

# Digital Gauge Counter

# ONOSOKKI

## DG-4320 DG-4340

- Supports various calculation functions  
Multiplication switching, panel condition memory, factor setting, offset setting and others
- The result of OK/NG judgment can be recognized by the color of backlight. (DG-4340)



### GS/BS series Linear Gauge Sensors



RP-721  
Roller Encoder



RP-1700 series  
Rotary Encoder

*Available for various sensors*

*Linear gauge sensors,  
rotary encoders etc.*

# DG-4320/4340

# Digital Gauge Counter

The DG-4320/4340 Digital gauge counters display and calculate the measured values from linear gauge sensors. In addition to four basic functions (multiplication, factor setup, offset setup and number of decimal place setting), new features such as calculation display function and condition memory function are equipped. It helps in-line measurement to work at production site efficiently. The DG-4320 has BCD output and various calculation functions. The DG-4340 has comparator function in addition to the functions the DG-4320 has.

## DG-4320



## DG-4340



### Various functions support your measurements (DG-4320/4340)

- Multiplication switching function : 1/2 or 4-multiplication can be selected using input pulse.<sup>※1</sup>
- Factor setting function : Multiplies the measurement value by the user-specified value.<sup>※2</sup>
- Offset setting function : Adds the user-specified value to the measurement value.
- Number of decimal point setting function : The position of decimal point can be moved regardless of the sensor resolution.
- Calculation display function : Calculates and displays the values of MAX, MIN, and RANGE (MAX-MIN).
- Panel condition memory function : Up to 4 conditions of setup parameters can be stored.

### Able to connect with encoders and linear gauge sensors (DG-4320/4340)

Not only linear gauge sensors, measured values from encoders can be displayed. 12-V power supply is available for an encoder or a sensor.<sup>※3※4</sup>  
The single-phase output type sensor also can be used. The angular, length measurement are enabled.

### BCD output (DG-4320/4340)

BCD output is provided. It enables to control the operations (display, start or stop of calculation, holding of data output etc.).  
The data is updated every 10 ms. (Previous model DG-4140: 25 ms)

### 3 channels of OK/NG judgment (DG-4340)

Comparator function is improved. 3 channels of OK/NG judgment can be made to group the objects. Both of upper and lower values can be set for 1 channel. The color of backlight is changed automatically when the comparator is ON.

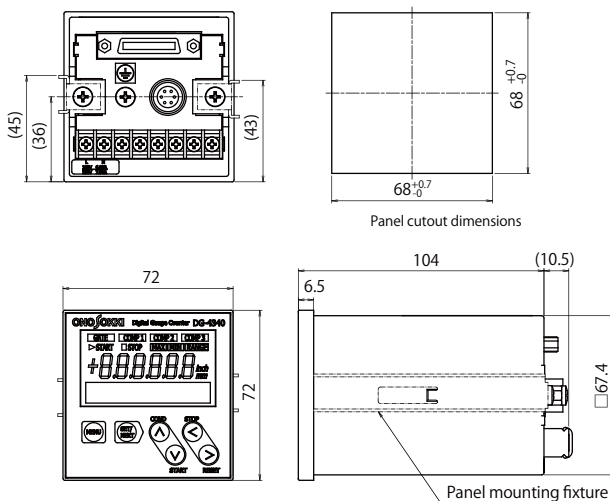
### Ecologically-friendly product (DG-4320/4340)

Compatible to CE marking and RoHS for safety measurement in use worldwide.  
Not generate noise, not affected by noise.

- \*1. 1/2/4-multiplication can be selected at 2-phase signal input.  
1/2-multiplication can be selected at 1-phase signal input.
- \*2. Factor value: 0.001 to 9.999 and 10 to 1000 (integral value)
- \*3. DC 5V is the standard specification of the DG-4320/4340.  
The DG-0430 (option) is required for 12-V power supply.
- \*4. Display range: 0 to ±199999

## Outer Dimensions

(Unit:mm)



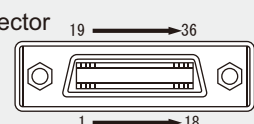
(Note):Recommended thickness of mounting panel: 1 to 3.2 mm

## BCD output Pin-assignment

Pin	Signal	Pin	Signal
1	1 × 10 <sup>0</sup> BCD output	19	4 × 10 <sup>4</sup>
2	2 × 10 <sup>0</sup>	20	8 × 10 <sup>4</sup>
3	4 × 10 <sup>0</sup>	21	Start input
4	8 × 10 <sup>0</sup>	22	Stop input
5	1 × 10 <sup>1</sup> BCD output	23	Display switching input 1
6	2 × 10 <sup>1</sup>	24	Display switching input 2
7	4 × 10 <sup>1</sup>	25	Polarity output +
8	8 × 10 <sup>1</sup>	26	Polarity output -
9	1 × 10 <sup>2</sup> BCD output	27	Decimal point output 1
10	2 × 10 <sup>2</sup>	28	Decimal point output 2
11	4 × 10 <sup>2</sup>	29	1 × 10 <sup>5</sup> BCD output
12	8 × 10 <sup>2</sup>	30	Error output
13	1 × 10 <sup>3</sup> BCD output	31	Hold input
14	2 × 10 <sup>3</sup>	32	Reset input
15	4 × 10 <sup>3</sup>	33	Busy input
16	8 × 10 <sup>3</sup>	34	Comparator gate input
17	1 × 10 <sup>4</sup> BCD output	35	Print command output
18	2 × 10 <sup>4</sup>	36	Common

