



# WL12G-3P2582P04

## W12

PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
WL12G-3P2582P04	1059645

Included in delivery: P250F (1)

Other models and accessories → [www.sick.com/W12](http://www.sick.com/W12)

Detailed technical data

Features

<b>Functional principle</b>		Photoelectric retro-reflective sensor
<b>Sensing range max.</b>		0 m ... 3 m <sup>1)</sup>
<b>Polarisation filter</b>		Yes
<b>Emitted beam</b>		
	Light source	LED <sup>2)</sup>
	Type of light	Infrared light
	Light spot size (distance)	Ø 25 mm (1.5 m)
<b>Key LED figures</b>		
	Wave length	850 nm
<b>Adjustment</b>		Cable, Single teach-in button
<b>Special features</b>		Different functions selectable by teach-in. Function 1 = Sensitivity adjustment. Function 2 = Operation mode selection (Mode I = 40 %, Mode II = 18 %, Mode III = 10 %). Function 3 = change pin 4 and pin 2 assignments
<b>Special applications</b>		Detecting transparent objects
<b>Items supplied</b>		Further details can be found in the operating instructions 8015091

<sup>1)</sup> Reflector P250F.  
<sup>2)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

Safety-related parameters

MTTF <sub>D</sub>	1,099 years
DC <sub>avg</sub>	0 %

<b>T<sub>M</sub> (mission time)</b>	20 years
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## Electronics

<b>Supply voltage U<sub>B</sub></b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	40 mA <sup>3)</sup>
<b>Protection class</b>	III
<b>Digital output</b>	
Type	PNP <sup>4)</sup>
Switching mode	Light switching <sup>4)</sup>
Signal voltage PNP HIGH/LOW	Approx. V <sub>S</sub> – 2.5 V / 0 V
Output current I <sub>max.</sub>	≤ 100 mA
Response time	≤ 333 μs <sup>5)</sup>
Switching frequency	1,500 Hz <sup>6)</sup>
<b>Circuit protection</b>	A <sup>7)</sup> B C <sup>8)</sup> D <sup>9)</sup>
<b>Special feature</b>	Detecting transparent objects
<b>Operating mode</b>	Mode I, 40 % attenuation, Mode II, 18 % attenuation, Mode III, 10 % attenuation

<sup>1)</sup> Limit values when operated in short-circuit protected network: max. 8 A.

<sup>2)</sup> May not fall below or exceed U<sub>y</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> Device has two switching outputs: PNP toff = 50 ms / PNP = 600 μs, 1,500 Hz.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> With light/dark ratio 1:1.

<sup>7)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>8)</sup> C = interference suppression.

<sup>9)</sup> D = outputs overcurrent and short-circuit protected.

## Mechanics

<b>Housing</b>	Rectangular
<b>Dimensions (W x H x D)</b>	15.5 mm x 48.5 mm x 42 mm
<b>Connection</b>	Plug, M12, 5-pin
<b>Material</b>	
Housing	Metal, zinc diecast
Front screen	Plastic, PMMA
<b>Weight</b>	120 g

## Ambient data

<b>Enclosure rating</b>	IP66 IP67
<b>Ambient operating temperature</b>	–40 °C ... +60 °C
<b>Ambient temperature, storage</b>	–40 °C ... +75 °C
<b>UL File No.</b>	NRKH.E181493 & NRKH7.E181493

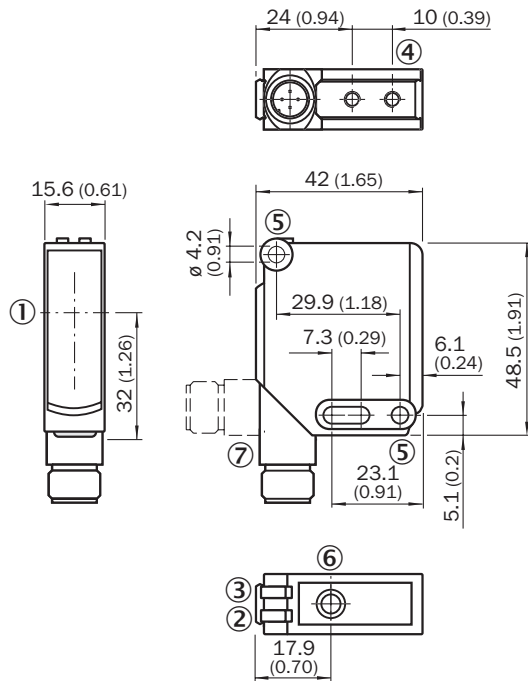
### Classifications

<b>ECLASS 5.0</b>	27270902
<b>ECLASS 5.1.4</b>	27270902
<b>ECLASS 6.0</b>	27270902
<b>ECLASS 6.2</b>	27270902
<b>ECLASS 7.0</b>	27270902
<b>ECLASS 8.0</b>	27270902
<b>ECLASS 8.1</b>	27270902
<b>ECLASS 9.0</b>	27270902
<b>ECLASS 10.0</b>	27270902
<b>ECLASS 11.0</b>	27270902
<b>ECLASS 12.0</b>	27270902
<b>ETIM 5.0</b>	EC002717
<b>ETIM 6.0</b>	EC002717
<b>ETIM 7.0</b>	EC002717
<b>ETIM 8.0</b>	EC002717
<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>Photobiological safety (DIN EN 62471) certificate</b>	✓

