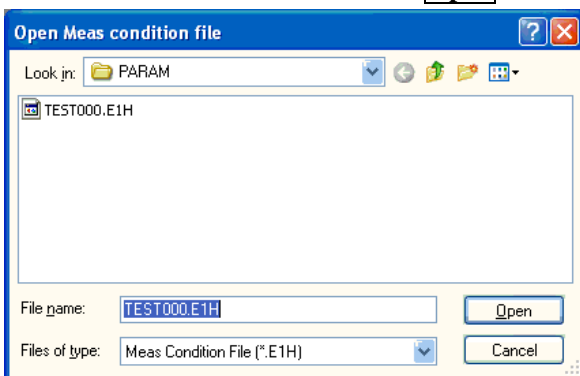
- Point to **File** on the menu bar and select **Open Meas Condition File** menu.



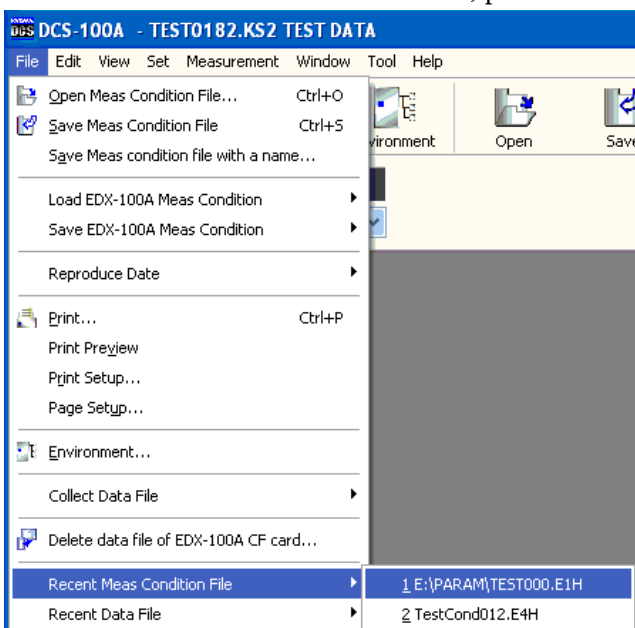
- Click the **Open** icon from the toolbar.



Select a file name and click the **Open** button.



- If the desired file is a recent file, point to **File** and select from **Recent Meas Condition File** menu.



10-3 SAVING & LOADING ONLINE MEAS CONDITIONS

10-3-1 Saving Data in EDX-100A CF Card

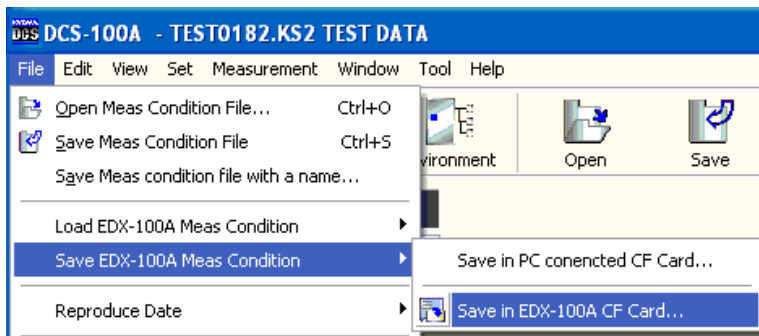
The current Meas conditions are saved as EDX-100A dedicated Meas condition file into the EDX-100A CF card. The file name shall be 'EDX100A.SET.'

It is a Meas condition file for carrying out offline measurement by the EDX-100A.

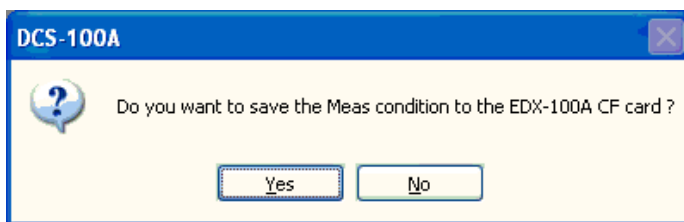
Channel conditions, Meas conditions and data file conditions are saved in the above Meas condition file.

■ Operation Method

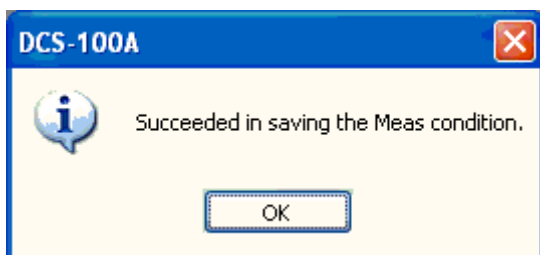
- (1) Point to **File** and select menus in due order from **Save EDX-100A Meas Condition – Save in EDX-100A CF Card**.



- (2) Set the CF card in the EDX-100A and press the **Yes** button to conduct the save operation.



- (3) The following message appears. Press the **OK** button.

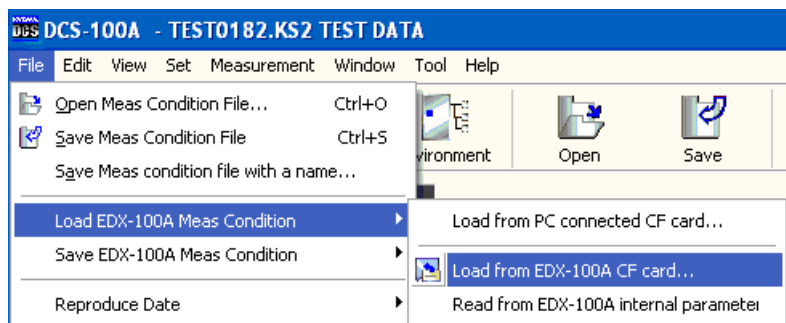


10-3-2 Loading from EDX-100A CF Card

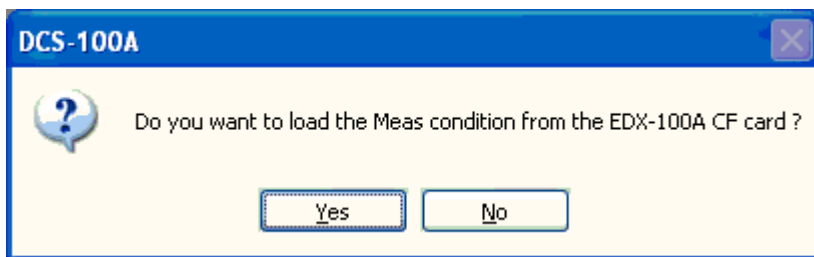
Meas condition file is loaded from the EDX-100A CF card.

■ Operation Method

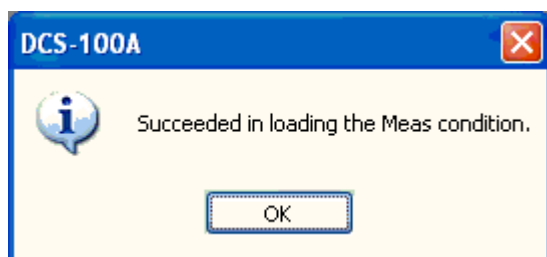
- (1) Point to **File** on the menu bar and select menus in due order from **Load EDX-100A Meas Condition - Load from EDX-100A CF Card**.



- (2) Insert the CF card into the EDX-100A and click the **Yes** button.



- (3) The loading of Meas condition file is complete and the result message appears. Click the **OK** button to close the dialog box.

