

PHOTOELECTRIC SENSORS



**WTF9-3P2461**  
W9-3

**SENSORS**  
INCORPORATED

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**SICK**  
Sensor Intelligence.

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Illustration may differ



Ordering information

Type	Part no.
WTF9-3P2461	1052990

Other models and accessories → [www.sick.de/W9-3](http://www.sick.de/W9-3)

Detailed technical data

Features

Sensor/detection principle	Photoelectric proximity sensor, 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	M3
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 % reflectance (referred to standard white, DIN 5033)

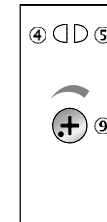
<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC <sup>1)</sup>
Ripple	< 5 V <sub>pp</sub> <sup>2)</sup>
Power consumption	≤ 30 mA <sup>3)</sup>
Output type	PNP <sup>4)</sup>
Output function	Complementary
Switching mode	Light/dark switching <sup>4)</sup>
Output current I <sub>max.</sub>	≤ 100 mA <sup>5)</sup>
Response time	< 0.333 ms <sup>6)</sup>
Switching frequency	1,500 Hz <sup>7)</sup>
Connection type	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	VISTAL@plastic
Optics material	Plastic, PMMA
Enclosure rating	IP 66 IP 67 IP 69K
Ambient operating temperature	-40 °C ... +60 °C
Ambient storage temperature	-40 °C ... +75 °C
UL File No.	NRKH.E181493

Adjustments possible

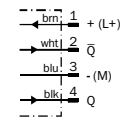
Potentiometer



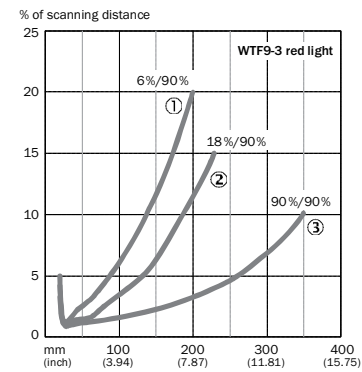
- ④ Status indicator LED, yellow: Status of received light beam
- ⑤ LED indicator green: power on
- ⑨ Sensing range adjustment

Connection diagram

Cd-084



Characteristic curve

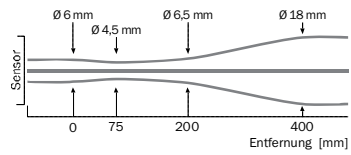


1) Limit values when operated in short-circuit protected network: max. 8 A.  
 2) May not exceed or fall below U<sub>v</sub> tolerances.  
 3) Without load.  
 4) Q = light switching.  
 5) At and above T<sub>u</sub> 50 °C, a max. load current of I<sub>max.</sub> = 50 mA is permitted.  
 6) Signal transit time with resistive load.  
 7) With light/dark ratio 1:1.  
 8) A = V<sub>G</sub> connections reverse polarity protected.  
 9) B = inputs and output reverse polarity protected.  
 10) C = interference suppression.

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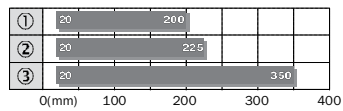
Light spot size

WTF9-3, red light, 350 mm



Sensing range diagram

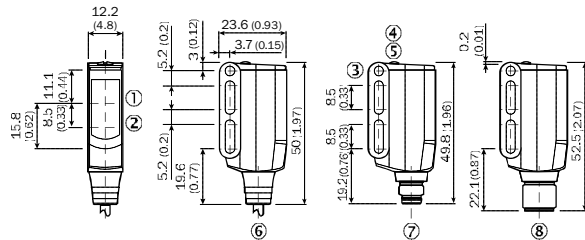
WTF9-3, red light, 350 mm



- 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 (Dimensions in mm (inch))

WTF9-3



- ① Center of optical axis, receiver
- ② Center of optical axis, sender
- ③ Mounting hole M3 (Ø 3.1 mm)
- ④ Status indicator LED, yellow: Status of received light beam
- ⑤ LED indicator green: power or
- ⑥ Connection cable 2 m
- ⑦ Connector M8, 4-pin
- ⑧ Connector M12, 4-pin

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Recommended accessories

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	Brief description	Type	Part no.
<b>Universal bar clamp systems</b>			
	Plate N08 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N08	2051607
<b>Mounting brackets and mounting plates</b>			
	Mounting bracket, steel, zinc coated, mounting hardware included	BEF-WN-W9-2	202285E
	Adapter plate, Stainless steel	BEF-AP-W9	2022734
	Fastening plate with threaded sleeve M3, PMMA, Brass (Br)	BEF-GPM3-W9	4066039
<b>Masks</b>			
	Mask card, vertical/horizontal slots, slot width: 0.5 mm / 1.0 mm / 1.5 mm / 2.0 mm	BL-9-2	4033253

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