



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

WTB4-3P2161



Model Name > [WTB4-3P2161](#)
Part No. > [1028099](#)



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 ¹⁾
Sensing range:	15 mm ... 150 mm ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	650 nm
Adjustment:	Potentiometer, 5 turns
Light spot size (distance):	Ø 7 mm (50 mm)

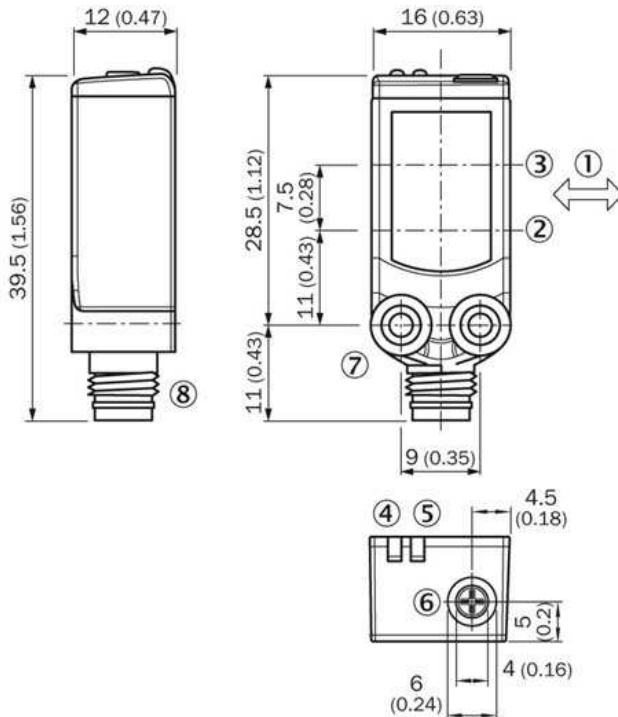
^{1) 2)} Object with 90 % reflectance (referred to standard white, DIN 5033) ³⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple::	< 5 Vpp ^{2) 3)}
Power consumption:	≤ 20 mA ⁴⁾
Output type:	PNP
Switching mode:	Light switching
Output current I _{max} ::	≤ 100 mA ⁵⁾
Response time:	< 0.5 ms ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Connector M8, 3-pin
Circuit protection:::	A, C, D ^{7) 8) 9)}
Protection class:	III
Weight:	30 g
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
Housing material:	ABS, Plastic

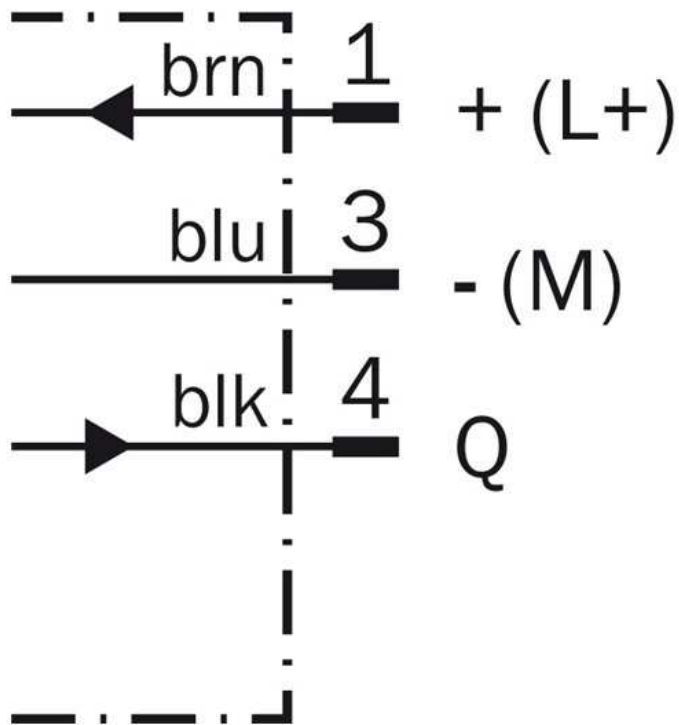
1) Limit values 2) 3) May not exceed or fall short of V_S tolerances 4) Without load 5) Signal transit time with resistive load 6) With light/dark ratio 1:1 7) A = V_S connections reverse-polarity protected 8) C = interference suppression 9) D = outputs overcurrent and short-circuit protected

