



WL12C-3P2432A70

W12-3

SMALL PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	Part no.
WL12C-3P2432A70	1067775

The sensor is equipped with a special Smart Task function. Additional information can be found in the "Technical Data." Use of the sensor for pure object detection is limited.

Other models and accessories → www.sick.com/W12-3

Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Without reflector minimum distance (autocollimation/coaxial optics)
Sensing range max.	0 m ... 5 m ¹⁾
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 100 mm (3 m)
Key LED figures	
Wave length	640 nm
Adjustment	IO-Link, Single teach-in button
Angle of dispersion	Approx. 1.5°
Pin 2 configuration	External input, Teach-in input, Sender off input, Detection output, logic output, Device contamination alarm output

¹⁾ Reflector PL80A.

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

Safety-related parameters

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

Communication interface

IO-Link	✓, COM2 (38,4 kBaud)
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 = measuring value
VendorID	26
DeviceID HEX	0x8000EF
DeviceID DEC	8388847

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 ⁴⁾
Switching mode	Light/dark switching
Signal voltage PNP HIGH/LOW	> U _v - 2,5 V / ca. 0 V
Output current I _{max.}	≤ 100 mA
Response time	⁵⁾
Repeatability (response time)	100 μs ⁶⁾
Switching frequency	1,500 Hz ⁷⁾
Circuit protection	A ⁸⁾ B ⁹⁾ C ¹⁰⁾ D ¹¹⁾
Response time Q/ on Pin 2	200 μs ... 300 μs ^{5) 6)}
Switching frequency Q/ to pin 2	≤ 1,500 Hz ¹²⁾

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

²⁾ May not fall below or exceed U_v tolerances.

³⁾ Without load.

⁴⁾ Pin 4: This switching output must not be connected to another output.

⁵⁾ Signal transit time with resistive load.

⁶⁾ Valid for Q \ on Pin2, if configured with software.

⁷⁾ With light/dark ratio 1:1.

⁸⁾ A = V_S connections reverse-polarity protected.

⁹⁾ B = inputs and output reverse-polarity protected.

¹⁰⁾ C = interference suppression.

¹¹⁾ D = outputs overcurrent and short-circuit protected.

¹²⁾ 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	Time measurement + debouncing
Logic function	Direct WINDOW
Timer function	Deactivated Switch-on delay Off delay ON and OFF delay Impulse (one shot)
Inverter	Yes
Time measurement accuracy	SIO Direct: --- SIO Logic: - 0,7 ... + 0,7 ms ± 0,5 % of time measurement value IOL: - 0.9 ... + 0.9 ms ± 0.5% of the time measurement
Time measurement accuracy (e.g. accuracy for time measurement value = 1 s)	SIO Direct: --- SIO Logic: - 5,6 ... + 5,6 ms IOL: - 5,9 ... + 5,9 ms
Resolution time measuring value	1 ms
Min. Time between two process events (switches)	SIO Direct: --- SIO Logic: 300 µs IOL: 500 µs
Debounce time max.	SIO Direct: --- SIO Logic: 30.000 ms IOL: 30.000 ms
Switching signal	
Switching signal Q _{L1}	Output type (dependant on the adjusted threshold)
Switching signal Q _{L2}	Output type (dependant on the adjusted threshold)
Measuring value	Time measurement value

