



**WTF26P-24161420A00**

W26

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

Type	part no.
WTF26P-24161420A00	1113470

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

## Detailed technical data

## Features

<b>Functional principle</b>	Photoelectric proximity sensor
<b>Functional principle detail</b>	Foreground suppression
<b>Sensing range</b>	
Sensing range min.	0 mm
Sensing range max.	800 mm
Adjustable switching threshold for background suppression	200 mm ... 800 mm
Reference object	Object with 90% remission factor (complies with standard white according to DIN 5033)
Minimum object height at set sensing range in front of black background (6% remission factor)	11 mm, at a distance of 500 mm
Recommended sensing range for the best performance	250 mm ... 500 mm
<b>Emitted beam</b>	
Light source	PinPoint LED
Type of light	Visible red light
Shape of light spot	Point-shaped
Light spot size (distance)	Ø 7 mm (700 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>	

<b>Adjustment</b>	Normative reference	EN 62471:2008-09   IEC 62471:2006, modified
	LED risk group marking	Free group
	Wave length	635 nm
	Average service life	100,000 h at $T_a = +25^\circ\text{C}$
<b>Display</b>	Teach-Turn adjustment	BluePilot: For setting the sensing range
	IO-Link	For configuring the sensor parameters and Smart Task functions
<b>Special applications</b>		Detecting flat objects

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	626 years
<b>DC<sub>avg</sub></b>	0%
<b>T<sub>M</sub> (mission time)</b>	20 years

## Communication interface

<b>IO-Link</b>	✓, V1.1
Data transmission rate	COM2 (38,4 kBaud)
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure	Bit 0 = switching signal $Q_{L1}$ Bit 1 = switching signal $Q_{L2}$ Bit 2 ... 15 = empty
VendorID	26
DeviceID HEX	0x800275
DeviceID DEC	8389237
Compatible master port type	A
SIO mode support	Yes

## Electronics

<b>Supply voltage <math>U_B</math></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)

<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.

Type	Push-pull: PNP/NPN
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	Approx. $U_B$ -2.5 V / 0 V
Signal voltage NPN HIGH/LOW	Approx. $U_B$ / < 2.5 V
Output current $I_{max.}$	$\leq 100$ mA
Circuit protection outputs	Reverse polarity protected Overcurrent and short-circuit protected
Response time	$\leq 2.5$ ms <sup>2)</sup>
Repeatability (response time)	150 $\mu$ s
Switching frequency	200 Hz <sup>3)</sup>
<b>Pin/Wire assignment</b>	
Function of pin 4/black (BK)	Digital output, dark switching, object present $\rightarrow$ output $\bar{Q}_{L1}$ HIGH; IO-Link communication C <sup>4)</sup>
Function of pin 4/black (BK) – detail	The pin 4 function of the sensor can be configured
	Additional possible settings via IO-Link
Function of pin 2/white (WH)	Digital output, light switching, object present $\rightarrow$ output $Q_{L1}$ LOW <sup>4)</sup>
Function of pin 2/white (WH) – detail	The pin 2 function of the sensor can be configured
	Additional possible settings via IO-Link

<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.

## 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>	Male connector M12, 4-pin
<b>Material</b>	
Housing	Plastic, VISTAL®
Front screen	Plastic, PMMA
Male connector	Plastic, VISTAL®
<b>Weight</b>	Approx. 80 g
<b>Maximum tightening torque of the fixing screws</b>	1.3 Nm

## Ambient data

<b>Enclosure rating</b>	IP66 (EN 60529) IP67 (EN 60529) IP69 (EN 60529) <sup>1)</sup>
<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))

<sup>1)</sup> Replaces IP69K with ISO 20653: 2013-03.

<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>Resistance to cleaning agent</b>	ECOLAB
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

<sup>1)</sup> Replaces IP69K with ISO 20653: 2013-03.

## Smart Task

<b>Smart Task name</b>	Base logics
<b>Logic function</b>	Direct AND OR Window Hysteresis
<b>Timer function</b>	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
<b>Inverter</b>	Yes
<b>Switching frequency</b>	SIO Logic: 200 Hz <sup>1)</sup> IOL: 200 Hz <sup>2)</sup>
<b>Response time</b>	SIO Logic: 2,5 ms <sup>1)</sup> IOL: 2,5 ms <sup>2)</sup>
<b>Repeatability</b>	SIO Logic: 300 µs <sup>1)</sup> IOL: 400 µs <sup>2)</sup>
<b>Switching signal</b>	Switching signal Q <sub>L1</sub> Switching signal Q̄ <sub>L1</sub>
	Switching output Switching output

<sup>1)</sup> Use of Smart Task functions without IO-Link communication (SIO mode).

<sup>2)</sup> Use of Smart Task functions with IO-Link communication function.