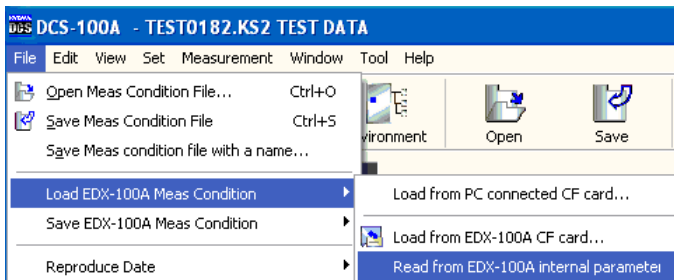


10-3-3 Loading Data from Internal Parameters of the EDX-100A

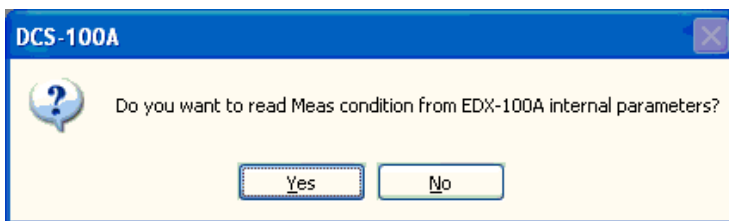
The EDX-100A is provided with information on Meas conditions, channel conditions and hardware configuration. This menu is used to load such data. The internal parameters are updated when the Meas conditions are saved.

■ Operation Method

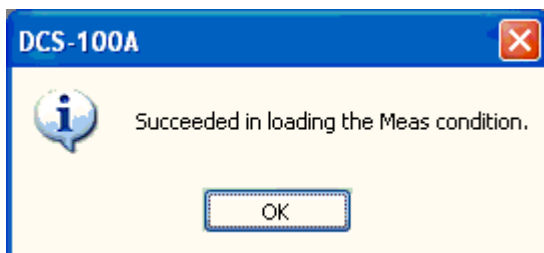
- (1) Point to **File** on the menu bar and select menus in due order from **Load EDX-100A Meas Condition - Load Data from Internal Parameters of EDX-100A**.



- (2) The following dialog box appears to confirm the data reading. Click the **Yes** button.



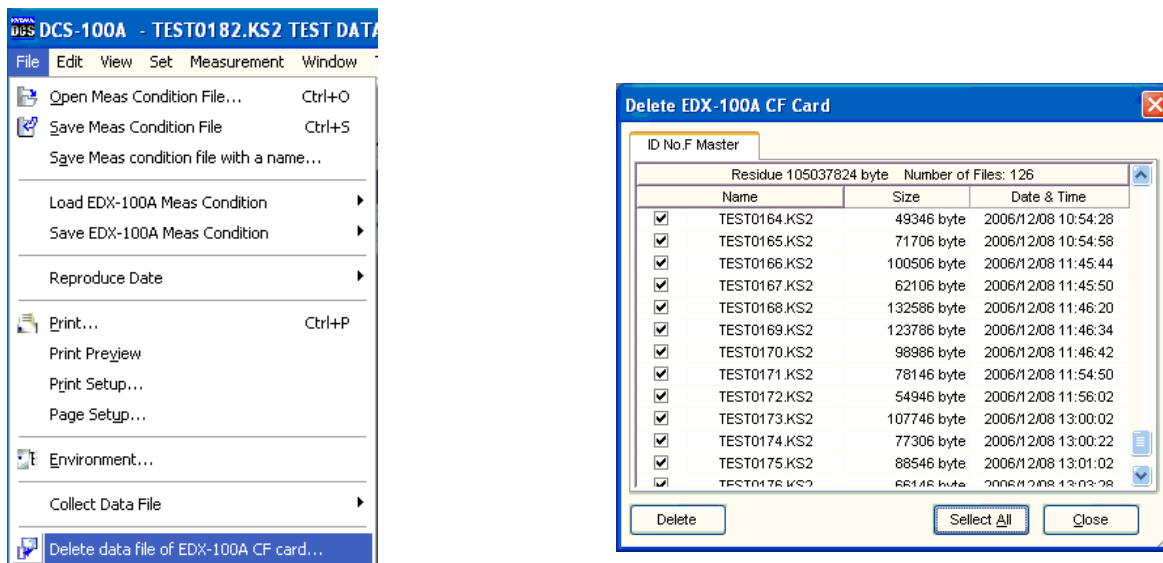
- (3) The loading of Meas conditions is complete, and the result message appears. Click the **OK** button to close the dialog box.



10-4 DELETING DATA FILE IN THE EDX-100A CF CARD

This section describes how to delete a data file saved in the EDX-100A CF card.

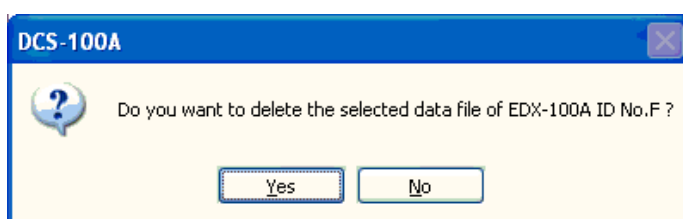
Point to **File** on the menu bar and select **Delete data file of EDX-100A CF Card** menu.



- (1) **ID No. Page**Data file in the CF card is displayed for every connected EDX-100A units.
- (2) **Residue, Number of Files**Residual capacity of the CF card and the number of files.
- (3) **Name**Data file name
Put a check mark to be a delete target file.
- (4) **Size**Size of the data file
- (5) **Date & Time**Date and time of the data file
- (6) **Delete** buttonDelete the check marked data file in the CF card.
- (7) **Select all** buttonCheck all the data file in the CF card to be delete target files.
- (8) **Close** buttonClose the data file list window in the CF card.

■ Operation Method

- (1) Open the delete target ID No. page.
- (2) Put a check mark on the target file name box for deleting data and press the **Delete** button.
For how to put a check mark, see “8-9-1 Selecting Data File”
- (3) The following message appears to confirm the deletion of the desired file. If it is OK, Press the **Yes** button to delete the desired file.



NOTE

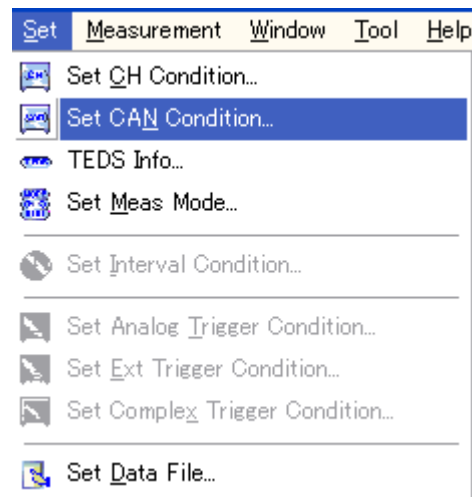
- It takes about 2 to3 minutes to delete a file with the file size approximately 2 Gbytes. Since no canceling is allowed while deleting data, wait until deleting process ends.

