



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

WTB27-3P3461



**Model Name** > [WTB27-3P3461](#)  
**Part No.** > [1048546](#)



*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 ... 2,000 mm <sup>1)</sup>                       |
| Sensing range:                   | 100 mm ... 2,000 mm                                    |
| Type of light:                   | Visible red light                                      |
| Light source:                    | PinPoint LED <sup>2)</sup>                             |
| Adjustment:                      | Potentiometer                                          |
| Light spot size (distance):      | Ø 12 mm (800 mm)                                       |

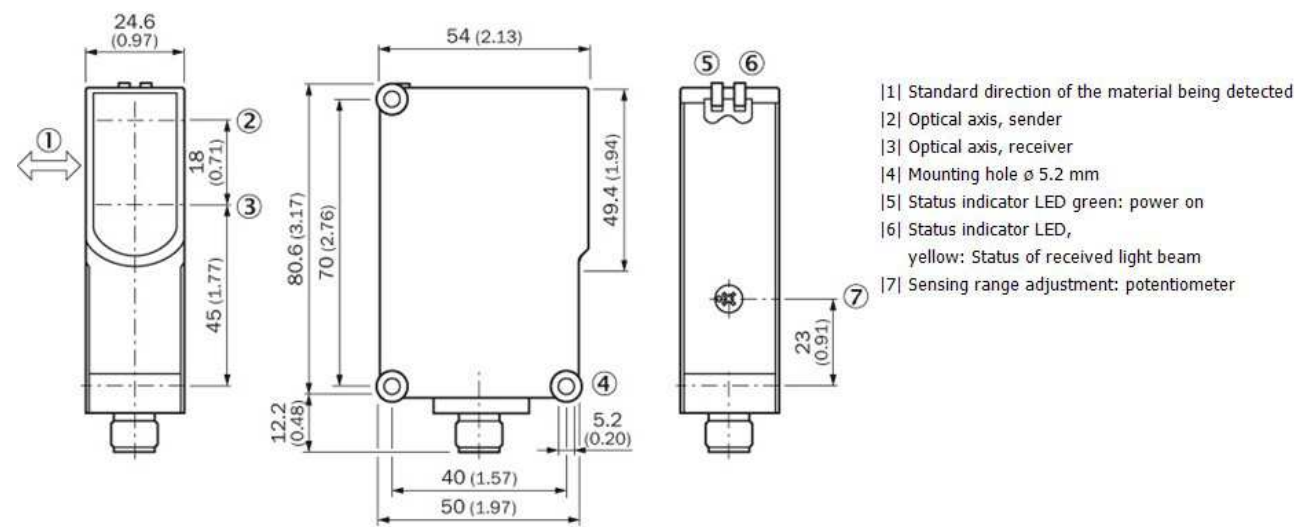
1) Object with 90 % reflectance (referred to standard white, DIN 5033) 2) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

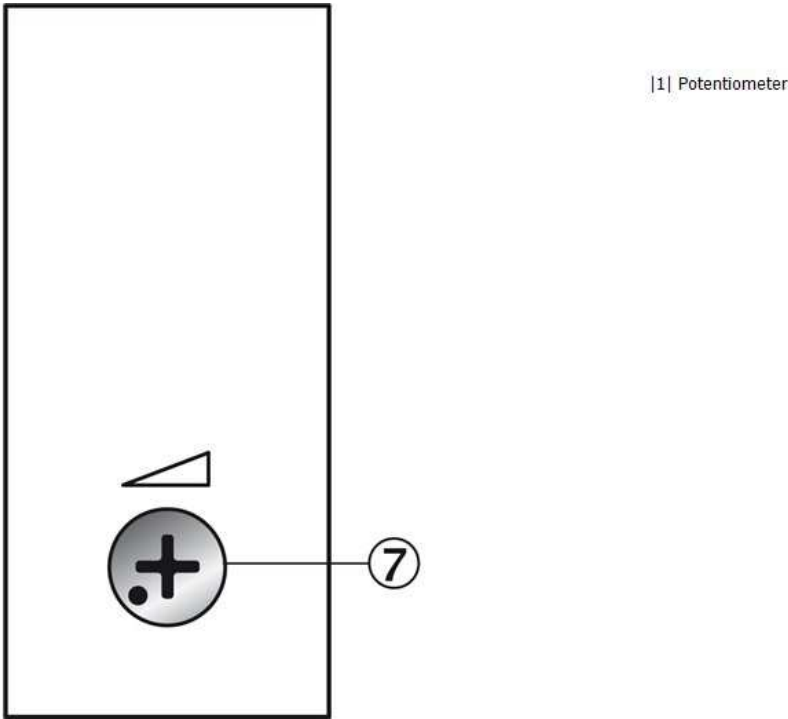
|                                |                                    |
|--------------------------------|------------------------------------|
| Supply voltage:                | 10 V DC ... 30 V DC <sup>1)</sup>  |
| Ripple:                        | $\leq 5\text{ Vpp}$ <sup>2)</sup>  |
| Output type:                   | PNP                                |
| Output function:               | Complementary                      |
| Switching mode:                | Light/dark switching               |
| 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:               | Cable with connector M12, 4-pin    |
| Circuit protection:::          | A, B, C <sup>5) 6) 7)</sup>        |
| Protection class:              | II <sup>8)</sup>                   |
| Front screen heating:          | -                                  |
| IO-Link:                       | -                                  |
| Special device:                | -                                  |
| 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       |
| Signal voltage PNP HIGH/LOW:   | Approx. VS - 2.5 V / 0 V           |

