



**WSE26P-39112102ZZZ**

**W26**

**PHOTOELECTRIC SENSORS**

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
WSE26P-39112102ZZZ	1102912

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

Illustration may differ



## Detailed technical data

### Features

<b>Functional principle</b>	Through-beam photoelectric sensor
<b>Sensing range</b>	
Sensing range min.	0 m
Sensing range max.	60 m
Maximum distance range from receiver to sender (operating reserve 1)	0 m ... 60 m
Recommended distance range from receiver to sender (operating reserve 2)	0 m ... 50 m
Recommended sensing range for the best performance	0 m ... 50 m
<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 115 mm (15 m)
Maximum dispersion of the emitted beam around the standardized transmission axis (squint angle)	< +/- 1.0° (at $T_U = +23^\circ\text{C}$ )
<b>Key LED figures</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>Adjustment</b>	Teach-Turn adjustment	BluePilot For configuring the time function
	Wire/pin	For activating the test input
<b>Display</b>	LED blue 1	BluePilot: Alignment aid
	LED blue 2	BluePilot: Time function display
	LED green	Operating indicator Static on: power on
	LED yellow	Status of received light beam Static on: object not present Static off: object present Flashing: Below the 1.5 function reserve

## Safety-related parameters

<b>MTTF<sub>D</sub></b>	438 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, sender</b>	$\leq 30 \text{ mA}$ , without load. At $U_B = 24 \text{ V}$ $< 50 \text{ mA}$ <sup>2)</sup>
<b>Current consumption, receiver</b>	$\leq 30 \text{ mA}$ , without load. At $U_B = 24 \text{ V}$ $< 50 \text{ mA}$ <sup>2)</sup>
<b>Protection class</b>	III
<b>Digital output</b>	Number
	Type
	Switching mode
	Signal voltage PNP HIGH/LOW
	Signal voltage NPN HIGH/LOW
	Output current I <sub>max.</sub>
	Circuit protection outputs
<b>Response time</b>	Response time
	Repeatability (response time)
	150 $\mu\text{s}$

<sup>1)</sup> Limit values.<sup>2)</sup> 10 V DC ... 16 V DC, without load.<sup>3)</sup> Signal transit time with resistive load in switching mode.<sup>4)</sup> With light/dark ratio 1:1.<sup>5)</sup> This switching output must not be connected to another output.

Switching frequency	1,000 Hz <sup>4)</sup>
Time functions	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, sender</b>	
Pin 6 function/gray (GY)	Test at 0 V
<b>Pin/Wire assignment, receiver</b>	
Function of pin 4/black (BK)	Digital output, light switching, object present → output $Q_{L1}$ LOW <sup>5)</sup>
Pin 5 function/white (WH)	Digital output, dark switching, object present → output $\bar{Q}_{L1}$ HIGH

<sup>1)</sup> Limit values.<sup>2)</sup> 10 V DC ... 16 V DC, without load.<sup>3)</sup> Signal transit time with resistive load in switching mode.<sup>4)</sup> With light/dark ratio 1:1.<sup>5)</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>	Cable with Q6 male connector, 6-pin, DC-coded, 298 mm
<b>Connection detail</b>	<p>Deep-freeze property Do not bend below 0 °C</p> <p>Conductor size 0.14 mm<sup>2</sup></p> <p>Cable diameter Ø 4.8 mm</p> <p>Length of cable (L) 270 mm</p> <p>Bending radius For flexible use &gt; 12 x cable diameter</p> <p>Bending cycles 1,000,000</p>
<b>Material</b>	<p>Housing Plastic, VISTAL®</p> <p>Front screen Plastic, PMMA</p> <p>Cable Plastic, PVC</p> <p>Male connector Plastic, VISTAL®</p>
<b>Weight</b>	Approx. 200 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>	<p>50 g, 11 ms (25 positive and 25 negative shocks per axis, for X, Y, Z axes, 150 shocks in total (EN60068-2-27))</p> <p>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))</p>