11. SETTING CAN CONDITION

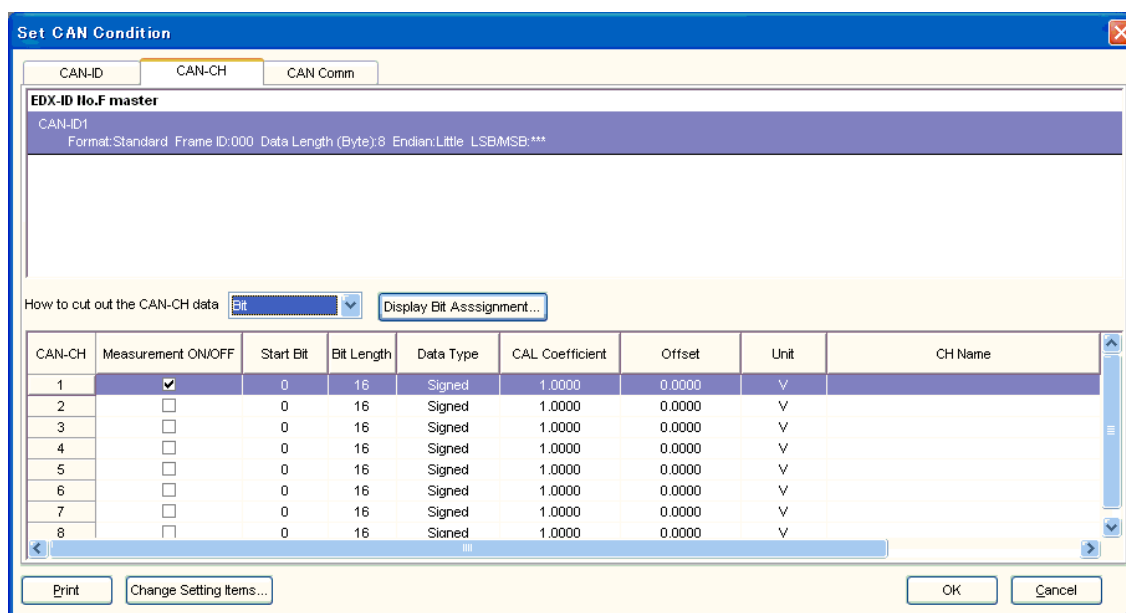
When CAN card is installed in the EDX-100A, before recording the CAN data, set CAN communication condition, CAN-ID condition, and CAN-CH condition.

Open the **Set CAN Condition** window by either of the following.

- Point to **Set** on the menu bar and select **Set CAN Condition** menu.
- Select **CAN Condition** icon from the toolbar.



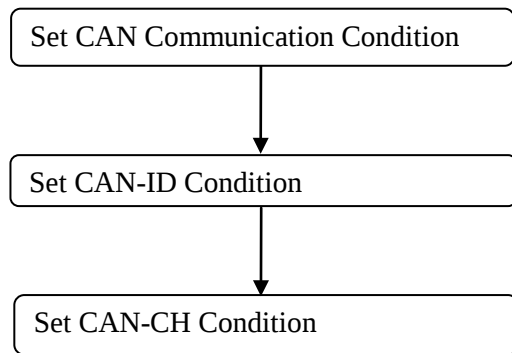
Details of tabs such as **CAN-ID**, **CAN-CH** condition, and **CAN-Communication** condition on the following **Set CAN Condition** window are described.



■ Common Operation of All Tabs

- (1) **Print** button.....Print CAN-Communication condition, CAN-ID condition, and CAN-CH condition.
- (2) **Change Setting Items** buttonAdd, delete, and sort setting items displayed on the **Set CAN Condition** window.
For how to operate is as same as described in “5.SETTING CH CONDITION.”
- (3) **OK** buttonDetermines the set contents and closes the **Set CAN Condition** window.
- (4) **Cancel** buttonCancels the set contents and closes the **Set CAN Condition** window.

■ **Procedures for Setting Conditions for Recording the CAN Data**



11-1 SETTING CAN COMMUNICATION CONDITION

EDX-ID No.	Device Name	CAN Comm Std	Comm Speed (kbps)	Sample Point	Sample Times	Resync Jump Width	Term Resist
F	master	High Speed CAN	500	80.0%(TSEG1:15, TSEG2:4, 40MHz)	1	2	OFF

■ Setting Items

(1) EDX-ID No.

ID No. of the CAN card installed EDX-100A.

(2) Device Name

Device name of the EDX-100A that is set in Register Device Information in “4. SETTING ENVIRONMENT.”

(3) CAN Comm Std

Set **Communication Standard**.

Select either of the two from the list box.

- High Speed CAN
- Low Speed CAN

When the communication standard is changed, default of the communication conditions is set as described in the following table.

	High Speed CAN	Low Speed CAN
Communication Speed (kbps)	500	125
Sample Point	80.0% (TSEG1: 15, TSEG2: 4, 40 MHz)	
Sample Times	1	
Synchronous Jump Width (SJW)	2	

(4) Comm Speed (kbps)

Set communication speed.

Select from the following options in the list box.

The communication speed shall be as follows according to preset CAN communication standard.

- High Speed CAN: 1000, 800, 500, 250, 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, and 10 [kbps]
- Low Speed CAN: 125, 100, 83.3, 62.5, 50, 33.3, 25, 20, and 10 [kbps]

(5) Sample Point

Set Sample Point.

Select from the following options in the list box.

Setting available sample point values are listed in the following. Set the desired sample point and the TSEG1 and TSEG2 values are automatically set. In addition, 40 MHz/32 MHz in parentheses () is an operation clock of CAN controller.

Communication Speed: Other than 800 kbps

- 85.0% (TSEG1:16, TSEG2:3, 40 MHz)
- 80.0% (TSEG1:15, TSEG2:4, 40 MHz)
- 75.0% (TSEG1:14, TSEG2:5, 40 MHz)
- 70.0% (TSEG1:13, TSEG2:6, 40 MHz)
- 65.0% (TSEG1:12, TSEG2:7, 40 MHz)
- 60.0% (TSEG1:11, TSEG2:8, 40 MHz)
- 80.0% (TSEG1:7, TSEG2:2, 40 MHz)
- 70.0% (TSEG1:6, TSEG2:3, 40 MHz)
- 60.0% (TSEG1:5, TSEG2:4, 40 MHz)
- 87.5% (TSEG1:13, TSEG2:2, 32 MHz)
- 81.3% (TSEG1:12, TSEG2:3, 32 MHz)
- 75.0% (TSEG1:11, TSEG2:4, 32 MHz)
- 68.8% (TSEG1:10, TSEG2:5, 32 MHz)
- 62.5% (TSEG1:9, TSEG2:6, 32 MHz)
- 56.3% (TSEG1:8, TSEG2:7, 32 MHz)
- 75.0% (TSEG1:5, TSEG2:2, 32 MHz)
- 62.5% (TSEG1:4, TSEG2:3, 32 MHz)

Communication Speed: 800 kbps

- 85.0% (TSEG1:16, TSEG2:3, 32 MHz)
- 80.0% (TSEG1:15, TSEG2:4, 32 MHz)
- 75.0% (TSEG1:14, TSEG2:5, 32 MHz)
- 70.0% (TSEG1:13, TSEG2:6, 32 MHz)
- 65.0% (TSEG1:12, TSEG2:7, 32 MHz)
- 60.0% (TSEG1:11, TSEG2:8, 32 MHz)
- 80.0% (TSEG1:7, TSEG2:2, 32 MHz)
- 70.0% (TSEG1:6, TSEG2:3, 32 MHz)
- 60.0% (TSEG1:5, TSEG2:4, 32 MHz)

NOTE

In the list box, only items that is set to TSEG2 value of more than currently set synchronous jump width (SJW) are displayed. If the desired sample point for setting is not displayed, check the synchronous jump width value (SJW).

(6) **Sample Times**

Set sample times.

Select the desired **Sample Times** from the following options in the list box.

Options: 1 and 3 (times)

(7) **Resync Jump Width (SJW)**

Set **Synchronous Jump Width** value with unit of TimeQuanta.

Select from the following options in the list box.

Options: 1, 2, 3, and 4

NOTE

In the list box, only items that is set to less than TSEG2 value of currently set sample point is displayed. If the desired synchronous jump width value for setting is not displayed, check the sample point value.

(8) **Terminat Resistance**

Set **Terminating Resistance**.

Select from the following options in the list box.

