RB Flat
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
- Multiple signal type optional：Analog、SSI、CANopen

Product Parameters

• Input

Measurement data	Position Magnet ring
Stroke length	50mm~5500mm， customized according to customer's needs
Number of measurements	1

• Output

Interface	Analog、SSI、CANopen
Resolution	1 / 2 / 5 / 10 / 20 / 50 / 100 μm
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/℃

• Operating conditions

Magnet ring velocity	Arbitrary
Protection level	IP67
Operating temperature	-40℃ ~ +85℃
Humidity/dew point	100%，relative humidity
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

• Electrical connection

Input voltage	+24Vdc±20%
operating current	＜100mA（ varying with range）
Polarity protection	Max.-30Vdc
Overvoltage protection	Max.36Vdc
Insulation resistance	＞10MΩ
Insulation strength	500V

• Structure and materials

Electronic bin	304 stainless steel
Measuring rod	304 stainless steel
Outer tube pressure resistance	35MPa (continuous)/70MPa (peak) or 350ba (continuous)/700ba (peak)
Position magnet	Standard magnetic ring and various ring magnets
Mounting thread	6 M6X16 screws，M18×1.5、 M20×1.5（Customizable）
Installation direction	Any direction
Connection type	Cable outlet or connector

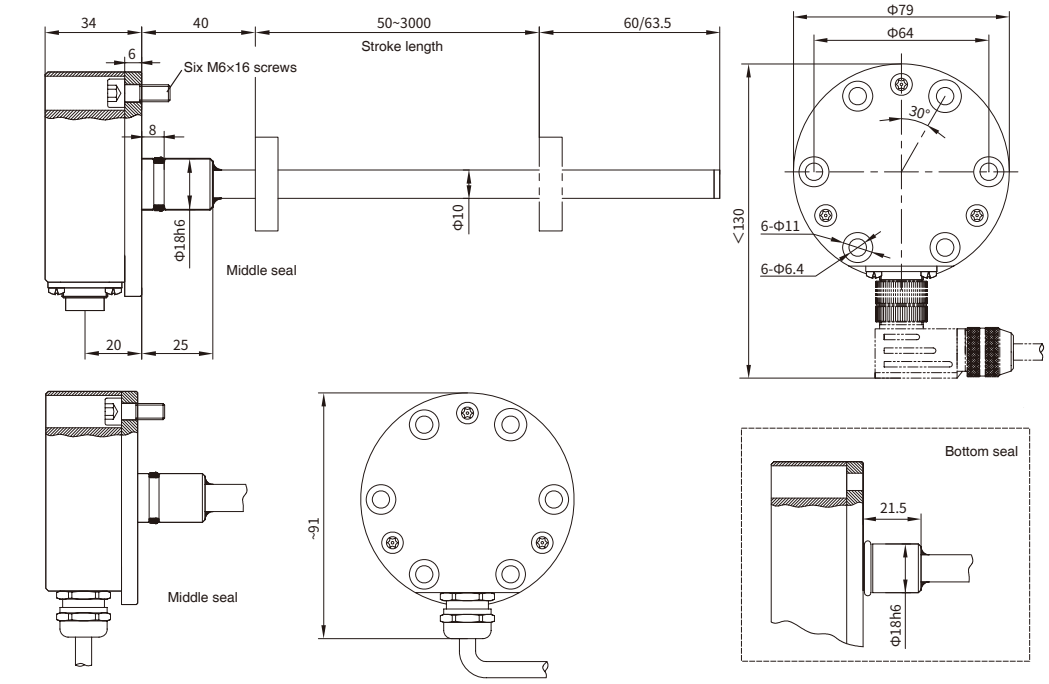
Aa Installation and Instructions for use

