



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

WTB27-3R2641



Model Name > [WTB27-3R2641](#)
Part No. > [1027750](#)



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 ... 1,100 mm ¹⁾
Sensing range:	100 mm ... 1,100 mm
Type of light:	Visible red light
Light source:	LED ²⁾
Wave length:	660 nm
Time type:	Switch on delay time delay off switch on delay and time delay off
Delay time:	Adjustable via time delay selector switch: 0.5 ... 10 s

Adjustment: Potentiometer
Light spot size (distance): Ø 15 mm (500 mm)

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

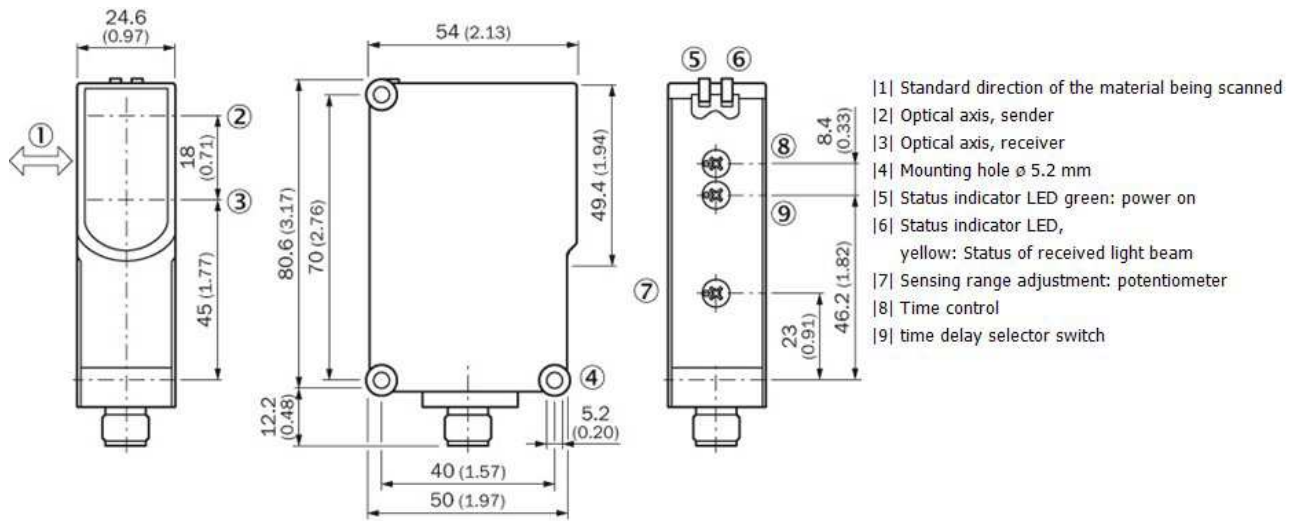
Mechanics/electronics

Supply voltage: 24 V AC/DC ... 240 V AC/DC ¹⁾
Power consumption: ≤ 2.5 VA
Output type: Relay ²⁾
Output function: Change-over contacts
Switching mode: Light/dark switching ³⁾
Output characteristic: Electrically isolated
Switching mode selector: Selectable via time delay selector switch
Switching current (switching voltage): 0.11 A (250 V DC), 3 A (24 V DC), 3 A (250 V AC)
Response time: ≤ 10 ms
Switching frequency: 10 Hz ⁴⁾
Connection type: Connector Q6, 6-pin, AC/UC-coding
Circuit protection: A, C ^{5) 6)}
Protection class: II ⁷⁾
Weight: 120 g
Housing material: ABS, Plastic
Optics material: PMMA
Enclosure rating: IP 65
Usage category: AC-15, DC-13, According to EN 60947-1
Ambient operating temperature: -40 °C ... 60 °C ⁸⁾
Ambient storage temperature: -40 °C ... 75 °C
UL File No.: NRKH.E181493 & NRKH7.E181493

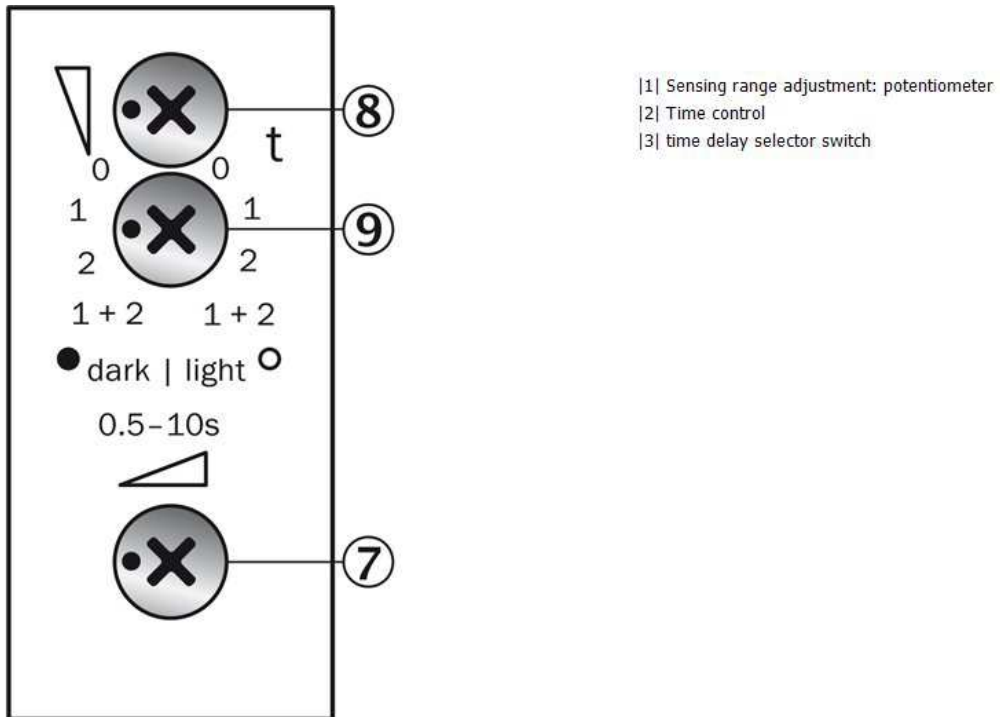
¹⁾ ± 10 % ^{2) 3)} Provide suitable spark suppression for inductive or capacitive loads. Relay contacts are separated from the power supply by a basic isolation of 3 mm.

