



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

WTB27-3P2441S22



**Model Name** > [WTB27-3P2441S22](#)  
**Part No.** > [1045144](#)



*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.:              | ≤ 700 mm, 30 mm ... 1,100 mm <sup>1) 2)</sup>          |
| Sensing range:                   | ≤ 700 mm                                               |
| Type of light:                   | Visible red light                                      |
| Light source:                    | LED <sup>3)</sup>                                      |
| Wave length:                     | 660 nm                                                 |
| Adjustment:                      | Potentiometer fixed with glue                          |
| Light spot size (distance):      | Ø 15 mm (500 mm)                                       |

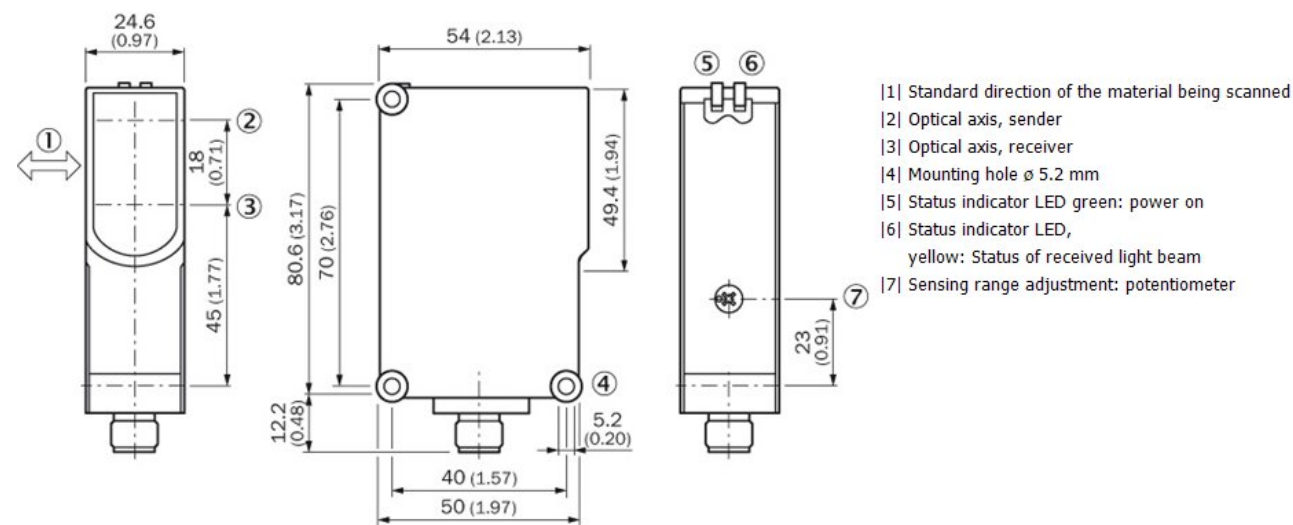
1) Object with 90 % reflectance (referred to standard white DIN 5033) 2) Object with 18 % reflectance (referred to grey) 3) Average service life of 100,000 h at T<sub>A</sub> = +25 °C

