



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

WTB4-3P3161



**Model Name** > [WTB4-3P3161](#)  
**Part No.** > [1028097](#)



*Illustration may differ*

**At a glance**

- Intense light spot with PinPoint LED technology
- Sensor with IR light available upon request
- Sensing range of 4 - 150 mm
- Background suppression sensor available with laser-like light spot
- Adjustment either via teach-in pushbutton, 5-turn potentiometer, cable or IO-Link
- Second emitter LED designed for suppression of shiny backgrounds
- Flexible sensing ranges and hysteresis settings
- Key lock function, remote teach, quality monitoring

**Your benefits**

- Reliable detection of objects regardless of color and consistency
- Smart machine design ensures low-cost integration due to mounting flexibility in areas with limited space
- Best-in-class background suppression and a high immunity to ambient light, ensuring reliable object detection
- Rugged mounting system with M3 threaded metal inserts reduces maintenance costs due to a long service life
- Precise detection with a high level of repeat accuracy due to an intense light spot with PinPoint LED technology
- Quick and easy format adjustment
- Easy monitoring of sensor status
- Key lock function and parameter download prevent incorrect settings



**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
Sensing range max.:	4 mm ... 150 mm <sup>1)</sup>
Sensing range:	15 mm ... 150 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):	Ø 7 mm (50 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

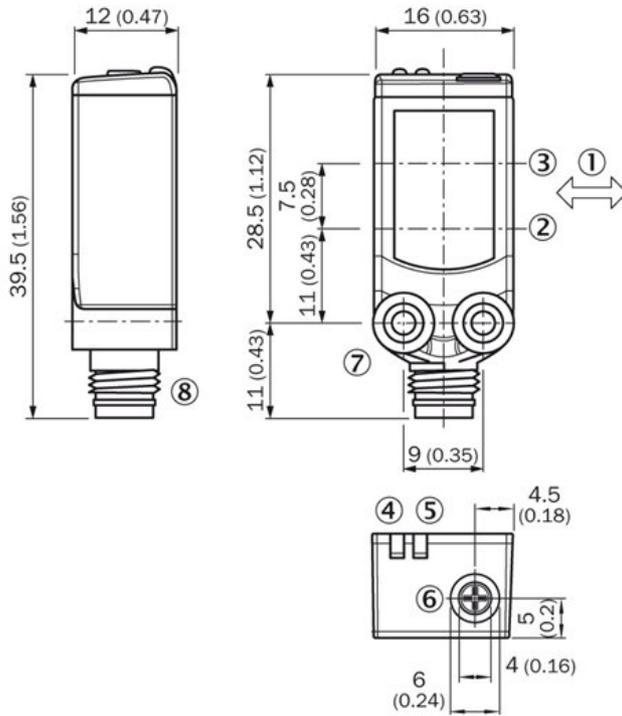
## Mechanics/electronics

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Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	< 5 Vpp <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, 100 mm <sup>6)</sup>
Cable material:	PVC
Conductor cross-section:	0.14 mm <sup>2</sup>
Cable diameter:	Ø 3.4 mm
Circuit protection:::	A, C, D <sup>7)</sup> <sup>8)</sup> <sup>9)</sup>
Protection class:	III
Weight:	30 g
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 67 IP 66
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

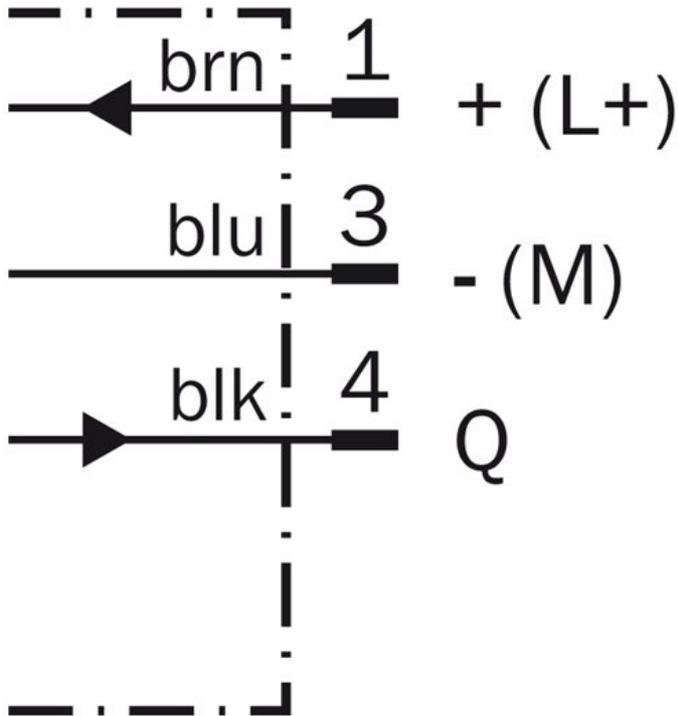
<sup>1)</sup> Limit values <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> Do not bend below 0 °C <sup>7)</sup> A =  $V_S$  connections reverse-polarity protected <sup>8)</sup> C = interference suppression <sup>9)</sup> D = outputs overcurrent and short-circuit protected

