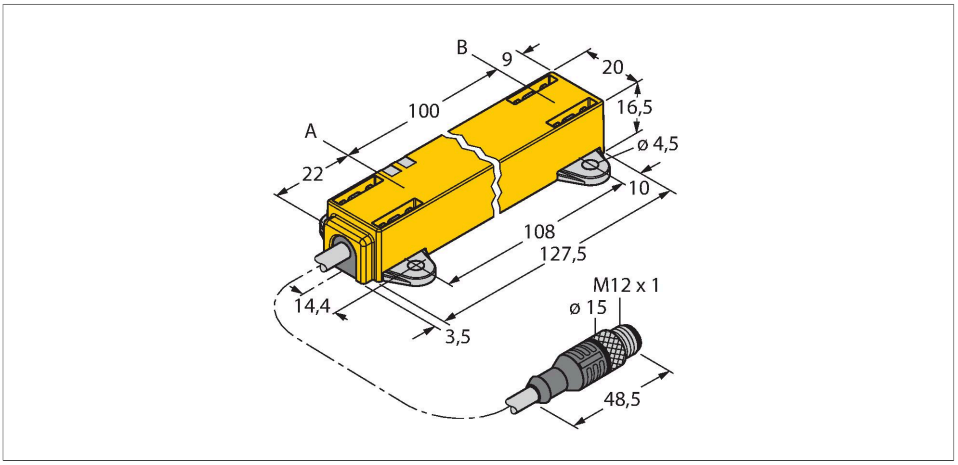
# LI100P1-Q17LM1-LIU5X2-0.3-RS5
# Inductive Linear Position Sensor



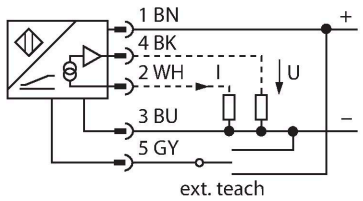

## Technical data

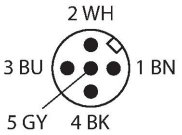
| | |
|---|---|
| Type | LI100P1-Q17LM1-LIU5X2-0.3-RS5 |
| ID | 1590726 |
| Measuring principle | Inductive |
| **General data** | |
| Measuring range | 100 mm |
| Resolution | 0.024 mm/12 bit |
| Nominal distance | 1.5 mm |
| Blind zone a | 22 mm |
| Blind zone b | 9 mm |
| Repeat accuracy | ≤ 0.03 % of full scale |
| Linearity deviation | ≤ 0.5 % f.s. |
| Temperature drift | ≤ ± 0.01 % / K |
| Hysteresis | not applied |
| **Electrical data** | |
| 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) |
| Output function | 5-pin, Analog output |
| Voltage output | 0…10 V |
| Current output | 4…20 mA |
| Load resistance voltage output | ≥ 4.7 kΩ |
| Load resistance current output | ≤ 0.4 kΩ |

## Features

- Rectangular, plastic
- Many mounting possibilities
- Positioning element P1-Li-QR14/Q17L, mounting aids M1.1-Q17L and M1.2-Q17L included in delivery
- LED indicates measuring range
- Immune to electromagnetic interference
- Extremely short blind zones
- Resolution, 12-bit
- 4-wire, 15…30 VDC
- Analog output
- Programmable measuring range
- 0…10 V and 4…20 mA
- Cable with male end M12 x 1

## Wiring diagram

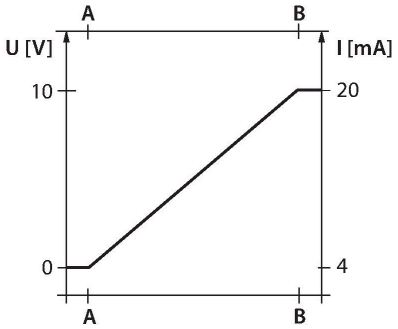



## Functional principle

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.

