



Photoelectric sensors  
W12-3, Photoelectric proximity sensor,  
Background suppression

WTB12-3N2413



**Type** > [WTB12-3N2413](#)  
**Part No.** > [1041428](#)



*Illustration may differ*

**At a glance**

- State of the art technology provides precise background suppression
- Withstands harsh environments
- PinPoint LED technology with highly visible light spot; variants available with IR LED for highly critical applications
- Rugged die-cast zinc housing, with optional Teflon® coating
- Versatile mounting options due to dovetail mounting - mounting holes and oblong holes
- Flexible sensing ranges and hysteresis settings
- Key lock function, remote teach, quality monitoring
- Diagnostics messages (contamination and short-circuit)

**Your benefits**

- State of the art technology, e.g. OES3 provides precise background suppression and reliable detection of challenging objects
- High immunity to ambient light, optical reflections and crosstalk ensures fewer false readings and less downtime
- Highly visible status LEDs simplify sensing distance adjustments and reduce installation time
- A rugged metal housing withstands high-pressure cleaners and cleaning agents, reducing downtime
- Complementary outputs in one housing reduce inventory and procurement costs
- IO-Link enables quick remote diagnostics and maintenance (optional)
- Easy installation using SICK accessories



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	15.6 mm x 48.5 mm x 42 mm
Housing design (light emission):	Rectangular
Sensing range max.:	20 mm ... 600 mm <sup>1)</sup>
Sensing range:	20 mm ... 600 mm
Type of light:	Infrared light
Light source:	LED <sup>2)</sup>
Wave length:	850 nm
Teach-in:	Double teach-in button
Adjustment:	Teach-in
Light spot size (distance):	15 x 15 mm (200 mm)

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

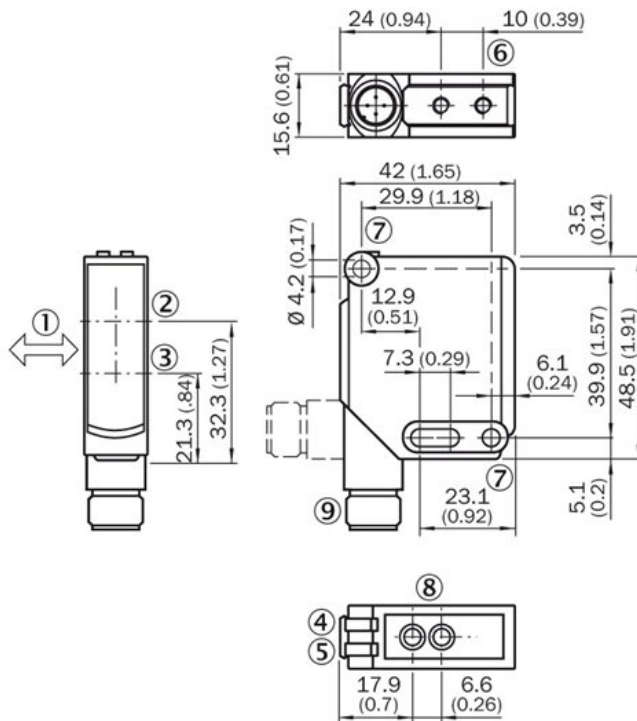
## Mechanics/electronics

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Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	$\leq 5\text{ Vpp}$ <sup>2)</sup>
Power consumption:	$\leq 55\text{ mA}$ <sup>3)</sup>
Output type:	NPN
Output function:	Complementary
Switching mode:	Light/dark switching
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 2.5\text{ V}$
Output current I <sub>max.</sub> :	100 mA
Response time:	$\leq 330\text{ }\mu\text{s}$ <sup>4)</sup>
Switching frequency:	1,500 Hz <sup>5)</sup>
Connection type:	M12, 4-pin male connector
Circuit protection:::	A, C, D <sup>6) 7) 8)</sup>
Protection class:	II
Weight:	120 g
Housing material:	Metal
Enclosure rating:	IP 66 IP 67
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

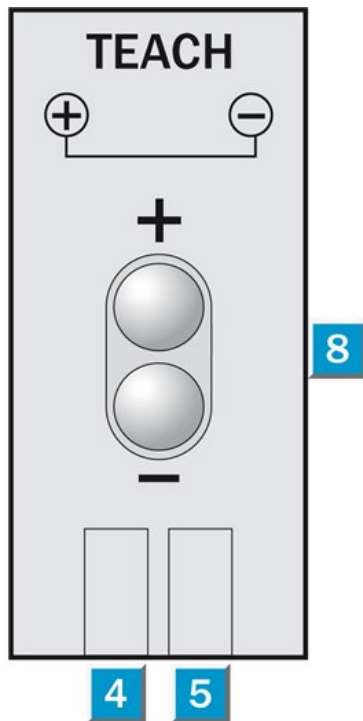
1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of  $V_S$  tolerances 3) Without load 4) Signal transit time with resistive load 5) With light/dark ratio 1:1 6) A =  $V_S$  connections reverse-polarity protected 7) C = interference suppression 8)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