Dimensional drawing

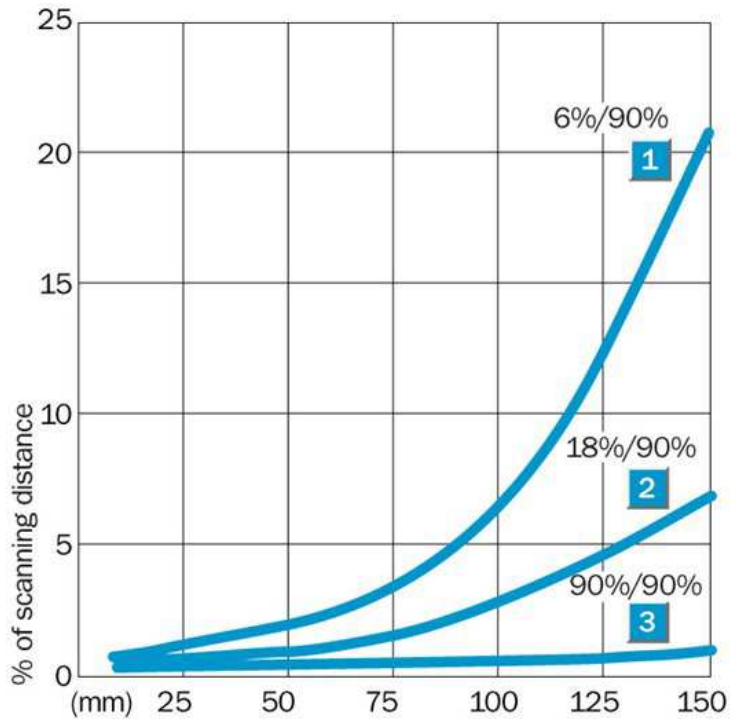


- |1| Standard direction of the material being detected
- |2| Optical axis, sender
- |3| Optical axis, receiver
- |4| Status indicator LED,
yellow: Status of received light beam
- |5| Status indicator LED green: supply voltage on
- |6| Potentiometer
- |7| Threaded mounting hole M3
- |8| Connection

Connection diagram

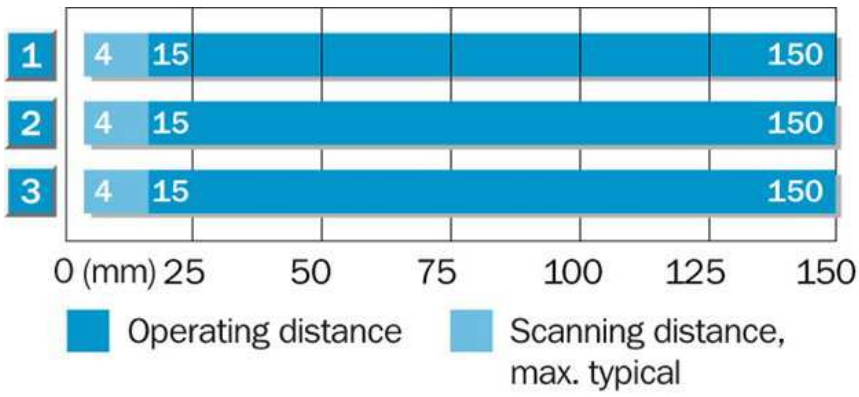


Characteristic curve



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

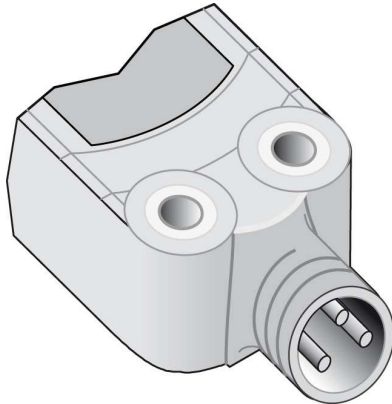
Sensing range diagram



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

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

Connection type



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