**Dimensional drawing**

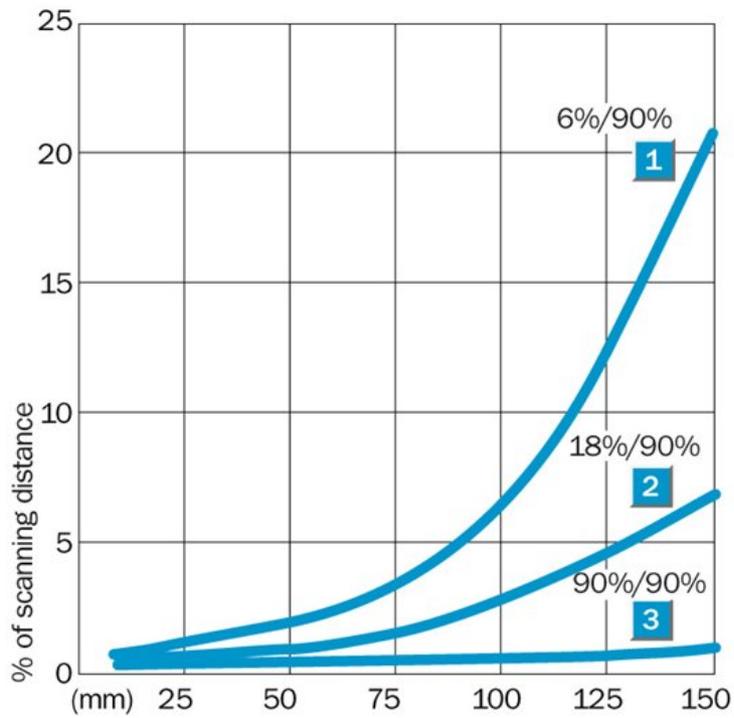


- |1| Standard direction of the material being scanned
- |2| Optical axis, sender
- |3| Optical axis, receiver
- |4| Status indicator LED,  
yellow: Status of received light beam
- |5| Status indicator LED green: power on
- |6| Potentiometer
- |7| Threaded mounting hole M3
- |8| Connection

**Connection diagram**

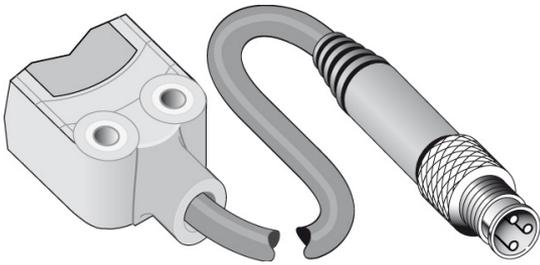


## Characteristic curve

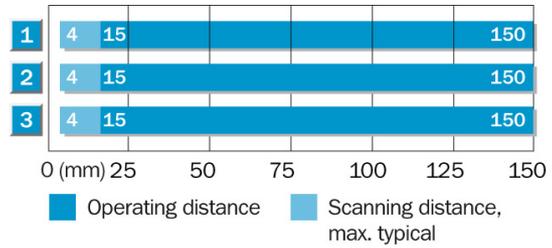


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

## Connection type



## Sensing range diagram



- |1| Scanning range on black, 6 % remission
- |2| Scanning range on grey, 18 % remission
- |3| Scanning range on white, 90 % remission

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