Options: OFF and ON

11-2 SETTING CAN-ID CONDITION

This section describes data frame conditions on the CAN bus. The EDX-100A is capable of recording up to 16 types of data frame.

Click the target "CAN card installed EDX-ID No."

CAN-ID	Measurement ON/OFF	Format	Frame ID	Data Length (Byte)	Endian	LSB/MSB	Number of CAN-CHs	CAN-ID Name
1	☒	Standard	000	8	Big	LSB	1	
2	☐	Standard	001	8	Big	LSB	1	
3	☐	Standard	000	8	Big	LSB	0	
4	☐	Standard	000	8	Big	LSB	0	
5	☐	Standard	000	8	Big	LSB	0	
6	☐	Standard	000	8	Big	LSB	0	
7	☐	Standard	000	8	Big	LSB	0	
8	☐	Standard	000	8	Big	LSB	0	
9	☐	Standard	000	8	Big	LSB	0	
10	☐	Standard	000	8	Big	LSB	0	
11	☐	Standard	000	8	Big	LSB	0	
12	☐	Standard	000	8	Big	LSB	0	
13	☐	Standard	000	8	Big	LSB	0	
14	☐	Standard	000	8	Big	LSB	0	
15	☐	Standard	000	8	Big	LSB	0	
16	☐	Standard	000	8	Big	LSB	0	

■ Setting Items

(1) Display ID

ID No. of the CAN card installed data frame is displayed in serial number.

(2) CAN-ID

ID Nos. of maximum 16 types of data frames.

(3) Measurement ON/OFF

Monitors and records only data frame ID that is set to ON with a check mark.

NOTE

CAN-ID with **Measurement ON/OFF** set to ON with a check mark shall be a target for recording and monitoring.

In addition, data file size of CAN-ID of which data is not required to record becomes small by setting the **Measurement ON/OFF** to OFF.

(4) Format

Set **Format** of data frame ID.

Select from the following options in the list box.

Options: Standard and Extension

(5) Frame ID

Set data **Frame ID** in hex number.

Setting range

- Standard data frame format: 0 to 7FFH (11 bits)
- Extended data frame format: 0 to 1FFFFFFFH (29 bits)

NOTE

Suppose CAN-ID is set to ON. If duplicated data frame ID is set with the same data frame format, **Measurement ON/OFF** of the duplicated data frame ID is changed to OFF when setting the CAN-ID Conditions is finished.

(6) Data Length (Byte)

Set **Data Length** of the internal data frame.

Setting range

- 1 to 8 (Bytes)

NOTE

When **Data Length** is changed, **Start Bit**, **Bit Length**, and **Data Type** in the CAN-CH condition may be automatically changed.

After changing the **Data Length**, always check the CAN-CH condition.

(7) Endian (Byte)

Set data frame **Endian**.

Select from the following options in the list box.

Options: Little and Big

<Description>

• Little

Data length is incremented by byte to the right by considering the data frame head as the least significant byte.

Example 1) Data length: 8 bytes

7	0	15	8	23	16	31	24	39	32	47	40	55	48	63	56
---	---	----	---	----	----	----	----	----	----	----	----	----	----	----	----

LSB

MSB

(Least Significant Byte)

(Most Significant Byte)

Example 2) Data length: 4 bytes

7	0	15	8	23	16	31	24
---	---	----	---	----	----	----	----

LSB

MSB

(Least Significant Byte)

(Most Significant Byte)

• Big

Data length is incremented by byte to the left by considering the data frame end as the least significant byte.

Example 1) Data length: 8 bytes

63	56	55	48	47	40	39	32	31	24	23	16	15	8	7	0
----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---

MSB

LSB

(Most Significant Byte)

(Least Significant Byte)

Example 2) Data length: 4 bytes

31	24	23	16	15	8	7	0
----	----	----	----	----	---	---	---

MSB

LSB

(Most Significant Byte)

(Least Significant Byte)

(8) **LSB/MSB**

When cutting out the CAN-CH data, specify the location (**LSB/MSB**) for start cutting the data.

It is only enabled with the Endian set to Big.

Select from the following options in the list box.

Options: LSB and MSB

(9) **Number of CAN CHs**

Display the **Number of CAN CHs** that is set to **Measurement ON** in CAN-CH condition.

(Editing not allowed.)

(10) **CAN-ID Name**

Set data frame **CAN ID Name**.

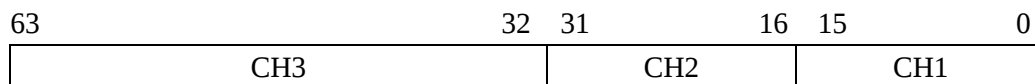
Input the **CAN ID Name** within 40 characters.

11-3 SETTING CAN-CH CONDITION

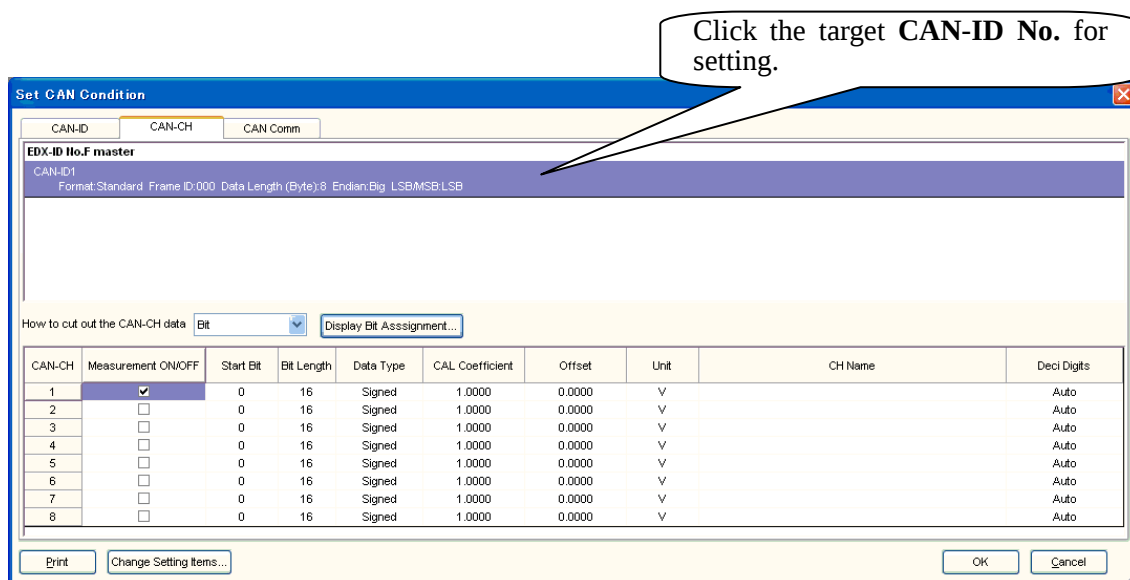
How to cut out data in the data frame on the CAN bus is set on the **Set Can Condition** window.

Up to 8-CH per data frame can be set as CAN-CH.

The following is an example of 3 data included in a data frame with data length: 8 bytes and endian: Big.



	Start Bit	Bit Length
CH1	0	16
CH2	16	16
CH3	32	32



■ Setting Items

(1) How to cut out the CAN-CH data

Set how to cut out the CAN CH data.

Select from the following options in the list box.

Options

- Bit: Set data position with bit No.
- Point: Set data position with XY (X: Byte No., Y: Bit No.)

(2) Display CH

Displays CH No. when graphically and numerically displaying the CAN data in CH unit.

(3) CAN-CH

Indicates **CAN-CH No.** of maximum 8 channels.

(4) **Measurement ON/OFF**

Set CAN-CH for displaying data recorded on monitor and data reproduce window in engineering unit.

