# 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

Temperature coefficient

• 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	$<\pm$ 0.001% of full scale, Min. $\pm$ 1 $\mu$ m
Hysteresis	<10µm
Hadata Para	$1 \text{KHz (range} \leq 1 \text{m}) \qquad 500 \text{Hz (1m} < \text{range} \leq 2 \text{m})$
Update time	250Hz (2m <range≤3m) ,="" customizable<="" td=""></range≤3m)>

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	Max30Vdc	
Overpressure protection	Max.36Vdc	
Insulation resistance	$>$ 10M $\Omega$	
Insulation strength	500V	

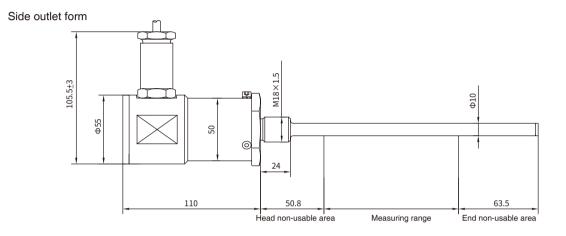
<30ppm/℃

Structure and materials		
304 stainless steel		
304/316 L stainless steel		
35MPa (continuous)/70MPa (peak) or 350ba ( continuous)/700ba (peak)		
Standard Magnet ring and various magnet rings		
M18×1.5、 M20×1.5、 3/4"-16UNF-3A (customizable)		
Any direction		
Special cable outlet(flameproof cable lead-in device)		

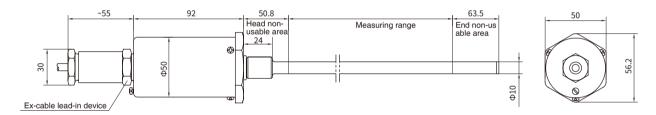
## A a Installation and Use Instructions

#### • 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.



#### Cable outlet form



## C Common Accessories - Analog Output

Accessory name/ model	Dimensions	Accessory name/ model	Dimensions
Standard magnet ring Order No.: 211501	Ф33 4-Ф4.3 Ф24	Magnetic isolation gasket	Ф33 4-Ф4.3 Ф24
Sector magnet Order No.: 211502	120° 2-04.3 R12 013.5	Sector magnetic isolation gasket	120° 2-04.3 R12 0 0333

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 sensor he		arrangement (facing the	8-pin male cor sensor head)	nnector arrangement (facing the
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	010V
Black	White	0 Vdc (power supply circuit)	Blue	0 Vdc (power supply circuit)
ote: * Wire color 1: cable PUR sheath, orange, -20~90°C * Wire color 2/3: cable PVC sheath orange,-20~105°C		Brown	+24Vdc power supply (-20%~+20%	
		White	Reservation	



## X X Selection Guide-Analog



01 - 04	Sensor shell form	16 - 19	Signal output mode
F B G	B Explosion-proof flameproof sensor	16 - 17	Output form and direction
		A 0	Current output, 4 ~ 20mA
05 - 09	Measuring range	A 1	Current output, 20 ~ 4mA
	Four digits, less than four digits are preceded by zero, M means metric system, unit mm	A 2	Current output, 0 ~ 20mA
	zero, in means means system, and min	A 3	Current output, 20 ~ 0mA
10 - 11	Magnet ring type/mounting thread form	V 0	Voltage output, 0 ~ 10V
S 1	M18×1.5, measuring rod diameter 10mm, 304 material	V 1	Voltage output, 10 ~ 0V
S 2	M20×1.5, measuring rod diameter 10mm, 304 material	V 2	Voltage output, -10 ~ +10V
S 3	3/4"-16UNF-3A, measuring rod diameter 10mm, 304 material	V 3	Voltage output, +10 ~ -10V
		V 4	Voltage output, 0 ~ 5V
12 - 15	Connection form	V 5	Voltage output, 5 ~ 0V
12 - 13	Cable outlet line type	V 6	Voltage output, -5 ~ +5V
DΗ	Cable outlet, PUR sheath, orange,-20~90 ℃, end scattered	V 7	Voltage output, +5 ~ -5V
D U	Cable outlet, PVC sheath, orange,-20~105 €, end scattered	18	Number of Magnet rings
SH	Side outlet, PUC sheath, orange,-20~90°C, end	1	Single Magnet ring
	scattered	19	No Magnet ring state
SU	Side outlet, PVR sheath, orange,-20~105°C, end scattered	Α	Keep the original value
		В	Max. value
14 - 15	Cable outlet mode: cable length, 01~99 meters	С	Min. value
	upporting cables, please refer to Analog/Start-Stop essories Selection	20 - 21	Non-usable area at head and end, customizable
		S 0	50.8mm+63.5mm
		B 0	30mm+60mm
		22-23	Country
			Refer to the country list

- Note: The forward output of the sensor means that when the Magnet ring moves away from the electronic bin, the output value increases and decreases when the Magnet ring moves in the reverse direction.
- Selection examples: FBGB-M0300-S2-DH02-A01B-B0-CN

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°C, 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.