Receptacle of main unit side:  
DX10A-36S  
(HIROSE ELECTRIC CO., LTD.)  
Applicable plug:  
DX40-36P  
(HIROSE ELECTRIC CO., LTD.)  
Plug cover:  
DX36-CV1  
(HIROSE ELECTRIC CO., LTD.)

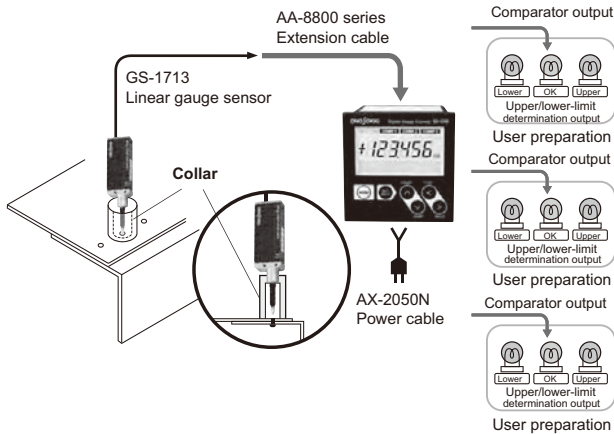
Connector



BCD cable (3m)

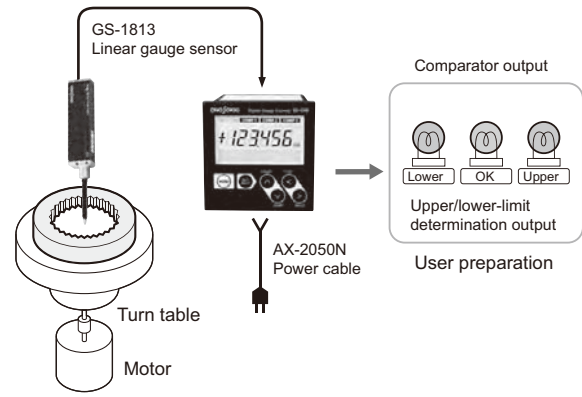
One-side open AA-8107

# Applications



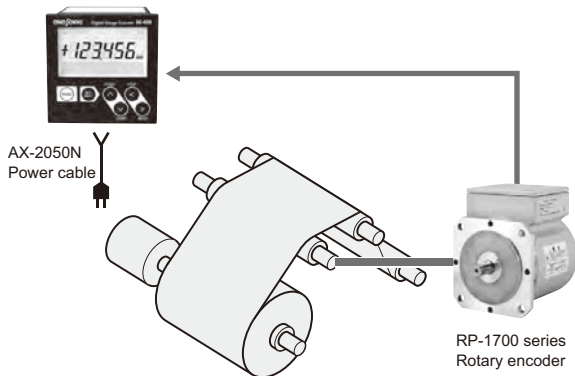
## 3ch OK/NG judgment using comparator function

By detecting height of projecting part of a screw, you can check the tightening. OK/NG judgment for three different types of screws can be made.



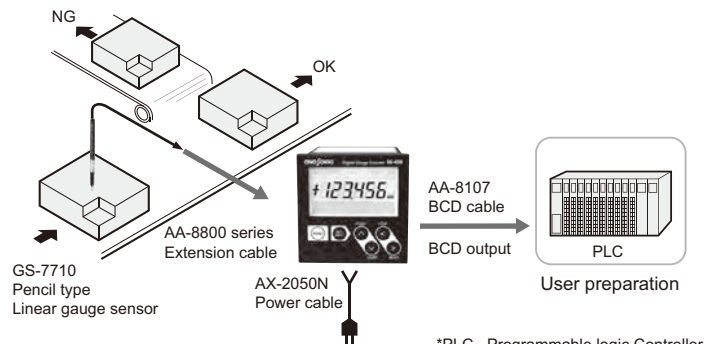
## OK/NG judgment of flatness using RANGE function

Flatness of parts can be measured easily to see the MAX value and MIN value (RANGE function). Turn around the measurement object with sensing the linear gauge sensor. Flatness of the object can be measured by the difference of MAX and MIN values detected.



## Measuring length using pulse counting

The length of paper or steel plate can be measured with a rotary encoder attached to a feed roller. The multiplication switching function or factor setting function of the DG-4300 series enables signal conversion from pulse of an encoder to the length of the object.



