

Digital Gauge Counter
DG-4300 Series



<http://www.onosokki.co.jp/English/english.htm>

Instruction Manual (Parameter Reference)

This instruction manual describes the setting methods of various conditions needed during measurement with a DG-4300 series digital gauge counter. It also provides the details of conditions to set.

Before using a DG-4300 series digital gauge counter, be sure to first set the conditions given in this manual.

See the separate 'Instruction Manual' for the basic handling methods of DG-4300 series digital gauge counters, along with part names and product specifications.

Model	Description
DG-4320	With BCD output
DG-4340	With BCD output/comparator output
DG-0430	Optional 12 V detector power supply supporting connection with encoders

Warranty

- This product is covered by a warranty for a period of one year from the date of delivery.
- This warranty covers free-of-charge repair during the warranty period for defects occurred while the product is used under correct operating conditions according to descriptions in this manual and notices on the unit label.
- For free-of-charge repair during the warranty period, contact your dealer or your nearest Ono Sokki sales office nearby.
- Even during the warranty period, the following failures will be handled on a fee basis.
 - Failures or damages occurring through misuse, misoperation, repairing without Ono Sokki's approval.
 - Failures or damages occurring through mishandling (dropping) during transportation after purchase.
 - Failures or damages occurring by an Act of God (fires, earthquakes, flooding, and lightning), environmental disruption, or abnormal voltage.
 - Replenishment of expendable supplies, spare parts, and accessories.

Omission of Issuance of Certificate

This product has been tested under strict conditions for correct operation before shipment. Please note that the issuance of certificate is omitted.

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Panel key functions

The functions of each panel key are listed below.

	Toggles between the measurement mode and setting mode, and switches from the setting condition display mode to the measurement mode. Also used to discard the setting that was just selected, and return to the applicable top menu.
	Used to enter the setting that was just selected, and to move to the next item. Used only to move to the next item in the setting condition display mode.
	Switches from the measurement mode to the setting condition display mode. Also used to toggle the setting item to change, and to increment the value of the currently selected digit when setting a numerical value.
	Starts calculation measurement when the device is in the measurement mode. Also used to toggle the setting item to change in reverse, and to decrement the value of the currently selected digit when setting a numerical value.
	Used to reset the measurement value, and to turn the key protection function ON/OFF when the device is in the measurement mode. Also used to move the menu selection cursor to the right, and to move the digit selection cursor to the right when setting a numerical value.
	Stops calculation measurement when the device is in the measurement mode. Also used to move the menu selection cursor to the left, and to move the digit selection cursor to the left when setting a numerical value.

Special panel key operations

Key protection function

The key protection function prohibits the keys on the front panel of the DG-4300 series digital gauge counter from being operated.

Setting key protection

Press and hold the RESET key for at least 2 seconds to set key protection.

The message KEY PROTECT appears in the setting display area when any key is pressed while the key protection is set.

Releasing key protection

Press and hold the RESET key for at least 2 seconds to release key protection.

Initialization function

The initialization function initializes the internal setting conditions of the DG-4300 series digital gauge counter. There are two types of initialization.

Resume memory initialization

Turning the power ON while holding down the RESET key initializes the resume memory to its factory default settings. (The resume memory stores the measurement conditions that were in use just before the power was turned OFF.) The panel condition memory is not initialized.

Full initialization

Turning the power ON while holding down the SET/NEXT and RESET keys at the same time initializes the resume memory and panel condition memory to their factory default settings.

Troubleshooting: Blinking error display

Measurement error display

If a measurement error occurs, the display blinks and the BCD OUT error output turns ON. This response indicates a measurement error has occurred, and is not a device malfunction.

When the error is a display value overflow or related error, there is no BCD OUT error output.

Error causes and solutions

To check the causes and solutions of measurement errors, see the information given in 'Error message list' in the separate 'Instruction Manual'.

Always reset the DG-4300 series digital gauge counter after resolving a measurement error.

