

DYNAMIC DATA RECORDING SOFTWARE**DCS-100A****INSTRUCTION MANUAL****(FOR PCD-300 Series Operation)**

Thank you for purchasing KYOWA's product DCS-100A DYNAMIC DATA RECORDING SOFTWARE (For PCD 300 Series Operation).

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

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

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NOTATIONS USED IN THE INSTRUCTION MANUAL

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 PCD series Sensor Interface (hereinafter referred to as the PCD-300 Series).

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 functions including System standby are 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

While controlling the PCD-300 Series with the DCS-100A, do not operate the PCD-300 series switches.

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

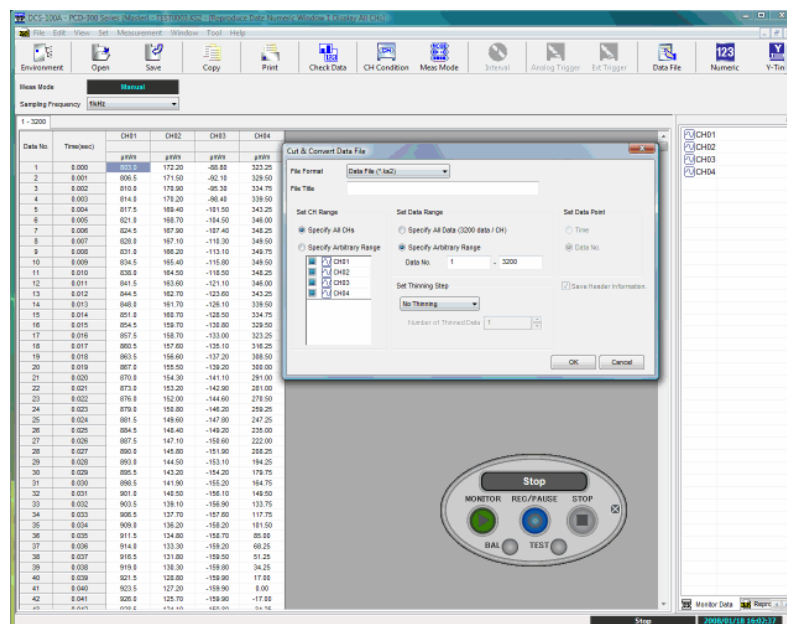
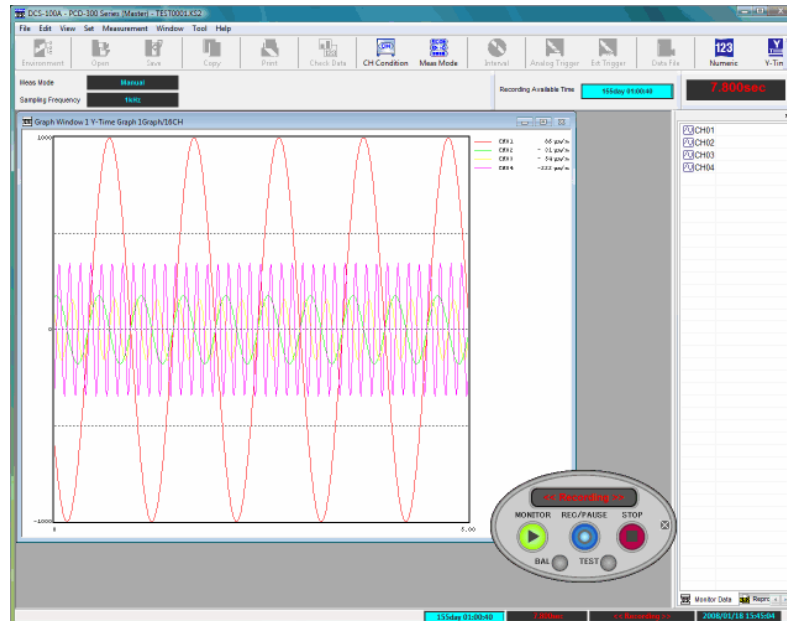
NOTE

When controlling the PCD-300 series with the DCS-100A, the DCS-100A may be forcedly terminated for certain reasons such as PC's poor performance (memory short). At this time, the PCD-300 Series are in the process of measurement.

When the DCS-100A is restarted once again and measurement is restarted, if a state unable to stop the measurement occurred, it is required to turn OFF/ON the PCD-300 Series.

1. OUTLINE

This Instruction Manual describes method for controlling the PCD-300 Series using the DCS-100A. For common operations of the DCS-100A for controlling dynamic meters, see separate volume of “DCS-100A DYNAMIC DATA RECORDING INSTRUCTION MANUAL FOR SOFTWARE (For Common Operation).”

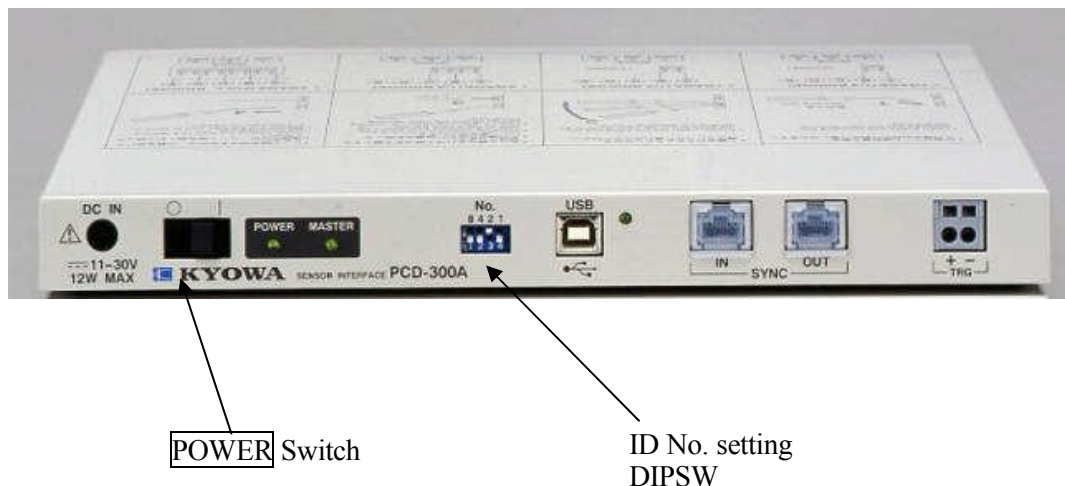


The PCD-300 Series is capable of online measurement via the PC and the USB interface.
The obtained data file is directly saved in the PC's hard disk.

This Instruction Manual describes various items for operating the PCD-300 Series such as basic operation flow, setting environment for USB connection, settings various CH and Meas conditions, and online measurement.

2. PCD-300 SERIES DEFAULT SETTINGS

Before using the PCD-300 Series for the first time, check the setting states of the ID Nos. of DIPSWs on the front panel.



2-1 SETTING ID NO.

Location of ID No. setting DIPSW is shown in the above figure.

■ Operation Method

- 1) Turn off the **POWER** switch of the PCD-300 Series.
- 2) Set the ID No. of the DIP SW.

When the number of connected PCD 300 Series is 1:	Set '1'
When the number of connected PCD-300 Series is more than 2:	Set in due order from '1,' '2,' ... (Always in serial numbers from '1')
- 3) Turn ON the PCD-300 Series **POWER** switch.

NOTE

- For synchronous operation, set ID No. '1' to a synchronous master and set serial numbers from ID No. '2' to synchronous slave units.
- When PCDS-300B and PCD-300A/320A are mixedly connected, always set the ID No. of the PCD-300B to a younger number. For example, setting the PCD-300B to ID No. 1, PCD-300A to ID No. 2, PCD-300B to ID No. 3, etc. is not allowed.
- For synchronous operations, ID No. of the clock master shall be '1.' In addition, PCB-300B or PCD-300A having younger ID No. shall be an oscillator master unit.
- Before changing the ID No. setting DIPSW, do not forget to turn off the PCD-300 series **POWER** switch.

3. BASIC OPERATION FLOW

This chapter explains the basic operating procedure for controlling the PCD-300 Series via USB connection.

- 1) First, check the PCD-300 Series default settings. See “2. PCD-300 DEFAULT SETTINGS.”
Connect the PCD-300 Series and PC using the USB cable, then turn ON the PCD-300 Series.
When connecting the PCD-300 Series for the first time, it is necessary to install the USB driver.
For the USB driver installation procedure, see “PCD-300A Series INSTRUCTION MANUAL FOR HARDWARE.”
- 2) Startup the DCS-100A.
- 3) Select **PCD-300 Series** for the **Device to be controlled** on the **Select DCS-100A Control Device** window and press the **Select** button.



Set Environment
(Set the control interface and
file saving destination)

See “4. SETTING ENVIRONMENT.”

- 4) Point to **File** on the menu bar and select **Environment** menu or select the **Environment** icon in the toolbar to open the **Environment** window.
- 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 PCD-300 Series type.
- 6) Close the **Set Connection Configuration** window and go back to the **Environment** window.
Click the **Check Communication** button on the **Environment** window, and conduct connection test in order to check whether communication is successfully conducted between the PC and PCD-300 Series. If the connection test is Good, close the **Environment** window.

(To be continued)

(Continued)

Set CH Condition

See “5. SETTING CH CONDITION”

- 7) Point to **Set** on the menu bar and select **Set CH Condition** menu or select the **Set CH Condition** icon in 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 PCD-300 Series 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 in the toolbar to open the **Set Meas Mode** window.
Set Meas mode and sampling frequency. Then, close the **Set Meas Mode** window.

Set Data File

See “7. SETTING DATA FILE.”

- 9) Point to **Set** on the menu bar and select **Set Data File** menu or select the **Data File** icon in 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 “8-5 EXECUTING MEASUREMENT.”

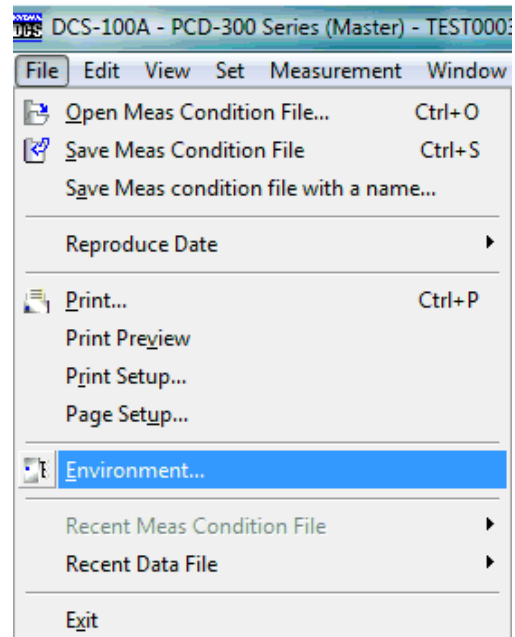
- 10) After setting Meas conditions, press the **MONITOR** to start the measurement and to monitor display the measured data on the window.
11) Press the **REC/PAUSE** button to start recording the measured data according to the Meas mode.
12) Press the **STOP** button to stop recording the measured data and to initiate the monitoring mode.
The recorded measured data is saved as a data file in the data file destination in the PC.
Press the **STOP** button once again in monitoring mode to stop the monitoring.

4. SETTING ENVIRONMENT

The **Environment** menu is used to set connection configuration of the PC connected PCD-300 Series device. For hardware connection procedures, see the “PCD-300 Series INSTRUCTION MANUAL FOR HARDWARE.”

Open the **Environment** window by either of the following.

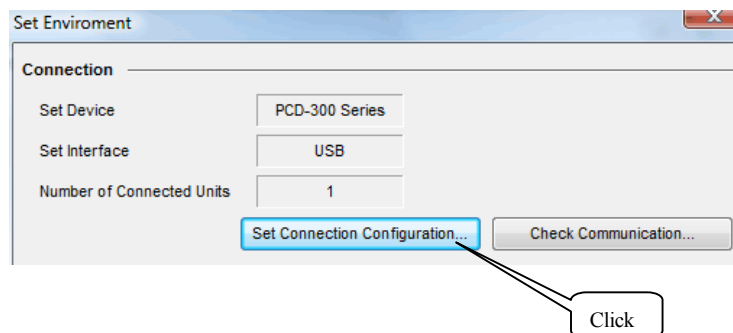
- Point to **File** on the menu bar and select **Environment**.
- Select the **Environment** icon in the toolbar.



4-1 SET CONNECTION CONFIGURATION

■ Operation Method

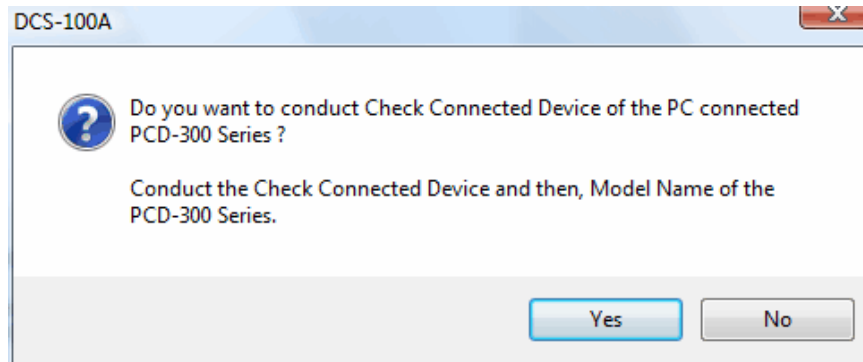
- 1) Click the **Set Connection Configuration** button to display the **Set Connection Configuration** window.



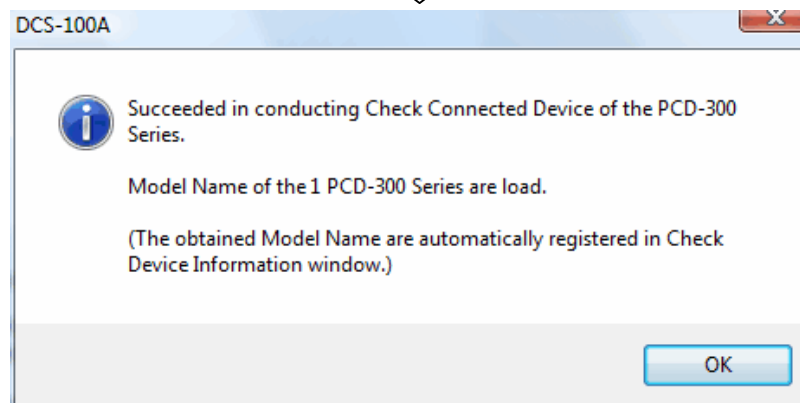
- 2) Conduct Check Connected Device and set Connection Configuration by referring to “4-1-1Checking Connected Device.”
- 3) Close the **Connection Configuration** window.

4-1-1 Checking Connected Device

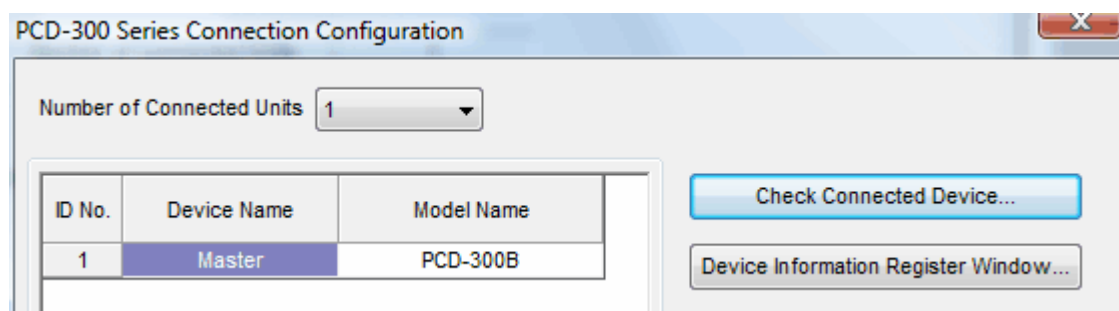
Before checking the connected device, do not forget to check USB interface and ID No. of the PCD Series are correctly set. Click the **Check Connected Device** on the **Connection Configuration** window. Then, current online connected PCD-300 Series is retrieved to read the hardware configuration.



