



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

WTB27-3F2411



**Model Name** > [WTB27-3F2411](#)  
**Part No.** > [1027753](#)



*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 ... 1,600 mm <sup>1)</sup>                                        |
| Sensing range:                   | 100 mm ... 1,600 mm                                                     |
| Type of light:                   | Infrared light                                                          |
| Light source:                    | LED <sup>2)</sup>                                                       |
| Wave length:                     | 880 nm                                                                  |
| Time type:                       | Switch on delay<br>time delay off<br>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 25 mm (800 mm)

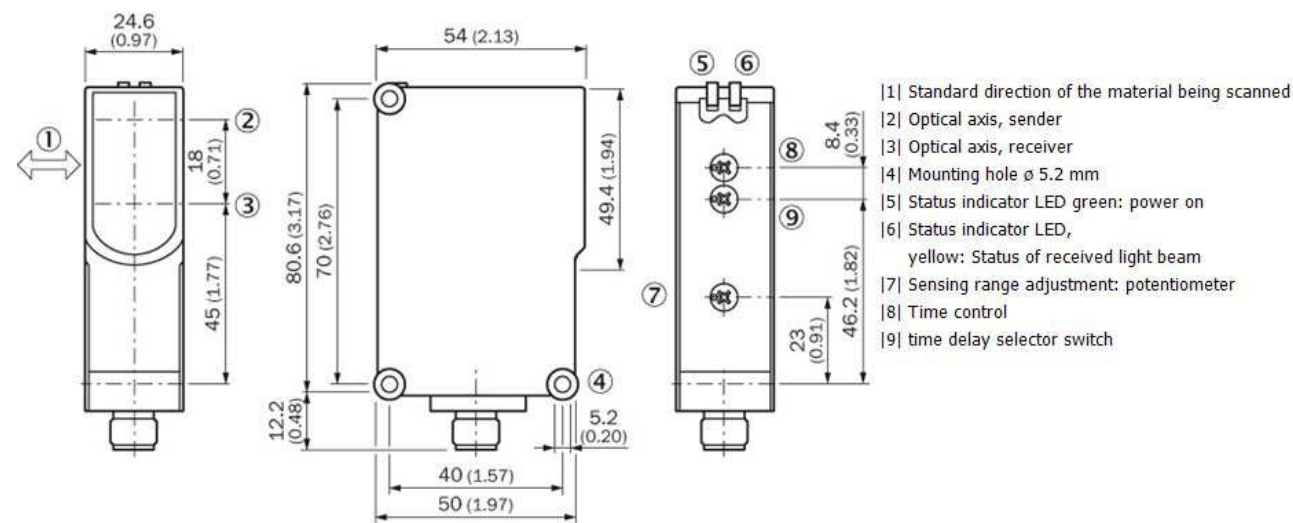
<sup>1)</sup> Object with 90 % reflectance (referred to standard white DIN 5033) <sup>2)</sup> Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

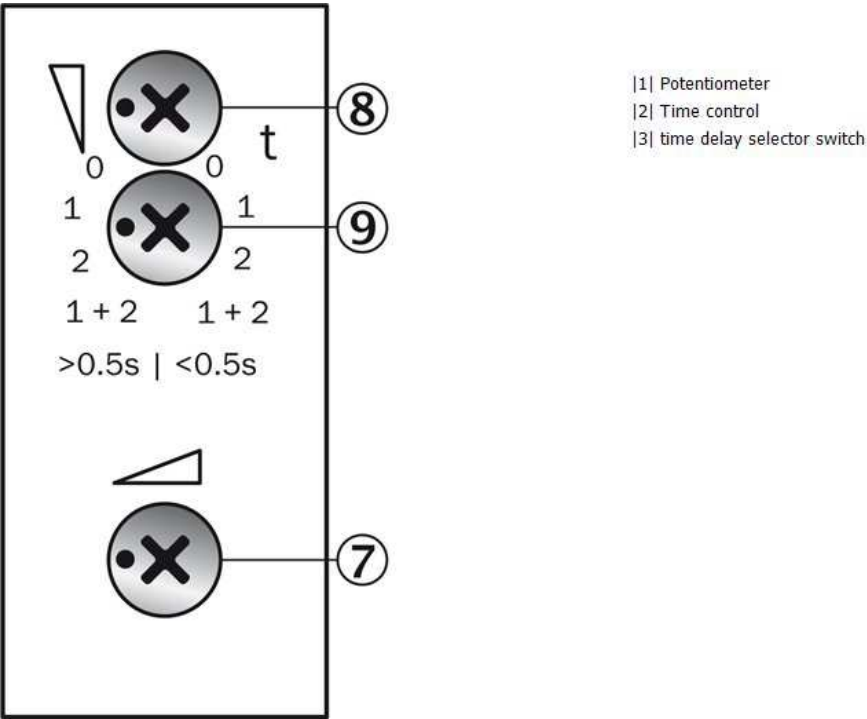
Supply voltage: 10 V DC ... 30 V DC <sup>1)</sup>  
Power consumption: ≤ 40 mA <sup>2)</sup>  
Output type: PNP  
Output function: Complementary  
Switching mode: Light/dark switching  
Signal voltage PNP HIGH/LOW: Approx.  $V_S - 2.5\text{ V} / 0\text{ V}$   
Output current I<sub>max.</sub>: ≤ 100 mA  
Response time: ≤ 1.5 ms <sup>3)</sup>  
Switching frequency: 350 Hz <sup>4)</sup>  
Connection type: Connector M12, 4-pin  
Circuit protection::: A, B, C <sup>5)</sup> <sup>6)</sup> <sup>7)</sup>  
Protection class: II <sup>8)</sup>  
Weight: 100 g  
Housing material: ABS, Plastic  
Optics material: PMMA  
Enclosure rating: IP 69K  
Ambient operating temperature: -40 °C ... 60 °C  
Ambient storage temperature: -40 °C ... 75 °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> Without load <sup>3)</sup> Signal transit time with resistive load <sup>4)</sup> With light/dark ratio 1:1 <sup>5)</sup>  $A = V_S$   
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

