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Photoelectric sensors
W4SL-3H, Photoelectric proximity sensor, Background suppression

WTB4SL-3N4162H

SICK
Sensor Intelligence.

Photoelectric sensors
W4SL-3H, Photoelectric proximity sensor, Background suppression

Type > WTB4SL-3N4162H
Part No. > 1058275

Illustration may differ

At a glance

- Precise laser light spot, laser class 1
- Stainless steel housing with hygienic design
- Latest SICK proprietary ASIC and laser technologies for very good background suppression and ambient light immunity
- ECOLAB certified, tested to IP66, IP67, IP68 and IP69K enclosure rating
- State-of-the-art connections through 100 % sealed electronics
- Patented teach-in pushbutton consisting of a stainless steel membrane welded into the housing

Your benefits

- Precise laser light spot for highly accurate switching behavior
- Washable stainless steel housing reduces bacterial contamination
- Innovative hygienic design with sealed connections and unique patented membrane teach-in pushbutton
- High level of system reliability and minimal operating costs even when aggressive cleaners are used, thanks to high-quality manufacturing and inspection
- 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.

Features

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	15.3 mm x 63.2 mm x 22.2 mm
Housing design:	Hygiene [1)]
Housing design (light emission):	Rectangular
Mounting hole:	M3
Sensing range max.:	25 mm ... 300 mm [2)]
Sensing range:	25 mm ... 300 mm [3)]
Type of light:	Visible red light
Light source:	Laser [4)]
Laser class:	1 (EN60825-1:2008-05 & IEC 60825-1:2007-03/CDRH 21 CFR 1040.10 & 1040.11)
Wave length:	650 nm
Adjustment:	Single teach-in button
Light spot size (distance):	Ø 1 mm (170 mm)

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[1] The essential difference between a standard/washdown product and a hygiene product is that where the process and contact with the medium (activity in the vicinity of the food) are concerned, the product is designed in accordance with the latest standards and hygiene design guidelines, and materials are selected accordingly [2] [3] Object with 90 % reflectance (referred to standard white, DIN 5033) [4] Average service life 50,000 h at T_A = +25 °C

Mechanics/electronics

Supply voltage:	10 V DC ... 30 V DC [1]
Ripple:	< 5 Vpp [2]
Power consumption:	≤ 30 mA [3]
Output type:	NPN [4]
Output function:	Complementary
Switching mode:	Light/dark switching [5]
Output current Imax.:	≤ 100 mA
Response time:	≤ 0.5 ms [6]
Switching frequency:	± 1,000 Hz [7]
Connection type:	Cable, 4-wire, 2 m [8]
Cable material:	PVC
Conductor cross-section:	0.14 mm²
Circuit protection:::	A, B, C [9] [10] [11]
Protection class:	III
Weight:	180 g
Housing material:	Stainless steel, Stainless steel V4A (1.4404, 316L)
Optics material:	PMMA
Enclosure rating:	IP 66, IP 67, IP 68, IP 69K [12]
Special feature:	D12 adapter shaft
Ambient operating temperature:	-10 °C ... +50 °C
Ambient storage temperature:	-30 °C ... +70 °C
Ambient operating temperature extended::	-30 °C ... +55 °C [13] [14]
Mechanical connection:	D12 adapter shaft

[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] [5] Q = light-switching [6] Signal transit time with resistive load [7] With light/dark ratio 1:1 [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

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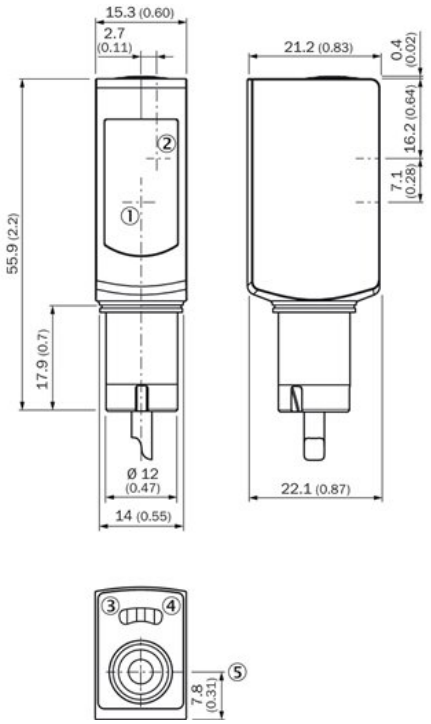
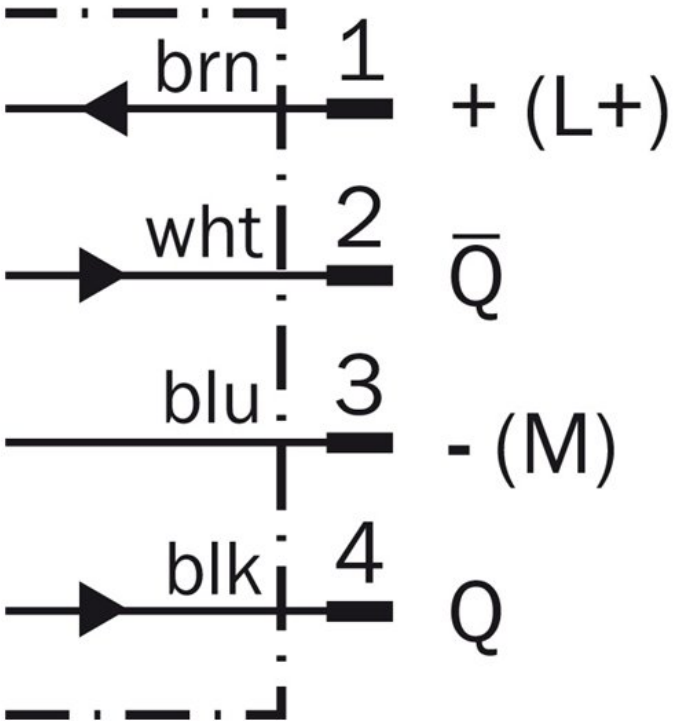
Dimensional drawing



