



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

WTV4-3P3121



Model Name > [WTV4-3P3121](#)
Part No. > [1042191](#)



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
Sensing range max.:	4 mm ... 50 mm ¹⁾
Sensing range:	15 mm ... 50 mm ²⁾
Type of light:	Infrared light
Light source:	PinPoint LED ³⁾
Wave length:	880 nm
Adjustment:	Potentiometer, 5 turns
Light spot size (distance):	Ø 10 mm (40 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

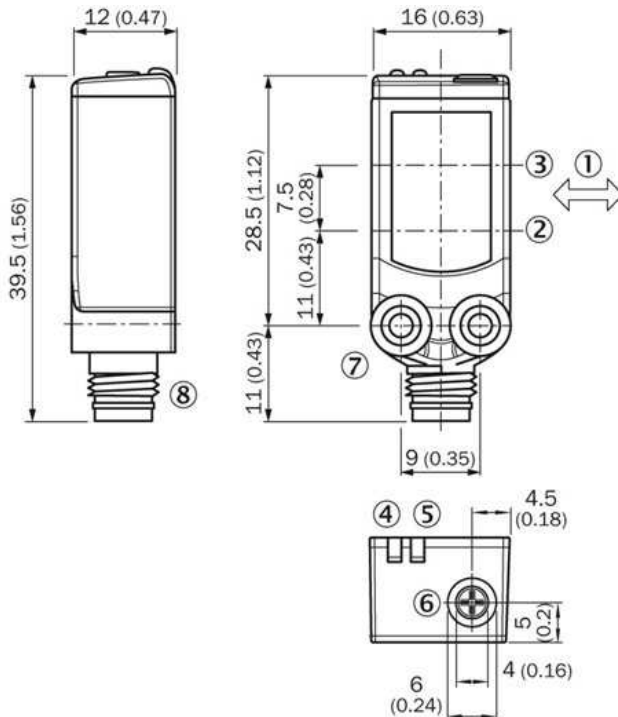
Mechanics/electronics

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
Response time:	< 0.5 ms ⁵⁾
Switching frequency:	1,000 Hz ⁶⁾
Connection type:	Cable with connector M8, 3-pin, 100 mm ⁷⁾
Cable material:	PVC
Conductor cross-section:	0.14 mm ²
Cable diameter:	Ø 3.4 mm
Circuit protection:::	A, C, D ^{8) 9) 10)}
Protection class:	III
Weight:	30 g
Optics material:	PMMA
Enclosure rating:	IP 67 IP 66
Special feature:	V-optics
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

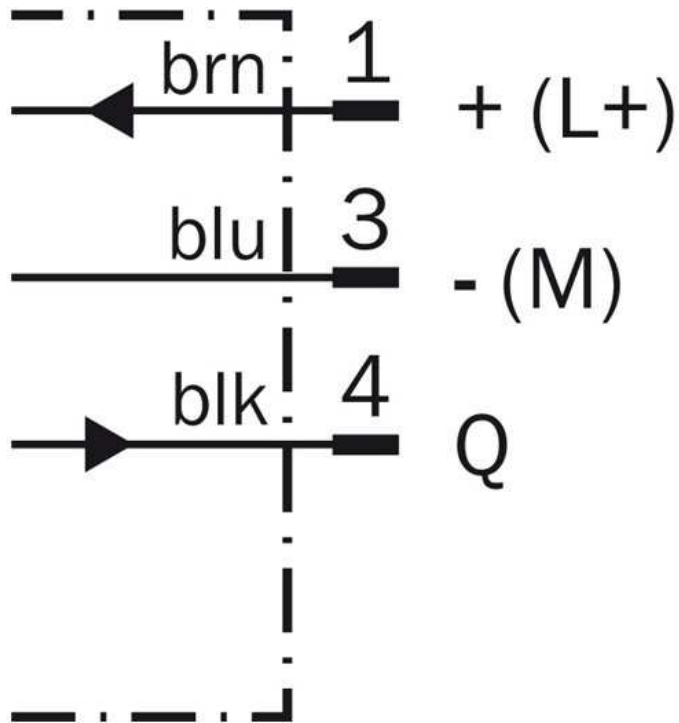
1) Limit values 2) 3) May not exceed or fall short of V_S tolerances 4) Without load 5) Signal transit time with resistive load 6) With light/dark ratio 1:1 7) Do not bend below 0 °C 8) A = V_S connections reverse-polarity protected 9) C = interference suppression 10) D = outputs overcurrent and short-circuit protected

Dimensional drawing

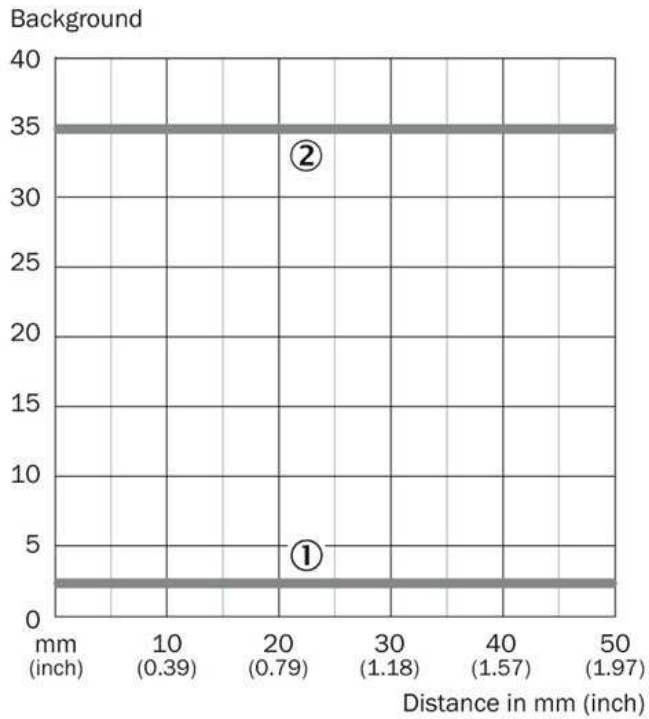


- |1| Standard direction of the material being detected
- |2| Optical axis, sender
- |3| Optical axis, receiver
- |4| Status indicator LED,
yellow: Status of received light beam
- |5| Status indicator LED green: supply voltage on
- |6| Potentiometer
- |7| Threaded mounting hole M3
- |8| Connection

Connection diagram



Characteristic curve



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

Connection type



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