



Photoelectric sensors  
W4-3, Photoelectric proximity sensor,  
Background suppression

WTV4-3P3171



**Model Name** > [WTV4-3P3171](#)  
**Part No.** > [1063336](#)



*Illustration may differ*

#### At a glance

- Sensing range from 4 - 50 mm
- Reliable detection of planar, highly transparent and shiny objects at distances of 20 to 25 mm
- 5-turn potentiometer for precise adjustment
- Large, consistent light spot
- Rugged plastic housing with M3 threaded metal inserts
- IR versions available for detection of jet-black objects with a remission < 1%
- Versions available with linear light spot

#### Your benefits

- Low-cost machine design since shiny and transparent objects are directly detected, making a separate reflector or through-beam system unnecessary
- Less mounting and setup time since no alignment is required
- Rugged mounting system with M3 threaded metal inserts reduces maintenance costs due to a long service life
- Reliable object detection due to best-in-class background suppression and high immunity to ambient light



#### Features

|                                  |                                                        |
|----------------------------------|--------------------------------------------------------|
| Sensor/detection principle:      | Photoelectric proximity sensor, Background suppression |
| Dimensions (W x H x D):          | 16 mm x 39.5 mm x 12 mm                                |
| Housing design (light emission): | Rectangular, Flat                                      |
| Sensing range max.:              | 3 mm ... 50 mm <sup>1)</sup>                           |
| Sensing range:                   | 5 mm ... 50 mm <sup>2)</sup>                           |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>3)</sup>                             |
| Wave length:                     | 650 nm                                                 |
| Adjustment:                      | Potentiometer, 5-turn                                  |
| Light spot size (distance):      | 3 x 20 mm (40 mm)                                      |

<sup>1) 2)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

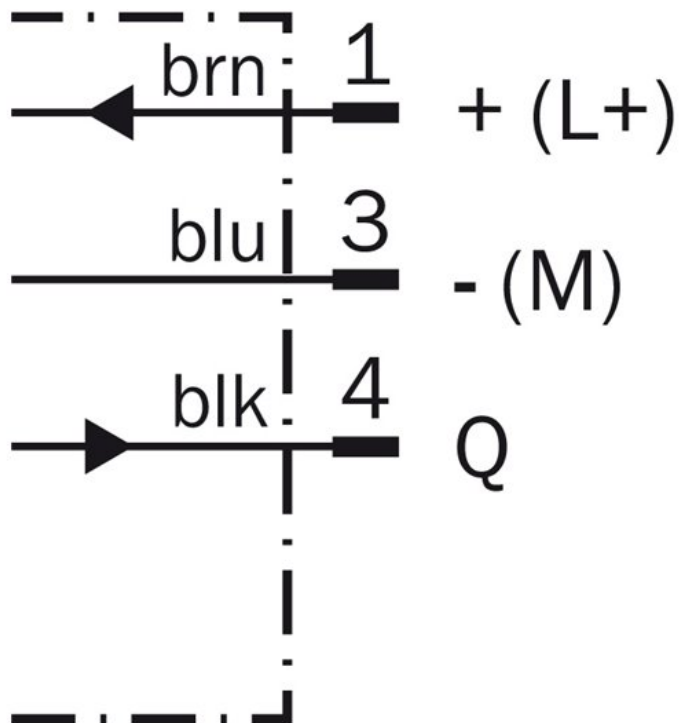
#### Mechanics/electronics

|                    |                                   |
|--------------------|-----------------------------------|
| Supply voltage:    | 10 V DC ... 30 V DC <sup>1)</sup> |
| Ripple:            | < 5 V <sub>pp</sub> <sup>2)</sup> |
| Power consumption: | ≤ 20 mA <sup>3)</sup>             |
| Output type:       | PNP                               |

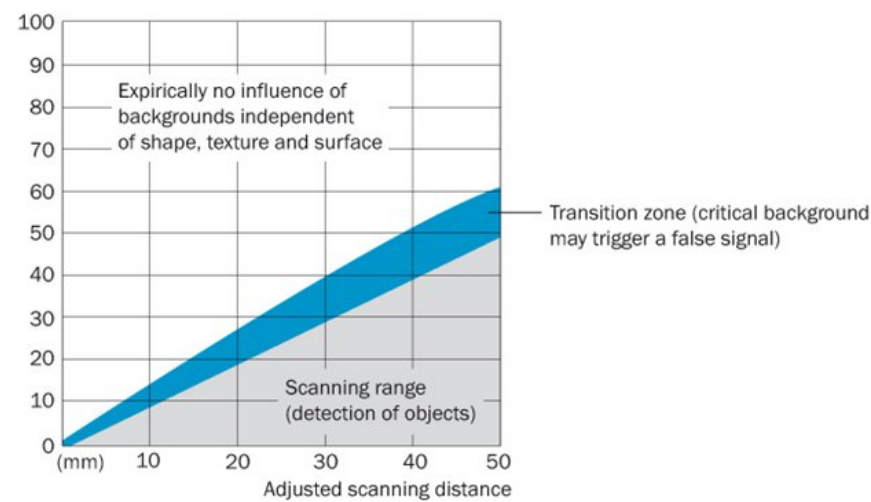
|                                   |                                  |
|-----------------------------------|----------------------------------|
| Switching mode:                   | Light switching                  |
| Output current I <sub>max</sub> : | ≤ 100 mA                         |
| Response time:                    | < 0.5 ms <sup>4)</sup>           |
| Switching frequency:              | 1,000 Hz <sup>5)</sup>           |
| Connection type:                  | Cable with connector M8, 3-pin   |
| Circuit protection:::             | A, C, D <sup>6)</sup> 7) 8)      |
| Protection class:                 | III                              |
| Weight:                           | 30 g                             |
| Housing material:                 | ABS, Plastic                     |
| Optics material:                  | PMMA                             |
| Enclosure rating:                 | IP 67<br>IP 66                   |
| Special feature:                  | Line-shaped light spot, V-optics |
| Ambient operating temperature:    | -40 °C ... 60 °C                 |
| Ambient storage temperature:      | -40 °C ... 75 °C                 |
| UL File No.:                      | NRKH.E181493 & NRKH7.E181493     |

<sup>1)</sup> Limit values   <sup>2)</sup> May not exceed or fall short of  $V_S$  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

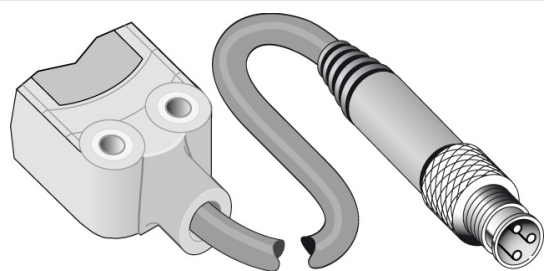
#### Connection diagram



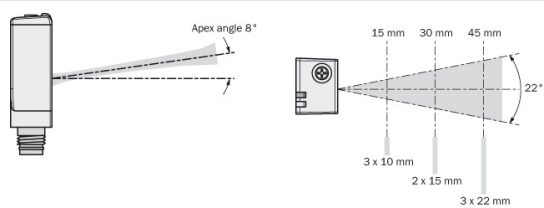
Characteristic curve



Connection type



Light spot size



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