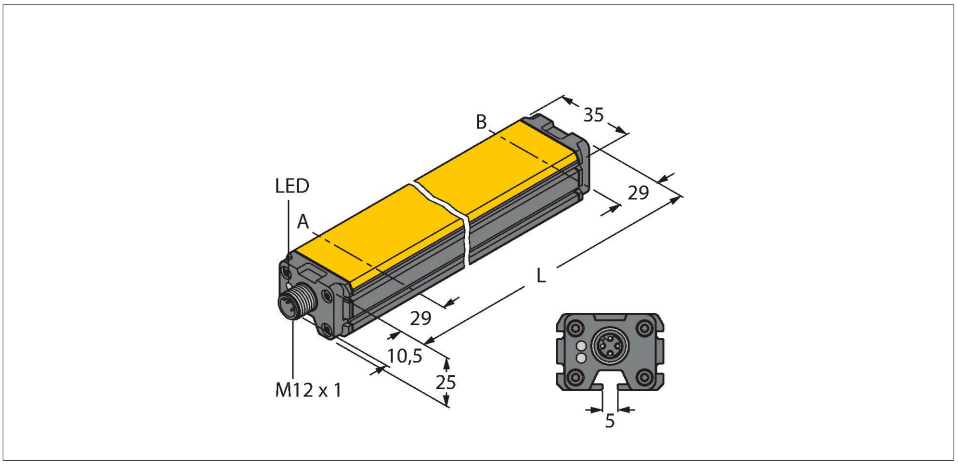
LI500P0-Q25LM0-ESG25X3-H1181
Inductive Linear Position Sensor



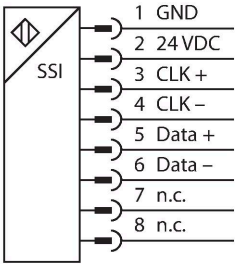
Technical data

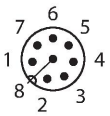
Type	LI500P0-Q25LM0-ESG25X3-H1181
Ident. no.	1590013
Measuring principle	Inductive
Measuring range	500 mm
Resolution	0,001 mm
Nominal distance	1.5 mm
Blind zone a	29 mm
Blind zone b	29 mm
Reproducibility	≤ 18 µm
Linearity deviation	≤ 0.05 %f.s.
Temperature drift	≤ ± 0.0001 % / K
Hysteresis	not applied
Ambient temperature	-25…+70 °C
Operating voltage	15…30 VDC
Residual ripple	≤ 10 % U_{ss}
Isolation test voltage	≤ 0.5 kV
Short-circuit protection	yes
Wire breakage/Reverse polarity protection	yes / yes (voltage supply)
Communication protocol	SSi
Output function	8-pin, 25 Bit, Gray coded
Process data area	Bit 0 … Bit 19
Diagnostic bits	Bit 21: Positioning element left the measuring range and is outside the detectable area.

Features

- Rectangular, aluminium / plastic
- Versatile mounting possibilities
- Measuring range indicated via LED
- Immune to electromagnetic interferences.
- Extremely short blind zones
- Resolution 0,001 mm
- 15…30 VDC
- Male M12 x 1, 8-pin
- SSI output
- 25 bit, Gray-coded
- SSI clock rate: 62.5 kHz … 1 MHz

Wiring diagram





Functional principle

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

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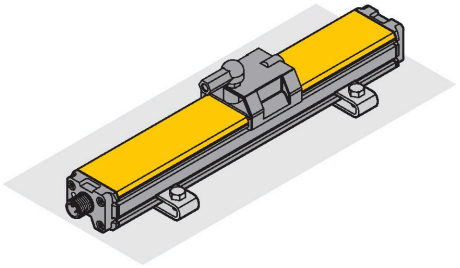
Technical data

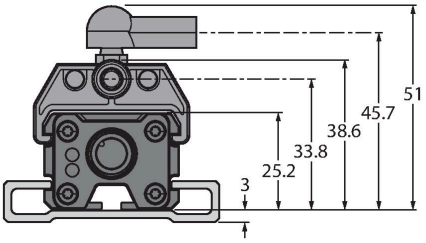
	Bit 22: Positioning element is in the measuring range, lower signal quality (e.g. distance too large) Bit 23: Positioning element is outside the measuring range
Sample rate	1000 Hz
Current consumption	< 50 mA
Design	Profile, Q25L
Dimensions	558 x 35 x 25 mm
Housing material	Aluminum/plastic, PA6-GF30, Anodized
Active area material	Plastic, PA6-GF30
Electrical connection	Connector, M12 × 1
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

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Mounting instructions

Mounting instructions/Description

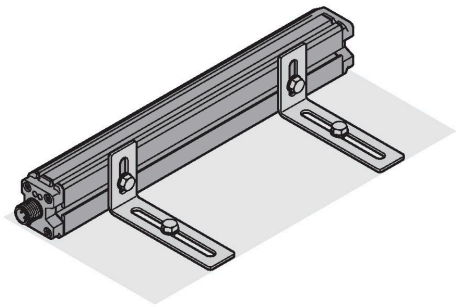




Extensive mounting accessories provide various options for installation. The measuring principle of RLC coupling makes the sensor immune to magnetized metal splinters and other interference fields.