Diagnosis

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

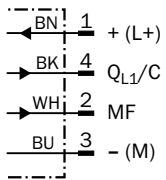
Classifications

ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902

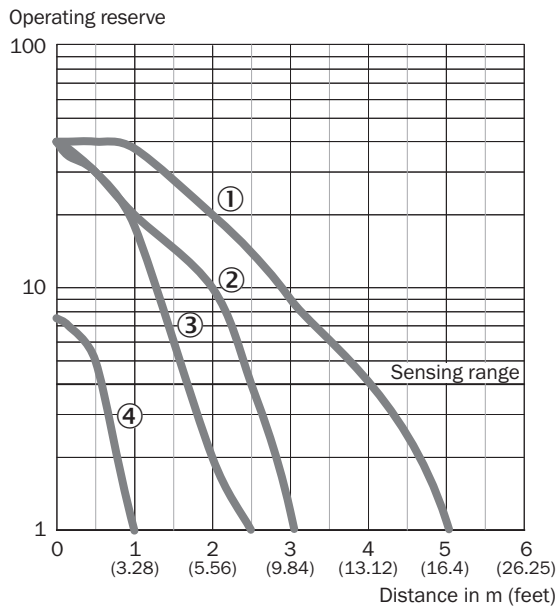
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection diagram

Cd-367

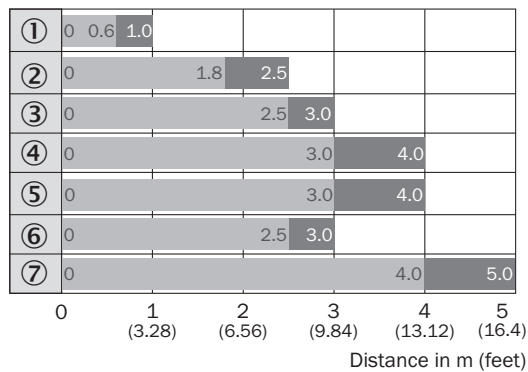


Characteristic curve



- ① Reflector PL80A
- ② Reflector C110A
- ③ Reflector PL20A
- ④ Reflective tape

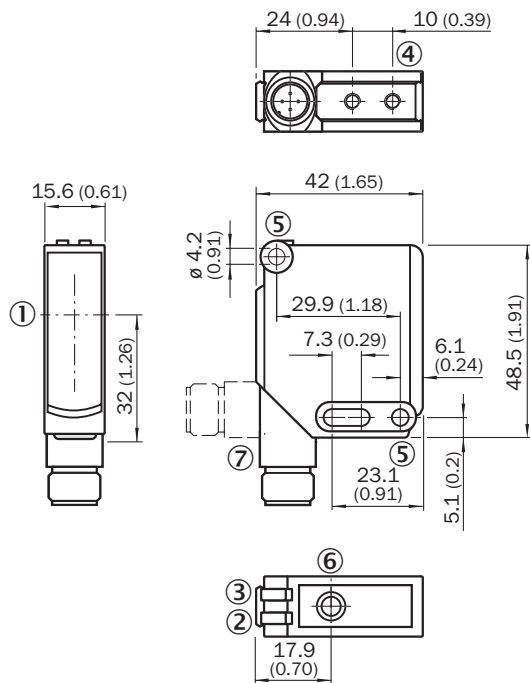
Sensing range diagram



■ Sensing range ■ Sensing range max.

- ① Reflective tape
- ② Reflector PL20A
- ③ Reflector PL30A
- ④ Reflector PL40A
- ⑤ Reflector PL50A
- ⑥ Reflector C110A
- ⑦ Reflector PL80A




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, Ø 4.2 mm
- ⑥ Sensitivity setting: single teach-in button
- ⑦ Connection

Recommended accessories

Other models and accessories → www.sick.com/W12-3

	Brief description	Type	Part no.
Mounting brackets and plates			
	Universal mounting bracket for reflectors, steel, zinc coated	BEF-WN-REFX	2064574
Reflectors			
	Rectangular, screw connection, 18 mm x 60 mm, PMMA/ABS, Screw-on, 2 hole mounting	PL20A	1012719
Others			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF2A14-050VB3XLEAX	2096235

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, straight, A-coded • Description: Unshielded • Connection systems: Screw-type terminals • Permitted cross-section: ≤ 0.75 mm² 	STE-1204-G	6009932

Recommended services

Additional services → www.sick.com/W12-3

	Type	Part no.
<p>Function Block Factory</p> <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. • Note: You can configure your function block at <a _blank"="" href="https://fbf.cloud.sick.com target=">Function Block Factory. As a login please use your SICK ID. 	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