ONO SOKKI

Digital Gauge Counter

DG-5100 Series

- Parameter Reference -

This manual describes basic operations, name of each section, and specifications of the DG-5100 Series Digital Gauge Counter.

Be sure to handle the product with the procedures described in this manual.

For details on name of each section, specifications, and handling precautions of DG-5100 Series Digital Gauge Counter, refer to the Instrument Instruction Manual.

Model	Description
DG-5100	Basic type main unit
DG-0522	BCD Function Option
DG-0530	Analog Output Function Option
TM-0301	DC Power Supply Option
TM-0340	Contact Output Function Option

■ Omission of Issuance of Certificate

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

■ Warranty

1. This product is covered by a warranty for a period of one year from the date of purchase. This warranty covers free-of-charge repair during the warranty period.
2. Even during the warranty period, the following failures will be handled on a fee basis.
   - Failures or damages occurring through misuse, improper repairs, or modification
   - Failures or damages occurring through mishandling (dropping) during transportation after purchase
   - Failures or damages occurring through natural calamities (fires, earthquakes, flooding, and lightening)
   - Failures or damages occurring through environmental disruption or abnormal voltage
   - Replenishment of expendable supplies, spare parts, and accessories

If you have any question about repairs after the warranty period, contact your dealer or Ono Sokki sales office nearby

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Modes and Mode Selection

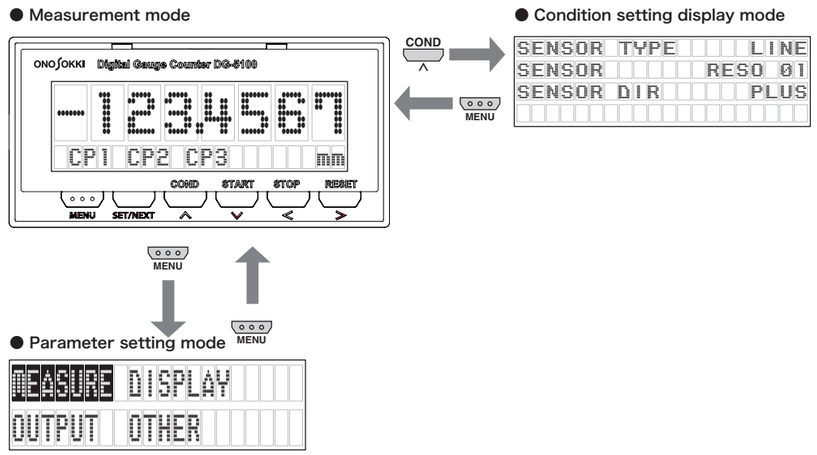
The DG-5100 Series Digital Gauge Counter is provided with three different modes: measurement, parameter setting, and condition setting display.

■ Changing the Mode

When you turn ON the power of the DG-5100 Series Digital Gauge Counter, it is activated in the measurement mode.

When you press the [MENU] switch in the measurement mode, the parameter setting mode is entered. When you press the [COND] switch in the measurement mode, the condition setting display mode is entered. When you press the [MENU] switch in the parameter setting mode or the condition setting display mode, the measurement mode is resumed.

Even if you press the [START] or [STOP] switch in the parameter setting mode or the condition setting display mode, the counter does not start measurement.



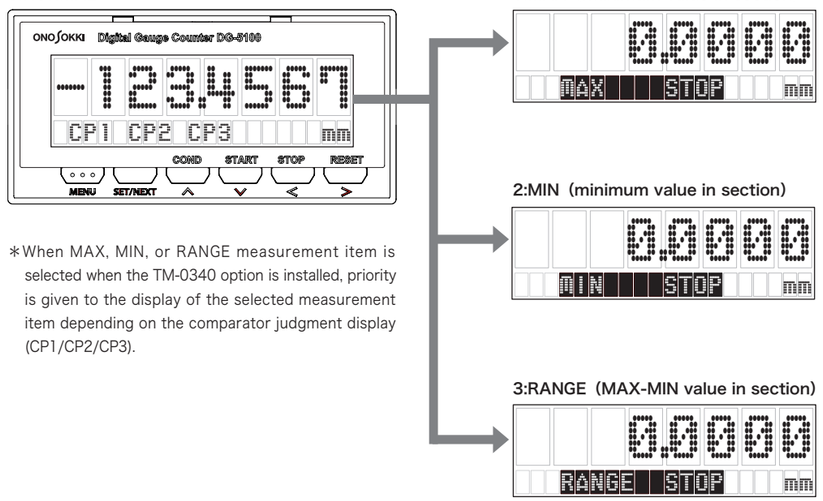
＊Exemplary screens when the option is installed

