



WTT12L-B3542

PowerProx

MULTITASK PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|--------------|----------|
| WTT12L-B3542 | 1072639 |

Other models and accessories → www.sick.com/PowerProx

Detailed technical data

Features

| | |
|--|--|
| Device type | Photoelectric sensors |
| Sensor/ detection principle | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D) | 20 mm x 49.6 mm x 44.2 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 50 mm ... 1,800 mm ¹⁾ |
| Sensing range | 100 mm ... 1,800 mm ^{2) 3)} |
| Type of light | Visible red light |
| Light source | Laser ⁴⁾ |
| Light spot size (distance) | Ø 12 mm (1,800 mm) |
| Wave length | 658 nm |
| Laser class | 1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11) |
| Adjustment | Single teach-in button (1 x) |

¹⁾ Object with 6 ... 90 % remission (based on standard white to DIN 5033).

²⁾ Adjustable.

³⁾ Object with 90 % reflectance (referred to standard white, DIN 5033).

⁴⁾ Average service life: 100,000 h at T_J = +25 °C.

Mechanics/electronics

| | |
|---------------------------------------|--|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 70 mA ³⁾ |
| Switching output | Push-pull: PNP/NPN ⁴⁾ |
| Number of switching outputs | 2 (Q, /Q) ⁴⁾ |
| Switching mode | Light/dark switching ⁴⁾ |
| Output current I_{max} | ≤ 100 mA |
| Response time | ≤ 16.7 ms ⁵⁾ |
| Switching frequency | 30 Hz ⁶⁾ |
| Analog output | - |
| Input | Sender off |
| Connection type | Cable with plug M12, 5-pin, 0.3 m ⁷⁾ |
| Cable material | PVC |
| Conductor cross-section | 0.14 mm ² |
| Circuit protection | A ⁸⁾ B ⁹⁾ C ¹⁰⁾ |
| Protection class | III |
| Weight | 80 g |
| Housing material | Plastic, VISTAL® |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Ambient operating temperature | -35 °C ... +50 °C ¹¹⁾ |
| Ambient temperature, storage | -40 °C ... +70 °C |
| Warm-up time | < 15 min ¹²⁾ |
| Initialization time | < 300 ms |
| UL File No. | NRKH.E181493 |

¹⁾ Limit values. Operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load. At V_S = 24 V.

⁴⁾ Q, /Q = 1 switching threshold, light/dark switching (complementary).

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ Do not bend below 0 °C.

⁸⁾ A = V_S connections reverse-polarity protected.

⁹⁾ B = inputs and output reverse-polarity protected.

¹⁰⁾ C = interference suppression.

¹¹⁾ As of T_a = 45 °C, a max.load current I_{max} = 50 mA is permitted.

¹²⁾ Below T_u = -10 °C a warm-up time is necessary.

Safety-related parameters

| | |
|-------------------------|-----------|
| MTTF_D | 138 years |
| DC_{avg} | 0 % |

| | |
|-------------------------------------|----------|
| T_M (mission time) | 20 years |
|-------------------------------------|----------|

Classifications

| | |
|-----------------------|----------|
| ECl@ss 5.0 | 27270904 |
| ECl@ss 5.1.4 | 27270904 |
| ECl@ss 6.0 | 27270904 |
| ECl@ss 6.2 | 27270904 |
| ECl@ss 7.0 | 27270904 |
| ECl@ss 8.0 | 27270904 |
| ECl@ss 8.1 | 27270904 |
| ECl@ss 9.0 | 27270904 |
| ECl@ss 10.0 | 27270904 |
| ECl@ss 11.0 | 27270904 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

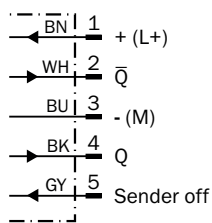
Connection/pin assignment

| | |
|-------------------------------|---|
| Connection type | Cable with plug M12, 5-pin, 0.3 m ¹⁾ |
| Connection type Detail | |
| Cable material | PVC |
| Conductor cross-section | 0.14 mm ² |

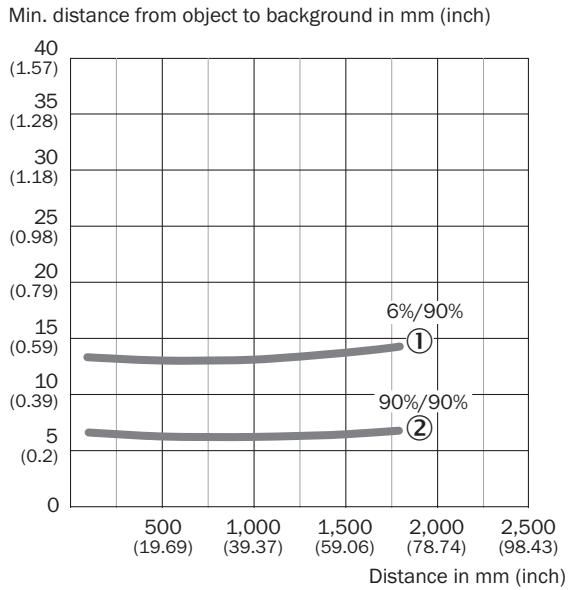
¹⁾ Do not bend below 0 °C.