The above message appears. Select the **Yes** button



Click the **OK** button to reflect the checked results on the **Connection Configuration** window.



MEMO

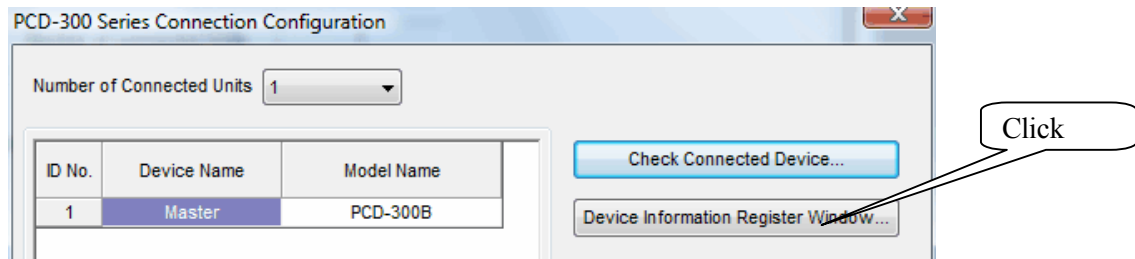
Hardware information read from the PCD-300 Series is registered on the **Register Device Information** window.

4-1-2 Device Information Register Window

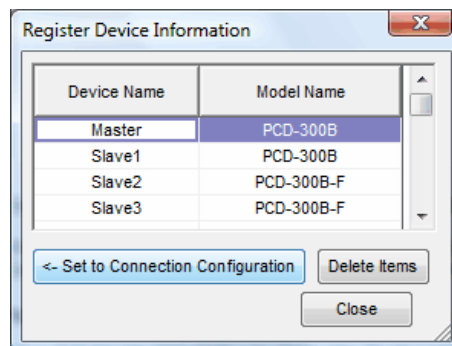
PCD format used by Check Connected Device is registered on the **Register Device Information Window**.

■ Operation Method

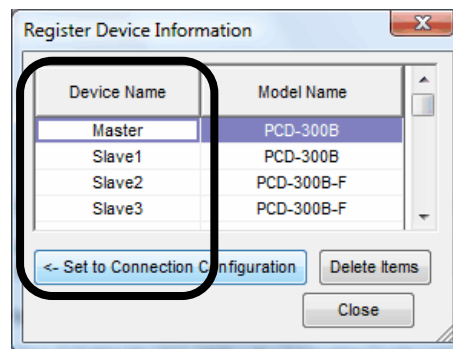
- 1) Click the **Device Information Register Window** button on the **Connection Configuration** window



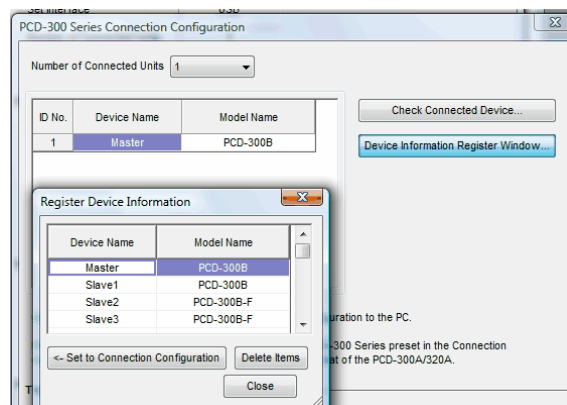
- 2) The **Register Device Information** window appears. Set the device name.



Changing the device name is available.



- 3) Move the cursor to the target device and press the **Set to Connection Configuration** button.

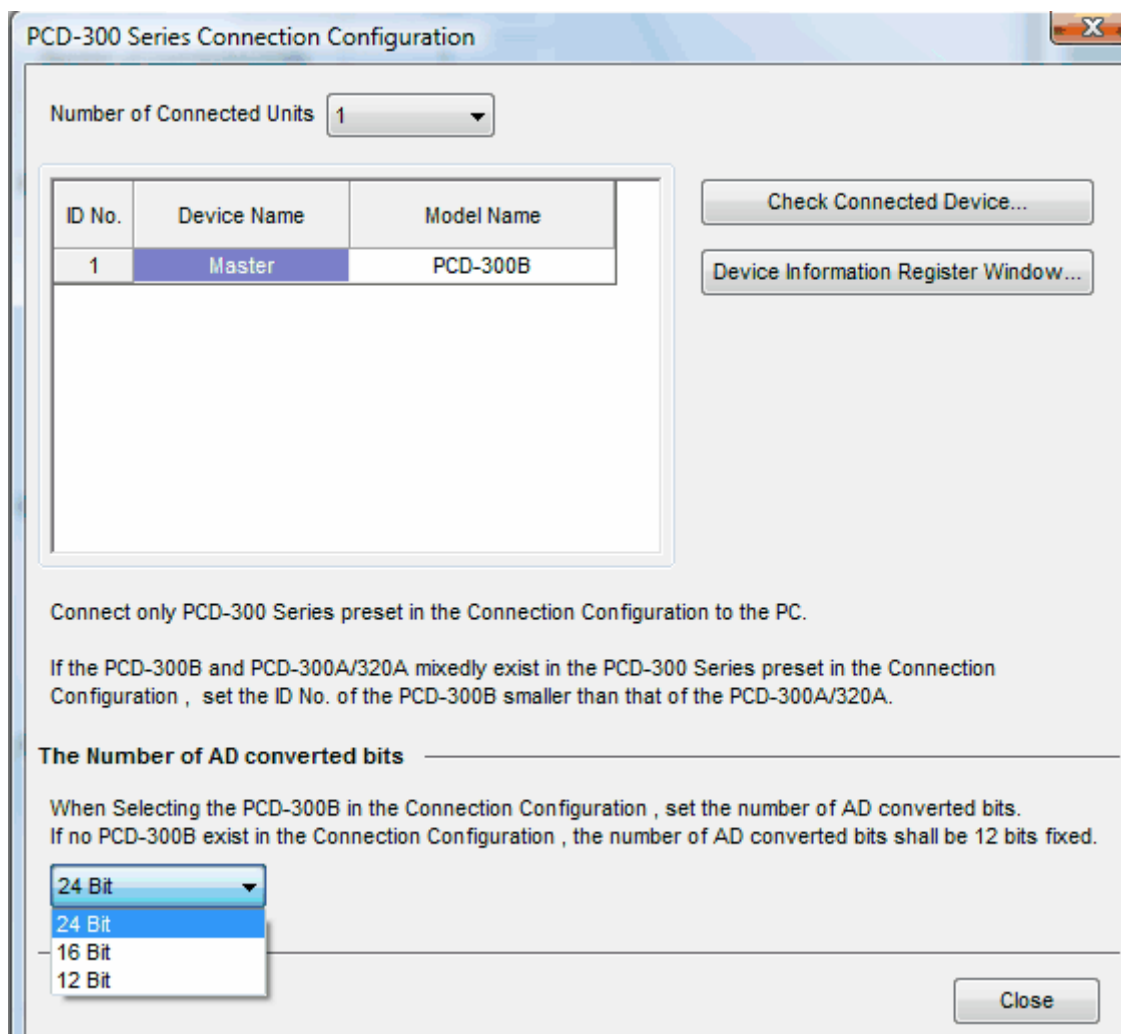


Then, click the **Close** button to close the **Register Device Information** window.

4-1-3 Setting the Number of AD Conversion Bits

When the PCD-300B is selected on the **Connection Configuration** window, set **The Number of AD converted bits**.

If the PCD-300B does not exist on the **Connection Configuration** window, the number of AD converted bits shall be 12 bits fixed.

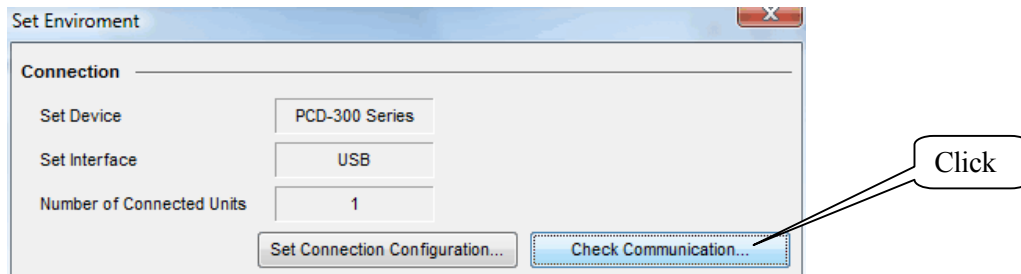


MEMO

- If the number of AD converted bits is set to 24 bits by the PCD-300B, capacity of the data file shall be approximately two times as large as 12/16 bits.
- Assume that the number of AD converted bits is set to '24.' For synchronous operation with the PCD-300A/320A, measured data of the PCD-300A/320A shall be converted into 4-byte data and stored.

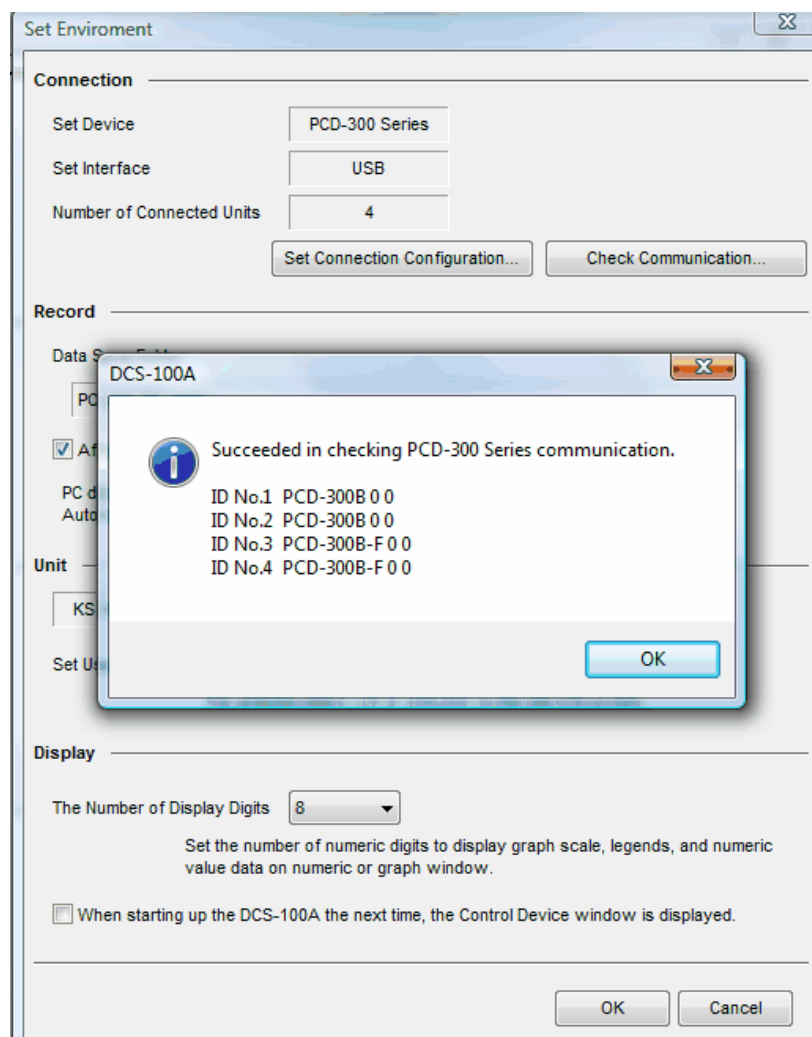
4-2 CHECKING COMMUNICATION

Conduct connection test to check whether or not normal communication is available between the PC and PCD-300 Series.



■ Operation Method

- 1) Click the **Check Communication** button on the **Set Environment** window.
- 2) The following check results appear on the window.



4-3 SETTING RECORD

Data file related items after the measurement are set on the **Record** portion on the **Set Environment** Window.

The screenshot shows the 'Set Environment' window with the 'Record' section highlighted by a thick black border. The 'Record' section contains the following settings:

- Data Save Folder:** A text box containing 'PC data file folder'.
- Checkmark:** A checked checkbox with the label 'After the measurement, data is automatically converted into CSV format file.'
- Text:** 'PC data file folder is set on the Set Save Folder on the Set Data File screen. Automatically collected data files are saved in the PC's Save Folder.'

Other sections visible in the window include:

- Connection:** Set Device (PCD-300 Series), Set Interface (USB), Number of Connected Units (4). Buttons: Set Connection Configuration..., Check Communication...
- Unit:** KS1/KS2 Format unit, Set User's Unit (three empty boxes). Text: The entered User's unit is reflected on the Set Unit screen.
- Display:** The Number of Display Digits (8). Text: Set the number of numeric digits to display graph scale, legends, and numeric value data on numeric or graph window. Checkbox: When starting up the DCS-100A the next time, the Control Device window is displayed.

Buttons at the bottom: OK, Cancel.

■ Operation Method

- 1) After the measurement, when it is required to automatically convert the obtained data into CSV format file and save it in the PC specified folder, put a check mark.
- 2) Click the **OK** button to determine the setting contents.

MEMO

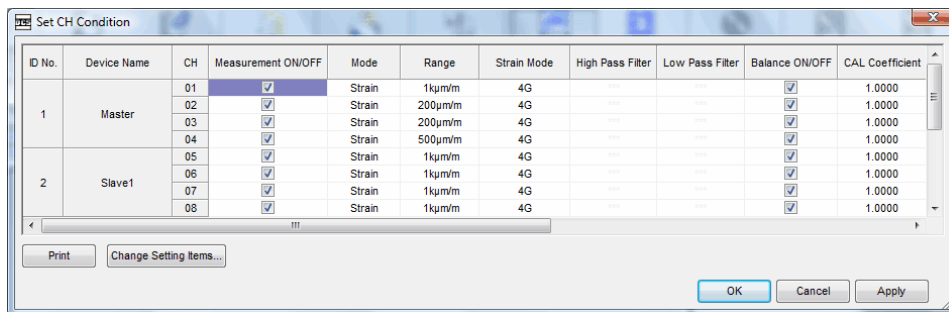
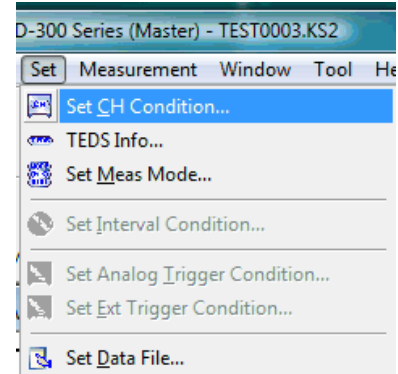
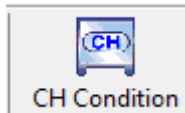
- Maximum data file size that can be recorded into the PCD-300 Series is up to PC's hard disk capacity.
- When error occurred during recording, after the measurement, no data converted into the CSV format file.

