



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

WTB27-3N1111S10



Model Name > **WTB27-3N1111S10**
Part No. > **1040143**



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 ... 2,200 mm ¹⁾
Sensing range:	100 mm ... 2,200 mm
Type of light:	Infrared light
Light source:	LED ²⁾
Wave length:	880 nm
Special features:	Sensing range 2200 mm
Adjustment:	Potentiometer
Light spot size (distance):	25 mm (800 mm)

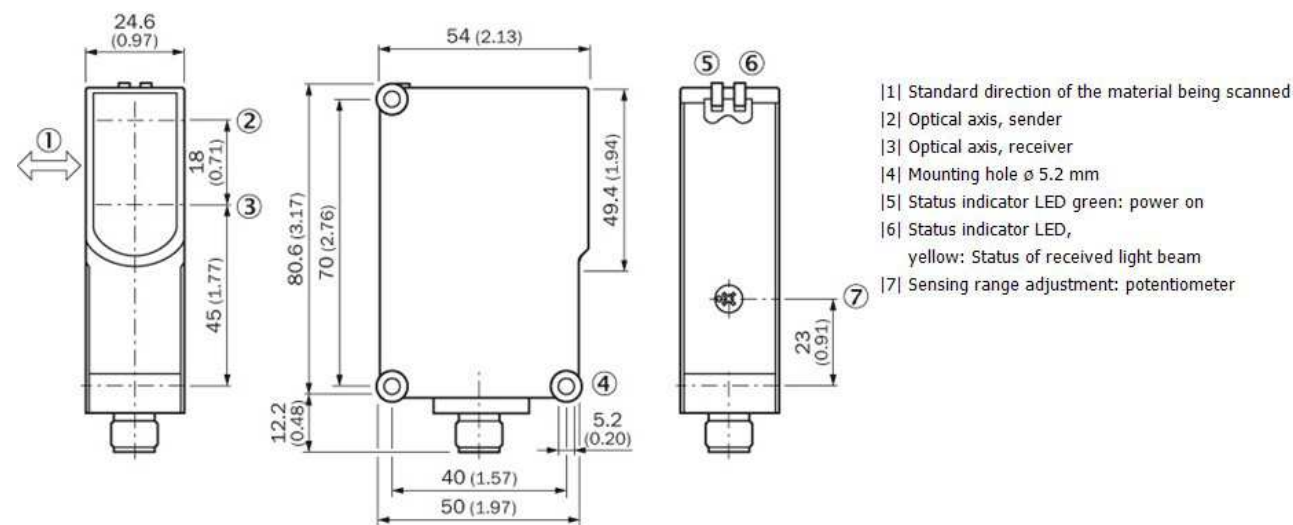
¹⁾ Object with 90 % reflectance (referred to standard white DIN 5033) ²⁾ Average service life of 100,000 h at $T_A = +25\text{ °C}$

Mechanics/electronics

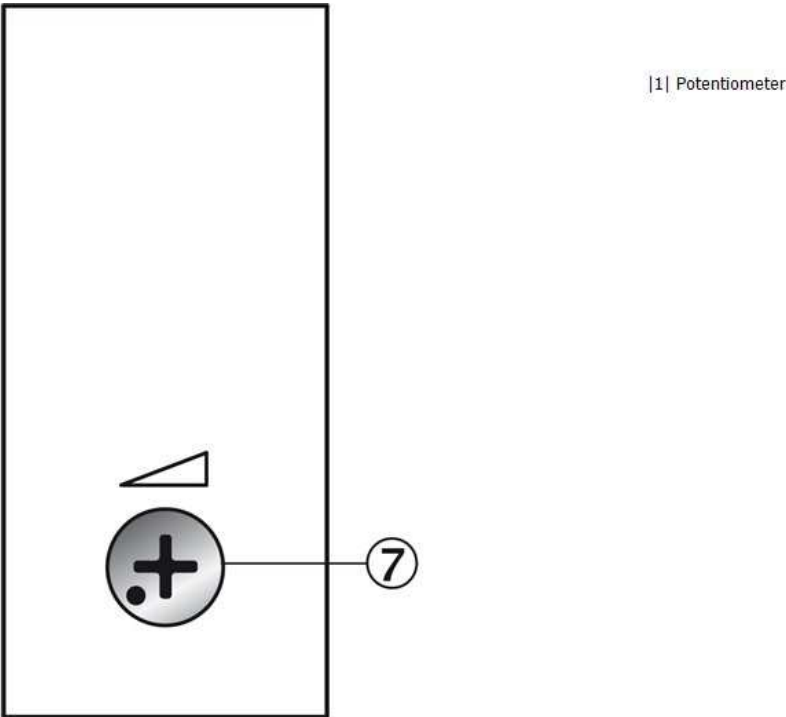
Supply voltage:	10 V DC ... 30 V DC ¹⁾
Power consumption:	$\leq 40\text{ mA}$ ²⁾
Output type:	NPN
Output function:	Complementary
Switching mode:	Light/dark switching
Signal voltage NPN HIGH/LOW:	Approx. $V_S / < 2.5\text{ V}$
Output current $I_{max.}$:	$\leq 100\text{ mA}$
Response time:	$\leq 2.5\text{ ms}$ ³⁾
Switching frequency:	200 Hz ⁴⁾
Connection type:	Cable, 4-wire, 2 m ⁵⁾
Cable material:	PVC
Circuit protection:::	A, B, C ⁶⁾ ⁷⁾ ⁸⁾
Protection class:	II ⁹⁾
Weight:	180 g
Special device:	✓
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 69K
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⁾ Do not bend below 0 °C ⁶⁾ A = V_S connections reverse-polarity protected ⁷⁾ B = inputs and output reverse-polarity protected ⁸⁾ C = interference suppression ⁹⁾ Reference voltage 50 V DC