1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of  $V_S$  tolerances 3) Signal transit time with resistive load 4) With  
light/dark ratio 1:1 5) A =  $V_S$  connections reverse-polarity protected 6) B = inputs and output reverse-polarity protected 7) C = interference suppression 8) Reference  
voltage: 50 V DC

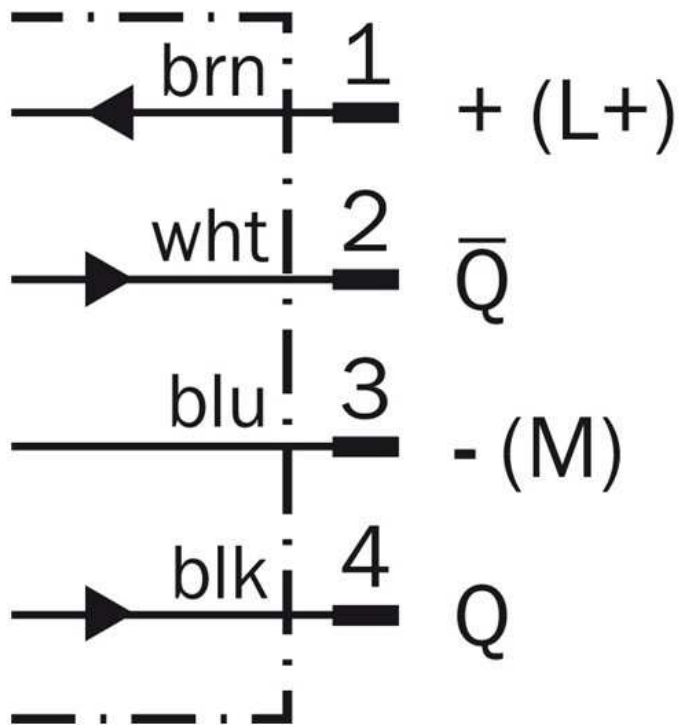
Dimensional drawing



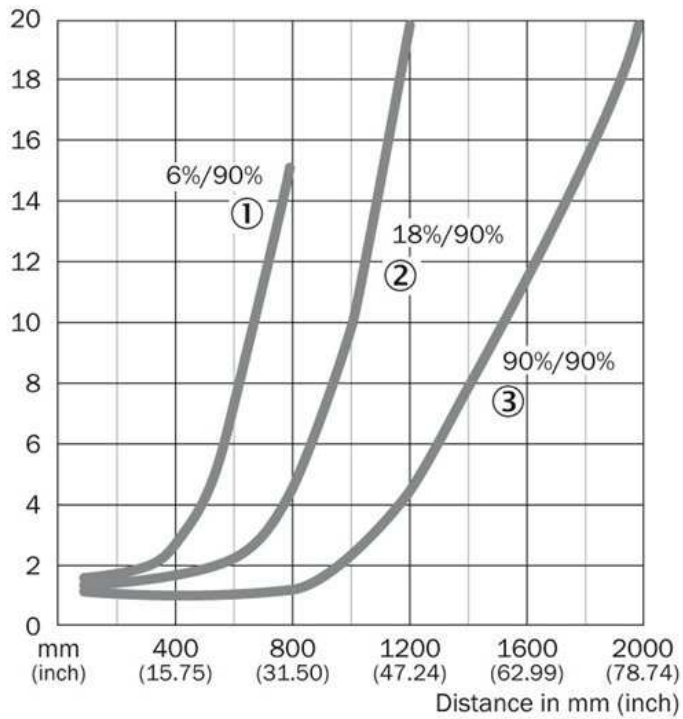
Adjustments possible



## Connection diagram

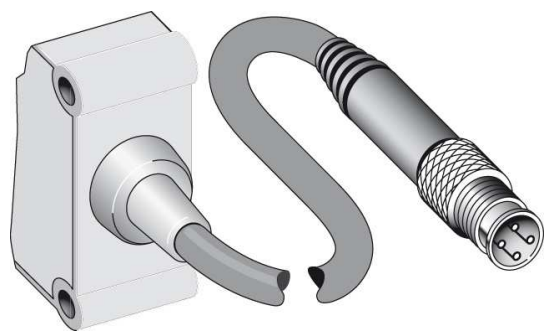


## Characteristic curve

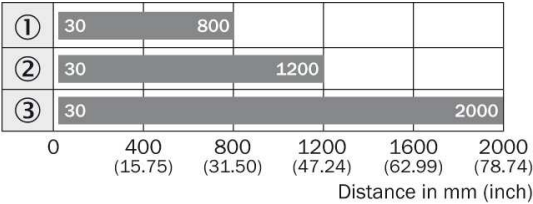


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on white, 90 % remission

Connection type



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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