



# WT18X-3P920P01

W18-3 Ex

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

| Type           | part no. |
|----------------|----------|
| WT18X-3P920P01 | 1029240  |

Other models and accessories → [www.sick.com/W18-3\\_Ex](http://www.sick.com/W18-3_Ex)

Illustration may differ



### Detailed technical data

#### Features

|  |                                  |
|--|----------------------------------|
| <b>Functional principle</b>            | Photoelectric proximity sensor   |
| <b>Functional principle detail</b>     | Background suppression           |
| <b>Dimensions (W x H x D)</b>          | 23.6 mm x 117 mm x 49.3 mm       |
| <b>Housing design (light emission)</b> | Rectangular                      |
| <b>Sensing range max.</b>              | 10 mm ... 1,000 mm <sup>1)</sup> |
| <b>Sensing range</b>                   | 50 mm ... 1,000 mm <sup>1)</sup> |
| <b>Type of light</b>                   | Infrared light                   |
| <b>Light source</b>                    | LED <sup>2)</sup>                |
| <b>Light spot size (distance)</b>      | Ø 30 mm (600 mm)                 |
| <b>Wave length</b>                     | 870 nm                           |
| <b>Adjustment</b>                      | Potentiometer, 4 turns           |
| <b>Special applications</b>            | Explosive areas                  |

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

<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| <b>Supply voltage U<sub>B</sub></b> | 10 V DC ... 30 V DC <sup>1)</sup> |
|-------------------------------------|-----------------------------------|

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

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

<sup>3)</sup> Without load.

<sup>4)</sup> Signal transit time with resistive load.

<sup>5)</sup> With light/dark ratio 1:1.

<sup>6)</sup> Do not bend below 0 °C.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

|                                       |  |
|---------------------------------------|--|
| <b>Ripple</b>                         | < 5 V <sub>pp</sub> <sup>2)</sup>  |
| <b>Current consumption</b>            | 55 mA <sup>3)</sup>  |
| <b>Switching output</b>               | PNP  |
| <b>Switching mode</b>                 | Light/dark switching   |
| <b>Output current I<sub>max</sub></b> | ≤ 100 mA   |
| <b>Response time</b>                  | < 700 μs <sup>4)</sup>   |
| <b>Switching frequency</b>            | 700 Hz <sup>5)</sup>   |
| <b>Connection type</b>                | Cable with M12 male connector, 4-pin, 290 mm <sup>6)</sup>   |
| <b>Cable material</b>                 | Plastic, PVC   |
| <b>Circuit protection</b>             | A <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup>  |
| <b>Weight</b>                         | 300 g  |
| <b>Special device</b>                 | ✓  |
| <b>Housing material</b>               | Plastic, ABS   |
| <b>Optics material</b>                | Plastic, PMMA  |
| <b>Enclosure rating</b>               | IP67   |
| <b>ATEX marking</b>                   | ATEX II 3G Ex nA op is IIIB T4 Gc X ATEX II 3D Ex tc IIIB T135 °C Dc X In accordance with directive 2014/34 / EU |
| <b>Ex area category</b>               | 3G, 3D   |
| <b>Ambient operating temperature</b>  | -20 °C ... +50 °C  |
| <b>Ambient temperature, storage</b>   | -40 °C ... +75 °C  |
| <b>UL File No.</b>                    | NRKH.E181493 & NRKH7.E181493   |

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

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

3) Without load.

4) Signal transit time with resistive load.

5) With light/dark ratio 1:1.

6) Do not bend below 0 °C.

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

8) C = interference suppression.

9) D = outputs overcurrent and short-circuit protected.

## Certificates

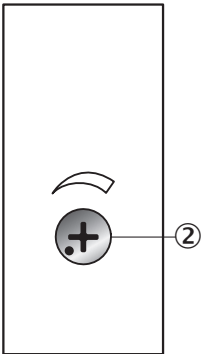
|  |   |
|--|---|
| <b>EU declaration of conformity</b>                      | ✓ |
| <b>UK declaration of conformity</b>                      | ✓ |
| <b>ACMA declaration of conformity</b>                    | ✓ |
| <b>China RoHS</b>  | ✓ |
| <b>cULus certificate</b>                                 | ✓ |
| <b>Photobiological safety (DIN EN 62471) certificate</b> | ✓ |

