

FBGB Explosion-Proof Displacement Sensor



Technical Characteristics

- Non-wear, non-contact measurement method
- Rugged and fully enclosed design
- Linear measurement, absolute position output
- Low power consumption design effectively reduces system heating
- Sealing grade up to IP67
- Pressure resistance and explosion-proof, high explosion-proof grade
- Strong anti-interference performance and high reliability
- Multiple interfaces are available: Analog、SSI、CANopen

C Product Parameters

• Input

Measurement data	Position Magnet ring
Stroke length	25mm~5500mm, customized according to customer needs
Number of measurements	1

• Output

Interface	Analog
Resolution	16-bit D/A or 0.0015% of full scale (min. 1μm)
Nonlinearity	< ± 0.01% of full scale, Min. ± 50μm
Repetition accuracy	< ± 0.001% of full scale, Min. ± 1μm
Hysteresis	< 10μm
Update time	1KHz (range ≤ 1m) 500Hz (1m < range ≤ 2m) 250Hz (2m < range ≤ 3m) , customizable
Temperature coefficient	< 30ppm/℃

• Working conditions

Magnet velocity	Arbitrary
Protection level	IP67
Operating temperature	-40℃ ~ +85℃
Humidity/dew point	The humidity is 90, and dew cannot be condensed
Shock index	GB/T2423.5 100g(6ms)
Vibration index	GB/T2423.10 20g/10~2000Hz
EMC test	GB/T17626.2/3/4/6/8, Grade 4/3/4/3/3, Class A, CE Certification
Certified Exd II BT6	Comply with GB3836.1-2010 and GB3836.2-2010 standards Temperature range: T6 (85℃ surface)

• Electrical Connection

Input voltage	+24Vdc±20%
operating current	< 90mA (varying with range)
Polarity protection	Max.-30Vdc
Overpressure protection	Max.36Vdc
Insulation resistance	> 10MΩ
Insulation strength	500V

• Structure and materials

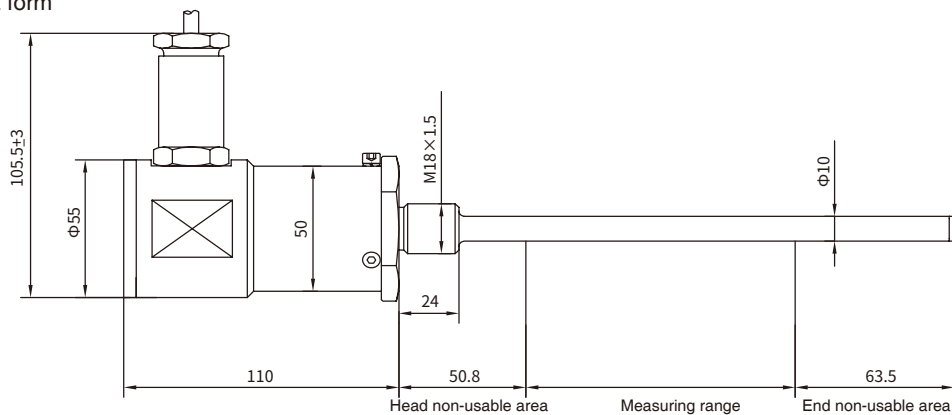
Electronic bin	304 stainless steel
Measuring rod	304/316 L stainless steel
Outer tube pressure	35MPa (continuous)/70MPa (peak) or 350ba (continuous)/700ba (peak)
Position magnet	Standard Magnet ring and various magnet rings
Mounting thread form	M18×1.5、M20×1.5、3/4"-16UNF-3A (customizable)
Installation direction	Any direction
Cable outlet mode	Special cable outlet(flameproof cable lead-in device)

A a Installation and Use Instructions

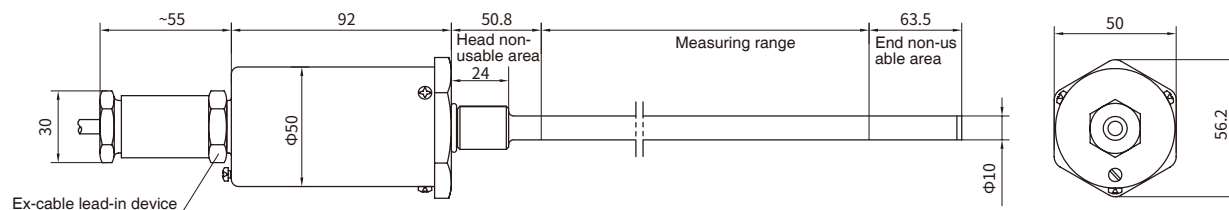
• Dimensions of FBGB explosion-proof sensors

FBGB series explosion-proof shell sensor is an explosion-proof structure composed of shell, electronic bin, sensor and lead-in device. It is designed for cylinder built-in installation under harsh environment. The working pressure is 35MPa continuous, flexible and simple installation mode. The Mounting thread form M18×1.5 or M20×1.5 or inch 3/4"-16UNF-3A.

Side outlet form



Cable outlet form



C Common Accessories - Analog Output

Accessory name/ model	Dimensions	Accessory name/ model	Dimensions
Standard magnet ring Order No.: 211501		Magnetic isolation gasket	
Sector magnet Order No.: 211502		Sector magnetic isolation gasket	

Note: Please refer to "Magnet ring Selection" for details of magnet ring kit and other models.

• Wiring mode

When the sensor is a connector output, refer to the pin definition in the following table for wiring mode; when the sensor is cable outlet output, refer to the wire color definition in the following table for connection mode

• 6-pin male connector arrangement (facing the sensor head)			8-pin male connector arrangement (facing the sensor head)	
Wire color 1*	Wire color 2*	Pin/wire function definition	Wire color 3*	Pin/wire function definition
Blue	Grey	No. 1 magnet ring position signal(+)	Yellow	Current output
Green	Pink	No. 1 magnet ring position signal(-)	Grey	0Vdc(Current/Voltage Loop)
Yellow	Yellow	Reservation	Pink	Reservation
White	Green	Reservation	-	Reservation
Red	Brown	+24Vdc power supply (-20%~+20%)	Green	0...10V
Black	White	0 Vdc (power supply circuit)	Blue	0 Vdc (power supply circuit)
			Brown	+24Vdc power supply (-20%~+20%)
			White	Reservation

Note: * Wire color 1: cable PUR sheath, orange, -20~90 °C
* Wire color 2/3: cable PVC sheath orange, -20~105 °C

- Indicates: the installation mode of the ordered product is built-in explosion-proof steel structure, with an stroke length of 300mm, mounting thread is M20×1.5, cable outlet, cable length is 2m (PUR sheath, orange, -20~90℃, end scattered), a 4-20mA output, a Max. output value without magnet ring, a forward output of single magnet ring, a non-usable area of 30mm at the head and a non-usable area of 60mm at the end.