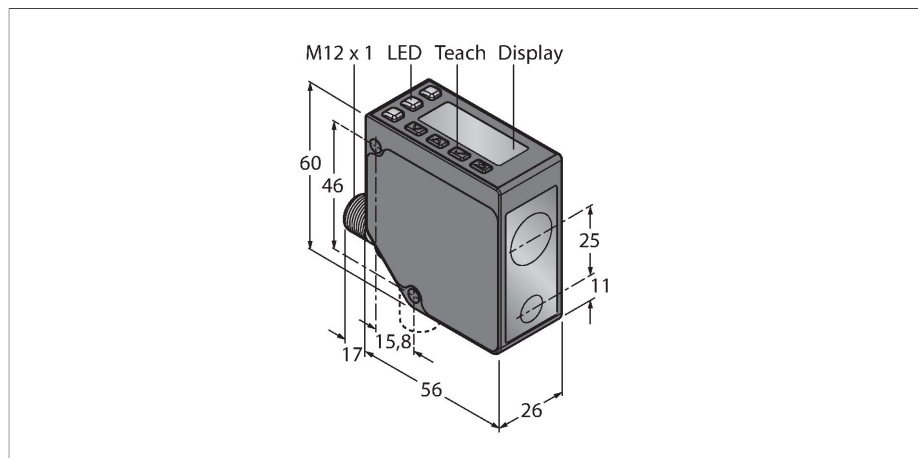


# LE250KC1Q

## Photoelectric Sensor – Laser Scanning System



### Technical data

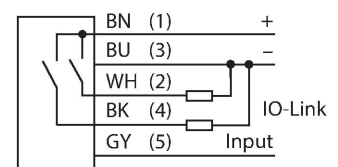
|                              |                    |
|------------------------------|--------------------|
| Type                         | LE250KC1Q          |
| ID                           | 3097767            |
| <b>Optical data</b>          |                    |
| Function                     | Proximity switch   |
| Operating mode               | Triangulation      |
| Light type                   | Red                |
| Wavelength                   | 650 nm             |
| Laser class                  | ▲ 1                |
| Optical resolution           | 0.2 mm             |
| Repeatability                | 0.1 mm             |
| Range                        | 100...400 mm       |
| Ambient light immunity       | 5000 lux           |
| <b>Electrical data</b>       |                    |
| Operating voltage            | 12...30 VDC        |
| DC rated operational current | ≤ 70 mA            |
| Short-circuit protection     | yes                |
| Reverse polarity protection  | yes                |
| Communication protocol       | IO-Link            |
| Output function              | NO/NC, PNP         |
| Switching frequency          | ≤ 250 Hz           |
| Readiness delay              | ≤ 2 s              |
| Readiness delay              | ≤ 3000 ms          |
| Response time typical        | < 2 ms             |
| <b>IO-Link</b>               |                    |
| IO-Link specification        | V 1.1              |
| IO-Link port type            | Class A            |
| Communication mode           | COM 2 (38.4 kBaud) |



### Features

- 2-line, 8-segment display
- Rotatable connector, male M12 × 1, 5-pin
- Range: 100...400 mm
- Laser class 1, red, 650 nm, acc. to IEC 60825-1:2007
- Resolution at 100 mm - 250 mm distance: < 0.02 mm
- Resolution at 250 mm - 400 mm distance: < 0.2 mm
- Operating voltage: 12...30 VDC
- 1 × PNP switching output with IO-Link communication
- Transmission of process value and parametrization via IO-link

### Wiring diagram



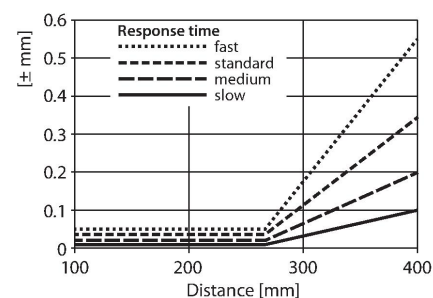
### Functional principle

The laser distance sensors of the LE250 Series measure the distance to the object to 400 mm. The devices are set with buttons on the housing. The built-in display assists with the menu navigation and serves to display the measured distance. The switching output is reprogrammable and the analog output is, depending on the type, either laid out as current or voltage output. The integrated connector is rotatable by 90° degrees which makes it easy to mount. The transmitter LED can be turned off via the menu or the grey wire (PIN 5). The same wire can be used to operate two devices in the synch mode, which prevents mutual influence. The measuring accuracy is 0.02 mm at a distance of 250 mm and 0.2 mm at a distance of 400 mm.