## Diagnosis

<b>Device status</b>	Yes
<b>Quality of teach</b>	Yes

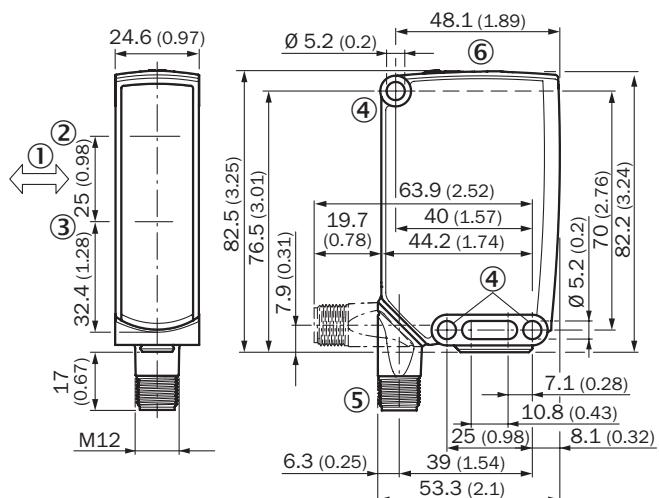
## Certificates

<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>IO-Link</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

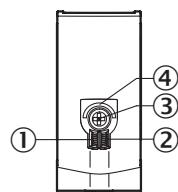
## Dimensional drawing, sensor



Dimensions in mm (inch)

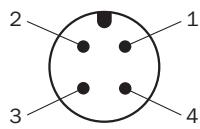
- ① Standard direction of the material being detected
- ② Center of optical axis, sender
- ③ Center of optical axis, receiver
- ④ Mounting hole, Ø 5.2 mm
- ⑤ Connection
- ⑥ display and adjustment elements

display and adjustment elements

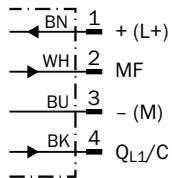


- ① LED indicator green
- ② LED indicator yellow
- ③ Teach-Turn adjustment
- ④ LED blue

Connection type M12 male connector, 4-pin

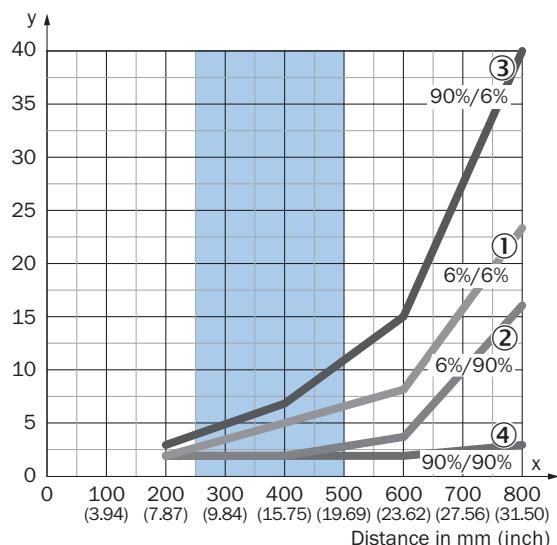


Connection diagram Cd-390



## Characteristic curve

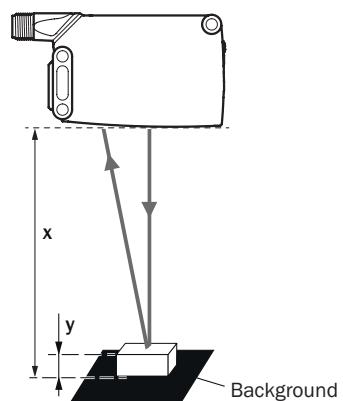
Minimum object height in mm (inch)



■ Recommended sensing range for the best performance

- ① black object, 6% remission factor, in front of black background, 6% remission factor
- ② black object, 6% remission factor, in front of white background, 90% remission factor
- ③ white object, 90% remission factor, in front of black background, 6% remission factor
- ④ white object, 90% remission factor, in front of white background, 90% remission factor

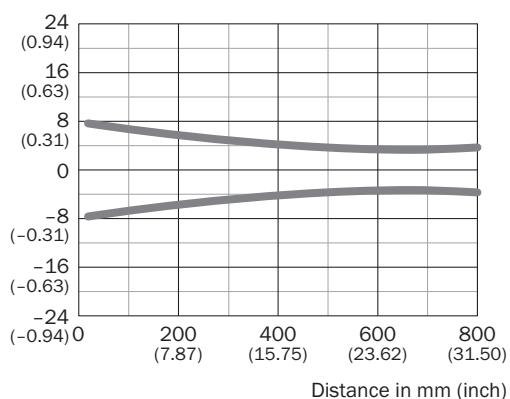
Example:  
Reliable detection of the object



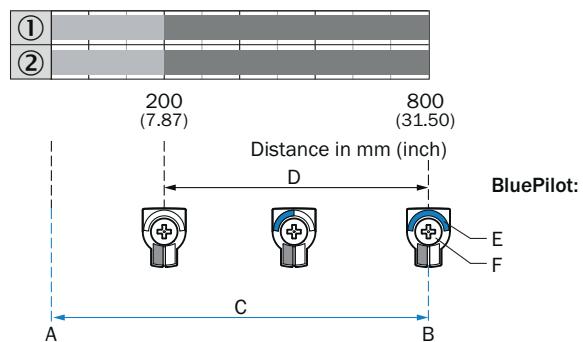
Black background (6 % remission factor)  
Distance of sensor to background x = 500 mm  
Minimum object height for white object (90 % remission factor) y = 11 mm

## Light spot size

mm (inch)



## Sensing range diagram



A = Sensing range min. in mm

B = Sensing range max. in mm

C = Viewing range

D = Adjustable switching threshold for foreground suppression

E = Sensing range indicator

F = Teach-Turn adjustment

① Sensing range on black, 6% remission factor

② Sensing range on white, 90% remission factor

## Recommended accessories

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

	Brief description	Type	part no.
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)