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 PCD-300 Series.

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

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

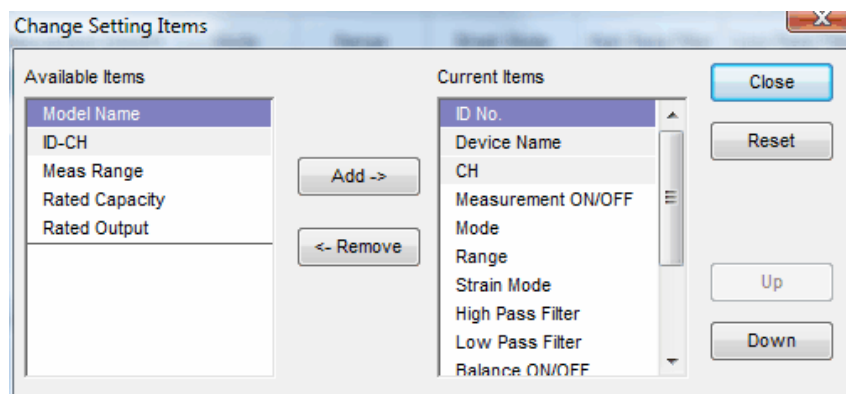


- 1) **Print** button Prints out **Set CH condition** window.
- 2) **Change Setting Items** button Setting items on the window are added, removed, or sorted.
- 3) **OK** button Determines the set contents and closes the **Set CH Condition** window.
- 4) **Cancel** button Cancels the set contents and closes the **Set CH Condition** window.
- 5) **Apply** button Determines the current set contents.

■ Change Setting Items

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

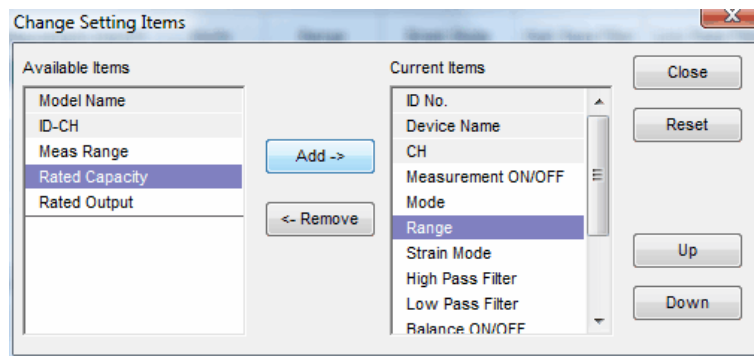
Setting items displayed on the **Set CH Condition** window are added, removed, or sorted.



- 1) **Add ->** button Item currently not on the window is added to the **Set CH Condition** window.
- 2) **<- Remove** button Item currently displayed on the window is removed from the **Set CH Condition** window.
- 3) **Close** button Determines the set item and closes the window.
- 4) **Reset** button Resets the set item to default state.
- 5) **Up/Down** button Sorts the current setting items.
Choose the setting item you want to move and click the **Up** or **Down**.

■ Operation Example

Procedures for adding the setting item **Rated Capacity** to the **Set CH Condition** window are described below:



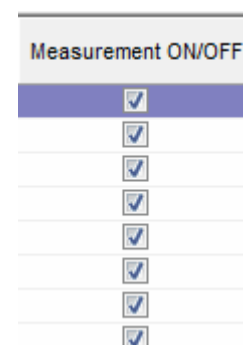
- 1) Select **Rated Capacity** in Available Items, move the cursor to a location in Current Items where you want to insert the selected item and then, click the **Add ->** button.
- 2) Then, **Rated Capacity** is added to Current Items.
In addition, items in the Current Items can be moved to any location by clicking the **Up** or **Down** button.
- 3) Lastly, click the **Close** to exit the **Change Setting Items** window.

■ Setting Items

- 1) ID-CH
Displays the ID number.
- 2) Device Name
Displays the device name preset in **Register Device Information** window when setting environment.
- 3) CH
Displays the **CH No.** CH No. is assigned in serial numbers starting from CH1.
If multiple PCD-300 Series are connected, the CH No. is determined according to the number of PCD-300 Series units.

Example)

PCD-300 Series	CH No.
1st unit	1 to 4
2nd unit	5 to 8
3rd unit	9 to 12
4th unit	13 to 16



- 4) Measurement ON/OFF (Essential).
Put a check mark on the measurement target CH box.
- 5) Mode (For extension)
Set the Meas mode.
Select the relevant mode from the list box.
Note) This item is for future extension. Currently, it is in grayout display and no setting is available.

6) Range

Set measuring range.

Select the relevant range from the range list box.

In addition, since the **Range** interlocks with the **Meas Range** item on the Available Items, when it is set on the **Meas Range** item, the **Range** on the Current Items is automatically set.

7) Strain Mode

Set strain mode. Applicable only when the PCD-300B is a connected device.

Select the relevant item (1G/2G/4G) from the list box.

8) High Pass Filter

Set high pass filter cutoff frequency.

Select the relevant item from the list box.

Control software (In the PCD-30A Control software, a term 'Coupling' is used.)

9) Low Pass Filter

Set low pass filter cutoff frequency.

Select the relevant item from the list box.

10) Balance ON/OFF

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

Balance ON/OFF can be set only when the Meas mode is set to **Strain** mode.

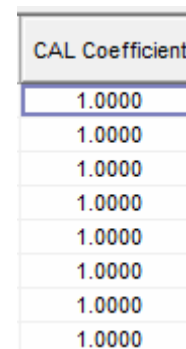
11) CAL Coefficient

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

Set CAL coefficient that converts data into engineering unit (physical value) that is corresponding to input sensors of CHs and compensation coefficient (lead wire compensation coefficient) to be used for gage factor compensation coefficient or extension cable in strain measurement.

Default of the CAL coefficient is '1.'

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



CAL Coefficient
1.0000
1.0000
1.0000
1.0000
1.0000
1.0000
1.0000
1.0000
1.0000
1.0000

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** interlocks with the **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.

12) OFFSET

Set offset value in engineering unit (A value multiplied by the CAL coefficient.)

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

Default of the offset is '0.'

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

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

Offset
0.0000
0.0000
0.0000
0.0000

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** interlocks with the **Meas Range** of the Available Items, if the **Offset** is changed, the **Meas Range** is automatically changed.

13) Unit (Arbitrarily Set)

Set engineering 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.

■ Selection of KS1/KS2 Format Unit

μm/m	e	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	OHM
kOHM	MOHM	%	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
* 100kpa	deg/s	msec	sec	min	hour
User's unit	User's unit	User's unit			

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.

14) CH Name (Arbitrarily set)

Input CH name comment strings within 40 characters.

Double click the desired CH item or press the **SPACE** key to be in input available state. Input the desired comment character string.

CH Name
Sensor01
Sensor02

15) Model Name (*)

Displays currently connected PCD-300 Series Model Name.

16) ID-CH (*)

Displays the ID No. and CH No. of the PCD-300 Series. The CH No. starts from '01' for every ID. For example, ID0-CH0 denotes CH1 of the master PCD-300 Series.

17) Meas Range (*)

Set the Meas range.

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

Select the relevant item from the list box.

Meas Range
-1000 - 1000 $\mu\text{m/m}$
-200 - 200 $\mu\text{m/m}$
-500 - 500 $\mu\text{m/m}$
-1000 - 1000 $\mu\text{m/m}$
-2000 - 2000 $\mu\text{m/m}$
-5000 - 5000 $\mu\text{m/m}$
-10000 - 10000 $\mu\text{m/m}$
-20000 - 20000 $\mu\text{m/m}$

In addition, **Meas Range** interlocks with the **Range**. If the **Meas Range** is changed, the **Range** is automatically changed.

18) Rated Capacity (*)

Set **Rated Capacity** of sensors together with the **Rated Out**. 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 the desired numeric value.

19) Rated Output

Set **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 item or press the **SPACE** key to be in input available state. Input the desired numeric value.

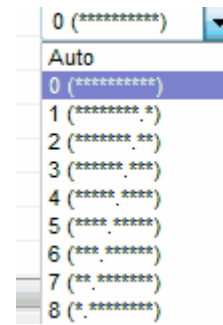
For strain measurement, set the rated output in the unit of mV/V.

20) Deci Digits

Set the number of digits below a decimal point of numeric value display. When changing the numeric value, select the relevant item from the list box.

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

Example) -100.123 → -100.12
5001.57 → 5001.6



For details, see “SETTING ENVIRONMENT in DCS-100A DYNAMIC DATA RECORDING 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 above item with the **Change Setting Items** button.

■ Copy and Paste

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

Measurement ON/OFF	Mode	Range	Strain Mode	High Pass Filter	Low Pass Filter
☒	Strain	500μm/m	1G	...	...
☒	Strain	200μm/m	4G	...	...
☒	Strain	200μm/m	4G	...	...
☒	Strain	500μm/m	4G	...	...

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

Measurement ON/OFF	Mode	Range	Strain Mode	High Pass Filter
☒	Strain	500μm/m	1G	...
☒	Strain	200μm/m	4G	...
☒	Strain	200μm/m	4G	...
☒	Strain	500μm/m	4G	...
☒	Strain	1kμm/m	4G	...
☒	Strain	1kμm/m	4G	...

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

Measurement ON/OFF	Mode	Range	Strain Mode
☒	Strain	500μm/m	1G
☒	Strain	500μm/m	1G
☒	Strain	500μm/m	1G
☒	Strain	500μm/m	1G

NOTE

Copying the range, low pass filter, etc., is only available if the copy source and copy destination has the same model name.

■ List of CH Condition Setting Items Optionals by the PCD-300 Series

Model	Mode	Strain Mode	Range	Low Pass Filter	High Pass Filter (Coupling)
PCD-300B	Strain	1 G 2 G 4 G	200 $\mu\text{m/m}$ 500 $\mu\text{m/m}$ 1 $\text{k}\mu\text{m/m}$ 2 $\text{k}\mu\text{m/m}$ 5 $\text{k}\mu\text{m/m}$ 10 $\text{k}\mu\text{m/m}$ 20 $\text{k}\mu\text{m/m}$ OFF	None	None
PCD-300A	Strain	None	200 $\mu\text{m/m}$ 500 $\mu\text{m/m}$ 1 $\text{k}\mu\text{m/m}$ 2 $\text{k}\mu\text{m/m}$ 5 $\text{k}\mu\text{m/m}$ 10 $\text{k}\mu\text{m/m}$ OFF	None	None
PCD-320A	Voltage	None	1 V 2 V 5 V 10 V 20 V 50 V OFF	FLAT 300 Hz 100 Hz 30 Hz 10 Hz	OFF(DC) 0.2 Hz(AC)

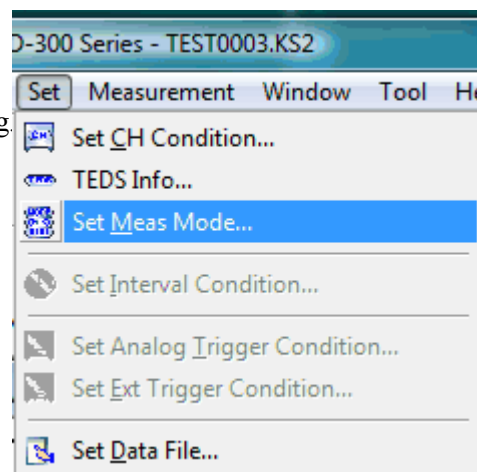
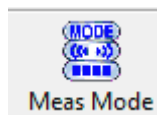
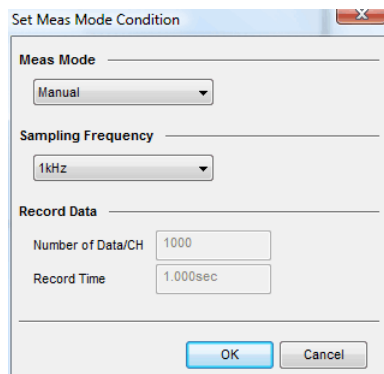
(): Notations used in PCD-30A Control Software.

6. SETTING MEASURING MODE CONDITION

This Chapter describes settings of Meas mode and sampling frequency.

Open the **Set Meas Mode Condition** window by either of the following

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



■ Operation Method

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

Manual

Manual (Set Recorded Data.)

Interval

Analog Trigger

External Trigger (Operated only the unit with external trigger terminal installed.)

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	Selections
	1 Hz, 2 Hz, 5 Hz, 10 Hz, 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 5 kHz, 10 kHz (*1)

NOTE

(*1)

- Sampling frequency of 10 kHz is enabled for the PCD-300B.
- When PCD-300B and PCD-300A/PCD-320A is mixedly connected, maximum sampling frequency shall be 5 kHz.
- When operating on Windows2000, the sampling frequency shall be maximum 5 kHz.

- 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** interlocks with each other, you can set the either of the two.

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

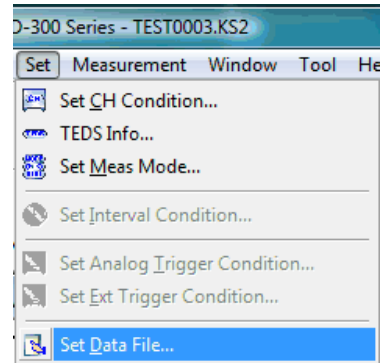
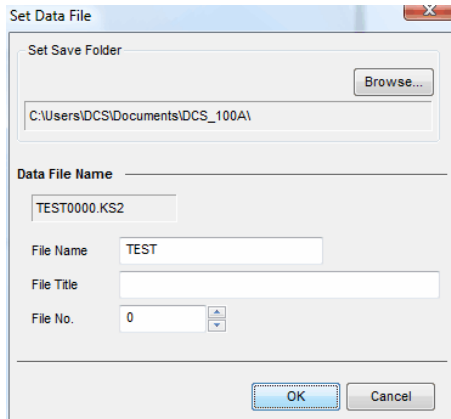
- 4) Click the **OK** button to set the Meas mode conditions.

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 the **Data File** icon in the toolbar.



■ Operation Method

- 1) Set **Set Save Folder** for saving the data file.
Clicking **Browse** displays a window where you can browse folders. Click the relevant folder, select the desired folder, and click the **OK** button to close the screen.
- 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 the **OK** button to determine the setting contents.

NOTE

- Set the file No. with a number larger than the data file No. in the data file destination. When the file No. reaches '9999,' no measurement is available. At this time, re-set the data file name once again.

7-1 DATA FILE NAME

Data file names are specified as shown below.

The file name in this section is enclosed in a square box for convenience.

Meas Mode	Data File Name
Manual Manual (Set Recorded Data)	TEST 0000 . KS2 (1) (2) (2)
Interval	TEST 0000 _Δ 0000 . KS2 (1) (2) (3)
Analog Trigger	
External Trigger	

1) File NameA file name with maximum 16 characters is assigned.

2) File NoA file No. between 0000 and 9999 is assigned.

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

3) Repeat timesRepeat times between 0000 and 9999 is assigned.

The repeat times is automatically incremented one after another for every recording.

According to the Meas mode, an alphabet Δ is added before the 4-digit repeat times.

...I: Interval measurement

...A: Analog trigger measurement

...E: External trigger measurement.

