



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

WTB27-3S1541



Model Name > [WTB27-3S1541](#)
Part No. > [1027749](#)



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

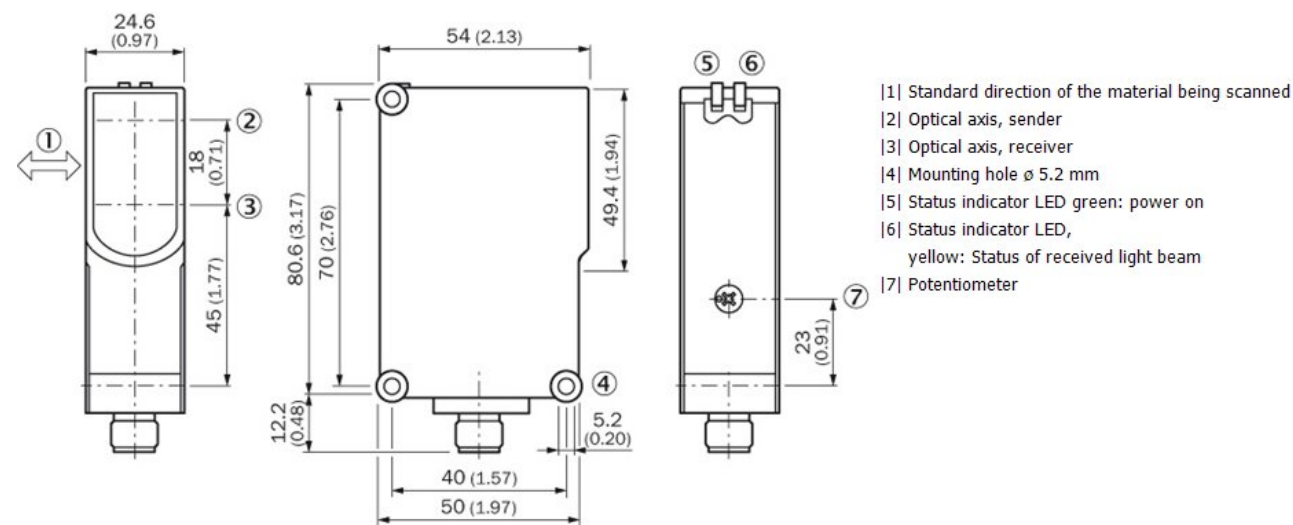
¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033) ²⁾ Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

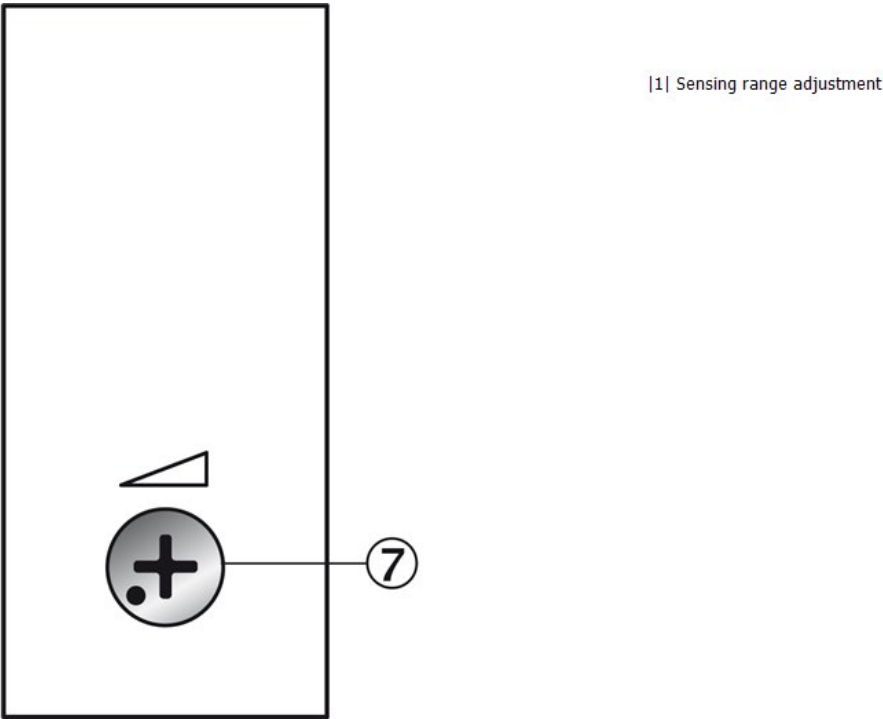
Supply voltage:	24 V AC/DC ... 240 V AC/DC ¹⁾
Power consumption:	≤ 2.5 VA
Output type:	Relay ²⁾
Output function:	Change-over contacts
Switching mode:	Light switching ³⁾
Output characteristic:	Electrically isolated
Switching current (switching voltage):	0.11 A (250 V DC), 3 A (24 V DC), 3 A (250 V AC)
Response time:	≤ 10 ms
Switching frequency:	10 Hz ⁴⁾
Connection type:	Cable, 5-wire, 2 m ⁵⁾
Cable material:	PVC
Circuit protection:	A, C ⁶⁾ ⁷⁾
Protection class:	II ⁸⁾
Weight:	200 g
IO-Link:	-
Special device:	-
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 66 IP 67
Usage category:	AC-15, DC-13, According to EN 60947-1
Ambient operating temperature:	-40 °C ... 60 °C ⁹⁾
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 ⁴⁾ With light/dark ratio 1:1 ⁵⁾ Do not bend below 0 °C ⁶⁾ A = V_S connections
reverse-polarity protected ⁷⁾ C = interference suppression ⁸⁾ Reference voltage 250 V AC ⁹⁾ UL: 0 °C ... +60 °C

