

W4S-3 Inox Hygiene

Hygienic design –
best optical detection properties

You no longer want to ...
... use a cable in the process.
... deal with the critical hygienic contact area between sensor and housing.
... accept threads, mounting holes and gaps.
... accept machine outage times, because sensors cannot operate properly in harsh ambient conditions.

But you want to ...
... detect all objects reliably.
... know precisely in which state the sensor is.
... be able to adjust the sensor fast and easily.
... not use a laser but have performance similar to one
... be able to clean the sensor without reservations.

Then the W4S-3 Inox Hygiene is exactly the right choice for you.

Robust, because the stainless steel housing, the front plate resistant to scratches and chemicals, and the set-

ting via the stainless steel membrane cannot be influenced and is more or less unbreakable.

Reliable, because all objects are detected reliably. The W4S-3 Inox Hygiene has 2 optical “Best in Class” features:

- The best sensor, which detects deep black objects reliably and uses a technology with two 2 sender LEDs as the first sensor to do so, with which critical reflecting backgrounds can be faded out.
- The photoelectric reflex sensor, which detects all transparent objects reliably in the food and beverage sector. Tracking of the switching threshold thereby prevents influences of temperature and influencing the reflector.

Fit for the future, because the sensor has an IO-Link and provides you with the option of remote adjustment and diagnosis. Outage times due to sensors and expensive technician trips are a thing of the past. This saves time and keeps customers content.

Further benefits

- V4A/316L housing
- SiO_x coated front screen
- Complies with the following standards and protection classes:
 - ECOLAB
 - FDA
 - Based on EHEDG
 - HACCP certified
 - IP 66, IP 67, IP 68



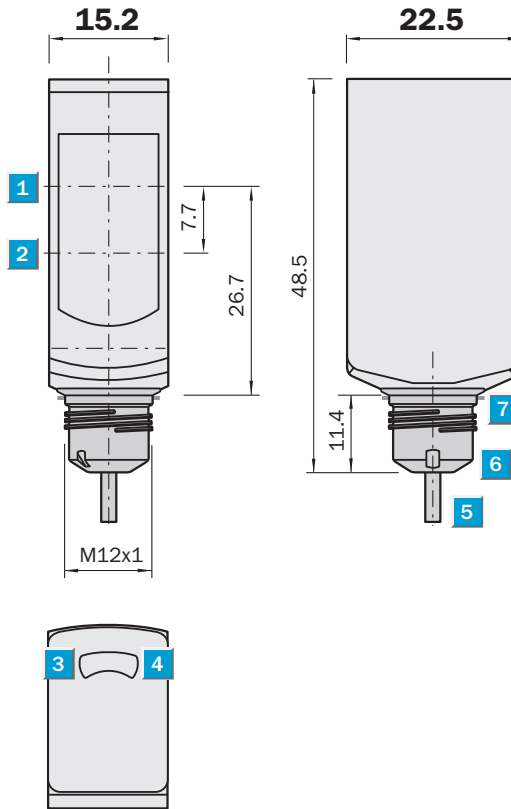
SICK
Sensor Intelligence.

Scanning distance
3 ... 500 mm

Photoelectric proximity sensor BGS

- Robust housing in V4A/316L
- Assembly with hidden and protected cable possible
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- Best background suppression and best ambient light suppression in its class

Dimensional drawing



Adjustments

All types

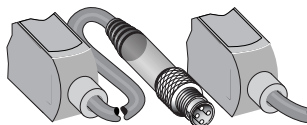
ET: teach-in
via wire

- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 LED indicator, green: power on
- 4 LED indicator, yellow: status of received light beam
- 5 Connector
- 6 Mounting adapter M12 x 1
- 7 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

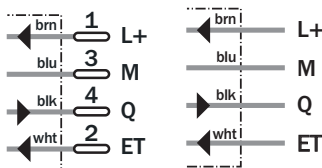
WTB4S-3P3265H

WTB4S-3N1165H



M8, 4-pin

4 x 0.14 mm²



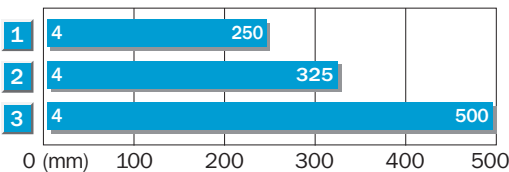
Accessories

Test and teach box

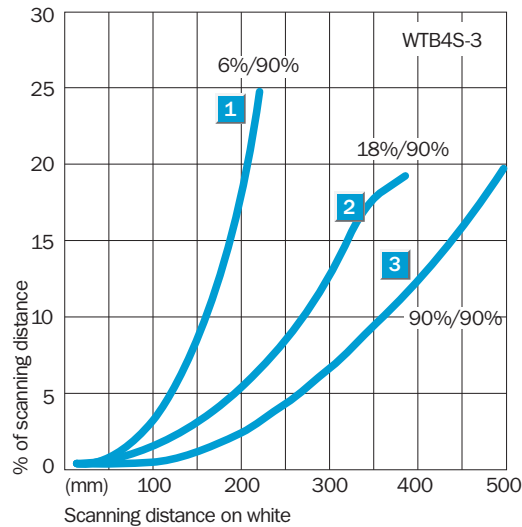
Technical data		WTB4S-3	P3265H	N1165H								
Scanning distance, typ. max.	3 ... 500 mm ¹⁾											
Sensitivity setting	ET: teach-in via cable ²⁾											
Light source, light type	PinPoint LED, red light, 650 nm ³⁾											
Light spot diameter	6.5 mm at 150 mm											
Supply voltage V_S	10 ... 30 V DC ⁴⁾											
Residual ripple ⁵⁾	< 5 V _{PP}											
Power consumption ⁶⁾	≤ 30 mA											
Switching output	PNP, Q											
	NPN, Q											
Switching mode	Light-switching											
Output current I _A max.	< 100 mA											
Response time ⁷⁾	< 0.5 ms											
Switching frequency, max. ⁸⁾	1000/s											
Connection type	Cable, PVC, 2m ⁹⁾											
	Cable with plug, M8, 4-pin, 150 mm ⁹⁾											
Circuit protection	A, B, C ¹⁰⁾											
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹²⁾											
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹¹⁾											
	Storage -30 °C ... +75 °C											
Weight	Approx. 40 g											
Housing material	AISI 316 L, SiO _x											

- 1) Object with 90 % remission (based on standard white DIN 5033)
- 2) External teach-in: Impulse > 2 s with voltage V_S with PNP and M with NPN
- 3) Average service life 100,000 h at T_A = +25 °C
- 4) Limit values, operation in short-circuit protected network max. 8 A
- 5) May not exceed or fall short of V_S tolerances
- 6) Without load
- 7) Signal transit time with resistive load
- 8) With light/dark ratio 1 : 1
- 9) Do not bend below 0 °C
- 10) A = V_S connections reverse-polarity protected
B = All outputs short-circuit protected
C = Interference pulse suppression
- 11) At V_S ≤ 24 V and I_A < 30 mA
- 12) With protected cable

Scanning distance



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



Ordering information

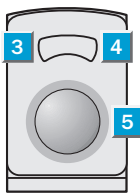
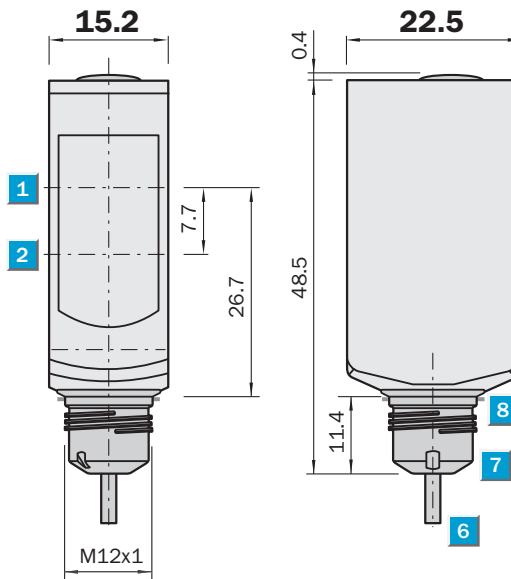
Model name	Part No.
WTB4S-3P3265H	1048102
WTB4S-3N1165H	1048107

Scanning distance
3 ... 500 mm

Photoelectric proximity sensor BGS

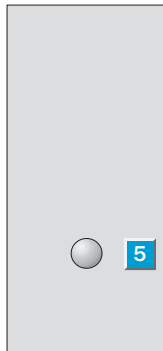
- Robust housing in V4A/316L
- Assembly with hidden and protected cable possible
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Easy to clean, because there are no mounting holes and the surface is smooth all around

Dimensional drawing



Adjustments

All types



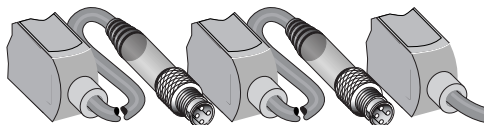
- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 LED indicator, green: power on
- 4 LED indicator, yellow: status of received light beam
- 5 Metal-membrane teach-in button
- 6 Connector
- 7 Mounting adapter M12 x 1
- 8 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

WTB4S-3P3262H

WTB4S-3P3264H

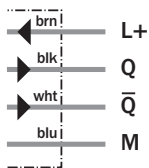
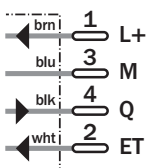
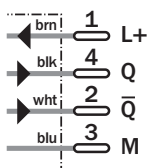
WTB4S-3N1162H



