



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

WTB27-3N2413



Model Name > [WTB27-3N2413](#)
Part No. > [1027761](#)



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 ¹⁾ |
| Sensing range: | 100 mm ... 1,600 mm |
| Type of light: | Infrared light |
| Light source: | LED ²⁾ |
| Wave length: | 880 nm |
| Adjustment: | Manual, via double teach button |
| Light spot size (distance): | Ø 25 mm (800 mm) |

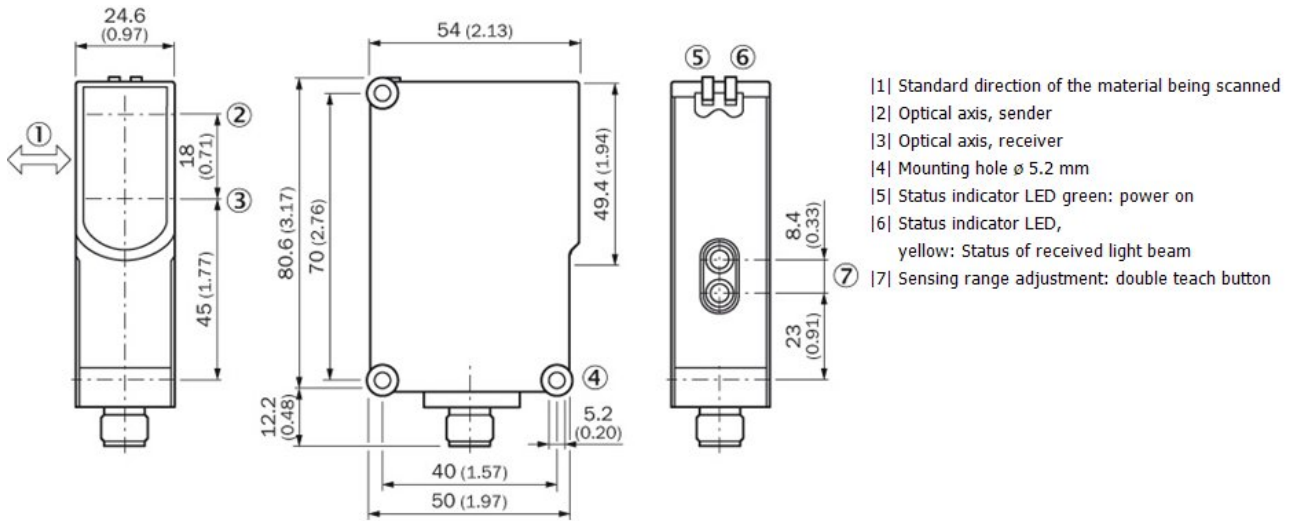
1) Object with 90 % reflectance (referred to standard white DIN 5033) 2) Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

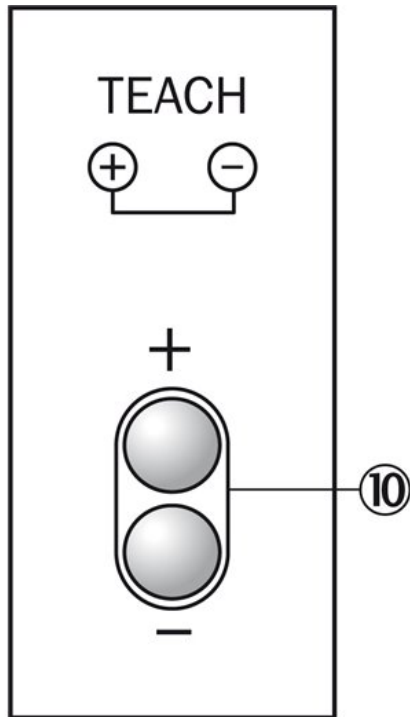
| | |
|--------------------------------|------------------------------------|
| Supply voltage: | 10 V DC ... 30 V DC ¹⁾ |
| Power consumption: | $\leq 40\text{ mA}$ ²⁾ |
| Switching output: | NPN |
| Output function: | Complementary |
| Switching mode: | Light/dark-switching |
| Signal voltage NPN HIGH/LOW: | Approx. $V_S / < 2.5\text{ V}$ |
| Output current $I_{max.}$: | $\leq 100\text{ mA}$ |
| Response time: | $\leq 1.5\text{ ms}$ ³⁾ |
| Switching frequency: | 350 Hz ⁴⁾ |
| Connection type: | Connector M12, 4-pin |
| Circuit protection::: | A, B, C ^{5) 6) 7)} |
| Protection class: | II ⁸⁾ |
| Weight: | 100 g |
| Front screen heating: | - |
| IO-Link: | - |
| Special device: | - |
| Housing material: | ABS, Plastic |
| Optics material: | PMMA |
| Enclosure rating: | IP 66 IP 67 |
| 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 6) B = inputs and output reverse-polarity protected 7) C = interference suppression 8) Reference voltage 50 V DC

