



WSE26P-39112102ZZZ

W26

PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
WSE26P-39112102ZZZ	1102912

Other models and accessories → www.sick.com/W26



Detailed technical data

Features

Functional principle		Through-beam photoelectric sensor
Sensing range		
	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
Emitted beam		
	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 Ta = +23 °C)
Key LED figures		
	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 Ta = +25 °C
Adjustment		
	Teach-Turn adjustment	BluePilot: for configuring the time function

Display	Wire/pin	For activating the test input
	LED blue 1	BluePilot: Alignment aid
	LED blue 2	BluePilot: Time function display
	LED green	Operating indicatorStatic on: power on
	LED yellow	Status of received light beamStatic on: object not presentStatic off: object presentFlashing: Below the 1.5 function reserve

Safety-related parameters

MTTF_D	438 years
DC_{avg}	0 %
T_M (mission time)	20 years

Electronics

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	≤ 5 V _{pp}
Usage category	DC-12 (According to EN 60947-5-2) DC-13 (According to EN 60947-5-2)
Current consumption, sender	≤ 30 mA, without load. At U _B = 24 V < 50 mA ²⁾
Current consumption, receiver	≤ 30 mA, without load. At U _B = 24 V < 50 mA ²⁾
Protection class	III
Digital output	
Number	2 (Complementary)
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.}	≤ 100 mA
Circuit protection outputs	Reverse polarity protected Overcurrent and short-circuit protected
Response time	≤ 500 μs ³⁾
Repeatability (response time)	150 μs
Switching frequency	1,000 Hz ⁴⁾
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)
Pin/Wire assignment, sender	
Pin 6 function/gray (GY)	Test at 0 V
Pin/Wire assignment, receiver	

1) Limit values.

2) 10 V DC ... 16 V DC, without load.

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

4) With light/dark ratio 1:1.

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

Function of pin 4/black (BK)	Digital output, light switching, object present → output Q _{L1} LOW ⁵⁾
Pin 5 function/white (WH)	Digital output, dark switching, object present → output \bar{Q}_{L1} HIGH

¹⁾ Limit values.

²⁾ 10 V DC ... 16 V DC, without load.

³⁾ Signal transit time with resistive load in switching mode.

⁴⁾ With light/dark ratio 1:1.

⁵⁾ This switching output must not be connected to another output.

Mechanics

Housing	Rectangular
Dimensions (W x H x D)	24.6 mm x 82.5 mm x 53.3 mm
Connection	Cable with Q6 male connector, 6-pin, DC-coded, 298 mm
Connection detail	
Deep-freeze property	Do not bend below 0 °C
Conductor size	0.14 mm ²
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
Material	
Housing	Plastic, VISTAL®
Front screen	Plastic, PMMA
Cable	Plastic, PVC
Male connector	Plastic, VISTAL®
Weight	Approx. 200 g
Maximum tightening torque of the fixing screws	1.3 Nm

Ambient data

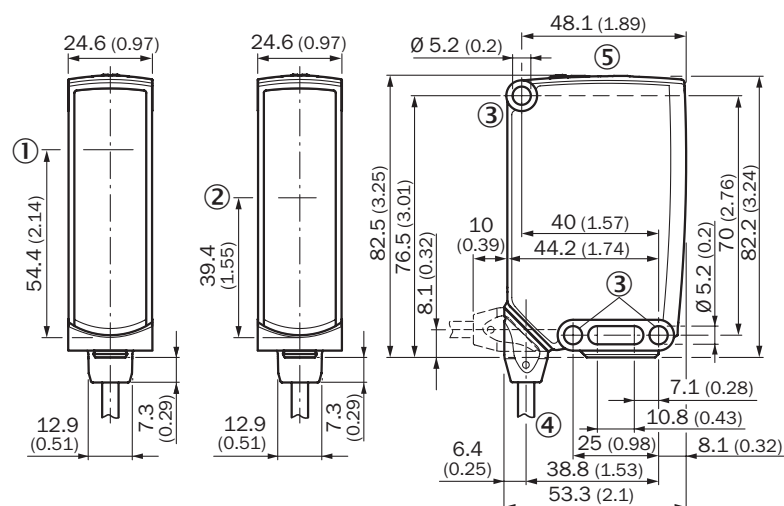
Enclosure rating	IP65 (EN 60529)
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
Shock resistance	50 g, 11 ms (25 positive and 25 negative shocks per axis, for X, Y, Z axes, 150 shocks in total (EN60068-2-27)) 50 g, 6 ms (5,000 positive and 5,000 negative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

Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓

Classifications

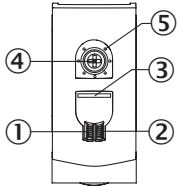
Dimensional drawing, sensor



- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Mounting hole, $\varnothing 5.2$ mm

