Reliable detection of transparent objects

STAIN-LESS STEEL | IP 69K | SIRIC®

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SIRIC® optical ASIC invented by SICK | PinPoint by SICK | ECOLAB

Additional information

Product description

The WLG4S-3 Inox Hygiene photoelectric retro-reflective sensors combine strict hygiene requirements based on EHEDG with best-in-class optical performance. The continuous threshold adaptation (AutoAdapt) of the switching threshold enables reliable transparent object detection and reduces the frequency that the sensor or reflector needs. Enclosed in an IP 69K stainless steel housing, these sensors can be adjusted via a stainless steel pushbutton with a metal membrane. With built-in protection for the sensor cable, no additional mounting brackets or mounting holes are required for in-process machine integration. These sensors as well as additional hygienic reflectors are designed for a completely hygienic sensor solution that is a necessity for the most hygienic machines.

At a glance

- Hygienic designed stainless steel housing and accessories (316L/1.4404)
- Hygienic mounting using M12-adapter thread or D12-adapter shaft
- IP 66, IP 67, IP 68 and IP 69K enclosure rating and Ecolab certified
- Resistant to a variety of common cleaning and disinfection agents
- PinPoint LED technology provides a highly visible laser-like light spot
- Teach-in stainless steel metal membrane or external teach-in

Your benefits

- Smooth hygienic housing and accessories with no grooves or crevices eliminates the potential for bacteria to grow, providing a more hygienic solution.
- Long service life in harsh conditions ensures less downtime and fewer replacement costs
- Reliable detection of all transparent objects in the pharmaceutical and food and beverage industries
- Quick and easy adjustment via a stainless steel metal membrane teach-in pushbutton
- Quick and easy alignment due to highly visible PinPoint emitter LED
- Remote monitoring and fast diagnostics via IO-Link (optional)

→ **www.mysick.com/en/W4S-3_Inox_Hygiene_Glass**

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

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Detailed technical data

Features

Sensor principle	Photoelectric retro-reflective sensor
Detection principle	Autocollimation
Dimensions (W x H x D)	15.25 mm x 63.2 mm x 22.15 mm
Housing design	Hygiene
Housing design (light emission)	Rectangular
Sensing range max. [1]	0 m ... 5 m
Sensing range [1]	0 m ... 3 m
Type of light	Visible red light
Light source [2]	PinPoint LED
Light spot size (distance)	Ø 45 mm (1.5 m)
Wave length	650 nm
Adjustment	Single teach-in button / Cable, Single teach-in button [3] / Cable [3] (depending on type)
Continuous threshold adaption (AutoAdapt)	✔
Special feature	Detection of transparent objects

[1] PL80A.

[2] Average service life of 100,000 h at T_A = +25 °C.

[3] External teach-in: pulse > 2 s with voltage Uv with PNP and M with NPN.

Mechanics/electronics

Supply voltage [1]	10 V DC ... 30 V DC
Ripple [2]	< 5 V_{pp}
Power consumption [3]	≤ 30 mA
Output type	PNP / NPN (depending on type)
Output function	Complementary
Switching mode	Light/dark-switching / Dark-switching (depending on type)
Output current $I_{max.}$	≤ 100 mA
Response time [4]	< 0.5 ms
Switching frequency [5]	1,000 Hz
Connection type	Cable, 2 m [6] / Male connector, M8 [7] / Cable with connector, M8, 150 mm [6] [7] (depending on type)
Mechanical connection	M12 adapter thread / D12 adapter shaft (depending on type)
Circuit protection	A [8], B [9], C [10]
Protection class	III
Weight	
Cable [6]	80 g
Connector [7]	140 g
Cable with connector [6] [7]	50 g
Polarisation filter	✔

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Housing material	Stainless steel 316L
Enclosure rating	IP 66, IP 67, IP 68, IP 69K
Ambient operating temperature	–30 °C ... +60 °C / –30 °C ... +70 °C [11]
Ambient storage temperature	–30 °C ... +75 °C

[1] Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.
[2] May not exceed or fall short of V_S tolerances.
[3] Without load.
[4] Signal transit time with resistive load.
[5] With light/dark ratio 1:1.
[6] Do not bend below 0 °C.
[7] Tightening torque, max.: 0.6 Nm.
[8] A = V_S connections reverse-polarity protected.
[9] B = inputs and output reverse-polarity protected.
[10] C = interference suppression.
[11] At UV ≤ 24 V and IA < 30 mA.

