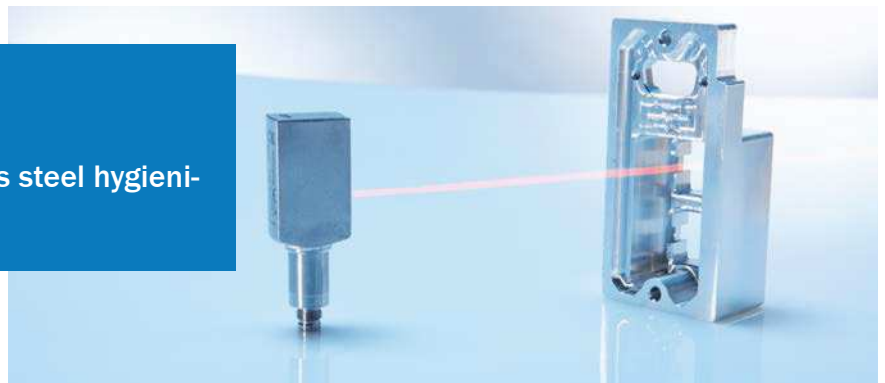


Laser technology and stainless steel hygienically combined



Product description

For the best possible hygienic performance: thanks to high immunity to ambient light, the new W4SL-3 Inox Hygiene miniature photoelectric sensors with precise laser light spot set new standards when it comes to preventing undesired background reflections and to ambient light immunity, even with modern energy-saving lights. The combination of SICK's latest proprietary laser and SIRIC® technologies reduces incorrect switching to minimize machine downtime. The photoelectric sensors complete this product

family. One device can reliably detect all transparent objects as well as tiny non-transparent objects, thus reducing the variety of devices. The photoelectric sensors also feature an IO-Link function, so that initial system performance diagnostics can be done independently. The W4SL-3 Inox Hygiene is certified in accordance with ECOLAB. In addition to an innovative leak-tight design, the sensors also have an impressive smooth housing design, which follows current hygiene guidelines.

At a glance

- Precise laser light spot, laser class 1
- Stainless steel housing with wash down design
- Latest SIRIC® and laser technologies for outstanding background suppression and ambient light immunity
- Teach-in pushbutton can be switched between detection of transparent and tiny non-transparent objects
- ECOLAB certified, tested to IP 66, IP 67, IP 68 and IP 69K enclosure rating
- IO-Link (optional)

Your benefits

- Precise laser light spot for highly accurate switching
- Washable stainless steel housing reduces bacterial contamination
- Innovative wash down design with sealed connections and unique patented membrane teach-in pushbutton
- High ambient light immunity reduces incorrect switching and ultimately machine downtime, even when modern energy-saving lights are used
- The highest degree of machine design flexibility. Outstanding BGS (background suppression) eliminates the effect of undesired background reflections. Autocollimation permits detection through very small drilled holes.
- IO-Link provides effortless initial diagnostics of system performance



Additional information

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→ www.mysick.com/en/W4SL-3H

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.



Detailed technical data

Features

Sensor principle	Photoelectric proximity sensor
Detection principle	Background suppression
Dimensions (W x H x D)	15.3 mm x 63.2 mm x 22.2 mm
Housing design	Hygiene
Housing design (light emission)	Rectangular, Slim
Mounting hole	M3
Sensing range max. ¹⁾	25 mm ... 300 mm
Sensing range ¹⁾	25 mm ... 300 mm
Type of light	Visible red light
Light source ²⁾	Laser
Light spot size (distance)	Ø 1 mm (170 mm)
Wave length	650 nm
Laser class ³⁾	1
Adjustment	Single teach-in button

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033)

²⁾ Average service life 50,000 h at T_A = +25 °C.

³⁾ EN60825-1:2008-05 & IEC 60825-1:2007-03 / CDRH 21 CFR 1040.10 & 1040.11.

Mechanics/electronics

Supply voltage ¹⁾	10 V DC ... 30 V DC
Ripple ²⁾	< 5 V _{pp}
Power consumption ³⁾	≤ 30 mA
Output type	PNP ⁴⁾ / NPN ⁴⁾ (depending on type)
Output function	Complementary
Switching mode ⁴⁾	Light/dark-switching
Output current I _{max.}	≤ 100 mA
Response time ⁵⁾	≤ 0.5 ms
Switching frequency ⁶⁾	± 1,000 Hz
Connection type	Male connector, M8 ⁷⁾ / Cable, 2 m ⁸⁾ (depending on type)
Mechanical connection	D12 adapter shaft
Circuit protection	A ⁹⁾ , B ¹⁰⁾ , C ¹¹⁾
Protection class	III
Weight	
Connector M8 ⁷⁾	140 g
Cable ⁸⁾	180 g
Housing material	Stainless steel V4A (1.4404, 316L)
Optics material	PMMA

Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹²⁾
Ambient operating temperature	-10 °C ... +50 °C
Ambient operating temperature extended ^{13) 14)}	-30 °C ... +55 °C
Ambient storage temperature	-30 °C ... +70 °C

¹⁾ Limit values, operation in short-circuit protected network max. 8 A.

