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

WTB27-3E2641

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Model Name > WTB27-3E2641
Part No. > 1027747

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:	0.5 ... 10 s, Adjustable via time delay selector switch: 0.02 ... 0.5 s

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

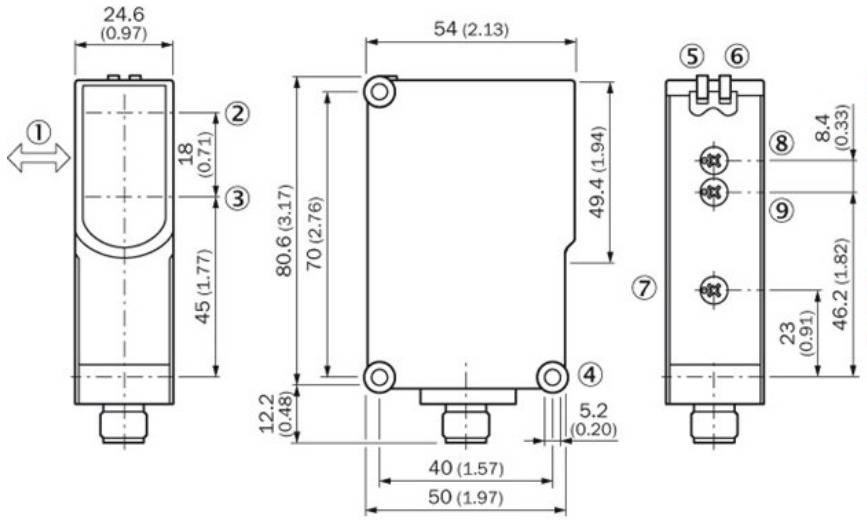
[1] Object with 90 % reflectance (referred to standard white DIN 5033) [2] Average service life of 100,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC [1]
Ripple:	≤ 5 Vpp [2]
Power consumption:	≤ 35 mA [3]
Output type:	NPN
Output function:	Complementary
Switching mode:	Light/dark-switching
Signal voltage NPN HIGH/LOW:	Approx. VS/< 2.5 V
Output current Imax.:	≤ 100 mA
Response time:	≤ 1.5 ms [4]
Switching frequency:	350 Hz [5]
Connection type:	Connector Q6, 6-pin, DC-coding
Circuit protection:::	A, B, C [6] [7] [8]
Protection class:	II [9]
Weight:	100 g
IO-Link:	-
Special device:	-
Housing material:	ABS, Plastic
Optics material:	PMMA
Enclosure rating:	IP 65
Test input sender off:	TE to VS
Ambient operating temperature:	-40 °C ... 60 °C
Ambient storage temperature:	-40 °C ... 75 °C
UL File No.:	NRKH.E181493 & NRKH7.E181493

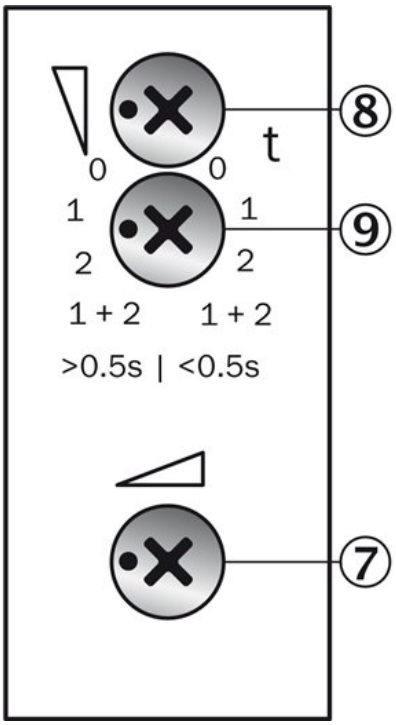
[1] Limit values, operation in short-circuit protected network max. 8 A [2] May not exceed or fall short of V_S tolerances [3] Without load [4] Signal transit time with resistive load [5] With light/dark ratio 1:1 [6] A = V_S connections reverse-polarity protected [7] B = inputs and output reverse-polarity protected [8] C = interference suppression [9] Reference voltage 50 V DC