Ordering information

Other models available at www.mysick.com/en/W4S-3_Inox_Hygiene_Glass

WLG4S-3H

- **Sensor principle:** photoelectric retro-reflective sensor
- **Detection principle:** autocollimation

Sensing range max. [1]	Mechanical connection	Output type	Switching mode	Adjustment	Connection	Connection diagram	Model name	Part no.
0 m ... 5 m	M12 adapter thread	PNP	Light/dark-switching	Single teach-in button	Cable with connector M8, 4-pin, 150 mm, PVC	Cd-083	WLG4S-3P3232H	1048120
			Dark-switching	Cable, Single teach-in button [2]		Cd-092	WLG4S-3F3234H	1048121
		NPN	Light/dark-switching	Single teach-in button	Cable, 4-wire, 2 m, PVC	Cd-094	WLG4S-3N1132H	1048123
			Dark-switching	Cable, Single teach-in button [2]	Cable, 4-wire, 2 m, PVC	Cd-093	WLG4S-3E1134H	1048124
				Cable [2]	Cable, 4-wire, 2 m, PVC	Cd-093	WLG4S-3E1135H	1048126
	D12 adapter shaft	PNP	Light/dark-switching	Single teach-in button	Connector M8, 4-pin	Cd-083	WLG4S-3P5232H	1057053

[1] PL80A.
[2] External teach-in: pulse > 2 s with voltage Uv with PNP and M with NPN.

WLG4S-3H Alarm output

- **Sensor principle:** photoelectric retro-reflective sensor
- **Detection principle:** autocollimation

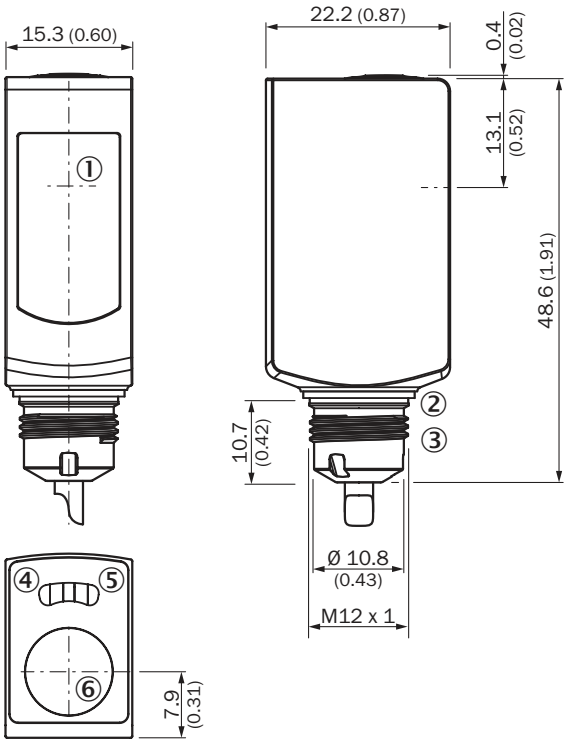
Sensing range max. [1]	Mechanical connection	Output type	Switching mode	Adjustment	Connection	Connection diagram	Model name	Part no.
0 m ... 5 m	M12 adapter thread	PNP	Dark-switching	Single teach-in button	Cable with connector M8, 4-pin, 150 mm, PVC	Cd-107	WLG4S-3V3232H	1048122

[1] PL80A.

