ATOM METRIC
FINEST MEASUREMENTS, HIGHEST PRECISION

RB2-MAGNETOSTRICTIVE DISPLACEMENT SENSOR - ANALOG OUTPUT

Technical Characteristics

- Rugged and fully enclosed design
- Non-wear, non-contact measurement method
- Strong environmental adaptability to meet various needs
- No need to return to zero, absolute position output
- Nonlinearity is 0.01% and repetition accuracy is 0.001%
- Stable and reliable, using digital analog technology
- Low power consumption design effectively reduces system heating

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Product Parameters

Input

Measurement data	Position magnet ring
Stroke length	25～5500 mm，customized according to customer needs
Number of measurements	1-2

Output

Current	4 ～ 20mA or 20 ～ 4mA(min/max load 0/500)
Voltage	0 ～ 10Vdc or 0～5Vdc（minimum load resistance≥10K ）
Resolution	16-bit D/A or 0.0015% of full scale (minimum 1μm)
Nonlinearity	＜ ± 0.01% of full scale, minimum ± 50μm
Repetition accuracy	＜ ± 0.001% of full scale, minimum ± 1μm
Hysteresis	＜10um
Update time	1KHz（range≤1m） 500Hz（1m＜range≤2m） 333Hz（2m＜range≤3m），customizable
Temperature coefficient	＜30ppm/℃

Working conditions

Magnet ring velocity	Arbitrary
Protection level	IP67
Operating temperature	-40℃ ～ +85℃/+100℃
Humidity/dew point	Humidity 90%, no condensation
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

Electrical connection

Input voltage	+24Vdc±20%
Power consumption	＜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, or 316L according to customer requirements
Measuring rod	304 stainless steel, or 316L according to customer requirements
Outer tube pressure	35MPa（continuous）/ 70MPa（peak）or 350bar（continuous）/700bar（peak）
Position magnet	Standard magnet ring and various ring magnets
Threaded interface	M18×1.5、M20×1.5、3/4"-16UNF-3A（customizable）
Installation direction	Any direction
Outgoing mode	Cable outlet or connector

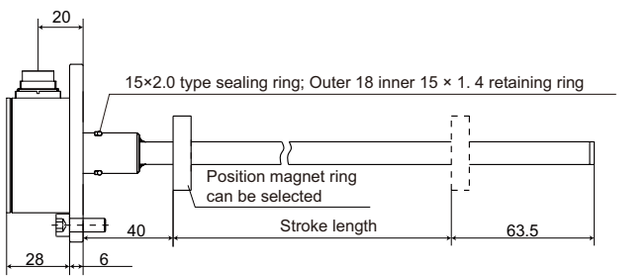
Installation Instructions

- Analog output magnetostrictive displacement sensor is suitable for real-time and precise measurement of the stroke of moving parts. It can measure the absolute displacement or stroke of vernier magnet ring, which is expressed in the form of standard analog quantity, including 0 ~ 20MA (forward and reverse), 4 ~ 20MA (forward and reverse) DC current or 0 ~ 10V (positive direction) DC voltage, etc. The sensor is built-in installation mode, which is suitable for the built-in installation of hydraulic cylinder and has compact structure.

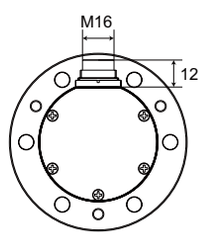
● Dimensions and installation guidance of RB2 pressure-resistant tubular sensor

RB2 series pressure-resistant tubular shell, built-in installation design for hydraulic system, pressure-resistant 35MPa continuous, flexible and simple installation mode.