Measurement Mode (NORMAL / MAX / MIN / RANGE)

The DG-5100 Series Digital Gauge Counter is provided with four different measurement modes: 0:NORMAL, 1:MAX, 2:MIN, and 3:RANGE.

Each measurement mode is selected by the DISPLAY condition in the parameter setting mode screen displayed when you press the [MENU] switch.

0 : NORMAL	Displays the instantaneous value.
1 : MAX	Displays the maximum value in a section between the timing when the [START] switch is pressed and the timing when the [STOP] switch is pressed.
2 : MIN	Displays the minimum value in a section between the timing when the [START] switch is pressed and the timing when the [STOP] switch is pressed.
3 : RANGE	Displays the difference between the maximum and minimum values (MAX-MIN) in a section between the timing when the [START] switch is pressed and the timing when the [STOP] switch is pressed.



＊When MAX, MIN, or RANGE measurement item is selected when the TM-0340 option is installed, priority is given to the display of the selected measurement item depending on the comparator judgment display (CP1/CP2/CP3).

Condition Setting Display Mode

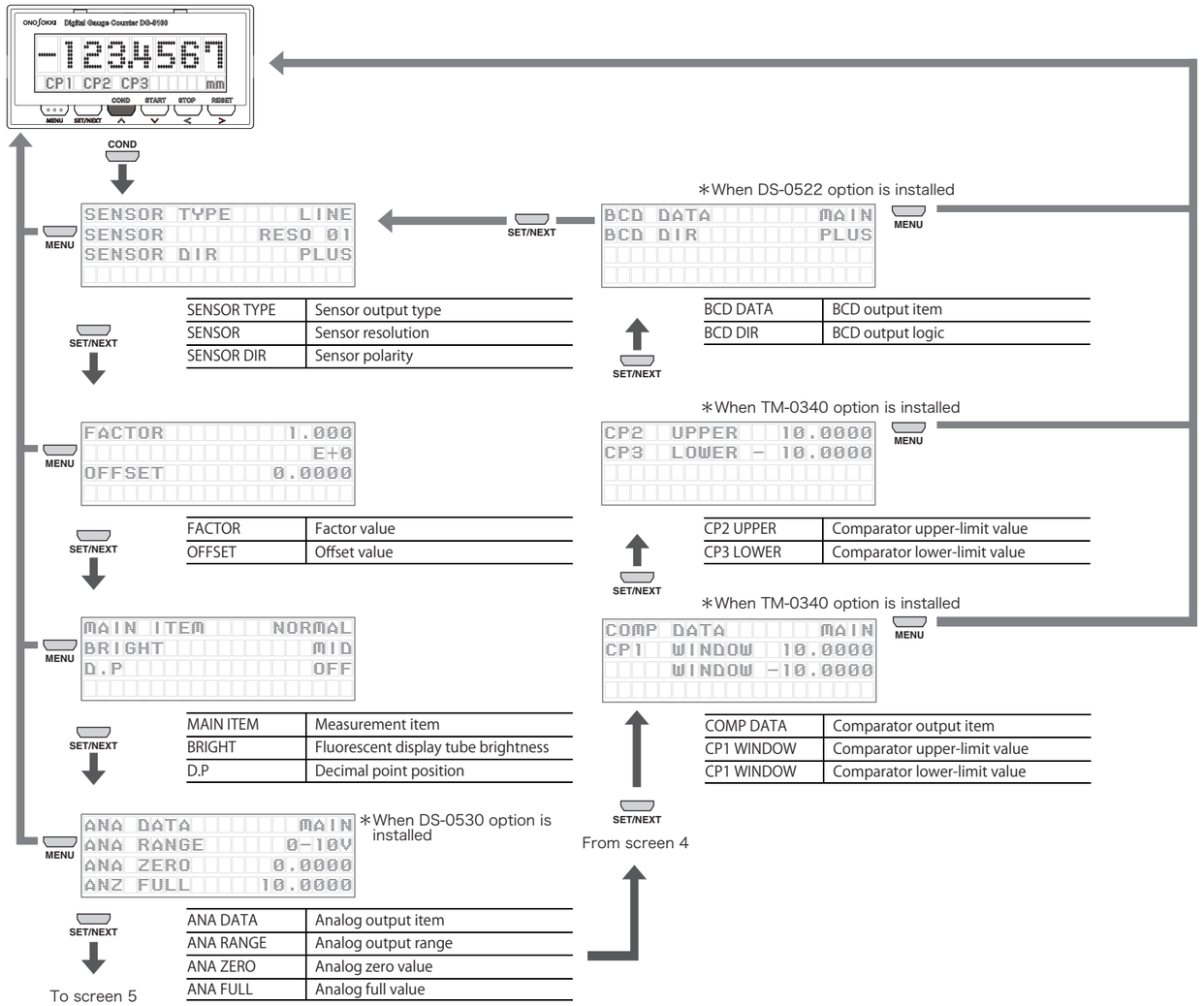
In this mode, condition settings in the DG-5100 Series Digital Gauge Counter are displayed for confirmation.

