

WTF9-3P2461

**PHOTOELECTRIC SENSORS** 





# Ordering information

Туре	part no.
WTF9-3P2461	1052990

Other models and accessories → www.sick.com/W9

Illustration may differ



### Detailed technical data

#### **Features**

Functional principle	Photoelectric proximity sensor
Functional principle detail	Foreground suppression
Dimensions (W x H x D)	12.2 mm x 52.2 mm x 23.6 mm
Housing design (light emission)	Rectangular
Mounting hole	МЗ
Sensing range max.	20 mm 350 mm <sup>1)</sup>
Sensing range	20 mm 200 mm
Type of light	Visible red light
Light source	PinPoint LED <sup>2)</sup>
Light spot size (distance)	Ø 4.5 mm (75 mm)
Wave length	650 nm
Adjustment	Potentiometer, 5 turns

 $<sup>^{1)}</sup>$  Object with 90% remission (based on standard white, DIN 5033).

 $<sup>^{2)}</sup>$  Average service life: 100,000 h at TU = +25 °C.

### Mechanics/electronics

Supply voltage U <sub>B</sub>	10 V DC 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>
Current consumption	30 mA <sup>3)</sup>
Switching output	PNP <sup>4)</sup>
Output function	Complementary
Switching mode	Light/dark switching <sup>4)</sup>
Output current I <sub>max.</sub>	$\leq$ 100 mA $^{5)}$
Response time	< 0.333 ms <sup>6)</sup>
Switching frequency	1,500 Hz <sup>7)</sup>
Connection type	Male connector M12, 4-pin
Circuit protection	A <sup>8)</sup> B <sup>9)</sup> C <sup>10)</sup>
Protection class	III
Weight	13 g
Housing material	Plastic, VISTAL®
Optics material	Plastic, PMMA
Enclosure rating	IP66 IP67 IP69K
Ambient operating temperature	-40 °C +60 °C
Ambient temperature, storage	-40 °C +75 °C
UL File No.	NRKH.E181493

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

### Safety-related parameters

MTTF <sub>D</sub>	1,030 years
<b>DC</b> <sub>avg</sub>	0 %
$T_{\mathrm{M}}$ (mission time)	20 years

### Certificates

EU declaration of conformity	✓
UK declaration of conformity	1
ACMA declaration of conformity	1
Moroccan declaration of conformity	✓

 $<sup>^{2)}\,\</sup>mbox{May}$  not fall below or exceed  $\mbox{U}_{\mbox{\scriptsize V}}$  tolerances.

<sup>3)</sup> Without load.

<sup>&</sup>lt;sup>4)</sup> Q = light switching.

 $<sup>^{5)}</sup>$  At and above Tu 50 °C, a max. load current of Imax. = 50 mA is permitted.

<sup>6)</sup> Signal transit time with resistive load.

<sup>7)</sup> With light/dark ratio 1:1.

 $<sup>^{8)}</sup>$  A = V<sub>S</sub> connections reverse-polarity protected.

 $<sup>^{9)}</sup>$  B = inputs and output reverse-polarity protected.

 $<sup>^{10)}</sup>$  C = interference suppression.

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### PHOTOELECTRIC SENSORS

China RoHS	✓
ECOLAB certificate	✓
cULus certificate	✓
Photobiological safety (DIN EN 62471) certificate	<b>✓</b>

### Classifications

ECLASS 5.0	27270904
ECLASS 5.1.4	27270904
ECLASS 6.0	27270904
ECLASS 6.2	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 possible Potentiometer

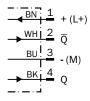


- ④ LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on
- Adjustment of sensing range

### Connection type

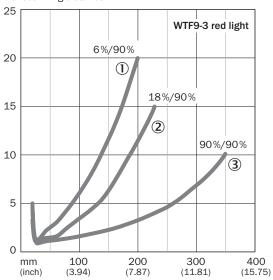


### Connection diagram Cd-084

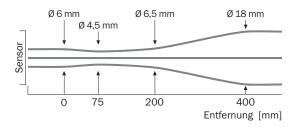


### Characteristic curve

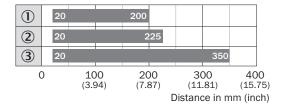




# Light spot size WT9-3, red light, 350 mm



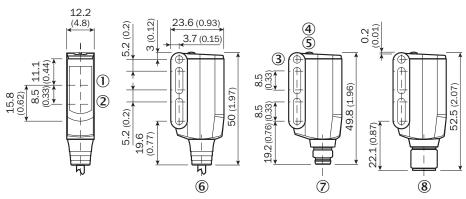
### Sensing range diagram WT9-3, red light, 350 mm



#### Sensing range

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

### Dimensional drawing WT9-3



#### Dimensions in mm (inch)

- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- 3 Mounting hole M3 (Ø 3.1 mm)
- 4 LED indicator yellow: Status of received light beam
- ⑤ LED indicator green: power on
- 6 Connection cable 2 m
- 7 male connector M8, 4-pin
- ® male connector M12, 4-pin

### Recommended accessories

Other models and accessories → www.sick.com/W9

	Brief description	Туре	part no.
Mounting sys	tems		
6	<ul> <li>Description: Plate N08 for universal clamp bracket</li> <li>Material: Steel, zinc diecast</li> <li>Details: Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li> <li>Items supplied: Universal clamp (5322626), mounting hardware</li> <li>Usable for: W100, W150, W4S, W4F, W8, W9-3, W8G, W8 Laser, W8 Inox, G6, W100 Laser, W100-2, W10, G6 Inox, RAY10, W4SLG-3, W9, GR18, MultiPulse, Reflex Array, MultiLine, LUT3, KT5, KT8, KT10, CS8</li> </ul>	BEF-KHS-N08	2051607
W 1	<ul> <li>Description: Mounting bracket</li> <li>Material: Steel</li> <li>Details: Steel, zinc coated</li> <li>Items supplied: Mounting hardware included</li> <li>Suitable for: W9-3</li> </ul>	BEF-WN-W9-2	2022855
6	Description: Plate N11N for universal clamp bracket     Material: Stainless steel     Details: Stainless steel 1.4571 (sheet), Stainless steel 1.4408 (clamp)     Items supplied: Universal clamp (5322627), mounting hardware     Usable for: DeltaPac, Glare, WTD20E	BEF-KHS-N11N	2071081
connectors ar	nd cables		
0	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones	YF8U14-050VA3XLEAX	2095889
	<ul> <li>Connection type head A: Male connector, M8, 4-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: 0.14 mm² 0.5 mm²</li> </ul>	STE-0804-G	6037323
	Connection type head A: Female connector, M8, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF8U14-050UA3XLEAX	2094792
<b>P</b>	Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235
The state of the s	<ul> <li>Connection type head A: Male connector, M12, 4-pin, straight, A-coded</li> <li>Description: Unshielded</li> <li>Connection systems: Screw-type terminals</li> <li>Permitted cross-section: ≤ 0.75 mm²</li> </ul>	STE-1204-G	6009932
No.	Connection type head A: Female connector, M12, 4-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 4-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A14-050UB3XLEAX	2095608

# 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