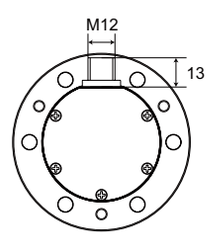
Compact sealing type



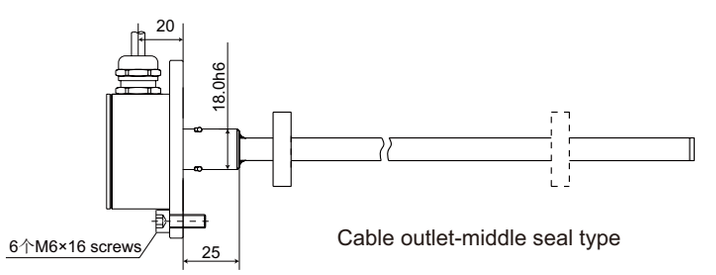
Connector-middle seal type



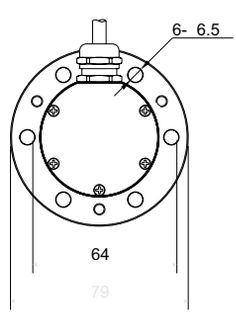
6-pin connector

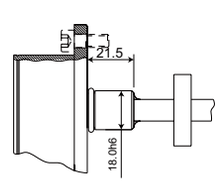


5-pin connector



Cable outlet-middle seal type





Bottom seal

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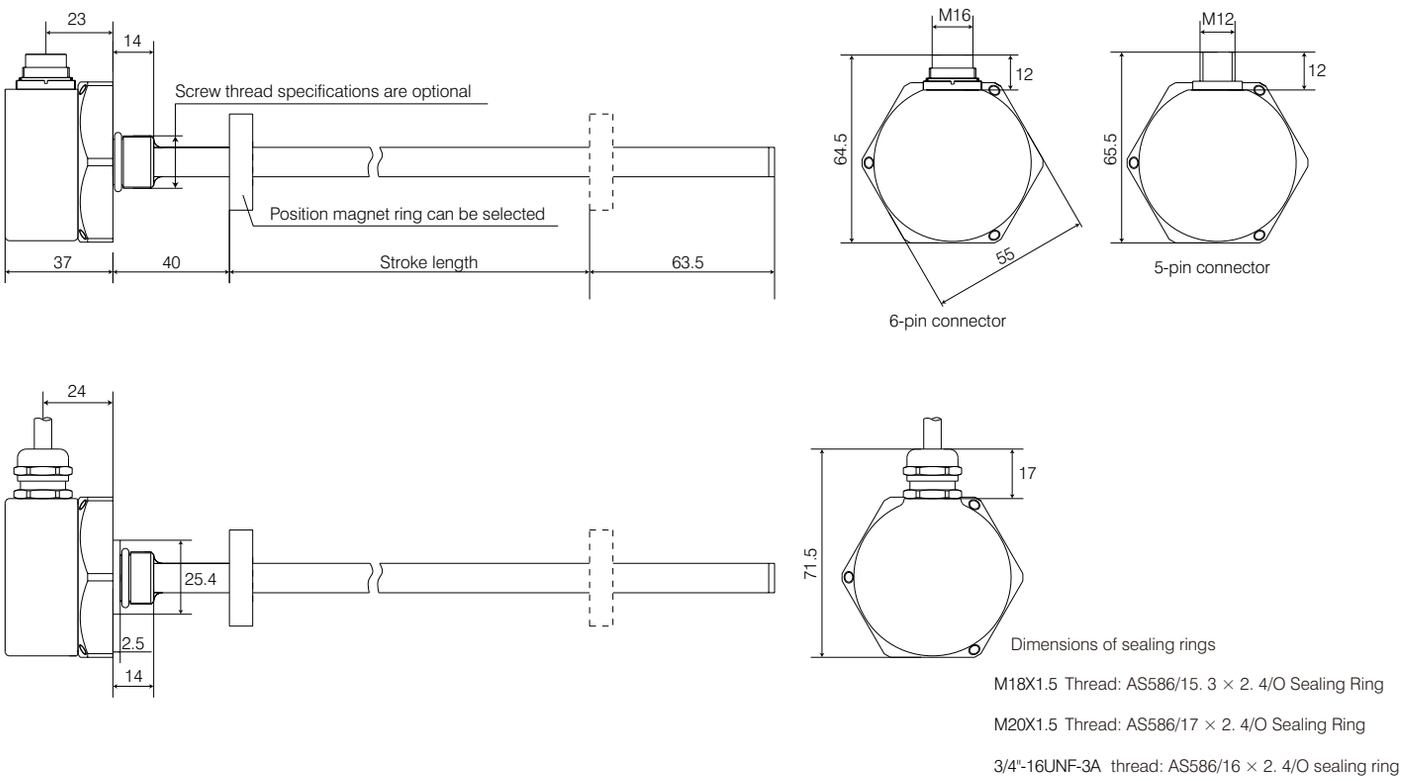
Installation Instructions

Hexagon flange type



Dimensions of sealing rings

M18X1.5 Thread: AS586/15. 3 × 2. 4/O Sealing Ring

M20X1.5 Thread: AS586/17 × 2. 4/O Sealing Ring

3/4"-16UNF-3A thread: AS586/16 × 2. 4/O sealing ring

• 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 straight-out cable output, refer to the cable color definition in the following table for connection mode

* Cable color 1: Cable PUR sheath, orange,-20 ~ 90

• 6-pin male connector arrangement (facing the sensor head)

Pin	Cable color 1*	Cable color2*	Pin/wire function definition
1	Blue	Grey	No.1 magnet ring position signal (+)
2	Green	Pink	No.1 magnet ring position signal (-)
3	Yellow	Yellow	No.2 magnet ring position (number 1 magnet ring velocity) signal (+)
4	White	Green	No.2 magnet ring position (No.1 magnet ring speed) signal (-)
5	Red	Brown	+24Vdc power supply (-20%~+20%)
6	Black	White	0 Vdc (power supply loop)

• 5-pin male connector arrangement (facing the sensor head)

Pin	Cable color 1*	Cable color 2*	Pin/wire function definition
1	Red	Brown	+24Vdc power supply (-20%~+20%)
2	Yellow	Grey	No.1 magnet ring position signal (+)
3	Black	White	0 Vdc (power supply loop)
4	Blue	Yellow	No.1 magnet ring position (number 1 magnet ring velocity) signal (+)
5	Green	Green	0Vdc(current/voltage loop)

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

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Selection Guide

R	B	2	–	M					–	S			–					–					–			–			
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 - 03	Sensor shell form
R B 2	Pressure-resistant round pipe (internal or external)

04 - 08	Measuring range
	Four digits, less than four digits are preceded by zero, M means metric system, unit mm

