



WTB26I-39721122ZZZ

W26

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.

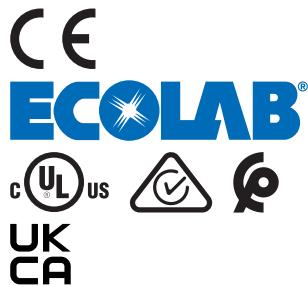


## Ordering information

Type	part no.
WTB26I-39721122ZZZ	1222808

Other models and accessories → [www.sick.com/W26](http://www.sick.com/W26)

Illustration may differ



## Detailed technical data

## Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Background suppression
<b>Sensing range</b>	
Sensing range min.	30 mm
Sensing range max.	2,000 mm
Adjustable switching threshold for background suppression	180 mm ... 2,000 mm
Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
Minimum distance between set sensing range and background (black 6% / white 90%)	85 mm, at a distance of 800 mm
Recommended sensing range for the best performance	200 mm ... 800 mm
<b>Emitted beam</b>	
Light source	LED
Type of light	Infrared light
Shape of light spot	Point-shaped
Light spot size (distance)	Ø 14 mm (1,000 mm)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.0° (at Ta = +23 °C)
<b>Key LED figures</b>	
Normative reference	EN 62471:2008-09   IEC 62471:2006, modified
LED risk group marking	Free group

	Wave length	850 nm
	Average service life	100,000 h at $T_a = +25^\circ\text{C}$
<b>Adjustment</b>	Teach-Turn adjustment 1	BluePilot: For setting the sensing range
	Teach-Turn adjustment 2	BluePilot: for configuring the time function
	Wire/pin	For activating the test input
<b>Display</b>	LED blue 1	BluePilot: sensing range indicator
	LED blue 2	BluePilot: Time function display
	LED green	Operating indicatorStatic on: power on
	LED yellow	Status of received light beamStatic on: object presentStatic off: object not present

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	507 years
<b>DC<sub>avg</sub></b>	0 %
<b>T<sub>M</sub> (mission time)</b>	20 years

## Electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>	
<b>Ripple</b>	$\leq 5 \text{ V}_{\text{pp}}$	
<b>Usage category</b>	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)	
<b>Current consumption</b>	$\leq 30 \text{ mA}$ , without load. At $U_B = 24 \text{ V}$	
<b>Protection class</b>	III	
<b>Digital output</b>	Number	2 (Complementary)
	Type	Push-pull: PNP/NPN
	Switching mode	Light/dark switching
	Signal voltage PNP HIGH/LOW	Approx. $U_B - 2.5 \text{ V} / 0 \text{ V}$
	Signal voltage NPN HIGH/LOW	Approx. $U_B / < 2.5 \text{ V}$
	Output current I <sub>max.</sub>	$\leq 100 \text{ mA}$
	Circuit protection outputs	Reverse polarity protected Overcurrent and short-circuit protected
	Response time	$\leq 500 \text{ }\mu\text{s}$ <sup>2)</sup>
	Repeatability (response time)	150 $\mu\text{s}$
	Switching frequency	1,000 Hz <sup>3)</sup>
<b>Time functions</b>	Deactivated (factory setting), switch-on delay, off delay, ON and OFF delay, Impulse (one shot)	
	Delay time	Teach-turn adjustment, 0 ms ... 30,000 ms, 0 ms (factory setting)
<b>Pin/Wire assignment</b>		
Function of pin 4/black (BK)	Digital output, light switching, object present $\rightarrow$ output Q HIGH <sup>4)</sup>	

<sup>1)</sup> Limit values.<sup>2)</sup> Signal transit time with resistive load in switching mode.<sup>3)</sup> With light/dark ratio 1:1.<sup>4)</sup> This switching output must not be connected to another output.

Pin 5 function/white (WH)	Digital output, dark switching, object present → output $\bar{Q}$ LOW
Pin 6 function/gray (GY)	Test at 0 V

1) Limit values.

2) Signal transit time with resistive load in switching mode.

3) With light/dark ratio 1:1.

4) This switching output must not be connected to another output.