Dimensional drawing



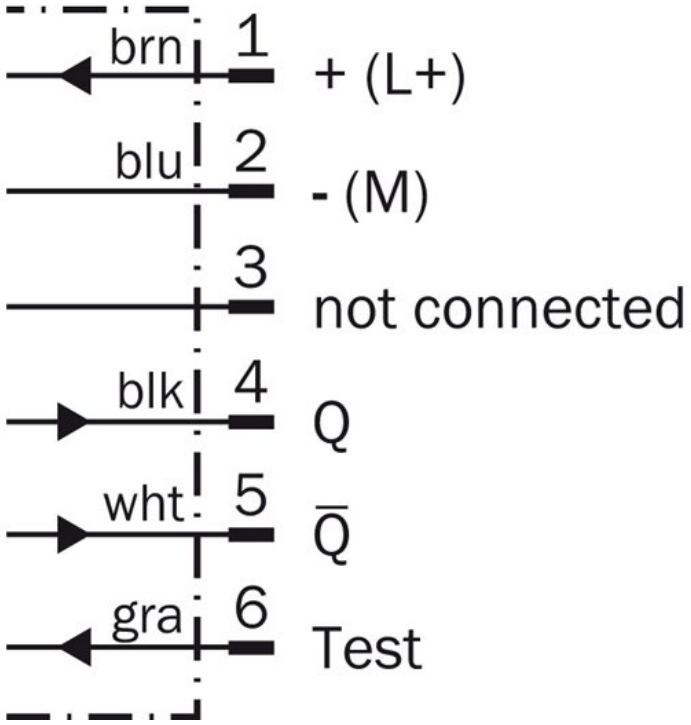
|1| Standard direction of the material being scanned
|2| Optical axis, sender
|3| Optical axis, receiver
|4| Mounting hole ø 5.2 mm
|5| Status indicator LED green: power on
|6| Status indicator LED,
yellow: Status of received light beam
|7| Sensing range adjustment: potentiometer
|8| Time control
|9| time delay selector switch

Adjustments possible

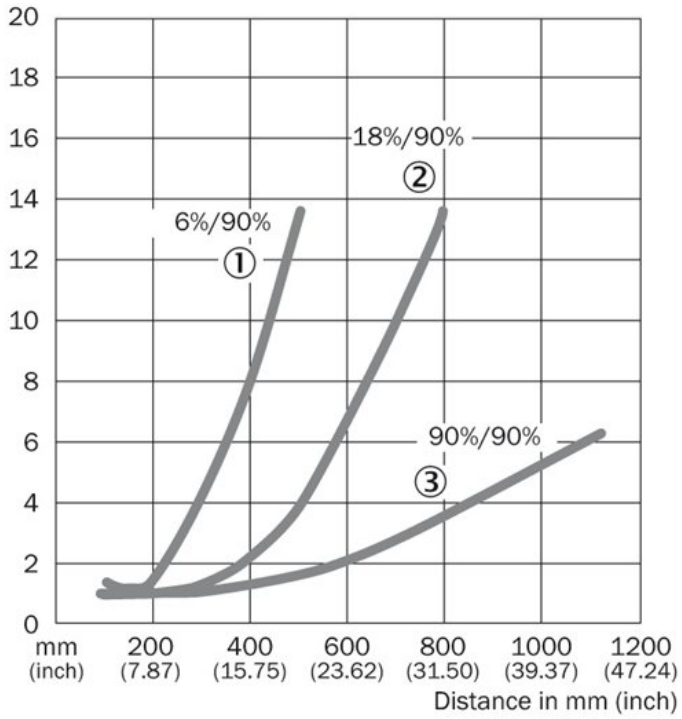


|1| Sensing range adjustment
|2| Time control
|3| time delay selector switch

Connection diagram

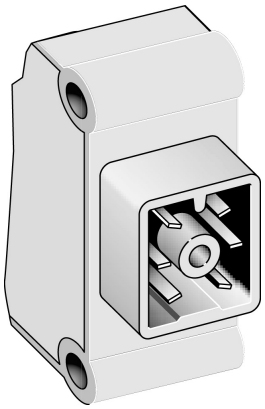


Characteristic curve

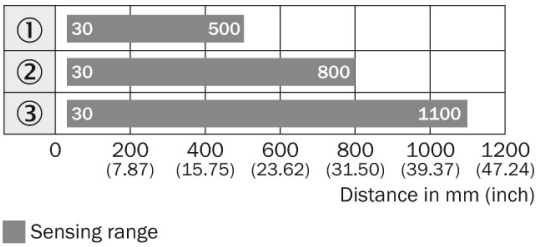


|1| Sensing range on black, 6 % remission
|2| Sensing range on grey, 18 % remission
|3| Sensing range on white, 90 % remission

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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