09 - 10	Magnet ring type/mounting thread form
S 1	Hexagon flange type, M18X1.5 mounting thread, measuring rod diameter 10mm, material of 304
S 2	Hexagon flange type, M20X1.5 mounting thread, measuring rod diameter 10mm, material of 304
S 3	Hexagon flange type, 3/4 "-16UNF-3A mounting thread measuring rod diameter 10mm, material 304
S 4	Compact seal type, bottom seal, measuring rod diameter 10mm, material of 304
S 5	Compact seal type, middle seal, measuring rod diameter 10mm, material of 304

11	Mechanical selection
0	Standard
1	With convex flange (2.5 mm)

12 - 15	Outgoing mode, cable length
12 - 13	Outgoing line type: straight-out cable mode
D H	PUR sheath, orange,-20 ~ 90 ℃, end scattered, Cable color 1
D U	PVC sheath, orange,-20 ~ 105 ℃, end scattered, Cable color 1
D I	PUR sheath, orange,-20 ~ 90 ℃, end 6-pin connector
D V	PVC sheath, orange,-20 ~ 105 ℃, end 6-pin connector
14 - 15	Cable outlet mode: cable length, 01 ~ 99 meters
12 - 15	Connector form
P H 5 0	Set of 5-pin male connectors (M12)
P H 6 0	Set of 6-pin male connectors (M16)

16 - 19	Signal output mode
16	Output
A	Current
V	Voltage
17	Function
1	Position (1 magnet, 1 output)
2	Position (2 magnets, 2 outputs)
3	Position and speed (1 magnet, 2 outputs)
4	Position and rate (1 magnet, 2 outputs)
5	Forward position and reverse position (1 magnet, 2 outputs)
6	Position and internal temperature of electronic compartment (1 magnet, 2 outputs)
7	Displacement difference (2 magnets, 1 output)
18	Output range
0	0...10VDC or 4...20mA
1	10...0VDC or 20...4mA
2	0...20mA
3	20...0mA
19	Non-magnet ring state
A	Keep the original value
B	Maximum value
C	Minimum value
20 - 21	Head and end non-usable area, customizable
S F	40mm+63.5mm
22 - 24	Maximum speed or rate value (optional: "function" is 3 or 4 is used)
	Encoding speeds in m/s range from 0.01 to 9.99 m/s (001... 999)

- 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 example: RB2-M0300-S10-PH60-A10B-SF

  Indicates: RB2 rod structure series, 300mm effective stroke, M18X1.5 installation thread, standard structure, measuring rod diameter 10mm, 304 material, 6-pin connector outlet form, no cable plug, 4-20mA output (1 magnet ring, 1 position output), head non-usable area 40mm, end non-usable area 63.5 mm.

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Guide for selection of cable fittings

A	S	T	–	M				–			
01	02	03		04	05	06	07		08	09	10

01 - 03	Type
A S T	Analog/Start-Stop interface

04 - 07	Cable length
M * * *	Less than 3 digits are preceded by zeros, and m means metric system, unit m

08 - 10	Cable type, outlet mode
H 0 1	One end of 6-pin (M16) female connector, and one end scattered
H 0 3	One end of 6-pin (M16) right angle female connector, and one end scattered
U 0 1	One end of 6-pin (M16) female connector, and one end scattered
U 0 2	One end of 8-pin (M16) female connector, and one end scattered
U 0 3	One end of 6-pin (M16) right angle female connector, and one end scattered
U 0 4	One end of 8-pin (M16) right angle female connector, and one end scattered
Note	H：Cable type, PUR sheath, orange,-20 ~ 90℃
	U：Cable type, PVC sheath, orange,-20 ~ 105℃

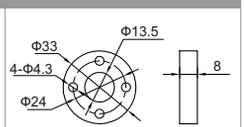
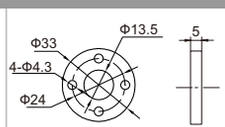
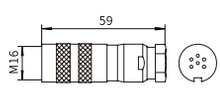
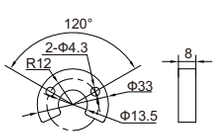
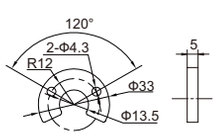
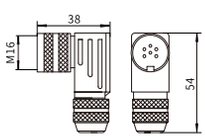
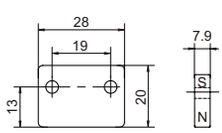
- Selection example：AST-M005-H01

  Indicates: Analog or Start-Stop interface cable, 5 meters long, PUR sheath, orange,-20 ~ 90℃. One end of 6-pin (M16) female connector, and one end scattered.

