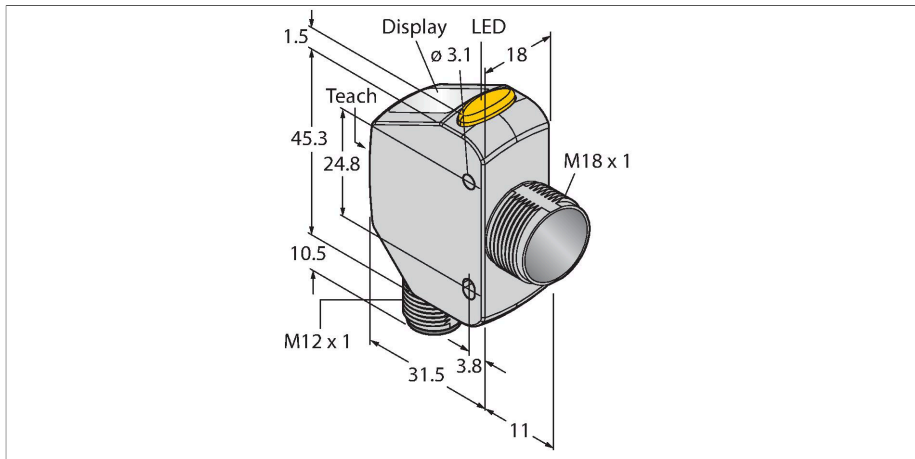


Q4XTKLAF300-Q8

Photoelectric Sensor – Laser Distance Sensor (Triangulation) With Switching Output and IO-Link



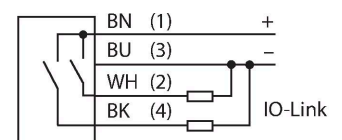
Technical data

| | |
|------------------------------|--|
| Type | Q4XTKLAF300-Q8 |
| ID | 3095301 |
| Optical data | |
| Function | Proximity switch |
| Operating mode | Background/foreground suppression |
| Light type | Red |
| Wavelength | 655 nm |
| Laser class | ▲ 1 |
| Optical resolution | 1 mm |
| Repeatability | 0.5 mm |
| Range | 25...300 mm |
| Ambient light immunity | 5000 lux |
| Electrical data | |
| Operating voltage | 10...30 VDC |
| DC rated operational current | ≤ 28 mA |
| Short-circuit protection | yes |
| Reverse polarity protection | yes |
| Communication protocol | IO-Link |
| Output function | NO/NC, Push-pull, PNP/NPN programmable |
| Output 2 | Switching output or frequency output |
| Readiness delay | ≤ 750 ms |
| Response time typical | < 1.5 ms |
| IO-Link | |
| IO-Link specification | V 1.1 |
| IO-Link port type | Class A |

Features

- 4-digit 7-segment LED display
- 3 buttons
- Output indicator (yellow)
- IP67/69K
- ECOLAB-certified
- Range: 25...300 mm
- Laser class 1, red, 655 nm, acc. to IEC 60825-1:2007
- Operating voltage: 12...30 VDC
- Output 1: PNP switching output with IO-Link communication
- Output 2: PNP switching output, teach-in input, laser control, synchronization or pulse frequency modulation (PFM)
- Rectangular model with offset M18 thread
- Stainless steel case (1.4404)
- Transmission of process value and parameterization via IO-link

Wiring diagram



Functional principle

The Q4X is a class 1 laser-distance sensor working on the principle of triangulation. It has a range of up to 600 mm, depending on the model, and bipolar switching outputs or analog output.

