



WTT190LC-B2233A00

PowerProx

MULTITASK PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | Part no. |
|-------------------|----------|
| WTT190LC-B2233A00 | 6067745 |

Included in delivery: BEF-W190 (1)

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

Detailed technical data

Features

| | |
|--|---|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | Background suppression, Optical time-of-flight |
| Dimensions (W x H x D) | 17.4 mm x 45.6 mm x 34.7 mm |
| Housing design (light emission) | Rectangular |
| Sensing range max. | 200 mm ... 3,000 mm ¹⁾ |
| Sensing range | 200 mm ... 3,000 mm ^{1) 2)} |
| Type of light | Visible red light |
| Light source | Laser ³⁾ |
| Light spot size (distance) | Ø 12 mm (3,000 mm) |
| Wave length | 658 nm |
| Laser class | 1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11) |
| Adjustment | Single teach-in button (2 x) Local user interface with display and button (2 x) IO-Link |
| Pin 2 configuration | External input, Teach-in input, Sender off input, Detection output, logic output |

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

²⁾ Adjustable.

³⁾ Average service life: 100,000 h at T_U = +25 °C.

Mechanics/electronics

| | |
|--|---|
| Supply voltage U_B | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | 75 mA ³⁾ |
| Switching output | Push-pull: PNP/NPN ^{4) 5)} |
| Number of switching outputs | 2 (Q ₁ , Q ₂) ⁴⁾ |
| Switching mode | Light/dark switching ⁴⁾ |
| Switching mode selector | Selectable via menu |
| Output current I_{max} | ≤ 100 mA |
| Response time | 0.6 ms, 0.8 ms, 1 ms, 1.8 ms, 3.4 ms, 6.6 ms, 13 ms, 25.8 ms, 51.4 ms, 102.6 ms ^{6) 7) 8)} |
| Switching frequency | 833 Hz, 625 Hz, 500 Hz, 278 Hz, 147 Hz, 76 Hz, 38 Hz, 19 Hz, 10 Hz, 4.9 Hz ^{7) 8) 9)} |
| Analog output | - |
| Input | MF = multifunctional input and output, programmable |
| Connection type | Male connector M8, 4-pin |
| Circuit protection | A ¹⁰⁾ B ¹¹⁾ C ¹²⁾ |
| Protection class | III |
| Weight | 25 g |
| Housing material | Plastic, ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP67 |
| Items supplied | BEF-W190 mounting bracket |
| Ambient operating temperature | -30 °C ... +50 °C ¹³⁾ |
| Ambient temperature, storage | -40 °C ... +70 °C |
| Warm-up time | < 5 min ¹⁴⁾ |
| Initialization time | < 300 ms |

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⁾ Q₁, Q₂ = 2 switching thresholds, light/dark switching selectable via light/dark selector.

⁵⁾ PNP/NPN switchable.

⁶⁾ Signal transit time with resistive load.

⁷⁾ Can be set via a mean value filter (AVG1, AVG2, AVG4, AVG8, AVG16, AVG32, AVG64, AVG128, AVG256, AVG512).

⁸⁾ Depending on distance to object, distance to background and selected switching threshold.

⁹⁾ With light/dark ratio 1:1.

¹⁰⁾ A = V_S connections reverse-polarity protected.

¹¹⁾ B = inputs and output reverse-polarity protected.

¹²⁾ C = interference suppression.

¹³⁾ $U_V \geq 24$ V. At $T_u < -10$ °C warm-up time < 10 min.

¹⁴⁾ For optimum performance observe max. warm-up time of 5 minutes.

