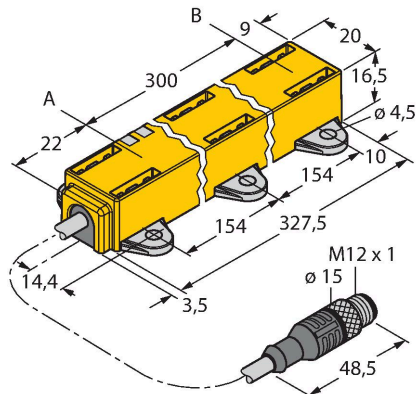


# LI300P1-Q17LM1-LU4X2-0.3-RS5/S97

## Inductive Linear Position Sensor



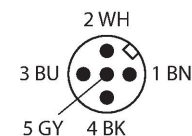
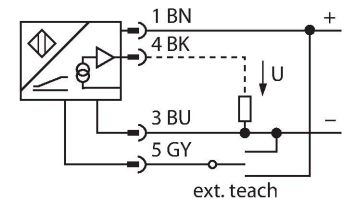
### Features

- Rectangular, plastic
- Versatile mounting options
- Positioning element P1-Li-QR14/Q17L, mounting elements 2 × M1.1-Q17L as well as 2 × M1.2-Q17L included in delivery
- LED indicates measuring range
- Immune to electromagnetic interference
- Extremely short blind zones
- Resolution, 12-bit
- 4-wire, 8...30 VDC
- Analog output
- Programmable measuring range
- 0.5...4.5 V
- Cable with male end M12 x 1

### Technical data

|                                        |                                  |
|----------------------------------------|----------------------------------|
| Type                                   | LI300P1-Q17LM1-LU4X2-0.3-RS5/S97 |
| ID                                     | 1590758                          |
| Measuring principle                    | Inductive                        |
| <b>General data</b>                    |                                  |
| Measuring range                        | 300 mm                           |
| Resolution                             | 0.073 mm/12 bit                  |
| Nominal distance                       | 1.5 mm                           |
| Blind zone a                           | 22 mm                            |
| Blind zone b                           | 9 mm                             |
| Linearity deviation                    | ≤ 0.5 % f.s.                     |
| Temperature drift                      | ≤ ± 0.01 %/K                     |
| Hysteresis                             | not applied                      |
| <b>Electrical data</b>                 |                                  |
| Operating voltage $U_B$                | 8...30 VDC                       |
| Ripple $U_{ss}$                        | ≤ 10 % $U_{Bmax}$                |
| Isolation test voltage                 | 0.5 kV                           |
| Short-circuit protection               | yes                              |
| Wire break/reverse polarity protection | yes/yes (voltage supply)         |
| Output function                        | 5-pin, Analog output             |
| Voltage output                         | 0.5...4.5 V                      |
| Load resistance voltage output         | ≥ 4.7 kΩ                         |
| Sample rate                            | 700 Hz                           |
| Current consumption                    | < 50 mA                          |
| <b>Mechanical data</b>                 |                                  |
| Design                                 | Profile, Q17L                    |
| Dimensions                             | 331 x 20 x 16.5 mm               |
| Housing material                       | Plastic, PC-GF10                 |

### Wiring diagram

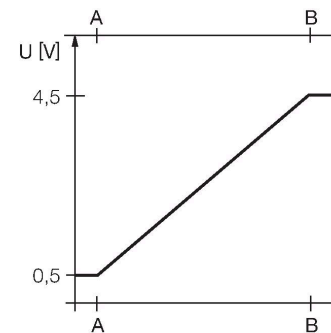


### Functional principle

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.