■ Selecting the Condition Setting Display Mode

When you press the [COND] switch in the measurement mode, the condition setting display mode is entered.

In the condition setting display mode, each time you press the [SET/NEXT] switch, up to seven condition setting screens change. When you press the [MENU] switch, the measurement mode is resumed.

■ Details on Condition Setting Display Mode Screen



Troubleshooting: Measurement Error Display (Blinking)

If a measurement error occurs, the display blinks and the BCD OUT error output (O.C.) is set to ON. This indicates not a failure but a measurement error.

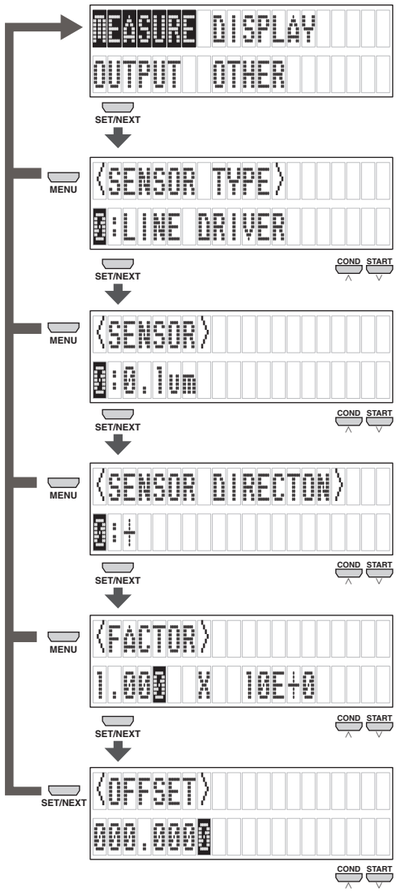
However, if the display value overflows, an error is not output.

The following describes causes and solutions of measurement error. After performing solution, reset the DG-5100 Series Digital Gauge Counter.

If the error cannot be recovered even after performing solution, contact your dealer or Ono Sokki sales office nearby.

Cause of Measurement Error	Possible Solution
The spindle moving speed of the sensor exceeded the maximum response speed of the sensor. (The maximum response speed may be exceeded by the impact occurring when the tip of the spindle hits an object under measurement.)	Reduce the moving speed of the object under measurement or sensor.
The input signal of the sensor was affected by external noise.	Wire the signal cable for sensor separately from noise sources such as motors.
	Do not extend the signal cable for sensor more than necessary.
	Reliably connect the DG-5100 main unit to a good ground.
The output signal of the sensor produced a 90-degree phase shift.	Replace the sensor.
The display value exceeded 7 digits.	Set the offset or factor value again so that the display value does not exceed 7 digits.