• Output characteristic

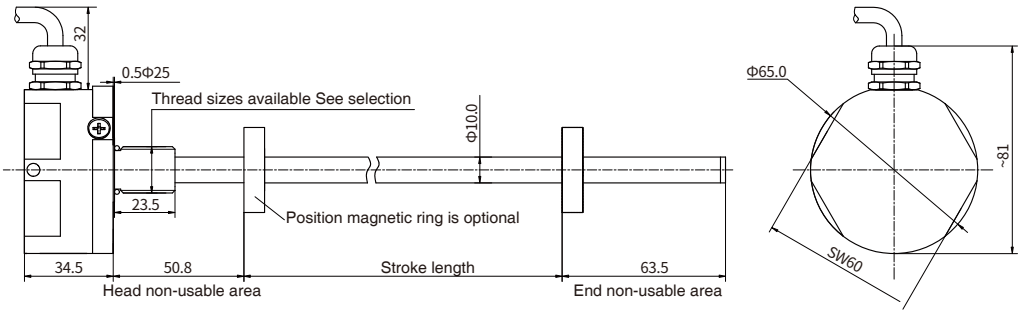
RB series sensors have high-strength protective shell and high working temperature, and are durable, which can provide users with continuous, reliable and real-time displacement signals in harsh environment. The sensor has a completely stainless steel shell. It is suitable for installing in hydraulic cylinder and measuring the stroke of piston, and is widely used in energy and mining industries. Thanks to its flat and compact design, the sensor is very suitable for cylinder installation in narrow space.

• Installation dimensions

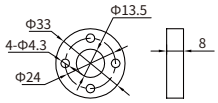
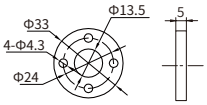
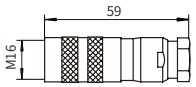
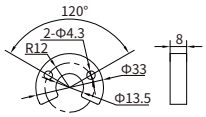
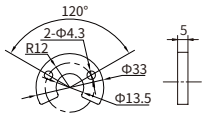
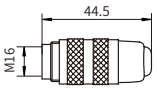
Tight pressure seal type



External thread type



C Common Accessories - CAN Bus Output

Accessory name/ model	Dimensions	Accessory name/ model	Dimensions	Accessory name/ model	Dimensions
Standard Magnet ring Order No.: 211501		Magnetic isolation gasket		6-pin female connector Order No.: 312701	
Sector magnet Order No.: 211502		Sector magnetic isolation gasket		6-pin end female connector Order No.: 312722	

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

Selection Guide-CAN Bus

R	B	–	M					–			–					–	C					–			–		
01	02		03	04	05	06	07		08	09		10	11	12	13		14	15	16	17	18		19	20		21	22

01 - 02 Sensor shell form

R B	Compact sealing installation

03 - 07 Stroke length

Four digits, less than four digits are preceded by zero, M means metric system, unit mm

08 - 09 Installation form

S 1	Bottom seal
S 2	Middle seal
S A	M18X1.5 measuring rod diameter 10mm, 304 material
S B	M20X1.5 measuring rod diameter 10mm, 304 material

10 - 13 Connection form

10 - 11 For cable outlet

D A	PVC sheath, purple, 4 cores,-40℃~75℃, end scattered

12 - 13 Straight-out cable mode: cable length, 01~99 meters

0 D R 1	PVC sheath, length 150mm, end with 5-pin connector

10 - 13 For connector

P D 6 0	Set of 6-pin male connectors (M16)

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

14 - 18 Signal output mode

14 Interface

C	CAN bus

15 Protocol type

1	CANopen	2	CANBasic

16 Baud

1	1000kBit/s	2	800kBit/s
3	500kBit/s	4	250kBit/s
5	125kBit/s	6	100kBit/s
7	50kBit/s	8	20kBit/s

17 Resolution

1	0.1mm	2	0.05mm
3	0.02mm	4	0.01mm
5	0.005mm	6	0.002mm
7	0.001mm		

18 Number of magnet rings (1~9 optional)

19 - 20 Non-usable area at head and end, customizable

S 4	40mm+60mm

21-22 Country

	Refer to the country list