

# Q-track™ linear position sensors

## S-series with standard resolution, analog output (U/I)



### Product features

- 12 bit resolution
- Current and voltage output in one device (5-wire, 15-30 VDC)
- M12 *euromast*® connector (5-pin)
- 29 mm blind zones
- Programmable measuring range
- Captive and floating (0-4 mm from sensing face) position elements available
- Robust extruded aluminum housing
- Watertight (IP67) polycarbonate insert
- Multifunction LED

### Measuring range indicated via LED

- **Green:** The positioning element is in the measuring range.
- **Green/yellow alternate flashing:** The positioning element is in the measuring range with a lower signal quality (i.e. distance too long).
- **Yellow flashing:** The positioning element is outside of the measuring range (max. range).
- **Off:** The positioning element is outside the programmed range but inside the total, non-programmed measuring length.

### Setting the measuring range

The initial and final value of the measuring range is set at the push of a button, either via a teach adapter or programming line (pin 5). Furthermore, the output curve can be inverted.

- Factory setting (0 V/4 mA at the connector end): Jumper pin 5 and pin 1 for 10 sec.
- Factory setting inverted: Jumper pin 5 and pin 3 for 10 sec.
- Setting the initial value: Move positioning element to desired position and jumper pin 5 and pin 3 for 2 sec.
- Setting the final value: Move positioning element to desired position and jumper pin 5 and pin 1 for 2 sec.

### Part number key

Li 100 P1 – Q25L M1 – LiU5 X3 – H1151

#### Functional principle

Li = linear inductive position sensors

#### Measuring range (mm)

from 100 mm to 1,000 mm, in 100 mm increments (100 mm = 3.937 inches)

#### Positioning element (see page 12)

P0 = no positioning element  
 P1 = P1-Li-Q25L (captive)  
 P2 = P2-Li-Q25L (floating)  
 P3 = P3-Li-Q25L (floating WFI)  
 P4 = P4-Li-Q25L (floating right angle)

#### Housing style

Q25L = rectangular, profile 25 x 35 mm

#### Connection type

H1151 = M12 *euromast* 5-pin connector

X3 = Multifunction LEDs

#### Output configuration

LiU5 = analog output, 4-20 mA / 0-10 V

#### Mounting bracket (see page 13)

M0 = no mounting brackets  
 M1 = M1-Q25L  
 M2 = M2-Q25L  
 M4 = M4-Q25L

### Ordering information

The *Q-track* linear position sensors are available in different lengths from 100 to 1,000 mm, in increments of 100 mm. The sensors, mounting accessories and positioning elements are available individually or as a kit.



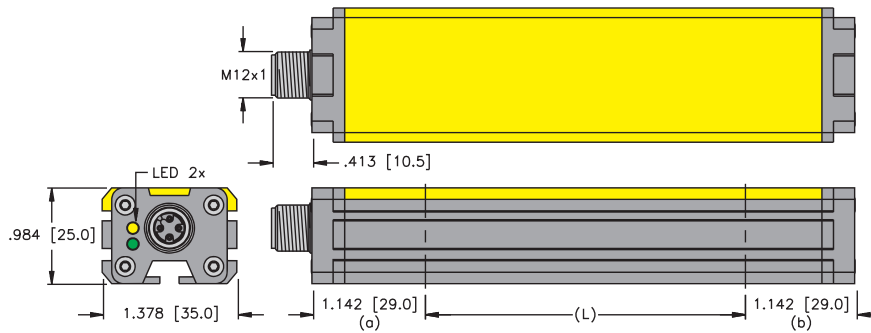
Assembly part number:  
 Li200P1-Q25LM2-LiU5X3-H1151

# S-series with standard resolution, analog output (U/I)

## Technical data



### Dimensions



Note: Right angle cable direction

### Measuring range specifications

Measuring ranges (L)	100, 200, 300, 400, 500, 600, 700, 800, 900, 1,000 mm
Blind zone (a)	29 mm
Blind zone (b)	29 mm

### System

Resolution	12 bit (measuring range in mm / 4096)
Repeatability/accuracy	0.025 % (0.025 mm per 100 mm)
Linearity deviation	≤ 0.1 % of full scale
Temperature drift	≤ ± 0.002 %/K
Ambient temperature	-25 to + 70 °C
Output update rate	2 ms
Speed	25 m/s