- **Measurement ON:** Data is cut out with start bit (SB), bit length (LN), data type, etc. that are set in the measured data frame to be displayed in numeric value.
- **Measurement OFF:** Displaying data cut out from the measured data frame is not allowed.
In addition, setting all the CAN-CHs to **Measurement OFF** is not allowed with this menu.
If all the CAN-CHs are not subjected to measurement, set the CAN-CH to **Measurement OFF** in CAN-ID Condition menu.

MEMO

- Regardless of the Measurement ON/OFF, the recorded data is stored with all the data of the preset data frame ID. However, take care that displaying the data in engineering unit is not available unless the data is correctly set.
- It is recommended to set the number of CAN-CHs of the **Measurement ON** to the number of data types in the data frame.

(5) **Start Bit** (Displayed when **How to cut out the CAN-CH data** is set to **Bit**)

Set a position for start cutting the CAN-CH data with bit No.

Setting available range

- 0 to 63: Setting range varies with data length and bit length of the data frame.

(6) **Start Point** (Displayed when **How to cut out the CAN-CH data** is set to **Point**)

Set CAN-CH data start cutting point with XY (X: Byte No., Y: Bit No.)

Setting available range

- 0 to 77

(7) **End Point** (Displayed when **How to cut out the CAN-CH data** is set to **Point**)

Set CAN-CH data end cutting point with XY (X: Byte No., Y: Bit No.)

Setting available range

- 0 to 77

(8) **Bit Length**

Set **Bit Length** of cut out CAN-CH data.

Setting available range

- 0 to 64: Setting range varies with data length and bit length of the data frame.

(9) Data Type

Set the type of cut out data.

Select from the following options in the list box.

Options

- Signed Signed integer type data
- Unsigned Unsigned integer type data
- Float Real type data (32 bit : 4 bytes)
Float range: -3.4028E+38 to -1.1755E-38,0,
1.1755E-38 to 3.4028E+38
- Double Real type data (64 bits : 8 bytes)
Double range: -1.7976E+308 to -2.2250E-308,0,
2.2250E-308 to 1.7976E+308

NOTE

- Float and Double data types are selectable only when data length of the data frame is more than 4 bytes and 8 bytes, respectively.
If selecting the above is not available, check **Data Length** on the **CAN-ID Condition** window.
- When selecting the real type data, **Start Bit/Bit Length** may be automatically changed.
After setting the data type, always check the **Start Bit/Bit Length**. In addition, if improper **Data Length** and **Endian** of the data frame are set, malfunction may be caused to the EDX-100A.
- DCS-100A is capable of displaying only data in the Float range Therefore, if real type data is selected, the correct value may not be displayed.

(10) CAL Coefficient

Set **CAL Coefficient** to convert the cut out data into physical value.

The physical value is converted with the following expression.

Physical value = Cut out data × CAL coefficient + Offset

MEMO

Generally, **CAL Coefficient** and **Offset** are set when real type data is converted into physical value data. If this setting is not required, set the above to '1.0' and '0.0,' respectively.

NOTE

When the physical value converted data exceeds the Float type range, no correct value is displayed.

Input available range

- -1.0E8 to -1.0E-8 or 1.0E-8 to 1.0E8

(11)Offset

Offset is set when a certain value is shifted for the physical value converted data.

Input available range

- -1.0E8 to -1.0E-8, 0.0, or 1.0E-8 to 1.0E8

(12)Unit

Set engineering unit according to CAN sensor.

Options

με	ε	mV	V	mA	A
mm	cm	m	°C	°F	gf/cm2
kgf/mm2	kgf/cm2	kgf/m2	mmHg	kPa	MPa
g	kg	ton	gf	kgf	tonf
N	kgf • mm	kgf • cm	kgf • m	Nm	Ω
kΩ	MΩ	%	dB	ppm	cm/s
m/s	m/min	km/h	Hz	kHz	MHz
°	deg	rad	kN	kNm	kW
rpm	cm/s2	m/s2	G	daN	mile/h
*100 kpa	deg/s	msec	sec	min	hour
User's unit	User's unit	User's unit			

(13)CH Name

Set the **CH Name** within 40 characters.

(14)Deci Digits

Set the number of digits below decimal point in numeric display.

Select from the relevant item from the list box.

If **Auto** is selected, numeric value is automatically set to be in 5 numbers without sign.

For details, see “Setting Environment” in DCS-100A Instruction Manual for Common Operation.

■ Bit Assignment Table

Click the **Display Bit Assignment** button and the selected CAN-CH cutting range is displayed in yellow.

When Bit is specified

CAN-CH1 Bit Assignment									
		Bit							
		7	6	5	4	3	2	1	0
Byte	0	63	62	61	60	59	58	57	56
	1	55	54	53	52	51	50	49	48
	2	47	46	45	44	43	42	41	40
	3	39	38	37	36	35	34	33	32
	4	31	30	29	28	27	26	25	24
	5	23	22	21	20	19	18	17	16
	6	15	14	13	12	11	10	9	8
	7	7	6	5	4	3	2	1	0
Close									

When Position is specified

CAN-CH1 Bit Assignment									
		Bit							
		7	6	5	4	3	2	1	0
Byte	0								
	1								
	2								
	3								
	4								
	5								
	6								
	7								
Close									

11-4 MONITORING CAN DATA

As same as the general analog CH data, CAN-CH data can be displayed on Y-Time graph, bar graph, X-Y graph and on numeric display.

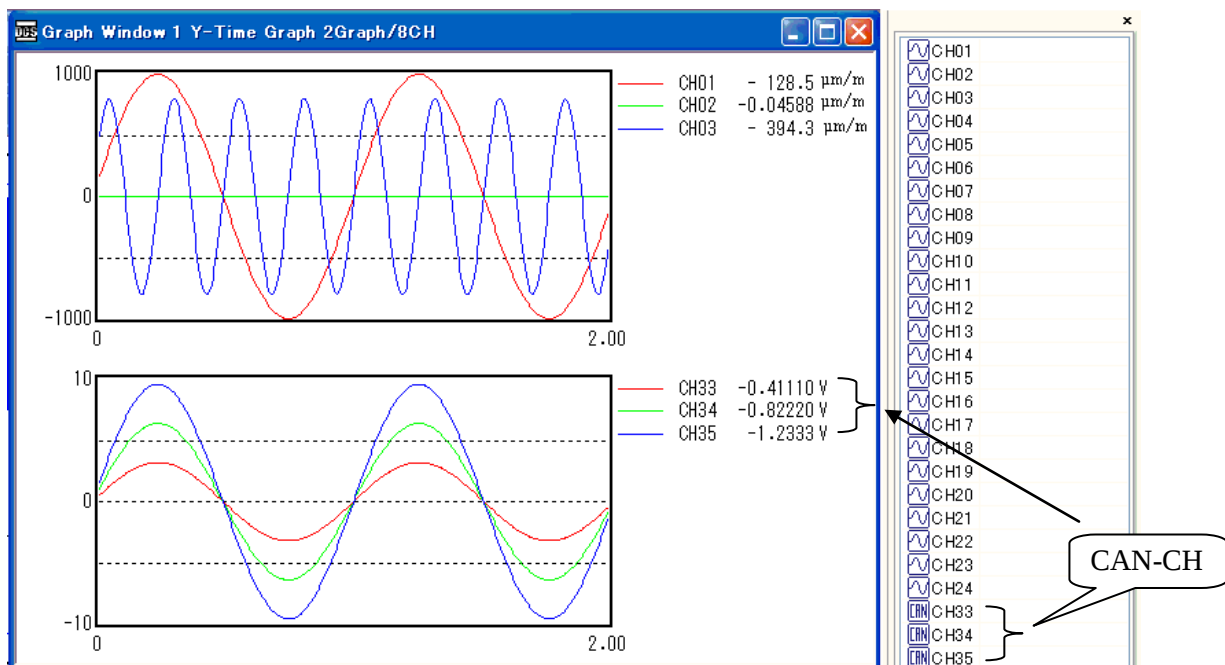
NOTE

- When recording the CAN data, sampling frequency shall be maximum 1 kHz.
- The DCS-100A is capable of displaying only data in Float range on graph and numeric display.