M8, 4-pin

M8, 4-pin

4 x 0.14 mm²



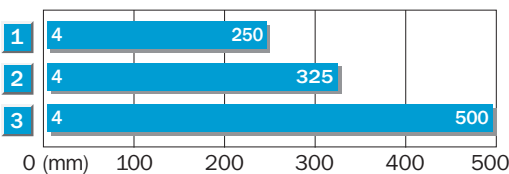
Accessories

Test and teach box

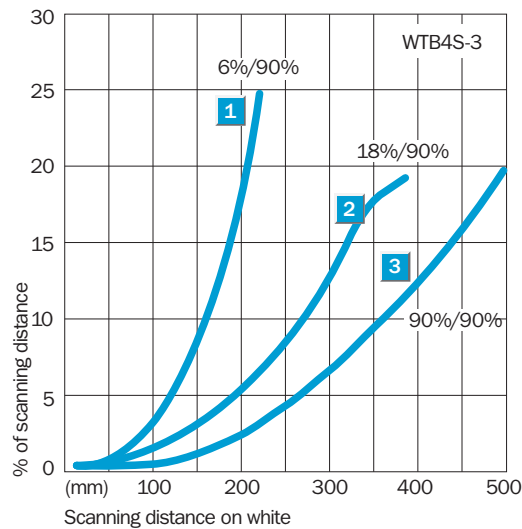
Technical data		WTB4S-3	P3262H	P3264H	N1162H						
Scanning distance, typ. max.	3 ... 500 mm ¹⁾										
Sensitivity setting	Teach-in: single teach-in button ²⁾										
	ET: teach-in via cable										
Light source, light type	PinPoint LED, red light, 650 nm ³⁾										
Light spot diameter	6.5 mm at 150 mm										
Supply voltage V_S	10 ... 30 V DC ⁴⁾										
Residual ripple ⁵⁾	< 5 V _{PP}										
Power consumption ⁶⁾	≤ 30 mA										
Switching output	PNP, Q										
	NPN, Q										
Switching mode	Complementary										
	Light-switching										
Output current I _A max.	< 100 mA										
Response time ⁷⁾	< 0.5 ms										
Switching frequency, max. ⁸⁾	1000/s										
Connection type	Cable, PVC, 2 m ⁹⁾										
	Cable with plug, M8, 4-pin, 150 mm ⁹⁾										
Circuit protection	A, B, C ¹⁰⁾										
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹²⁾										
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹¹⁾										
	Storage -30 °C ... +75 °C										
Weight	Approx. 40 g										
Housing material	AISI 316 L, SiO _x										

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- 6) Without load
- 7) Signal transit time with resistive load
- 8) With light/dark ratio 1 : 1
- 9) Do not bend below 0 °C
- 10) A = V_S connections reverse-polarity protected
B = All outputs short-circuit protected
C = Interference pulse suppression
- 11) At V_S ≤ 24 V and I_A < 30 mA
- 12) With protected cable

Scanning distance



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



Ordering information

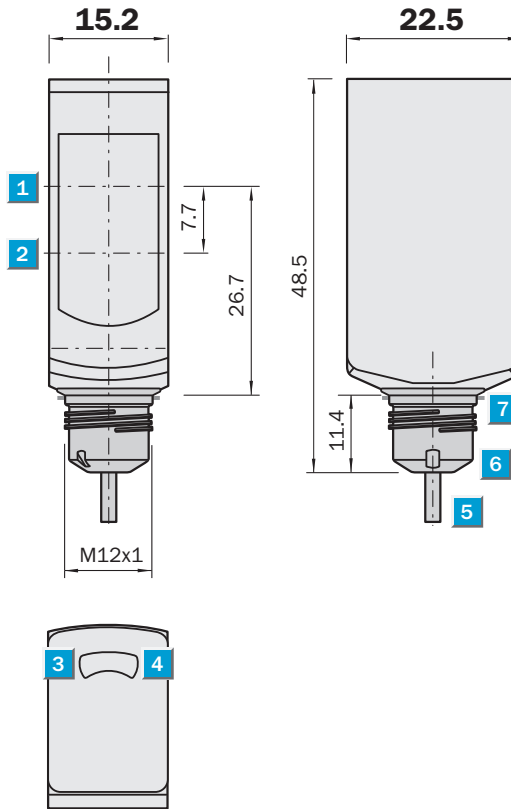
Model name	Part No.
WTB4S-3P3262H	1048094
WTB4S-3P3264H	1048047
WTB4S-3N1162H	1048095

Scanning distance
3 ... 120 mm

Photoelectric proximity sensor BGS

- Robust housing in V4A/316L
- Assembly with hidden and protected cable possible
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- Laser-like, focussed light spot, to accurately detect small parts or edges

Dimensional drawing



Adjustments

All types

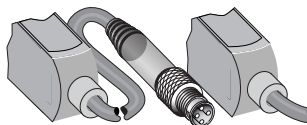
ET: teach-in
via wire

- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 LED indicator, green: power on
- 4 LED indicator, yellow: status of received light beam
- 5 Connector
- 6 Mounting adapter M12 x 1
- 7 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

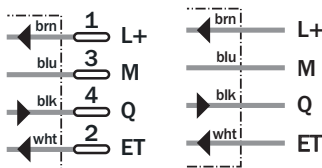
WTB4S-3P3235H

WTB4S-3N1135H



M8, 4-pin

4 x 0.14 mm²



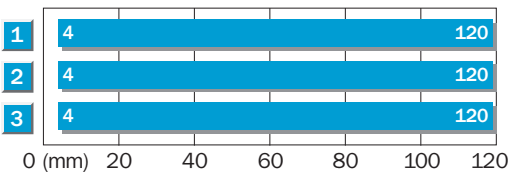
Accessories

Test and teach box

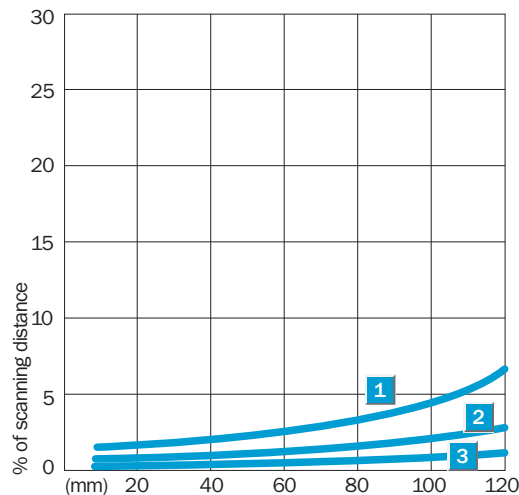
		P3235H	N1135H							
Scanning distance, typ. max.	3 ... 120 mm ¹⁾									
Sensitivity setting	ET: teach-in via cable ²⁾									
Light source, light type	PinPoint LED, red light, 650 nm ³⁾									
Light spot diameter	2.5 mm at 50 mm									
Supply voltage V_S	10 ... 30 V DC ⁴⁾									
Residual ripple ⁵⁾	< 5 V _{PP}									
Power consumption ⁶⁾	≤ 30 mA									
Switching output	PNP, Q									
	NPN, Q									
Switching mode	Light-switching									
Output current I _A max.	< 100 mA									
Response time ⁷⁾	< 0.5 ms									
Switching frequency, max. ⁸⁾	1000/s									
Connection type	Cable, PVC, 2m ⁹⁾									
	Cable with plug, M8, 4-pin, 150 mm ⁹⁾									
Circuit protection	A, B, C ¹⁰⁾									
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹²⁾									
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹¹⁾									
	Storage -30 °C ... +75 °C									
Weight	Approx. 40 g									
Housing material	AISI 316 L, SiO _x									

- 1) Object with 90 % remission (based on standard white DIN 5033)
- 2) External teach-in: Impulse > 2 s with voltage V_S with PNP and M with NPN
- 3) Average service life 100,000 h at T_A = +25 °C
- 4) Limit values, operation in short-circuit protected network max. 8 A
- 5) May not exceed or fall short of V_S tolerances
- 6) Without load
- 7) Signal transit time with resistive load
- 8) With light/dark ratio 1 : 1
- 9) Do not bend below 0 °C
- 10) A = V_S connections reverse-polarity protected
B = All outputs short-circuit protected
C = Interference pulse suppression
- 11) At V_S ≤ 24 V and I_A < 30 mA
- 12) With protected cable

Scanning distance



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



Ordering information

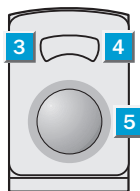
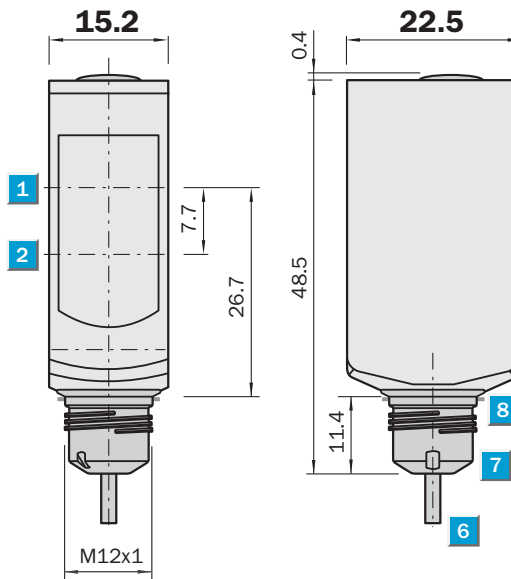
Model name	Part No.
WTB4S-3P3235H	1048100
WTB4S-3N1135H	1048101

Scanning distance
3 ... 120 mm

Photoelectric proximity sensor BGS

- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- Focused light spot similar to a laser to detect small parts or edges precisely

