

BS-102W & BS-112W

INSTRUCTION MANUAL

Thank you very much for purchasing ONO SOKKI BS-102W & BS-112W BABY Gauge Sensor. To ensure proper operation, read this manual carefully before use. After reading, keep this manual in a convenient place so that you can consult it at any time.

■ Precautions for Use

- (1) If you disassemble the sensor, failure may result. If you open the cover, dust such as metal chips, cutting oil or other dirt may intrude to cause a failure. Therefore, never open the cover. Once you open the cover, IP64 (IEC standard) cannot be guaranteed.
- (2) When a dustproof rubber boot or release cover is removed, IP64 (IEC standard) cannot be guaranteed. Especially, the release cover should never be opened because it is sealed. (Any release cable or lifter can not be used to move the spindle.)
- (3) The BS-102W and BS-112W have a splash-proof construction which conforms to IP64 protection standard (IEC). However, care should be taken not to use it in locations exposing it to direct water splashes. If it is used in such locations from necessity, a protection cover such as a vinyl sheet should be applied. In addition, never put it in water or water jet stream.
- (4) The interface between the spindle and the bearing is precisely machined, so that no lateral force (maximum allowable lateral pressure : 100g) or torsional force should be applied to the spindle. Nor should the stem be squeezed more than necessary.
- (5) Do not remove the ring from the spindle. Because the ring which is mounted to the spindle is the stopper.
- (6) Since the Baby Gauge Sensor is a highly precise measuring instrument, care should be taken not to drop it or to subject it other forms of shock.

■ Outline

The BS-102W and the BS-112W are the splash-proof type linear gauge sensors which are designed to comply with IP64 protection standard (IEC). They are suitable for use in the location subjected to a lot of dust and water splashes.

Operation of the spindle

(1) Use the dedicated lifter

If the spindle is operated directly by hand, there arises a danger that dust or oil (grease) sticks on it to cause errors. To avoid this, it is recommended to use the release dedicated to BS-102W&BS-112W.

(2) Use the linear gauge sensor within the maximum response speed.

The maximum response speed of the spindle is 1 m/s (at 20°C) for the BS-102W and 0.2 m/s for the BS-112W. If it is moved at a speed faster than the allowed limit, a condition causing possible measurement error. When the spindle is to be applied to the measuring object, bring the spindle within 1mm above the surface to be contacted before putting down the spindle.

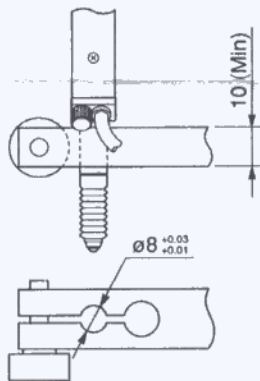
(3) Reference point of spindle

If the spindle is not made touch the reference plane, no accurate fixed point can be obtained. For measurement, be sure to make the spindle touch the reference plane and make this pushed condition the reference point.

How to Mount the Sensor

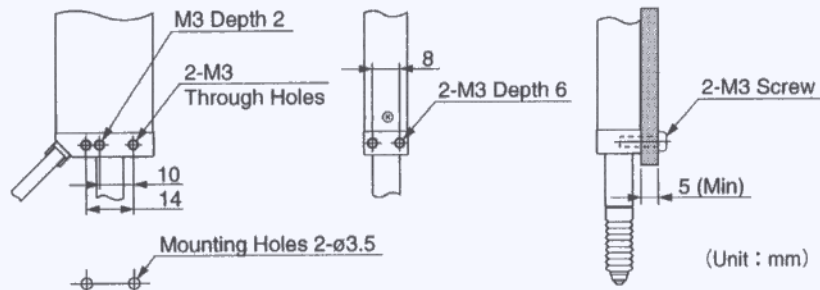
(1) Fixing by the stem

The stem is finished to $\phi 8_{-0.03}^0$ mm in outer diameter. For this fixing method, prepare a mounting hole of $\phi 8_{+0.01}^{0.03}$ mm, and tighten carefully so that no excess force acts on the stem.


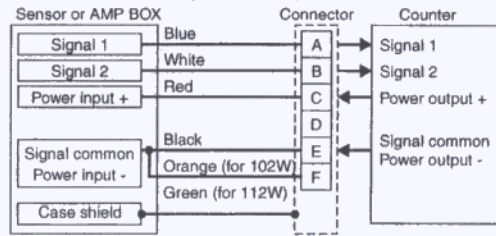


(2) Mounting by Using the Mounting Holes

The Gauge may be held using either M3 panhead screws or socket-head bolts in the M3 mounting holes provided in the sensor.



■ Specification

Type code	BS-102W	BS-112W
Measurement range	10 mm	10 mm
Resolution	10 μ m	1 μ m
Measuring accuracy	3 μ m (at 20°C)	3 μ m (at 20°C)
Response speed	1 m/s	0.2 m/s
Measurement force	1.47 N (150 gf) or less	
Protection standard	IP64(IEC standard) (Not including connector section and AMP BOX)	
Supply voltage	4.5 to 6 VDC	
Current consumption	Approx. 30 mA at 5 VDC	Approx. 70 mA at 5 VDC
Output signal	<p>two-phase square waveform</p> <p>Phase difference: $90^{\circ} \pm 20^{\circ}$ (at 5 VDC)</p> <p>Hi: 4.5 to 6.0 V (in no-load condition)</p> <p>Lo: max. 0.4 V or less BS-102W:P=40 μm BS-112W:P=4 μm</p>  <p>When the spindle is pushed in When the spindle comes out</p>	
Terminal connector	<p>R03-PB6M(from Tajimi Musen)</p>  <p>* Inside the sensor, the signal common terminal is not connected to the case.</p>	
Operating temperature	+5°C to +40°C	
Storage temperature	-10°C to +55°C	
Cable length	1.9 m between sensor and counter	1.9 m between sensor and AMP BOX / 100 mm between AMP BOX and counter
Weight	Approx. 150 g including cable	Approx. 200 g including AMP BOX and cable
Accessory	· Dustproof Rubber Boot · Instruction Manual	
Options	Release	AA-813, AA-816
	Dust-proof rubber boot	AA-973(with a measuring chip)
	Gauge stand	ST-011, ST-022
	Others	various probes AA-8402 connection joint for exchanging measuring chips(when AA-973 dust-proof boot is used)

■ Outside Drawing

Unit : mm