## Technical data

|                            |                                   |
|----------------------------|-----------------------------------|
| Process data width         | 16 bit                            |
| Frame type                 | Type_2_2                          |
| Minimum cycle time         | 2 ms                              |
| Function Pin 4             | IO-Link                           |
| Function Pin 2             | DI                                |
| Maximum cable length       | 20 m                              |
| Profile support            | Smart Sensor Profil               |
| Included in the SIDI GSDML | Yes                               |
| <b>Mechanical data</b>     |                                   |
| Design                     | Rectangular, LE250                |
| Dimensions                 | 56 x 26 x 77 mm                   |
| Housing material           | Metal, Zinc Alloy Die-Cast, Black |
| Lens                       | plastic, Polycarbonate            |
| Electrical connection      | Connector, M12 × 1, PVC           |
| Number of cores            | 5                                 |
| Ambient temperature        | -20...+55 °C                      |
| Storage temperature        | -30...+65 °C                      |
| Relative humidity          | 90 %                              |
| Protection class           | IP67                              |
| Special features           | keep/defer                        |
| Power-on indication        | LED, Green                        |
| Switching state            | LED, Yellow                       |
| <b>Tests/approvals</b>     |                                   |
| Approvals                  | CE, cULus listed                  |

## Excess Gain Curve

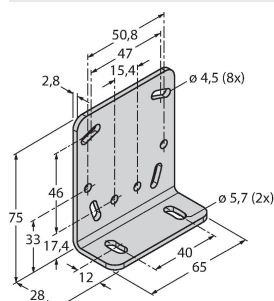


## Accessories

### SMBLEL

3086754

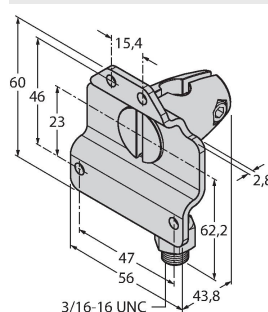
Mounting bracket, rectangular, stainless steel, for side mounting of LE250/550 sensors



### SMBLEFA

3088226

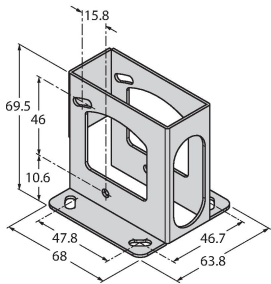
Mounting bracket, rotatable, stainless steel, for sensors of the LE250/550 series



SMBLEU

3086755

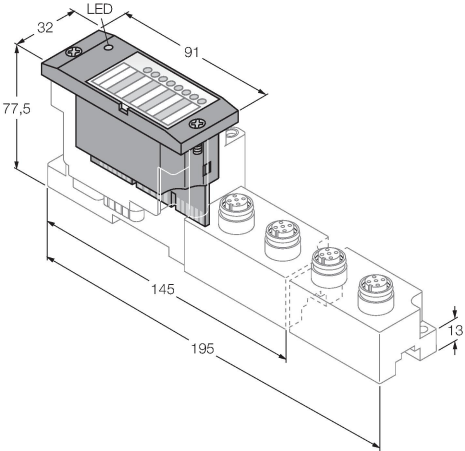
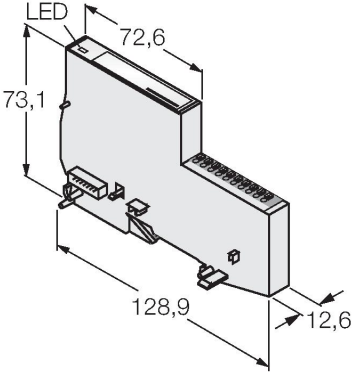
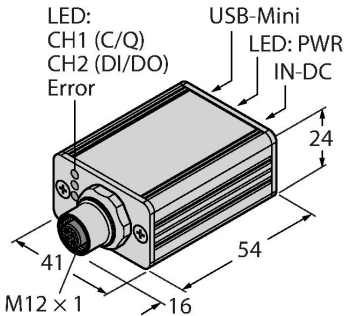
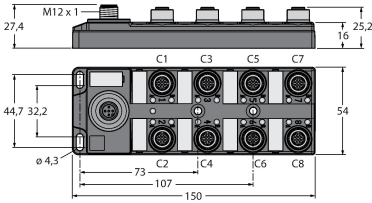
Protective housing, stainless steel, for sensors of the LE250/550 series

