

LI500P0-Q25LM0-ELIUPN8X3-H1151

Inductive Linear Position Sensor – IO-Link



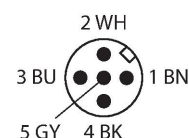
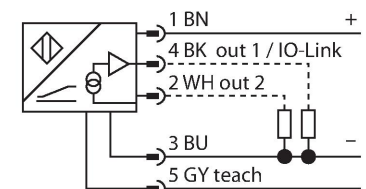
Technical data

Type	LI500P0-Q25LM0-ELIUPN8X3-H1151
ID	1590606
Measuring principle	Inductive
General data	
Measuring range	500 mm
Resolution	0.008 mm/16 bit
Nominal distance	1.5 mm
Blind zone a	29 mm
Blind zone b	29 mm
Reproducibility	≤ 18 µm
Linearity deviation	≤ 0.05 % f.s.
Temperature drift	≤ ± 0.003 %/K
Hysteresis	not applied
Electrical data	
Operating voltage U_B	15...30 VDC
Ripple U_{ss}	≤ 10 % U_{Bmax}
Isolation test voltage	0.5 kV
Short-circuit protection	yes
Wire break/reverse polarity protection	yes/Complete
Communication protocol	IO-Link
Output function	5-pin, NO/NC, PNP/NPN, analog output
Output 1	Switching output or IO-Link mode
Output 2	Analog or switching output
Voltage output	0...10 V
Current output	4...20 mA
	programmable via IO-Link
Load resistance voltage output	≥ 4.7 kΩ

Features

- Rectangular, aluminium / plastic
- Versatile mounting possibilities
- Measuring range displayed via LED
- Immune to electromagnetic interference
- Extremely short blind zones
- Programmable analog measuring range
- 16-bit resolution
- 15...30 VDC
- Analog output, factory setting 0...10 V
- All functions programmable via IO-Link / - PACTware
- 4 programmable switching zones
- Programmable current and voltage output functions
- NC / NO programmable functions, available as NPN or PNP version
- Process value 16 bit IO-Link telegram
- M12 x 1 male, 5-pin

Wiring diagram



Functional principle

The measuring principle of linear position sensors is based on RLC coupling between the positioning element and the sensor,

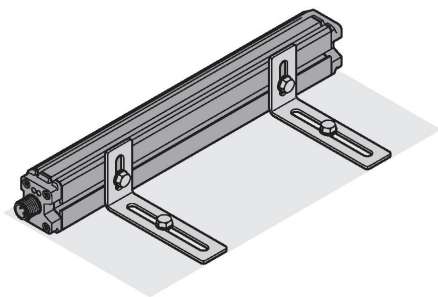
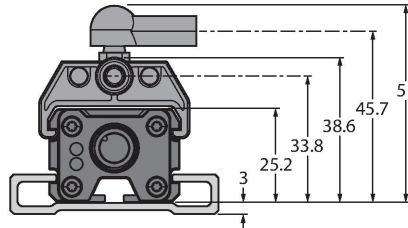
Technical data

Load resistance current output	≤ 0.4 kΩ
Sample rate	1000 Hz
Current consumption	< 50 mA
IO-Link	
IO-Link specification	V 1.0
Programming	FDT / DTM
Process data width	16 bit
Frame type	2.2
Included in the SIDI GSDML	Yes
Mechanical data	
Design	Profile, Q25L
Dimensions	558 x 35 x 25 mm
Housing material	Aluminum/plastic, PA6-GF30, Anodized
Active area material	Plastic, PA6-GF30
Electrical connection	Connector, M12 × 1
Environmental conditions	
Ambient temperature	-25...+70 °C
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class	IP67
MTTF	138 years acc. to SN 29500 (Ed. 99) 40 °C
Power-on indication	LED, Green
Measuring range display	multifunction LED, green, yellow, yellow flashing

whereby an output signal is provided proportional to the position of the positioning element. The rugged sensors are wear and tear-free, thanks to the contactless operating principle. They convince through their excellent repeatability, resolution and linearity within a broad temperature range. The innovative technology ensures a high immunity to electromagnetic DC and AC fields.

Mounting instructions

Mounting instructions/Description



Extensive mounting accessories provide various options for installation. The measuring principle of RLC coupling makes the sensor immune to magnetized metal splinters and other interference fields.