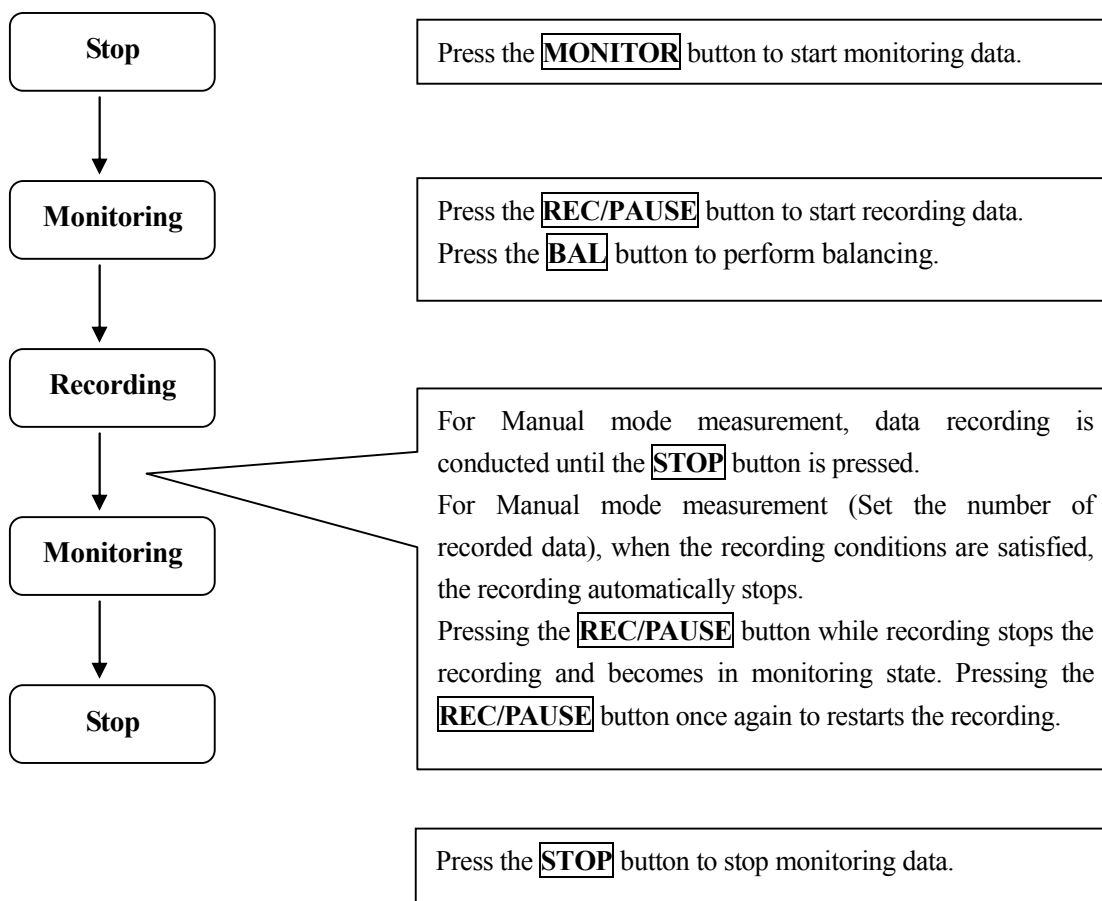
8. ONLINE MEASUREMENT

8-1 MANUAL MEASUREMENT

This section describes measurement flow when Meas mode is set to **Manual** or **Manual (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.

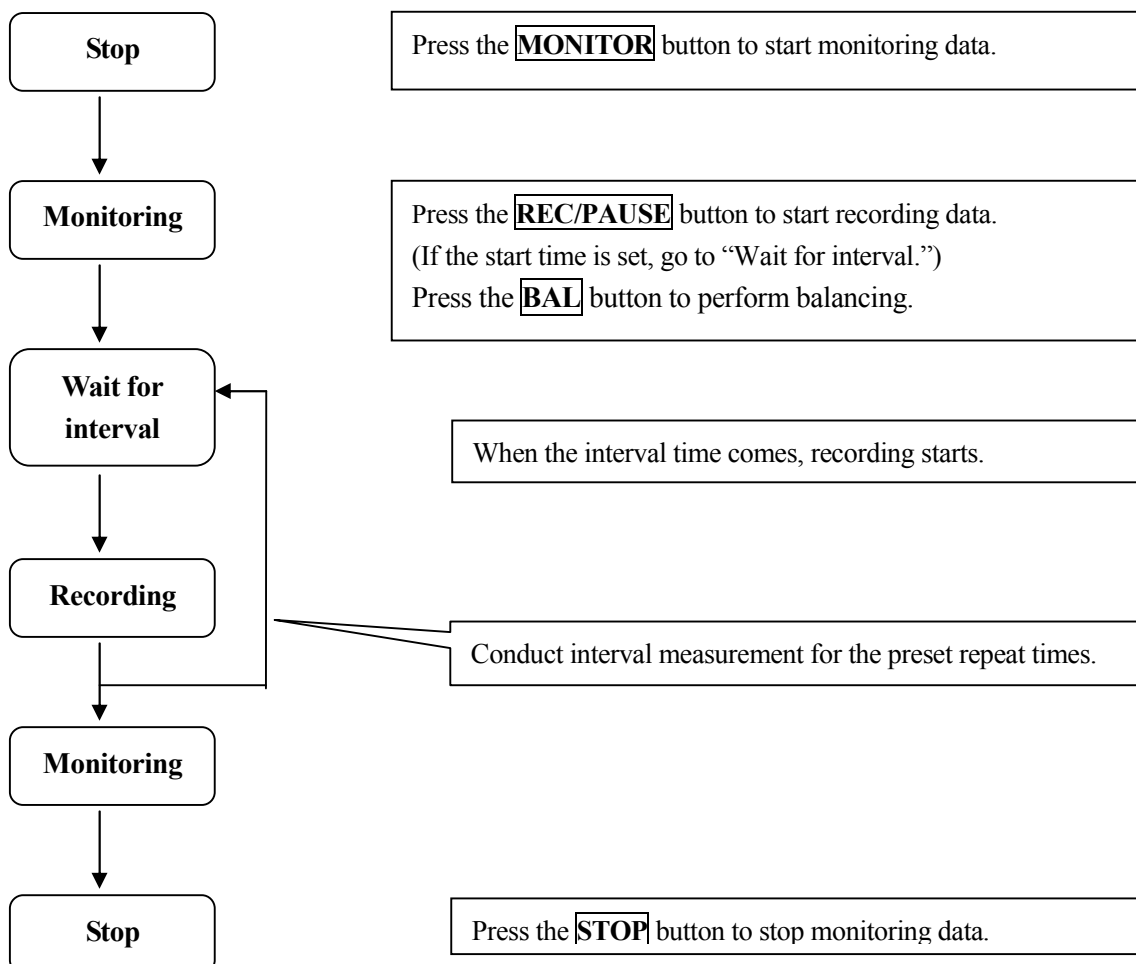
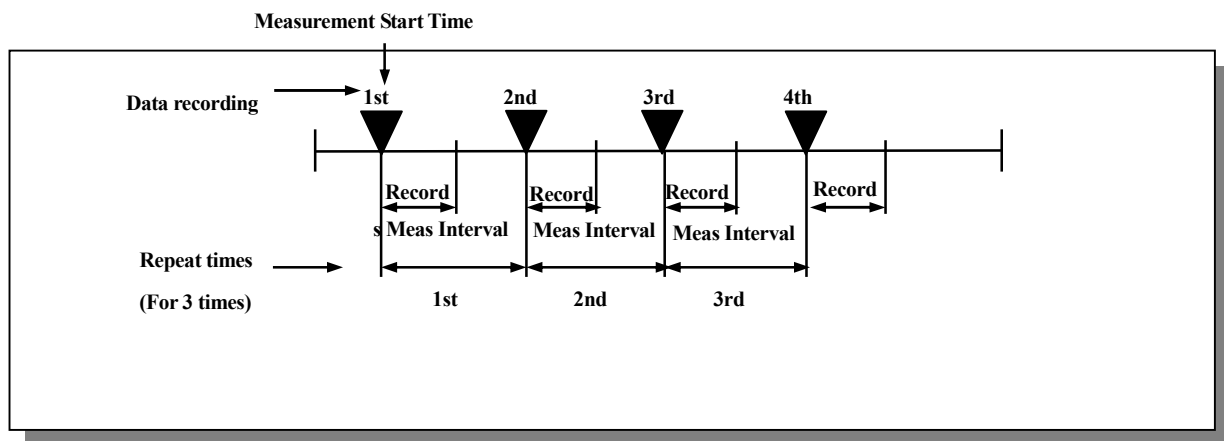
In addition, the **Manual** mode measurement (Set the number of recorded data) is capable of setting recording time and the number of recorded data. Manually press the **REC/PAUSE** button to start recording the measured data. After satisfying the Meas conditions, the PCD-300 Series automatically stops 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 PCD-300 Series becomes in monitoring state.

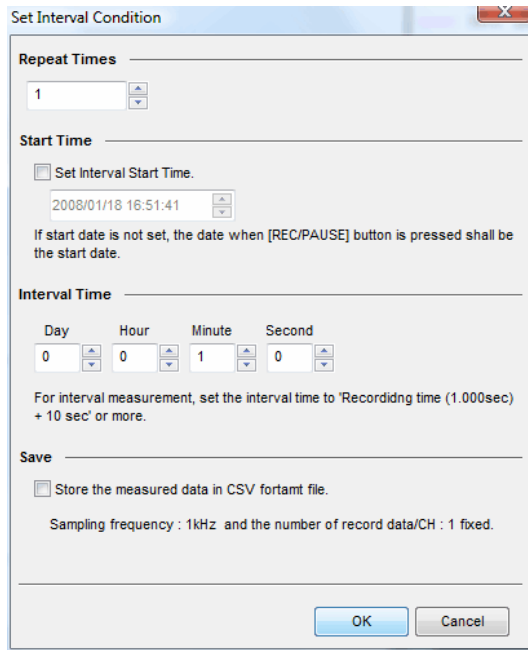


8-2-1 Setting Interval Measurement Conditions

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

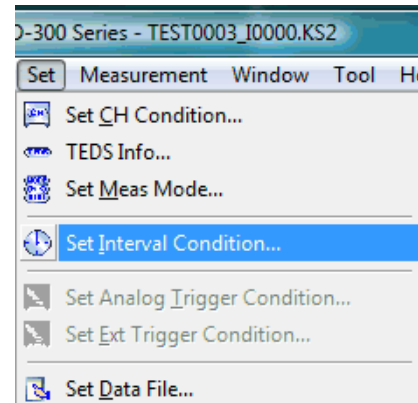
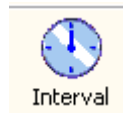
Open the **Set Interval Condition** screen by either of the following.

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



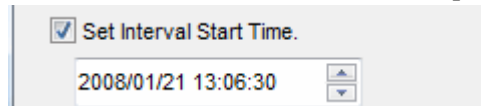
The 'Set Interval Condition' dialog box contains the following fields and options:

- Repeat Times:** A numeric input field set to 1.
- Start Time:** A checkbox labeled 'Set Interval Start Time.' is checked. Below it is a date/time field showing '2008/01/18 16:51:41'. A note states: 'If start date is not set, the date when [REC/PAUSE] button is pressed shall be the start date.'
- Interval Time:** Four spin buttons for Day (0), Hour (0), Minute (1), and Second (0).
- Save:** A checkbox labeled 'Store the measured data in CSV format file.' is checked. Below it, text reads: 'Sampling frequency : 1kHz and the number of record data/CH : 1 fixed.'
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.



■ 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.



A close-up of the 'Set Interval Start Time' checkbox, which is checked, and the date/time field below it showing '2008/01/21 13:06:30'.

- 3) Set the interval time.

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



A close-up of the interval time spin buttons, showing Day (0), Hour (0), Minute (1), and Second (0).

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

NOTE

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

If the interval measurement is already terminated, the message appears notifying the current state.

■ Saving Data in CSV Format File

Generally, for the interval measurement, when the time comes for starting the interval measurement, the preset number of data is recorded with the preset sampling frequency to create one KS2 format file. Therefore, if the interval measurement is conducted for 10 times, 10 files are created. However, if **Store the measured data in CSV format file** box is checked in **Save** portion, since data of interval measurement is added and saved in CSV format file, the files are collected into 1 file from the start to end of the interval measurement.

Restrictions and specifications of the interval measurement for saving data in CSV format file are stated in the following.

1) Sampling frequency is 1 kHz fixed and the number of recorded data/CH is 1 fixed

2) Monitor data and recorded data is average of 1000 data.

When the interval measurement start time comes, averaged data of data of the past 1 second is written into the file.

Therefore, data recording is not available under phenomenon of 0.1 Hz.

3) The recorded data file is in CSV format file and not in KS2 format file.

Note that after recording, the CSV format file cannot be reproduced by the DCS-100A. Customers are required to reproduce the file with commercially available software.

4) File format

Example: When interval distance: 10 second and Repeat times: 3

Date, Time, CH01, CH02, CH03, CH04	1st line: CH No.
Unit,, $\mu\text{m}/\text{m}$, $\mu\text{m}/\text{m}$, $\mu\text{m}/\text{m}$, $\mu\text{m}/\text{m}$	2nd line: Unit
2007/12/07, 13:00:00. -122.25, -2, -2, -2	3rd line: Recorded data (1st)
2007/12/07, 13:00:10. -123.62, -2, -2, -2	4th line : Recorded data (2nd)
2007/12/07, 13:00:20. -123.64, -2, -2, -2	5th line Recorded data (3rd)
2007/12/07, 13:00:30. -123.53, -2, -2, -2	6th line Recorded data (4th)

(One line is added for every interval distance.)

5) The number of digits below a decimal point of CHs is outputted with the number of display digits preset in CH Condition.

6) The file name shall be preset File name + File No. CSV.

Example) When File name: TEST and File No.: 0, the file name shall be TEST0000.CSV.

7) Interval distance can be set from 2 second.