Dimensional drawing



Adjustments

All types



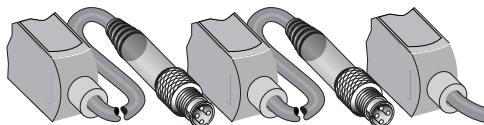
- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 LED indicator, green: power on
- 4 LED indicator, yellow: status of received light beam
- 5 Metal-membrane teach-in button
- 6 Connector
- 7 Mounting adapter M12 x 1
- 8 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

WTB4S-3P3232H

WTB4S-3P3234H

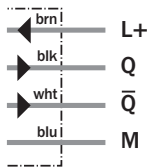
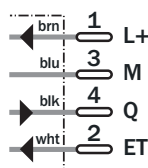
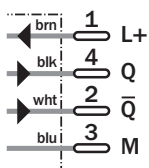
WTB4S-3N1132H



M8, 4-pin

M8, 4-pin

4 x 0.14 mm²



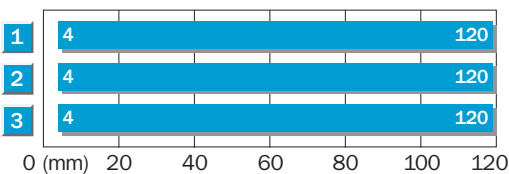
Accessories

Test and teach box

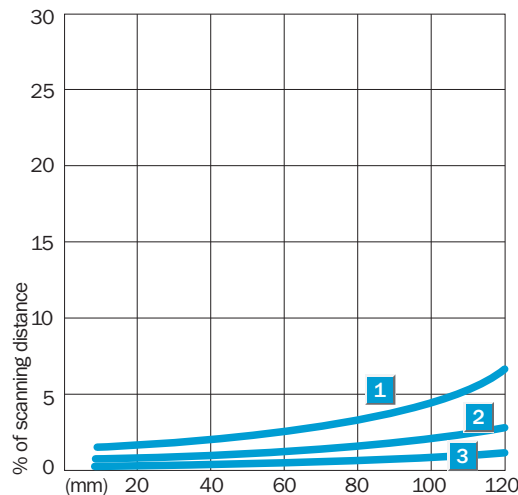
		P3232H	P3234H	N1132H						
Scanning distance, typ. max.	3 ... 120 mm ¹⁾									
Sensitivity setting	Teach-in: single teach-in button & cable									
	ET: teach-in via cable ²⁾									
Light source, light type	PinPoint LED, red light, 650 nm ³⁾									
Light spot diameter	2.5 mm at 50 mm									
Supply voltage V_S	10 ... 30 V DC ⁴⁾									
Residual ripple ⁵⁾	< 5 V _{PP}									
Power consumption ⁶⁾	≤ 30 mA									
Switching output	PNP, Q									
	NPN, Q									
Switching mode	Complementary									
	Light-switching									
Output current I _A max.	< 100 mA									
Response time ⁷⁾	< 0.5 ms									
Switching frequency, max. ⁸⁾	1000/s									
Connection type	Cable, PVC, 2 m ⁹⁾									
	Cable with plug M8, 4-pin, 150 mm ⁹⁾									
Circuit protection	A, B, C ¹⁰⁾									
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹²⁾									
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹¹⁾									
	Storage -30 °C ... +75 °C									
Weight	Approx. 40 g									
Housing material	AISI 316 L, SiO _x									

- 1) Object with 90 % remission (based on standard white DIN 5033)
- 2) External teach-in: Impulse > 2 s with voltage V_S with PNP and M with NPN
- 3) Average service life 100,000 h at T_A = +25 °C
- 4) Limit values, operation in short-circuit protected network max. 8 A
- 5) May not exceed or fall short of V_S tolerances
- 6) Without load
- 7) Signal transit time with resistive load
- 8) With light/dark ratio 1 : 1
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C = Interference pulse suppression
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- 12) With protected cable

Scanning distance



- 1 Scanning range on black, 6 % remission
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- 3 Scanning range on white, 90 % remission



Ordering information

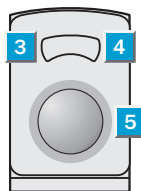
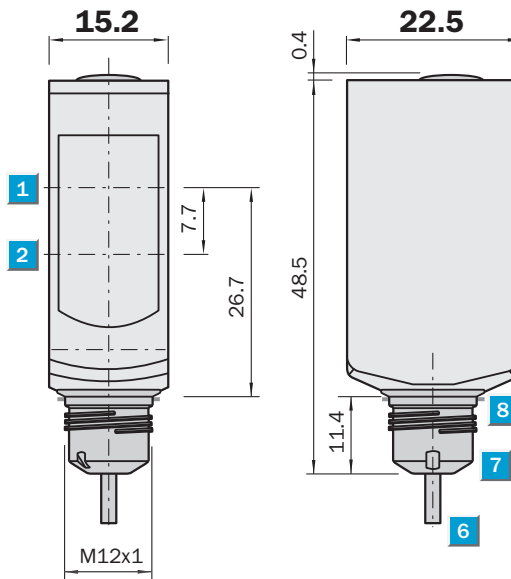
Model name	Part No.
WTB4S-3P3232H	1048096
WTB4S-3P3234H	1048097
WTB4S-3N1132H	1048098

Scanning distance
3 ... 120 mm

Photoelectric proximity sensor BGS

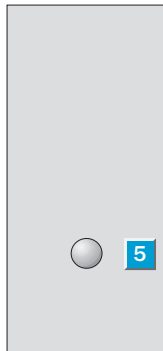
- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- Best background suppression and best ambient light suppression in its class

Dimensional drawing



Adjustments

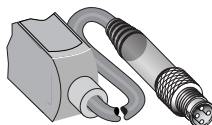
WTB4SC-3P3232H



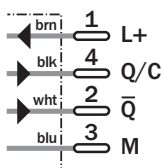
- 1 Optical axis, sender
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- 5 Metal-membrane teach-in button
- 6 Connector
- 7 Mounting adapter M12 x 1
- 8 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection type

WTB4SC-3P3232H



M8, 4-pin



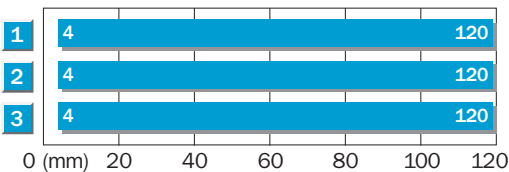
Accessories

Test and teach box

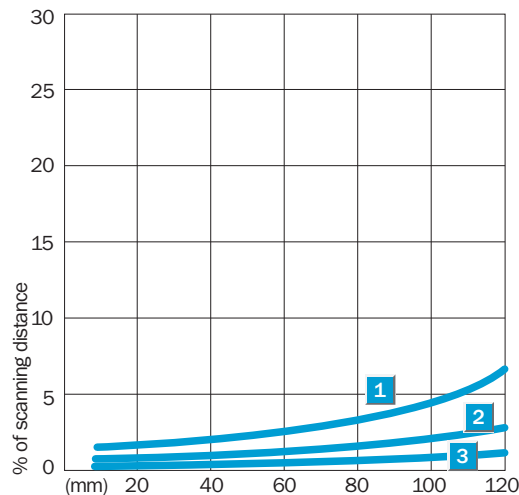
Technical data		WTB4SC-3	P3232H										
Scanning distance, typ. max.	3 ... 120 mm ¹⁾												
Sensitivity setting	Teach-in: single teach-in button												
Light source, light type	PinPoint LED, red light, 650 nm ²⁾												
Light spot diameter	2.5 mm at 50 mm												
Supply voltage V_S	10 ... 30 V DC ³⁾												
Residual ripple ⁴⁾	< 5 V _{PP}												
Power consumption ⁵⁾	≤ 30 mA												
Switching output	PNP, Q/C												
	PNP, \bar{Q}												
Switching mode	Complementary												
Communication mode	COM2												
Output current I _A max.	< 100 mA												
Response time ⁶⁾	< 0.5 ms												
Switching frequency, max. ⁷⁾	1000/s												
Connection type	Cable with plug M8, 4-pin, 150 mm ⁸⁾												
Circuit protection	A, B, C ⁹⁾												
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹¹⁾												
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹⁰⁾												
	Storage -30 °C ... +75 °C												
Weight	Approx. 40 g												
Housing material	AISI 316 L, SiO _x												

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Scanning distance



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



Ordering information

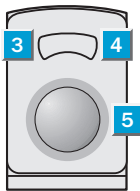
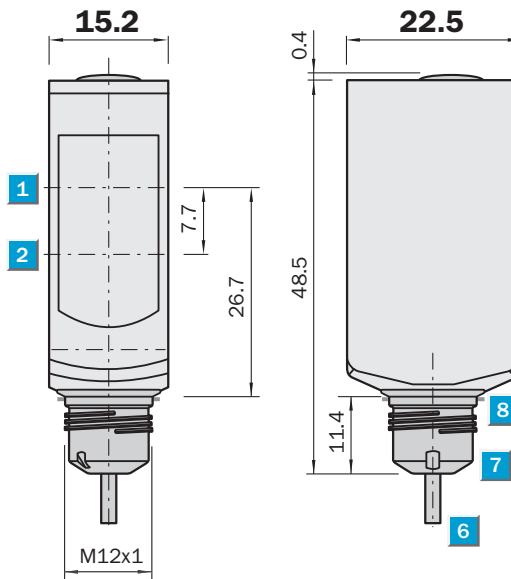
Model name	Part No.
WTB4SC-3P3232H	1048099

Scanning distance
3 ... 280 mm

Photoelectric proximity sensor BGS

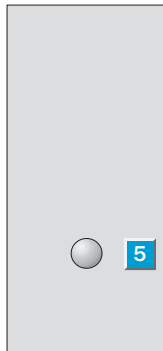
- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- Focused light spot similar to a laser to detect small parts or edges precisely at 100 mm

