



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

WTB12-3F2441S63



Model Name > **WTB12-3F2441S63**
Part No. > **1059689**



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 ¹⁾
Sensing range:	20 mm ... 600 mm
Type of light:	Infrared light
Light source:	LED ²⁾
Wave length:	850 nm
Adjustment:	Potentiometer, 5-turn
Light spot size (distance):	15 x 15 mm (200 mm)

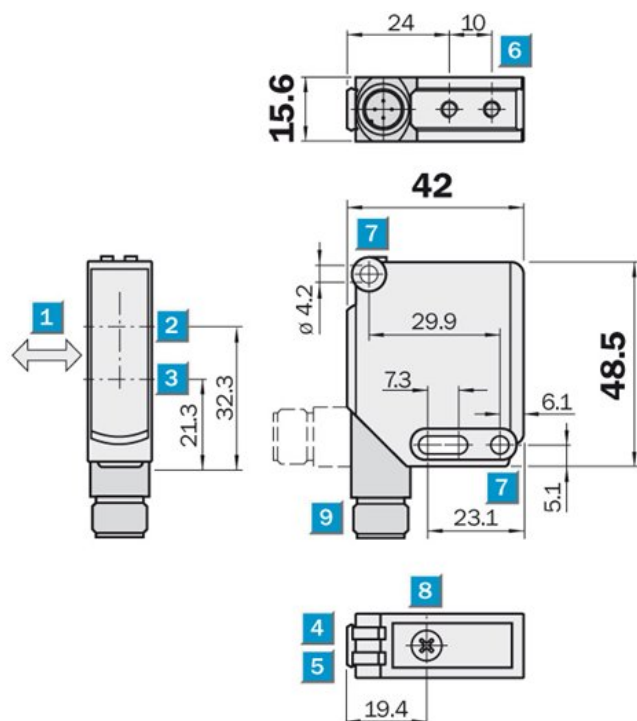
¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033) ²⁾ Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC ¹⁾
Ripple:	$\leq 5 \text{ V}_{pp}$ ²⁾
Power consumption:	$\leq 55 \text{ mA}$ ³⁾
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/dark-switching
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 2.5 \text{ V}$
Output current $I_{max.}$:	100 mA
Response time:	$\leq 330 \mu\text{s}$ ⁴⁾
Switching frequency:	1,500 Hz ⁵⁾
Connection type:	Cable, 4-wire, 2 m ⁶⁾
Cable material:	PVC
Conductor cross-section:	0.25 mm ²
Circuit protection:::	A, C, D ⁷⁾ ⁸⁾ ⁹⁾
Protection class:	II
Weight:	200 g
Special device:	-
Housing material:	Metal
Enclosure rating:	IP 66 IP 67 IP 69K
Special features:	Sensing range 80 mm, yarn string detection
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

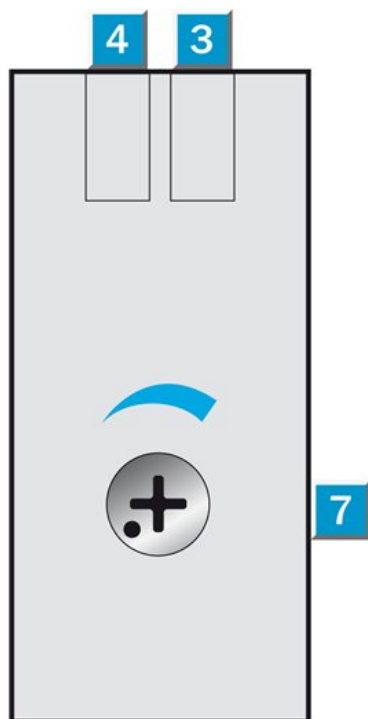
¹⁾ Limit values, operation in short-circuit protected network max. 8 A ²⁾ May not exceed or fall short of V_S tolerances ³⁾ Without load ⁴⁾ Signal transit time with resistive load ⁵⁾ With light/dark ratio 1:1 ⁶⁾ Do not bend below 0 °C ⁷⁾ A = V_S connections reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ D = outputs overcurrent and short-circuit protected

