



WTV4-3N1141  
W4

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type        | part no. |
|-------------|----------|
| WTV4-3N1141 | 1084396  |

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 ... 50 mm <sup>1)</sup>                                       |
| <b>Sensing range</b>               | 15 mm ... 50 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 10 mm (40 mm)                                                    |
| <b>Key LED figures</b>             |                                                                    |
| Wave length                        | 650 nm                                                             |
| <b>Adjustment</b>                  | Potentiometer, 5 turns                                             |
| <b>Special applications</b>        | Detecting uneven, shiny objects, Detecting objects wrapped in film |

<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.

### 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>          | 20 mA <sup>3)</sup>               |
| <b>Protection class</b>             | III                               |

<sup>1)</sup> Limit values.

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

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

|                           |                                                       |                                  |
|---------------------------|-------------------------------------------------------|----------------------------------|
| <b>Digital output</b>     | Type                                                  | NPN                              |
|                           | Switching mode                                        | Dark switching                   |
|                           | Output current $I_{\max}$                             | $\leq 100 \text{ mA}$            |
|                           | Response time                                         | $< 0.5 \text{ ms}$ <sup>4)</sup> |
|                           | Switching frequency                                   | $1,000 \text{ Hz}$ <sup>5)</sup> |
| <b>Circuit protection</b> | A <sup>6)</sup><br>C <sup>7)</sup><br>D <sup>8)</sup> |                                  |
| <b>Special feature</b>    | V-optics                                              |                                  |

<sup>1)</sup> Limit values.

<sup>2)</sup> May not fall below or exceed  $U_T$  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> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

## Mechanics

|                        |                                  |                   |
|------------------------|----------------------------------|-------------------|
| Housing                | Rectangular                      |                   |
| Design detail          | Flat                             |                   |
| Dimensions (W x H x D) | 16 mm x 39.5 mm x 12 mm          |                   |
| Connection             | Cable, 4-wire, 2 m <sup>1)</sup> |                   |
| Connection detail      |                                  |                   |
|                        | Conductor size                   | 0.14 mm²          |
|                        | Cable diameter                   | Ø 3.4 mm          |
|                        | Length of cable (L)              | 2 m <sup>1)</sup> |
| Material               |                                  |                   |
|                        | Housing                          | Plastic, ABS      |
|                        | Front screen                     | Plastic, PMMA     |
|                        | Cable                            | Plastic, PVC      |
| Weight                 | 30 g                             |                   |

<sup>1)</sup> Do not bend below 0 °C.

## Ambient data

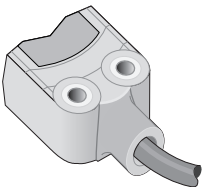
|                                      |                              |
|--------------------------------------|------------------------------|
| <b>Enclosure rating</b>              | IP67<br>IP66                 |
| <b>Ambient operating temperature</b> | -40 °C ... +60 °C            |
| <b>Ambient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

## Classifications

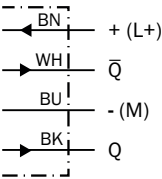
|                     |          |
|---------------------|----------|
| <b>ECLASS 5.0</b>   | 27270904 |
| <b>ECLASS 5.1.4</b> | 27270904 |
| <b>ECLASS 6.0</b>   | 27270904 |

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

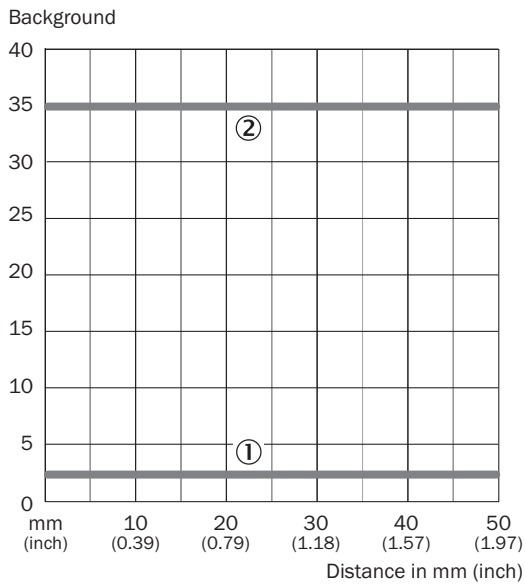
Connection type



Connection diagram Cd-094

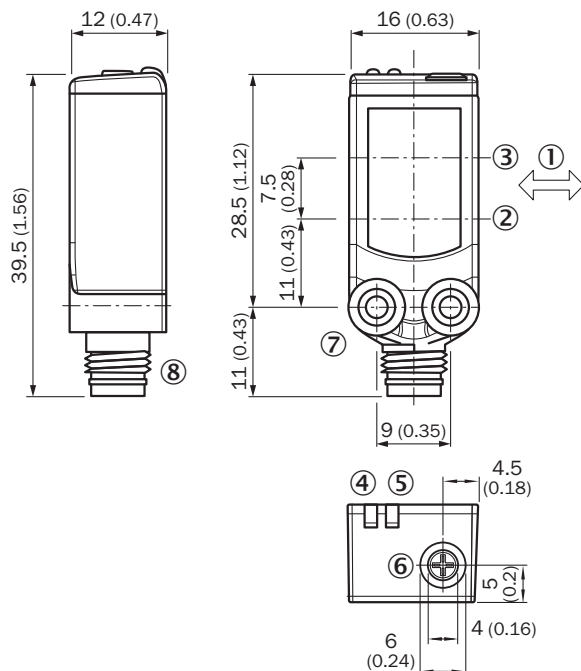


## Characteristic curve WTV4-3, V-optics



- ① black/white shift 90% / 6%
- ② Distance to the background with transparent objects

## Dimensional drawing WTx4-3, potentiometer



Dimensions in mm (inch)

- ① Standard direction of the material being detected
- ② Optical axis, sender
- ③ Optical axis, receiver
- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: Supply voltage active
- ⑥ Potentiometer
- 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. |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |          |
|    | <ul style="list-style-type: none"><li>• <b>Connection type head A:</b> Male connector, M8, 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> 0.14 mm² ... 0.5 mm²</li></ul>                                                                                                                                                                                                                                                    | STE-0804-G  | 6037323  |
| Mounting systems                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |          |
|    | <ul style="list-style-type: none"><li>• <b>Description:</b> Plate N08 for universal clamp bracket</li><li>• <b>Material:</b> Steel, zinc diecast</li><li>• <b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li><li>• <b>Items supplied:</b> Universal clamp (5322626), mounting hardware</li><li>• <b>Usable for:</b> W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8</li></ul> | BEF-KHS-N08 | 2051607  |
|   | <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  |
|  | <ul style="list-style-type: none"><li>• <b>Description:</b> Mounting bracket for floor 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-B    | 2051630  |

## 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)