### Electrical data

Operating voltage	15-30 VDC
Residual ripple	≤ 10 % $U_{pp}$
No-load current	≤ 8 mA
Rated insulation voltage	≤ 0.5 kV
Short-circuit protection	yes
Wire breakage / reverse polarity protection	yes/yes
Output function	5-wire, analog output
Voltage output	0-10 V
Current output	4-20 mA
Load resistance of voltage output	≥ 4.7 kΩ
Load resistance of current output	≤ 0.4 kΩ

### Housing style

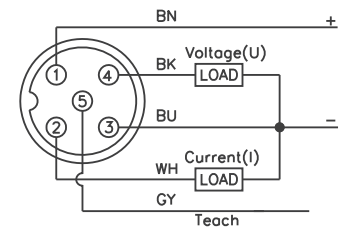
Housing style	rectangular, Q25L
Dimensions	profile 35 x 25 mm, L = measuring range + 58mm
Housing material	aluminum
Material active face	plastic, PC-GF20
Connection	connector, M12 x 1
Vibration resistance	55 Hz (1 mm)
Shock resistance	30 g (11 ms)
Protection class (IEC 60529/EN 60529)	IP67

### LEDs

Power indication	green LED
Measuring range indication	green/yellow multifunctional LED

### Wiring diagram

5-pin M12 *euromast*® connection



Mating cordset: RK 4.5T-\*/S618



Part number	Description
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Connection cable for standard series and E-series with analog output	
RK 4.5T-2/S618	M12 <i>eurofast</i> ®, 5-pin female, shielded, 2 meter cable with flying leads. Other lengths available upon request.
RK 4.5T-2-RS 4.5T (as shown)	M12 <i>eurofast</i> , 5-pin 2 meter extension cable with male and female connectors. To connect <i>Q-track</i> ™ linear position sensors with analog output to TB4. Other lengths available upon request.
RKC 4.5T-2-RSS 4.5T	M12 <i>eurofast</i> , 5-pin 2 meter extension cable with male and female connectors. To connect <i>Q-track</i> ™ linear position sensors with analog output to TB4. Other lengths available upon request. Shield connected to male coupling nut for use in high noise environments.



Connection cable for E-series with SSI interface	
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E-RKC-8T-264-2	M12 <i>eurofast</i> , 8-pin female connector with 2 meter cable with flying leads. To connect <i>Q-track</i> linear position sensors with SSI output to <i>BL20</i> ® fieldbus stations.
E-RKC-8T-264-2-RSC-8T	M12 <i>eurofast</i> , 8-pin female connector with 2 meter cable to M12 <i>eurofast</i> , 8-pin male connector. To connect <i>Q-track</i> linear position sensors with SSI output to <i>BL67</i> ® and <i>BL compact</i> fieldbus stations.
E-RKS-8T-264-0.5-CSWM12/S3085 (as shown)	M12 <i>eurofast</i> , 8-pin female connector with 0.5 meter cable to right angle M23 <i>multifast</i> ®, 12-pin male connector. To connect <i>Q-track</i> linear position sensors with SSI output to <i>BL67</i> and fieldbus stations.



Teach adapter	
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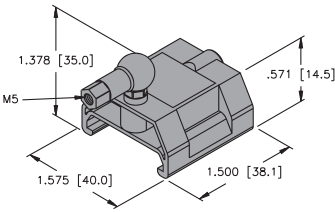

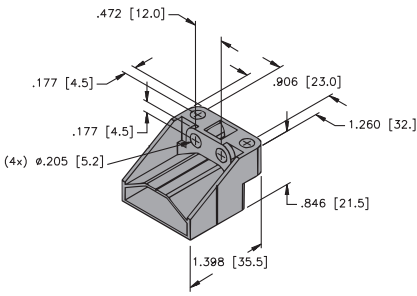
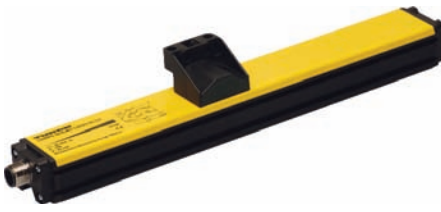
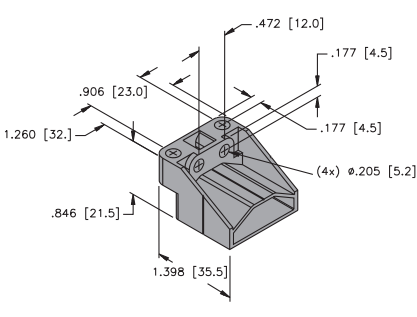
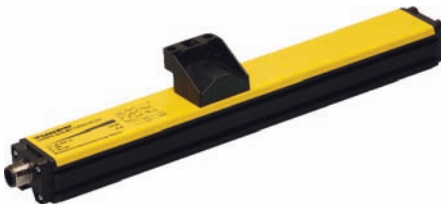
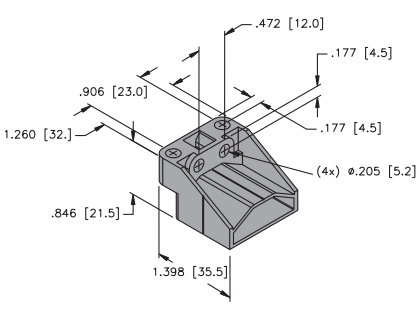

