

Magnetostrictive Linear Position Sensor

Outside cylinder SSI

L5 - BXXXX-12



Profile

- Outside installation, easy to use
- Absolute position output, without zero operation
- Contactless sensing with highest durability
- High resolution, SSI output upto 0.5µm
- Design of low power consumption, reduce the temperature drift



Features

- Status LEDs for indicating operating status and diagnostics
- Modular design, easy repairing
- Linearity deviation $< \pm 0.01\%$ rated length
- Repeatability $< \pm 0.001\%$ rated length

Parameter of measurement

Measuring Length	25 ~ 3500 mm
SSI Signal	24、25、26 bits Binary or Gray
Baud rate	70kBd ~ 1MBd
	Cable Length: <3 <50 <100 <200 <400 m Baud rate: 1000 <400 <300 <200 <100 kBd
Resolution	0.5 / 1 / 2 / 5 / 10 / 20 / 50 / 100 µm
Linearity	$< \pm 0.01\%$ F.S. (Min. $\pm 40\mu\text{m}$)
Repeatability	$< \pm 0.001\%$ F.S. (Min. ± 1 bits)
Update time	F.S.: 300 750 1000 2000 5000 mm 3.7 3.0 2.3 1.2 0.5 kHz

Electrical characteristics

Connection	Cable or M16, 7pins Connector
Voltage	24VDC (-15 / +20%)
Current	$< 60\text{mA}$ (Depend on Measuring range)
Polarity protection*	Max. -30VDC
Overvoltage protection*	Max. 36VDC
Electric strength	500V (DC ground to machine ground)
Error indicator	Red and Green LED indicator

* Max. 5mins

Design & Material

Sensor head	Aluminium alloy
Protective shell	Aluminium alloy
Mounting holder	304LStainless

Installation & Accessories

Installation direction	Any orientation
Installation	Mounting holder, M5×20
Magnet	Round rail slide magnet L5-0000-ACMB-0003, Not included in delivery Square floating magnet L5-0000-ACMB-0001, Not included in delivery U-Magnet L5-0000-ACRI-0005, Not included in delivery
Mounting holder	L5-0000-ACMT-0002, Not included in delivery (At least two)
Connector	E1-2207-0100, Not included in delivery

Operation condition

Magnet speed	Any
Operating temperature	$-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Humidity/Dew point	R.H.90%, No Condensation
Temperature coefficient	$< 30\text{ppm}/^{\circ}\text{C}$
Protection Level	IP67

Sensor diagnostic display

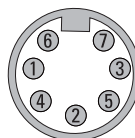


Indicator	Description
Green ON	Normal function
Green Flash	Programming mode
Red Flash	Magnet out of measuring range
Red ON	Magnet not detected or damaged magnet

Wiring

Signal	Ub	GND	+C	-C	+D	-D
Cable(color)	Brown	White	Yellow	Green	Pink	Gray
M16, 7 pins Connector	5	6	3	4	2	1

M16, 7pins Pin top view (sensor)



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**Ordering example
Outside**

L5 - B 1 0 0 0 - 1 2 1 2 - XXXX X X - X

Series a b c d e f g h

a Measuring range
1000 = 1000 mm
.....
Max.3500 mm
in 5-mm increments

c Operation Voltage
1 = 24 VDC

e Communication
S1G1 = 25 bits, Gray
S1G2 = 24 bits, Gray
S1G3 = 26 bits, Gray
S1B1 = 25 bits, Binary
S1B2 = 24 bits, Binary
S1B3 = 26 bits, Binary

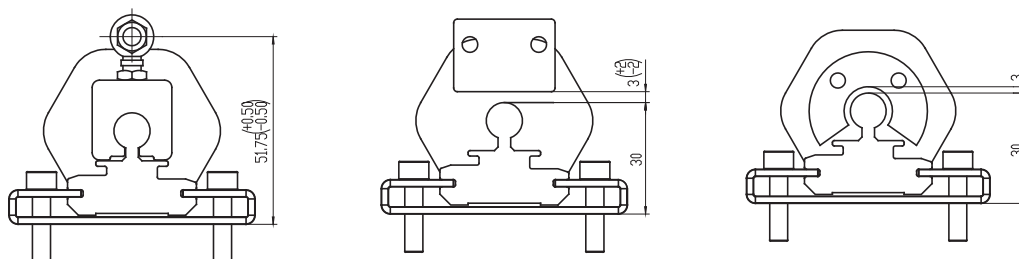
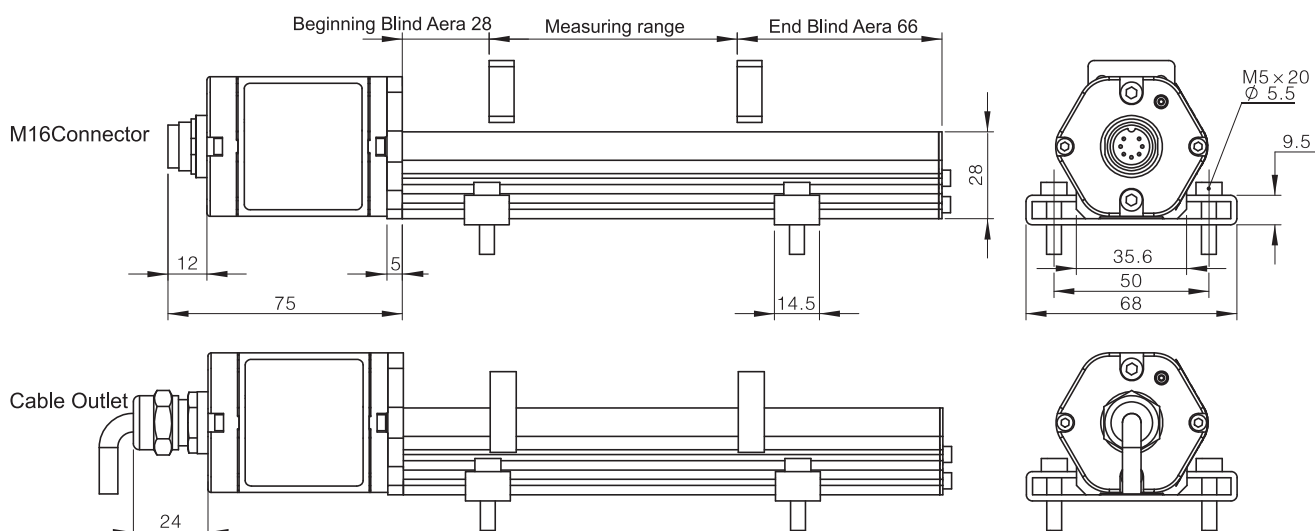
f Resolution
1 = 0.001 2 = 0.002
3 = 0.005 4 = 0.01
5 = 0.02 6 = 0.06
7 = 0.1 8 = 0.0005

b Output
12 = SSI output

d wiring
2 = M16, 7pinsConnector
PXX = Standard cable outlet, XX meters
TXX = High temperature cable outlet, XX meters

g Direction
P = Forward direction
N = Reverse direction

h Blind Area (Beginning+End)
S = 28 + 66 (mm)

Installation

Dimensions


Note: Position measurement is via floating magnets travelling along the sensing rod without any mechanical contact.
Square floating magnet : Max.Horizontal offset upto ±3mm, Max.Vertical distance upto 5mm