

# Magnetostrictive Linear Position Sensor

Outside Cylinder Profibus DP

L5 - EXXXX-13



## Profile

- Robust, oil resistance
- Absolute position output, without zero operation
- Contactless sensing with highest durability
- High resolution, upto 1  $\mu\text{m}$  / can be set via GSD file
- Design of low power consumption, reduce the temperature drift
- Nod address and resolution can be programmed



## Features

- Status LEDs for indicating operating status and diagnostics
- Modular design, easy repairing

- Linearity deviation  $< \pm 0.01\%$  rated length
- Repeatability  $< \pm 0.002\%$  rated length

Parameter of measurement	
Measuring Length	25-2500mm
Output	Profibus-DP (EN - 50 170)
Baud rate	12Mbit/s
Resolution	1 $\mu\text{m}$ / Can be modified via GSD file
Linearity	$< \pm 0.01\%$ F.S. (Min. $\pm 50\mu\text{m}$ )
Repeatability	$< \pm 0.002\%$ F.S. (Min. $\pm 2\mu\text{m}$ )
Update time	0.5ms (F.S. $< 1\text{m}$ )    1.0ms (1m $< \text{F.S.} < 2\text{m}$ ) 2.0ms (2m $< \text{F.S.} < 4\text{m}$ )    4.0ms (4m $< \text{F.S.} < 7.6\text{m}$ )

Design & Material	
Sensor head	Aluminium alloy
Sensor stroke	Aluminium alloy
Mounting holder	304LStainless

Electrical characteristics	
Connection	Dual M16 or Dual M12+M8 Connector
Voltage	24VDC (-15 / +20%)
Current	$< 50\text{mA}$ (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

Installation & Accessories	
Installation direction	Any orientation
Installation	Mounting holder, M5x20Specified screw
Magnet	Flat rail sliding block magnet L5-0000-ACMB-0004, Not included in delivery Trapezoid Floating Magnet L5-0000-ACMB-0005, Not included in delivery
Mounting holder	L5-0000-ACMT-0002, Not included in delivery (At lease two)
Connector	Dual M12+M8Connector, Not included in delivery: M12Male E1-1105-0112 M12Female E1-1205-0102 M8 Female E1-6204-0010
Terminal resistance	M12 E1-PDP0-TR00

\* Max. 5mins

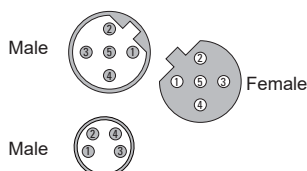
## Wiring

Dual M12Connector+M8Connector

Signal	Ub	GND	A(Bus)	B(Bus)	DGND*	VP*
M12, 5 Pin DP Connector	—	—	2	4	3	1
M8, 4 Pin power Connector	1	3	—	—	—	—

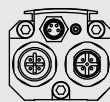
\* DGND and VP Only available for terminal

Dual M12Connector+M8Connector  
Pin top view (sensor)



Operation condition	
Magnet speed	Any
Operating temperature	$-40^{\circ}\text{C}$ ~ $+85^{\circ}\text{C}$
Humidity/Dew point	R.H.90%, No Condensation
Temperature coefficient	$< 30\text{ppm}/^{\circ}\text{C}$
Protection Level	IP65

Sensor diagnostic display		
Green	Red	Description
ON	—	Normal function
—	ON	Magnet not detected or damaged magnet
—	Flash	Magnet out of measuring range
<b>Flash</b>	—	Programming mode
Flash	Flash	Communication error



# Magnetostrictive Linear Position Sensor

Outside Cylinder Profibus DP

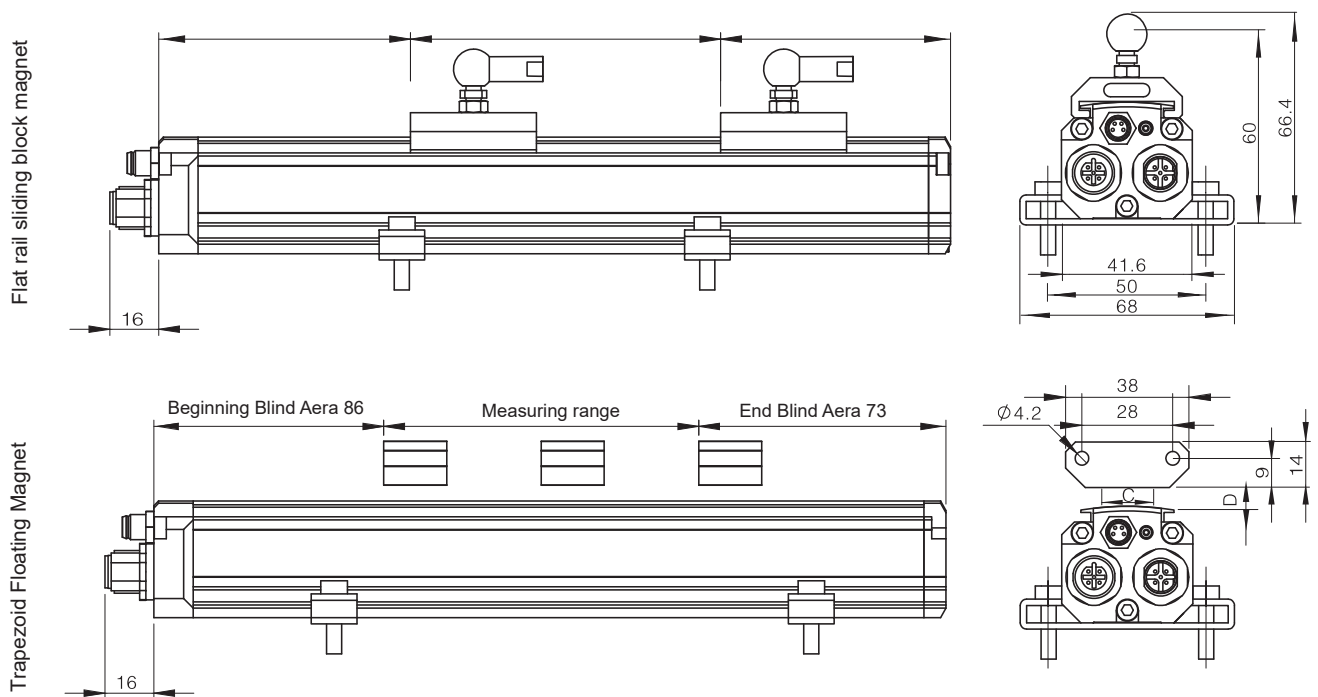
L5 - EXXX-13

Ordering example  
Outside Cylinder

L5 - E 1 0 0 0 - 1 3 1 6 - XXXX 1 P - X  
Serie a b c d e f g

<p><b>a</b> Measuring range 0100 = 100 mm Max.4500 mm in 5-mm increments</p>	<p><b>c</b> Operation Voltage 1 = 24 VDC</p>	<p><b>e</b> Magnet number P101 = 1-3Magnets, position P102 = Single Magnet, position</p>	<p><b>g</b> Blind Aera (Bignning+End) S = 50.8 + 63.5 (mm) B = 29 + 60 (mm)</p>
<p><b>b</b> Output 13 = Profibus DP</p>	<p><b>d</b> Wiring 6 = Dual M12, 5 pinsDPConnector+M8 power Connector</p>	<p><b>f</b> Resolution (mm) 1 = 0.001, Can be modified via GSD file</p>	

## Dimensions



Note: (1) Default delivery 2pcs mounting clamps, there will be more one each 500mm longer than 1000mm.  
 (2) 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.