If the device can't be restored after resolving an error, contact your place of purchase or nearest Ono Sokki sales office.

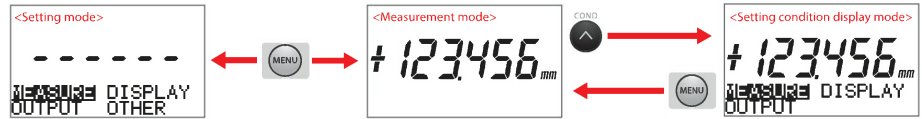
Main modes and how to switch them

DG-4300 series digital gauge counter has three modes: the measurement mode, setting mode, and setting condition display mode.

To select the mode, press the MENU or COND key as described below.

Pressing the START or STOP key does not start or stop calculation if the device is not in the measurement mode (in the setting mode or setting condition display mode). Make sure you are in the correct mode.

Measurement mode	DG-4300 series digital gauge counters start in the measurement mode directly after power ON.
Setting mode	Press the MENU key in the measurement mode to switch to the parameter setting mode. Press the MENU key again to return to the measurement mode.
Setting condition display mode	Press the COND key in the measurement mode to switch to the parameter setting condition display mode. Press the MENU key to return to the measurement mode.

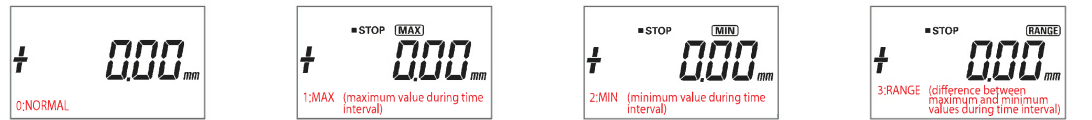


Measurement modes (NORMAL/MAX/MIN/RANGE) and how to switch them

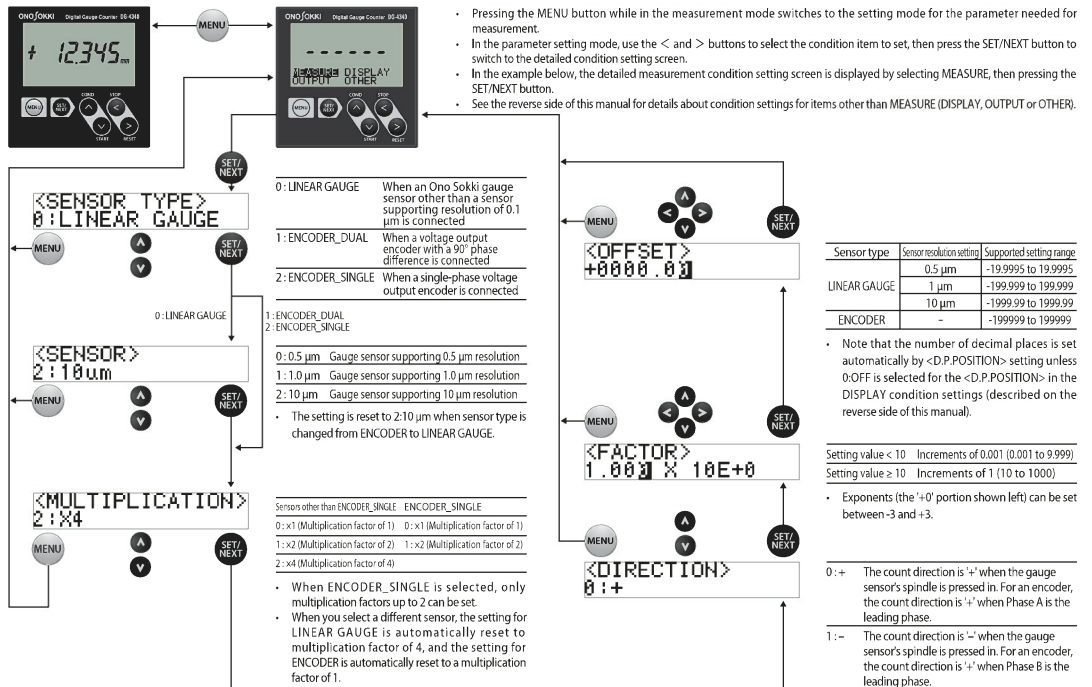
DG-4300 series digital gauge counters have four measurement mode selections: 0:NORMAL, 1:MAX, 2:MIN and 3:RANGE.

