



# WTB4SC-3P2262A70

W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

| Type             | part no. |
|------------------|----------|
| WTB4SC-3P2262A70 | 1067756  |

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

Detailed technical data

Features

|                                    |                            |                                                                                  |
|------------------------------------|----------------------------|----------------------------------------------------------------------------------|
| <b>Functional principle</b>        |                            | Photoelectric proximity sensor                                                   |
| <b>Functional principle detail</b> |                            | Background suppression                                                           |
| <b>Sensing range max.</b>          |                            | 4 mm ... 180 mm <sup>1)</sup>                                                    |
| <b>Sensing range</b>               |                            | 10 mm ... 180 mm <sup>1)</sup>                                                   |
| <b>Emitted beam</b>                |                            |                                                                                  |
|                                    | Light source               | PinPoint LED <sup>2)</sup>                                                       |
|                                    | Type of light              | Visible red light                                                                |
|                                    | Light spot size (distance) | Ø 6.5 mm (150 mm)                                                                |
| <b>Key LED figures</b>             |                            |                                                                                  |
|                                    | Wave length                | 650 nm                                                                           |
| <b>Adjustment</b>                  |                            | IO-Link, Single teach-in button                                                  |
| <b>Pin 2 configuration</b>         |                            | External input, Teach-in input, Sender off input, Detection output, logic output |

<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.

Safety-related parameters

|                         |           |
|-------------------------|-----------|
| <b>MTTF<sub>D</sub></b> | 873 years |
| <b>DC<sub>avg</sub></b> | 0 %       |

## Communication interface

|                        |                                          |
|------------------------|------------------------------------------|
| <b>IO-Link</b>         | ✓ , COM2 (38,4 kBaud)                    |
| Data transmission rate | COM2 (38,4 kBaud)                        |
| Cycle time             | 2.3 ms                                   |
| Process data length    | 16 Bit                                   |
| Process data structure | Bit 0 = switching signal Q <sub>L1</sub> |
|                        | Bit 1 = switching signal Q <sub>L2</sub> |
|                        | Bit 2 ... 15 = measuring value           |
| VendorID               | 26                                       |
| DeviceID HEX           | 0x8000D3                                 |
| DeviceID DEC           | 8388819                                  |

## Electronics

|                                         |                                                                          |
|-----------------------------------------|--------------------------------------------------------------------------|
| <b>Supply voltage U<sub>B</sub></b>     | 10 V DC ... 30 V DC <sup>1)</sup>                                        |
| <b>Ripple</b>                           | < 5 V <sub>pp</sub> <sup>2)</sup>                                        |
| <b>Current consumption</b>              | 30 mA <sup>3)</sup>                                                      |
| <b>Protection class</b>                 | III                                                                      |
| <b>Digital output</b>                   |                                                                          |
| Type                                    | PNP <sup>4)</sup>                                                        |
| Switching mode                          | Light/dark switching                                                     |
| Output current I <sub>max.</sub>        | ≤ 100 mA                                                                 |
| Repeatability (response time)           | 150 μs <sup>5)</sup>                                                     |
| Switching frequency                     | 1,000 Hz                                                                 |
| <b>Circuit protection</b>               | A <sup>6)</sup><br>B <sup>7)</sup><br>C <sup>8)</sup><br>D <sup>9)</sup> |
| <b>Response time Q/ on Pin 2</b>        | 300 μs ... 450 μs <sup>10) 5)</sup>                                      |
| <b>Switching frequency Q / to pin 2</b> | 1,000 Hz <sup>11)</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>y</sub> tolerances.

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

<sup>4)</sup> Pin 4: This switching output must not be connected to another output.

<sup>5)</sup> Valid for Q \ on Pin2, if configured with software.

<sup>6)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>7)</sup> B = inputs and output reverse-polarity protected.

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

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

<sup>10)</sup> Signal transit time with resistive load.

