

Panasonic

INDUSTRY

NEW

Contact-type

Self-Monitoring Sensor

Digital Displacement Sensor Head

50 mm 1.969 in type
General Purpose

HG-S1050



Lightweight

Long stroke
Newly arrived
50 mm 1.969 in type!

Lightweight with a robust yet slim body!
Optical absolute method eliminates “value skipping” and “unset zero point”!

Plain bearings with 2-point support structure

Disperses lateral shock to significantly reduce the risk of breakage.

**Slender (W 17.5 × H 173.5 × D 27 mm
W 0.689 × H 6.831 × D 1.063 in) and
lightweight (approx. 180 g) body**

Realizes the industry's smallest^{*1} class of sensor head.

Metal guide whirl-stop structure

Risk of damage and measurement failure due to deformation and wear deterioration are significantly reduced.

^{*1}: As of November 2019, in-company survey.

Spindle stopper

Blocks upward thrust impact.

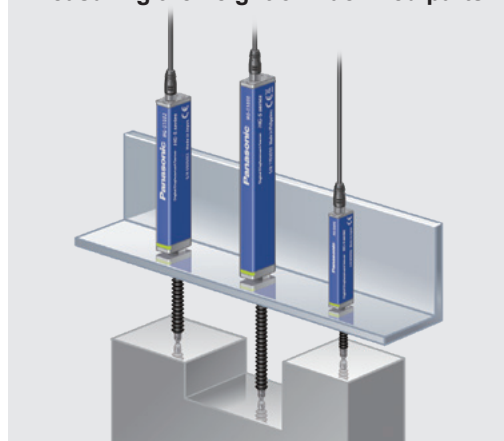
**Tip deviation amount of
40 µm 1.575 mil or less (typical value)^{*2}**

Deviation of the measurement point is held to a minimum.

^{*2}: Value calculated from the clearance of the upper and lower plain bearings.

Application

Measuring the height of machined parts



Bending-resistant cable^{*3}

A bending-resistant cable provides peace of mind even when the sensor head is installed on a movable tool.

^{*3}: Sensor head connection cable is sold separately.

A straight connector and L-shaped connector are also available.

- Length: 3 m 9.843 ft CN-HS-C3(L)
- Length: 7 m 22.966 ft CN-HS-C7(L)
- NEW • Length: 10 m 32.808 ft CN-HS-C10(L)
- Length: 20 m 65.617 ft CN-HS-C20(L)

Hot-swappable

The sensor head can be replaced without turning OFF the controller power.

NEW

**Sensor head
50 mm 1.969 in
type
HG-S1050**



**Controller^{*4}
HG-SC□**



^{*4}: Controllers are sold separately.

- Master unit (high-performance type) HG-SC101(-P)
- Slave unit (high-performance type) HG-SC111(-P)
- Slave unit (standard type) HG-SC112(-P)
- Slave unit (wire-saving type) HG-SC113

SPECIFICATIONS

| Item | Type | | |
|--------------------------------|-----------------------|--|--|
| | 50 mm 1.969 in type | | |
| | General purpose | | |
| | Standard type | | |
| Model No. | HG-S1050 | | |
| Regulatory compliance | | | EMC Directive, RoHS Directive |
| Compatible controller (Note 2) | | | HG-SC101(-P), HG-SC111(-P), HG-SC112(-P), HG-SC113 |
| Position detection method | | | Optical absolute linear encoder method |
| Measurement range | | | 50 mm 1.969 in |
| Stroke | | | 50.5 mm 1.988 in or more |
| Measuring force | Downward mount | 3.8 N or less (50 mm 1.969 in pressing position) 1.9 N (intermediate position) (Note 3) | |
| | Upward mount | 3.2 N or less (50 mm 1.969 in pressing position) 1.4 N (intermediate position) (Note 3) | |
| | Side mount | 3.4 N or less (50 mm 1.969 in pressing position) 1.7 N (intermediate position) (Note 3) | |
| Resolution | | | 0.5 μm 0.020 mil |
| Sampling period | | | 1 ms |
| Indication accuracy (P-P) | | | Full range: 3.5 μm 0.138 mil or less |
| Tip deviation amount | | | 40 μm 1.575 mil or less (typical) (Note 4) |
| Hot swap function | | | Incorporated |
| Operation indicator | | | 2-color LED (Orange / Green) |
| Pollution degree | | | 2 |
| Operating altitude | | | 2,000 m 6561.68 ft or less (Note 5) |
| Environmental resistance | Protection | IP67 (IEC) (Note 6) | |
| | Ambient temperature | -10 to +55 °C +14 to +131 °F (No condensation or icing allowed), Storage: -20 to +60 °C -4 to +140 °F | |
| | Ambient humidity | 35 to 85 % RH, Storage: 35 to 85 % RH | |
| | Insulation resistance | 100 MΩ or more at 250 V DC | |
| | Vibration resistance | 10 to 55 Hz frequency, 1.5 mm 0.059 in double amplitude in X, Y and Z directions for two hours each | |
| Shock resistance | | 980 m/s ² acceleration in X, Y and Z directions three times each | |
| Grounding method | | | Capacitor grounding |
| Material | | | Body: Aluminum alloy, Holder: Stainless steel, Spindle: Tool steel, Probe (Note 7): Ceramic, Rubber bellows: NBR (black) |
| Weight | | | Main unit weight: 180 g approx. |
| Accessories | | | Sensor head fastening wrench 1 pc., Mounting nut 1 pc. |