Safety-related parameters

| | |
|-------------------------|-------------|
| MTTF_D | 170.9 years |
| DC_{avg} | 0 % |

Communication interface

| | |
|---------------------------------------|---|
| Communication interface | IO-Link V1.1 |
| Communication Interface detail | COM3 (230,4 kBaud) |
| Cycle time | 1 ms |
| Process data length | 32 Bit |
| Process data structure | Bit 0 = switching signal Q _{L1} Bit 1 = switching signal Q _{L2} Bit 2 = detection signal Q _{int.1} Bit 3 = detection signal Q _{int.2} Bit 4 = detection signal Q _{int.3} Bit 5 = detection signal Q _{int.4} Bit 6 = detection signal Q _{int.5} Bit 7 = detection signal Q _{int.6} Bit 8 = detection signal Q _{int.7} Bit 9 = detection signal Q _{int.8} Bit 10 ... 15 = empty Bit 16 ... 31 = distance value |
| VendorID | 26 |
| DeviceID HEX | 0x8001D3 |
| DeviceID DEC | 8389075 |

Smart Task

| | |
|----------------------------------|--|
| Smart Task name | Base logics |
| Logic function | Direct AND OR WINDOW Hysteresis |
| Timer function | Deactivated On delay Off delay ON and OFF delay Impulse (one shot) |
| Inverter | Yes |
| Switching signal | |
| Switching signal Q _{L1} | Switching output |
| Switching signal Q _{L2} | Switching output |

Diagnosis

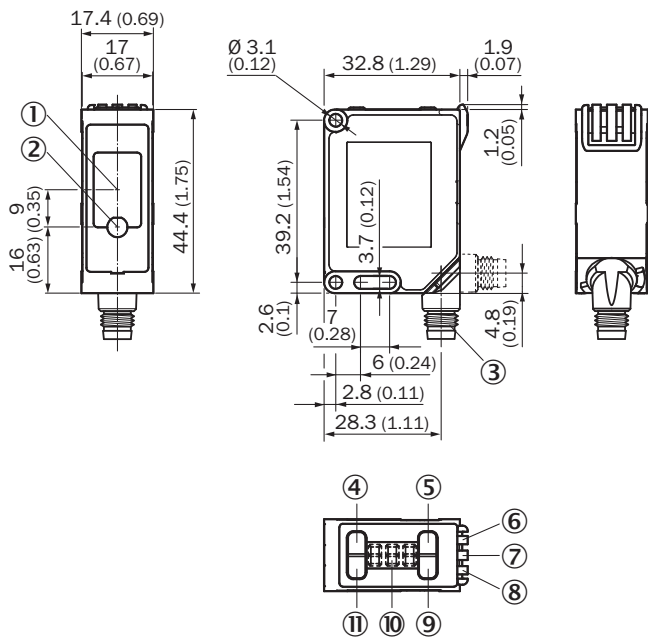
| | |
|--|---------------------|
| Device temperature | |
| Measuring range | -127 °C ... +127 °C |
| Device status | Yes |
| Operating hour counter | Yes |
| Operating hours counter with reset function | Yes |
| Quality of run | Yes |
| Remaining service life sender LED | Yes |

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 |
| eCl@ss 12.0 | 27270903 |
| ETIM 5.0 | EC002719 |
| ETIM 6.0 | EC002719 |
| ETIM 7.0 | EC002719 |
| ETIM 8.0 | EC002719 |
| UNSPSC 16.0901 | 39121528 |

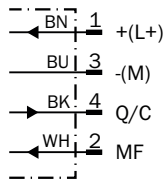
Dimensional drawing (Dimensions in mm (inch))



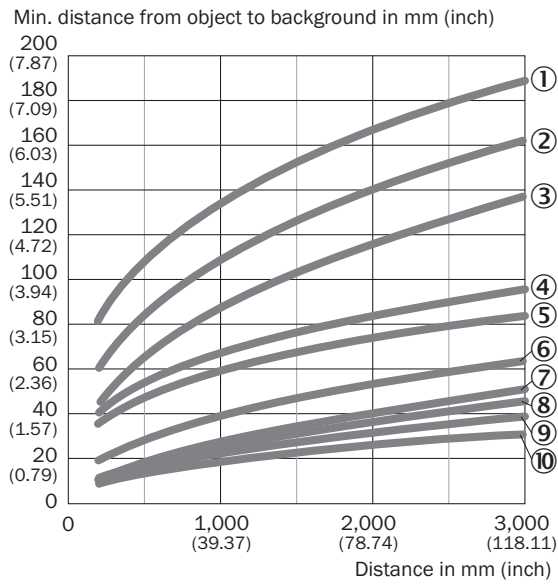
- ① Receiver
- ② Sender
- ③ Connection
- ④ RUN button
- ⑤ (+/Q2) button
- ⑥ Status indicator orange: Q2 output indicator
- ⑦ Status indicator LED, green/red: power on / stability indicator
- ⑧ Status indicator orange: Q1 output indicator
- ⑨ (-/Q1) button
- ⑩ Display
- ⑪ SET button