## Mechanics

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	24.6 mm x 82.5 mm x 53.3 mm
<b>Connection</b>	Cable with Q6 male connector, 6-pin, DC-coded, 298 mm
<b>Connection detail</b>	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.14 mm <sup>2</sup>
Cable diameter	Ø 4.8 mm
Length of cable (L)	270 mm
Bending radius	For flexible use > 12 x cable diameter
Bending cycles	1,000,000
<b>Material</b>	
Housing	Plastic, VISTAL®
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Plastic, VISTAL®
<b>Weight</b>	Approx. 100 g
<b>Maximum tightening torque of the fixing screws</b>	1.3 Nm

## Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529)
<b>Ambient operating temperature</b>	-40 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>Shock resistance</b>	50 g, 11 ms (25 positive and 25 negative shocks per axis, for X, Y, Z axes, 150 shocks in total (EN60068-2-27)) 50 g, 6 ms (5,000 positive and 5,000 negative shocks per axis, for X, Y, Z axes, 30,000 shocks in total (EN60068-2-27))
<b>Vibration resistance</b>	10 Hz ... 2,000 Hz (Amplitude 0.5 mm / 10 g, 20 sweeps per axis, for X, Y, Z axes, 1 octave/min, (EN60068-2-6))
<b>Air humidity</b>	35 % ... 95 %, relative humidity (no condensation)
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

## Certificates

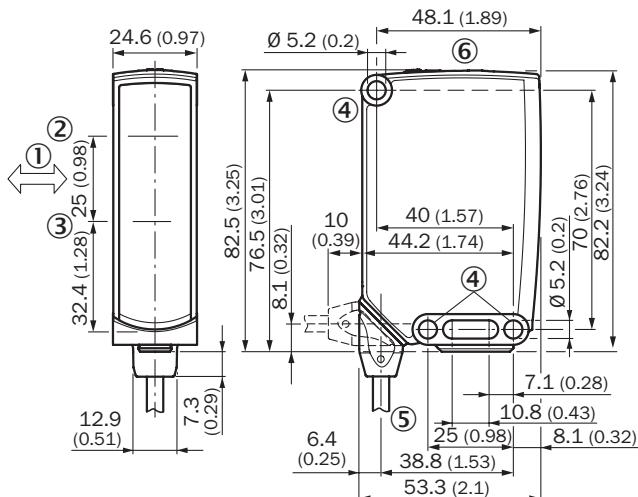
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓

<b>ECOLAB certificate</b>	✓
<b>cULus certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270904
<b>ECLASS 5.1.4</b>	27270904
<b>ECLASS 6.0</b>	27270904
<b>ECLASS 6.2</b>	27270904
<b>ECLASS 7.0</b>	27270904
<b>ECLASS 8.0</b>	27270904
<b>ECLASS 8.1</b>	27270904
<b>ECLASS 9.0</b>	27270904
<b>ECLASS 10.0</b>	27270904
<b>ECLASS 11.0</b>	27270904
<b>ECLASS 12.0</b>	27270903
<b>ETIM 5.0</b>	EC002719
<b>ETIM 6.0</b>	EC002719
<b>ETIM 7.0</b>	EC002719
<b>ETIM 8.0</b>	EC002719
<b>UNSPSC 16.0901</b>	39121528

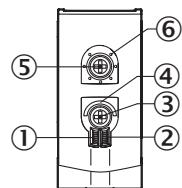
## Dimensional drawing, sensor



Dimensions in mm (inch)

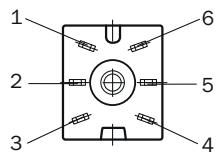
- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ Mounting hole, Ø 5.2 mm
- ⑤ Connection
- ⑥ display and adjustment elements

## display and adjustment elements

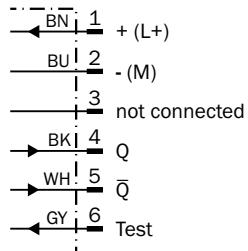


- ① LED indicator green
- ② LED indicator yellow
- ③ Teach-Turn adjustment 1
- ④ LED blue 1
- ⑤ Teach-Turn adjustment 2
- ⑥ LED blue 2

