



WL12GC-3P2472B01

W12G

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WL12GC-3P2472B01	1070335

Other models and accessories → www.sick.com/W12G

Detailed technical data

Features

Device type	Photoelectric sensors
Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Autocollimation
Sensing range max.	0 m ... 4 m
Sensing range	0 m ... 4 m ¹⁾
Polarisation filters	Yes
Emitted beam	
Light source	PinPoint LED ²⁾
Type of light	Visible red light
Light spot size (distance)	Ø 25 mm (1.5 m)
Key LED figures	
Wave length	660 nm
Adjustment	IO-Link Single teach-in button
Special features	Functions compatible with WL12GC-3P2472A91
Special applications	Detecting transparent objects

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at T_U = +25 °C.

Pin 2 configuration	External input, Teach-in input, Sender off input, Detection output, logic output, Device contamination alarm output
AutoAdapt	✓

¹⁾ Reflector PL80A.

²⁾ Average service life: 100,000 h at $T_U = +25\text{ °C}$.

Safety-related parameters

MTTF_D	891 years
DC_{avg}	0 %
T_M (mission time)	20 years

Communication interface

Communication interface	IO-Link V1.1
Communication Interface detail	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 = measuring value
VendorID	26
DeviceID HEX	0x8000F5
DeviceID DEC	8388853

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	30 mA ³⁾
Protection class	III
Digital output	
Type	PNP
Signal voltage PNP HIGH/LOW	Approx. V _S - 2.5 V / 0 V
Output current I _{max.}	≤ 100 mA
Repeatability (response time)	100 μs ⁴⁾
Switching frequency	1,500 Hz ⁵⁾
Attenuation along light beam	> 8 %
Switching mode	Light/dark switching

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

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load.

⁴⁾ Valid for Q \ on Pin2, if configured with software.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

¹⁰⁾ Signal transit time with resistive load.

¹¹⁾ With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

Circuit protection	A ⁶⁾ B ⁷⁾ C ⁸⁾ D ⁹⁾
Response time Q/ on Pin 2	200 µs ... 300 µs ^{10) 4)}
Switching frequency Q / to pin 2	≤ 1,500 Hz ¹¹⁾
Special feature	Detecting transparent objects

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

²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

⁴⁾ Valid for Q \ on Pin2, if configured with software.

⁵⁾ With light/dark ratio 1:1.

⁶⁾ A = V_S connections reverse-polarity protected.

⁷⁾ B = inputs and output reverse-polarity protected.

⁸⁾ C = interference suppression.

⁹⁾ D = outputs overcurrent and short-circuit protected.

¹⁰⁾ Signal transit time with resistive load.

¹¹⁾ With light / dark ratio 1:1, valid for Q \ on Pin2, if configured with software.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	15.6 mm x 48.5 mm x 42 mm
Connection	Male connector M12, 4-pin
Material	
Housing	Metal, zinc diecast
Front screen	Plastic, PMMA
Weight	120 g

Ambient data

Enclosure rating	IP66 IP67
Ambient operating temperature	-40 °C ... +60 °C
Ambient temperature, storage	-40 °C ... +75 °C
UL File No.	NRKH.E181493 & NRKH7.E181493

Smart Task

Smart Task name	Timestamp + debouncing
Logic function	Direct AND OR WINDOW Hysteresis
Timer function	Deactivated On delay Off delay ON and OFF delay Impulse (one shot)

¹⁾ SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

²⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

³⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Inverter	Yes
Response time	SIO Direct: 300 µs ... 450 µs ¹⁾ SIO Logic: 550 µs ... 650 µs ²⁾ IOL: --- ³⁾
Repeatability	SIO Direct: 150 µs ¹⁾ SIO Logic: 150 µs ²⁾ IOL: --- ³⁾
Time stamp accuracy	SIO Direct: --- SIO Logic: --- IOL: - 90 ... + 90 µs
Min. Time between two process events (switches)	SIO Direct: 450 µs SIO Logic: 450 µs IOL: 500 ms
Time stamp number buffer	SIO Direct: --- SIO Logic: --- IOL: 8
Max. TimeStamp Range	SIO Direct: --- SIO Logic: --- IOL: 260 ms
Debounce time max.	SIO Direct: --- SIO Logic: 52 ms IOL: 52 ms
Switching signal	
Switching signal Q _{L1}	Switching output
Switching signal Q _{L2}	Switching output
Measuring value	Timestamp

¹⁾ SIO Direct: sensor operation in standard I/O mode without IO-Link communication and without using internal sensor logic or time parameters (set to "direct"/"deactivated").

²⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.

³⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.