Dimensional drawing

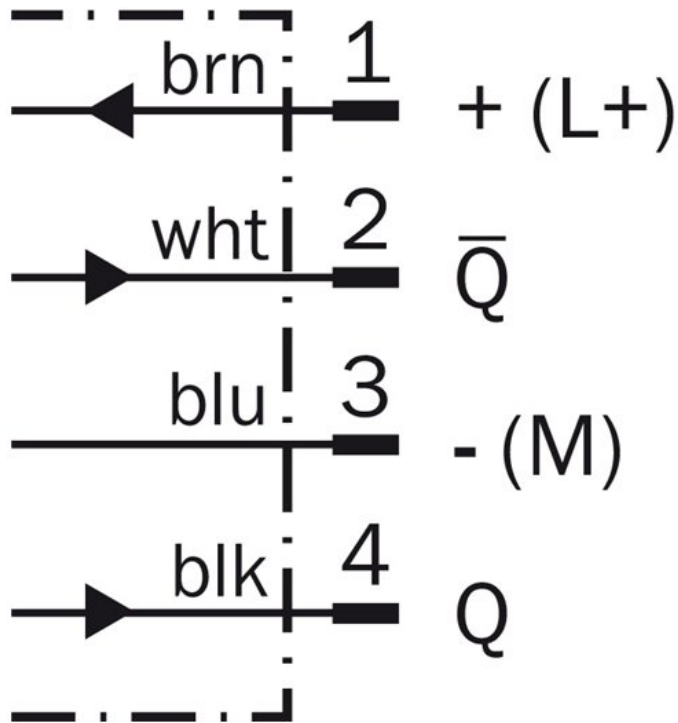


Adjustments possible

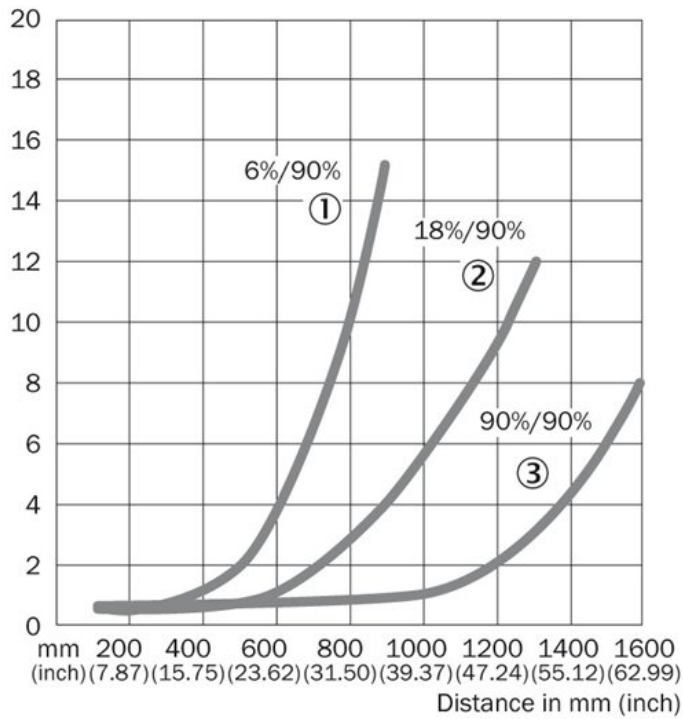


[1] Double teach-in button

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

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