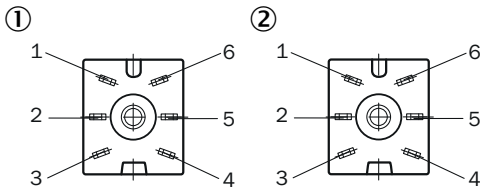
- ④ Connection
- ⑤ display and adjustment elements

display and adjustment elements



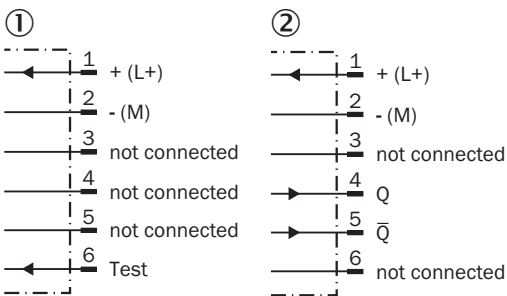
- ① LED indicator green
- ② LED indicator yellow
- ③ LED blue 1
- ④ Teach-Turn adjustment
- ⑤ LED blue 2

Connection type Cubic connector, 6-pin



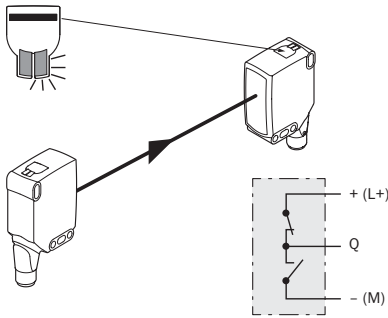
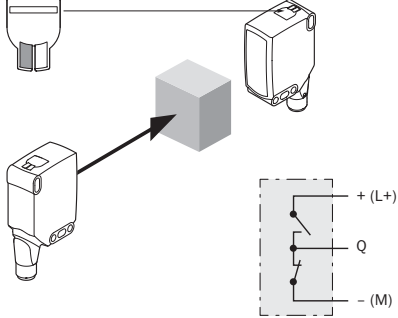
- ① sender
- ② receiver

Connection diagram Cd-075

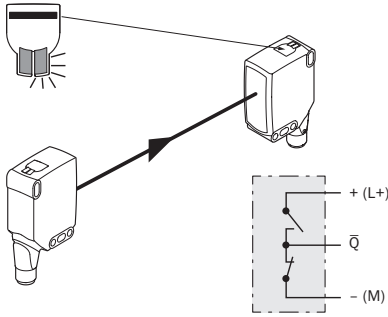
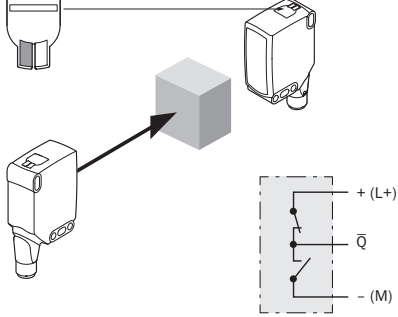


- ① sender
- ② receiver

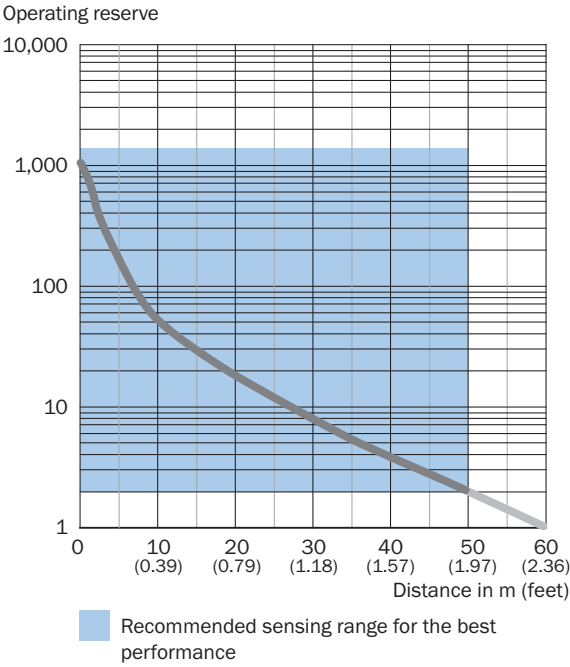
Truth table Push-pull: PNP/NPN - light switching Q

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

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

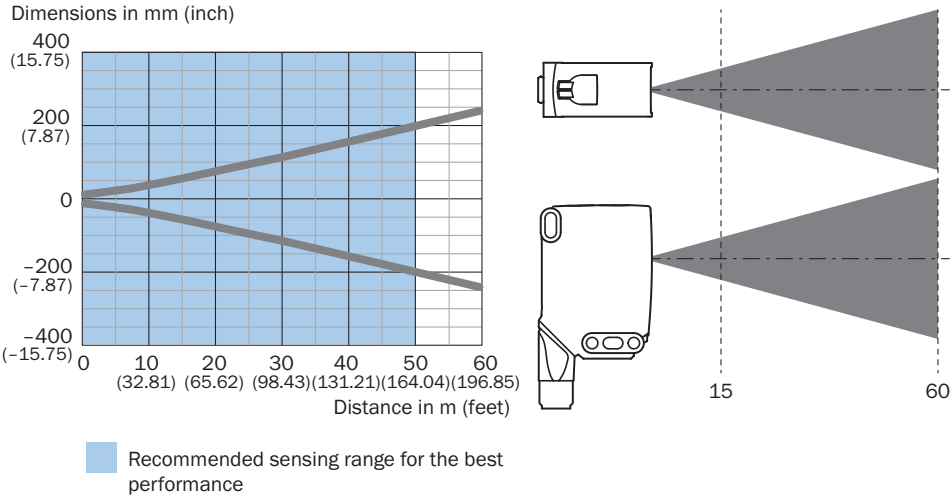
	Dark switching \bar{Q} (normally open (upper switch), normally closed (lower switch))	
	Object not present → Output LOW	Object present → Output HIGH
Light receive	✓	✗
Light receive indicator	☀	✗
Load resistance to L+	⚡	✗
Load resistance to M	✗	⚡
		