- Notes: 1) Where measurement conditions have not been specified precisely, the conditions used were as follows: standard type measurement probe (TR-S10-C), ambient temperature +20 °C +68 °F, and a clean atmosphere where dust and liquids such as water and oil do not come in contact with the equipment.
2) Always connect the 50 mm 1.969 in type (HG-S1050) to an HG-SC□ controller manufactured February 2019 or later.
3) Typical value near center of measurement.
4) Value calculated from the clearance of the upper and lower plain bearings.
5) Do not use or store in an environment that has been pressurized to an air pressure higher than the atmospheric pressure at 0 m.
6) Excludes damage and deterioration to rubber bellows due to external causes.
7) The probes (optional) are also available.

OPTIONS

The following products are available on a made to order basis.

- Measurement probes (Note): Standard type (5 per set) **TR-S10-C×5**
 - Joint: 15 mm 0.591 in length type **TR-J102**, 25 mm 0.984 in length type **TR-J104**
 - Rubber bellows: For 50 mm 1.969 in type sensor head (5 pcs. per set) **TR-G50×5**
- Note: A variety of measurement probes are available. Please refer to our website for details.

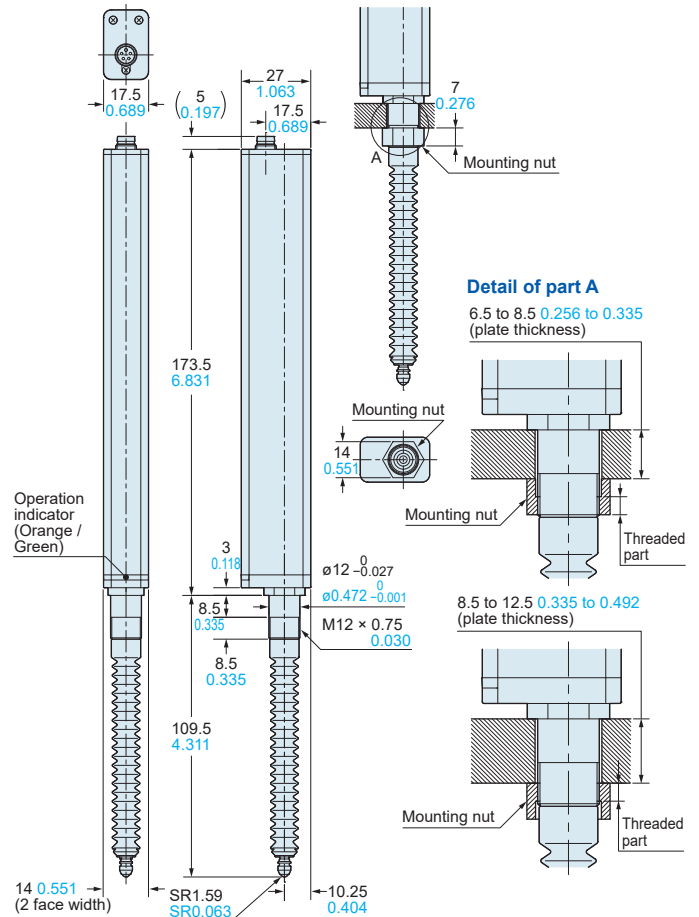
DIMENSIONS (Units: mm in)

The CAD data can be downloaded from our website.

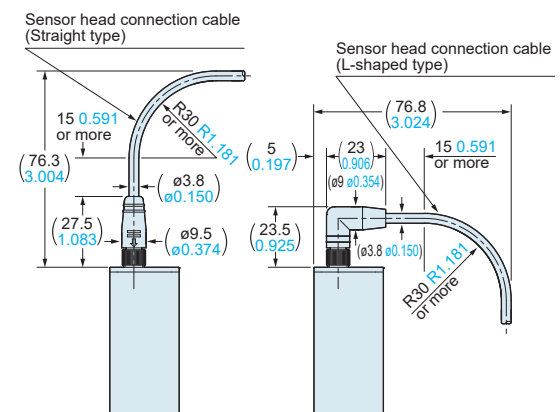
HG-S1050

Sensor head

Installation of mounting nut attachment



Installation of sensor head connection cable



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