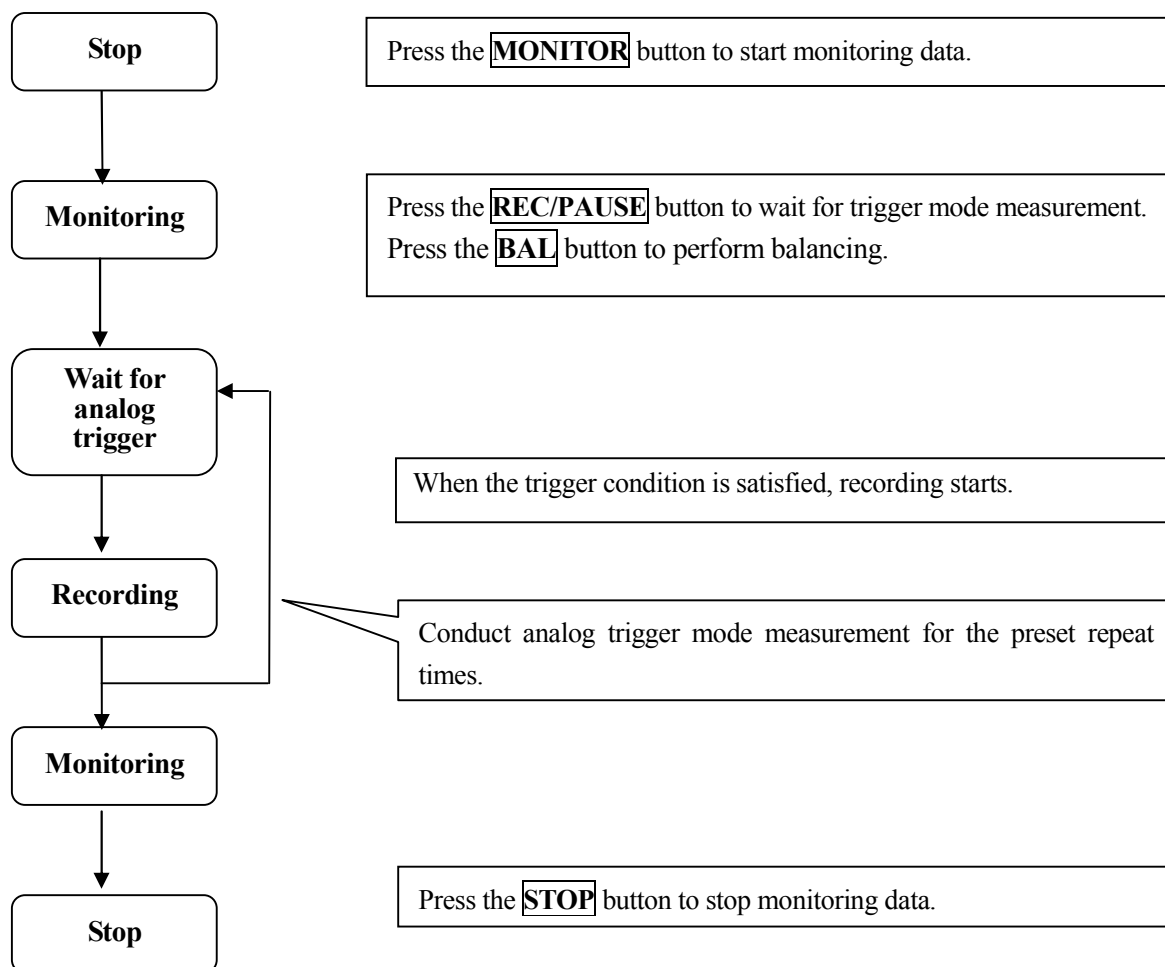
As the size of the recorded data file becomes large, data may not be recorded with the preset interval distance.

8) Recording available time and recording time are not displayed on the measuring mode bar and status bar.

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 PCD-300 Series becomes in monitoring state.

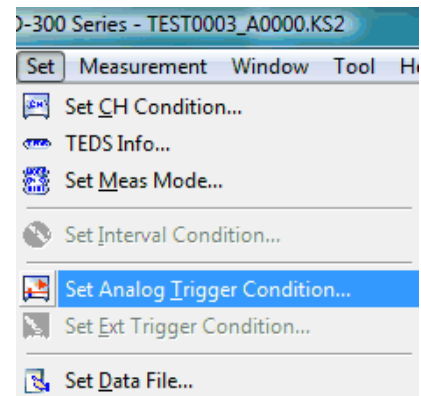
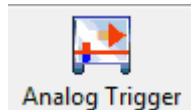
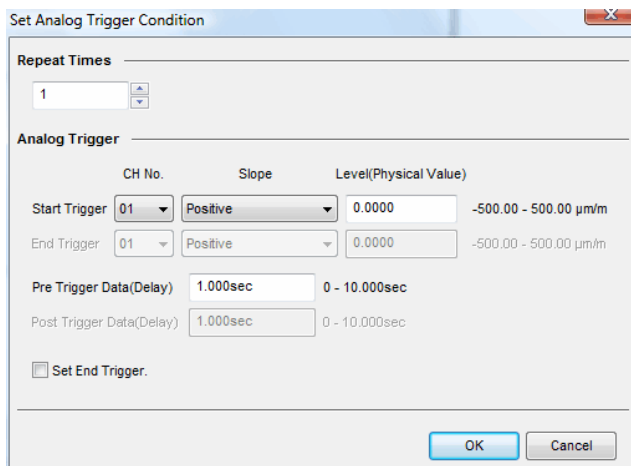


8-3-1 Setting Analog Trigger Measurement Conditions

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

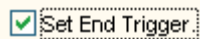
Open the **Set Analog Trigger Condition** window by either of the following.

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



■ Operation Method

- 1) Set the **Repeat Times**. Setting range is from 1 to 9999.
Directly input or set the repeat times with 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 the **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 unit within a value relevant to engineering unit 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 purposes, the allowable delay range is shown at the right of the data entry field.
- 7) Click the **OK** button to set the trigger conditions.

MEMO

Setting available delay amount (sec) = 10000 data ÷ Sampling frequency (Hz)

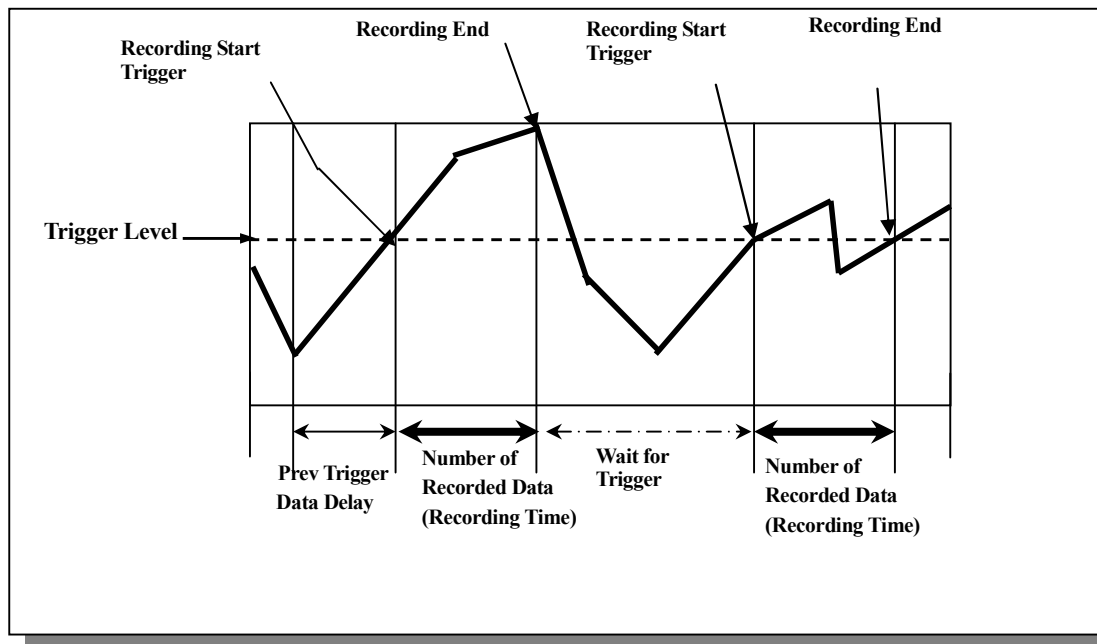
8-3-2 Trigger Slope

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.

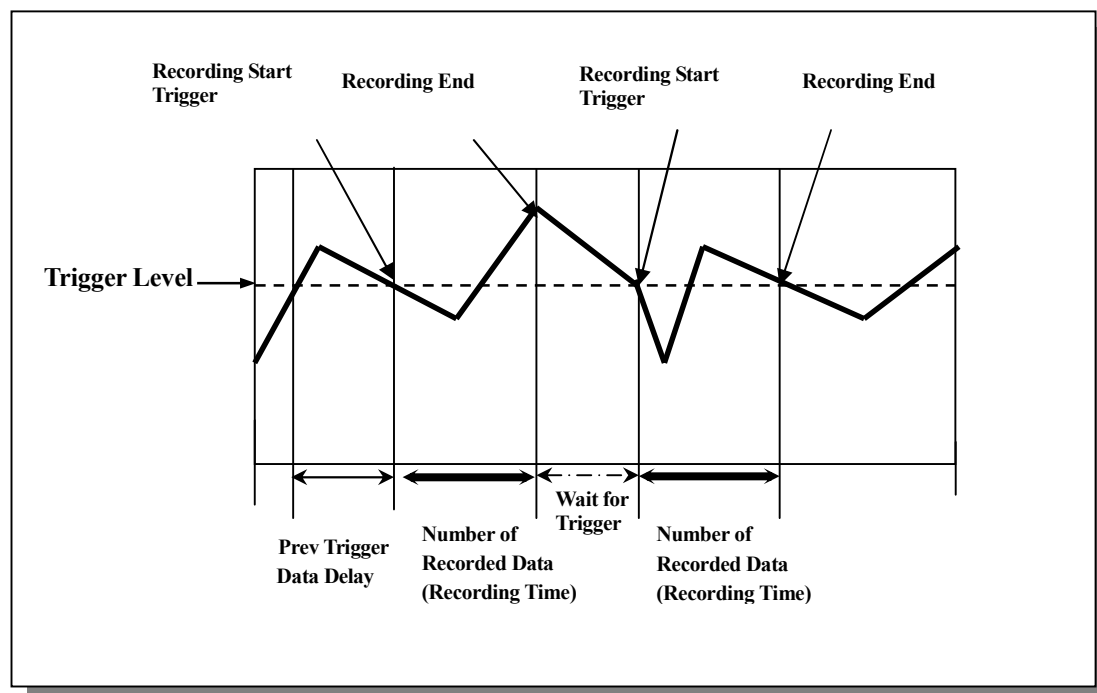
Trigger slope are classified into the following 2 types.

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

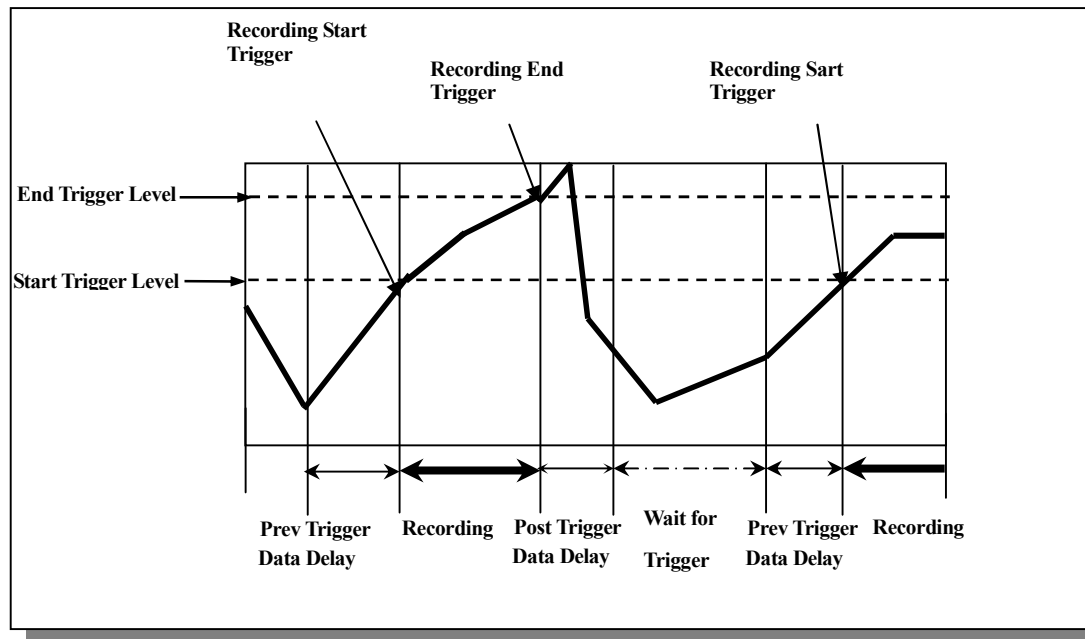


■ End Trigger: Negative

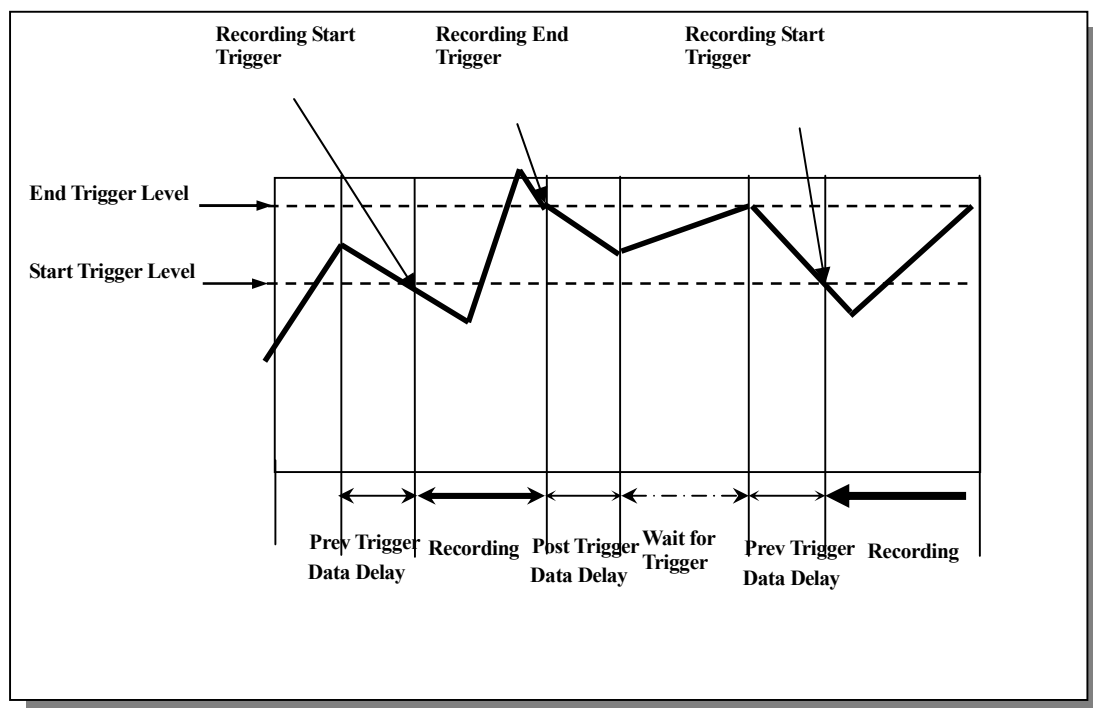


Example of trigger slope with end trigger.