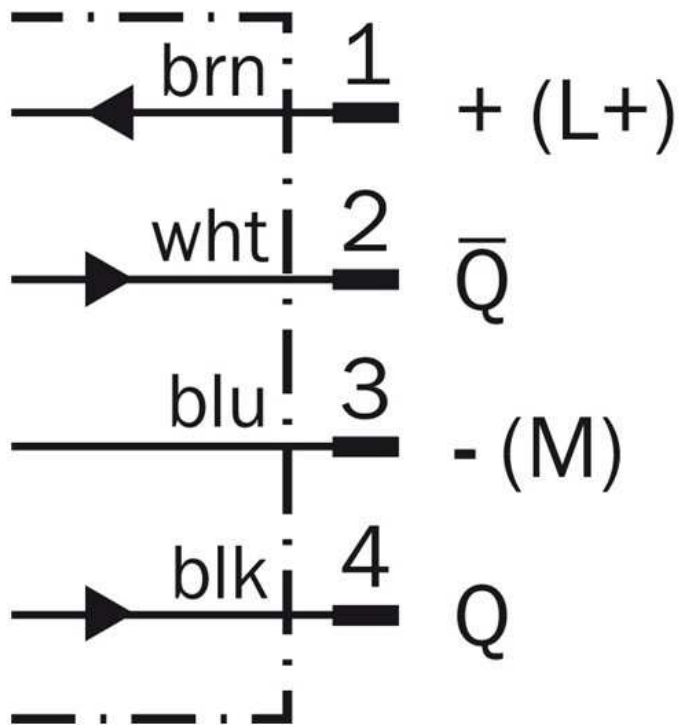
Dimensional drawing



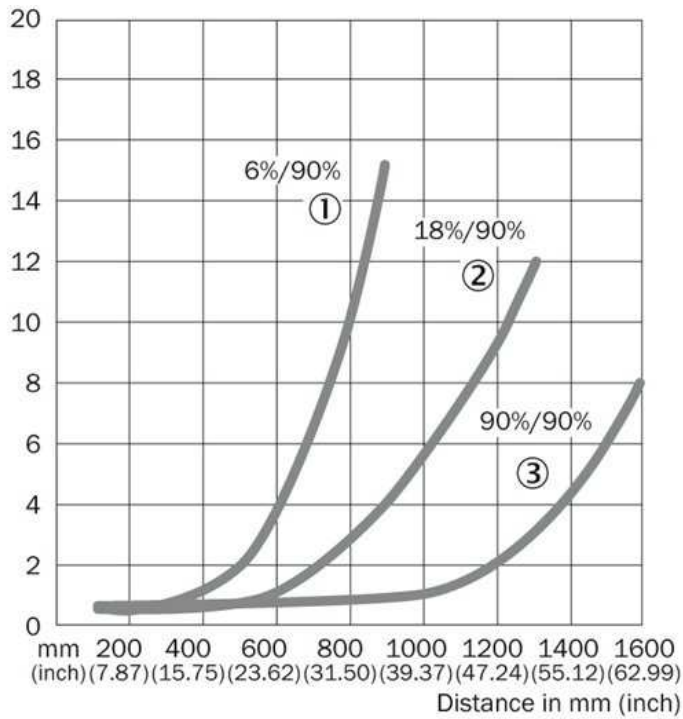
Adjustments possible



## Connection diagram

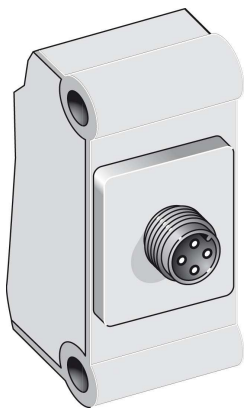


## Characteristic curve

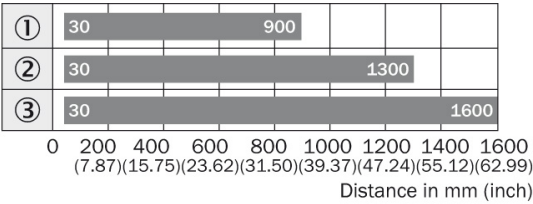


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

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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