<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

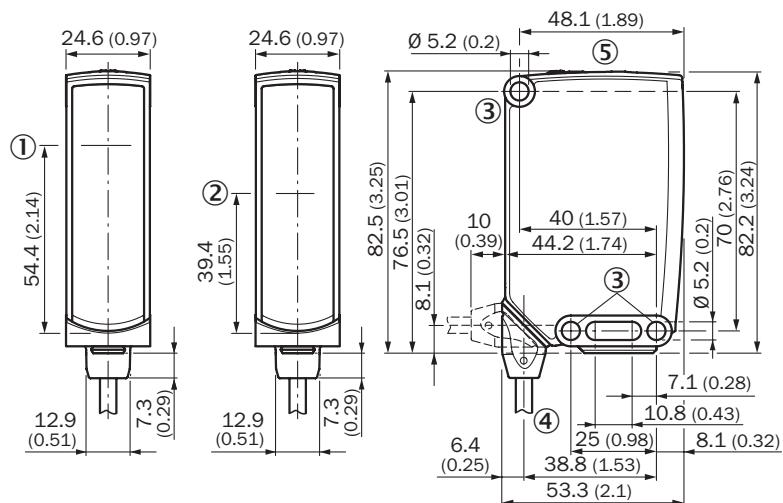
## Classifications

<b>ECLASS 5.0</b>	27270901
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901
<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

## 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 certificate</b>	✓
<b>Photobiological safety (DIN EN 62471) certificate</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

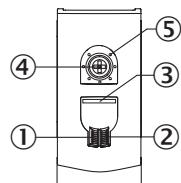
## Dimensional drawing, sensor



Dimensions in mm (inch)

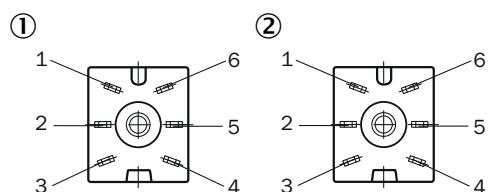
- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole, Ø 5.2 mm
- ④ Connection
- ⑤ display and adjustment elements

## display and adjustment elements



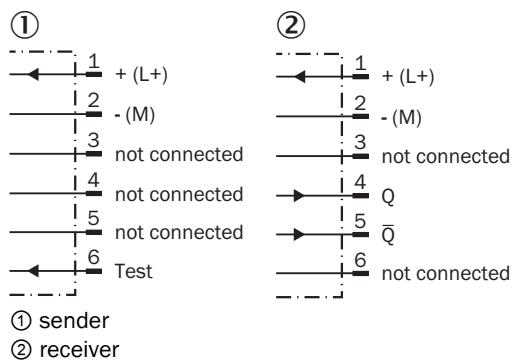
- ① LED indicator green
- ② LED indicator yellow
- ③ LED blue 1
- ④ Teach-Turn adjustment
- ⑤ LED blue 2

## Connection type Cubic connector, 6-pin

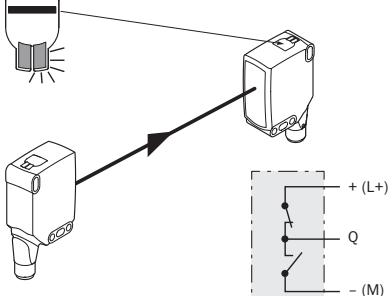
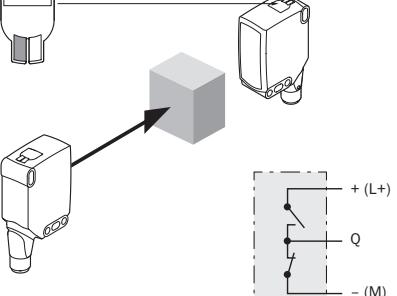


- ① sender
- ② receiver

Connection diagram Cd-075



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

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

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

Dark switching $\bar{Q}$ (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	✗	✗

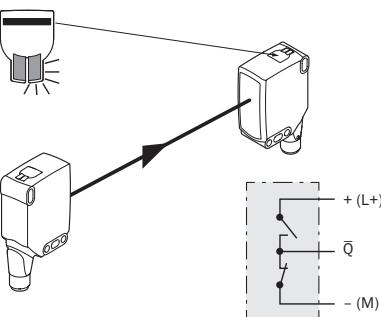


Diagram showing a light receive indicator setup. A sensor emits light towards a receiver. The receiver is connected to a power source (+ (L+)) and ground (- (M)). The output is labeled  $\bar{Q}$ .

