



Photoelectric sensors
W4S-3, Photoelectric proximity sensor,
Background suppression

WTB4S-3P3431



Model Name > [WTB4S-3P3431](#)
Part No. > [1055059](#)



Illustration may differ

At a glance

- Best background suppression in its class
- Setting either via teach-in pushbutton, 5-turn potentiometer cable or by IO-Link
- All models with PinPoint LED technology
- Versions with laser-like LED light spots
- High immunity to ambient light

Your benefits

- Less downtime due to reliable detection of all types of objects
- Laser-like light spot provides quick and easy alignment
- Smart machine design makes it possible to mount the sensor in the tightest spaces
- 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):	12.2 mm x 41.8 mm x 17.3 mm
Housing design (light emission):	Rectangular
Sensing range max.:	4 mm ... 120 mm ¹⁾
Sensing range:	10 mm ... 120 mm ²⁾
Type of light:	Visible red light
Light source:	PinPoint LED ³⁾
Wave length:	650 nm
Adjustment:	Potentiometer, 5-turn
Light spot size (distance):	Ø 2.5 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

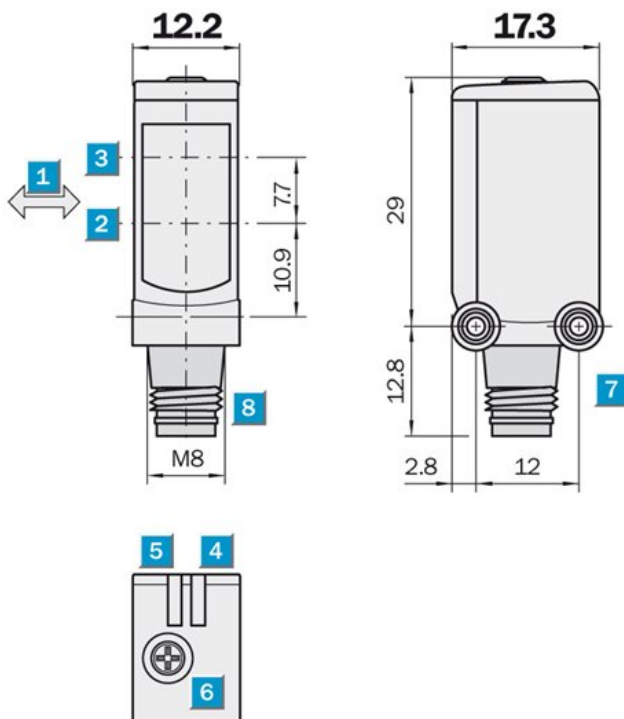
Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	< 5 Vpp ²⁾
Power consumption:	≤ 20 mA ³⁾
Output type:	PNP
Switching mode:	Light/dark-switching
Output current I _{max} ..:	≤ 100 mA
Response time:	< 0.5 ms ⁴⁾

Switching frequency:	1,000 Hz ⁵⁾
Connection type:	Cable with connector M12, 4-pin, 150 mm ⁶⁾
Cable material:	PVC
Conductor cross-section:	0.14 mm ²
Cable diameter:	Ø 3.4 mm
Circuit protection:::	A, C, D ⁷⁾ ⁸⁾ ⁹⁾
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

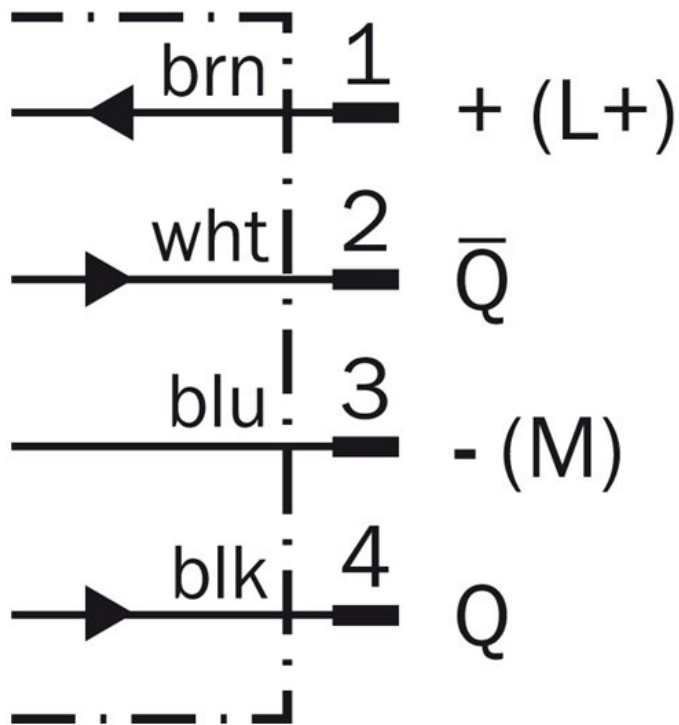
¹⁾ Limit values ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ Do not bend below 0 °C ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ D = outputs overcurrent and short-circuit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

Dimensional drawing

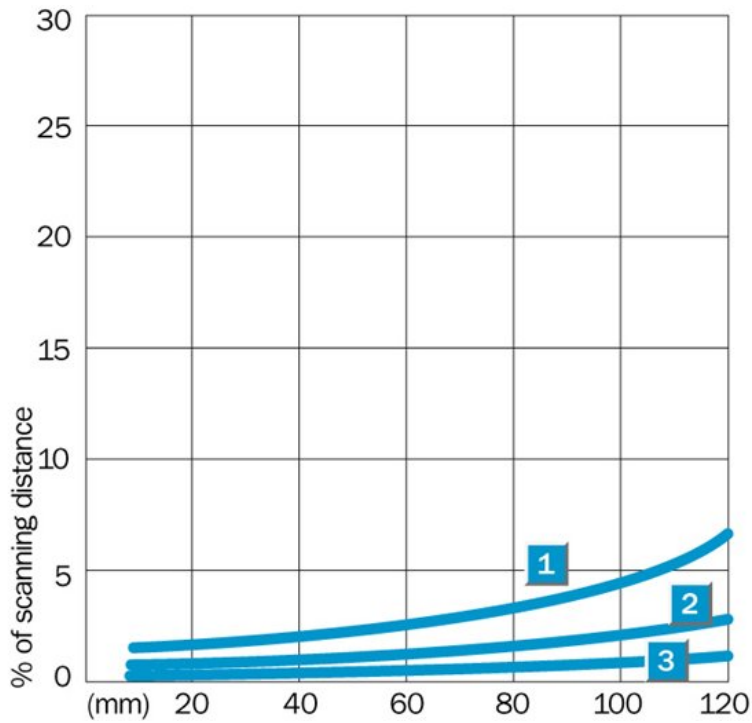


- [1] Standard direction of the material being scanned
- [2] Optical axis receiver
- [3] Optical axis sender
- [4] Status indicator LED green: power on
- [5] Status indicator LED, yellow: Status of received light beam
- [6] Potentiometer
- [7] Threaded mounting hole M3
- [8] Connection

Connection diagram



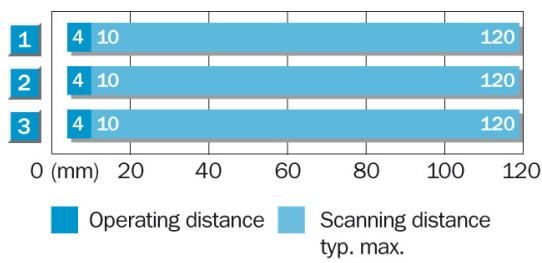
Characteristic curve



Connection type



Sensing range diagram



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

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