## Classifications

|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270904 |
| <b>ECLASS 5.1.4</b> | 27270904 |

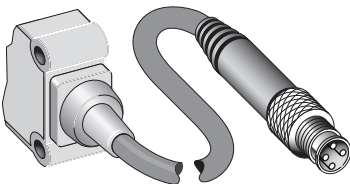
|                       |          |
|-----------------------|----------|
| <b>ECLASS 6.0</b>     | 27270904 |
| <b>ECLASS 6.2</b>     | 27270904 |
| <b>ECLASS 7.0</b>     | 27270904 |
| <b>ECLASS 8.0</b>     | 27270904 |
| <b>ECLASS 8.1</b>     | 27270904 |
| <b>ECLASS 9.0</b>     | 27270904 |
| <b>ECLASS 10.0</b>    | 27270904 |
| <b>ECLASS 11.0</b>    | 27270904 |
| <b>ECLASS 12.0</b>    | 27270903 |
| <b>ETIM 5.0</b>       | EC002719 |
| <b>ETIM 6.0</b>       | EC002719 |
| <b>ETIM 7.0</b>       | EC002719 |
| <b>ETIM 8.0</b>       | EC002719 |
| <b>UNSPSC 16.0901</b> | 39121528 |

### Adjustments

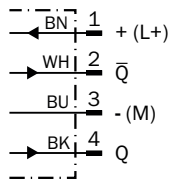


② setting of the sensing range: potentiometer, 4 revolutions

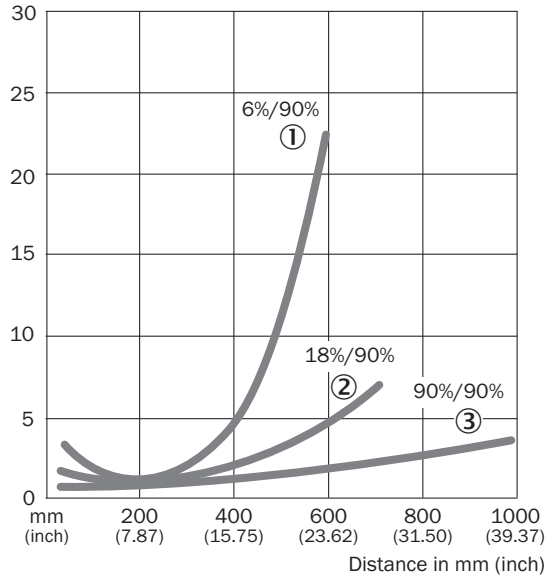
### Connection type



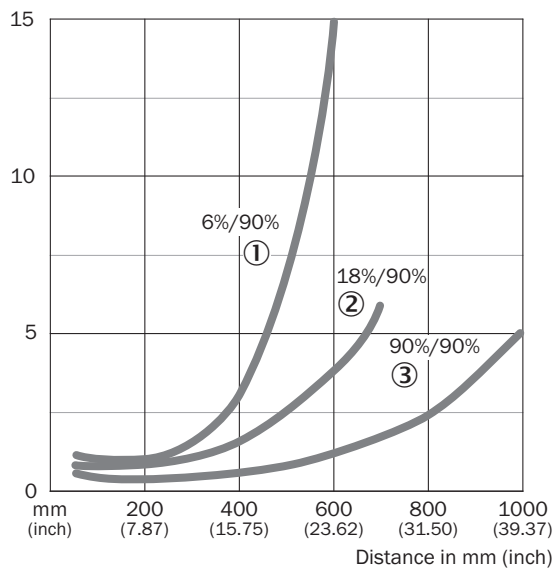
Connection diagram Cd-083



Characteristic curve



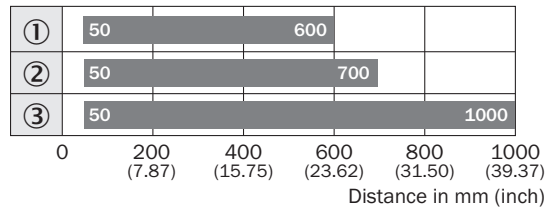
Characteristic curve WT18-3 (Ex), infraret, 1,000 mm



- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor

③ Sensing range on white, 90% remission factor

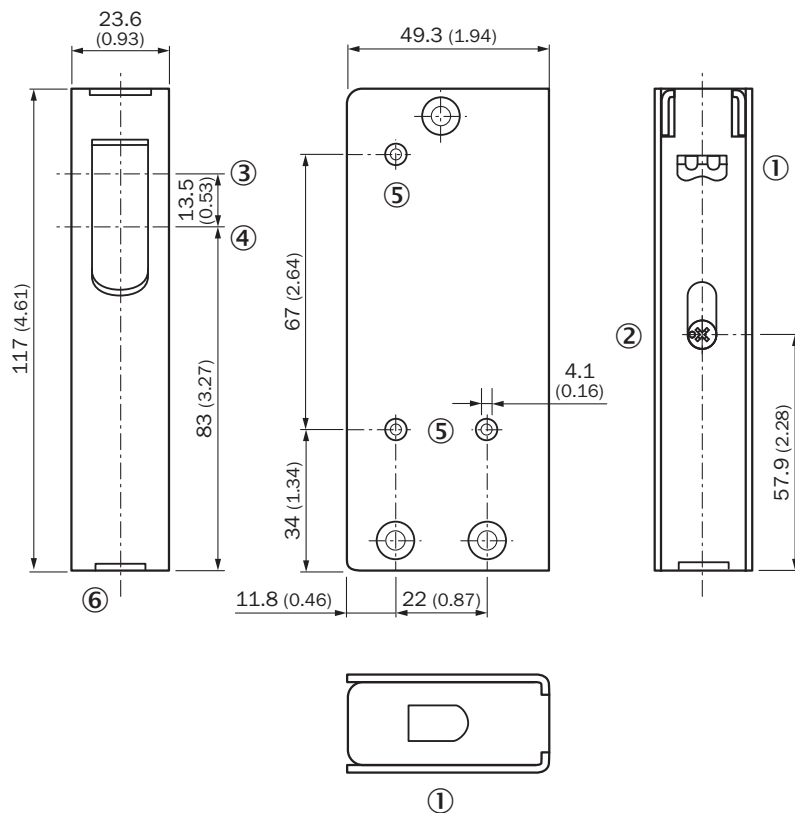
### Sensing range diagram WT18-3 (Ex), infraret, 1,000 mm



■ Sensing range

- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

### Dimensional drawing WT18-3 Ex






Dimensions in mm (inch)

- ① Display LED
- ② Adjustment of sensing range
- ③ Center of optical axis, sender
- ④ Center of optical axis, receiver
- ⑤ Mounting hole  $\varnothing$  4.1 mm
- ⑥ Connection

Recommended accessories

Other models and accessories → [www.sick.com/W18-3\\_Ex](http://www.sick.com/W18-3_Ex)

|   | Brief description  | Type               | part no. |
|---|--|--------------------|----------|
| connectors and cables   |  |                    |          |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>  | YF2A14-050VB3XLEAX | 2096235  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>   | STE-1204-G         | 6009932  |
|    | <ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul> | YF2A14-050UB3XLEAX | 2095608  |
| Mounting systems  |  |                    |          |
|   | <ul style="list-style-type: none"> <li>• <b>Description:</b> Mounting bracket with hinged arm</li> <li>• <b>Material:</b> Steel</li> <li>• <b>Details:</b> Steel, zinc coated</li> <li>• <b>Items supplied:</b> Mounting hardware included</li> <li>• <b>Suitable for:</b> W14-2, W18-3</li> </ul>   | BEF-WN-W18         | 2009317  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Mounting bracket</li> <li>• <b>Material:</b> Steel</li> <li>• <b>Details:</b> Steel, zinc coated</li> <li>• <b>Items supplied:</b> Mounting hardware included</li> <li>• <b>Suitable for:</b> W14-2, W18-3</li> </ul>   | BEF-WN-W14         | 2019084  |
|  | <ul style="list-style-type: none"> <li>• <b>Description:</b> Plate N11N for universal clamp bracket</li> <li>• <b>Material:</b> Stainless steel</li> <li>• <b>Details:</b> Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)</li> <li>• <b>Items supplied:</b> Universal clamp (5322627), mounting hardware</li> <li>• <b>Usable for:</b> DeltaPac, Glare, WTD20E</li> </ul>  | BEF-KHS-N11N       | 2071081  |

## 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)