Dimensional drawings

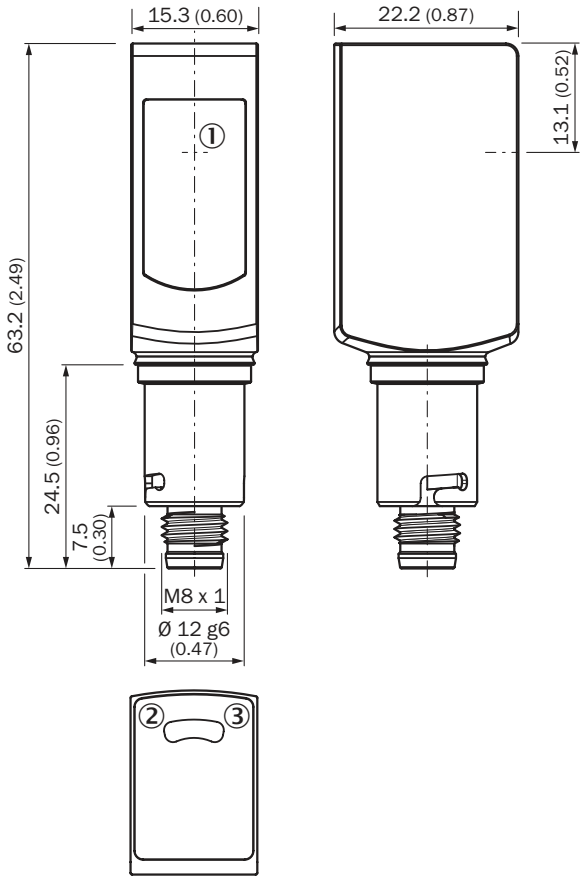
Dimensions in mm (inch)

WLG4S-3H, with single teach-in button



① Center of optical axis
② Gasket (tightening torque 6Nm)
③ Connector M12
④ Status indicator LED, yellow: Status of received light beam
⑤ Status indicator LED green: power on
⑥ Teach-in button

WLG4S-3H, without single teach-in button, D12 adapter shaft, l-adaption



① Center of optical axis
② Status indicator LED green: power on
③ Status indicator LED, yellow: Status of received light beam

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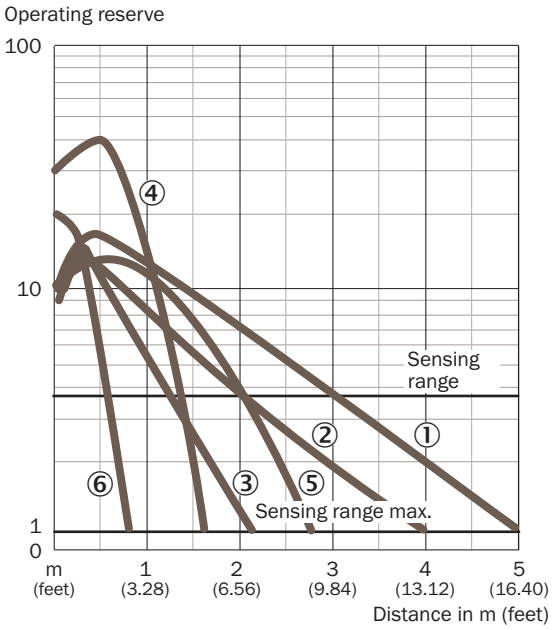
Characteristic curves

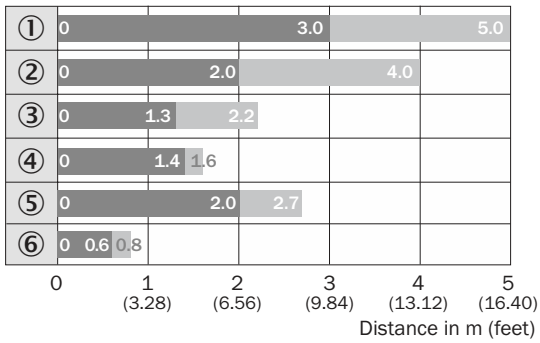
WLG4S-3, 5 m



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

Bar diagrams

WLG4S-3, 5 m

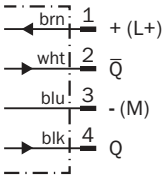


Sensing range
Sensing range max.