## Mechanics/electronics

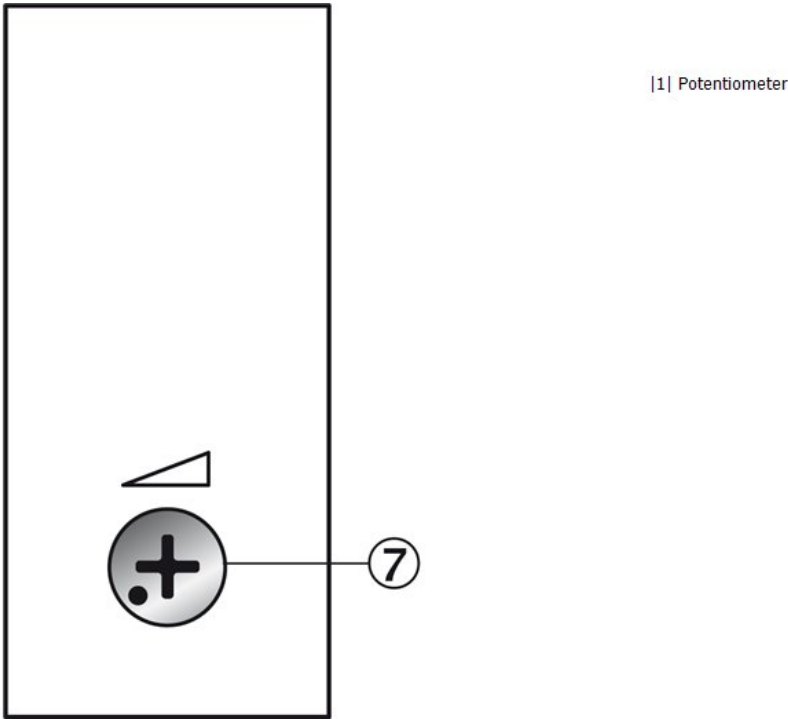
|                                   |                                                                 |
|-----------------------------------|-----------------------------------------------------------------|
| Supply voltage:                   | 10 V DC ... 30 V DC <sup>1)</sup>                               |
| Power consumption:                | ≤ 35 mA <sup>2)</sup>                                           |
| Output type:                      | PNP                                                             |
| Output function:                  | Complementary                                                   |
| Switching mode:                   | Light/dark-switching                                            |
| Signal voltage PNP HIGH/LOW:      | Approx. V <sub>S</sub> - 2.5 V / 0 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) 6) 7)</sup>                                     |
| Protection class:                 | II <sup>8)</sup>                                                |
| Weight:                           | 100 g                                                           |
| Front screen heating:             | -                                                               |
| IO-Link:                          | -                                                               |
| Special device:                   | ✓                                                               |
| Housing material:                 | ABS, Plastic                                                    |
| Optics material:                  | PMMA                                                            |
| Enclosure rating:                 | IP 69K                                                          |
| Special features:                 | Sensing range preset at 700 mm on an object with 18 % remission |
| 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) Without load 3) Signal transit time with resistive load 4) With light/dark ratio 1:1 5) A = V<sub>S</sub>  
connections reverse-polarity protected 6) B = inputs and output reverse-polarity protected 7) C = interference suppression 8) Reference voltage 50 V DC

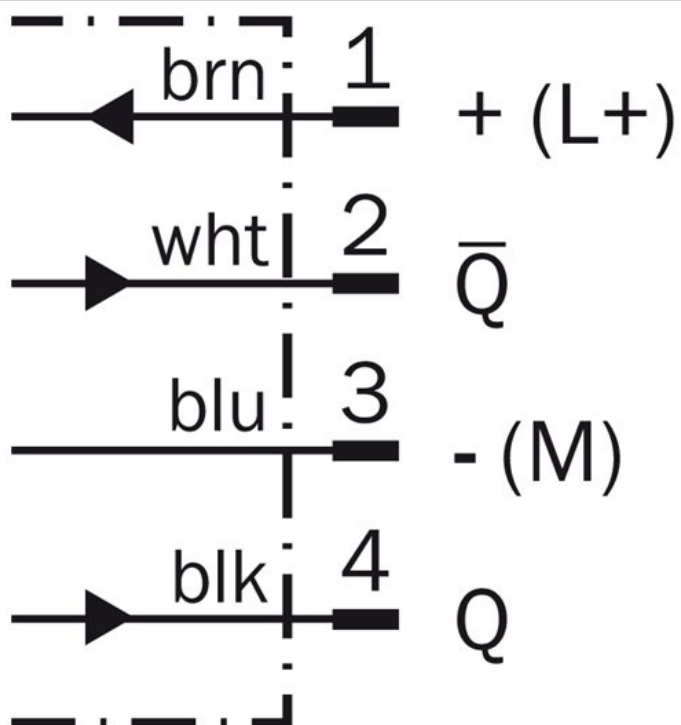
Dimensional drawing



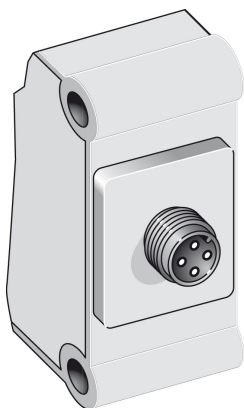
Adjustments possible



## Connection diagram



## Connection type



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