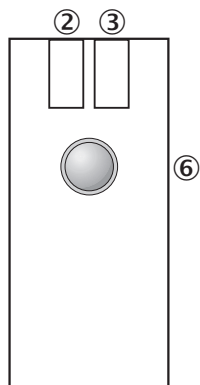
## Dimensional drawing



Dimensions in mm (inch)

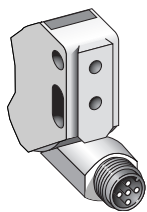
- ① Optical axis
- ② LED indicator yellow: Status of received light beam
- ③ Green LED indicator: supply voltage active, mode I is set, blue LED indicator: mode II is set, bright blue indicator: mode III is set
- ④ M4 threaded mounting hole, 4 mm deep
- ⑤ Mounting hole, Ø 4.2 mm
- ⑥ Sensitivity setting: single teach-in button
- ⑦ Connection

## Adjustments Teach-in

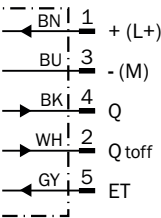


- ② LED indicator yellow: Status of received light beam
- ③ green LED indicator: power on, teach-in mode I
- ③ blue LED indicator: teach-in mode II
- ⑥ Single teach-in button,
- ⑥ function 1: teach-in sensitivity on reflector,
- ⑥ function 2: change operation/teach-in mode

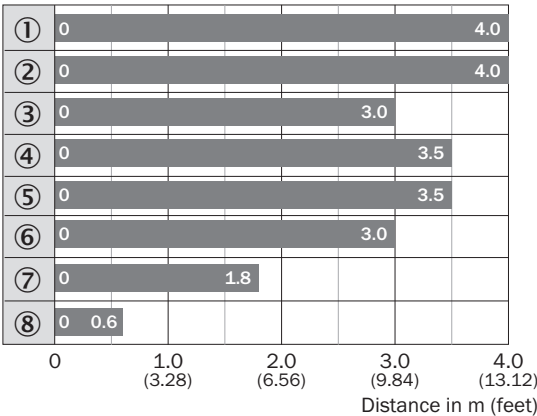
Connection type



Connection diagram Cd-611



Sensing range diagram WL12G-3



- Sensing range max.
- ① Reflector PL80A
  - ② Reflector C110A
  - ③ Reflector P250F
  - ④ Reflector PL50A
  - ⑤ Reflector PL40A
  - ⑥ Reflector PL30A
  - ⑦ Reflector PL20A
  - ⑧ Reflective tape REF-IRF-56

## Functions




Teach-in-Modus für Objekte / Teach-in mode for objects	Lichtdämpfung / light attenuation	Objekttyp / object type	Teach-in-Zeit / Teach-in time	Ext. Teach-in über Lei- tung / Ext. cable teach	Anzeige-LED / LED indicator
I	40 %	PET-Flasche / Folie /Glas / PET-Flasche / Folie/ glas	1 ... 5 s	30 ... 100 ms	grün / green
II	18 %	Farbglasflaschen/ Colored glass bottles	5 ... 10 s	100 ... 200 ms	blau / blue
III	10 %	dickwandige, farbige Glasflaschen/ thick-walled, colored glass bottles dickwandige Glasscheiben/ thick-walled glass panes opaque Targets, z.B. dickwandiges Milchglas/ opaque targets, e.g. thick-walled frosted glass	9 ... 12 s	150 ... 200 ms	hellblau (weiß)/ bright blue (white)




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## Recommended accessories

Other models and accessories → [www.sick.com/W12](http://www.sick.com/W12)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Universal mounting bracket for reflectors</li> <li><b>Dimensions (W x H x L):</b> 85 mm x 90 mm x 35 mm</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Suitable for:</b> C110A, P250, PL20, PL30A, PL40A, PL80A</li> </ul>	BEF-WN-REFX	2064574
	<ul style="list-style-type: none"> <li><b>Description:</b> Mounting bracket, large</li> <li><b>Material:</b> Stainless steel</li> <li><b>Details:</b> Stainless steel</li> <li><b>Items supplied:</b> Mounting hardware included</li> <li><b>Suitable for:</b> W11-2, W12-3, W16</li> </ul>	BEF-WG-W12	2013942
reflectors and optics			
	<ul style="list-style-type: none"> <li><b>Description:</b> Fine triple reflector, screw connection, suitable for laser sensors</li> <li><b>Dimensions:</b> 52 mm 62 mm</li> <li><b>Ambient operating temperature:</b> -30 °C ... +65 °C</li> </ul>	P250F	5308843

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 5-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> <math>\leq 0.75 \text{ mm}^2</math></li> <li>• <b>Note:</b> For field bus technology</li> </ul>	STE-1205-G	6022083
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-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> 5 m, 5-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>	YF2A15-050UB5XLEAX	2095618
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-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> 5 m, 5-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Uncontaminated zones, Zones with chemicals</li> </ul>	YF2A15-050VB5XLEAX	2096240



## 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)