If the CAN data exceeds the Float range, no correct data is displayed.

Reference: Float range

-3.4028E+38 to -1.1755E-38, 0, 1.1755E-38 to 3.4028E+38



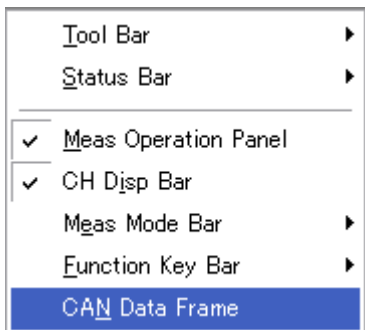
11-4-1 Displaying CAN Data Frame

Select **CAN Data Frame** and all data in the CAN data frame is displayed in hexadecimal numbers (8 bytes). Open the **CAN Data Frame** window by either of the following.

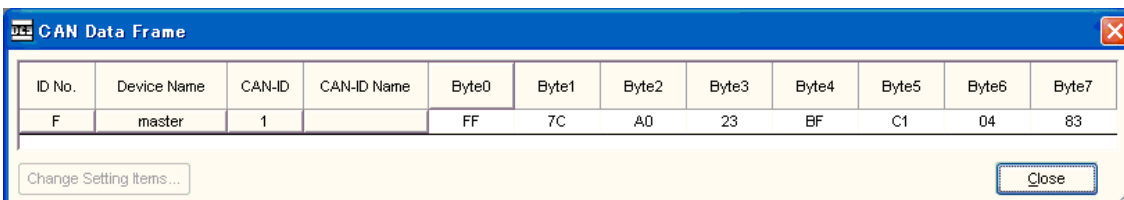
- Point to **View** on the menu bar and select **CAN Data Frame** menu.



- Select **CAN Data Frame** from the pop-up menu.



The following **CAN Data Frame** window appears.



While monitoring is stopped, press the **Change Setting Items** button to sort, delete, etc. the display items. Detailed operations are as same as described in “5. SETTING CH CONDITION.”

MEMO

When reproducing data, if data files including the CAN data is numerically displayed, CAN data frame can be displayed as same as the analog CH data.

12. LOADING TEDS SENSOR INFORMATION

The EDX-100A is capable of loading TEDS (Transducer Electronic Data Sheet) sensor information and automatically set the most appropriate range, CAL coefficient, unit, etc.

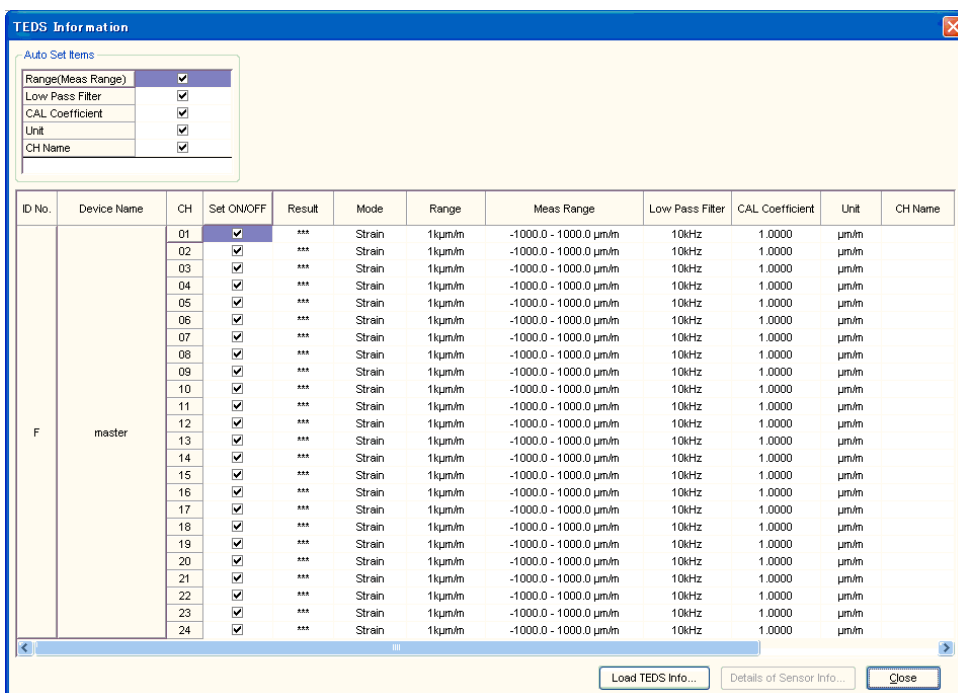
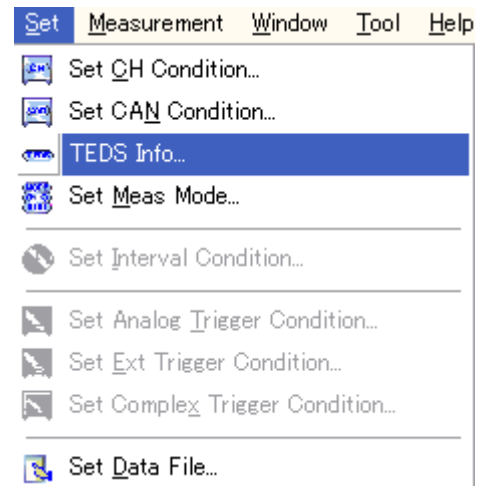
However, it should be noted that the EDX-100A cannot load all the TEDS sensor information.

The following table shows conditioner cards and loading available TEDS sensor template IDs.

Conditioner Card Type	Template ID	Sensor Type
CDV-40A(-F)	30	Voltage output sensor
	33	Strain gage sensor
DPM-42A(-F)	33	Strain gage sensor
CCA-40A(-F)	0	Piezoelectronic accelerometer
	24	Piezoelectronic accelerometer
	25	Piezoelectronic accelerometer

Open the **TEDS Information** window by either of the following to load the TEDS information and to set CH condition.

- Point to **Set** on the menu bar and select **TEDS Information** menu.
- Select **TEDS INFORMATION** icon from the toolbar.



12-1 SETTING TEDS INFORMATION LOADING ITEMS

This section describes details of setting various items for loading the TEDS sensor information.

12-1-1 Setting CH for Loading TEDS Information

After loading the TEDS information, set a CH for setting various conditions such as mode, range, unit, low pass filter, CAL coefficient, etc.

ID No.	Device Name	CH	Set ON/OFF	Result
		01	☒	***
		02	☒	***
		03	☒	***

MEMO

- Loading the TEDS information is available for all CHs regardless of ON/OFF of the **Set On/OFF** column.
- After loading the TEDS information, items of which CH condition are automatically set are only items with check mark ON on the **Set ON/OFF** column as well as with check mark ON on the **Auto Set Items**. If either of the above two has check mark OFF, CH condition is not changed.

Set ON/OFF

- Check mark ON: Item available for changing in setting item column is set in Set CH Condition window.
- Check mark OFF: Currently set CH conditions is not changed.

12-1-2 Auto Set Items for Loading TEDS Information

After loading the TEDS information, select items to be set in the CH condition.