- Selection example：AST-M010-U04

  Indicates: Analog or Start-Stop interface cable, 10 meters long, PVC sheathed, orange,-20 ~ 105℃. One end of 8-pin (M16) right angle female connector, and one end scattered

Common Accessories

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 90 female connector Order No.: 312702	
Square magnet Order No.: 211508		Standard magnet ring kit Order No.: 288501 1 magnet ring, 1 gasket, 4 screws with spring washer	 Magnetic insulation gasket: thickness 5mm Screw: GB/T70.1, M4X18，material304 Spring gasket: GB/T93Φ 4, material304	Magnet ring 32 kit Order No.: 288512 1 magnet ring, 1 gasket, 2 screws with spring washer	Magnetic insulation gasket: thickness 5mm Screw: GB/T70.1, M4X20，material304 Spring gasket: GB/T93Φ 4, material304

Troubleshooting Table

Analog

	Fault	Reason	Checking method
RH.RP.RD .RF	LEDs off	No power supply	Check whether the power supply has power. Use a multimeter to measure whether the voltage value of the power supply is normal.
		Wiring error	Check whether the sensor power cord is connected correctly
		Sensor damaged	After investigation, if it is confirmed that the sensor is damaged or faulty and needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
	Red and green LED keep on	No magnet /magnet mismatch/mistakenly use gasket as magnet	Test after correctly installing the magnet
		Sensor damage	After investigation, if it is confirmed that the sensor is damaged or faulty and needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
	The green LED is on and the red LED is flashing	The magnet leaves the stroke length range	Check whether the magnet is in the non-usable area at the head and end. Test after move the magnet or piston rod into the stroke
	Green LED flashing, red LED is off	Sensor data jumping	The sensor detects that the data jump at a certain point exceed s the set threshold (≥ 0. 5mm), and needs to be returned to the factory for inspection and maintenance, please contact the sales staff or after-sales staff to send it back
	LED cannot be observed, no current/voltage tested	Magnet problem in Cylinder/broken current of multimeter for test	Step 1: If the sensor is not disassembled, measure the signal cable voltage with a multimeter. About 21.6 V indicates that the sensor output is normal, and the current file of the multimeter is damaged. It is necessary to replace a new multimeter test until the current is measured Step 2: Disassemble the sensor and put on a magnet on the rod. When the green LED is on and the multimeter current/voltage value is normal, it means that the sensor is normal. If there is a problem with the magnet in the cylinder, it is necessary to disassemble the cylinder to check whether the magnet is damaged or falls off Step 3: Disassemble the sensor and put on a magnet on the rod. Moving the magnet within the stroke,if the LED is abnormal and there is no current/voltage or abnormal current/voltage value (not in the corresponding output range), please returned to the factory for detection, please contact the sales staff or after-sales staff to send it back
	Displacement value does not match with Cylinder action; the deviation between reference ruler and sensor actual value is large	Parameter setting in controller (PLC) program	The stroke length parameter of the sensor in PLC program should be set with the same value as the stroke of the sensor
RS.RB. FBGB	The data curve increasing is stepped	The customer uses the row grounding problem of the three-wire terminal / the signal (-) needs to be connected to the ground	Connect the power ground and the signal (-) cable to the power GND terminal block / after the signal (-) cable is connected to the ground, then check whether the data returns to normal
	Abnormal current value (current sensor) /abnormal voltage value (voltage sensor)	Problem with the magnet in the cylinder /communication module problem /The current gear of the multimeter for testing is broken /sensor damaged	Step 1: If the sensor is not disassembled, measure the signal cable voltage with a multimeter. About 21.6 V indicates that the sensor output is normal, and the current file of the multimeter is damaged. It is necessary to replace a new multimeter test until the current is measured Step 2: After disassembled, check the appearance of the sensor and whether the cable connector is damaged. After confirming that there is no abnormality, put on a magnet to power on the sensor. If the current/voltage value of the multimeter is normal, it means that the sensor is normal, indicating that there is a problem with the magnet in the cylinder, and the cylinder needs to be disassembled to check whether the magnet is damaged or fallen off. Step 3: Disassemble the sensor and put on a magnet on the rod. Moving the magnet within the stroke,if the LED is abnormal and there is no current/voltage or abnormal current/voltage value (not in the corresponding output range), please returned to the factory for detection, please contact the sales staff or after-sales staff to send it back

SSI

RH.RP.RD .RF	LEDs are off	No power supply	After investigation, if it is confirmed that the sensor is damaged or faulty and needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
		No magnet /magnet mismatch/mistakenly use gasket as magnet	Check whether the sensor power cord is connected correctly
		Sensor damage	After investigation, if it is confirmed that the sensor is damaged or faulty and needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
	Red and green LED keep on	No Magnet	Test after correctly installing the magnet
		Sensor damage	After investigation, if it is confirmed that the sensor is damaged or faulty and needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
		Internal fault of sensor	Needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
RH.RP.RS. RD.RF	Interface converter has data, but PLC shows no data	Poor wiring connec ion	Check whether the copper wire is full at the connection , re-plug the connector
		Interference	Check whether the two ends of the connecting cable are connected and whether the cable impedance is less than a few hundred Ω. Replace the channel test, install a power filter/isola tor if necessary, replace the extension cable with a sensor-specific cable, or replace it with RHB, RHC sensors
	Abnormal output value or value jumping	Magnet mismatch or damage	Check whether the magnet in the cylinder is of another brand, whether the position of the built-in magnet and the gasket is correct, whether the magnet has fallen off, etc. Externally mounted sensors check for sliding magnets off track
		Wrong selection of mounting clamp	Use mounting clamp with insulation washer (for profile structure)
		Incorrect controller parameters	Check code system, baud , monostable time, etc. If necessary, contact after-sales technicians
		Sensor damage	Check the appearance to determine whether there is damage. If damaged, needs to be returned for repair, please contact the sales staff or after-sales staff to send it back; If there is no abnormality in the appearance and no abnormality is found after the above inspection, please contact the after-sales staff for solution

