



# WTF12-3N2443

## W12-3

SMALL PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WTF12-3N2443	1094258

Included in delivery: BEF-KH-W12 (2)  
Other models and accessories → [www.sick.com/W12-3](http://www.sick.com/W12-3)

Detailed technical data

Features

Functional principle		Photoelectric proximity sensor
Functional principle detail		Foreground suppression
Sensing range max.		30 mm ... 500 mm <sup>1)</sup>
Sensing range		30 mm ... 500 mm
Emitted beam	Light source	LED <sup>2)</sup>
	Type of light	Visible red light
	Light spot size (distance)	Ø 7 mm (300 mm)
Key LED figures		
	Wave length	640 nm
Adjustment		Single teach-in button
Items supplied		2 x clamps BEF-KH-W12, incl. screws

<sup>1)</sup> Object with 90% remission (based on standard white, DIN 5033).  
<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

Safety-related parameters

MTTF <sub>D</sub>	672 years
DC <sub>avg</sub>	0 %

## Electronics

<b>Supply voltage <math>U_B</math></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	45 mA <sup>3)</sup>
<b>Protection class</b>	III
<b>Digital output</b>	
Type	NPN
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. $V_S / \leq 2,5 \text{ V}$
Output current $I_{\max}$	$\leq 100 \text{ mA}$
Response time	$\leq 330 \mu\text{s}$ <sup>4)</sup>
Switching frequency	1,500 Hz <sup>5)</sup>
<b>Output function</b>	Complementary
<b>Circuit protection</b>	A <sup>6)</sup> C <sup>7)</sup> D <sup>8)</sup>

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed  $U_Y$  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> A =  $V_S$  connections reverse-polarity protected.

<sup>7)</sup> C = interference suppression.

<sup>8)</sup> D = outputs overcurrent and short-circuit protected.

## Mechanics

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	15.6 mm x 48.5 mm x 42 mm
<b>Connection</b>	Male connector M12, 4-pin
<b>Material</b>	
Housing	Metal
Front screen	Plastic, PMMA
<b>Weight</b>	120 g

## Ambient data

<b>Enclosure rating</b>	IP66 IP67
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

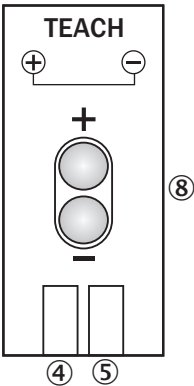
## Classifications

<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904

ECLASS 7.0	27270904
ECLASS 8.0	27270904
ECLASS 8.1	27270904
ECLASS 9.0	27270904
ECLASS 10.0	27270904
ECLASS 11.0	27270904
ECLASS 12.0	27270903
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
ETIM 8.0	EC002719
UNSPSC 16.0901	39121528

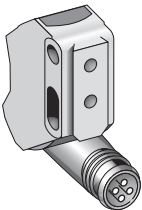
Adjustments

WTB12-3, WTF12-3, double teach-in button



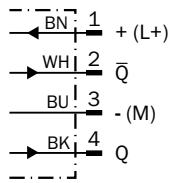
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑧ Sensing range adjustment: double teach-in button

Connection type



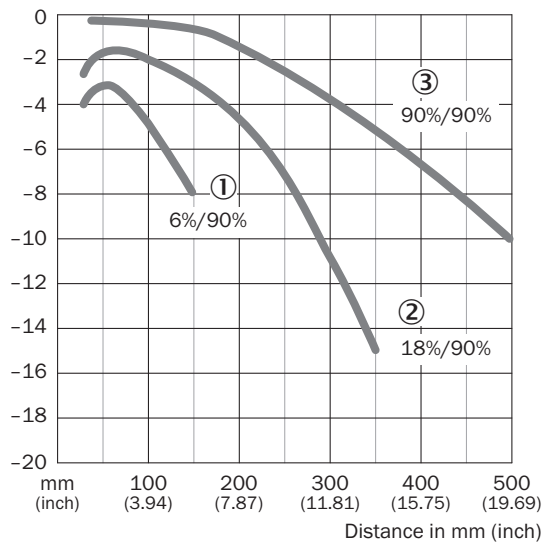
## Connection diagram

Cd-083



## Characteristic curve

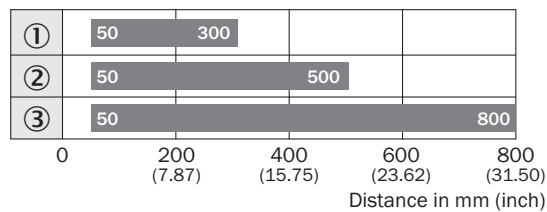
WTF12-3, 500 mm



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

## Sensing range diagram

WTF12-3, 500 mm

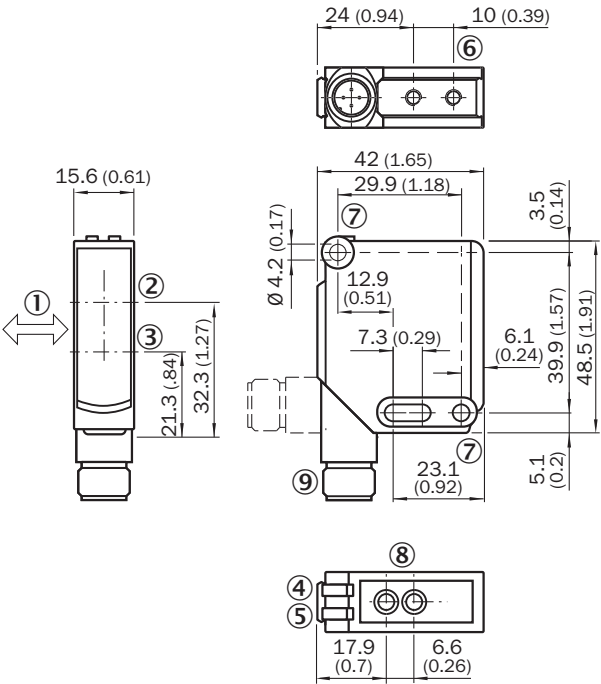


■ Sensing range

- ① Sensing range on black, 6% remission factor
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- ③ Sensing range on white, 90% remission factor

Dimensional drawing (Dimensions in mm (inch))


WTF12-3, Single teach-in button



- ① Standard direction of the material being detected  
 ② Optical axis, receiver  
 ③ Optical axis, sender  
 ④ LED indicator green: Supply voltage active  
 ⑤ LED indicator yellow: Status of received light beam  
 ⑥ M4 threaded mounting hole, 4 mm deep  
 ⑦ Mounting hole, Ø 4.2 mm  
 ⑧ Sensing range adjustment: potentiometer  
 ⑨ Connection

Recommended accessories

Other models and accessories → [www.sick.com/W12-3](http://www.sick.com/W12-3)

	Brief description	Type	Part no.
Others			
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 4-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 4-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A14-050VB3XLEAX	2096235
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Male connector, M12, 4-pin, straight, A-coded</li> <li><b>Description:</b> Unshielded</li> <li><b>Connection systems:</b> Screw-type terminals</li> <li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li> </ul>	STE-1204-G	6009932

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)