Connection diagram

Cd-282

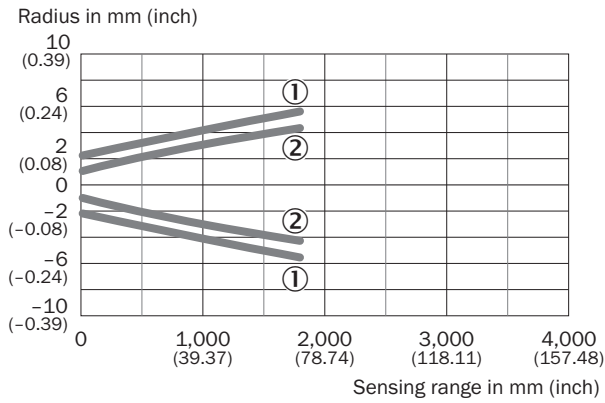


Characteristic curve



- ① Sensing range on black, 6% remission
- ② Sensing range on white, 90% remission

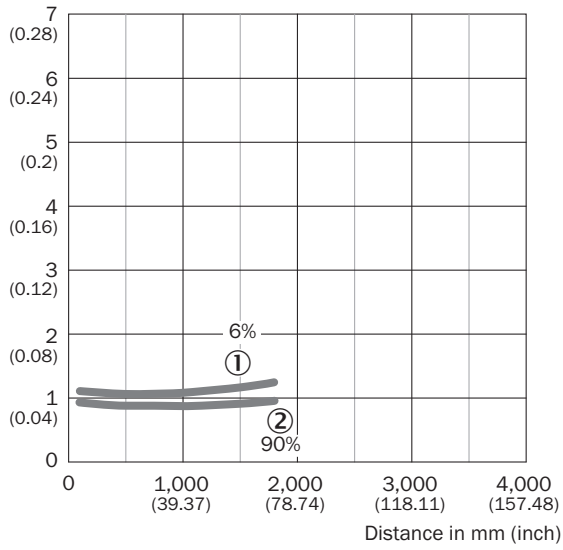
Light spot size



- ① Light spot horizontal
- ② Light spot vertical

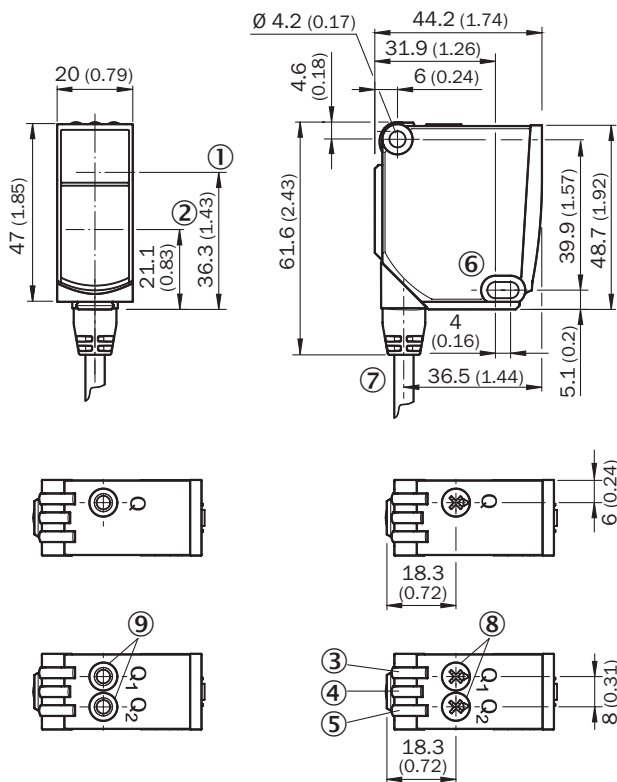
Repeatability

Repeatability in mm (inch)



- ① 6 % remission, on black
- ② 90 % remission, on white

Dimensional drawing (Dimensions in mm (inch))



- ① Optical axis, sender
- ② Optical axis, receiver
- ③ LED indicator yellow: Status of received light beam
- ④ LED indicator green: power on
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Mounting hole, $\varnothing 4.2$ mm
- ⑦ Connection
- ⑧ Potentiometer
- ⑨ Single teach-in button

Recommended accessories

Other models and accessories → www.sick.com/PowerProx

| | Brief description | Type | Part no. |
|---|---|--------------------|----------|
| Mounting brackets and plates | | | |
|  | BEF-WTT12L | BEF-WTT12L | 2078538 |
| Plug connectors and cables | | | |
|  | Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF2A15-050VB5XLEAX | 2096240 |
|  | Head A: male connector, M12, 5-pin, straight Cable: unshielded For field bus technology | STE-1205-G | 6022083 |

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SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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