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	SSI				
Resolution	0.1 / 0.5 / 1 / 2 / 5 / 10 / 20 / 40 / 50 / 100 μm				
Nonlinearity	< ± 0.01% of full scale, Min. ± 50μm				
Repetition accuracy	< \pm 0.001% of full scale, Min. \pm 1 μ m				
Hysteresis	<10µm				
	$1 \text{KHz (range} \leq 1 \text{m}) \qquad 500 \text{Hz (1m} < \text{range} \leq 2 \text{m})$				
Update time	250Hz (2m <range≤3m) ,="" customizable<="" td=""></range≤3m)>				
Temperature coefficient	< 30ppm /C				

Working conditions			
Magnet ring velocity	Arbitrary		
Protection level	IP67		
Operating temperature	-40°C ~ +85°C		
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 °C surface)		

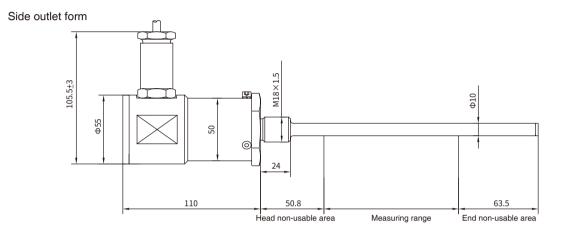
• Electrical Connec	ction
Input voltage	+24Vdc±20%
operating current	<90mA (varying with range)
Polarity protection	Max30Vdc
Overpressure protection	Max.36Vdc
Insulation resistance	$>$ 10M Ω
Insulation strength	500V

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)		

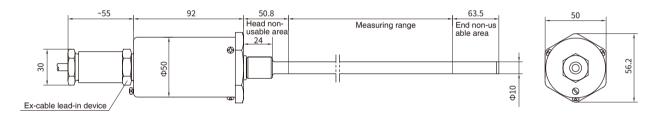
A a Installation and Use Instructions

• 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.



Cable outlet form





C Common Accessories - SSI 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 033 013.5	Sector magnetic isolation gasket	2-04.3 R12 013.5

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

Wiring mode

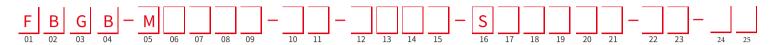
When the sensor is connector output, refer to the pin definition in the following table for wiring mode; when the sensor is cable outlet output, refer to the line color definition in the following table for connection mode

7-pin male connector arrangement (facing the sensor head)					
Wire color 1*	Wire color 2*	Pin/wire function definition			
White	Grey	Data (-)			
Yellow	Pink	Data (+)			
Blue	Yellow	Clock (+)			
Green	Green	Clock (-)			
Red	Brown	+24Vdc power supply (-20%~+20%)			
Black	White	0 Vdc			
-	-	Do not connect			

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

8-pin male cor sensor head)	nnector arrangement (facing the
Wire color 3*	Pin/wire function definition
Yellow	Clock (+)
Grey	Data (+)
Pink	Clock (-)
-	Reservation
Green	Data (-)
Blue	0 Vdc (power supply circuit)
Brown	+24Vdc power supply (-20%~+20%)
White	Reservation

X X Selection Guide-SSI



01 - 04 Sensor shell form		16 - 21 Signal output mode						
F B G B Explosion-proof flameproof sensor		17		Data length				
			1	24bit	2	25bit	3	26bit *
05 - 09	05 - 09 Measuring range			* 26-bit are parity bits and 25-bit are status bits				us bits
	Four digits, less than four digits are preceded by zero, M means metric system, unit mm	18		Data format				
10 - 11	Magnet ring type/mounting thread form		В	Binary	G	Gray code		
S 1	M18×1.5, measuring rod diameter 10mm, 304 material	19		Resolution				
S 2	M20×1.5, measuring rod diameter 10mm, 304 material		1	0.1mm	2	0.05mm		
S 3	3/4"-16UNF-3A, measuring rod diameter 10mm,		3	0.02mm	4	0.01mm		
3 3	304 material		5	0.005mm	6	0.002mm		
12 - 15	Connection form		7	0.001mm	8	0.04mm		
12 - 13	Cable outlet mode		9	0.0005mm	0	0.0001mm		
D H	Cable outlet, PUR sheath, orange,-20~90°C, end scattered	20		Direction				
D U	Cable outlet, PVC sheath, orange,-20~105 C, end scattered		0	Forward	1	Reverse		
SH	Side outlet, PUC sheath, orange,-20~90 $^{\circ}\!$	21		Mode				
SU	Side outlet, PVR sheath, orange,-20~105 $^{\rm C}$, end scattered		0	0 Regular 1 Synchronization 2 High u		High update rate		
14 - 15	Cable outlet mode: cable length, 01~99 meters	22 - 2	١٥.					
Note: See S	Note: See SSI cable Accessories selection for supporting cables		23	Non-usable area at head and end, customizable				
		S 0		50.8mm+63.5mm				
		B 0		30mm+60mm				
		24-25 Country						
				Refer to the	coun	try list		