

ONLINE DATA SHEET
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Photoelectric sensors
W9-3, Photoelectric proximity sensor, Background suppression

WTB9-3P3161



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Model Name > WTB9-3P3161
Part No. > 1052931





Illustration may differ

At a glance

- High-performance proximity sensing in ultra-rugged VISTAL™ housing
- PinPoint LED for highly visible and precise light spot
- Two emitter LEDs for best-in-class background suppression
- Variable mounting with M3 or M4 hole pattern
- Wide range of connection options

Your benefits

- Rugged VISTAL™ housing provides reliable installation and operation
- Reliable object detection in all situations using best-in-class technology
- Quick and easy alignment with reliable object detection due to the highly visible PinPoint light spot
- M3 slotted hole mounting for multiple mounting possibilities
- One housing with a wide range of options makes machine integration easy
- Variety of accessories for quick and easy mounting

Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	12.2 mm x 50 mm x 23.6 mm
Housing design (light emission):	Rectangular
Mounting hole:	M3
Sensing range max.:	20 mm ... 350 mm [1]
Sensing range:	20 mm ... 200 mm [2]
Type of light:	Visible red light
Light source:	PinPoint LED [3]
Adjustment:	Potentiometer, 5 turns
Light spot size (distance):	Ø 4.5 mm (75 mm)

[1] Object with 90 % reflectance (referred to standard white, DIN 5033) [2] Object with 6 % reflectance (referred to standard white, DIN 5033) [3] Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

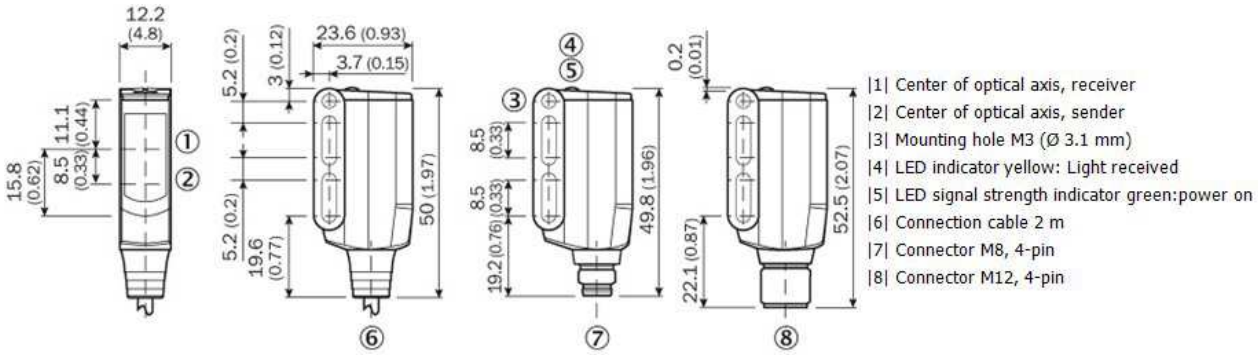
Supply voltage:	10 V DC ... 30 V DC [1]
Ripple:	< 5 Vpp [2]
Power consumption:	≤ 30 mA [3]
Output type:	PNP [4]
Switching mode:	Light switching [5]

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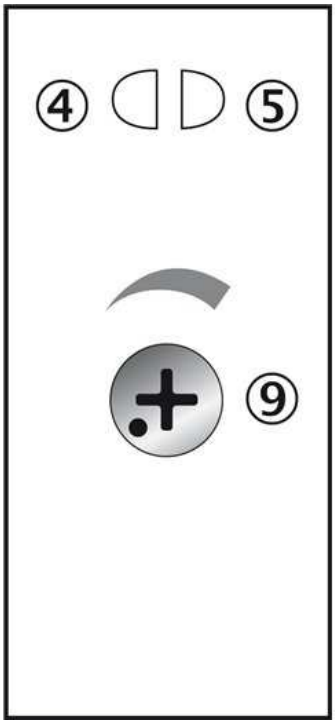
Output current Imax.:	≤ 100 mA [6)]
Response time:	< 0.333 ms [7)]
Switching frequency:	1,500 Hz [8)]
Connection type:	Cable with connector M8, 3-pin, 120 mm [9)]
Cable material:	PVC
Conductor cross-section:	0.14 mm²
Circuit protection:::	A, B, C [10) 11) 12)]
Protection class:	III
Weight:	80 g
Polarisation filter:	-
Optics material:	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
Housing material:	Plastic, VISTAL

[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) 5)] Q = light-switching [6)] As of Tu 50 °C, a max. load current IImax. = 50 mA is permitted [7)] Signal transit time with resistive load [8)] With light/dark ratio 1:1 [9)] Do not bend below 0 °C [10)] A = V_S connections reverse-polarity protected [11)] B = inputs and output reverse-polarity protected [12)] C = interference suppression

