



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

WTB27-3P2413S14



**Model Name** > **WTB27-3P2413S14**  
**Part No.** > **1028208**



*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                                                 |
| Adjustment:                      | Manual, via double teach button                        |
| Light spot size (distance):      | Ø 25 mm (800 mm)                                       |

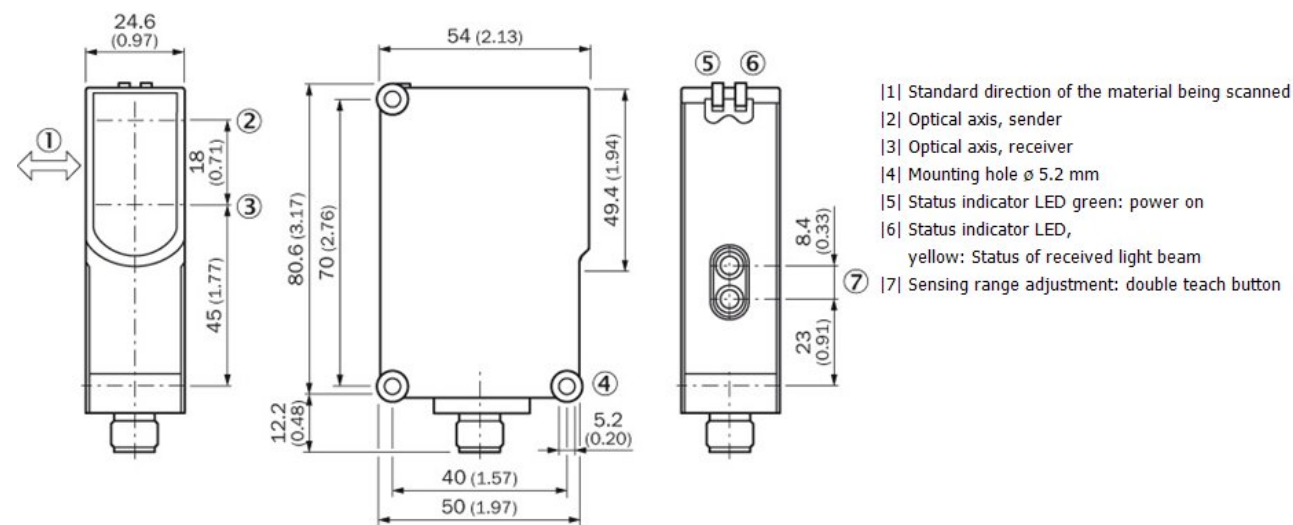
1) Object with 90 % reflectance (referred to standard white DIN 5033) 2) Average service life of 100,000 h at  $T_A = +25\text{ °C}$

## Mechanics/electronics

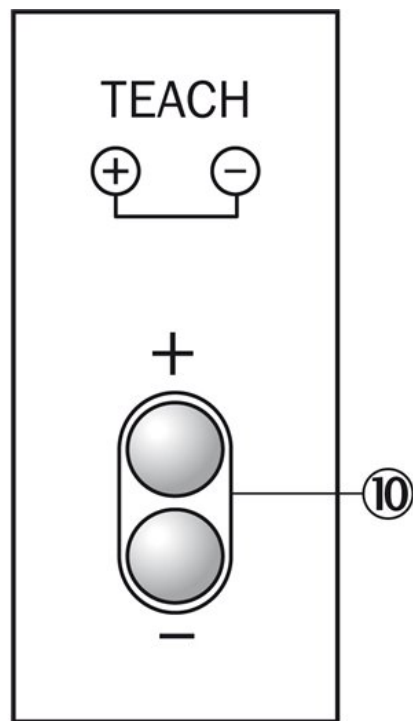
|                                |                                                   |
|--------------------------------|---------------------------------------------------|
| Supply voltage:                | 10 V DC ... 30 V DC <sup>1)</sup>                 |
| Power consumption:             | $\leq 40\text{ mA}$ <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)</sup> <sup>6)</sup> <sup>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 66<br>IP 67                                    |
| Special features:              | For extreme shock loads                           |
| 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)  $A = V_S$   
 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

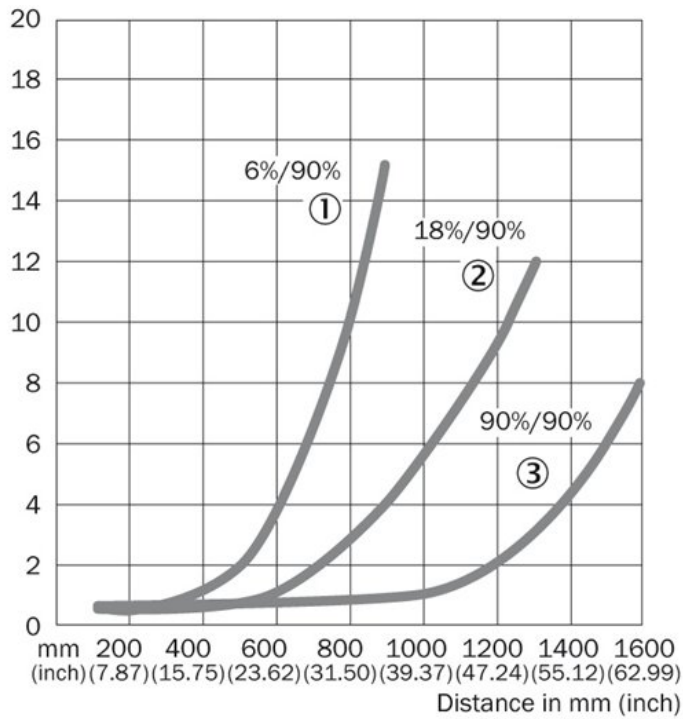


1] Double teach-in button

## Connection diagram

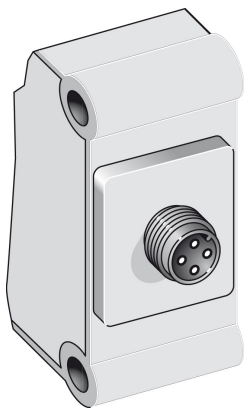


## Characteristic curve

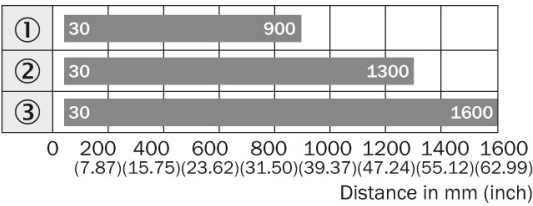


- |1| Sensing range on black, 6 % remission
- |2| Sensing range on grey, 18 % remission
- |3| Sensing range on white, 90 % remission

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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