You can switch these measurement modes using the DISPLAY condition settings in the parameter setting mode switched from the measurement mode by pressing the MENU key.

0:NORMAL	Displays instantaneous values
1:MAX	Displays the maximum value measured during the interval from when the START key is pressed until the STOP key is pressed.
2:MIN	Displays the minimum value measured during the interval from when the START key is pressed until the STOP key is pressed.
3:RANGE	Displays the difference between the maximum and minimum values measured during the interval from when the START key is pressed until the STOP key is pressed.



Condition items in the MEASURE (measurement condition) setting screen



Condition items in the DISPLAY (display control) setting screen

<DISPLAY MAIN>
0: NORMAL Measurement instantaneous value display
1: MAX Maximum value display
2: MIN Minimum value display
3: RANGE Range value (MAX-MIN) display

<D.P.POSITION>
0: OFF Display depending on <SENSOR> and <SENSOR TYPE> settings
1: 0.00000 Display with no decimal places
2: 0.0000.0 Display with one decimal place
3: 0.0000.00 Display with two decimal places
4: 0.000.000 Display with three decimal places
5: 0.00.0000 Display with four decimal places
6: 0.00000 Display with five decimal places

• The setting for number of decimal places can be selected freely regardless of the selected sensor. But note that when using the device with a gauge sensor, displacement measurement is the basic measurement type, so if 0:OFF is selected, the number of decimal places is set automatically according to the <SENSOR> and <SENSOR TYPE> settings.

<LCD CONTRAST>
0 to 9 Default value: 4
Higher values: dark, Lower values: light

• <LCD CONTRAST> changes the LCD contrast when changing settings. Note that the setting is only entered if the SET/NEXT button is pressed.

Condition items in the OUTPUT (output setting) setting screen

<OUTPUT>
0: BCD
1: COMP

<BCD OUT DATA>
0: MAIN

<BCD LOGIC>
0: +
1: -

<COMP SETTING>
0: SKIP
1: NEXT
0: UPPER
1: LOWER
2: OK/NG
0: UPPER
1: LOWER
2: OK/NG

<COMP OUT DATA>
0: MAIN
1: NORMAL

<OUTPUT>
0: BCD Move to BCD output setting
1: COMP Move to comparator output setting

<COMP SETTING>
0: COMP 1 Move to COMP1 setting
1: COMP 2 Move to COMP2 setting
2: COMP 3 Move to COMP3 setting

<BCD OUT DATA>
0: MAIN BCD output of measured values using DISPLAY MAIN setting
1: NORMAL BCD output of instantaneous values

<BCD LOGIC>
0: + BCD output using positive logic
1: - BCD output using negative logic

<COMP OUT DATA>
0: MAIN Comparator output using measured values with DISPLAY MAIN setting
1: NORMAL Comparator output with instantaneous values

<COMP SETTING>
0: SKIP End setting and move to setting mode top screen.
1: NEXT Move to other comparator-related condition settings.

• Asterisks (*) in LCD graphics indicate the channel number of the selected comparator.
• The comparator setting ranges are shown below.