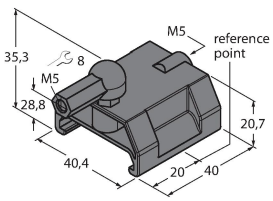
LED indicates measuring range
Green:
Positioning element is in the measuring range
Yellow:
Positioning element is in the measuring range, signal low (e.g. distance too large), see status bit 22
Yellow flashing:
Positioning element is outside the coverage, see status bit 23
LED OFF:
Positioning element is outside the programmed range (only with teachable versions)

Note: Pin 8 should be kept potential-free



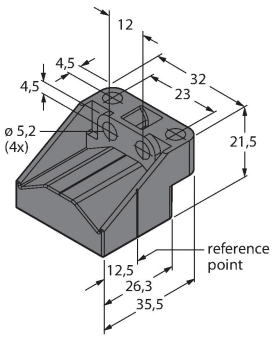
Accessories

P1-LI-Q25L	6901041



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

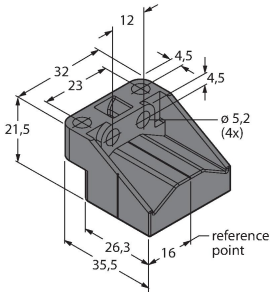
P2-LI-Q25L	6901042



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.

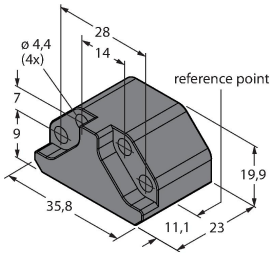
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P3-LI-Q25L	6901044



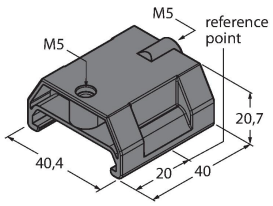
Floating positioning element for Li-Q25L linear position sensors; operational at an offset of 90 ; nominal distance to sensor 1.5 mm; pairing with linear position sensor at a distance of up to 5 mm; misalignment tolerance of up to 4 mm

P6-LI-Q25L	6901069



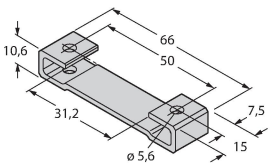
Floating positioning element for linear position sensors LI-Q25L; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 5 mm or misalignment tolerance of up to 4 mm.

P7-LI-Q25L	6901087



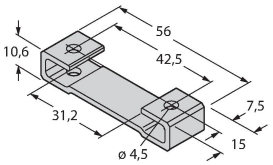
Guided positioning element for linear position sensors LI-Q25L, without ball joint

M1-Q25L	6901045



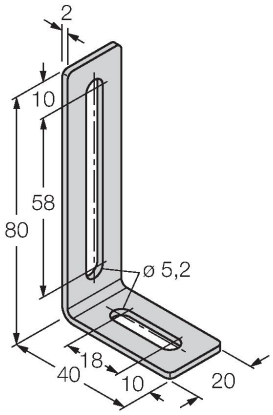
Mounting foot for linear position sensors LI-Q25L; material: aluminum; 2 pcs. per bag

M2-Q25L	6901046



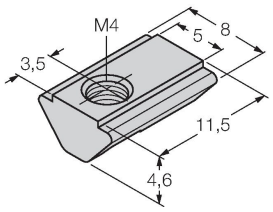
Mounting foot for linear position sensors LI-Q25L; material: aluminum; 2 pcs. per bag

M4-Q25L	6901048



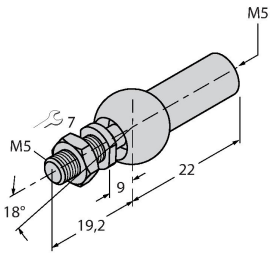
Mounting bracket and sliding block for linear position sensors LI-Q25L; material: Stainless steel; 2 pcs. per bag

MN-M4-Q25	6901025



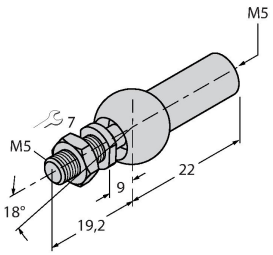
Sliding block with M4 thread for the backside profile of the LI-Q25L; material: galvanized steel; 10 pcs. per bag

AB-M5	6901057



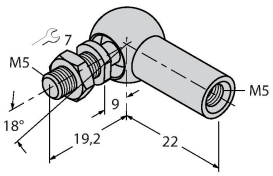
Axial Joint for Guided Positioning Elements

ABVA-M5	6901058



Axial joint for guided positioning element, stainless steel

RBVA-M5	6901059



Angle joint for guided positioning element, stainless steel

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Wiring accessories

Dimension drawing	Type	Ident. no.	
	E-RKC 8T-264-2	U-04781	Connection cable, female M12, straight, 8-pin (twisted pairs),shielded, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com

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