Auto Set Items can be changed before or after loading the TEDS information. In addition, regardless of check mark ON/OFF on the **Auto Set Items**, TEDS information loaded results are displayed.

TEDS Information	
Auto Set Items	
Range(Meas Range)	☒
Low Pass Filter	☒
CAL Coefficient	☒
Unit	☒
CH Name	☒

NOTE

- ON/OFF of the **Auto Set Items** is set together for all CHs and not available for every CH.

(1) Range (Meas Range)

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) the change in **Mode** and **Range (Meas Range)** by loading the TEDS information.

MEMO

- **Mode** and **Range** values are automatically calculated from sensor type and rated capacity.
- **Meas Range** is displayed with maximum measurement available value calculated from mode, range, and CAL coefficient. When deciding the **Range**, see the **Meas Range** for reference
- For sensors with rated capacity not stated on the **TEDS information** window, the **Range** is set to its maximum.

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

(2) Low Pass Filter

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) the change in **Low Pass Filter** by loading the TEDS information.

NOTE

- **Low Pass Filter** is automatically set only when the TEDS sensor is connected to the CDV-40A and DPM-42A. Note that when conditioner cards with anti-aliasing filters (CDV-40A-F, DPM-42A-F, and CCA-40A-F) are used and sampling frequency is set to more than 100 Hz, the low pass filter is to **AUTO**. For TEDS sensors connected to conditioner card other than the above, no low pass filter is set.

(3) CAL Coefficient

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) the change in **CAL Coefficient** by loading the TEDS information.

NOTE

- After loading the TEDS information, only **CAL Coefficient** is automatically set. Offset is not allowed to change the value set in the Set CH Condition window. Therefore, if the **Mode** or **Range (Meas Range)** is changed after loading the TEDS information, check the Offset value.

(4) **Unit**

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) the change in **Unit** by loading the TEDS information.

MEMO

- When **Units** other than units that can be set in the DCS-100A are stated in the TEDS information, the unit 'mm' is used.
- If 'Pa' unit is stated in the TEDS information, it is converted into 'kPa' or 'MPa' according to rated capacity.
- For the CCA-40A, the unit 'm/s2' is used.

(5) **CH Name**

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) the change in **CH Name** by loading the TEDS information.

In addition, the **CH Name** is taken from the User Data in TEDS sensor of Manufacturer ID=58 (KYOWA ELECTRONIC INSTRUMENTS CO., LTD.)

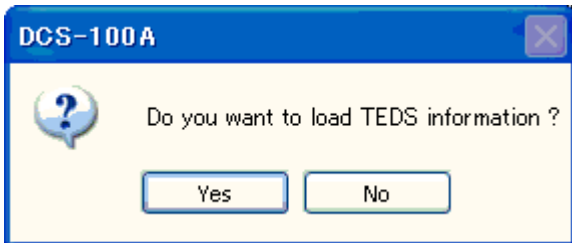
12-2 LOADING TEDS INFORMATION

This section describes loading of TEDS sensor information.

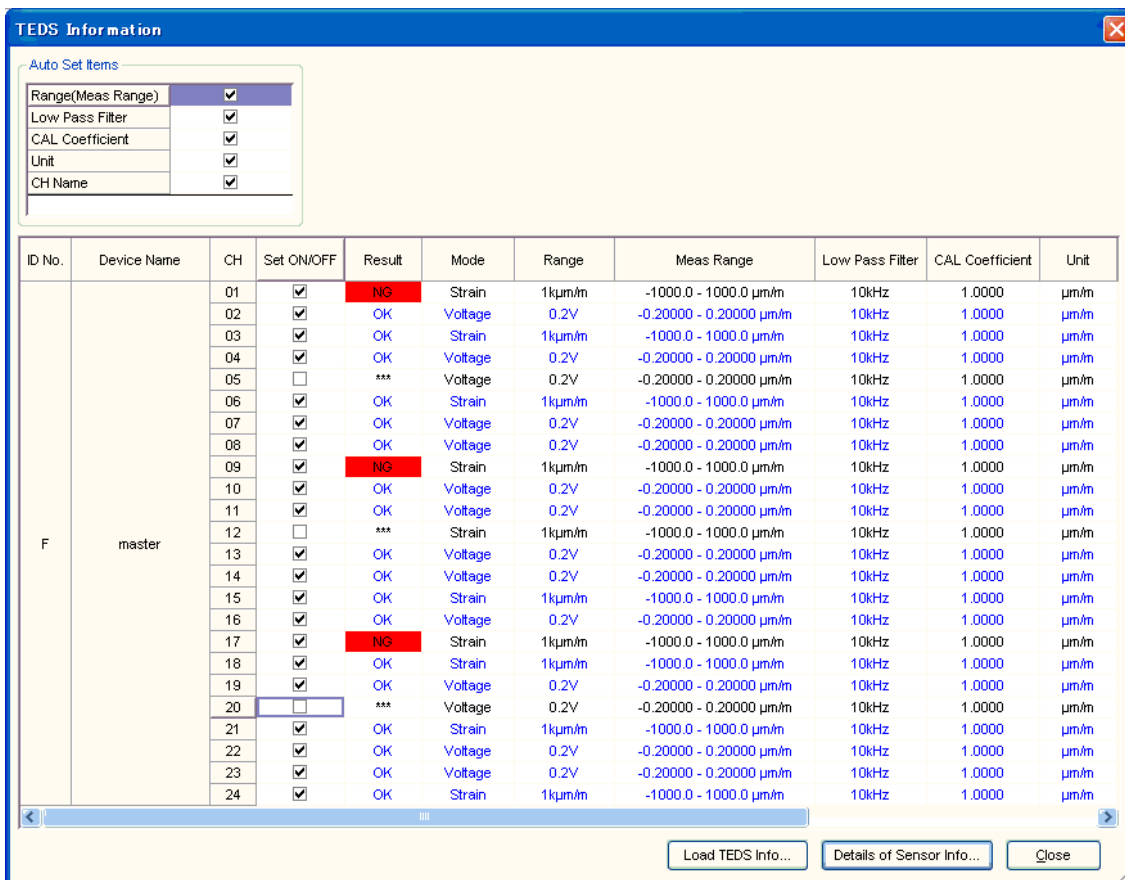
Loading the TEDS sensor information is applied for loading information of all CHs regardless of items preset in **Set ON/OFF** or **Auto Set Items**.

■ Operation Method

- (1) Click the **Load TEDS Info** button on the **TEDS Information** window.
- (2) A dialog box appears to confirm the loading of TEDS information.



- (3) **Yes** buttonLoad the **TEDS Information**.
- (4) **No** buttonNo **TEDS Information** is loaded.
- (5) After completing the loading of TEDS information, the following window appears with **OK** or **NG** displayed on **Result** column.



■ **Window Display Color**

Window display colors of **Set ON/OFF**, **Result**, **Auto Set Items** column shall be as follows.

Display Color	Background	Set ON/OFF	Result	Auto Set Items	Remarks
Blue	White	ON	OK	ON	Set display colors on the Set CH Condition window. Note) When Range (Meas Range) is changed, background color is yellow.
Black	White	OFF	***	ON/OFF	
Black	Red	ON	NG	ON/OFF	

12-2-1 Setting Range (Meas Range)

After loading the TEDS information, you can change automatically set **Range (Meas Range)**.

MEMO

- Changing the measuring range is available only for CHs satisfying the following conditions.
 - (1) TEDS information loading resulted in OK.
 - (2) Check mark on **Set ON/OFF** column is ON.
 - (3) Check mark on **Range (Meas Range)** menu of **Auto Set Items** is ON.
 - (4) Values of **Range** and **(Meas Range)** are displayed in blue.