Depending on the application, additional isolation might have to be applied in the user's circuit. ⁴⁾ With light/dark ratio 1:1 ⁵⁾ A = V_S connections reverse-polarity protected ⁶⁾ C = interference suppression ⁷⁾ Reference voltage 250 V AC ⁸⁾ UL: 0 °C ... +60 °C

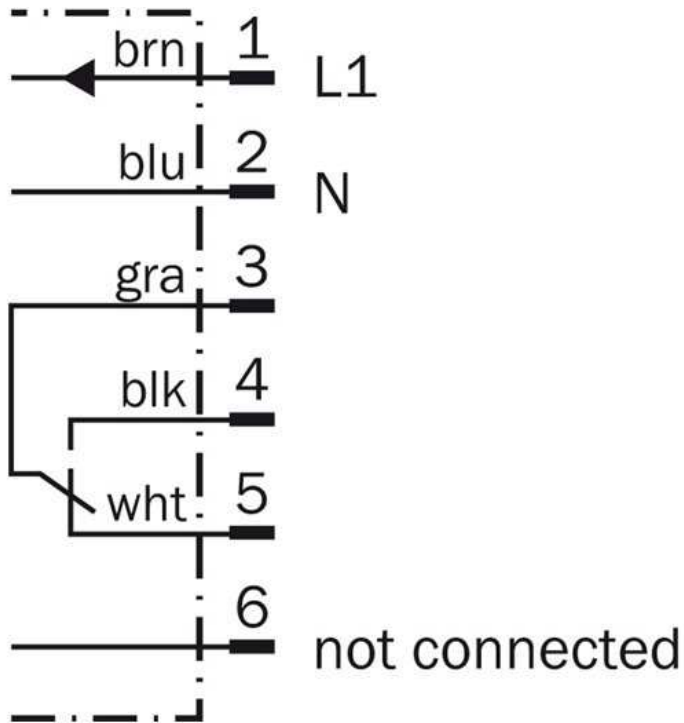
Dimensional drawing



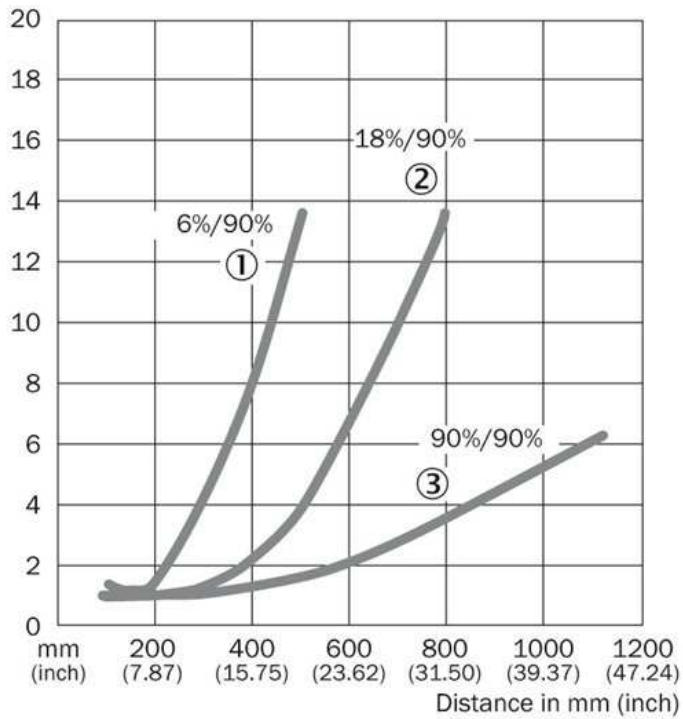
Adjustments possible



Connection diagram



Characteristic curve

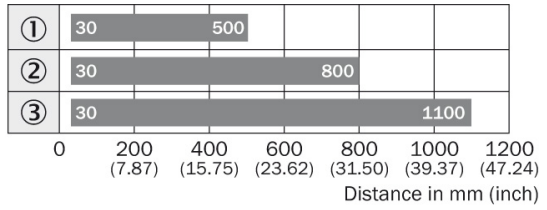


- 1| Sensing range on black, 6 % remission
- 2| Sensing range on grey, 18 % remission
- 3| Sensing range on white, 90 % remission

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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