Dimensional drawing



Adjustments

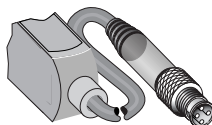
WTB4S-3P3204H



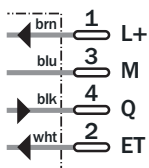
- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 LED indicator, green: power on
- 4 LED indicator, yellow: status of received light beam
- 5 Metal-membrane teach-in button
- 6 Connector
- 7 Mounting adapter M12 x 1
- 8 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection type

WTB4S-3P3204H



M8, 4-pin



Accessories

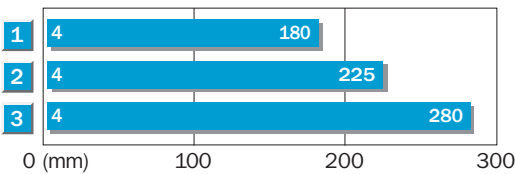
Test and teach box

P3204
HS01

Scanning distance, typ. max.	3 ... 280 mm ¹⁾
Sensitivity setting	Teach-in: single teach-in button
	ET: teach-in via cable ²⁾
Light source, light type	PinPoint LED, red light, 650 nm ³⁾
Light spot diameter	2.5 mm at 100 mm
Supply voltage V_S	10 ... 30 V DC ⁴⁾
Residual ripple ⁵⁾	< 5 V _{PP}
Power consumption ⁶⁾	< 30 mA
Switching output	PNP, Q
Switching mode	Light-switching
Output current I _A max.	< 100 mA
Response time ⁷⁾	< 0.5 ms
Switching frequency, max. ⁸⁾	1000/s
Connection type	Cable with plug M8, 4-pin, 150 mm ⁹⁾
Circuit protection	A, B, C ¹⁰⁾
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹²⁾
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹¹⁾
	Storage -30 °C ... +75 °C
Weight	Approx. 40 g
Housing material	AISI 316 L, SiO _x

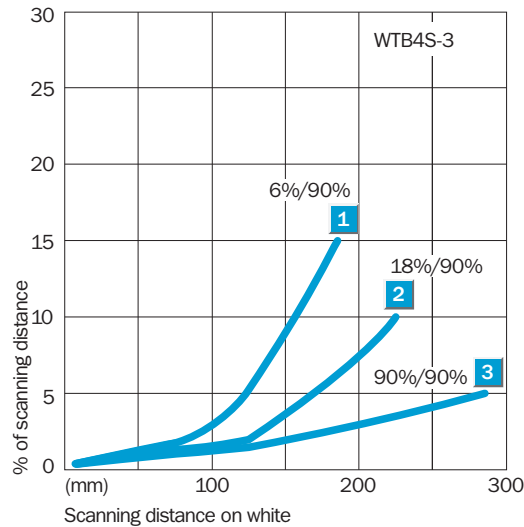
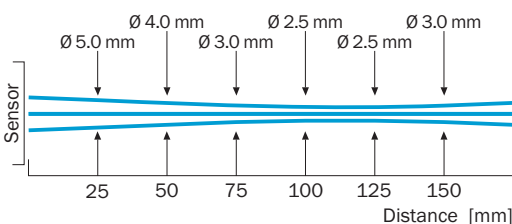
- 1) Object with 90 % remission (based on standard white DIN 5033)
- 2) External teach-in: Impulse > 2 s with voltage V_S with PNP and M with NPN
- 3) Average service life 100,000 h at T_A = +25 °C
- 4) Limit values, operation in short-circuit protected network max. 8 A
- 5) May not exceed or fall short of V_S tolerances
- 6) Without load
- 7) Signal transit time with resistive load
- 8) With light/dark ratio 1 : 1
- 9) Do not bend below 0 °C
- 10) A = V_S connections reverse-polarity protected
B = All outputs short-circuit protected
C = Interference pulse suppression
- 11) At V_S ≤ 24 V and I_A < 30 mA
- 12) With protected cable

Scanning distance



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

Light spot diameter



Ordering information

Model name	Part No.
WTB4S-3P3204HS01	1048532

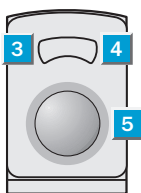
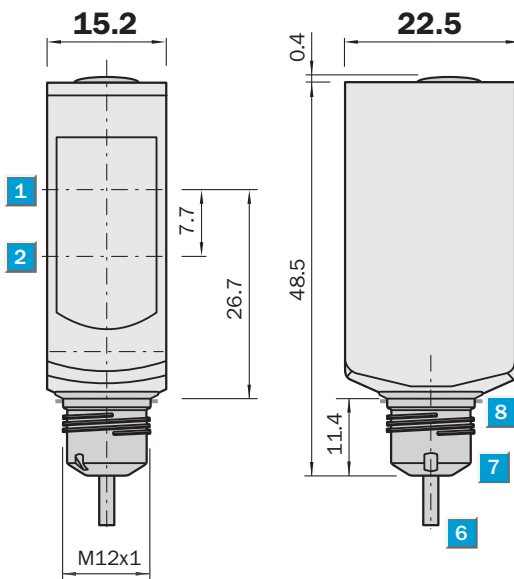
On request

Scanning distance
20 ... 200 mm

Photoelectric proximity sensor VGA

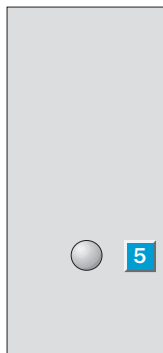
- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- Backgrounds such as steel surfaces or conveyor belts serve as reflector

Dimensional drawing



Adjustments

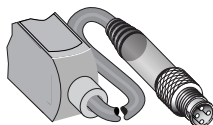
WTF4S-3P3264H



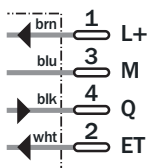
- 1 Optical axis, sender
- 2 Optical axis, receiver
- 3 LED indicator, green: power on
- 4 LED indicator, yellow: status of received light beam
- 5 Metal-membrane teach-in button
- 6 Connector
- 7 Mounting adapter M12 x 1
- 8 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection type

WTF4S-3P3264H



M8, 4-pin



Accessories

Test and teach box



		P3264H								
Scanning distance, typ. max.	20 ... 200 mm ¹⁾									
Sensitivity setting	Teach-in: single teach-in button									
	ET: teach-in via cable ²⁾									
Light source, light type	PinPoint LED, red light, 650 nm ³⁾									
Light spot diameter	6.5 mm at 150 mm									
Supply voltage V_S	10 ... 30 V DC ⁴⁾									
Residual ripple ⁵⁾	< 5 V _{PP}									
Power consumption ⁶⁾	≤ 30 mA									
Switching output	PNP, Q									
Switching mode	Light-switching									
Output current I _A max.	< 100 mA									
Response time ⁷⁾	< 0.5 ms									
Switching frequency, max. ⁸⁾	1000/s									
Connection type	Cable with plug M8, 4-pin, 150 mm									
Circuit protection	A, B, C ⁹⁾									
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹¹⁾									
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹⁰⁾									
	Storage -30 °C ... +75 °C									
Weight	Approx. 40 g									
Housing material	AISI 316 L, SiO _x									

- | | | | |
|---|--|--|--------------------------|
| 1) Object with 90 % remission (based on standard white DIN 5033) | 4) Limit values, operation in short-circuit protected network max. 8 A | 8) With light/dark ratio 1 : 1 | 11) With protected cable |
| 2) External teach-in: Impulse > 2 s with voltage V _S with PNP and M with NPN | 5) May not exceed or fall short of V _S tolerances | 9) A = V _S connections reverse-polarity protected | |
| 3) Average service life 100,000 h at T _A = +25 °C | 6) Without load | B = All outputs short-circuit protected | |
| | 7) Signal transit time with resistive load | C = Interference pulse suppression | |
| | | 10) At V _S ≤ 24 V and I _A < 30 mA | |

Teach-in procedure

- There is no object in the beam path, the light spot can be detected on the background (e.g. conveyor belt).
- For the teach-in procedure, reduce distance from the background, e.g. by holding a lighter colored object in front of the background or by moving the sensor closer to the background.
 - For smooth and consistent backgrounds: reduce distance from the background by at least 5%.
 - For inconsistent objects (e.g. chain links) reduce distance from the background by at least 15%.
- Press teach-in button for > 2 s. Sensor is adjusted and the scanning distance is memorized.