\*PLC...Programmable logic Controller

## Auto-judgment using BCD output function

OK/NG judgment of processed parts can be made automatically by using BCD output function and PLC\*. The comparator function decides whether those dimensions are within the specified values or not. And then OK parts are selected by the PLC via the BCD signal of the DG-4340.

## Overview Specification

Items	Model name	DG-4320	DG-4340
Display		LCD display, segment-dotmatrix display, color backlight, 6-digit display	
Measurement range		0 to ±199999 (0 or 5 is displayed on the first digit when the resolution of 0.5 μm is selected).	
Applicable sensor		Linear gauge sensors by Ono Sokki (excluding the GS-3800 series) 2-phase and 1-phase square wave voltage output type sensor by Ono Sokki (encoder etc.)	
Sectable resolution		Can be selected from 0.5 μm, 1 μm, 10 μm	
Input signal		2-phase difference square wave, 1-phase square wave (Can be changed by setup menu)	
Displayed value		Instantaneous value, Max value, Min value, RANGE value (Max value - Min value)	
Calculation function		Offset setting, Factor setting, Multiplication switching, number of decimal place setting	
Digital output		BCD output, update cycle: 10 ms, open collector output (Positive or negative logic can be selectable)	
Comparator		<ul style="list-style-type: none"> <li>•3ch semiconductor relay</li> <li>The setup can be changed by upper, lower or OK/NG comparator.</li> <li>•Backlight turns red when the comparator is "ON".</li> </ul>	
Panel condition memory function		Setup parameters can be stored to counter (4 conditions)	
Outer dimensions / weight		72 (W) × 72 (H) × 114 (D) mm / approx. 320 g	
Power supply voltage		AC100 to 240 V	
Operating temperature range		0 C° to +40 C°	
Storage temperature range		-10 C° to +55 C°	
Accessories		Instruction manual, panel mounting fixture, terminal cover	
Options		DG-0430 (12 V power supply) AA-8101 (BCD cable 3 m) AX-2050N (Power supply cable 3 m)	

\*1 When you select a rotary encoder as a sensor, unit and decimal point are not displayed. (The decimal point can be displayed by "Number of decimal place setting function".)

# For precise measurement

## 0.1µm resolution Linear Gauge Sensor

### GS-3800 series

The GS-3813/3830 is a high resolution type linear gauge sensor with durable bearing and dust/oil-proof (IP66G). It is suitable for in-line measurement by automatic machinery.



**GS-3813/3830**



The DG-5100 is a high speed type linear gauge counter. Necessary functions can be installed by adding optional cards. We provide various function such as comparator, analog output etc. This is the one satisfies all the functions that you need.



**DG-5100**



#### Specification

Item	Model name	GS-3813	GS-3830
Measurement range		13 mm	30 mm
Applicable counter		DG-5100	
Resolution		0.1 µm	
Accuracy (at +20 °C)		1 µm	
Max.spindle velocity <sup>※1</sup>		0.3 (1.2) m/s	
Measurement force (downward) <sup>※2</sup>		2.3 N or less	2.7 N or less
The number of sliding times (proven in our endurance test)		15 million times	
Protection class (not including connector part)		IP66G	
Stem diameter		φ15 <sup>+0</sup> <sub>-0.009</sub> mm	
Signal output		90° phase differential square wave (line driver output)	
Accessories		Instruction manual, open-end wrench	

※1 The values within parentheses ( ) are the maximum spindle velocity used with the DG-5100.

※2 An attachment may not return completely if it is facing laterally or upwards.

Finger lift	AA-969
Gauge stand	ST-0230
Dust protective rubber	AA-4104 (13 mm) / AA-4105 (30 mm)
Extension cable	AA-8900 series

#### Specification

Item	Model name	DG-5100
Applicable gauge sensor <sup>※1</sup>		GS-3813/3830
Display method		Fluorescent display tube, 7 digits
Input signal		90° phase differential square wave (Line driver or voltage output)
Max.input frequency <sup>※2</sup>		3 MHz (300 kHz)
External control input signal		Hold, reset
Power supply		AC100 to 240 V
Accessories		Instruction manual, external control, connector for terminal

\*1 AA-8910 conversion cable is required when the GS series sensors are used with.

\*2 Connecting th the GS-3813/3830 : 3 MHz  
Connecting to other than the GS-3813/3830 : 300 kHz

#### Option

Model name	Function
DG-0522 <sup>※1</sup>	BCD output function 7-digit output Open collector
TM-0350 <sup>※1</sup>	RS232C control function
DG-0530	Analog out Voltage output -10 to +10 V Current output 4 to 20 mA/0 to 16 mA (selectable)
TM-0340	Comparator, 3-channel, mechanical relay
TM-0301	DC power supply, available from DC12 to 24 V

\*1 Either of the DG-0522 or the TM-0350 can be installed.

Please refer to the specified brochures for GS-3813/3830 and DG-5100 for more details.



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\* Outer appearance and specifications are subject to change without prior notice.

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