LED indications

green
positioning element is in the measuring range
yellow
positioning element is in the measuring range, the distance is too large. This is indicated by a weaker signal
yellow flashing
positioning element is outside the coverage.
off
positioning element is outside the programmed area (only with teachable versions)

Teaching

In addition to the setting via IO-link or -PACTware, the start and end point of the measuring range can be set by pressing the button at the teachadapter. Moreover there is the possibility to invert the course of the output curve.

Bridge pin 5 and pin 1 for 10 s = factory setting

Bridge pin 5 and pin 3 for 10 s = factory setting inverted

Bridge pin 5 and pin 3 for 2 s = sets start value of measuring range

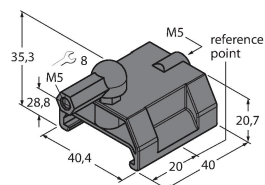
Bridge pin 5 and pin 1 for 2 s = sets end value of measuring range

Accessories

P1-LI-Q25L

6901041

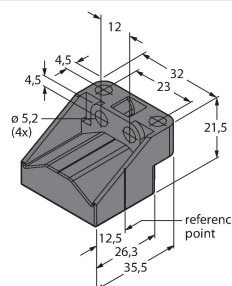
Guided positioning element for linear position sensors LI-Q25L, inserted in the groove of the sensor



P2-LI-Q25L

6901042

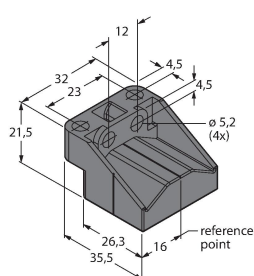
Floating positioning element for linear position sensors LI-Q25L; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 5 mm or misalignment tolerance of up to 4 mm.



P3-LI-Q25L

6901044

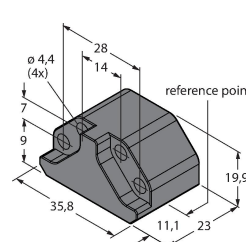
Floating positioning element for LI-Q25L linear position sensors; operational at an offset of 90°; nominal distance to sensor 1.5 mm; pairing with linear position sensor at a distance of up to 5 mm; misalignment tolerance of up to 4 mm



P6-LI-Q25L

6901069

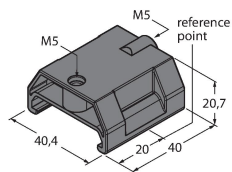
Floating positioning element for linear position sensors LI-Q25L; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 5 mm or misalignment tolerance of up to 4 mm.



P7-LI-Q25L

6901087

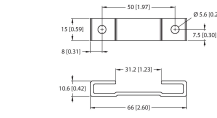
Guided positioning element for linear position sensors LI-Q25L, without ball joint



M1-Q25L

6901045

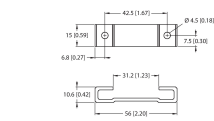
Mounting foot for linear position sensors LI-Q25L; material: aluminum; 2 pcs. per bag



M2-Q25L

6901046

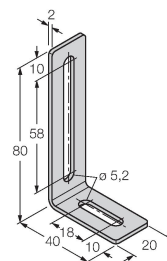
Mounting foot for linear position sensors LI-Q25L; material: aluminum; 2 pcs. per bag



M4-Q25L

6901048

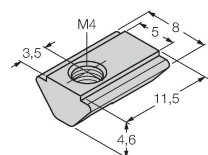
Mounting bracket and sliding block for linear position sensors LI-Q25L; material: Stainless steel; 2 pcs. per bag



MN-M4-Q25

6901025

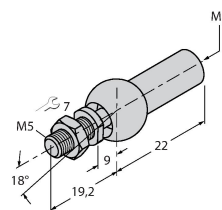
Sliding block with M4 thread for the backside profile of the LI-Q25L; material: galvanized steel; 10 pcs. per bag



AB-M5

6901057

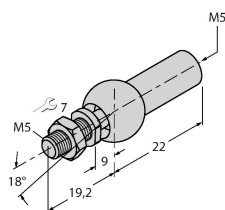
Axial Joint for Guided Positioning Elements



ABVA-M5

6901058

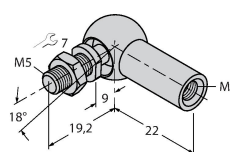
Axial joint for guided positioning element, stainless steel



RBVA-M5

6901059

Angle joint for guided positioning element, stainless steel



Accessories

Dimension drawing	Type	ID	
	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port