■ Start Trigger, End Trigger: Positive



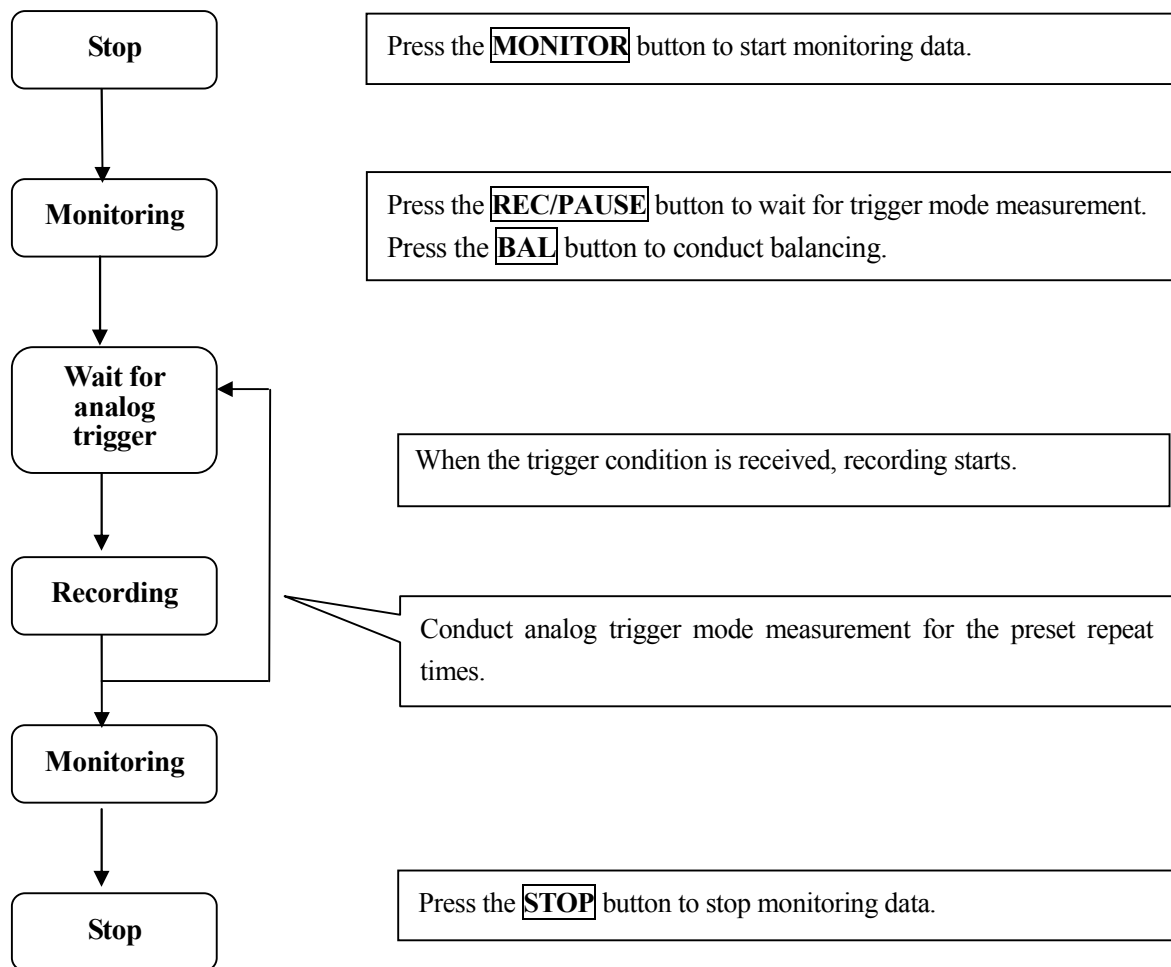
■ Start Trigger, End Trigger: Negative



8-4 EXTERNAL TRIGGER MEASUREMENT

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

When the external trigger signal is received, the External trigger mode measurement starts recording data with the preset trigger conditions. For how to connect the external trigger signal, refer to Instruction Manual for Hardware.

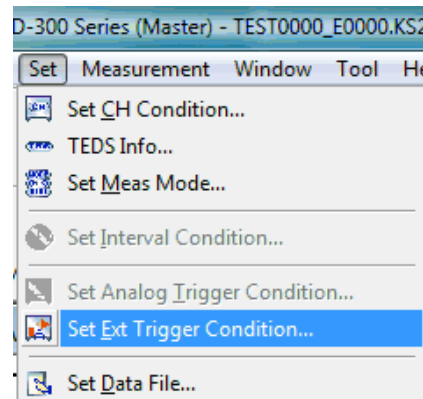
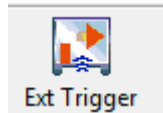
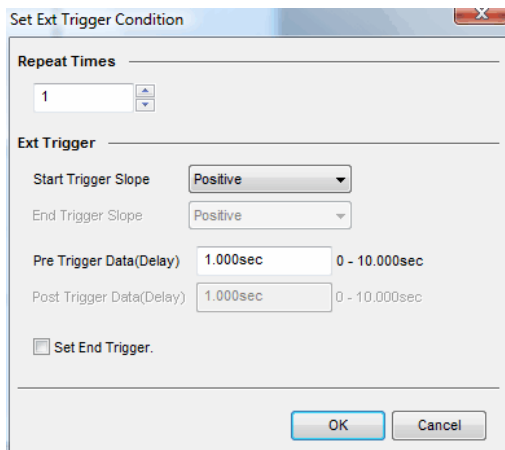


8-4-1 Setting External Trigger Condition

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

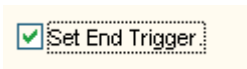
Open the **Set Analog Trigger Condition** window by either of the following.

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



■ Operation Method

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



- 3) Set **Trigger Slope**.
Select relevant item from the list box level.

■ Selection

Positive
Negative

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

8-5 EXECUTING MEASUREMENT

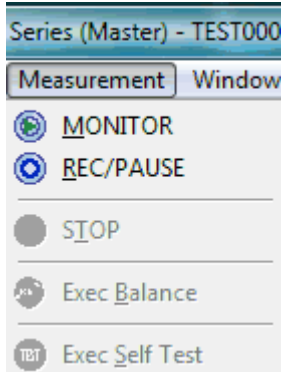
While conducting monitor measurement, measured data is recorded according to the preset Meas mode conditions.

Conduct measurement related operations by any of the following.

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



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



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

■ Meas Operation Panel



- 1) Status Display Displays status of the measurement.

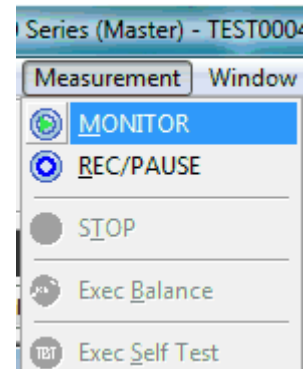
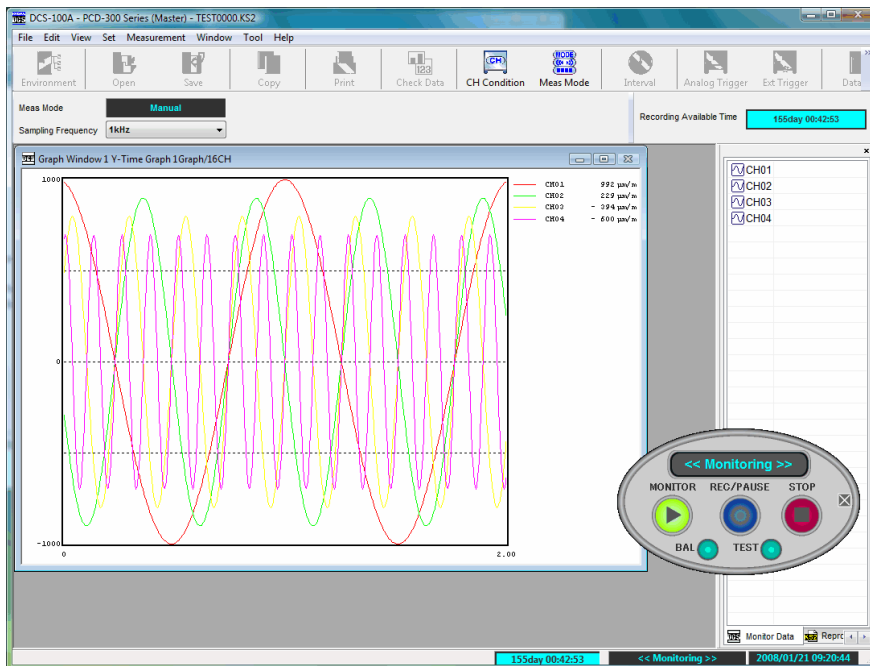
Stop	Measurement stop
Monitoring	In the process of monitor measurement
Recording	Recording data
Stopping recording	Pausing recording with the PAUSE button pressed.
Waiting for Interval measurement	Interval measurement condition is not satisfied
Waiting for ▲▲▲ Trigger measurement	Conditions for desired Trigger measurement are not satisfied. Analog trigger measurement condition is not satisfied. ▲▲▲: Analog Trigger/External Trigger

- 2) **X** button Closes the Meas Operation Panel.
- 3) **MONITOR** button Starts monitor measurement.
- 4) **REC/PAUSE** button Starts recording data.
- 5) **STOP** button Stops recording/monitoring data.
- 6) **BAL** button Conducts balancing and displays balancing results.
- 7) **TEST** button Conducts self-test and displays test results.

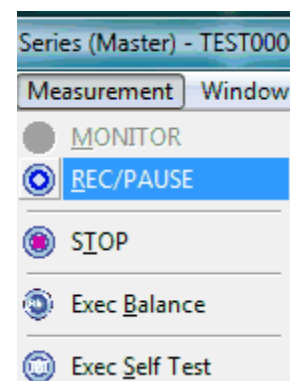
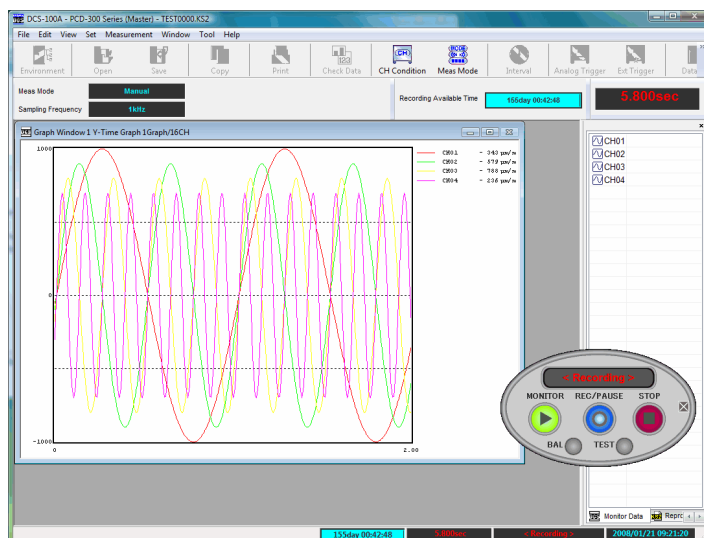
8-5-1 Manual Mode Measurement

■ Operation Method

- 1) Starts monitor mode measurement by any of the following.
 - Point to **Measurement** on the menu bar and select **MONITOR** menu.
 - Select the **MONITOR** icon in the toolbar.
 - Press the **MONITOR** button on the **Meas Operation Panel**.

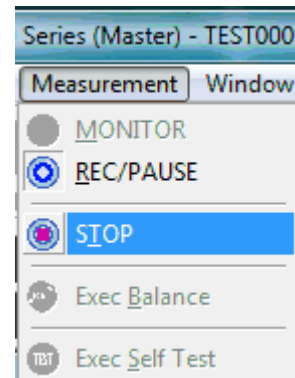


- 2) Starts data recording by any of the following.
 - Point to **Measurement** and select **REC/PAUSE** menu.
 - Select the **REC** icon in the toolbar.
 - Click the **REC/PAUSE** button on the **Meas Operation Panel**.



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

- 3) Ends data recording by any of the following.
- Point to **Measurement** and select **STOP** menu.
 - Select the **STOP** icon in the toolbar.
 - Click the **STOP** button on the **Meas Operation Panel**.



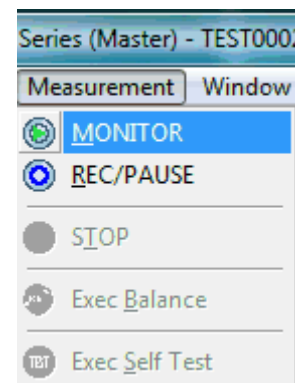
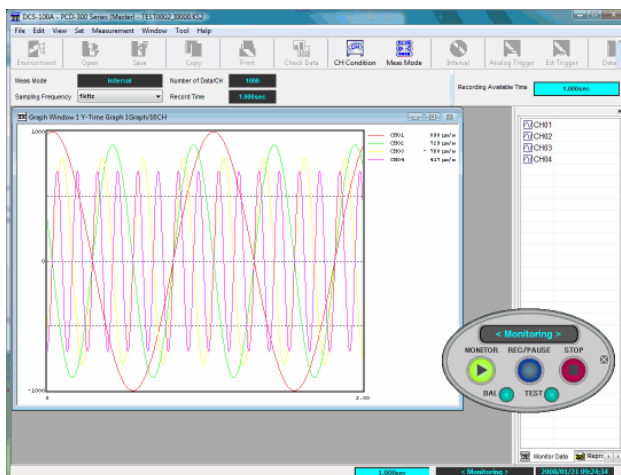
When the Meas mode is set to **Manual (Set the number of recorded data)**, after recording conditions are satisfied, the DCS-100A automatically ends data recording.

- 4) Ends monitoring data by any of the following.
- Point to **Measurement** and select **STOP** menu.
 - Select the **STOP** icon in the toolbar.
 - Click the **STOP** button on the **Meas Operation Panel**.

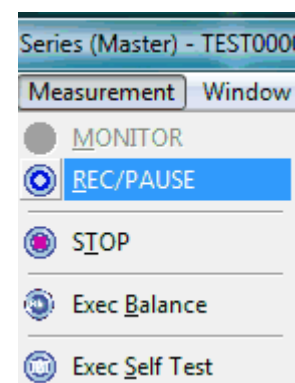
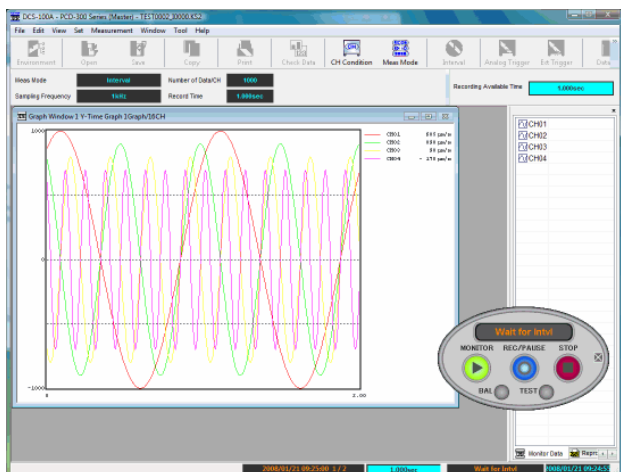
8-5-2 Interval/Analog Trigger/External Trigger Measurement

■ Operation Method

- 1) Starts monitor mode measurement by any of the following.
 - Point to **Measurement** and select **MONITOR** menu.
 - Select the **MONITOR** icon in the toolbar.
 - Click the **MONITOR** button on the Meas Operation Panel.



- 2) Obtain a status that is waiting for various conditions by any of the following.
 - Point to **Measurement** and select **REC** menu.
 - Select the **REC** icon in the toolbar.
 - Click the **REC** button on the Meas Operation Panel.



<Interval mode measurement>

On the status bar, recording start date, recording repeat times, and recording time of the Interval measurement are displayed



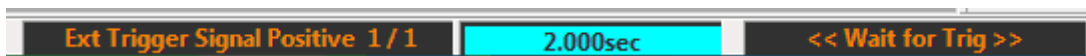
<Analog trigger mode measurement>

On the status bar, trigger CH, trigger level, measurement repeat times, and recording time of the Analog trigger measurement are displayed.