<sup>11)</sup> With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

## Mechanics

|                               |                             |
|-------------------------------|-----------------------------|
| <b>Housing</b>                | Rectangular                 |
| <b>Design detail</b>          | Slim                        |
| <b>Dimensions (W x H x D)</b> | 12.2 mm x 41.8 mm x 17.3 mm |
| <b>Connection</b>             | Male connector M8, 4-pin    |

|                 |              |               |
|-----------------|--------------|---------------|
| <b>Material</b> | Housing      | Plastic, ABS  |
|                 | Front screen | Plastic, PMMA |
| <b>Weight</b>   |              | 20 g          |

#### Ambient data

|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Enclosure rating</b>              | IP67<br>IP66                 |
| <b>Ambient operating temperature</b> | -40 °C ... +60 °C            |
| <b>Ambient temperature, storage</b>  | -40 °C ... +75 °C            |
| <b>UL File No.</b>                   | NRKH.E181493 & NRKH7.E181493 |

#### Smart Task

|                                                                                    |                                                                                                                                              |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Smart Task name</b>                                                             | Time measurement + debouncing                                                                                                                |
| <b>Logic function</b>                                                              | Direct<br>WINDOW                                                                                                                             |
| <b>Timer function</b>                                                              | Deactivated<br>Switch-on delay<br>Off delay<br>ON and OFF delay<br>Impulse (one shot)                                                        |
| <b>Inverter</b>                                                                    | Yes                                                                                                                                          |
| <b>Response time</b>                                                               | 1)<br>2)                                                                                                                                     |
| <b>Repeatability</b>                                                               | 1)<br>2)                                                                                                                                     |
| <b>Time measurement accuracy</b>                                                   | SIO Direct: ---<br>SIO Logic: - 0,7 ... + 0,7 ms ± 0,5 % of time measurement value<br>IOL: - 0.9 ... + 0.9 ms ± 0.5% of the time measurement |
| <b>Time measurement accuracy (e.g. accuracy for time measurement value = 1 s )</b> | SIO Direct: ---<br>SIO Logic: - 5,7 ... + 5,7 ms<br>IOL: - 5,9 ... + 5,9 ms                                                                  |
| <b>Resolution time measuring value</b>                                             | 1 ms                                                                                                                                         |
| <b>Min. Time between two process events (switches)</b>                             | SIO Direct: ---<br>SIO Logic: 500 µs<br>IOL: 800 µs                                                                                          |
| <b>Debounce time max.</b>                                                          | SIO Direct: ---<br>SIO Logic: 30.000 ms<br>IOL: 30.000 ms                                                                                    |
| <b>Switching signal</b>                                                            |                                                                                                                                              |
| Switching signal Q <sub>L1</sub>                                                   | Output type (dependant on the adjusted threshold)                                                                                            |
| Switching signal Q <sub>L2</sub>                                                   | Output type (dependant on the adjusted threshold)                                                                                            |
| <b>Measuring value</b>                                                             | Time measurement value                                                                                                                       |

<sup>1)</sup> SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

<sup>2)</sup> IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

#### Diagnosis

|                      |     |
|----------------------|-----|
| <b>Device status</b> | Yes |
|----------------------|-----|

#### Certificates

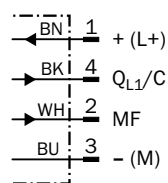
|                                     |   |
|-------------------------------------|---|
| <b>EU declaration of conformity</b> | ✓ |
|-------------------------------------|---|

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

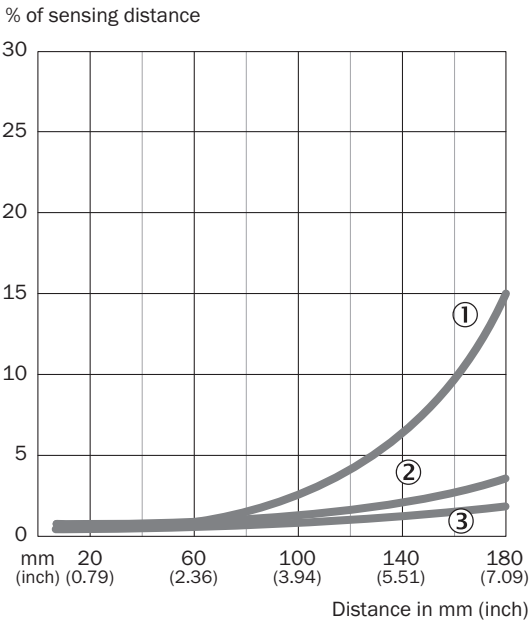
## Classifications

|                       |          |
|-----------------------|----------|
| <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 |