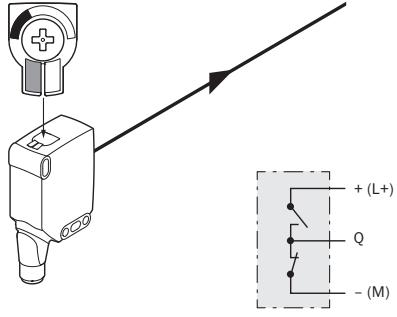
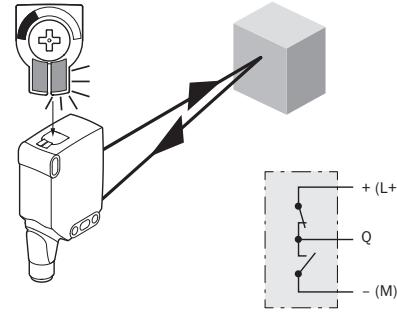
## Connection type Cubic connector, 6-pin



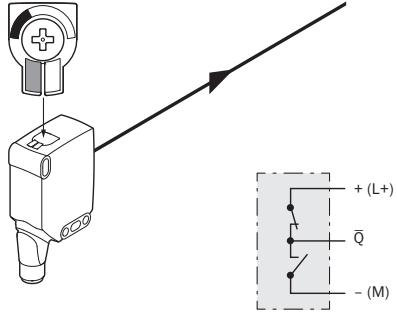
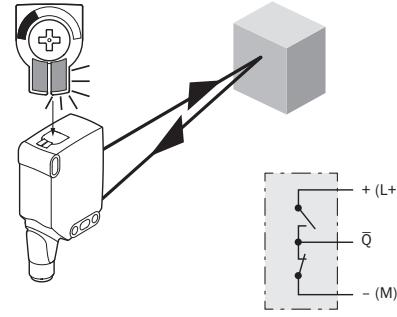
## Connection diagram Cd-178



## Truth table Push-pull: PNP/NPN - light switching Q

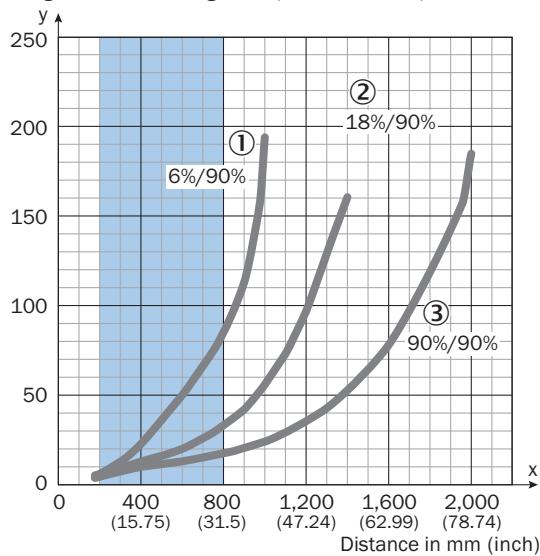
Light switching Q (normally open (upper switch), normally closed (lower switch))		
	Object not present → Output LOW	Object present → Output HIGH
Light receive	✗	✓
Light receive indicator	✗	✗
Load resistance to L+	⚡	✗
Load resistance to M	✗	⚡
		

Truth table Push-pull: PNP/NPN – dark switching  $\bar{Q}$ 

Dark switching $\bar{Q}$ (normally closed (upper switch), normally open (lower switch))		
	Object not present → Output HIGH	Object present → Output LOW
Light receive	✗	✓
Light receive indicator	✗	✗
Load resistance to L+	✗	⚡
Load resistance to M	⚡	✗
		

## Characteristic curve WTB26I-xxxxx1xx

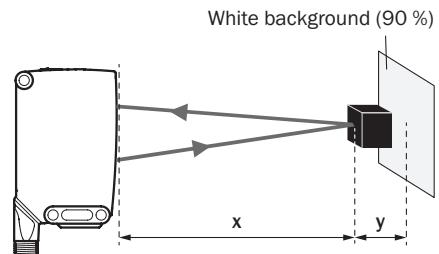
Minimum distance in mm (y) between the set sensing range and white background (90 % remission)



