



Photoelectric sensors  
W27-3, Photoelectric proximity sensor,  
Background suppression

WTB27-3P2441S13



**Model Name** > [WTB27-3P2441S13](#)  
**Part No.** > [1028207](#)



*Illustration may differ*

**At a glance**

- Precise background suppression with no scanning distance drift
- PinPoint technology: intense red LED with consistent light spot
- Resistant to ambient light, optical reflections, and crosstalk from other photoelectric devices
- Sensing range adjustment with potentiometer or teach-in
- Operating temperature: -40 °C to +60 °C
- Flexible sensing ranges and hysteresis settings
- Key lock function, remote teach, quality monitoring
- Diagnostics messages (contamination and short-circuit)

**Your benefits**

- PinPoint technology can replace laser photoelectric proximity sensors in some applications. No laser safety regulations and a longer operating life due to PinPoint technology
- Less downtime due to ASIC (application-specific integrated circuit) chip technology by SICK
- Resistant to ambient light, optical reflections, and immune to crosstalk from other photoelectric devices, reducing false detection
- Durable housing with reinforced mounting holes withstands harsh conditions
- Reliable operation in harsh environments with temperatures as low as -40 °C
- Quick and easy format adjustment
- Easy monitoring of sensor status
- Key lock function and parameter download prevent incorrect settings
- Simple sensor cloning



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	24.6 mm x 80.6 mm x 54 mm
Housing design (light emission):	Rectangular
Sensing range max.:	30 mm ... 1,100 mm <sup>1)</sup>
Sensing range:	100 mm ... 1,100 mm
Type of light:	Visible red light
Light source:	LED <sup>2)</sup>
Wave length:	660 nm
Special features:	For extreme shock loads
Adjustment:	Potentiometer
Light spot size (distance):	Ø 15 mm (500 mm)

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

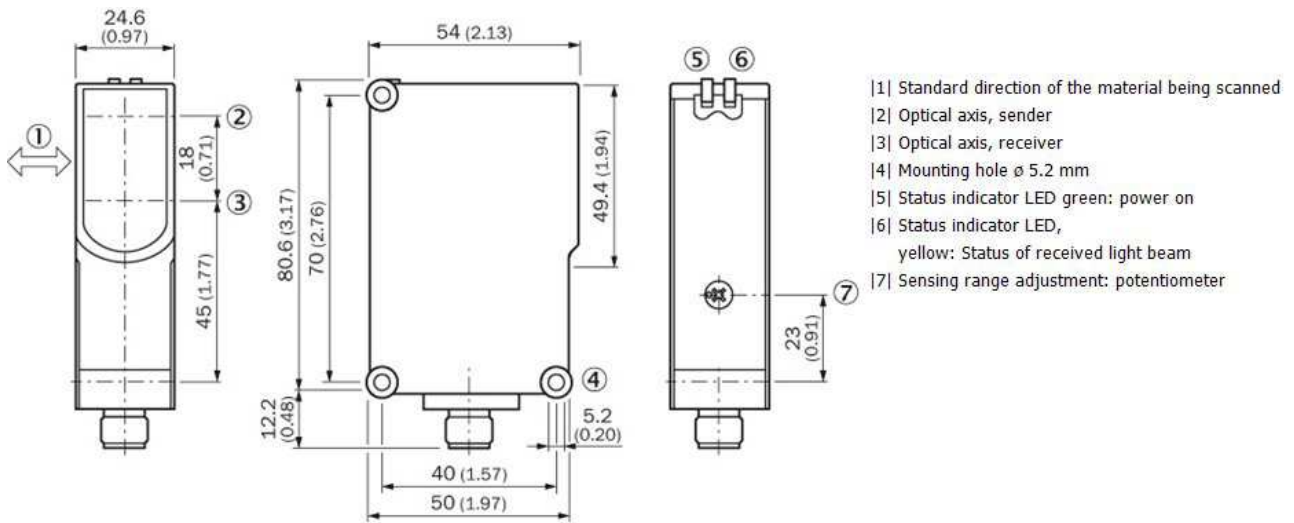
## Mechanics/electronics

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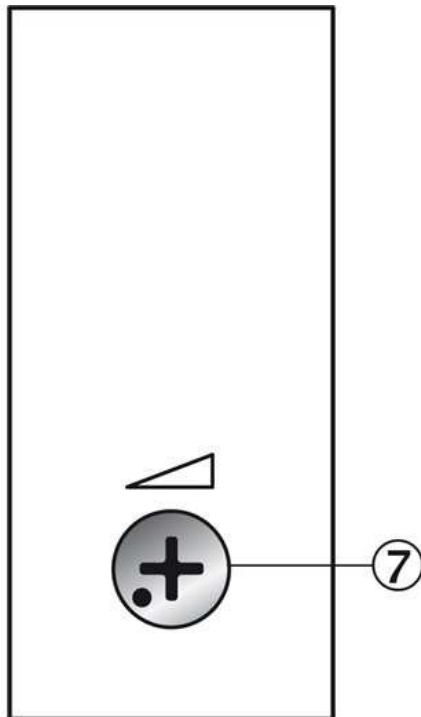
Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Power consumption:	$\leq 35\text{ mA}$ <sup>2)</sup>
Output type:	PNP
Output function:	Complementary
Switching mode:	Light/dark switching
Signal voltage PNP HIGH/LOW:	Approx. $V_S - 2.5\text{ V}/0\text{ V}$
Output current $I_{max.}$ :	$\leq 100\text{ mA}$
Response time:	$\leq 1.5\text{ ms}$ <sup>3)</sup>
Switching frequency:	350 Hz <sup>4)</sup>
Connection type:	Connector M12, 4-pin
Circuit protection:::	A, B, C <sup>5) 6) 7)</sup>
Protection class:	II <sup>8)</sup>
Weight:	100 g
Special device:	✓
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 69K
Ambient operating temperature:	$-40\text{ °C} \dots 60\text{ °C}$
Ambient storage temperature:	$-40\text{ °C} \dots 75\text{ °C}$
UL File No.:	NRKH.E181493 & NRKH7.E181493

