



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

WTB27-3F2641



**Model Name** > [WTB27-3F2641](#)  
**Part No.** > [1027746](#)



*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
Time type:	Switch on delay time delay off switch on delay and time delay off
Delay time:	0.5 ... 10 s, Adjustable via time delay selector switch: 0.02 ... 0.5 s

Adjustment: Potentiometer  
Light spot size (distance): Ø 15 mm (500 mm)

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

## Mechanics/electronics

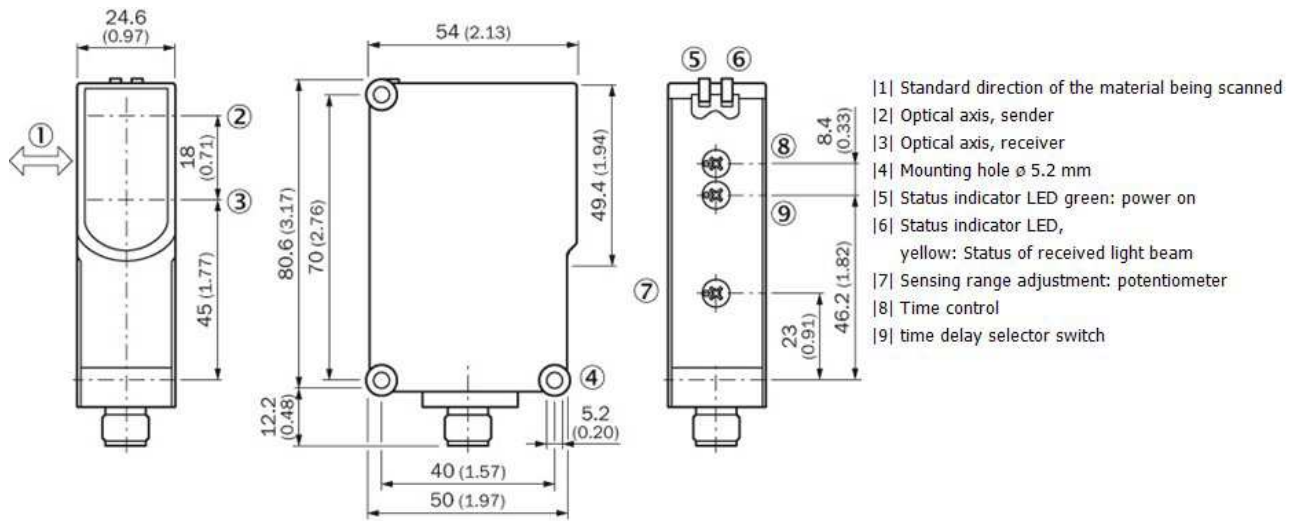
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Supply voltage: 10 V DC ... 30 V DC <sup>1)</sup>  
Ripple:  $\leq 5\text{ Vpp}$  <sup>2)</sup>  
Power consumption:  $\leq 35\text{ mA}$  <sup>3)</sup>  
Output type: PNP  
Output function: Complementary  
Switching mode: Light/dark switching  
Signal voltage PNP HIGH/LOW: Approx.  $V_S - 2.5\text{ V}/0\text{ V}$   
Output current  $I_{\text{max}}$ :  $\leq 100\text{ mA}$   
Response time:  $\leq 1.5\text{ ms}$  <sup>4)</sup>  
Switching frequency: 350 Hz <sup>5)</sup>  
Connection type: Connector Q6, 6-pin, DC-coding  
Circuit protection::: A, B, C <sup>6) 7) 8)</sup>  
Protection class: II <sup>9)</sup>  
Weight: 100 g  
Housing material: ABS, Plastic  
Optics material: PMMA  
Enclosure rating: IP 65  
Test input sender off: TE to 0 V  
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

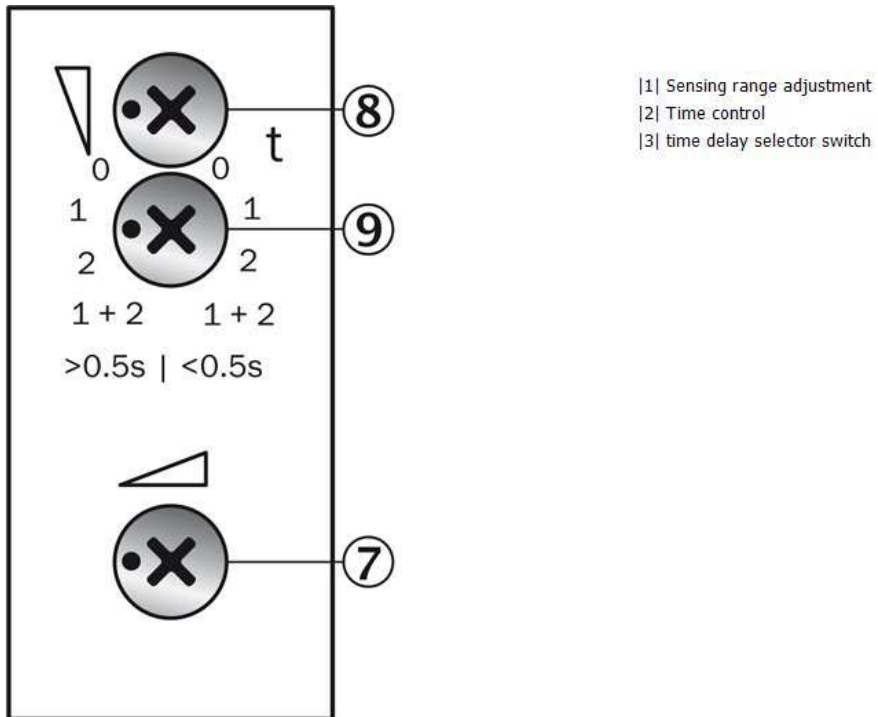
<sup>1)</sup> Limit values, operation in short-circuit protected network max. 8 A <sup>2)</sup> May not exceed or fall short of  $V_S$  tolerances <sup>3)</sup> Without load <sup>4)</sup> Signal transit time with resistive load <sup>5)</sup> With light/dark ratio 1:1 <sup>6)</sup> A =  $V_S$  connections reverse-polarity protected <sup>7)</sup> B = inputs and output reverse-polarity protected <sup>8)</sup> C = interference suppression <sup>9)</sup>