Sensor type	Resolution setting	Upper limit evaluation value setting <COMP* UPPER>	Lower limit evaluation value setting <COMP* LOWER>
LINEAR GAUGE	0.5 μm	-19.9995 to 19.9995	-19.9995 to 19.9995
	1 μm	-199.999 to 199.999	-199.999 to 199.999
	10 μm	-1999.99 to 1999.99	-1999.99 to 1999.99
ENCODER	-	-199999 to 199999	-199999 to 199999

Condition items in the OTHER (others) setting screen

<PANEL COND>
0: SKIP Skip settings
1: SAVE Save panel conditions
2: LOAD Recall panel conditions
3: CLEAR Erase all panel conditions

• Note that executing 3: CLEAR simultaneously resets both the panel conditions and the resume memory (which stores the settings in use before the power is turned OFF) to the factory default settings.

<LOAD CONDITION>
0: COND 1 Recall COND1
1: COND 2 Recall COND2
2: COND 3 Recall COND3
3: COND 4 Recall COND4

<SAVE CONDITION>
0: COND 1 Save in COND1
1: COND 2 Save in COND2
2: COND 3 Save in COND3
3: COND 4 Save in COND4

List of factory default settings

When you turn the DG-4300 series digital gauge counter's power ON while holding down the SET/NEXT and RESET keys at the same time, the resume memory and panel condition memory are reset to the factory default settings below.

The asterisks (*) in the <COMP* WORKING>, <COMP* UPPER> and <COMP* LOWER> items in the list indicate that the same value is set for COMP1, COMP2 and COMP3.

Condition setting	Setting item	Setting value
MEASURE	<SENSOR TYPE>	LINEAR GAUGE
	<SENSOR>	10 μm
	<MULTIPLICATION>	Multiplication factor of 4
	<DIRECTION>	+
	<FACTOR>	1.000X10E+0
	<OFFSET>	+0000.00
DISPLAY	<DISPLAY MAIN>	NORMAL
	<D.P.POSITION>	OFF
	<LCD CONTRAST>	4
	<BCD OUT DATA>	MAIN
OUTPUT	<BCD LOGIC>	+
	<COMP OUT DATA>	MAIN
	<COMP* WORKING>	UPPER
	<COMP* UPPER>	+1000.00
	<COMP* LOWER>	+0000.00

• Asterisks in setting items indicate comparator channels (1 to 3).

Setting condition display mode

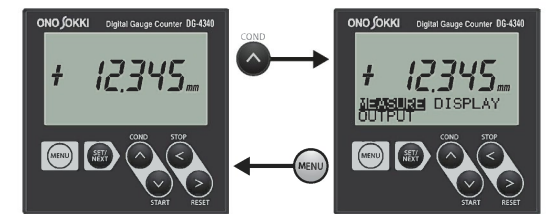
The setting condition display mode is used to display and check conditions set in the DG-4300 series digital gauge counter while executing measurement, without interrupting measurement.

Switching to setting condition display mode

Press the COND key in the measurement mode to switch to the parameter setting condition display mode while continuing measurement.

Press the < or > key in the parameter setting condition display mode to select the setting item you want to check. With the desired item selected, press the SET/NEXT key repeatedly to toggle the set condition display with each press.

Pressing the MENU key returns the display to the normal measurement mode.



Condition setting display mode	Display item	Comment	
MEASURE	<SENSOR TYPE>		
	<SENSOR>	• Not displayed when ENCODER is selected.	
	<MULTIPLICATION>		
	<DIRECTION>		
	<FACTOR>		
	<OFFSET>		
DISPLAY	<DISPLAY MAIN>		
	<D.P.POSITION>		
	<LCD CONTRAST>		
	<BCD OUT DATA>		
OUTPUT	<BCD LOGIC>		
	<COMP OUT DATA>		
	<COMP* WORKING>		
	COMPARATOR	UPPER <COMP* UPPER>	• Displays upper limit evaluation value selected for <COMP* WORKING>.
		LOWER <COMP* LOWER>	• Displays lower limit evaluation value selected for <COMP* WORKING>.
OK/NG <COMP* UPPER>		• Displays upper limit evaluation value selected for <COMP* WORKING>.	
OK/NG <COMP* LOWER>		• Displays lower limit evaluation value selected for <COMP* WORKING>.	