Troubleshooting Table

CAN

	Fault	Reason	Checking method
RH.RP. RF	Green LED is on, red LED is flashing	Magnet out of stroke length	Check the magnet, you need to move the magnet placed in the stroke test again, observe whether the light becomes green light, red light off
	Red and green LED keep on	Magnet not detected	Please check whether the Magnet ring is assembled correctly
	Green LED is on, red LED is off , no data	Wiring/program parameter setting error, etc	Check whether the wiring sequence is correct, whether the EDS file is correctly installed, whether the end resistance is connected, whether the baud is correctly set, whether the resistance value between CAN-H and CAN-L signal wire is about 27kΩ~50kΩ, whether there is current between the power supply and GND, whether the communication mode is asynchro nous/synchronous, whether there is a start-up node instruction sent, please contact the technical or after-sales staff after the above inspection
	LEDs are off	power supply/sensor failure	Check whether the power supply, whether the sensor is damaged, and return to the factory for maintenance, please contact the sales staff or after-sales staff to send it back

Profinet

RH.RP	The green LED is on, and the data display is-1 or 0	Sensor communicating , cannot detect the magnet	The sensor output is normal, please check whether the magnet is assembled correctly and whether the measuring rod is damaged
	The green LED is on, and the data display is 0x7fffffff (hexadecimal)	Sensor communicating , cannot detect magnet	The sensor output is normal, please check whether the Magnet ring is assembled correctly and whether the measuring rod is damaged
	The green LED flashing and the red LED is on	Sensor internal fault	Sensor needs to be returned for repair, please contact the sales staff or after-sales staff to send it back
	LEDs are off	Abnormal power supply/sensor failure	Check whether the power supply, whether the sensor is damaged, and return to the factory for maintenance, please contact the sales staff or after-sales staff to send it back
	The green LED is on and the red LED is flashing	Communication failure	Check whether the GSD file matches or is correctly installed, whether the sensor name matches the configuration, modify the sensor name to simple characters such as A/a if necessary, and then configuration test

Start-Stop

RH.RP	Green LED is on, red LED is flashing, no data	The sensor has no interrogation signal	Check whether the connection is correct, whether the controller send the start signal, and whether the hardware such as the controller module is normal
	LEDs are on	Magnet or sensor failure	Check whether the magnet is assembled normally. Use frequency mode of an oscilloscope and multimeter to measure whether the waveform of start/stop signal line has amplitude or frequency value. After confirming that there is no amplitude or frequency, it must be returned to the factory for maintenance, please contact the sales staff or after-sales staff to send it back

Profibus-DP

RH.RP	Green LED flashing, no data	Communication failure, configuration setting error, etc.	Check the communication cable connection, whether the address set in the configuration is consistent with the sensor model label, and whether the sensor address jumps (TEC address programmer is required to read the actual sensor address)
	Green LED is on, no data	Abnormal configuration setting/ wrong number of magnets, etc.	Check state configuration, bus wiring, magnet number, etc.
	LEDs are off	Power/Sensor Failure	Check whether the power supply is normal, whether the sensor is damaged, and return to the factory for maintenance , please contact the sales staff or after-sales staff to send it back

Ether-CAT

RH.RP	The green LED flashing and the red LED is on	Magnet not detected/incorrect number of magnets	Check whether the magnet is assembled correctly; When there are multiple magnetic rings, check whether the actual number of magnets matches the number of set parameters

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Industrial Applications

Metallurgical industry

Port machinery

Hydraulic machinery

Wind power industry

Injection molding machinery

Vulcanizing machinery

Die casting machinery

Vertical mill machinery

Construction machinery

Papermaking machinery

Liquid level tank

Forming machinery

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- Strong environmental adaptability to meet various needs
- No need to return to zero, absolute position output
- Nonlinearity is 0.01% and repetition accuracy is 0.001%
- Stable and reliable, using digital analog technology
- Low power consumption design effectively reduces system heating

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Product Parameters-SSI Output

• Input

Measurement data	Position magnet ring
Effective travel	25~5500 mm, customized according to customer needs
Number of measurements	1pcs

• Output

Interface	SSI Synchronous Serial Interface--Differential signal in SSI standard
Data Format	Binary or Gray code
Data length	8-32 bits
Resolution	5 / 10 / 20 / 40/ 50 / 100 μm
Nonlinearity	<±0.01% of full scale, minimum ±50μm
Repetition accuracy	< ±0.001% for full-scale, Or equivalent to resolution
Transmission speed	50KBD~1MBD line length <3 <50 <100 <200 <400 (m) Rate 1000 <400 <300 <200 <100 (KBD)
Update time	Length: 300 750 1000 2000 5000 mm Frequency: 3.3 3.0 2.3 1.2 0.5 kHz
Hysteresis	<10μm
Temperature coefficient	<15ppm/℃
Working mode	Asynchronous, synchronous (synchronous 1)

