

NEW

Contact-Type Digital Displacement Sensor

HG-S SERIES

Responding to the Needs of Production Floor



Optical Absolute Method Contact-Type Digital Displacement Sensor

HG-S101

Panasonic

gital Displacement Sensor HG-S series

Class-Top Accuracy

Resolution of 0.1 µm and accuracy of 1 µm or less Optical absolute method for elimination of "value skipping" and "unset zero point"

Slim & Robust

Slim body measuring 11 × 18 × 84.5 mm Industry's top-level robustness

Dual Display Controller

2-line digital display for unprecedented ease of use Full-fledged functions designed for optimum ease of operation on production floor



HG-S SERIES

Versatile and Easy-to-Use Controller

The controller features the industry's first* dual display and offers versatile functions and excellent ease of use.

Industry's first!*

Dual display featuring NAVI function for added indication flexibility

The 2-line digital display simultaneously shows head measurement (measured value) and judgment value (calculated value). * As a sensor product using optical absolute method, as of September 2015 (according to our company's investigation)

All-direction LCD

The high-contrast LCD provides sharp and clear indications and wide viewing angle.



Motor shaft eccentricity measurement



X-Y stage position measurement



Tablet surface flatness measurement

Easy setting

Example of tolerance setting with reference to master workpiece





Resin roller eccentricity measurement



Up to 15 slave units can be connected per master unit.



• High performance type (analog current + input / output) NPN output type HG-SC101 PNP output type HG-SC101-P



Slave units

• High performance type (analog current + input / output) NPN output type HG-SC111 PNP output type HG-SC111-P



High-speed response of

sensor head

3 ms in combination with any

• Standard type (input / output) NPN output type HG-SC112 PNP output type HG-SC112-P



• Wire-saving type HG-SC113

Sensor head

Туре		General purpose		High precision			
		Standard type	Low measuring force type	Standard type	Low measuring force type		
Item	Model No.	HG-S1010	HG-S1010R	HG-S1110	HG-S1110R		
Compatible controller		HG-SC101(-P), HG-SC111(-P), HG-SC112(-P), HG-SC113					
Position detection method		Optical absolute linear encoder method					
Measurement range		10 mm (Note 1)					
Stroke		10.5 mm or more (Note 1)					
Measuring force (Note 2) (Note 3)	Downward mount	1.65 N or less 1.1 N (Note 4)	0.35 N or less 0.3 N (Note 4)	1.65 N or less 1.1 N (Note 4)	0.35 N or less 0.3 N (Note 4)		
	Upward mount	1.35 N or less 0.85 N (Note 4)	0.12 N or less 0.05 N (Note 4)	1.35 N or less 0.85 N (Note 4)	0.12 N or less 0.05 N (Note 4)		
	Side mount	1.5 N or less 0.95 N (Note 4)	0.25 N or less 0.2 N (Note 4)	1.5 N or less 0.95 N (Note 4)	0.25 N or less 0.2 N (Note 4)		
Resolution		0.5 µm		0.1 µm			
Indication accuracy (P-P)		Full range: 2.0 μm or less Narrow range: 1.0 μm or less (any 60 μm)		Full range: 1.0 μm or less Narrow range: 0.5 μm or less (any 60 μm)			
Tip deviation amount		35 μm (Typical value)					
Hot swap function		Incorporated					
Operation indicator lamp		2-color LED (Orange / Green)					
Protective structure		IP67 (IEC) (Note 5)		IP67 (IEC) (Note 5)			
Accessory		Standard type (HG-S1010 / HG-S1110): Sensor head fastening wrench 1 pc., mounting nut 1 pc. Low measuring force type (HG-S1010R / HG-S1110R): Sensor head fastening wrench 1 pc., mounting nut 1 pc., rubber bellows 1 pc.					

Notes: 1) Range of 5 to 10 mm in the case of low measurement force type (HG-S1010R / HG-S1110R) in upward mount position. 2) Measured at ambient temperature of +20 °C.

3) In the case of low measurement force type (HG-S1010R / HG-S1110R), measurements were obtained with products in standard configuration without rubber bellows.

4) Typical value near center of measurement.

5) Excludes damage and deterioration to the rubber bellows due to external causes.

Controller

Туре		Master unit	Slave unit				
		High performance type	High performance type	Standard type	Wire-saving type		
No.	NPN output	HG-SC101	HG-SC111	HG-SC112			
Item	PNP output	HG-SC101-P	HG-SC111-P	HG-SC112-P	HG-5C113		
Compatible sensor head		HG-S1010(R), HG-S1110(R)					
Number of connectable units		Up to 15 slave units can be connected per master unit.					
Supply voltage		24 V DC ±10 %, including 0.5 V ripple (P-P)					
Current consumption (Note 2)		70 mA or less (when sensor head is connected)					
Analog current output (Note 3)		 Current output range: 4 to 20 mA / F.S. Error output: 0 mA Linearity: ±0.25 % F.S. Load impedance: 250 Ω max. 					
Control output (Output 1, Output 2, Output 3)		<npn output="" type=""> <pnp output="" type=""> NPN open-collector transistor PNP open-collector transistor • Maximum sink current: 50 mA (Note 4) • Maximum source current: 50 mA (Note 4) • Applied voltage: 30 V DC or less (between output and 0 V) • Maximum source current: 50 mA (Note 4) • Residual voltage: 1.5 V or less (at 50 mA sink current) • Residual voltage: 1.5 V or less (at 50 mA sink current) • Leakage current: 0.1 mA or less • Leakage current: 0.1 mA or less</pnp></npn>					
Short-circuit protection		Incorporated (automatic reset type)					
Decision output		Open / closed switching type when ON (output activated)					
	Alarm output Open when ON (alarm)						
Response time							
Display resolution							
Cable		0.2-mm ² , 2-core cable (brown and blue lead wires) / 0.15-mm ² , 7-core composite cable, 2 m	0.15-mm ² , 7-core composite cable, 2 m	0.15-mm ² , 6-core cabtire cable, 2 m			
Notes: 1) Measured at a supply voltage of +24 V DC and an ambient temperature of +20 °C, unless otherwise indicated							

nperature of +20 °C, unless otherwise indicated.

2) Power consumption does not include analog current output.

a) Linearity F.S. = 16 mA, and is linearity with respect to digitally measured values.
4) When slave units are connected to the master unit, the maximum sink current / source current of the control output and ambient temperature vary depending on the number of connected slave units.

2015.11 panasonic.net/id/pidsx/global

Panasonic Industrial Devices SUNX Co., Ltd. **Global Sales Department**