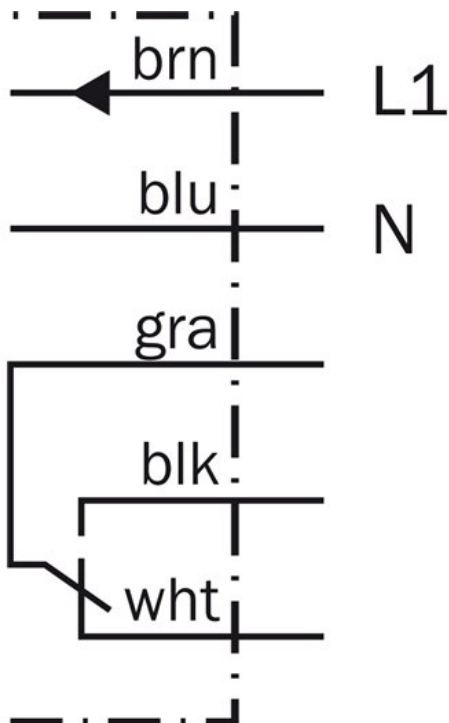
Dimensional drawing



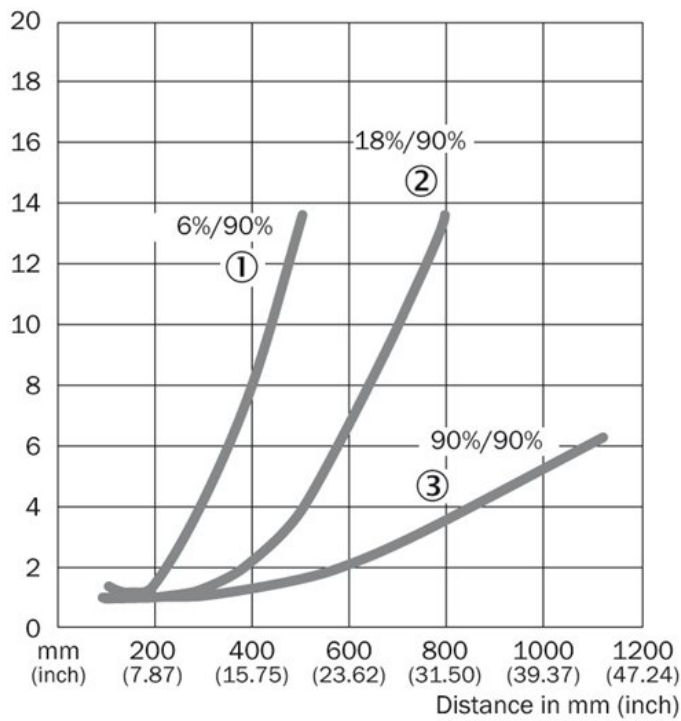
Adjustments possible



Connection diagram

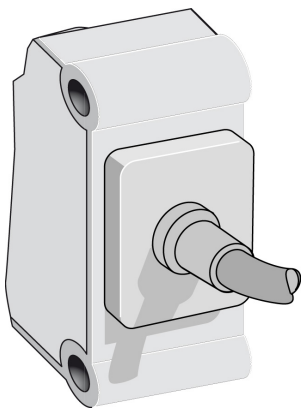


Characteristic curve

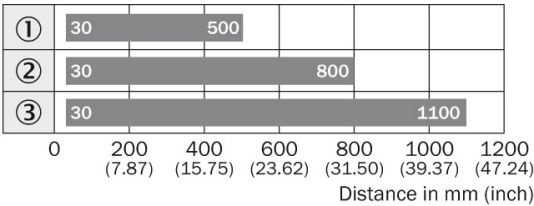


- [1] Sensing range on black, 6 % remission
- [2] Sensing range on grey, 18 % remission
- [3] Sensing range on white, 90 % remission

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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