



WL4SC-3P2232A70

W4

MINIATURE PHOTOELECTRIC SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
WL4SC-3P2232A70	1067760

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/W4



Detailed technical data

Features

Functional principle	Photoelectric retro-reflective sensor
Functional principle detail	Autocollimation
Sensing range max.	0 m ... 5 m ¹⁾
Sensing range	0 m ... 3 m ¹⁾
Polarisation filters	Yes
Emitted beam	
Light source	PinPoint LED ²⁾
Type of light	Visible red light
Light spot size (distance)	Ø 45 mm (1.5 m)
Key LED figures	
Wave length	650 nm
Adjustment	IO-Link, Single teach-in button
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_J = +25 °C.

Safety-related parameters

MTTF_D	1,222 years
DC_{avg}	0 %

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	0x8000D7
DeviceID DEC	8388823

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾
Current consumption	20 mA ³⁾
Protection class	III
Digital output	
Type	PNP ⁴⁾
Switching mode	Light/dark switching
Output current I _{max.}	≤ 100 mA
Repeatability (response time)	150 μs ⁵⁾
Switching frequency	1,000 Hz
Circuit protection	A ⁶⁾ B ⁷⁾ C ⁸⁾ D ⁹⁾
Response time Q/ on Pin 2	300 μs ... 450 μs ^{10) 5)}
Switching frequency Q / to pin 2	1,000 Hz ¹¹⁾

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

⁵⁾ Valid for Q \ on Pin2, if configured with software.

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
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Design detail	Slim	
Dimensions (W x H x D)	12.2 mm x 41.8 mm x 17.3 mm	
Connection	Male connector M8, 4-pin	
Material	Housing	Plastic, ABS
	Front screen	Plastic, PMMA
Weight	30 g	

Ambient data

Enclosure rating	IP67 IP66
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 On delay Off delay ON and OFF delay Impulse (one shot)	
Inverter	Yes	
Response time	1) 2)	
Repeatability	1) 2)	
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: --- ³⁾ SIO Logic: - 5,7 ... + 5,7 ms ¹⁾ IOL: - 5,9 ... + 5,9 ms ²⁾	
Resolution time measuring value	1 ms	
Min. Time between two process events (switches)	SIO Direct: --- SIO Logic: 450 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	

¹⁾ SIO Logic: Sensor operation in standard I/O mode without IO-Link communication. Sensor-internal logic or timing parameters plus Automation Functions used.
²⁾ IOL: Sensor operation with full IO-Link communication and usage of logic, timing and Automation Function parameters.
³⁾ 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").

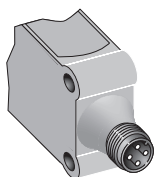
Diagnosis

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

Classifications

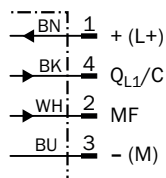
ECLASS 5.0	27270902
ECLASS 5.1.4	27270902
ECLASS 6.0	27270902
ECLASS 6.2	27270902
ECLASS 7.0	27270902
ECLASS 8.0	27270902
ECLASS 8.1	27270902
ECLASS 9.0	27270902
ECLASS 10.0	27270902
ECLASS 11.0	27270902
ECLASS 12.0	27270902
ETIM 5.0	EC002717
ETIM 6.0	EC002717
ETIM 7.0	EC002717
ETIM 8.0	EC002717
UNSPSC 16.0901	39121528

