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DATA SHEET

# WTB27-3R2641

W27
Photoelectric sensors

SICK
Sensor Intelligence


Illustration may differ

## PHOTOELECTRIC SENSORS

# WTB27-3R2641

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| WTB27-3R2641 | 1027750 |

Further device versions and accessories at www.sick.com/W27

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Functional principle | Photoelectric proximity sensor |
| Functional principle detail | 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] |
| Light spot size (distance) | Ø 15 mm (500 mm) |
| Wave length | 660 nm |
| Adjustment | Potentiometer |

[1] Object with 90% remission (based on standard white, DIN 5033).

[2] Average service life: 100,000 h at $T_U$ = +25 °C.

## MECHANICS/ELECTRONICS

| | |
|---|---|
| Supply voltage $U_B$ | 20 V AC/DC ... 250 V AC/DC [1] |
| Power consumption | ≤ 2.5 VA |
| Switching output | Relay, electrically isolated [2] |
| Output function | Change-over contacts |
| Switching mode | Light/dark switching |
| Switching mode selector | Selectable via time delay selector switch |
| Switching current (switching voltage) | 4 A @ 250 V AC, 4 A @ 24 V DC, 0.125 A @ 250 V DC<br>UL: 4 A @ 250 V AC, general use / 4 A @ 250 V AC, resistive (NO) / 3 A @ 250 V AC, resistive (NC) / 4 A @ 24 V DC, NO, general use / 3 A @ 24 V DC, NC, general use / R300 / B300 (NO contacts only) / 0 °C ... +60 °C |
| Response time | ≤ 10 ms |
| Switching frequency | 10 Hz [3] |
| Time functions | Switch-on delay<br>Off delay<br>Switch on delay and time delay off |
| Delay time | Adjustable via time delay selector switch, 0.5 s ... 10 s |
| Connection type | Male connector Q6, 6-pin, AC/UC-coded |
| Circuit protection | A [4]<br>C [5] |
| Protection class | II [6] |
| Weight | 120 g |
| Housing material | Plastic, ABS |
| Optics material | Plastic, PMMA |
| Enclosure rating | IP65 |
| Usage category | AC-15, DC-13<br>According to EN 60947-1 |
| Ambient operating temperature | –40 °C ... +60 °C [7] |
| Ambient temperature, storage | –40 °C ... +75 °C |
| UL File No. | NRKH.E181493 & NRKH7.E181493 |

[1] Limit values.

[2] Provide suitable arc suppression for inductive or capacitive loads. Relay contacts are separated from the supply voltage by a basic isolation of 3 mm. Depending on the application, additional isolation might have to be applied in the user's circuit.

[3] With light/dark ratio 1:1.

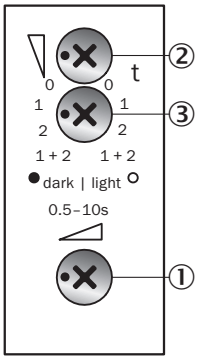
[4] A = $V_s$ connections reverse-polarity protected.

[5] C = interference suppression.

[6] Reference voltage: 250 V AC, overvoltage category 2.

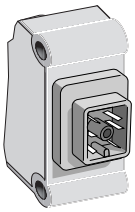
[7] UL: 0 °C ... +60 °C.

### ADJUSTMENTS POTENTIOMETER, TIME FUNCTIONS, LIGHT-/DARK-SWITCH

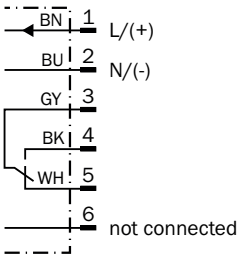



① Potentiometer
② Time control
③ time delay selector switch

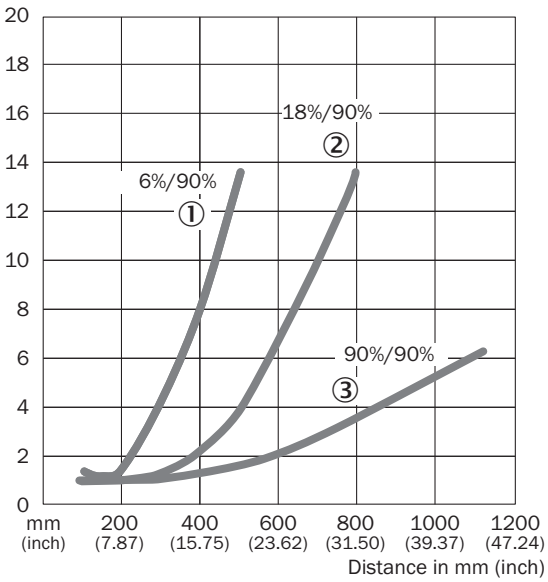
### CONNECTION TYPE



### CONNECTION DIAGRAM CD-181

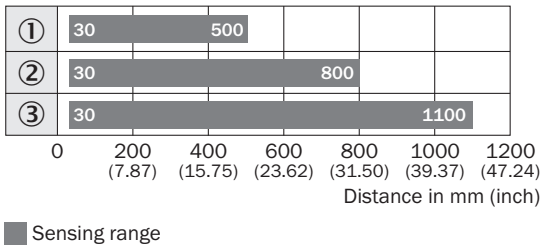


## CHARACTERISTIC CURVE



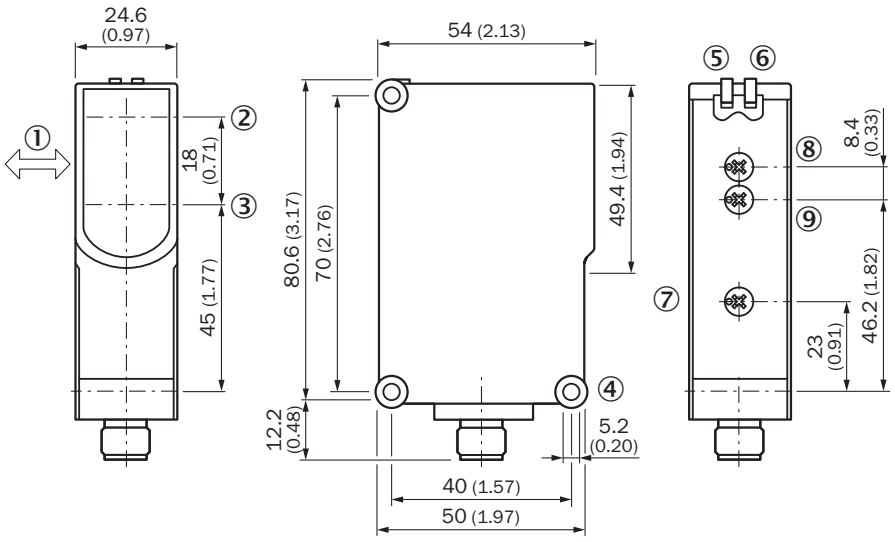

① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

## SENSING RANGE DIAGRAM




① Sensing range on black, 6% remission factor
② Sensing range on gray, 18% remission factor
③ Sensing range on white, 90% remission factor

**DIMENSIONAL DRAWING WTB27-3, POTENTIOMETER, TIME FUNCTIONS**




Dimensions in mm (inch)
① Standard direction of the material being detected
② Optical axis, sender
③ Optical axis, receiver
④ Mounting hole ø 5.2 mm
⑤ LED indicator green: Supply voltage active
⑥ LED indicator yellow: Status of received light beam
⑦ Sensing range adjustment: potentiometer
⑧ Time control
⑨ time delay selector switch

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1027750

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Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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