• Working conditions

Magnet velocity	Arbitrary
Protection level	IP67
Operating temperature	-40°C ~ +85°C
Humidity/dew point	Humidity 90%, no condensation
Shock index	GB/T2423.5 100g(6ms)
Vibration index	GB/T2423.10 15g/10~2000Hz
EMC test	GB/T17626.2/3/4/6/8, Grade 3/3/2/3, Class A, CE certification

• Structure and materials

Electronic Warehouse	304 stainless steel
Measuring rod	304 stainless steel
External tube pressure	35MPa (continuous) / 70MPa (peak) (measuring rod diameterΦ10)
Position magnet	Standard magnetic rings and various ring magnets
Threaded interface	M18×1.5、M20×1.5、3/4"-16UNF-3A (customizable)
Installation direction	Any direction, threaded installation (thread specifications optional)
Wiring Method	Straight out cable (loose wire connection) or aviation plug (M16 connector)

• Electrical connection

Input voltage	+24Vdc±20%
operating current	＜100mA (varying with range)
Polarity protection	Maximum-30Vdc
Overpressure protection	Maximum36Vdc
Insulation resistance	＞10MΩ
Insulation strength	500V

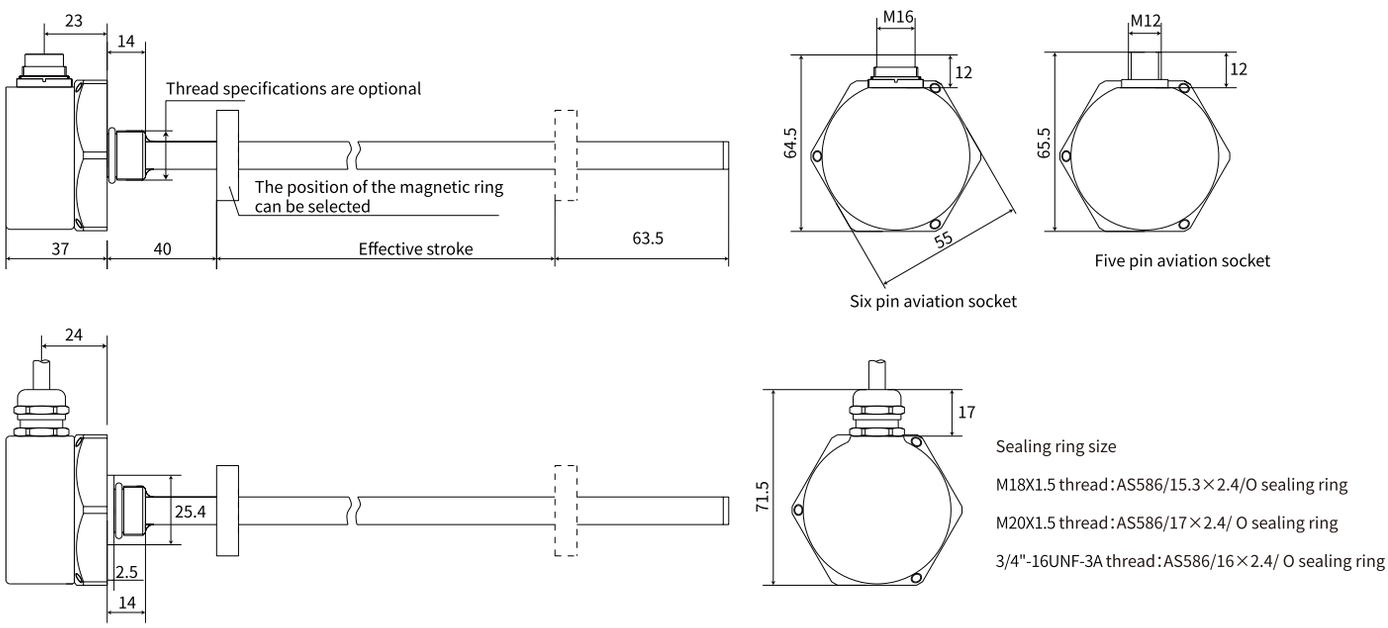
Installation and usage instructions

SSI output magnetostrictive displacement sensor, suitable for real-time and precise measurement of the stroke of moving parts. It can measure the absolute displacement or stroke of the vernier magnetic ring in standard analog form

This includes: 0-20mA (forward and reverse), 4-20mA (forward and reverse) DC current, or 0-10V (forward and reverse) DC voltage. The sensor is a built-in installation method, suitable for the built-in installation of hydraulic cylinders, with a compact structure.