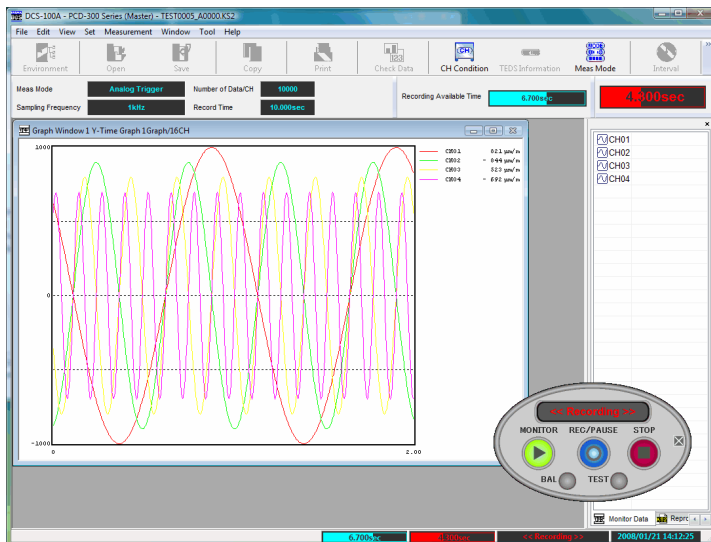


<External trigger mode measurement>

On the status bar, measurement repeat times and recording time, waiting for trigger state of the External trigger measurement are displayed.



3) After satisfying various conditions, data recording starts.



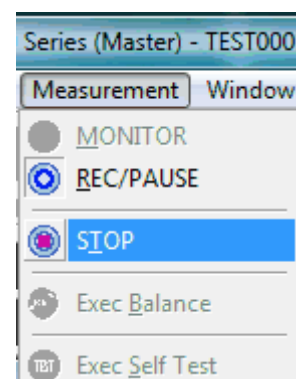
On the status bar, recording progress is displayed.



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



8-6 BALANCING

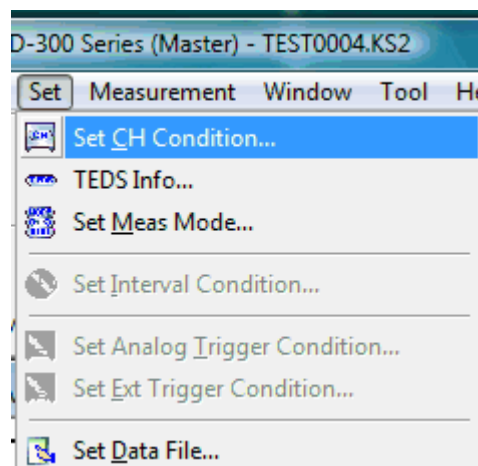
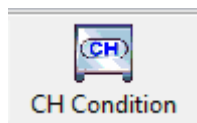
Balancing should be conducted during monitoring or while the operation is stopped. Balancing is not available while stopping monitoring or recording data. Balancing is enabled only in strain mode.

■ Operation Method

- 1) Select balance target channel for balancing.

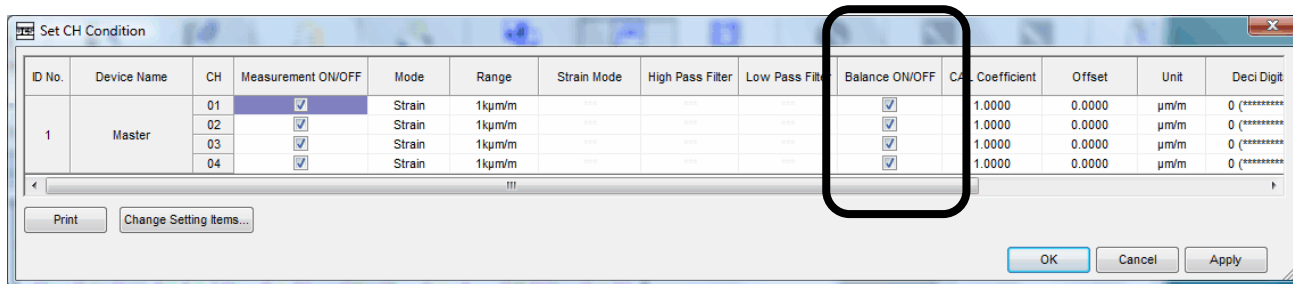
Open the **Set CH Condition** window by either of the following.

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



Put check marks on desired target CH on the **Balance ON/OFF** check box.

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



- 2) Start monitoring data.

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

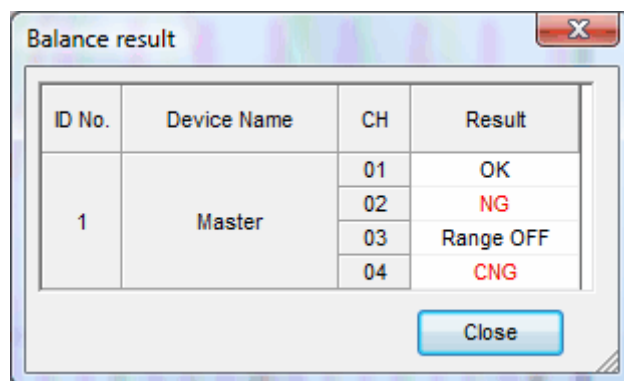
- 3) Conduct balancing.

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

- 4) The following balancing results are displayed.

Click the **CLOSE** button and restart the monitoring.

OK	Normal
NG	Balancing resistance is NG.
CNG	Balancing capacity is NG.
Range OFF	Balancing exempted
**	Measurement exempted

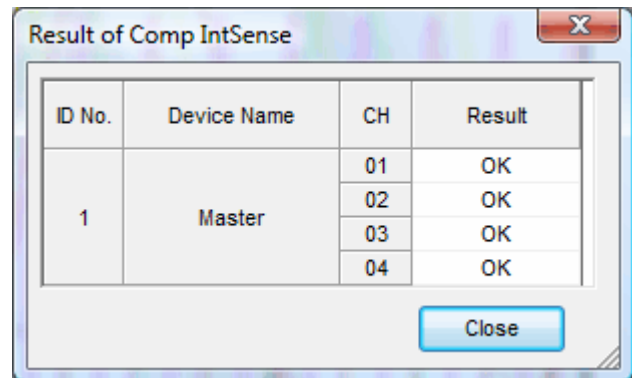


8-7 SELF-TEST

Self-test is conducted for the PCD-300 Series during monitoring data. Note that the self-test is not available while stopping monitoring or recording data.

■ Operation Method

- 1) Starts monitoring.
Click the **MONITOR** button on the **Meas Operation Panel**.
- 2) Conduct self-test.
Click the **TEST** button on the **Meas Operation Panel**.
- 3) The following self-test results are displayed.
Click the **Close** button and restart the monitoring.



OK	Measurement operation is good.
NG	Measurement operation is faulty.

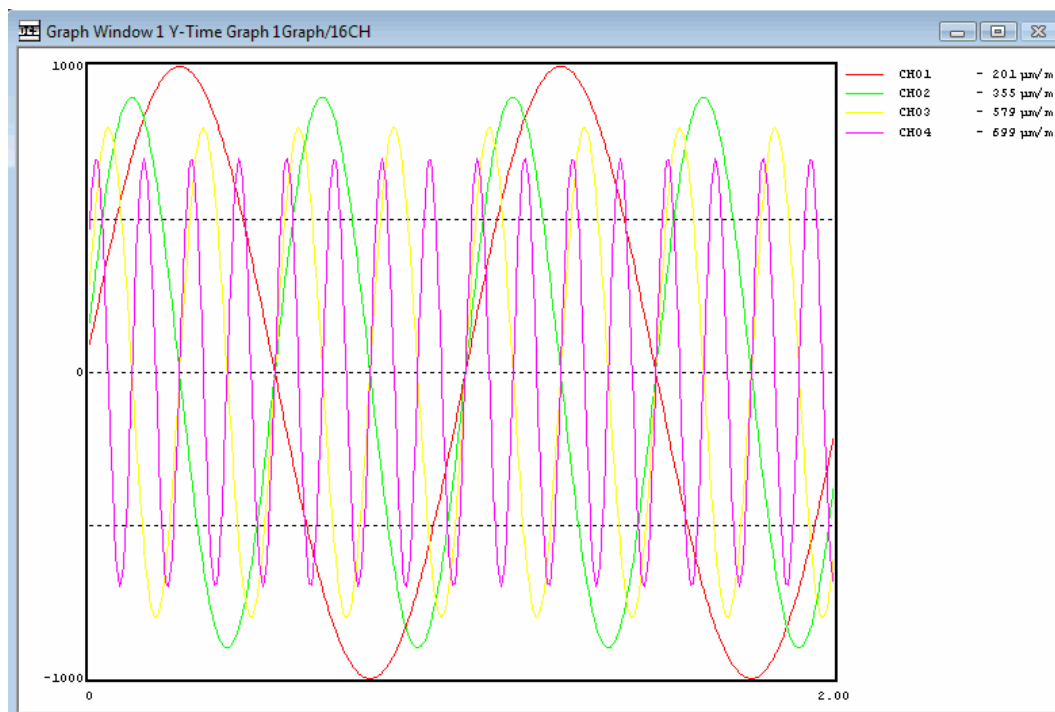
9. OTHERS

9-1 SETTING SCALE VALUE

In the **Y-Time graph** 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 separate volume of “DCS-100A DYNAMIC DATA RECORDING SOFTWARE INSTRUCTION MANUAL (For Common Operation).”

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



9-2 SAVING AND LOADING MEAS CONDITION FILE

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

9-2-1 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 'P3H.'

When the measurement is conducted 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 in addition to CH condition, Meas condition, and data file condition.

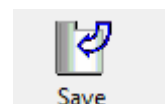
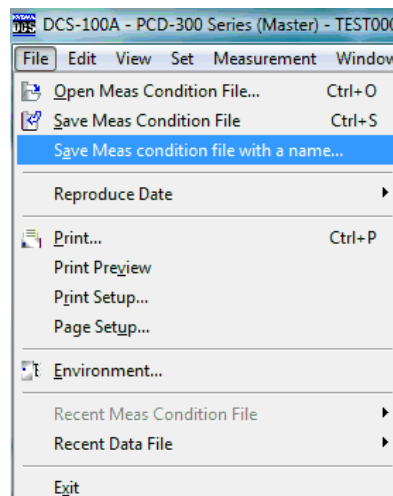
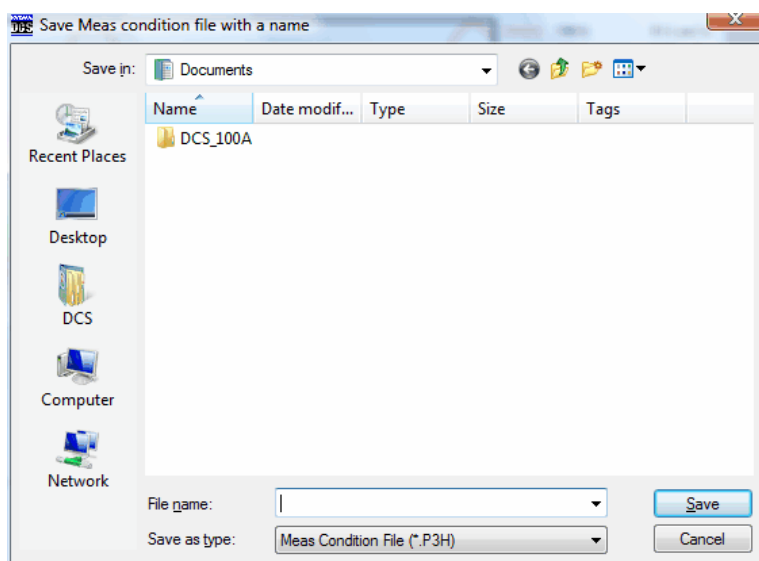
NOTE

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

■ 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 in the toolbar.



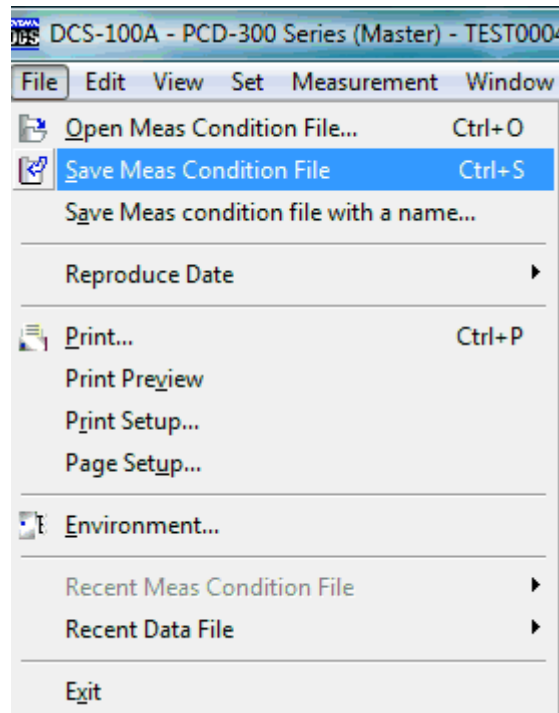
Select a file destination (**Save in**), input a file name, and click the **Save** button.

9-2-2 Saving Meas Condition File

The current Meas condition is saved into the DCS-100A dedicated Meas condition file (Extension: P3H).

■ Operation Method

Point to **File** and select **Save Meas Condition File** menu.



If the current measuring conditions are not yet saved, **Save Meas condition file with a name** window appears.
For how to operate, see “9-2-1 Saving Meas Condition File with a Name.”

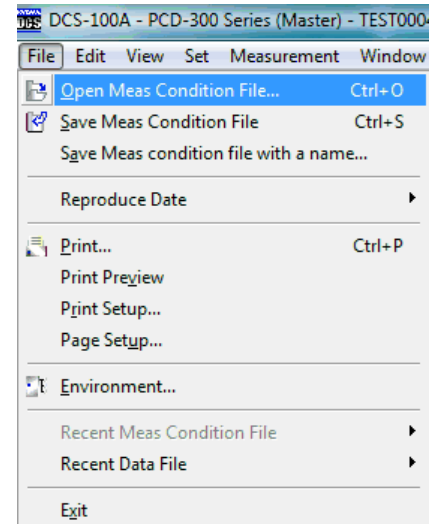
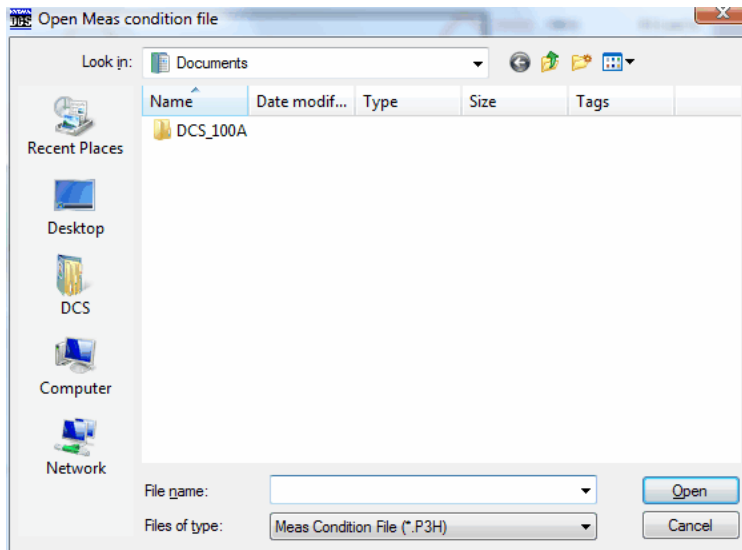
9-2-3 Opening Meas Condition File

Previously saved DCS-100A dedicated Meas condition file (Extension: P3H) is loaded.