Diagnosis

Device status	Yes
Quality of teach	Yes
Quality of run	Yes, Contamination display

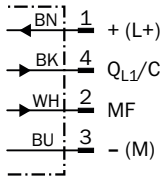
Classifications

eCl@ss 5.0	27270902
eCl@ss 5.1.4	27270902
eCl@ss 6.0	27270902
eCl@ss 6.2	27270902
eCl@ss 7.0	27270902
eCl@ss 8.0	27270902
eCl@ss 8.1	27270902
eCl@ss 9.0	27270902
eCl@ss 10.0	27270902
eCl@ss 11.0	27270902
eCl@ss 12.0	27270902
ETIM 5.0	EC002717

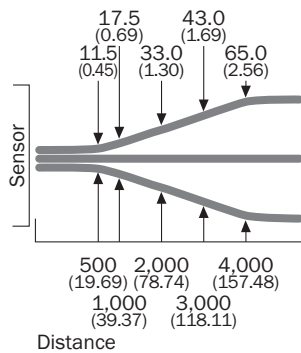
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection diagram

Cd-367



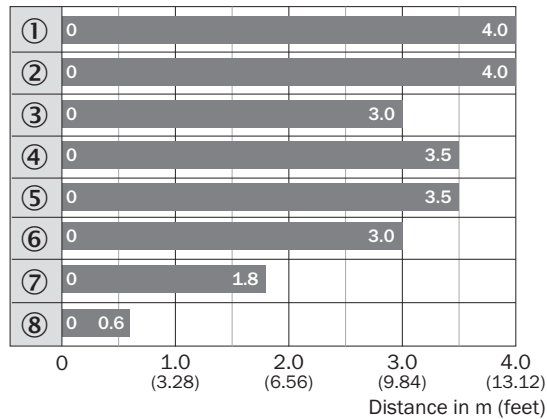
Light spot size



All dimensions in mm (inch)

Sensing range diagram

WL12G-3



■ Sensing range max.

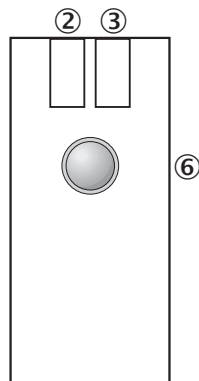
- ① Reflector PL80A
- ② Reflector C110A
- ③ Reflector P250F
- ④ Reflector PL50A
- ⑤ Reflector PL40A
- ⑥ Reflector PL30A
- ⑦ Reflector PL20A
- ⑧ Reflective tape REF-IRF-56

Functions

Teach-in-Modus für Objekte / Teach-in mode for objects	Lichtdämpfung /	Objekttyp /	Teach-in-Zeit / Teach-in time	Ext. Teach-in über Leitung / Ext. cable teach-in	Anzeige-LED / LED indicator
I	10 %	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

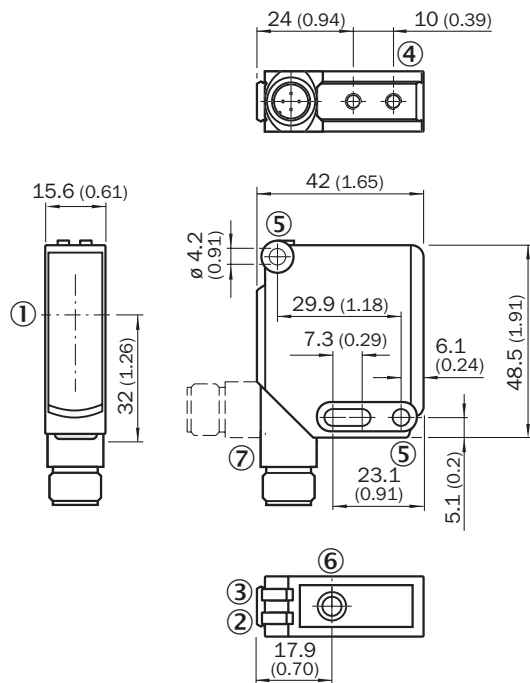
Adjustments

Teach-in



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





Dimensional drawing (Dimensions in mm (inch))



- ① Optical axis
- ② LED indicator yellow: Status of received light beam
- ③ LED indicator green: Supply voltage active
- ④ M4 threaded mounting hole, 4 mm deep
- ⑤ Mounting hole, \varnothing 4.2 mm
- ⑥ Sensitivity setting: single teach-in button
- ⑦ Connection

Recommended accessories

Other models and accessories → www.sick.com/W12G

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Cable: unshielded	STE-1204-G	6009932
Reflectors			
	Fine triple reflector, screw connection, suitable for laser sensors, 52 mm x 62 mm, PM-MA/ABS, Screw-on, 2 hole mounting	P250F	5308843

Recommended services

Additional services → www.sick.com/W12G

	Type	Part no.
Function Block Factory		
<ul style="list-style-type: none"> Description: The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found <a _blank"="" href="https://fbf.cloud.sick.com target=">here. 	Function Block Factory	On request

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