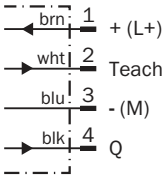
① PL80A
② PL40A
③ PL20A
④ PL10F
⑤ P250 CHEM
⑥ REF-IRF-56

Connection diagram

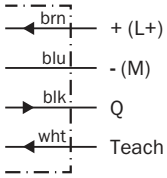
Cd-083



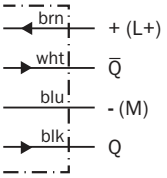
Cd-092



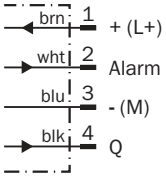
Cd-093



Cd-094



Cd-107



Recommended accessories

Plug connectors and cables

Connecting cable (female connector-open), hygienic systems

- **Cable material:** PP
- **Connector material:** PP

Figure	Connection type head A	Connection type head B	Connecting cable	Enclosure rating	Model name	Part no.
	Female connector, M8, 4-pin, straight	Cable, open conductor heads	2 m, 4-wire	IP 67, IP 69K	DOL-0804-G02MN	6033670
			5 m, 4-wire	IP 67, IP 69K	DOL-0804-G05MN	6033671
	Female connector, M8, 4-pin, angled	Cable, open conductor heads	2 m, 4-wire	IP 67, IP 69K	DOL-0804-W02MN	6033673
			5 m, 4-wire	IP 67, IP 69K	DOL-0804-W05MN	6033674

Universal bar clamp systems

- **For product family:** Hygienic Design BeftecHD for sensors with D12 adapter shaft

Figure	Material	Description	Model name	Part no.
	Hygienic Design, Stainless steel V4A (1.4404, 316L), Silicone (seal)	Hygienic design mounting tube with bayonet lock, 14.4 mm x 85.5 mm x 14.4 mm	BEF-HDSBR	4074403
		Hygienic design flange with seal, 40 mm x 12 mm x 40 mm	BEF-HDSF	4072880
		Hygienic design telescopic tube, straight, with bayonet lock without flange, 23 mm x 153 mm x 23 mm	BEF-HDSTRG	2067780
		Hygienic design telescopic tube, straight, with bayonet lock with flange, 40 mm x 165 mm x 40 mm	BEF-HDSTRGF	2067779
		Hygienic design telescopic tube, angled, with bayonet lock without flange, 23 mm x 125 mm x 73 mm	BEF-HDSTRW	2067778
		Hygienic design telescopic tube, angled, with bayonet lock with flange, 40 mm x 125 mm x 76 mm	BEF-HDSTRWF	2067777

Reflectors

Angular

Figure	Material	Description	Model name	Part no.
	Plastic	Chemically resistant, screw connection, 47 mm x 47 mm	P250 CHEM	5321097
	PMMA/ABS	Rectangular, screw connection, 80 mm x 80 mm	PL80A	1003865

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Fine triple reflectors

Figure	Material	Description	Model name	Part no.
	Plastic	Fine triple, chemically resistant, screw connection, 18 mm x 18 mm	PL10F CHEM	5321636
		Fine triple, chemically resistant, screw connection, suitable for laser sensors, 16 mm x 38 mm	PL20F-CHEM	5326089

Reflective tape

Figure	Description	Model name	Part no.
	Self-adhesive, 50 mm x 60 mm	REF-IRF-56	5314244

Special reflectors

Figure	Material	Description	Model name	Part no.
	Plastic	Chemically resistant, screw connection, 38 mm x 15 mm	PL20 CHEM	5321089
	PMMA/ABS	Antifog, for prevention of moisture fogging on the reflection area, screw connection, 56 mm x 37 mm	PL40A Antifog	5322011
	Plastic	Rectangular, screw connection M3, countersunk screw head, chemical resistent, 56 mm x 37 mm	PL40B-CHEM	5326088
	Stainless steel V4A (1.4404, 316L)	Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, D12-adapter shaft, 25 mm x 25 mm	PLH25-D12	2063404
		Stainless steel reflector, hygienic design, chemically resistant, Enclosure rating IP 69K, M12-adapter thread, 25 mm x 25 mm	PLH25-M12	2063403
		Stainless steel reflector, wash-down design, chemically resistant, Enclosure rating IP 69K, screw connection, 14 mm x 14 mm	PLV14-A	2063405

→ For additional accessories, please see page L-861

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W4S-3 Inox Hygiene Glass