



# 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](http://www.sick.com/PowerProx)

### Detailed technical data

#### Features

|                                        |                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Sensor/ detection principle</b>     | Photoelectric proximity sensor, Background suppression                                        |
| <b>Dimensions (W x H x D)</b>          | 17.4 mm x 45.6 mm x 34.7 mm                                                                   |
| <b>Housing design (light emission)</b> | Rectangular                                                                                   |
| <b>Sensing range max.</b>              | 200 mm ... 3,000 mm <sup>1)</sup>                                                             |
| <b>Sensing range</b>                   | 200 mm ... 3,000 mm <sup>1) 2)</sup>                                                          |
| <b>Type of light</b>                   | Visible red light                                                                             |
| <b>Light source</b>                    | Laser <sup>3)</sup>                                                                           |
| <b>Light spot size (distance)</b>      | Ø 12 mm (3,000 mm)                                                                            |
| <b>Wave length</b>                     | 658 nm                                                                                        |
| <b>Laser class</b>                     | 1 (IEC 60825-1 / CDRH 21 CFR 1040.10 & 1040.11)                                               |
| <b>Adjustment</b>                      | Single teach-in button (2 x)<br>Local user interface with display and button (2 x)<br>IO-Link |

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

<sup>2)</sup> Adjustable.

<sup>3)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

## Mechanics/electronics

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

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

<sup>2)</sup> May not exceed or fall below U<sub>y</sub> tolerances.

<sup>3)</sup> Without load. At V<sub>S</sub> = 24 V.

<sup>4)</sup> Q<sub>1</sub>, Q<sub>2</sub> = 2 switching thresholds, light/dark switching selectable via light/dark selector.

<sup>5)</sup> PNP/NPN switchable.

<sup>6)</sup> Signal transit time with resistive load.

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

<sup>8)</sup> Depending on distance to object, distance to background and selected switching threshold.

<sup>9)</sup> With light/dark ratio 1:1.

<sup>10)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>11)</sup> B = inputs and output reverse-polarity protected.

<sup>12)</sup> C = interference suppression.

<sup>13)</sup> V<sub>S</sub> ≥ 24 V. Below Ta < -10 °C warm-up time < 10 min.

<sup>14)</sup> For best performance consider warm up time ≤ 5 minutes.

## Safety-related parameters

|                         |             |
|-------------------------|-------------|
| <b>MTTF<sub>D</sub></b> | 170.9 years |
| <b>DC<sub>avg</sub></b> | 0%          |

Communication interface

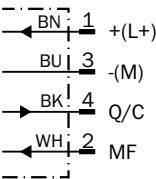
|                     |          |
|---------------------|----------|
| <b>VendorID</b>     | 26       |
| <b>DeviceID HEX</b> | 0x8001D3 |
| <b>DeviceID DEC</b> | 8389075  |

Classifications

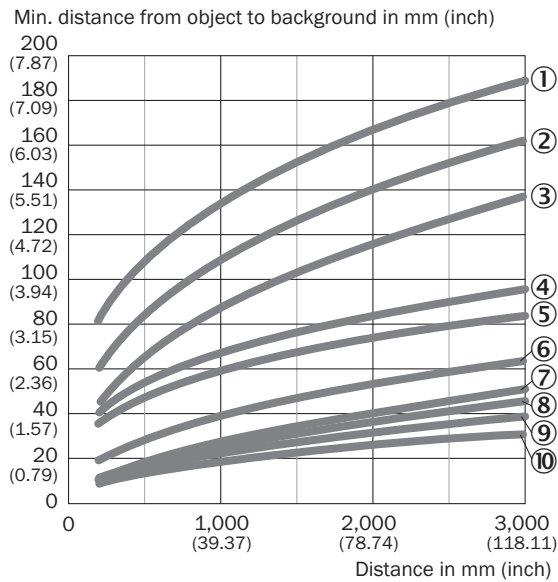
|                       |          |
|-----------------------|----------|
| <b>ECl@ss 5.0</b>     | 27270904 |
| <b>ECl@ss 5.1.4</b>   | 27270904 |
| <b>ECl@ss 6.0</b>     | 27270904 |
| <b>ECl@ss 6.2</b>     | 27270904 |
| <b>ECl@ss 7.0</b>     | 27270904 |
| <b>ECl@ss 8.0</b>     | 27270904 |
| <b>ECl@ss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