## Connection diagram Cd-367

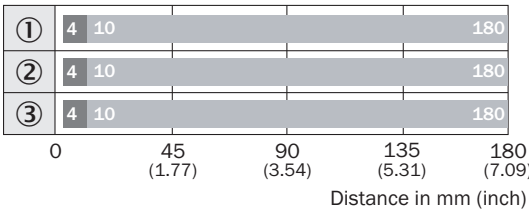


Characteristic curve WTB4S-3, 180 mm



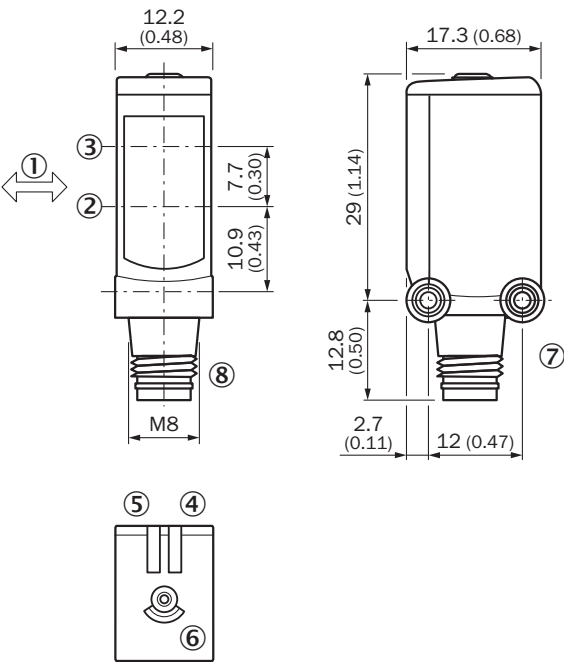
- ① Sensing range on black, 6% remission factor
- ② Sensing range on gray, 18% remission factor
- ③ Sensing range on white, 90% remission factor

Sensing range diagram WTB4S-3, 180 mm



- Sensing range max.
- 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 WTB4S-3, Single teach-in button



- Dimensions in mm (inch)
- ① Standard direction of the material being detected
  - ② optical axis, receiver
  - ③ optical axis, sender
  - ④ LED indicator green: Supply voltage active
  - ⑤ LED indicator yellow: Status of received light beam
  - ⑥ Teach-in button
  - ⑦ Threaded mounting hole M3
  - ⑧ Connection

Recommended accessories

Other models and accessories → [www.sick.com/W4](http://www.sick.com/W4)

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                             | Type     | part no. |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                               |          |          |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket for wall mounting</li><li>• <b>Material:</b> Stainless steel</li><li>• <b>Details:</b> Stainless steel 1.4571</li><li>• <b>Items supplied:</b> Mounting hardware included</li><li>• <b>Suitable for:</b> W4S, W4F, W4S</li></ul> | BEF-W4-A | 2051628  |

|                                                                                   | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                            | Type               | part no. |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                    |          |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M12, 4-pin, A-coded</li><li>• <b>Connection type head B:</b> Female connector, M8, 4-pin, A-coded</li><li>• <b>Connection type head C:</b> Female connector, M8, 4-pin, A-coded</li><li>• <b>Cable:</b> 0.11 m, PVC</li><li>• <b>Description:</b> Unshielded</li></ul>                                                                                                | SYL-8204-G0M11-X2  | 6055012  |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M8, 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>                                  | YF8U14-050VA3XLEAX | 2095889  |
|  | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li><li>• <b>Connection type head B:</b> Male connector, M12, 4-pin, straight, A-coded</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> | YF8U14-050VA3M2A14 | 2096609  |

## 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)