Connection diagram

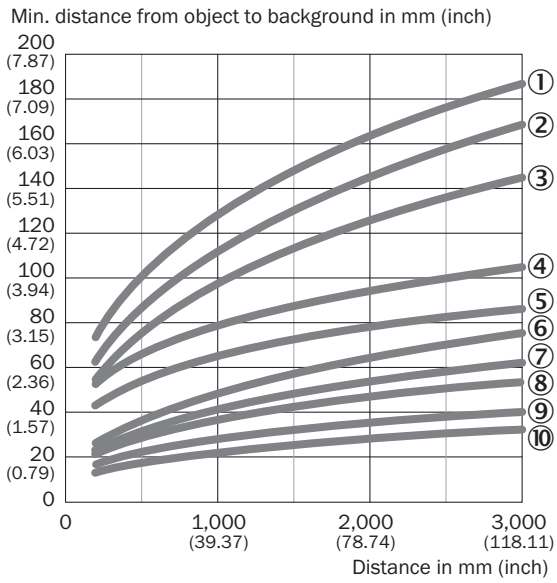
Cd-278



Characteristic curve

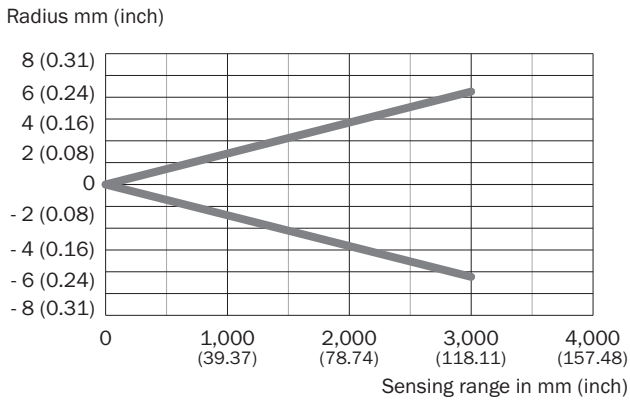


- ① 6 % / 90 % AVG1
- ② 6 % / 90 % AVG2
- ③ 6 % / 90 % AVG4
- ④ 6 % / 90 % AVG8
- ⑤ 6 % / 90 % AVG16
- ⑥ 6 % / 90 % AVG32
- ⑦ 6 % / 90 % AVG64
- ⑧ 6 % / 90 % AVG128
- ⑨ 6 % / 90 % AVG256
- ⑩ 6 % / 90 % AVG512





- ① 90 % / 90 % AVG1
- ② 90 % / 90 % AVG2
- ③ 90 % / 90 % AVG4
- ④ 90 % / 90 % AVG8
- ⑤ 90 % / 90 % AVG16
- ⑥ 90 % / 90 % AVG32
- ⑦ 90 % / 90 % AVG64
- ⑧ 90 % / 90 % AVG128
- ⑨ 90 % / 90 % AVG256
- ⑩ 90 % / 90 % AVG512

Light spot size



Recommended accessories

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

| | Brief description | Type | Part no. |
|---|--|--------------------|----------|
| Plug connectors and cables | | | |
|  | Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m | YF8U14-050VA3XLEAX | 2095889 |
|  | Head A: male connector, M8, 4-pin, straight Cable: unshielded | STE-0804-G | 6037323 |

Recommended services

Additional services → www.sick.com/PowerProx

| | Type | Part no. |
|--|------------------------|------------|
| Function Block Factory | | |
| <ul style="list-style-type: none"> Description: The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here. Note: You can configure your function block at <a _blank"="" href="https://fbf.cloud.sick.com target=">Function Block Factory. As a login please use your SICK ID. | Function Block Factory | On request |

SICK AT A GLANCE

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.”

WORLDWIDE PRESENCE:

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