²⁾ May not exceed or fall short of V_s tolerances.

³⁾ Without load.

⁴⁾ Q = light-switching.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ Tightening torque, max.: 0.6 Nm.

⁸⁾ Do not bend below 0 °C.

⁹⁾ A = V_s connections reverse-polarity protected.

¹⁰⁾ B = inputs and output reverse-polarity protected.

¹¹⁾ C = interference suppression.

¹²⁾ Only in case of correctly mounted IP 69K connecting cable.

¹³⁾ As of $T_a = 50$ °C, a max. supply voltage $V_{max.} = 24$ V and a max. load current $I_{max.} = 50$ mA is permitted.

¹⁴⁾ Using the sensor below $T_a = -10$ °C is possible, if the sensor is turned on at $T_a > -10$ °C, then the environment cools down and the sensor is not disconnected from the supply voltage during the whole time. It is not allowed to turn on the sensor below $T_a = -10$ °C.

Ordering information

Other models available at www.mysick.com/en/W4SL-3H

WTB4SL-3H

- **Sensor principle:** photoelectric proximity sensor
- **Switching mode:** light/dark-switching (Q = light-switching.)
- **Adjustment:** single teach-in button

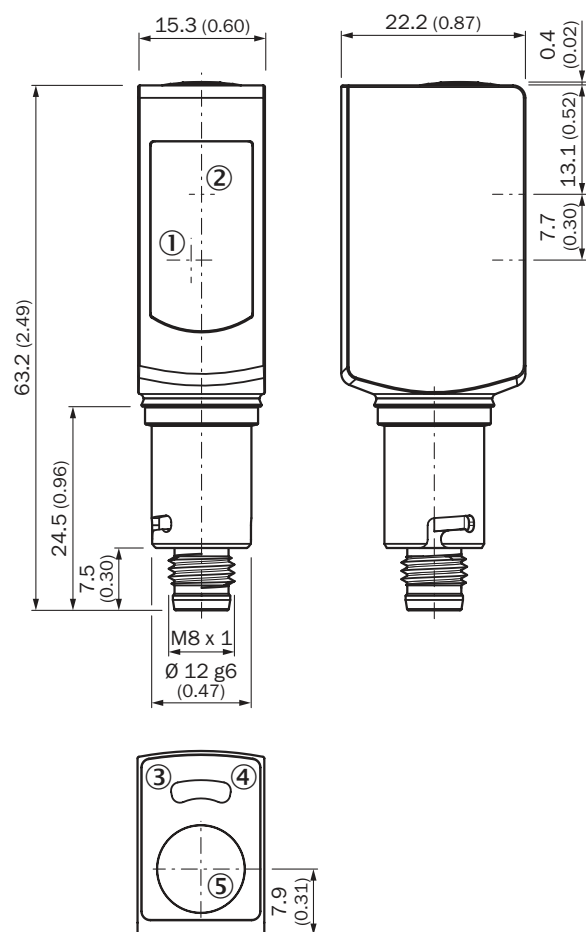
Sensing range max. ¹⁾	Mechanical connection	Output type	Connection	Connection diagram	Model name	Part no.
25 mm ... 300 mm	D12 adapter shaft	PNP	Connector M8, 4-pin	Cd-094	WTB4SL-3P5262H	1058271
			Cable, 4-wire, 2 m, PVC	Cd-083	WTB4SL-3P4162H	1058274
		NPN	Cable, 4-wire, 2 m, PVC	Cd-083	WTB4SL-3N4162H	1058275

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033)

Dimensional drawings

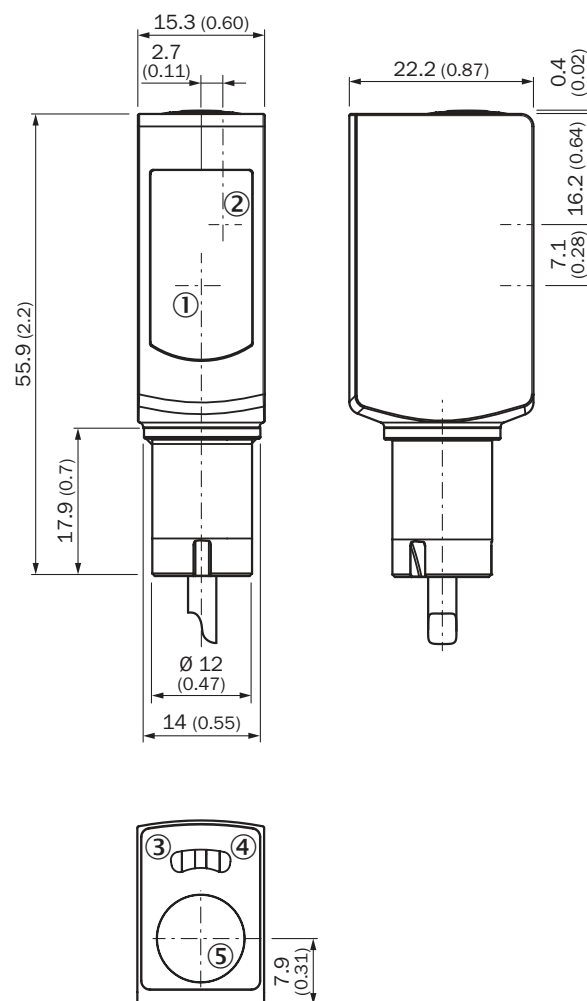
Dimensions in mm (inch)