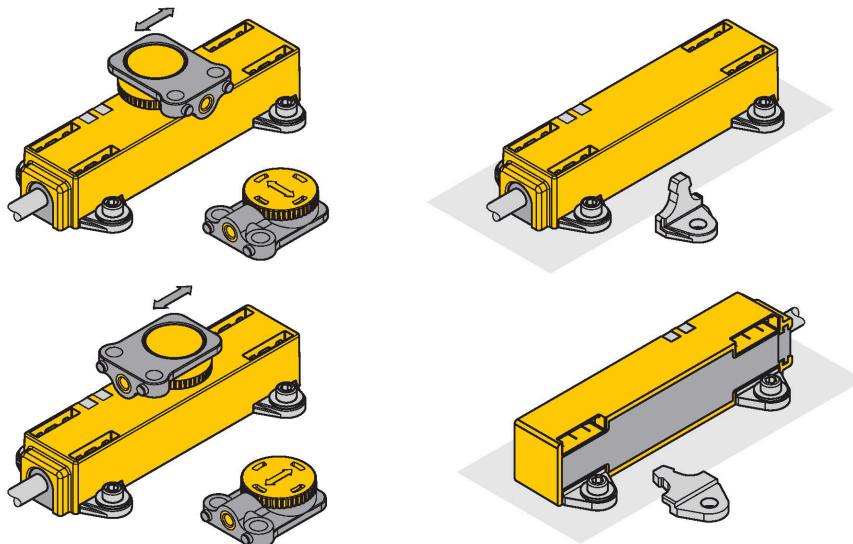
## Technical data

|                                 |                                                                   |
|---------------------------------|-------------------------------------------------------------------|
| Electrical connection           | Cable with connector, M12 × 1                                     |
| Cable quality                   | Ø 5 mm, Lif32Y32Y, TPE, 0.3 m                                     |
|                                 | Low temp. flexible and E-chain capable                            |
| Core cross-section              | 4 x 0.34 mm <sup>2</sup>                                          |
| <b>Environmental conditions</b> |                                                                   |
| Ambient temperature             | -40...+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, 2 × M1.1-Q17L, 2 × M1.2-Q17L |
| UL certificate                  | E210608                                                           |



## Mounting instructions

### Mounting instructions/Description



Extensive mounting accessories provide various options for installation. The positioning element can be mounted offset by 90°, thereby providing optimal mounting flexibility. The linear position sensor can also be safely and easily mounted offset by 90° using the two versions of the provided fastening units. The measuring principle of RLC coupling makes the sensor immune to magnetized ferrous chips and other interference fields. It must be mounted without any space between the sensor and the mounting plate.

Status display via LED

Green:

Sensor is supplied properly

Measuring range display via LED

Green:

Positioning element is within the measuring range

Green flashing:

Positioning element is within the measuring range, low signal quality (e.g. distance too great)

Off:

Positioning element is outside the detection range

Teaching

The start and end point of the measuring range are set by pressing the button on the teach adapter. Moreover there is the possibility of inverting the course of the output curve.

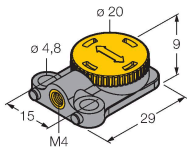
Bridge pin 5 and pin 1 for 10 s (UB) = factory setting

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

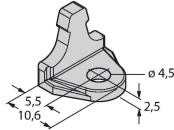
Accessories

P1-LI-QR14/Q17L1590724



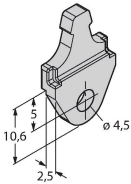
Floating positioning element for linear position sensors LI-QR14 and LI-Q17L; transverse and longitudinal mounting possible; the nominal distance to the sensor is 1.5 mm; pairing with the linear position sensor at a distance of up to 3 mm or a misalignment tolerance of up to 3 mm

M1.1-Q17L1590749



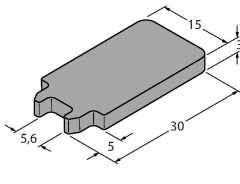
Mounting bracket for linear position sensors LI-Q17L; material: aluminum; 3 pcs. per bag

M1.2-Q17L1590750



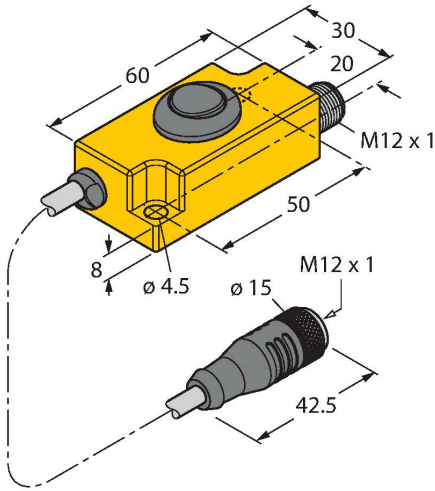
Mounting foot for linear position sensors LI-Q17L; material: aluminum; 3 pcs. per bag

RMT-Q17L1590755



Removal tool for mounting elements for linear position sensors LI-Q17L

Accessories

| Dimension drawing                                                                   | Type       | ID      |                                                                                                 |
|-------------------------------------------------------------------------------------|------------|---------|-------------------------------------------------------------------------------------------------|
|  | TX1-Q20L60 | 6967114 | Teach adapter for inductive encoders, linear position, angle, ultrasonic and capacitive sensors |