Characteristic curve WSE26P-xxxx1xx



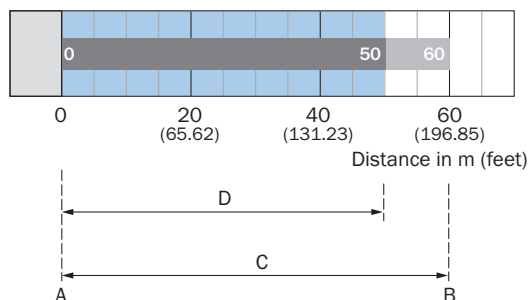
WSE26I-xxxx1xx

Light spot size Visible red light



WSE26P-xxxx1xx

Sensing range diagram WSE26P-xxxx1xx

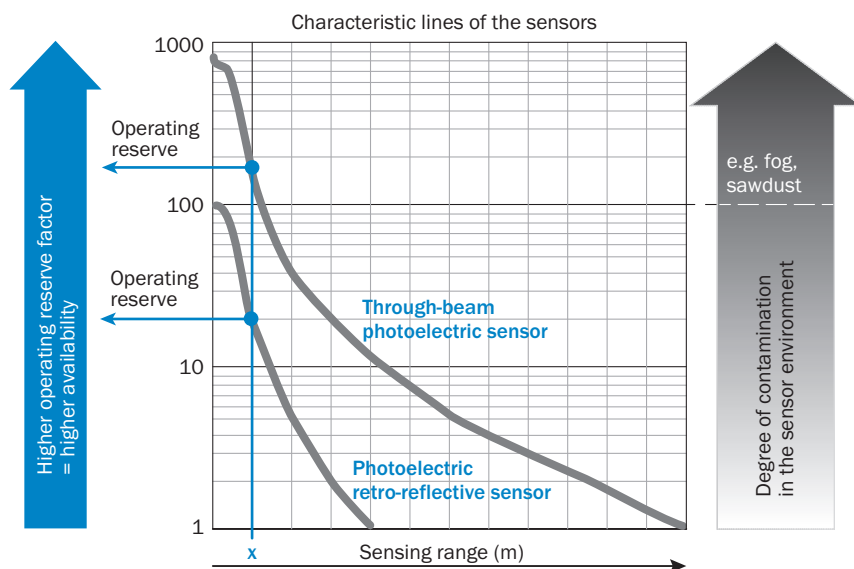


Recommended sensing range for the best performance

WSE26I-xxxx1xx

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

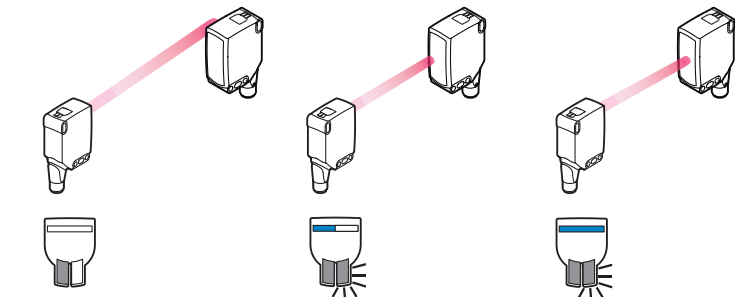
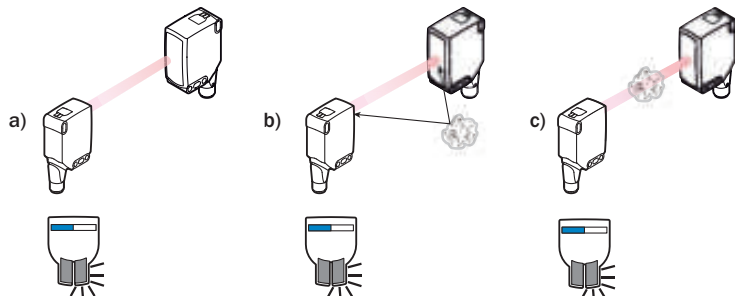
Functions Operation note



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">– optimum alignment– highest possible operating reserve	<p>WSE through-beam photoelectric sensor alignment</p> 
<p>Service note</p> <p>A reduction in sensor availability is displayed by a decrease of the blue LEDs.</p> <p>Possible causes:</p> <ul style="list-style-type: none">a) insufficient alignmentb) contamination of the optical surfacesc) particles in the light beam	

Recommended accessories

Other models and accessories → www.sick.com/W26

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