Connection diagram

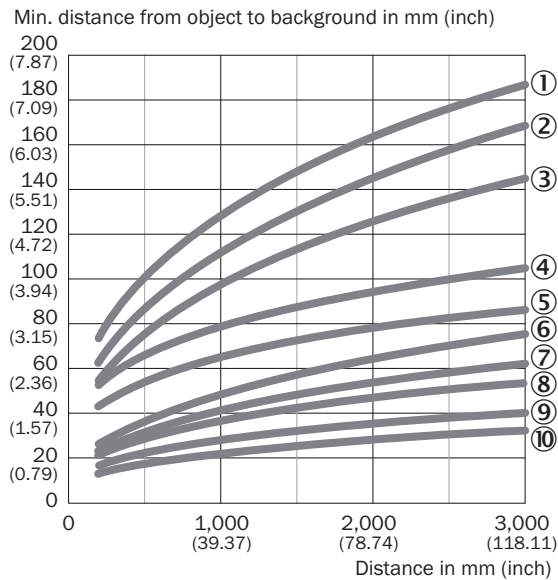
Cd-278



## Characteristic curve



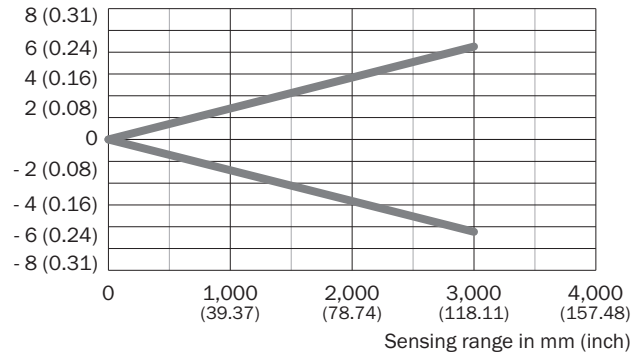
- ① 6 % / 90 % AVG1
- ② 6 % / 90 % AVG2
- ③ 6 % / 90 % AVG4
- ④ 6 % / 90 % AVG8
- ⑤ 6 % / 90 % AVG16
- ⑥ 6 % / 90 % AVG32
- ⑦ 6 % / 90 % AVG64
- ⑧ 6 % / 90 % AVG128
- ⑨ 6 % / 90 % AVG256
- ⑩ 6 % / 90 % AVG512



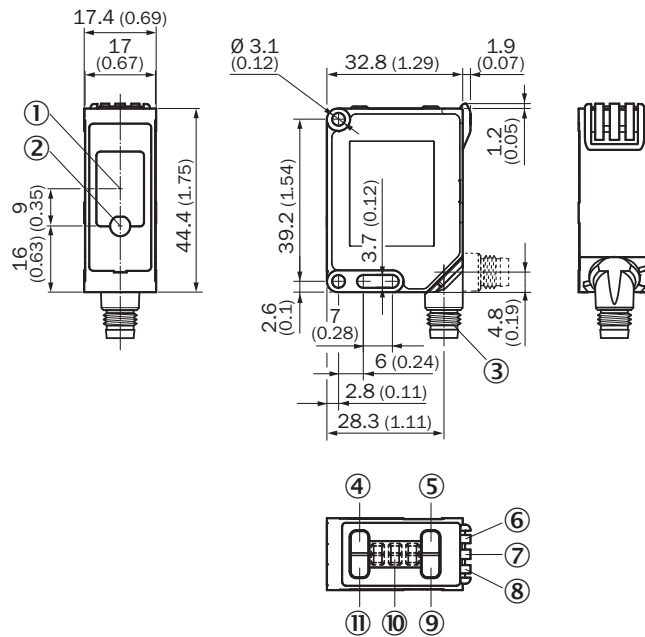
- ① 90 % / 90 % AVG1
- ② 90 % / 90 % AVG2
- ③ 90 % / 90 % AVG4
- ④ 90 % / 90 % AVG8
- ⑤ 90 % / 90 % AVG16
- ⑥ 90 % / 90 % AVG32
- ⑦ 90 % / 90 % AVG64
- ⑧ 90 % / 90 % AVG128
- ⑨ 90 % / 90 % AVG256
- ⑩ 90 % / 90 % AVG512

### Light spot size

Radius mm (inch)



### 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

## Recommended accessories

Other models and accessories → [www.sick.com/PowerProx](http://www.sick.com/PowerProx)

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

## Recommended services

Additional services → [www.sick.com/PowerProx](http://www.sick.com/PowerProx)

|                                                                                                                                                                                                                                                                                                                                                           | Type                   | Part no.   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------|
| Function Block Factory                                                                                                                                                                                                                                                                                                                                    |                        |            |
| <ul style="list-style-type: none"> <li><b>Description:</b> The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&amp;R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here</a>.</li> </ul> | 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:

Contacts and other locations –[www.sick.com](http://www.sick.com)