## Dimensional drawing



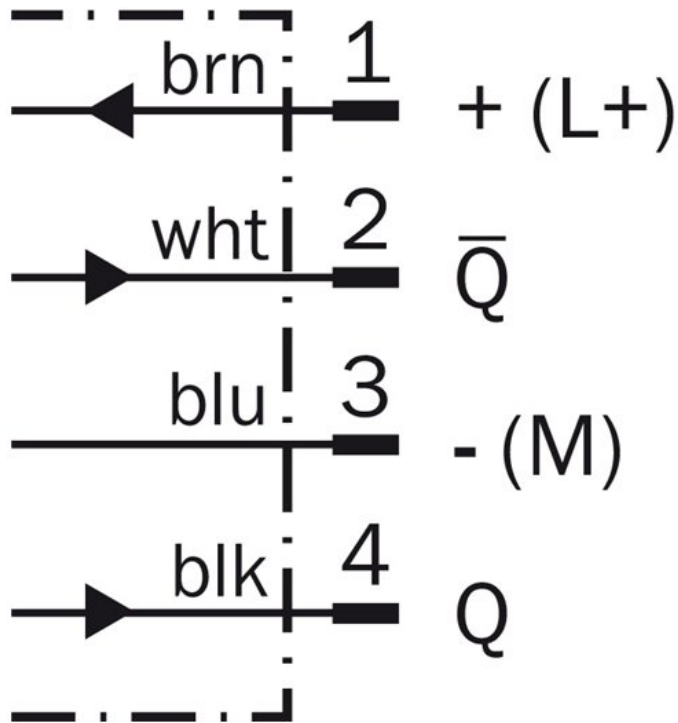
- |1| Standard direction of the material being scanned
- |2| Optical axis, receiver
- |3| Optical axis, sender
- |4| Status indicator LED green: power on
- |5| Status indicator LED,  
yellow: Status of received light beam
- |6| M4 threaded mounting hole, 4 mm deep
- |7| Mounting hole,  $\varnothing$  4.2 mm
- |8| Sensing range adjustment: double teach button
- |9| Connection

## Adjustments possible

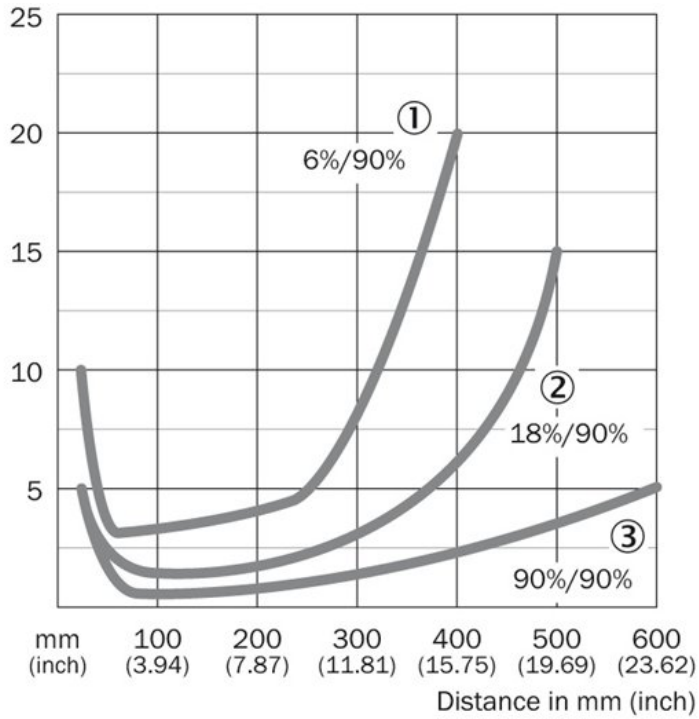


- |4| Green LED indicator: supply voltage active
- |5| LED indicator yellow: Light received
- |8| Sensing range adjustment: double teach button

Connection diagram

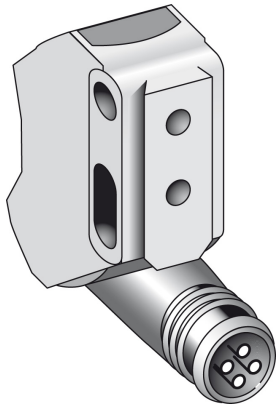


Characteristic curve

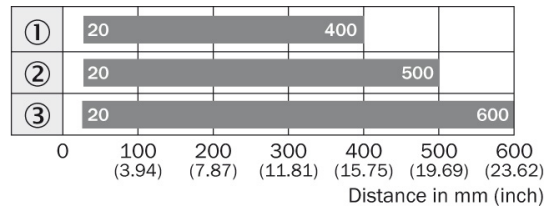


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

## Connection type



## Sensing range diagram



■ Sensing range

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