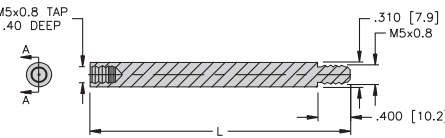

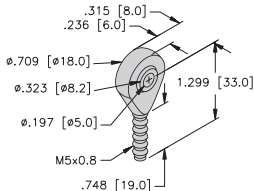
VB2-SP5	Teach adapter to program the measuring range of <i>Q-track</i> linear position sensors.
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Test box	
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TB4	Test box for sensors with analog or switching output; batteries included. May also be used to program zero and span.
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# Position elements

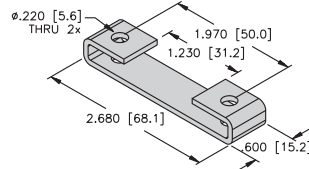
Dimensions	Part number	Description
 	<b>P1-Li-Q25L</b>	Captive positioning element; laterally inserted in sensor groove; incl. rod-end bearing to mount M5 threaded rods
 	<b>P2-Li-Q25L</b>	Floating positioning element, operates at a distance of 0-4 mm to the sensor surface
 	<b>P4-Li-Q25L</b>	Floating positioning element, applied in extremely strong magnetic fields, such as welding areas; operates at a distance of 0-4 mm to the sensor surface
 	<b>P3-Li-Q25L</b>	Floating positioning element; right angle orientation; operates at a distance of 0-4 mm to the sensor surface
 	<b>CA*E-Q21</b>	Control arm; Can be used with P1-Li-Q25L and RE-Q21 to connect the positioning element to an actuator.  * Length specified in inches. 3, 6 and 9 inches are standard lengths. Other lengths available, consult factory for part numbers and availability.
 	<b>RE-Q21</b>	Rod End; Can be used with P1-Li-Q25L and CA*E-Q21 to connect the positioning element to an actuator.

# Mounting accessories

A comprehensive range of accessories is available for mounting. Sliding blocks, the sensor groove and different brackets provide many mounting possibilities. Flexibility is guaranteed, as accessories are available for all borehole distances



### Dimensions



### Part number

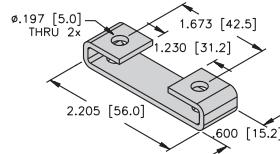
M1-Q25L

### Description

Mounting foot for *Q-track*™ linear position sensors; Two mounting feet should be used for devices with a measuring range of up to 1,000 mm; Material: stainless steel; 2 pcs. per bag.

### Part number

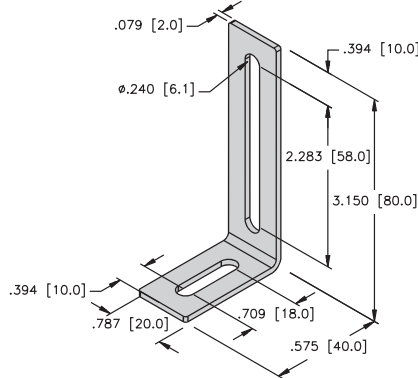
M2-Q25L



Mounting foot for *Q-track* linear position sensors; Two mounting feet should be used for devices with a measuring range of up to 1,000 mm; Material: stainless steel; 2 pcs. per bag.

### Part number

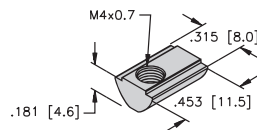
M4-Q25L



Mounting bracket for *Q-track* linear position sensors; Two mounting feet should be used for devices with a measuring range of up to 1,000 mm; Material: stainless steel; 2 pcs. per bag.

### Part number

MN-M4-Q25



Sliding blocks with M4 thread for back side groove of *Q-track* linear position sensors; Material: Brass; 10 pcs. per bag.

Only available separately, not as a kit with linear position sensors.