

# 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	CANopen
Resolution	0.5 / 1 / 2 / 5 / 10 / 20 / 50 / 100 $\mu$ m
Nonlinearity	$< \pm 0.01\%$ of full scale, Min. $\pm 50\mu$ m
Repetition accuracy	$< \pm 0.001\%$ of full scale, Min. $\pm 1\mu$ m
Hysteresis	$< 10\mu$ m
Update time	1KHz (range $\leq 1$ m)      500Hz (1m < range $\leq 2$ m) 250Hz (2m < range $\leq 3$ m) , customizable
Temperature coefficient	$< 30$ ppm/°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 Connection

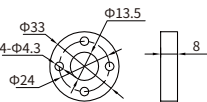
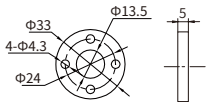
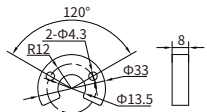
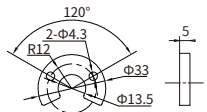
Input voltage	+24Vdc $\pm 20\%$
operating current	$< 90$ mA (varying with range)
Polarity protection	Max.-30Vdc
Overpressure protection	Max.36Vdc
Insulation resistance	$> 10$ M $\Omega$
Insulation strength	500V

### • 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 $\times$ 1.5、M20 $\times$ 1.5、3/4"-16UNF-3A (customizable)
Installation direction	Any direction
Cable outlet mode	Special cable outlet(flameproof cable lead-in device)



## C Common Accessories - CAN Bus 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 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)

Wire color	Pin/wire function definition
Green	CAN (-)
Yellow	CAN (+)
-	Do not connect
-	Do not connect
Brown	+24Vdc power supply (-20%~+20%)
White	0 Vdc (power supply loop)

## X Selection Guide-CAN Output

FBGB - M -  -  - C -  -   
 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

01 - 04	Sensor shell form
<span>F</span> <span>B</span> <span>G</span> <span>B</span>	Explosion-proof flameproof sensor

05 - 09	Measuring range
	Four digits, less than four digits are preceded by zero, M means metric system, unit mm

10 - 11	Magnet ring type/mounting thread form
<span>S</span> <span>1</span>	M18×1.5, measuring rod diameter 10mm, 304 material
<span>S</span> <span>2</span>	M20×1.5, measuring rod diameter 10mm, 304 material
<span>S</span> <span>3</span>	3/4"-16UNF-3A, measuring rod diameter 10mm, 304 material

12 - 15	Connection form
12 - 13	Cable outlet mode
<span>D</span> <span>H</span>	Cable outlet, PUR sheath, orange, -20~90℃, end scattered
<span>D</span> <span>U</span>	Cable outlet, PVC sheath, orange, -20~105℃, end scattered
<span>S</span> <span>H</span>	Side outlet, PUC sheath, orange, -20~90℃, end scattered
<span>S</span> <span>U</span>	Side outlet, PVR sheath, orange, -20~105℃, end scattered

14 - 15	Cable outlet mode: cable length, 01~99 meters
<span>0</span> <span>D</span> <span>R</span> <span>1</span>	PVC sheath, length 150mm, end 5-pin male connector

**Note:** For supporting cables, please refer to CAN bus cable Accessories selection

16 - 20	Signal output mode
<span>16</span>	Interface
<span>C</span>	CAN bus

17	Protocol type
<span>1</span>	CANopen
<span>2</span>	CANBasic

18	Baud
<span>1</span>	1000kBit/s
<span>2</span>	800kBit/s
<span>3</span>	500kBit/s
<span>4</span>	250kBit/s
<span>5</span>	125kBit/s
<span>6</span>	100kBit/s
<span>7</span>	50kBit/s
<span>8</span>	20kBit/s

19	Resolution
<span>1</span>	0.1mm
<span>2</span>	0.05mm
<span>3</span>	0.02mm
<span>4</span>	0.01mm
<span>5</span>	0.005mm
<span>6</span>	0.002mm
<span>7</span>	0.001mm

20	Number of Magnet rings (1~9 optional)
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21 - 22	Non-usable area at head and end, customizable
<span>S</span> <span>0</span>	50.8mm+63.5mm
<span>B</span> <span>0</span>	30mm+60mm

23-24	Country
<span></span> <span></span>	Refer to the country list