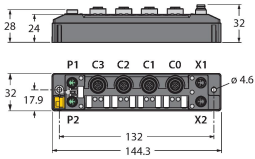
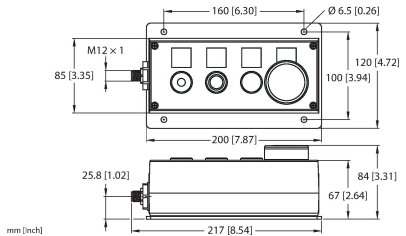
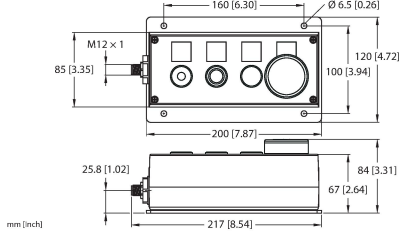
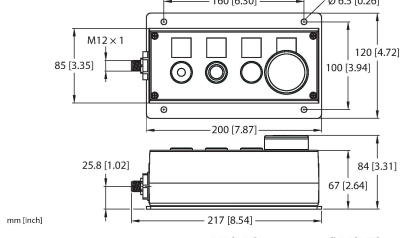
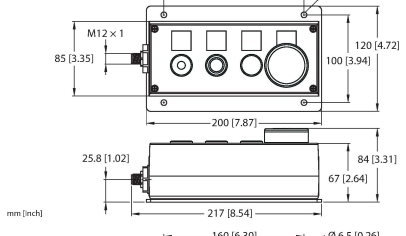
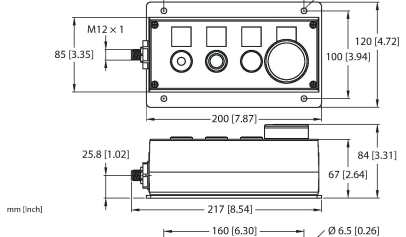
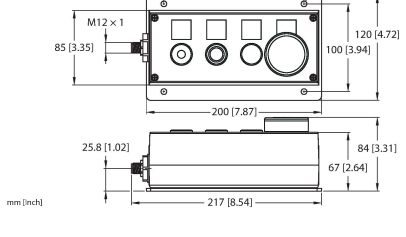


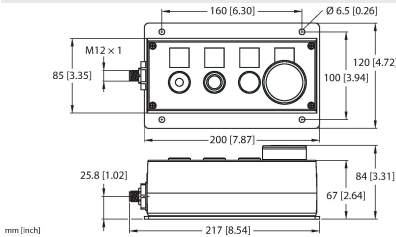
Accessories

| Dimension drawing | Type          | ID      |                                                                                                                                                                                                                                      |
|-------------------|---------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | RKC4.5T-2/TEL | 6625016 | Connection cable, female M12, straight, 5-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>                     |
|                   | WKC4.5T-2/TEL | 6625028 | Connection cable, female M12, angled, 5-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>                       |
|                   | RKS4.5T-2/TEL | 6626361 | Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, sheath material: PVC, black; shielded; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a> |
|                   | WKS4.5T-2/TEL | 6626364 | Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, sheath material: PVC, black; shielded; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>   |

Accessories

| Dimension drawing                                                                                                                                                                                                                                         | Type           | ID      |                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------|
|  <p>LED</p> <p>32</p> <p>91</p> <p>77,5</p> <p>145</p> <p>195</p> <p>13</p>                                                                                              | BL67-4IOL      | 6827386 | 4-channel IO-Link Master module for the modular BL67 I/O-system                                                                   |
|  <p>LED</p> <p>72,6</p> <p>73,1</p> <p>128,9</p> <p>12,6</p>                                                                                                            | BL20-E-4IOL    | 6827385 | IO-Link master module for the modular BL20 I/O system, 4-channel                                                                  |
|  <p>LED: CH1 (C/Q)<br/>CH2 (DI/DO)<br/>Error</p> <p>USB-Mini</p> <p>LED: PWR</p> <p>IN-DC</p> <p>24</p> <p>54</p> <p>41</p> <p>M12 x 1</p> <p>16</p>                   | USB-2-IOL-0002 | 6825482 | IO-Link Master with integrated USB port                                                                                           |
|  <p>M12 x 1</p> <p>27,4</p> <p>25,2</p> <p>16</p> <p>54</p> <p>44,7</p> <p>32,2</p> <p>ø 4,3</p> <p>73</p> <p>107</p> <p>150</p> <p>C1 C3 C5 C7</p> <p>C2 C4 C6 C8</p> | TBIL-M1-16DXP  | 6814102 | 16-channel I/O-hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |

| Dimension drawing                                                                   | Type                 | ID        |                                                                                                                                   |
|-------------------------------------------------------------------------------------|----------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------|
|    | TBEN-S2-4IOL         | 6814024   | Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A                            |
|    | OPIL-E4-IO2-FE01(DE) | 100029326 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |
|    | OPIL-E4-IO2-FE02     | 100029327 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |
|   | OPIL-E4-IO2-FE03     | 100029328 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |
|  | OPIL-E4-IO3-FE04     | 100036394 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |
|  | OPIL-E4-IO3-FE01     | 100036505 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |
|  | OPIL-E4-IO3-FE02     | 100036506 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |

| Dimension drawing                                                                 | Type             | ID        |                                                                                                                                   |
|-----------------------------------------------------------------------------------|------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------|
|  | OPIL-E4-IO3-FE03 | 100036507 | 16-channel I/O hub for the connection of 16 digital PNP signals to an IO-Link master (input/output freely selectable per channel) |