Dimensional drawing

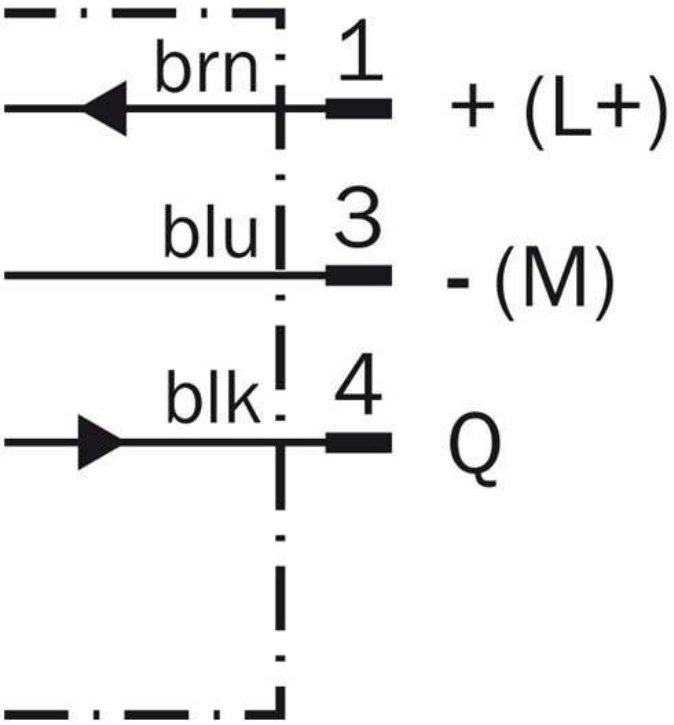


Adjustments possible



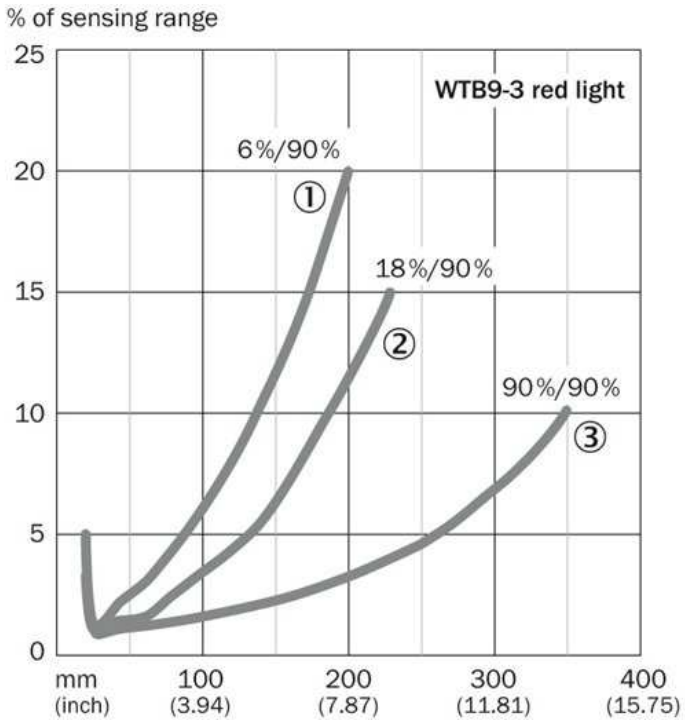
|4| LED indicator yellow: Light received
|5| LED signal strength indicator green:power on
|9| Sensing range adjustment

Connection diagram



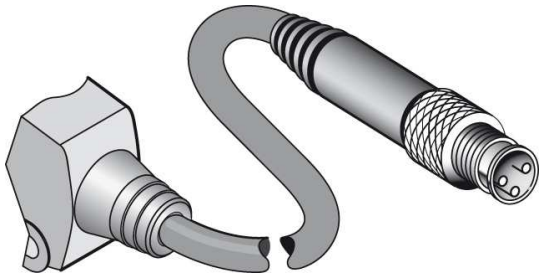
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Characteristic curve

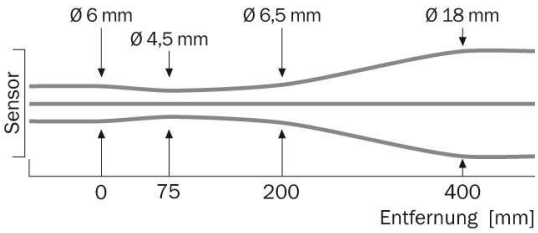


|1| Sensing range on black, 6 % remission
|2| Sensing range on gray, 18 % remission
|3| Sensing range on white, 90 % remission

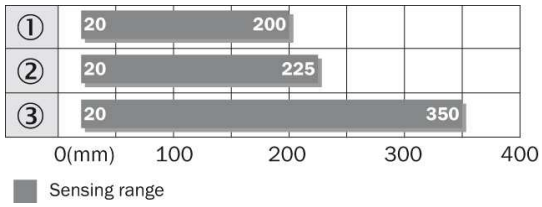
Connection type



Light spot size



Sensing range diagram



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