MEASURE Setting Screen Condition Items



＊When you move the cursor to MEASURE and then press the [SET/NEXT] switch, the SENSOR TYPE screen appears.

● **SENSOR TYPE (Sensor Type Setting)**

0：LINE DRIVER	Selects the line driver output type sensor.
1：VOLTAGE	Selects the voltage output type sensor.

● **SENSOR (Sensor Resolution Setting)**

0：0.1um	Sets the sensor resolution to 0.1 μm.
1：0.5um	Sets the sensor resolution to 0.5 μm.
2：1um	Sets the sensor resolution to 1 μm.
3：10um	Sets the sensor resolution to 10 μm.

● **SENSOR DIRECTION (Sensor Polarity Setting)**

0：+	Sets increment when the spindle of the gauge sensor is pushed in.
1：−	Sets decrement when the spindle of the gauge sensor is pushed in.

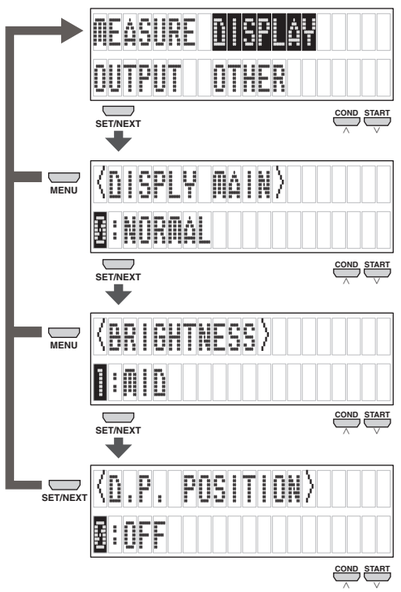
● **FACTOR (Numerical Factor Value Setting)**

FACTOR	0.001 to 1000 (factor value)

● **OFFSET (Numerical Offset Value Setting)**

Sensor resolution 0.1 μm	-999.9999 to 999.9999
Sensor resolution 0.5 μm	-999.9995 to 999.9995
Sensor resolution1 μm	-999.999 to 999.999
Sensor resolution 10 μm	-999.99 to 999.99

DISPLAY Setting Screen Condition Items



＊When you move the cursor to DISPLAY and then press the [SET/NEXT] switch, the DISPLAY MAIN screen appears.

● **DISPLAY MAIN (Measurement Item Setting)**

0：NORMAL	Displays the instantaneous value.
1：MAX	Displays the maximum value in section.
2：MIN	Displays the minimum value in section.
3：RANGE	Displays the MAX-MIN value.

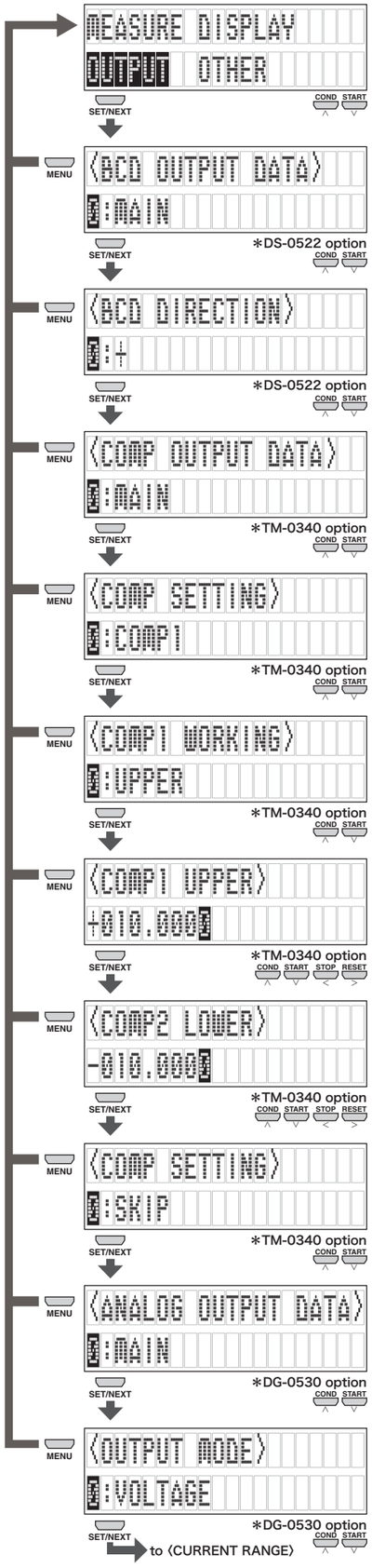
● **BRIGHTNESS (Fluorescent Display Tube Brightness Setting)**