Ordering information

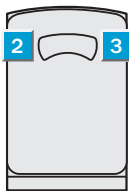
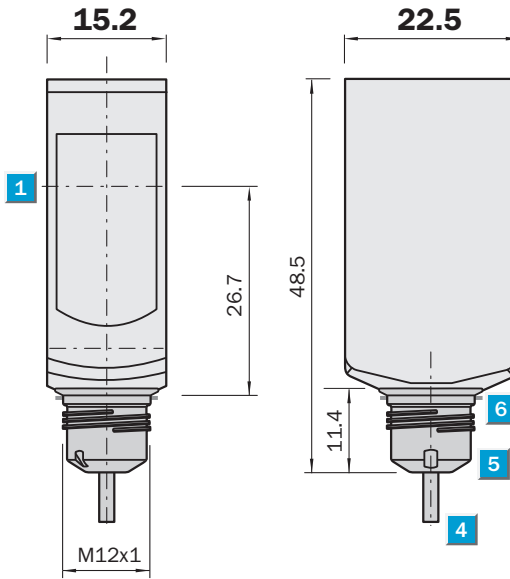
Model name	Part No.
WTF4S-3P3264H	1048109

More detailed information can be found in the operating instructions and on the Internet at www.sick.com

Scanning range
0 ... 4 m
 Photoelectric reflex sensor

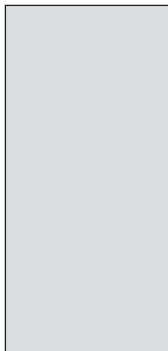
- Robust housing in V4A/316L
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- PinPoint LED enables quick and easy alignment
- Small reflectors provide high reserve factors

Dimensional drawing



Adjustments

All types

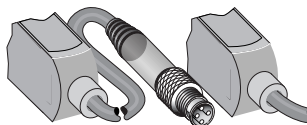


Without adjustment

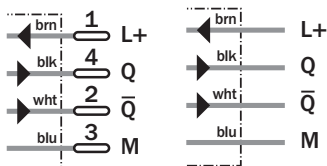
- 1 Optical axis, sender and receiver (autocollimation)
- 2 LED indicator, green: power on
- 3 LED indicator, yellow: status of received light beam
- 4 Connector
- 5 Mounting adapter M12 x 1
- 6 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

WL4S-3P3230H WL4S-3N1130H



M8, 4-pin 4 x 0.14 mm²

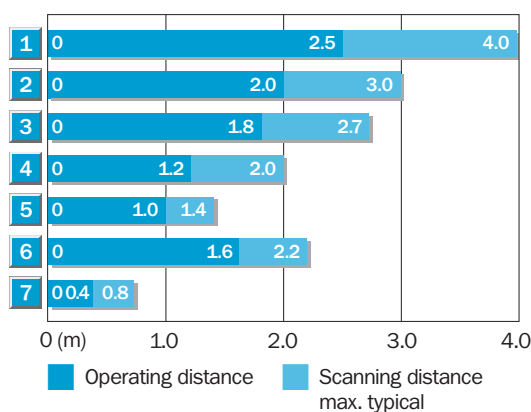


Accessories
Reflectors
Test and teach box

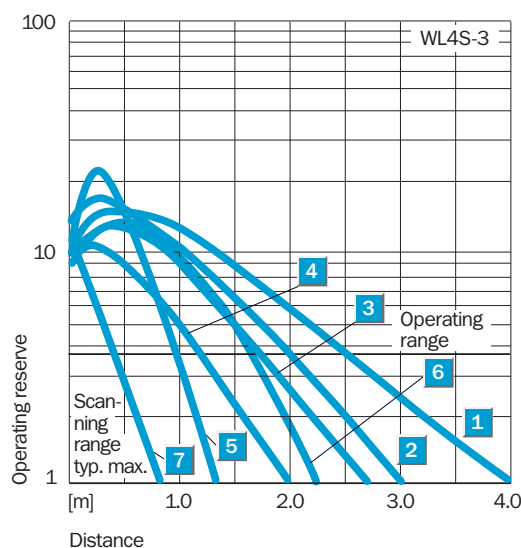
		P3230H	N1130H							
Scanning range, typ. max.	0 ... 4 m									
Scanning range, recommended	0 ... 2.5 m									
Relating to	PL80A									
Light source, light type	PinPoint LED, red light, 650 nm ¹⁾									
Light spot diameter	45 mm at 1.5 m									
Polarization filter	✓									
Supply voltage V_S	10 ... 30 V DC ²⁾									
Residual ripple ³⁾	< 5 V _{PP}									
Power consumption ⁴⁾	≤ 30 mA									
Switching output	PNP, Q									
	NPN, Q									
Switching mode	Complementary									
Output current I _A max.	< 100 mA									
Response time ⁵⁾	< 0.5 ms									
Switching frequency, max. ⁶⁾	1000/s									
Connection type	Cable, PVC, 2 m ⁷⁾									
	Cable with plug M8, 4-pin, 150 mm									
Circuit protection	A, B, C ⁸⁾									
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹⁰⁾									
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ⁹⁾									
	Storage -30 °C ... +75 °C									
Weight	Approx. 40 g									
Housing material	AISI 316 L, SiO _x									

- 1) Average service life 100,000 h at T_A = +25 °C
- 2) Limit values, operation in short-circuit protected network max. 8 A
- 3) May not exceed or fall short of V_S tolerances
- 4) Without load
- 5) Signal transit time with resistive load
- 6) With light/dark ratio 1 : 1
- 7) Do not bend below 0 °C
- 8) A = V_S connections reverse-polarity protected
B = All outputs short-circuit protected
C = Interference pulse suppression
- 9) At V_S ≤ 24 V and I_A < 30 mA
- 10) With protected cable


Scanning range and operating reserve



Reflector type	Operating range
1 PL80A	0 ... 2.5 m
2 PL250F	0 ... 2.0 m
3 PL40A	0 ... 1.8 m
4 PL20F	0 ... 1.2 m
5 PL10F	0 ... 1.0 m
6 P250 CHEM	0 ... 1.6 m
7 REF-IRF-56	0 ... 0.4 m

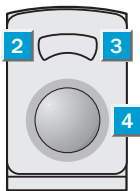
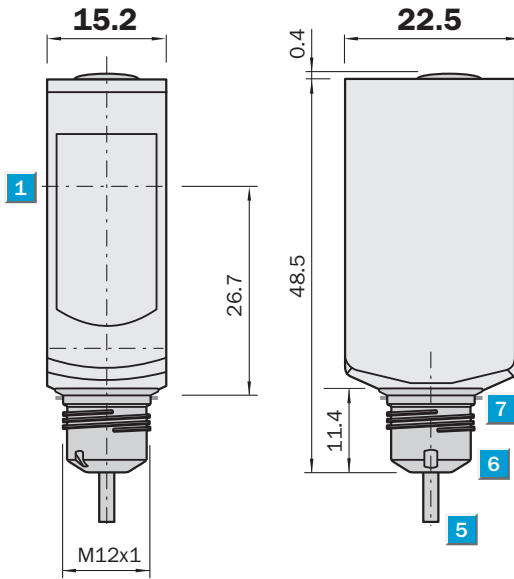


Ordering information	
Model name	Part No.
WL4S-3P3230H	1048115
WL4S-3N1130H	1048116


Scanning range
 0 ... 5 m
Photoelectric reflex sensor

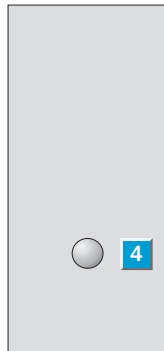
- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Easy to clean, because there are no mounting holes and the surface is smooth all around

Dimensional drawing



Adjustments

All types



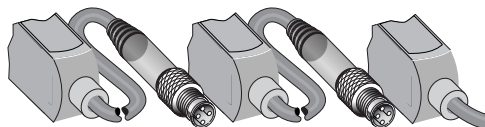
- 1** Optical axis, sender and receiver (autocollimation)
- 2** LED indicator, green: power on
- 3** LED indicator, yellow: status of received light beam
- 4** Metal-membrane teach-in button
- 5** Connector
- 6** Mounting adapter M12 x 1
- 7** PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

WL4S-3P3232H

WL4S-3V3232H

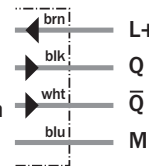
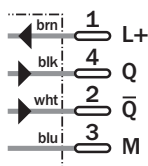
WL4S-3N1132H



M8, 4-pin

M8, 4-pin

4 x 0.14 mm²



Accessories

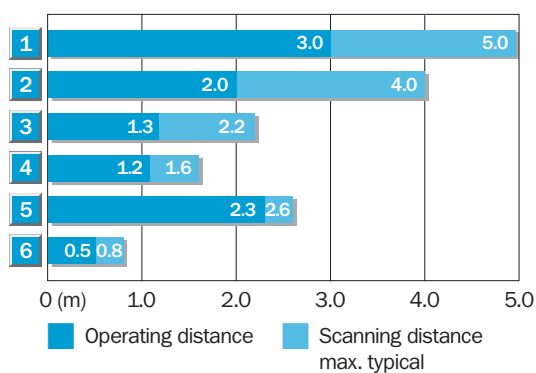
Reflectors

Test and teach box

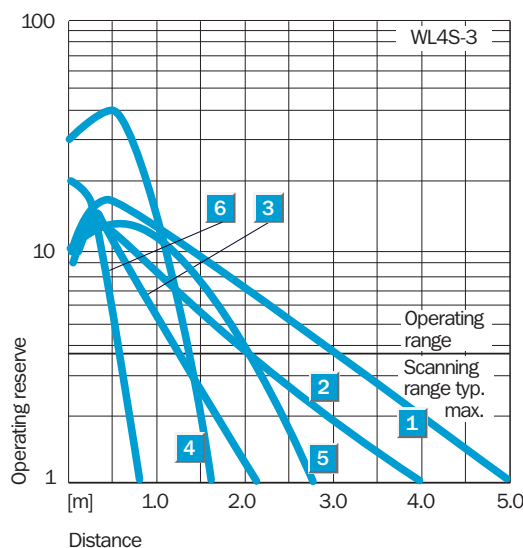
		V3232H	P3232H	N1132H						
Scanning range, typ. max.	0 ... 5 m									
Scanning range, recommended	0 ... 3 m									
Relating to	PL80A									
Sensitivity setting	Teach-in: single teach-in button									
Light source, light type	PinPoint LED, red light, 650 nm ¹⁾									
Light spot diameter	45 mm at 1.5 m									
Polarization filter	✓									
Supply voltage V_S	10 ... 30 V DC ²⁾									
Residual ripple ³⁾	< 5 V _{PP}									
Power consumption ⁴⁾	≤ 30 mA									
Switching output	PNP, Q									
	NPN, Q									
Switching mode	Dark-switching									
	Complementary									
Output current I _A max.	< 100 mA									
Response time ⁵⁾	< 0.5 ms									
Switching frequency, max. ⁶⁾	1000/s									
Alarm output	Pre-failure signalling output									
Connection type	Cable, PVC, 2 m ⁷⁾									
	Cable with plug M8, 4-pin, 150 mm ⁷⁾									
Circuit protection	A, B, C ⁸⁾									
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹⁰⁾									
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ⁹⁾									
	Storage -30 °C ... +75 °C									
Weight	Approx. 40 g									
Housing material	AISI 316 L, SiO _x									