Dimensional drawing



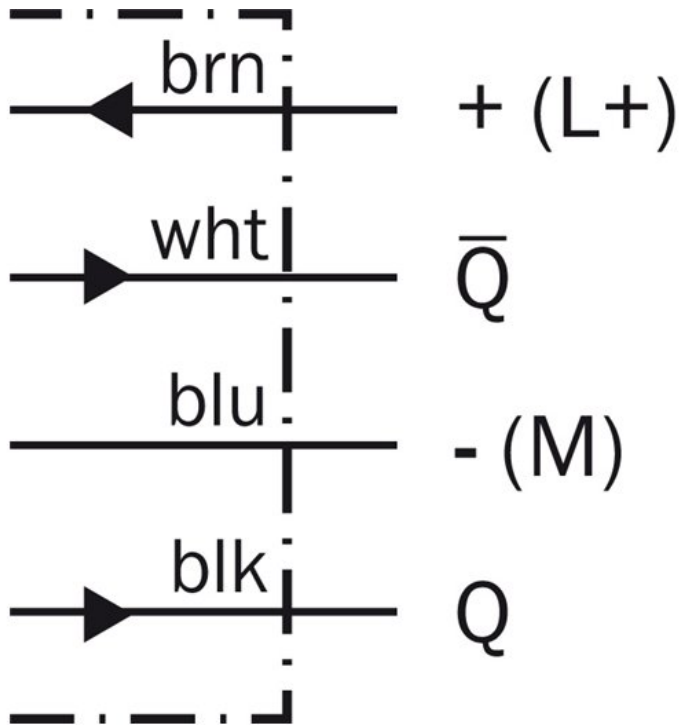
- [1] Standard direction of the material being scanned
- [2] Optical axis, receiver
- [3] Optical axis, sender
- [4] Status indicator LED green: power on
- [5] Status indicator LED,
yellow: Status of received light beam
- [6] M4 threaded mounting hole, 4 mm deep
- [7] Mounting hole, Ø 4.2 mm
- [8] Sensing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

Adjustments possible

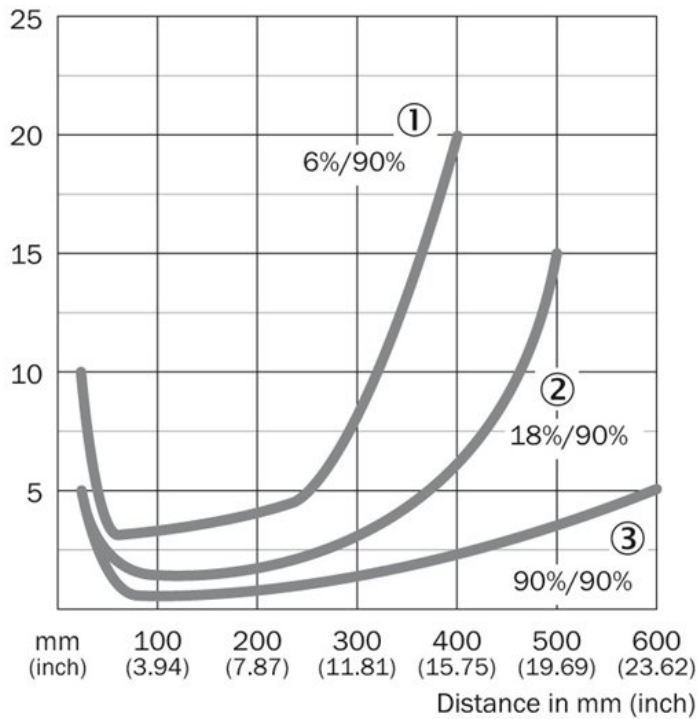


- [4] Green LED indicator: supply voltage active
- [5] LED indicator yellow: Light received
- [8] Sensing range adjustment: potentiometer

Connection diagram

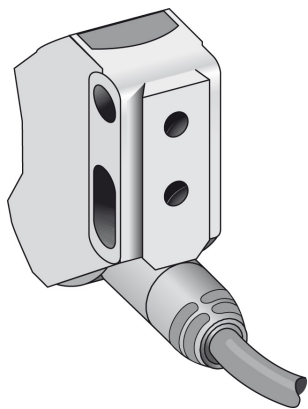


Characteristic curve

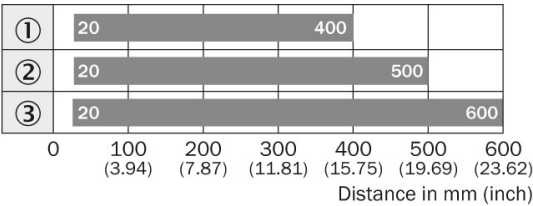


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

Connection type



Sensing range diagram



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

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