1) Limit values, operation in short-circuit protected network max. 8 A 2) Without load 3) Signal transit time with resistive load 4) With light/dark ratio 1:1 5)  $A = V_S$   
connections reverse-polarity protected <sup>6)</sup> B = inputs and output reverse-polarity protected <sup>7)</sup> C = interference suppression <sup>8)</sup> Reference voltage 50 V DC

## Dimensional drawing

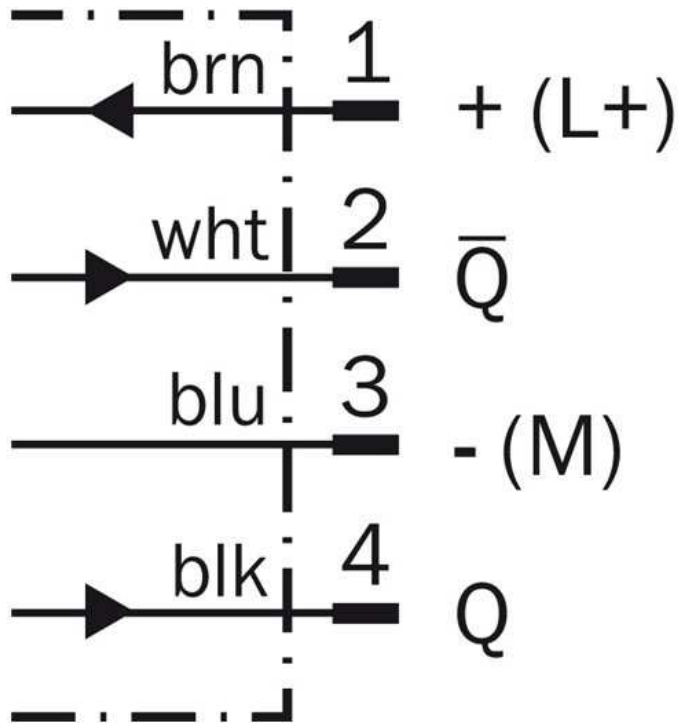


## Adjustments possible

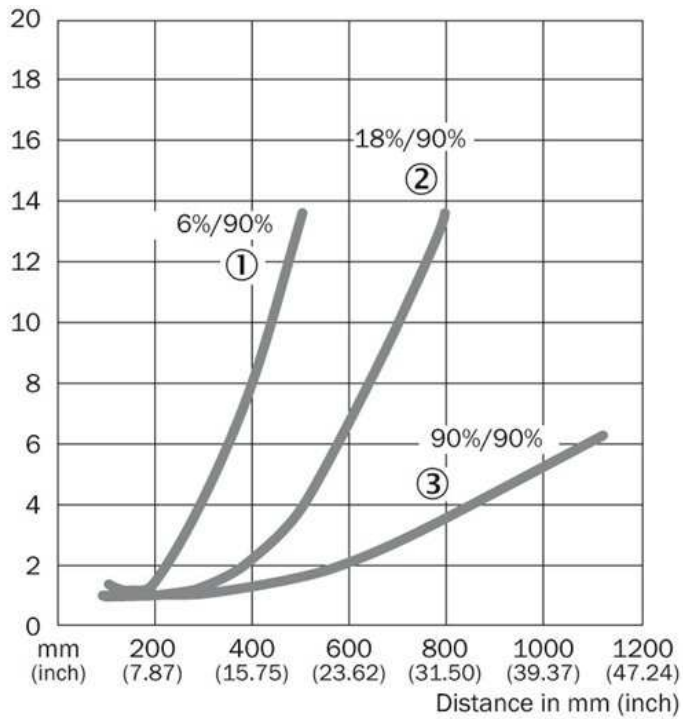


|1| Potentiometer

Connection diagram



Characteristic curve

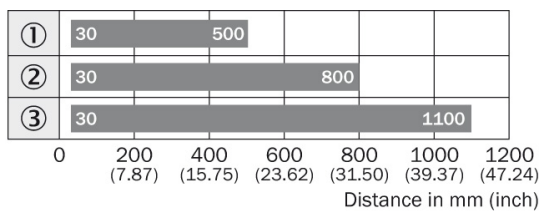


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

## 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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