- 1) Average service life 100,000 h at T_A = +25 °C
- 2) Limit values, operation in short-circuit protected network max. 8 A
- 3) May not exceed or fall short of V_S tolerances
- 4) Without load
- 5) Signal transit time with resistive load
- 6) With light/dark ratio 1 : 1
- 7) Do not bend below 0 °C
- 8) A = V_S connections reverse-polarity protected
B = All outputs short-circuit protected
C = Interference pulse suppression
- 9) At V_S ≤ 24 V and I_A < 30 mA
- 10) With protected cable

Scanning range and operating reserve



Reflector type	Operating range
1	PL80A 0 ... 3.0 m
2	PL40A 0 ... 2.0 m
3	PL20A 0 ... 1.3 m
4	PL10F 0 ... 1.2 m
5	P250 CHEM 0 ... 2.3 m
6	REF-IRF-56 0 ... 0.5 m



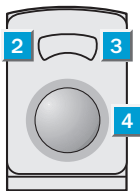
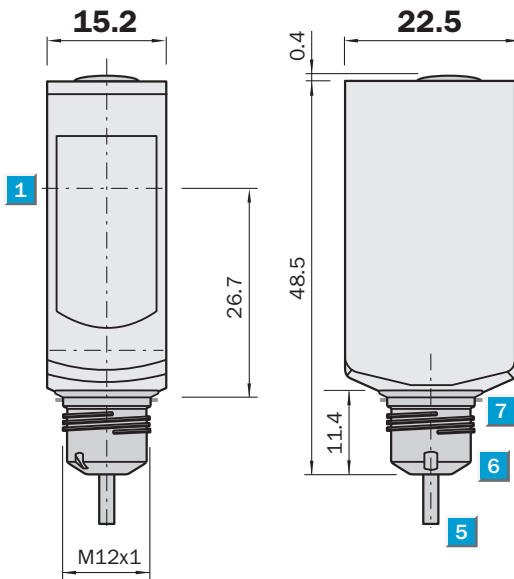
Ordering information	
Model name	Part No.
WL4S-3V3232H	1048118
WL4S-3P3232H	1048117
WL4S-3N1132H	1048119

Scanning range
0 ... 5 m

Photoelectric reflex sensor

- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Detection of highly transparent objects with tracking of switching threshold
- Quick and easy commissioning thanks to teach-in function

Dimensional drawing



Adjustments

All types

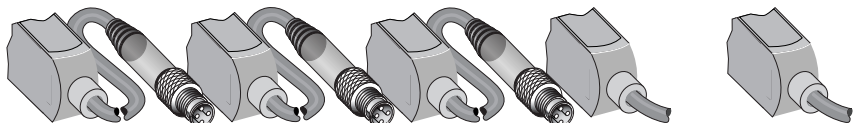


- 1 Optical axis, sender and receiver (autocollimation)
- 2 LED indicator, green: power on
- 3 LED indicator, yellow: status of received light beam
- 4 Metal-membrane teach-in button
- 5 Connector
- 6 Mounting adapter M12 x 1
- 7 PTFE gasket 13.4 x 0.8 mm (included with delivery)



Connection types

WLG4S-3P3232H WLG4S-3V3232H WLG4S-3F3234H WLG4S-3E1134H WLG4S-3N1132H



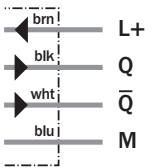
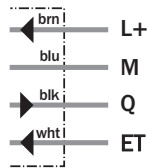
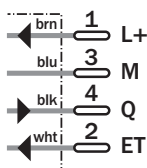
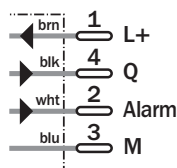
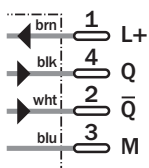
M8, 4-pin

M8, 4-pin

M8, 4-pin

4 x 0.14 mm²

4 x 0.14 mm²



Accessories

- Reflectors
- Test and teach box

		P3232H	V3232H	F3234H	E1134H	N1132H				
Scanning range typ.	0 ... 5 m									
Scanning range, recommended	0 ... 3 m									
Relating to	PL80A									
Sensitivity setting	Teach-in: single teach-in button ¹⁾ ET: teach-in via cable									
Light source, light type ²⁾	PinPoint LED, red light, 650 nm									
Light spot diameter	45 mm at 1.5 m									
Polarization lter	✓									
Supply voltage V_S	10 ... 30 V DC ³⁾									
Residual ripple ⁴⁾	< 5 V _{PP}									
Power consumption ⁵⁾	≤ 30 mA									
Switching output	PNP, Q NPN, Q									
Switching mode	Dark-switching Complementary									
Output current I _A max.	< 100 mA									
Response time ⁶⁾	< 0.5 ms									
Switching frequency, max. ⁷⁾	1000/s									
Alarm output	Pre-failure signalling output (VMA)									
Connection type	Cable, PVC, 2 m ⁸⁾ Cable with plug M8, 4-pin, 150 mm ⁸⁾									
Circuit protection	A, B, C ⁹⁾									
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹¹⁾									
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹⁰⁾ Storage -30 °C ... +75 °C									
Weight	Approx. 40 g									
Housing material	AISI 316 L, SiOx									

- 1) External teach-in: Impulse > 2 s with voltage V_S with PNP and M with NPN
- 2) Average service life 100,000 h at T_A = +25 °C
- 3) Limit values
- 4) May not exceed or fall short of V_S tolerances
- 5) Without load
- 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
B = All outputs short-circuit protected
C = Interference pulse suppression
- 10) At V_S ≤ 24 V and I_A < 30 mA
- 11) With protected cable

Teach-in function

Programming via teach-in button

Standard mode (switching threshold adaptation):

Standard mode (switching threshold adaptation): sensor adjusts the switching threshold to the ambient conditions. Sensor has clear sight of the reflector.

No object in the beam path: Connect ET (pin2) > 2 s < 5 s with V_S.

Yellow LED display flashes briefly. Sensor is ready to operate.

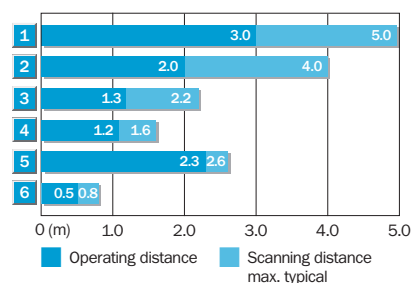
Switch off switching threshold adaptation:

Sensor works statically with a switching threshold of 50 %. Sensor has clear sight of the reflector.

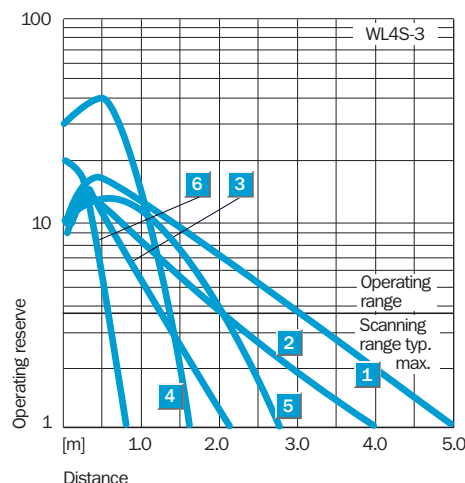
No object in the beam path: Connect ET (pin2) > 8 s with V_S.

Yellow LED display flashes 2 times. Sensor is ready to operate.

Scanning range and operating reserve




Reflector type	Operating range
1	PL80A 0 ... 3.0 m
2	PL40A 0 ... 2.0 m
3	PL20A 0 ... 1.3 m
4	PL10F 0 ... 1.2 m
5	P250 CHEM 0 ... 2.3 m
6	REF-IRF-56 0 ... 0.5 m



Ordering information

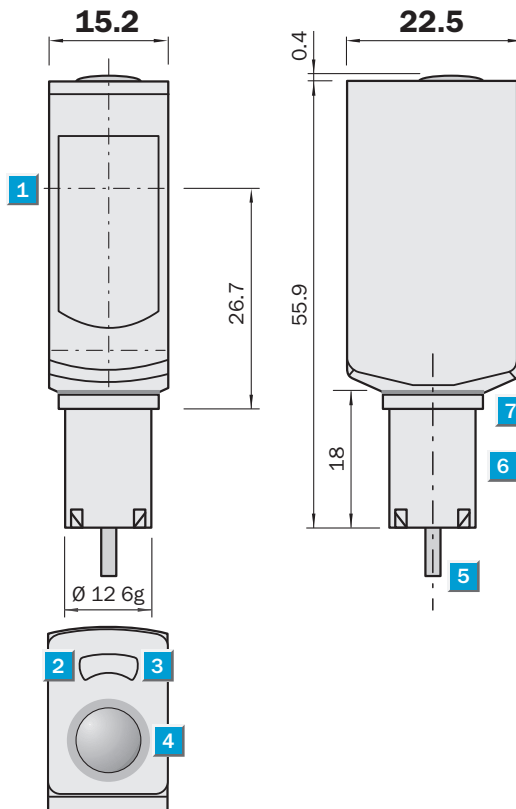
Model name	Part No.
WLG4S-3P3232H	1048120
WLG4S-3F3234H	1048121
WLG4S-3V3232H	1048122
WLG4S-3E1134H	1048124
WLG4S-3N1132H	1048123