0：HI	Fluorescent display tube brightness: High
1：MID	Fluorescent display tube brightness: Medium (initial setting)
2：LOW	Fluorescent display tube brightness: Low

● **D.P. POSITION (Decimal Point Position Setting)**

0：OFF	Depends on the sensor resolution.
1：000000.0	First decimal place
2：00000.00	Second decimal place
3：0000.000	Third decimal place
4：000.0000	Fourth decimal place
5：00.00000	Fifth decimal place
6：0.000000	Sixth decimal place
7：0000000	Decimal point not displayed.

OUTPUT (Output Conditions) Setting Screen Condition Items



＊When you move the cursor to OUTPUT and then press the [SET/NEXT] switch, the BCD OUTPUT DATA screen appears first.

● **BCD OUTPUT DATA (BCD Output Item Setting)**

0：MAIN	BCD output of the measurement value set in DISPLAY MAIN
1：NORMAL	BCD output of the instantaneous value under measurement

● **BCD DIRECTION (BCD Output Logic Setting)**

0：+	Positive logic output
1：−	Negative logic output

● **COMP OUTPUT DATA (Comparator Output Setting)**

0：MAIN	Comparator output of the measurement value set in DISPLAY MAIN
1：NORMAL	Comparator output of the instantaneous value under measurement

● **COMP SETTING (Setting Comparator Selection)**

0：COMP1	Selects COMP1.
1：COMP2	CSelects COMP2.
2：COMP3	Selects COMP3.

● **COMP WORKING (Comparator Judgment Mode Setting)**

0：UPPER	Upper-limit comparator
1：LOWER	Lower-limit comparator
2：WINDOW	UPPER-LOWER comparator
3：OFF	No comparator judgment

● **COMP1 UPPER (Comparator Upper-limit Judgment Value Setting)**

Sensor resolution 0.1 μm	-999.9999 to 999.9999
Sensor resolution 0.5 μm	-999.9995 to 999.9995
Sensor resolution 1 μm	-999.999 to 999.999
Sensor resolution 10 μm	-999.99 to 999.99

● **COMP2 LOWER (Comparator Lower-limit Judgment Value Setting)**

Sensor resolution 0.1 μm	-999.9999 to 999.9999
Sensor resolution 0.5 μm	-999.9995 to 999.9995
Sensor resolution 1 μm	-999.999 to 999.999
Sensor resolution 10 μm	-999.99 to 999.99

● **COMP SETTING (Comparator Following Screen Setting)**

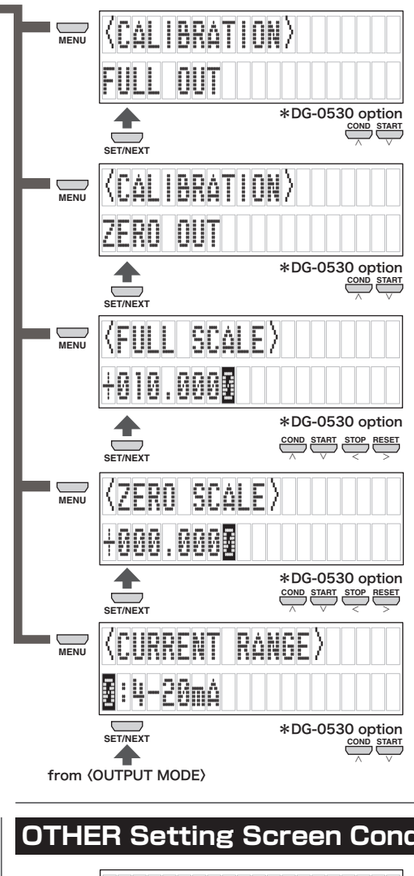
0：SKIP	Moves on to the following screen.
1：NEXT	Moves on to the COMP SETTING screen.