With the dual mode functionality, the Q4X captures not only distances but also the light intensity that is reflected by an object. This unique feature allows laser sensors to be used for applications that would have been

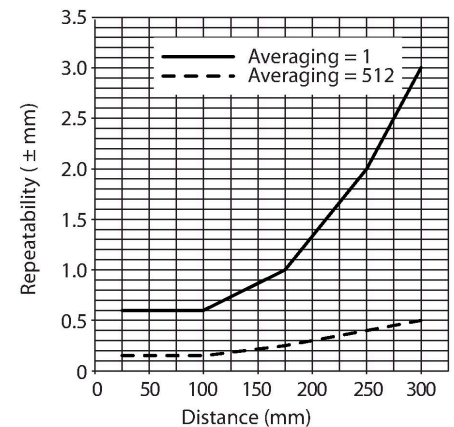
Technical data

| | |
|----------------------------|--|
| Communication mode | COM 2 (38.4 kBaud) |
| 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 |
| Mechanical data | |
| Design | Rectangular with thread, Q4X |
| Dimensions | 43.5 x 18 x 57.5 mm |
| Housing material | Metal, Stainless steel |
| Lens | acrylic, PMMA |
| Electrical connection | Connector, M12 x 1, PVC |
| Number of cores | 4 |
| Ambient temperature | -10...+50 °C |
| Storage temperature | -25...+75 °C |
| Relative humidity | 35...95 % |
| Protection class | IP67 IP68 IP69 |
| Special features | Chemical-resistant Clear object detection keep/defer Wash down Resistant to chemicals |
| Switching state | LED, Yellow |
| Display | 4-digit 7-segment LED display |
| Tests/approvals | |
| Vibration resistance | MIL-STD-202G, Method 201A (10 to 60 Hz, 1.52 mm peak to peak amplitude, for 2 hours along the x, y and z-axis), sensor operating |
| Shock test | MIL-STD-202G, Method 213B Condition I (100G 6x along the XYZ-axis, 18 impacts), sensor in operation |
| Approvals | CE, cULus, ECOLAB |

inconceivable before this. This means that even clear objects can be reliably detected. Dual mode is only available for devices with a switching output.

In RUN mode, you can change the value of the output as well as the switching function, and perform the selected teach mode. Another sensor status is setup mode. In setup mode, you can select teach mode, all standard operating parameters or a factory reset.

Excess Gain Curve

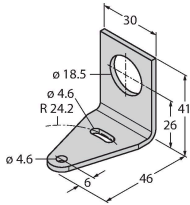


Accessories

SMB18A

3033200

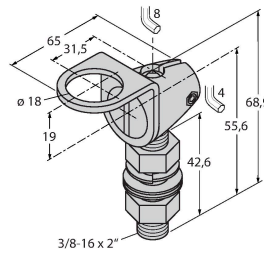
Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread



SMB18FAM10

3011184

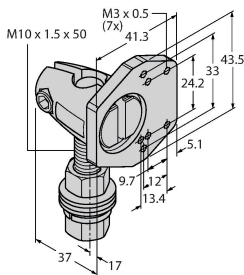
Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm



SMBQ4XFAM10

3091513

Mounting bracket, rotatable, stainless steel, for sensors of the Q4X/Q3X series, M10 x 1.5 thread



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 www.turck.com |
| | RKH4.5-2/TFG | 6933455 | Connection cable, M12 female, straight, 5-pin, stainless steel coupling nut, cable length: 2 m, jacket material: TPE, gray, temperature range -40...+105 °C; other cable lengths and designs available, see www.turck.com |
| | 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 www.turck.com |
| | 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 www.turck.com |

| Dimension drawing | Type | ID | |
|-------------------|---------------|---------|--|
| | RKC4.4T-2/TEL | 6625013 | Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com |
| | WKC4.4T-2/TEL | 6625025 | Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com |

Accessories

| 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 |
| | TBEN-L4-8IOL | 6814082 | Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A |
| | 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) |
| | BL67-4IOL | 6827386 | 4-channel IO-Link Master module for the modular BL67 I/O-system |
| | BL20-E-4IOL | 6827385 | IO-Link master module for the modular BL20 I/O system, 4-channel |
| | USB-2-IOL-0002 | 6825482 | IO-Link Master with integrated USB port |
| | BRT-Q4X-60X18 | 3095776 | Reflector for Q4X laser sensors for clear object detection or dual-mode applications, rectangular housing: 60 mm x 18 mm |
| | BRT-Q4X-60X50 | 3095777 | Reflector for Q4X laser sensors, for clear object detection or dual-mode applications, rectangular housing: 60 mm x 50 mm |