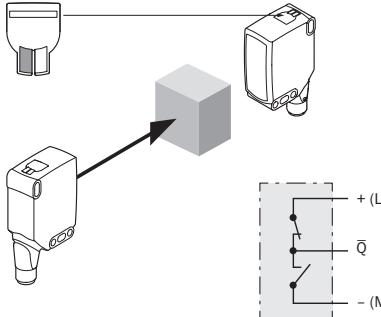
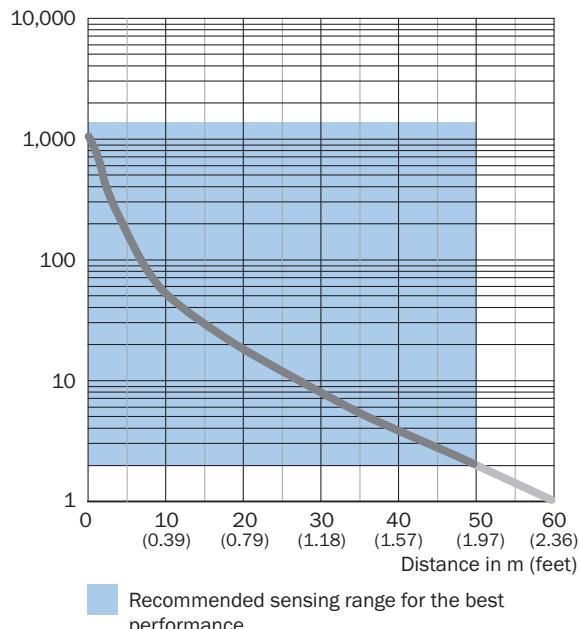


Diagram showing a load resistance setup. A sensor emits light towards a receiver. The receiver is connected to a power source (+ (L+)) and ground (- (M)). The output is labeled  $\bar{Q}$ .