● **ANALOG OUTPUT DATA (Analog Output Setting)**

0：MAIN	BCD output of the measurement value set in DISPLAY MAIN
1：NORMAL	Analog output of the instantaneous value under measurement

● **OUTPUT MODE (Analog Output Type Setting)**

0：VOLTAGE	Voltage output of analog signal
1：CURRENT	Current output of analog signal



● **CALIBRATION FULL OUT (Full Output Fine Adjustment)**

FULL OUT	Analog output full adjustment

＊Adjust the setting by using the [∧] and [∨] switches.
＊Each time you press the switches, the value is changed and stored.

● **CALIBRATION ZERO OUT (Zero Output Fine Adjustment)**

ZERO OUT	Analog output zero adjustment

＊Adjust the setting by using the [∧] and [∨] switches.
＊Each time you press the switches, the value is changed and stored.

● **ZERO SCALE (Analog Full Scale Setting)**

Sensor resolution 0.1 μm	-999.9999 to 999.9999
Sensor resolution 0.5 μm	-999.9995 to 999.9995
Sensor resolution 1 μm	-999.999 to 999.999
Sensor resolution 10 μm	-999.99 to 999.99

＊Output when 10.0000 is set: +10V for +10.0000, -10V for -10.0000

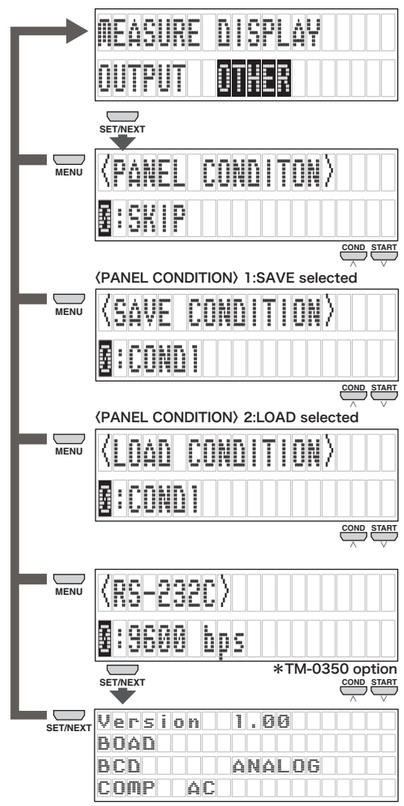
● **ZERO SCALE (Analog Zero Scale Setting)**

Sensor resolution 0.1 μm	-999.9999 to 999.9999
Sensor resolution 0.1 μm	-999.9995 to 999.9995
Sensor resolution 0.1 μm	-999.999 to 999.999
Sensor resolution 0.1 μm	-999.99 to 999.99

● **CURRENT RANGE (Output Current Range Setting)**

0：4−20mA	Sets the output current to the 4-20mA range.
1：0−16mA	Sets the output current to the 0-16mA range.

OTHER Setting Screen Condition Items



＊When you move the cursor to OTHER and then press the [SET/NEXT] switch, the PANEL CONDITION screen appears.

● **PANEL CONDITION (Panel Condition Setting)**

0：SKIP	Skips the setting.
1：SAVE	Stores panel conditions.
2：LOAD	Loads panel conditions.
3：CLEAR	Clears panel conditions.

● **SAVE CONDITION (Stores Panel Conditions)**

0：COND1	Stores panel conditions to COND1.
1：COND2	Stores panel conditions to COND2.
2：COND3	Stores panel conditions to COND3.
3：COND4	Stores panel conditions to COND4.

● **LOAD CONDITION (Loads Panel Conditions)**

0：COND1	Loads panel conditions from COND1.
1：COND2	Loads panel conditions from COND2.
2：COND3	Loads panel conditions from COND3.
3：COND4	Loads panel conditions from COND4.

● **RS-232C (RS-232C Setting)**

0：9600	Sets the baud rate to 9600 bps.
1：19200	Sets the baud rate to 19200 bps.

● **Version Number and Option Information Display**