Scanning range
0 ... 5 m
Photoelectric reflex sensor

- Robust housing in V4A/316L
- Seamlessly and smoothly welded metal-membrane teach-in button for maximum robustness and hygiene
- Detection of highly transparent objects with switching threshold adaption
- Quick and easy commissioning thanks to teach-in function

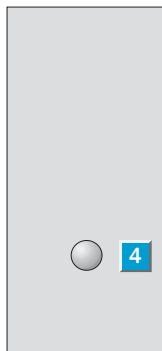


Dimensional drawing



Adjustments

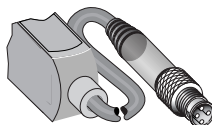
WL4S-3F3234HS01



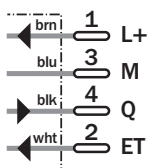
- 1 Optical axis, sender and receiver (autocollimation)
- 2 LED indicator, green: power on
- 3 LED indicator, yellow: status of received light beam
- 4 Metal-membrane teach-in button
- 5 Connector
- 6 Mounting adapter Ø 12 mm
- 7 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection type

WL4S-3F3234HS01



M8, 4-pin



Accessories
 Reflectors
 Test and teach box



Scanning range typ.	0 ... 5 m
Scanning range, recommended	0 ... 3 m
Relating to	Reflector PL80A
Sensitivity setting	Teach-in: single teach-in button ET: teach-in via cable ¹⁾
Light source, light type ²⁾	PinPoint LED, red light, 650 nm
Light spot diameter	45 mm at 1.5 m
Polarization filter	✓
Supply voltage V_S	10 ... 30 V DC ³⁾
Residual ripple ⁴⁾	< 5 V _{PP}
Power consumption ⁵⁾	≤ 30 mA
Switching output	PNP, Q
Switching mode	Dark-switching Complementary
Output current I _A max.	< 100 mA
Response time ⁶⁾	< 0.5 ms
Switching frequency, max. ⁷⁾	1000/s
Connection type	Cable with plug M8, 4-pin, 150 mm ⁸⁾
Circuit protection	A, B, C ⁹⁾
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹¹⁾
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ¹⁰⁾ Storage -30 °C ... +75 °C
Weight	Approx. 40 g
Housing material	AISI 316 L, SiOx

F3234 HS01	P3232 HS02											
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- 1) External teach-in: Impulse > 2 s with voltage V_S with PNP and M with NPN
 2) Average service life 100,000 h at T_A = +25 °C
 3) Limit values
 4) May not exceed or fall short of V_S tolerances
 5) Without load
 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
 B = All outputs short-circuit protected
 C = Interference pulse suppression
 10) At V_S ≤ 24 V and I_A < 30 mA
 11) With protected cable

Teach-in function

Programming via teach-in button

Standard mode (switching threshold adaptation):

Standard mode (switching threshold adaptation): sensor adjusts the switching threshold to the ambient conditions. Sensor has clear sight of the reflector.

No object in the beam path: Connect ET (pin2) > 2 s < 5 s with V_S.

Yellow LED display flashes briefly. Sensor is ready to operate.

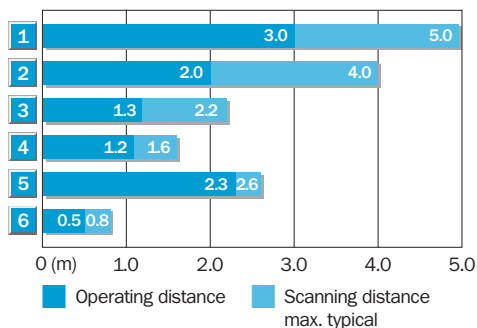
Switch off switching threshold adaptation:

Sensor works statically with a switching threshold of 50 %. Sensor has clear sight of the reflector.

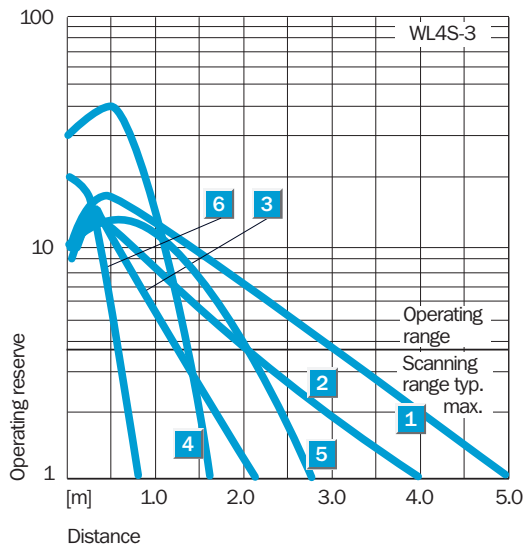
No object in the beam path: Connect ET (pin2) > 8 s with V_S.

Yellow LED display flashes 2 times. Sensor is ready to operate.

Scanning range and operating reserve



Reflector type	Operating range
1 PL80A	0 ... 3.0 m
2 PL40A	0 ... 2.0 m
3 PL20A	0 ... 1.3 m
4 PL10F	0 ... 1.2 m
5 P250 CHEM	0 ... 2.3 m
6 REF-IRF-56	0 ... 0.5 m



Ordering information

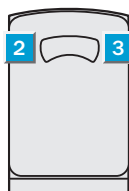
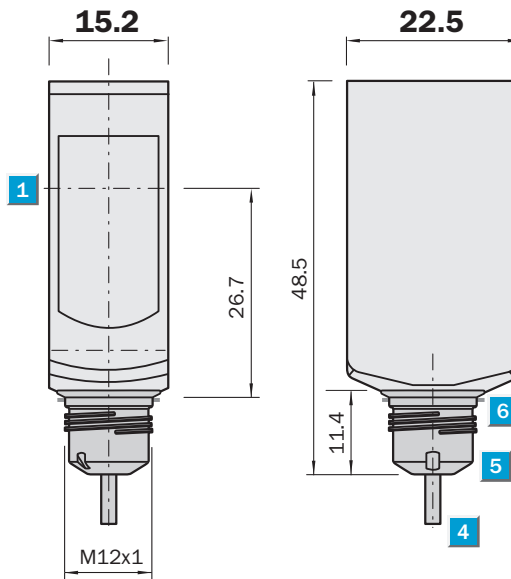
Model name	Part No.
WLG4S-3F3234HS01	1048535
WLG4S-3P3232HS02	1050665

Scanning range
0 ... 5 m

Through-beam photoelectric sensor

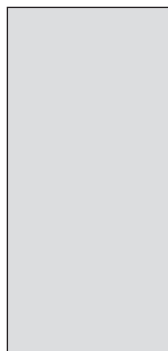
- Robust housing in V4A/316L
- Easy to clean, because there are no mounting holes and the surface is smooth all around
- PinPoint LED enables quick and easy alignment
- Small, intense light spot provides high reserve factors

Dimensional drawing



Adjustments

All types



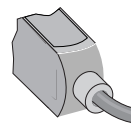
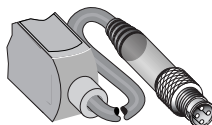
Without adjustment

- 1 Optical axis, sender and receiver (autocollimation)
- 2 LED indicator, green: power on
- 3 LED indicator, yellow: status of received light beam
- 4 Connector
- 5 Mounting adapter M12 x 1
- 6 PTFE gasket 13.4 x 0.8 mm (included with delivery)

Connection types

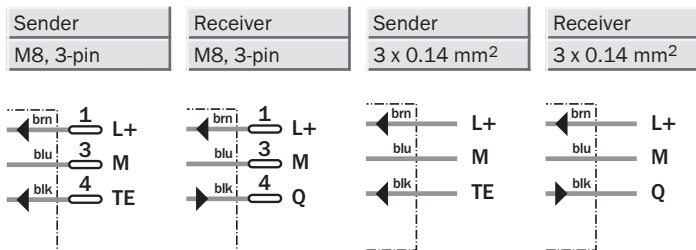
WSE4S-3_3130H

WSE4S-3_1330H



Accessories

Test and teach box



Technical data		WSE4S-3	P3130H	F3130H	N1330H	E3130H	E1330H						
Scanning range typ.	0 ... 5 m												
Scanning range, recommended	0 ... 4.5 m												
Light source, light type ¹⁾	PinPoint LED, red light, 650 nm												
Light spot diameter	130 mm at 2 m												
Supply voltage V_S	10 ... 30 V DC ²⁾												
Residual ripple ³⁾	< 5 V _{PP}												
Power consumption, sender	≤ 20 mA												
Power consumption, receiver ⁴⁾	≤ 20 mA												
Switching output	PNP, Q												
	NPN, Q												
Switching mode	Dark-switching												
	Light-switching												
Output current I_A max.	< 100 mA												
Response time ⁵⁾	< 0.5 ms												
Switching frequency, max. ⁶⁾	1000/s												
Test input sender off	TE to 0 V												
Connection type	Cable, PVC, 2 m ⁷⁾												
	Cable with plug M8, 3-pin, 100 mm ⁷⁾												
Circuit protection	A, B, C ⁸⁾												
Enclosure rating	IP 66, IP 67, IP 68, IP 69K ¹⁰⁾												
Ambient temperature	Operation -30 °C ... +60 °C/70 °C ⁹⁾												
	Storage -30 °C ... +75 °C												
Weight	Approx. 80 g												
Housing material	AISI 316 L, SiOx												