Connection type



Connection diagram

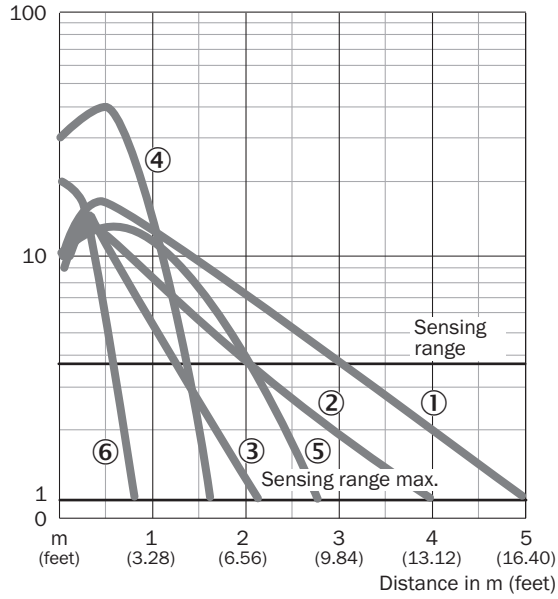
Cd-367



Characteristic curve

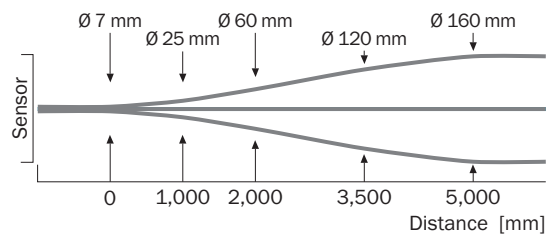
WL4S-3, WLG4S-3, 5 m

Operating reserve



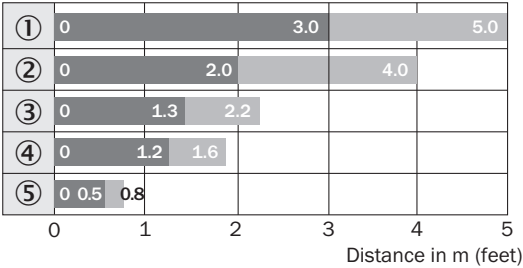
- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ PL10F reflector
- ⑤ Reflector P250 CHEM
- ⑥ Reflective tape REF-IRF-56

Light spot size



Sensing range diagram

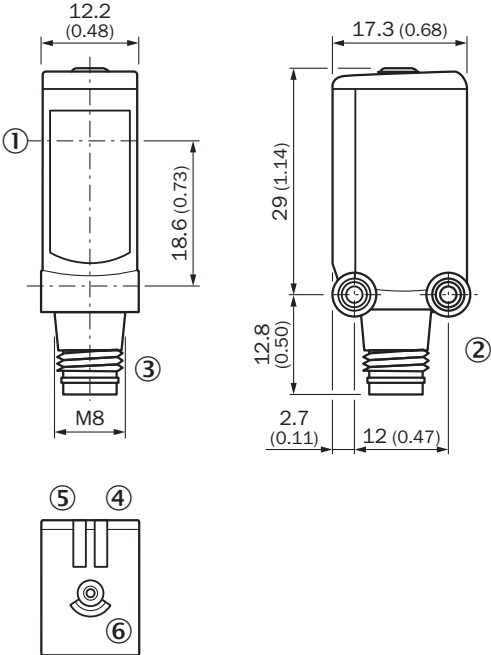
WL4S-3, WLG4S-3, 5 m



- Sensing range
- Sensing range max.
- ① Reflector PL80A
- ② Reflector PL40A
- ③ Reflector PL20A
- ④ PL10F reflector
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Dimensional drawing (Dimensions in mm (inch))






WL4S-3, WLG4S-3, single teach-in button



- ① Center of optical axis
- ② Threaded mounting hole M3
- ③ Connection
- ④ LED indicator green: Supply voltage active
- ⑤ Orange LED indicator: status of received light beam
- ⑥ Teach-in button

Recommended accessories

Other models and accessories → www.sick.com/W4

	Brief description	Type	Part no.
Distributors			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 4-pin, A-coded • Connection type head B: Female connector, M8, 4-pin, A-coded • Connection type head C: Female connector, M8, 4-pin, A-coded • Signal type: Sensor/actuator cable • Cable: 0.11 m, PVC • Description: Sensor/actuator cable, Y-distribution, 2 x M8 female connectors, 4-pin, straight, 0.11 m, PVC cable, 1 x M12 male connector, 4-pin, straight, connects a SICK sensor to a SICK Smart sensor; Female connector brassed (A): Auxiliary sensor; Female connector nickel-plated (B): Smart Sensor; Male connector nickel-plated (C): IO-Link master/ PLC • Note: Slimline T-piece, 2 x M8 female connector + M12 male connector with cable 	SYL-8204-G0M11-X2	6055012
Mounting brackets and plates			
	Mounting bracket for wall mounting, Stainless steel 1.4571, mounting hardware included	BEF-W4-A	2051628
Reflectors			
	Fine triple reflector, screw connection, suitable for laser sensors, 20 mm x 32 mm, PM-MA/ABS, Screw-on, 2 hole mounting	PL10F	5311210
Others			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 4-pin, straight, A-coded • Connection type head B: Male connector, M12, 4-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PVC • Description: Sensor/actuator cable, unshielded • Application: Zones with chemicals 	YF8U14-050VA3M2A14	2096609
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M8, 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 	YF8U14-050VA3XLEAX	2095889

Recommended services

Additional services → www.sick.com/W4

	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 here. • Note: You can configure your function block at 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