- RB2 pressure resistant circular tube sensor size and installation guide

Hexagonal flange type (core replaceable)



Sealing ring size

M18X1.5 thread：AS586/15.3×2.4/O sealing ring

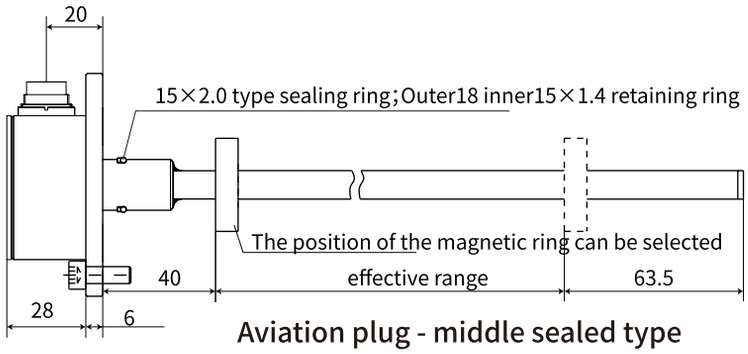
M20X1.5 thread：AS586/17×2.4/ O sealing ring

3/4"-16UNF-3A thread：AS586/16×2.4/ O sealing ring

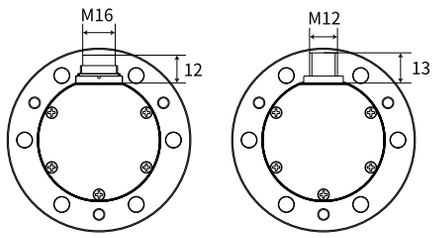
ATOM METRIC
FINEST MEASUREMENTS, HIGHEST PRECISION

Installation and usage instructions

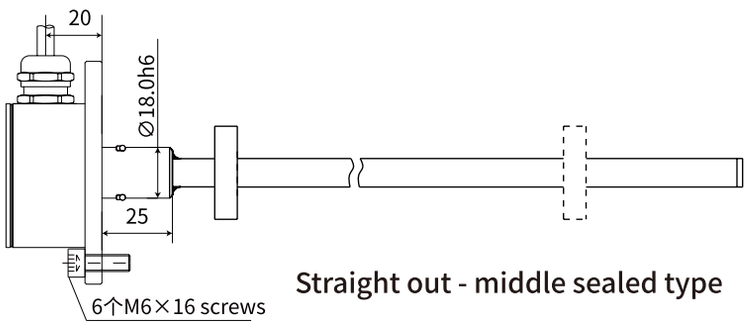
Compact seal type



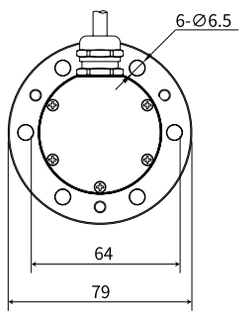
Aviation plug - middle sealed type

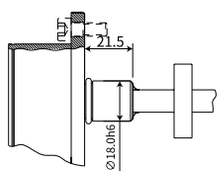


Six pin aviation socket　　Five pin aviation socket



Straight out - middle sealed type





Bottom seal

• Connection way

When the sensor is an aviation plug output, refer to the pin definitions in the table below for the wiring method; When the sensor is a direct output cable, the wiring method should refer to the line color definitions in the table below

• 7-pin male connector arrangement			
Pin	Line color1*	Line color2*	Pin/wire function definition
1	White	Grey	Data (-)
2	Yellow	Pink	Data (+)
3	Blue	Yellow	Clock (+)
4	Green	Green	Clock (-)
5	Red	Brown	+24Vdc
6	Black	White	0Vdc
7	-	-	Non-connect

NOTE: * COLOR 1: CABLE PUR SHEATH, ORANGE,
-20~90 °C
*LINE COLOR 2/3: CABLE TPV SHEATH, ORANGE,
-20~105 °C

• 8-pin male connector arrangement		
Pin	Line color3*	Pin/wire function definition
1	Yellow	Clock (+)
2	Grey	Data (+)
3	Pink	Clock (-)
4	-	Reservation
5	Green	Data (-)
6	Blue	0Vdc
7	Brown	+24Vdc
8	White	Reservation

ATOM METRIC
FINEST MEASUREMENTS, HIGHEST PRECISION

Guide to Selection-SSI Output

R	B	2	–	M					–	S			–					–	S	1	0						–		
01	02	03		04	05	06	07	08		09	10	11		12	13	14	15		16	17	18	19	20	21	22	23		24	25

01 - 03 Sensor shell form

R B 2	Pressure resistant circular tube (internal or external)

04 - 08 Measuring range

Four digits, add zeros before any four digits,
M represents metric system, unit: mm

09 - 10 Installation thread form

S 1	Hexagonal flange type, M18X1.5 installation thread, measuring rod diameter 10mm,304 material, replaceable core
S 2	Hexagonal flange type, M20X1.5 installation thread, measuring rod diameter 10mm, 304 material, can be replaced by core pulling
S 3	Hexagonal flange type, 3/4 "-16UNF-3A installation threaded measuring rod diameter 10mm, made of 304 material, can be replaced by core pulling
S 4	Compact sealing type, bottom sealing, measuring rod diameter 10mm, made of 304 material
S 5	Compact sealing type, middle sealing, measuring rod diameter 10mm, made of 304 material
S 6	M18X1.5 installation thread, measuring rod diameter 10mm, made of 304 material, non replaceable core, strengthened waterproof
S 7	M20X1.5 installation thread, measuring rod diameter 10mm, made of 304 material, non replaceable core, reinforced waterproof
S 8	3/4 "-16UNF-3A installation threaded measuring rod with a diameter of 10mm, made of 304 material, non replaceable core, reinforced waterproof