WTB4SL-3H, connector



- ① Center of receiver's optical axis
- ② Center of optical axis, sender
- ③ Status indicator LED, yellow: Status of received light beam
- ④ Status indicator LED green: power on
- ⑤ Single teach-in button

WTB4SL-3H, cable

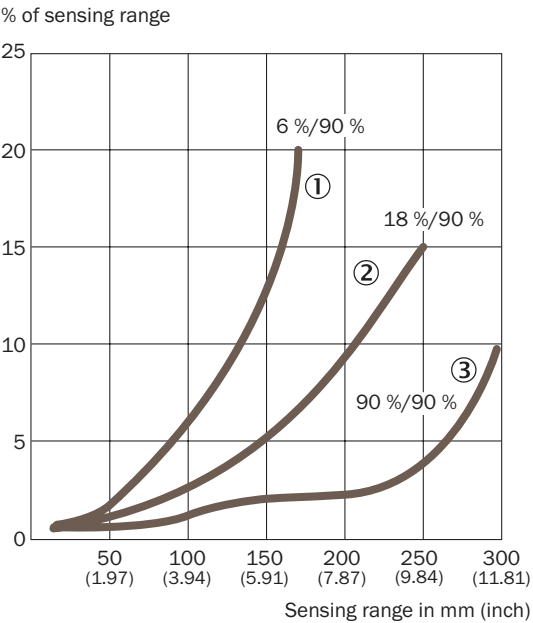


- ① Center of optical axis, sender
- ② Center of optical axis, receiver
- ③ Status indicator LED, yellow: Status of received light beam
- ④ Status indicator LED green: power on
- ⑤ Single teach-in button

Characteristic curves

Black-white shift

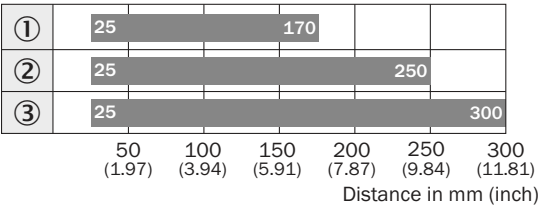
WTB4SL-3H



- ① Sensing range on black, 6 % remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90 % remission

Bar diagrams

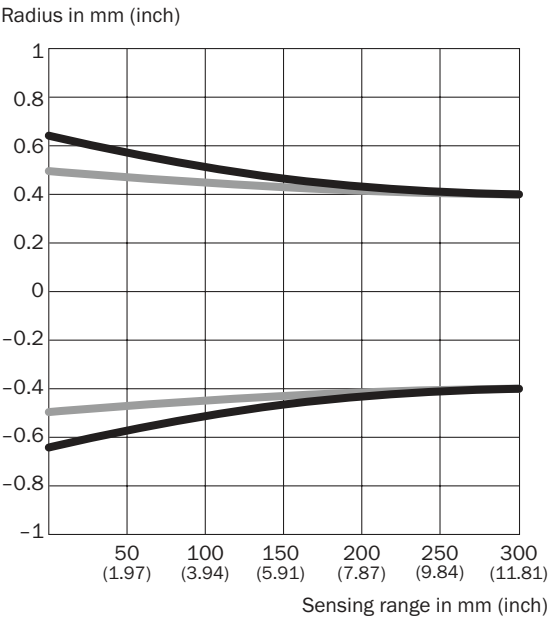
WTB4SL-3H



- Sensing range typ. max.
① Sensing range on black, 6 % remission
② Sensing range on gray, 18 % remission
③ Sensing range on white, 90 % remission

Light spot diameter

WTB4SL-3H



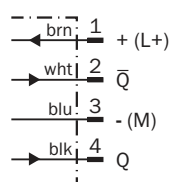
Dimensions in mm (inch)

Sensing range	Vertical	Horizontal
50 mm (1.97)	1.2 (0.05)	1.0 (0.04)
100 mm (3.94)	1.1 (0.04)	1.0 (0.04)
200 mm (7.87)	0.9 (0.04)	0.9 (0.04)
300 mm (11.81)	0.8 (0.03)	0.8 (0.03)

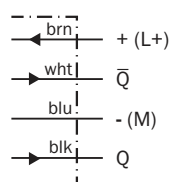
- Vertical
— Horizontal

Connection diagram

Cd-083



Cd-094



Recommended accessories

Plug connectors and cables

Connecting cable (female connector-open), PVC, hygienic systems

- Cable material: PVC
- Connector material: PVC

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 BeftechHD 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

→ For additional accessories, please see page L-861