■ Recommended sensing range for the best performance

- ① Black object, 6% remission factor
- ② Gray object, 18% remission factor
- ③ White object, 90% remission factor

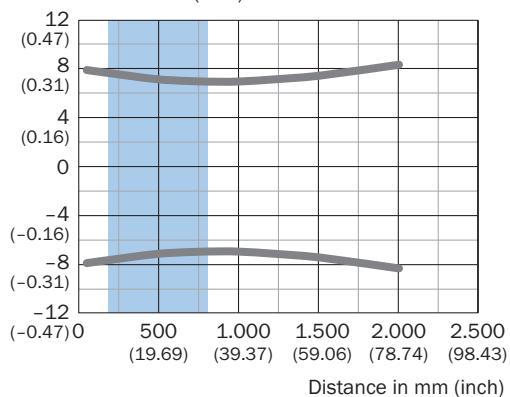
Example:  
Safe suppression of the background



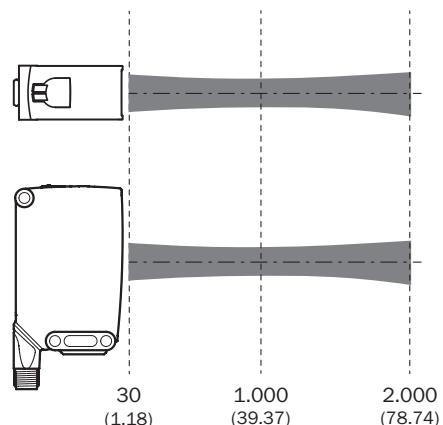
White background (90 %)  
Black object (6 % remission)  
Set sensing range  $x = 800$  mm  
Needed minimum distance to white background  $y = 85$  mm

## Light spot size WTB26I-xxxxx1xx

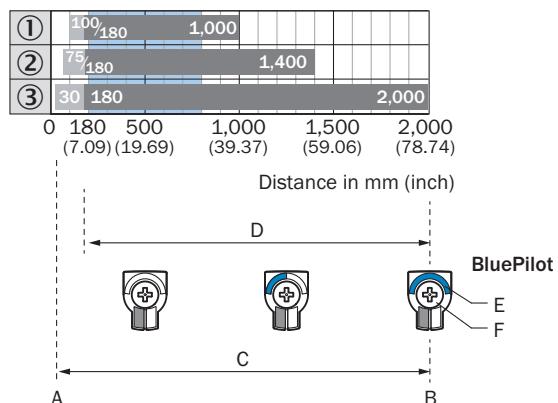
Dimensions in mm (inch)



■ Recommended sensing range for the best performance



## Sensing range diagram



Recommended sensing range for the best performance

1	Black object, 6% remission factor
2	Gray object, 18% remission factor
3	White object, 90% remission factor
A	Sensing range min. in mm
B	Sensing range max. in mm
C	Field of view
D	Adjustable switching threshold for background suppression
E	Sensing range indicator
F	Teach-Turn adjustment

## Recommended accessories

Other models and accessories → [www.sick.com/W26](http://www.sick.com/W26)

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, 6-pin, angled, DC-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 2 m, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li></ul>	DOL-1306-W02M	6030217
Mounting systems			
	<ul style="list-style-type: none"><li><b>Description:</b> Plate N12 for universal clamp. For mounting PL30A, P250 reflectors, W27 and WTR2 sensors.</li><li><b>Material:</b> Steel, zinc diecast</li><li><b>Details:</b> Zinc plated steel (sheet), Zinc die cast (clamping bracket)</li><li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li><li><b>Usable for:</b> W26, Reflex Array, P250, W23-2, W27-3, W27-3</li></ul>	BEF-KHS-N12	2071950

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is "Sensor Intelligence."**

## WORLDWIDE PRESENCE:

Contacts and other locations [www.sick.com](http://www.sick.com)