Reference voltage 50 V DC

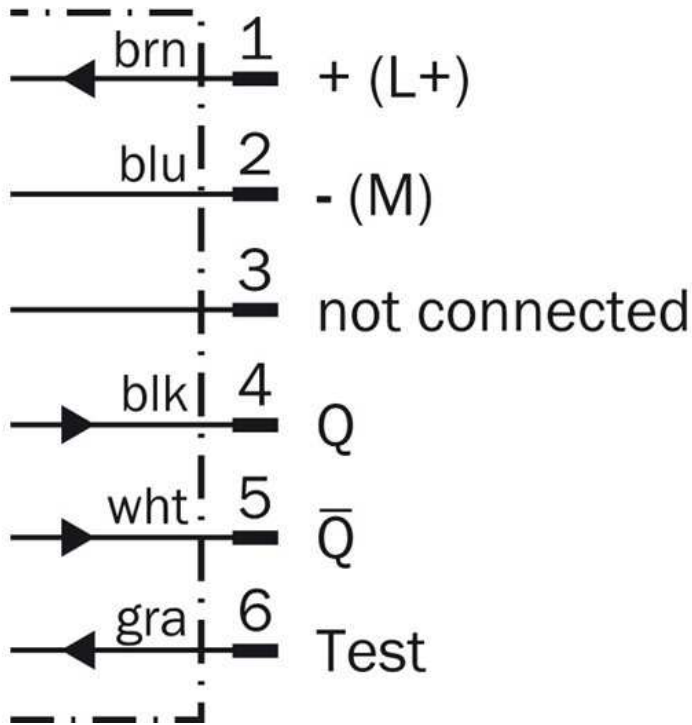
## Dimensional drawing



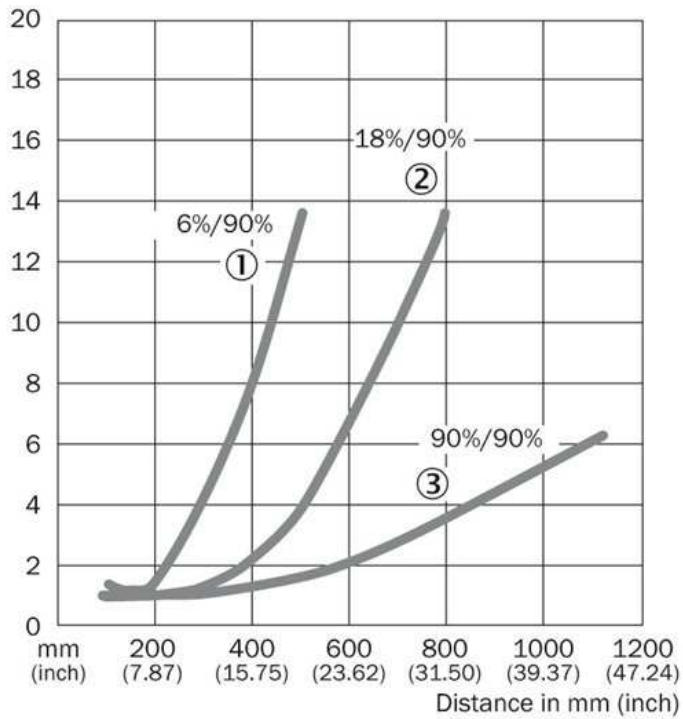
## Adjustments possible



Connection diagram



Characteristic curve

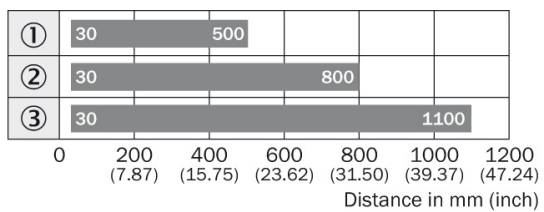


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

## 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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