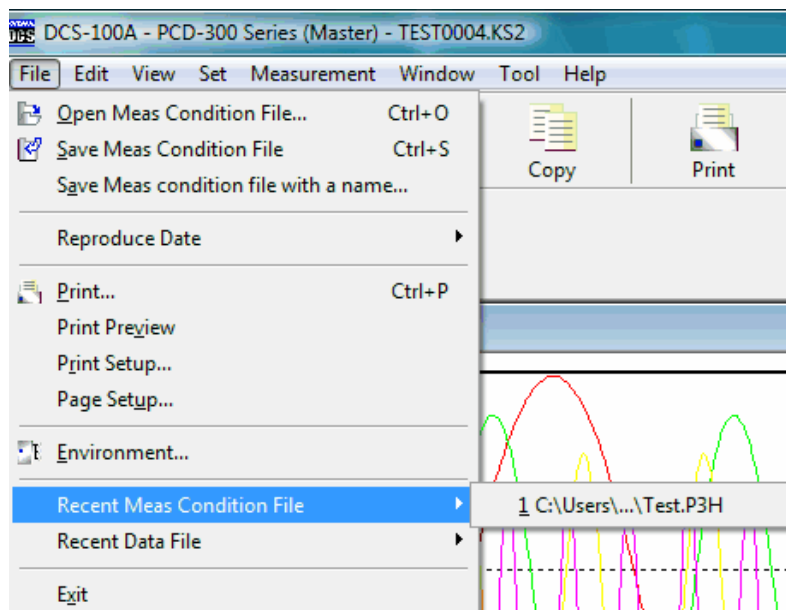
■ Operation Method

Open the **Meas Condition File** window by either of the following method.

- Point to **File** and select **Open Meas Condition File** menu.
- Click the Open icon in 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. LOADING TEDS SENSOR INFORMATION

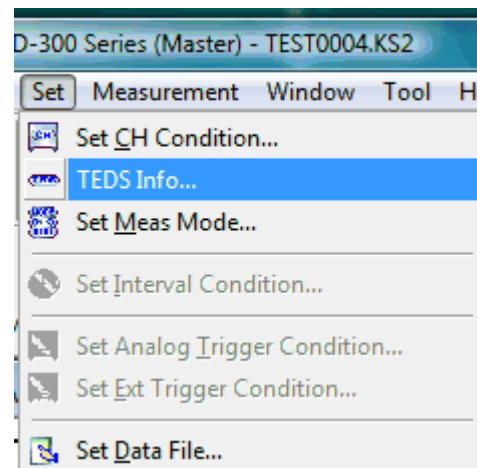
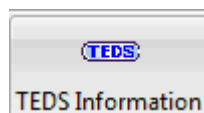
The PCB-300B is capable of loading TEDS (Transducer Electronic Data Sheet) (hereinafter referred to as the TEDS) sensor information and automatically setting various conditions such as appropriate range, calibration coefficient, unit, etc.

It should be noted that the PCD-300B is not capable of loading all the TEDS sensor information items. Loading available TEDS sensor template ID is described in the following.

Model	Template ID	Sensor Type
PCD-300B	33	Strain Gage Sensor

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

- Point to **Set** and select **TEDS Information** menu.
- Select the **TEDS Information** icon in the toolbar.



 A screenshot of the "TEDS Information" dialog box. It contains an "Auto Set Items" section with checkboxes for "Range(Meas Range)", "Strain Mode", "Low Pass Filter", "CAL Coefficient", and "Unit", all of which are checked. Below this is a table with columns: ID No., Device Name, CH, Set ON/OFF, Result, Mode, Range, Meas Range, Strain Mode, Low Pass Filter, CAL Coefficient, and Unit. The table shows data for a device named "Master" with four channels (01, 02, 03, 04). At the bottom right are "Load TEDS Info..." and "Close" buttons.

ID No.	Device Name	CH	Set ON/OFF	Result	Mode	Range	Meas Range	Strain Mode	Low Pass Filter	CAL Coefficient	Unit
1	Master	01	☒	***	Strain	1kμm/m	-1000 - 1000 μm/m	4G	***	1.0000	μm/m
		02	☒	***	Strain	1kμm/m	-1000 - 1000 μm/m	4G	***	1.0000	μm/m
		03	☒	***	Strain	1kμm/m	-1000 - 1000 μm/m	4G	***	1.0000	μm/m
		04	☒	***	Strain	1kμm/m	-1000 - 1000 μm/m	4G	***	1.0000	μm/m

10-1 SETTING TEDS INFORMATION LOADING ITEMS

Set various items for loading the TEDS sensor information items.

10-1-1 Setting CH for Loading TEDS Information

After loading the TEDS information, set a CH for setting various items such as mode, range (Meas range), unit, low pass filter, calibration coefficient, etc.

ID No.	Device Name	CH	Set ON/OFF
1	Master	01	☒
		02	☒
		03	☒
		04	☒

MEMO

- Loading the TEDS information is targeted to all the CHs irrespective of **ON/OFF** of **Set CH ON/OFF** column.
 - After loading the TEDS information, CH condition of only CHs with **Set ON/OFF** set to **ON** and items in **Auto Set Items** set to **ON** are automatically set.
- If either of the above is marked with **OFF**, no CH conditions is changed.

Set ON/OFF

Check mark **ON**: Set items that can change in **Auto Set Items** to CH condition.

Check mark **OFF**: Changing currently set CH condition is not allowed.

10-1-2 Setting Items When Loading TEDS Information

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

Set items can be changed before and after loading the TEDS information. Irrespective of check marks **ON/OFF** of **Auto Set Items**, after loading the TEDS information, the loaded results are displayed on the **TEDS Information** window.

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

MEMO

Note that setting **ON/OFF** of All Set Items can be conducted for all the CHs together at the same time and not separately for every CH.

1) Range (Meas Range)

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) changing the mode, range (Meas range) by loading the TEDS information.

MEMO

- Mode and range values are automatically obtained by calculating sensor type and rated capacity.
- The Meas range is displayed with a measurement available maximum value that is obtained by calculating mode and range values and calibration coefficient. Refer the Meas range when determining the range.
- For sensors with no rated capacity stated in the TEDS information, range is set to maximum range.

2) Low Pass Filter

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) changing the low pass filter by loading the TEDS information.

3) Calibration Coefficient

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) changing the CAL coefficient by loading the TEDS information.

MEMO

- After loading the TEDS information, only CAL coefficient can be automatically set. Offset is not available to change the value preset in CH condition. Therefore, after loading the TEDS information, if mode or range (Meas range) is changed, do not forget to check the offset value.

4) Unit

Set whether to allow (Check mark ON) or prohibit (Check mark OFF) changing the unit by loading the TEDS information.

MEMO

- If unit other than setting available units in the DSC-100A is written in the TEDS information, it is expressed in 'mm.'
- If unit 'Pa' is written in the TEDS information, it is converted into 'kPa' or 'MPa' according to the rated capacity.

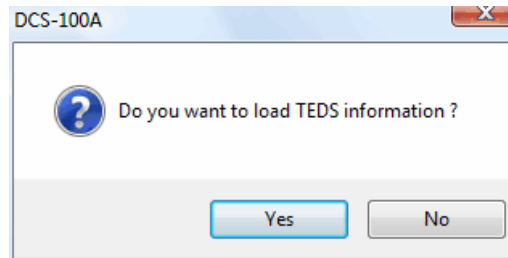
10-2 LOADING TEDS INFORMATION

Load the TEDS sensor information.

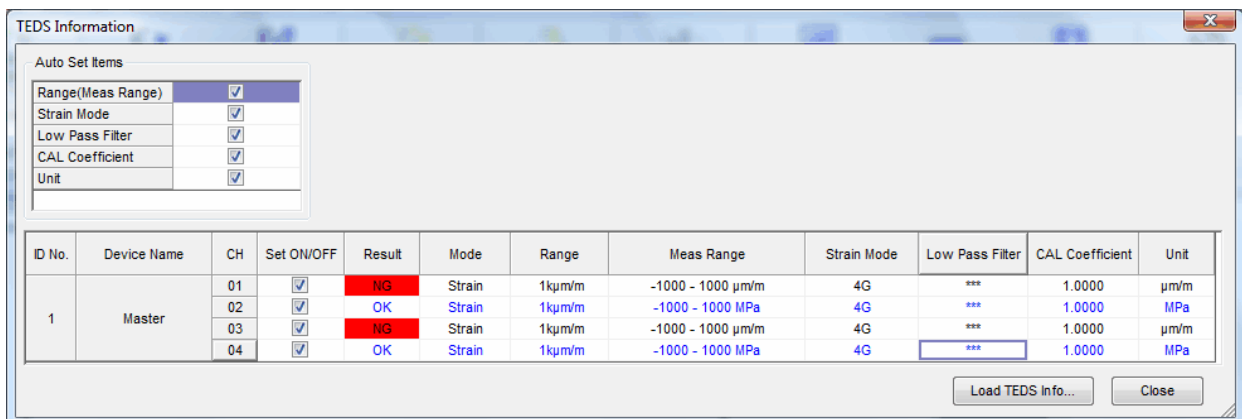
Loading the TEDS sensor information is conducted for information of all CHs irrespective of items previously set in **Set ON/OFF** and **All Set Items**.

■ Operation Method

- 1) Click the **Load TEDS Information** button.
- 2) A message appears to confirm whether to load the TEDS information.



- 3) **Yes** button Load the TEDS information.
- 4) **No** button No TEDS information is loaded.
- 5) After loading the TEDS information is complete, loaded results are displayed with **OK** or **NG** as shown in the following figure.



■ Window Color

Set ON/OFF, **Result**, **Auto Set Items** on the **TEDS Information** window are separately colored as described in the following table.

Color	Background	Set ON/OFF	Result	Auto Set Items	Remarks
Blue	White	ON	OK	ON	To be set in the CH condition. Note)When the Range (Meas Range) is changed, background is yellow.
Black	White	OFF	***	ON/OFF	
Black	Red	ON	NG	ON/OFF	

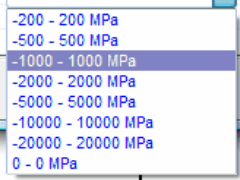
10-2-1 Setting Range (Meas Range)

After loading the TEDS information, changing the automatically set **Range (Meas Range)** is allowed.

MEMO

- Changing the Meas Range is available only for CHs that satisfied the following conditions.
 - 1) TEDS information loaded results are **OK**.
 - 2) Set ON/OFF column is checked **ON**.
 - 3) Range (Meas Range) in Auto Set Items is checked **ON**.
 - 4) Range and Meas Range are colored blue.

ID No.	Device Name	CH	Set ON/OFF	Result	Mode	Range	Meas Range	Strain Mode	L
1	Master	01	☒	NG	Strain	1kµm/m	-1000 - 1000 µm/m	4G	
		02	☒	OK	Strain	1kµm/m	-1000 - 1000 MPa	4G	
		03	☒	NG	Strain	1kµm/m	-200 - 200 MPa	4G	
		04	☒	OK	Strain	1kµm/m	-500 - 500 MPa	4G	



■ Setting Meas Range

The Meas Range is indicated with measuring available maximum value obtained by calculating range value and CAL coefficient of conditioner cards as described in the following expression.

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

MEMO

- After loading the TEDS information, changing available item is only **Range (Meas Range)**.
If it is changed, background color becomes yellow.
Changing the mode, unit, low pass filter, and CAL coefficient are not available on this window.
Change the above items on the CH condition window.

10-3 SETTING TEDS INFORMATION TO CH CONDITION

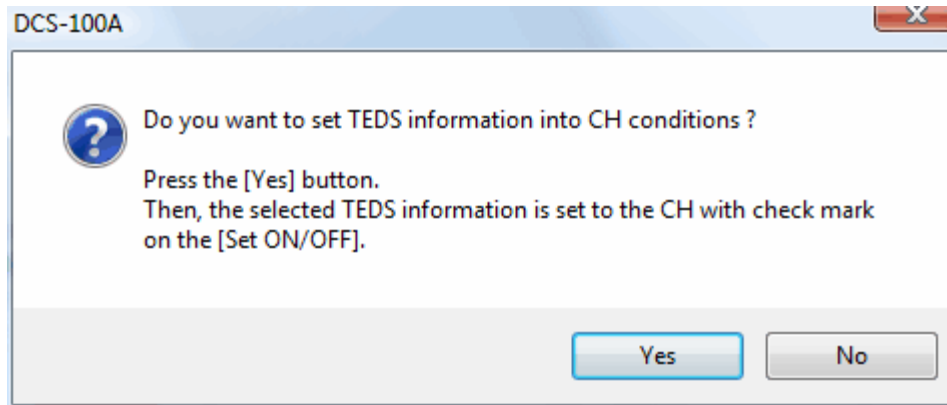
After loading the TEDS information, CHs having Set ON/OFF: **ON**, Result: **OK**, and Auto Set Items: **ON** are set in the CH condition.

■ Operation Method

- 1) Setting items in the CH condition is conducted when closing the TEDS window.

Click the **Close** button.

Then, the following message appears to check whether to set TEDS information.



- 2) **Yes** button Set the TEDS information to CH condition.
- 3) **No** button No items are set in the CH condition.

In addition, check the items changed by loading the TEDS information on the CH Condition window.

11. SPECIFICATIONS

The DCS-100A is a software that, by controlling the PCD-300 Series from the PC, is designed to set various Meas conditions, conduct data recording, display data on graphs, convert files, etc. The USB interface is used for communication between the PCD-300 Series and PC.

- Number of controllable PCD-300 Series Maximum 4 (When controlling more than 2 PCD-300 Series, data is recorded by synchronous operation.)
- Applicable type PCD-300A, PCD-320A, and PCD-300B
- Setting CH condition Meas CH, Meas mode, range, strain mode, high pass filter, low pass filter, balance ON/OFF, CAL coefficient, offset, unit, CH name, Meas range, rated capacity, rated output, and the number of digits on the display (Display items can be selected as desired).
- Meas condition
 - Sampling frequency PCD-300B: 1 to 10 kHz, PCD-300A/PCD-320A: 1 to 5 kHz
 Note) • Connection configuration with PCD-300B and PCD-300A/PCD-320A mixedly exist: Maximum 5 kHz
 • PCD-300B using Windows2000: Maximum 5 kHz
 - Data file size Up to hard disk capacity
 - Manual measurement Records data between **REC** and **STOP** buttons or by specifying the number of recorded data, records data from **REC** buttons to the number of specified data.
 - Interval measurement Automatically records data according to the preset recording start time and recording interval.
 Capable of saving data in CSV format file.
 - Trigger measurement Starts/stops data recording according to the preset trigger condition.
 - Commonly used trigger condition
 - 1) End trigger Setting available
 - 2) Delay amount Maximum 10000 data/CH for both start/end of data recording.
 - Analog trigger condition
 - 1) Trigger CH Arbitrary 1 CH
 - 2) Trigger level Set in engineering unit
 - 3) Trigger slope Up/Down
 - External trigger condition Enabled when the number of AD conversion bits is 12 and 24 bits.
 - 1) Trigger slope Up/Down
- CSV conversion of recorded data After recording, automatically converts the recorded data into CSV format file.
- Loading TEDS sensor information After loading the TEDS sensor information with the PCD-300B, the loaded data is set in CH condition.
- Setting environment
 - Setting hardware configuration Set the number of connected PCD-300 Series units.
 Capable of loading the hardware configuration from the USB connected PCD-300 Series.
 - Checking Communication Load version of the PCD-300 Series.
 - The number of AD conversion bits For the PCD-300B: Selectable from 12/24 bits
 Note) When no PCD-300B exists in the connection configuration, 12 bits fixed.