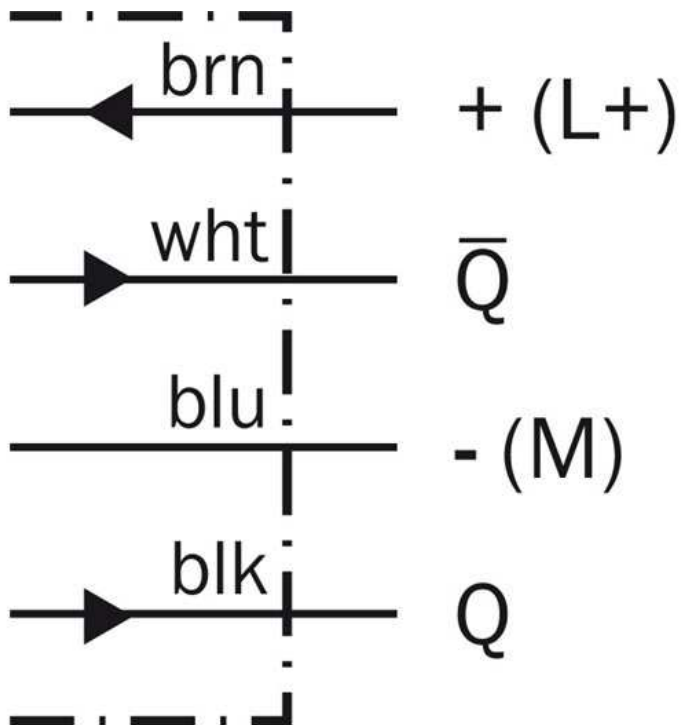
Dimensional drawing



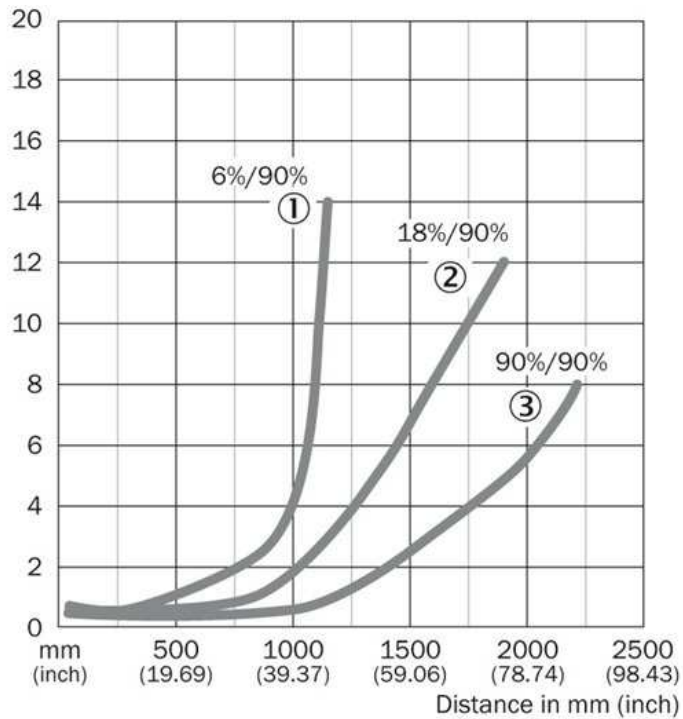
Adjustments possible



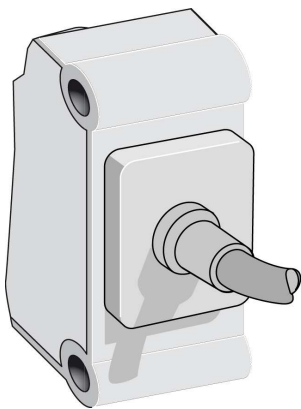
Connection diagram



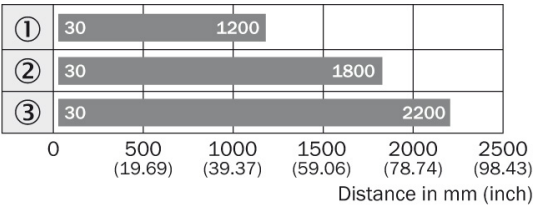
Characteristic curve



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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