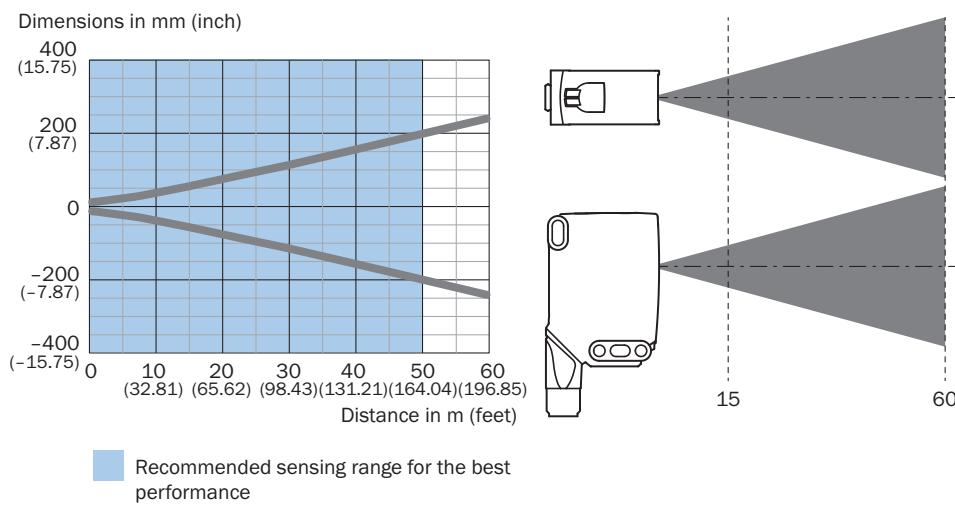
## Characteristic curve WSE26P-xxxxx1xx

Operating reserve



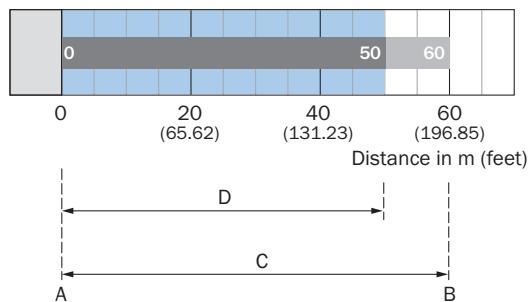
WSE26I-xxxxx1xx

## Light spot size Visible red light



WSE26P-xxxxx1xx

## Sensing range diagram WSE26P-xxxxx1xx

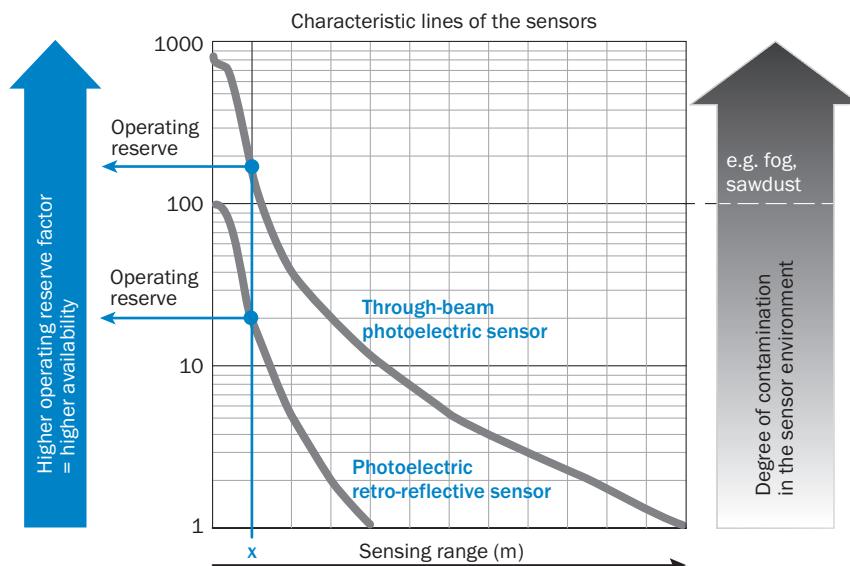


■ Recommended sensing range for the best performance

WSE26I-xxxxx1xx

A	Sensing range min. in m
B	Sensing range max. in m
C	Maximum distance range from receiver to sender
D	Recommended distance range from receiver to sender

## Functions Operation note



At a sensing range of „x“ the photoelectric retro-reflective and through-beam photoelectric sensors have different operating reserves (see blue arrow). The higher the operating reserve factor, the better the sensor can compensate the contamination in the air or in the light beam and on the optical surfaces (front screen, reflector), i.e. the sensor has the maximum availability, otherwise the sensor switches due to pollution although there is no object in the path of the light beam.

## Functions Operation note

## BluePilot: Blue indicator LEDs with double benefits

<p>Easy and quick sensor alignment with the help of the LED indicator</p> <p>All blue LEDs illuminate</p> <ul style="list-style-type: none"> <li>- optimum alignment</li> <li>- highest possible operating reserve</li> </ul>	<p><b>WSE through-beam photoelectric sensor alignment</b></p>
<p><b>Service note</b></p> <p>A reduction in sensor availability is displayed by a decrease of the blue LEDs.</p> <p>Possible causes:</p> <ol style="list-style-type: none"> <li>insufficient alignment</li> <li>contamination of the optical surfaces</li> <li>particles in the light beam</li> </ol>	

## 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> Mounting bracket with hinged arm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W23-2, W27-3, Reflex Array</li> </ul>	BEF-WN-W27	2009122
	<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
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket with articulated arm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W16, W26, W11, W12, W23, W27, Dx50, W280, G10</li> </ul>	BEF-WN-MULTI2	2093945
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W23-2, W27-3, Reflex Array</li> </ul>	BEF-WN-W23	2019085

## 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)