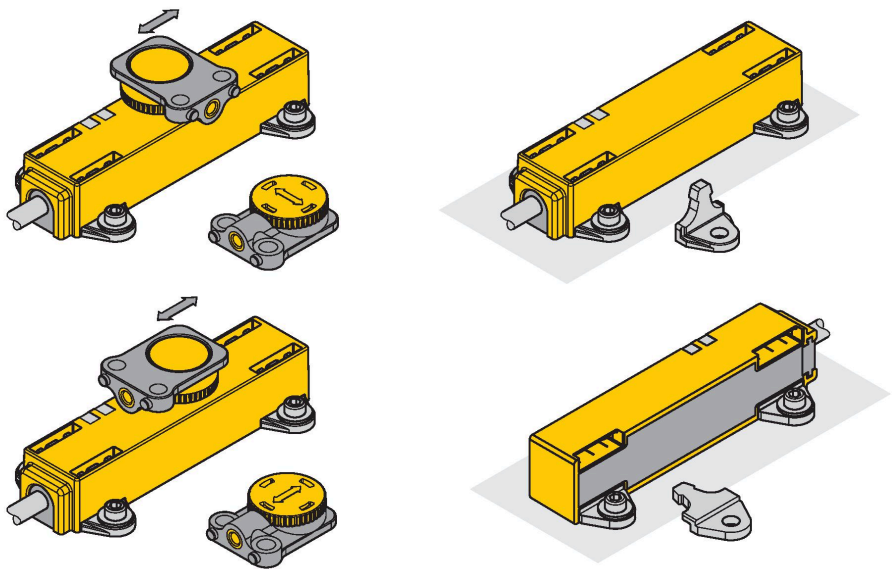
## Technical data




| | |
|---|---|
| Sample rate | 700 Hz |
| Current consumption | < 50 mA |
| **Mechanical data** | |
| Design | Profile, Q17L |
| Dimensions | 131 x 20 x 16.5 mm |
| Housing material | Plastic, PC-GF10 |
| Electrical connection | Cable with connector, M12 × 1 |
| Cable quality | Ø 5.2 mm, Black, LifYY, PVC, 0.3 m |
| Core cross-section | 5 x 0.25 $mm^2$ |
| **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 |
| Included in delivery | positioning element P1-Li-QR14/Q17L, M1.1-Q17L, M1.2-Q17L |

## Mounting instructions

| Mounting instructions/Description |
|---|



Extensive mounting accessories provide various options for installation.
The positioning element can be mounted offset by 90° degrees. This provides highest mounting flexibility. The linear position sensor can also be mounted offset by 90° degrees with the two provided screw joints. The measuring principle of RLC coupling makes the sensor immune to magnetized metal splinters and other interference fields.

LED indicates status:
Green:
Sensor is supplied correctly

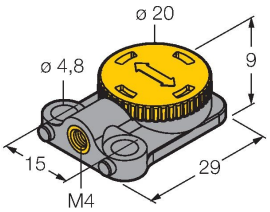
LED indicates measuring range
Green:
Positioning element is in the measuring range
Green flashing:
Positioning element is in the measuring range, signal low (e.g. distance too large)
LED OFF:
Positioning element is outside the coverage

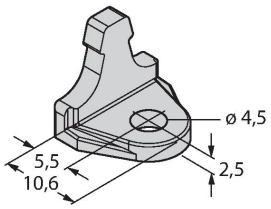
Teaching
The start and end point of the measuring range are set by pressing the button at the teach

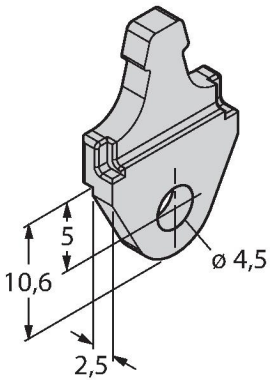
adapter. Moreover there is the possibility to invert the course of the output curve.
Bridge pin 5 and pin 1 for 10 s (UB) = factory setting
Bridge pin 5 and pin 3 for 10 s (GND) = factory setting inverted

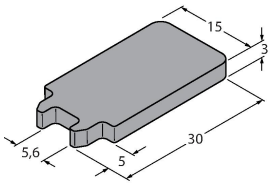
Bridge pin 5 and pin 3 for 2 s (GND) = sets start value of measuring range
Bridge pin 5 and pin 1 for 2 s (UB) = sets end value of measuring range

## Accessories

| P1-LI-QR14/Q17L | 1590724 |
|---|---|
|  | Floating positioning element for linear position sensors LI-QR14 and LI-Q17L; transverse and longitudinal mounting possible; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 3 mm or a misalignment tolerance of up to 3 mm |

| M1.1-Q17L | 1590749 |
|---|---|
|  | Mounting bracket for linear position sensors LI-Q17L; material: aluminum; 3 pcs. per bag |

| M1.2-Q17L | 1590750 |
|---|---|
|  | Mounting foot for linear position sensors LI-Q17L; material: aluminum; 3 pcs. per bag |

| RMT-Q17L | 1590755 |
|---|---|
|  | Removal tool for mounting elements for linear position sensors LI-Q17L |