Meas Range is set with the same operation method as that for setting normal CH conditions.

Select and set from **Range** or **Meas Range** list box. Then, **Meas Range** relevant to range as well as **Range** relevant to Meas Range are automatically displayed.

CH	Set ON/OFF	Result	Mode	Range	Meas Range	Lo
01	☒	NG	Strain	1kμm/m	-1000.0 - 1000.0 μm/m	
02	☒	OK	Voltage	0.2V	-0.20000 - 0.20000 μm/m	
03	☒	OK	Strain	50kμm/m	-50000 - 50000 μm/m	
04	☒	OK	Voltage	0.2V	-500.00 - 500.00 μm/m	
05	☐	***	Voltage	0.2V	-1000.0 - 1000.0 μm/m	
06	☒	OK	Strain	1kμm/m	-2000.0 - 2000.0 μm/m	
07	☒	OK	Voltage	0.2V	-5000.0 - 5000.0 μm/m	
08	☒	OK	Voltage	0.2V	-10000 - 10000 μm/m	
09	☒	NG	Strain	1kμm/m	-20000 - 20000 μm/m	
10	☒	OK	Voltage	0.2V	-50000 - 50000 μm/m	
11	☒	OK	Voltage	0.2V	0.0000 - 0.0000 μm/m	
12	☐	***	Strain	1kμm/m	-0.20000 - 0.20000 μm/m	
					-1000.0 - 1000.0 μm/m	

■ Setting Meas Range

Maximum measuring available range is obtained by calculating range value and CAL coefficient of conditioner card as shown in the following expression.

$$\text{Meas Range} = \text{Range value} \times \text{CAL coefficient}$$

MEMO

- After loading the TEDS information, change available item is only **Range (Meas Range)**.
After changing the **Range**, background color becomes yellow.
Note that changing **Mode**, **Unit**, **Low Pass Filter**, **CAL Coefficient**, **CH Name**, etc. are not available on this window.
To change the above items, change on **Set CH Condition** window.

12-2-2 Displaying Details of TEDS Sensor

TEDS sensor information of the selected CH is displayed in details.

MEMO

- **Details of Sensor Info** button is displayed only when the TEDS information is correctly loaded.
- After loading the TEDS information, although the loading resulted in NG, the **Details of Sensor Info** button may be displayed. In this case, it is considered that EDX-100A compatible TEDS sensor is connected but TEDS sensor compatible conditioner card may not be connected. Therefore, check TEDS sensor connected state for CH with loading resulted in NG and **Details of Sensor Info** button displayed.
- For details of items displayed with **Details of Sensor Info** button, contact TEDS sensor manufacturer.

■ Operation Method

- (1) Click the **Details of Sensor Info** button.

Details of Sensor Information CH03	
CH No.	04
Unique Registration Number	0x0000000043E76223
Manufacture ID	58
Model Number	0
Version Letter	A
Version Number	5
Serial Number	11000045
Template ID	33
Physical Measurand	N
Minimum physical value	-500.00
Maximum physical value	500.00
Transducer Electrical Signal Type	Bridge Sensor
Minimum voltage output [V]	-0.0011550
Maximum voltage output [V]	0.0011550
Mapping Method	Linear
Bridge Type	FULL
Bridge element impedance [Ohm]	374.60
Response Time [sec]	1.0000E-6
Excitation level, nominal [V]	10.000
Excitation level, min [V]	1.0000
Excitation level, max [V]	15.000
Calibration Date	2005/12/15
Calibration Initials	GTO
Calibration Period [days]	365
Measurement location ID	0
User Data	

- (2) **<-Prev CH**Sensor detailed information of the previous CH.
- (3) **Next CH->**Sensor detailed information of the next CH.
- (4) **Close** buttonClose the **Details of Sensor Information** window.

12-3 SETTING TO CH CONDITION

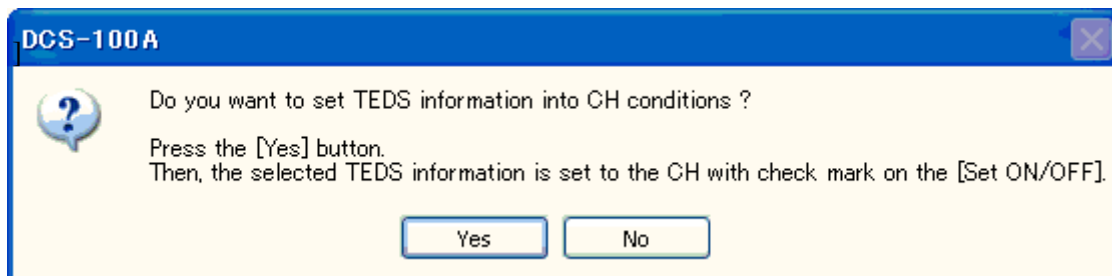
After loading the TEDS information, various items are set on the Set CH Condition window such as **Set ON/OFF** to ON, **Result** to OK, and **Auto Set Items** to ON (Items displayed in blue).

■ Operation Method

(1) TEDS information is set to CH condition when exiting the TEDS window.

Click the **Close** button.

The following message appears to confirm the setting of the loaded TEDS information into CH condition.



(2) **Yes** buttonTEDS information is set to CH condition.

(3) **No** buttonTEDS information is not set to CH condition.

Check items that are changed by loading the TEDS sensor information on the Set CH Condition window.

13. SPECIFICATIONS

Number of units	Up to 8 units (up to 256 channels.)
Interface	LAN or USB
Saving format	Saves the measured data in the EDX-100A CF card or PC folder in the KS2 format file.
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, Internal sensitivity compensation ON/OFF, Offset ZERO ON/OFF (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-100A internal parameter.
Collecting data file	PC collects the KS2 format file, saved in the EDX-100A CF card, via LAN/USB. To collect the KS2 format file, insert the CF card in the PC.
Deleting data file	PC deletes the KS2 format file, saved in the EDX-100A CF card, via LAN/USB.
Setting environment	
Setting hardware configuration	Sets the number of units and device names. Loads the hardware configurations from the EDX-100A.
Communication check	Loads the EDX-100A version.
Setting IP address	PC sets the EDX-100A via LAN/USB. Saves the IP address setting file in the CF card.
Device confirmation	LEDs, on the EDX-100A front panel, light up.
Others	Oscillator switching (internal/external), operating beep sound
<When saving the measured data in the EDX-100A CF card>	
Sampling frequency	1 Hz to 100k Hz (1/2/5 system, 2n system, external clock) *Limited by the number of channels.
File size	Up to 2 GB. *The number of data varies with the number of channels.
Measure mode	Manual, Manual (Set Record Data), Interval, Analog 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	
End trigger	Settable
Delay	Up to 262,144 data for both start and end. The delay time varies with the number of channels.
Analog trigger conditions	
Trigger channel	Any 1 channel of the master unit

Trigger level	Physical quantity
Trigger slope	Positive or Negative
External trigger conditions	
Trigger slope	Positive or Negative
Complex trigger conditions	
Trigger source	Select from the analog channels (any 2 channels of the master unit) or external trigger. Capable of judging the trigger source by using the logical AND and OR operators.
Trigger level	Physical quantity
Trigger slope	Positive or Negative

<When saving the measured data in the PC folder>

Sampling frequency	1 Hz to 100k Hz (1/2/5 system, 2n system, external clock)
File size	Up to the hard disk 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 262,144 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
Static measurement	Every time the DCS-100A starts recording data, the DCS-100A additionally saves the moving-averaged measured data in a single CSV format file. *Measure Mode: Manual and Interval only.
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.