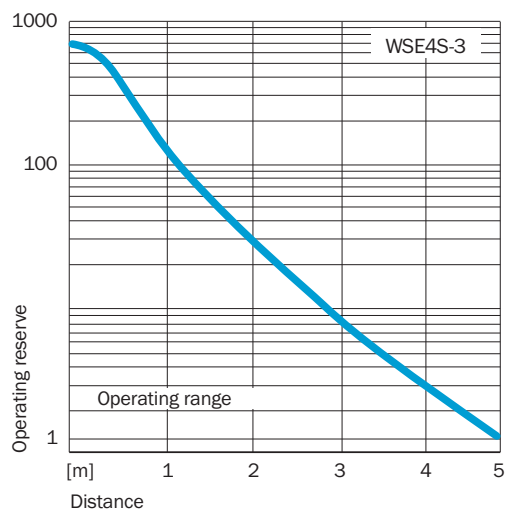
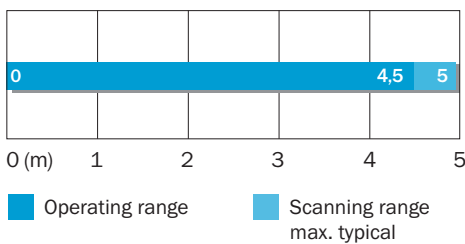
1) Average service life 100,000 h at $T_A = +25\text{ °C}$
 2) Limit values
 3) May not exceed or fall short of V_S tolerances

4) Without load
 5) Signal transit time with resistive load
 6) With light/dark ratio 1 : 1
 7) Do not bend below 0 °C

8) A = V_S connections reverse-polarity protected
 B = All outputs short-circuit protected
 C = Interference pulse suppression

9) At $V_S \leq 24\text{ V}$ and $I_A < 30\text{ mA}$
 10) With protected cable

Scanning range and operating reserve



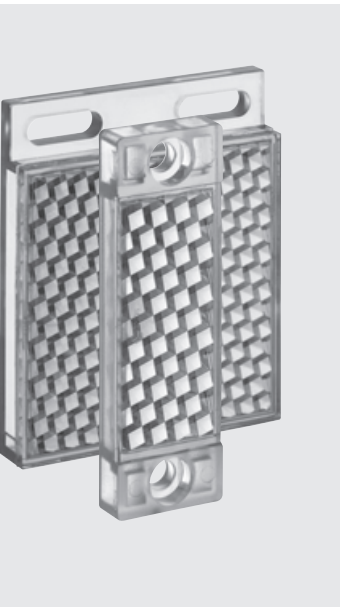
Ordering information	
Model name	Part No.
WSE4S-3P3130H	1048127
WSE4S-3F3130H	1048128
WSE4S-3N1330H	1048129
WSE4S-3E3130H	1048131
WSE4S-3E1330H	1048130

Reflectors

Reflectors "Food & Beverage"

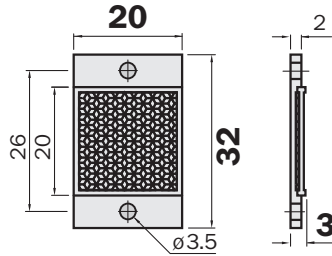
Reflectors

- The Food & Beverage Reflector
- Chemical resistance tested by the German Technical Control Board against H₂O₂, formic acid, and chlorophene
- Resistant against ECOLAB detergents
- Temperature resistant to 100 °C

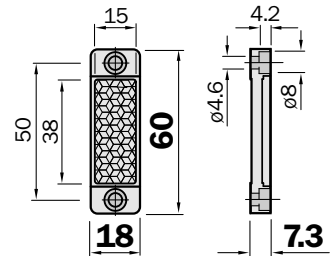


Dimensional drawing

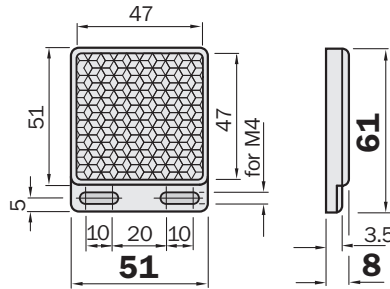
PL10F CHEM



PL20 CHEM



P250 CHEM



Technical data

Material	Chemically resistant plastic
Mounting	2-hole mounting, M4
Temperature	-20 ... +100 °C ¹⁾
Reflectance	50 ... 70% ²⁾
Enclosure rating	IP 67/IP 69K

PL10F CHEM	PL20 CHEM	P250 CHEM
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¹⁾ Continually 80 °C, short-term ~15 min 100 °C. Optical performance can be hampered with use at the upper temperature limit.

²⁾ Assuming standard reflectors with the same design.
Example: P250 ≥ 100%,
P250 CHEM ≥ 50 ... 70%, dependent on photoelectric switch used.

Resistant against ECOLAB detergents

Procedure:

- Immerse the CHEM reflectors in various detergent solutions and concentrates
- Temperature: 60 or 80 °C
- Length of time: 2 weeks
- After 2 weeks, the reflectors are rinsed using demineralized water and assessed visually and gravimetrically.

Ordering information

Model name	Part No.
PL10F CHEM	5321636
PL20 CHEM	5321089
P250 CHEM	5321097

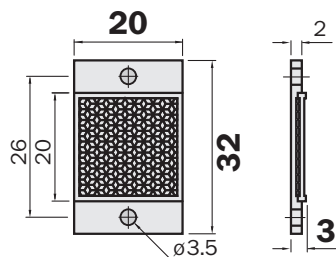
Product/ concentration	T [°C]	Suitability
P3-cosa CIP 72	60	+
P3-cosa CIP 77	80	+
P3-cosa CIP 90	80	+
P3-cosa CIP 92	80	+
P3-cosa CIP 95	80	+
P3-cosa PUR 80	80	+
P3-cosa PUR 83	80	+
P3-cosa PUR 84	80	+
P3-cosa PUR 85	80	+
P3-cosa PUR 88	80	+

Product/ concentration	T [°C]	Suitability
P3-cosa FOAM 40	80	+
P3-cosa DES	80	+
P3-cosa FLUX 22	80	+
P3-cosa FLUX 33	80	+
P3-cosa FLUX 44	80	+
P3-cosa FLUX 55*	80	0

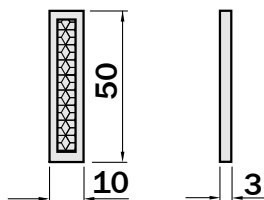
+ = suitable
0 = conditionally suitable
- = not suitable
* = contains nitric acid

SENSICK Reflectors plastic design, angular for ambient temperatures up to 65 °C

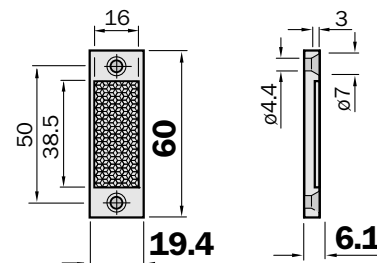
Micro triple reflector 20 x 20 mm ²	
Screwable	
Model name	Part No.
PL10F	5311210



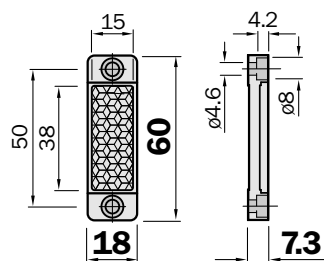
Micro triple reflector 10 x 50 mm ²	
Plan	
Model name	Part No.
PL15F	5313849



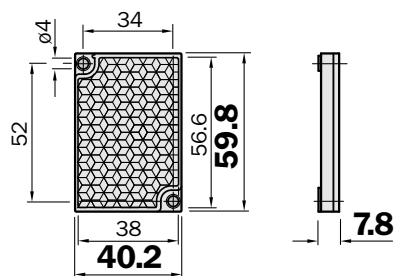
Micro triple reflector 20 x 40 mm ²	
Screwable	
Model name	Part No.
PL20F	5308844



Reflector 20 x 40 mm ²	
Screwable	
Model name	Part No.
PL20A	1012719



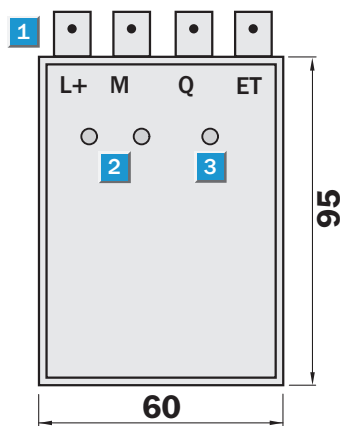
Reflector 40 x 60 mm ²	
Screwable	
Model name	Part No.
PL40A	1012720



Special accessories

Test box 18V for sensors with teach-in via cable

Model name	Part No.
Testbox	6038940



- 1** Terminals for electrical connections
- 2** Teach-in buttons for external teach-in
- 3** Display LED for switching output

Australia

Phone +61 3 9497 4100
1800 33 48 02 - tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail sac@sick.com.br

Ceská Republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +852-2763 6966
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail kundenservice@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-999-0590
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 3358 1341
E-Mail support@sick.jp

Nederlands

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail austefjord@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

Republic of Korea

Phone +82-2 786 6321/4
E-Mail info@sickkorea.net

Republika Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7 495 775 05 34
E-Mail info@sick-automation.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail admin@sicksgp.com.sg

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886 2 2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 216 587 74 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 4 8865 878
E-Mail info@sick.ae

USA/Canada/México

Phone +1(952) 941-6780
1 800-325-7425 - tollfree
E-Mail info@sickusa.com

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