|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

Connection diagram



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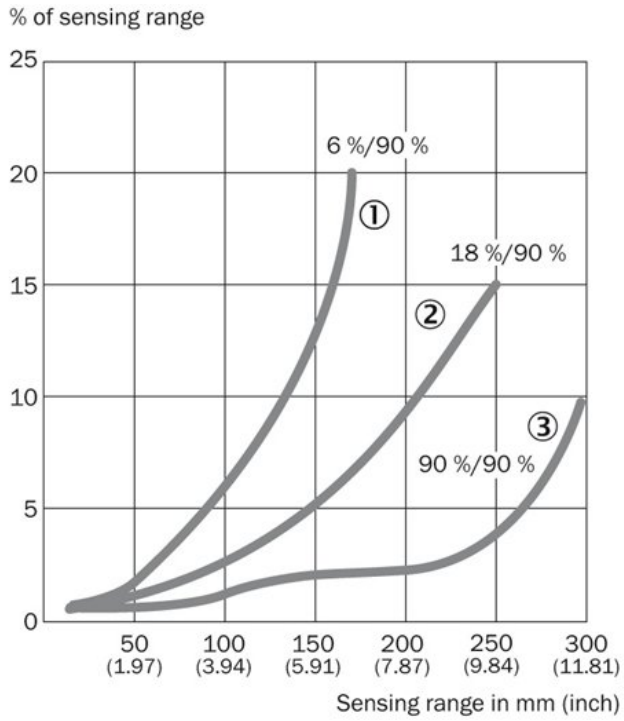
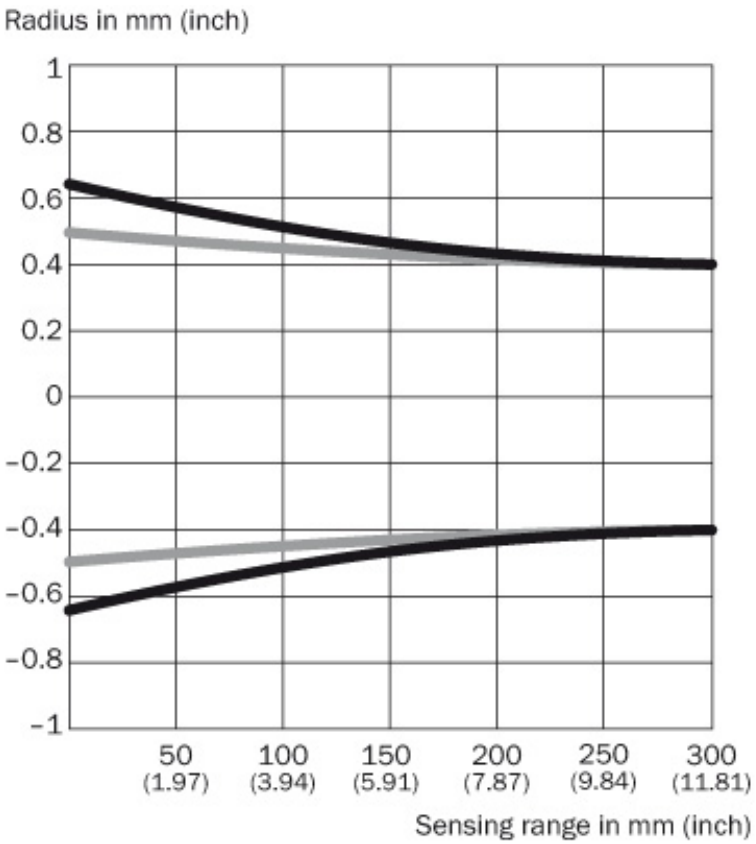
Characteristic curve



|1| Sensing range on black, 6 % remission
|2| Sensing range on grey, 18 % remission
|3| Sensing range on white, 90 % remission

Light spot size



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)

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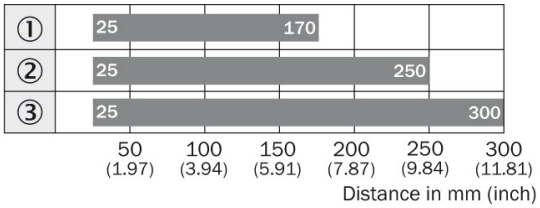
Sensing range diagram



Sensing range typ. max.

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