11 Mechanical selection

0	standard
1	With convex flange (2.5mm)

12 - 15 Intelligent Sensing and Detection

12 - 13 Outlet type: straight out cable method

D H	PUR sheath, orange, -20~90 °C, loose wire at the end, wire color 1
D U	PVC sheath, orange, -20~105 °C, loose wire at the end, wire color 2
D B	PVC sheath, orange, -20~105 °C, loose wire at the end, wire color 3
D I	PUR sheath, orange, -20~90 °C, 7-core aviation plug at the end
D V	PVC sheath, orange, -20~105 °C, 7-core aviation plug at the end
D C	PVC sheath, orange, -20~105 °C, 8-core aviation plug at the end

14 - 15 Straight out cable method: Cable length, 01-99 meters

12 - 15 Aviation socket form

P H 7 0	A set of 7-pin male plugs (M16)

16 - 23 Signal output mode

16	S	SS1
17	1	position
18	0	standard

19 Data length

1	24 Bit	2	25 Bit	3	26 Bit*

* 26 bitis parity bits and 25-bitis status bits

20 Data Format

B	Binary	G	Gray code

21 Resolution

1	0.1mm	2	0.05mm
3	0.02mm	4	0.01mm
5	0.005mm	8	0.04mm

22 Direction

0	forward	1	reverse

23 mode

0	asynchronous	1	synchronous1

24 - 25 Blind spots at the beginning and end, customizable

S F	40mm+63.5mm

- Explanation: The forward output of the sensor refers to the increase in output value when the magnetic ring moves away from the electronic chamber, and the decrease when it moves in the opposite direction
- Selection example: RB2-M0300-S10-PH70-S1B500-SF

  Indicates: RB2 rod structure series, 300mm effective stroke, M18X1.5 installation thread, standard structure, measuring rod diameter 10mm, 304 material, 7-pin aviation socket outlet form, SSI output, resolution 0.005mm, forward asynchronous output, head blind spot 40mm, end blind spot 63.5mm.

ATOM METRIC
FINEST MEASUREMENTS, HIGHEST PRECISION

SSI Cable Accessories Selection Guide

S	S	I	–	M				–			
01	02	03		04	05	06	07		08	09	10

01 - 03	Type
S S I	SSI interface

04 - 07	Cable Length
M * * *	Less than 3 digits are preceded by zeros, and M means metric system, unit m

08 - 10	Cable type and outgoing method
H 0 1	One end of 7-pin (M16) female connector, and one end scattered
H 0 3	One end of 7-pin (M16) right angle female connector, and one end scattered
U 0 1	One end of 7-pin (M16) female connector, and one end scattered
U 0 2	One end of 8-pin (M16) female connector, and one end scattered
U 0 3	One end of 7-pin (M16) right angle female connector, and one end scattered
U 0 4	One end of 8-pin (M16) right angle female connector, and one end scattered
NOTES	H：cable type, PUR sheath, orange, -20~90°C
	U：Cable type, PVC sheath, orange, -20~105°C

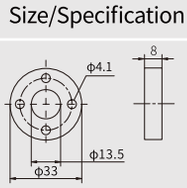
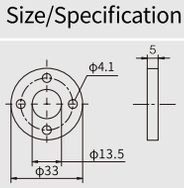
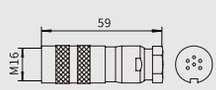
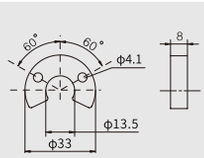
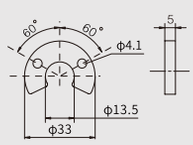
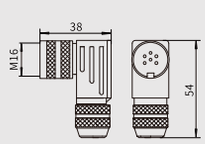
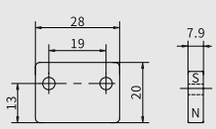
- Selection example: e.g. SSI-MO05-H01

  SSI interface cable, with a length of 5 meters, PUR sheath, orange color, -20~90 °C, One end of 7-pin (M16) female connector, and one end scattered

- Selection example: e.g. SSI-MO10-U04

  SSI interface cable, with a length of 10 meters, PVC sheath, orange color, -20~105 °C, One end of 8-pin (M16) right angle female connector, and one end scattered.

Common attachments

Accessory Name/Model	Size/Specification	Accessory Name/Model	Size/Specification	Accessory Name/Model	Size/Specification
Standard magnetic ring Order No.：211501		Magnetic isolation gasket		6-pinFemale Connector Order No.：312701	
Sector magnet Order No.：211502		Sector magnetic isolation gasket		6-pin 90 Female Connector Order No.：312702	
Square magnet Order No.：211508		Standard magnetic ring kit Order No.：288501 1 magnetic ring, 1 gasket, 4 screws with spring washers	 Magnetic isolation gasket: thickness 5mm, screw: GB/T70.1, M4X18, material 304 Spring washer: GB/T93, Ø 4, material 304	Magnetic Ring 32 Kit Order No.：288512 1 magnetic ring, 1 gasket, 2 screws with spring washers	 Magnetic isolation gasket: thickness 5mm, screw: GB/T70.1, M4X20, material 304 Spring washer: GB/T93, Ø 4, material 304

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