

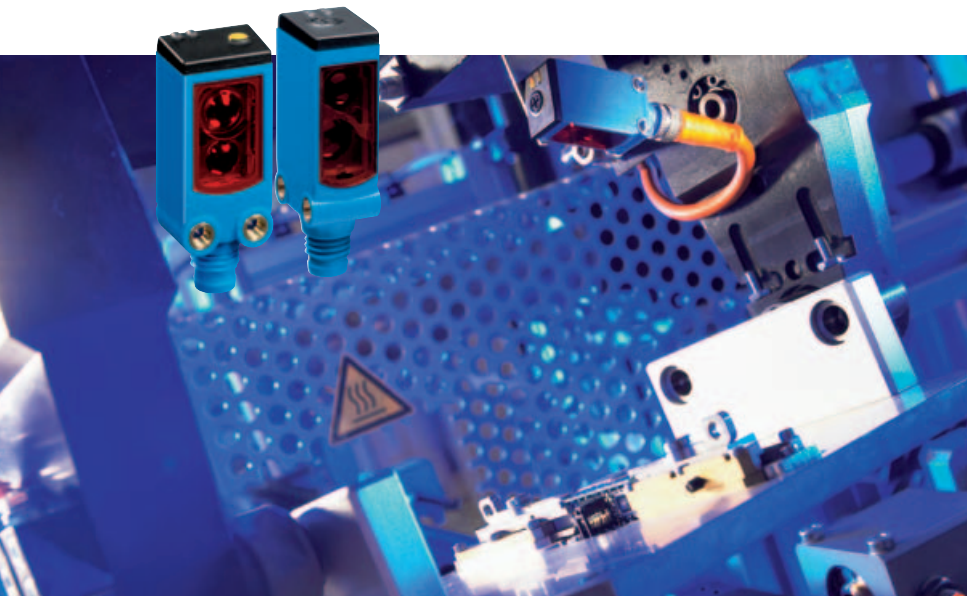
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# Miniature photoelectric switches series W4-3: The efficient space savers

DATA SHEET



## Photoelectric reflex switch with switching threshold adaptation and autocollimation.

Transparent objects of all kinds can be reliably detected in difficult and changing ambient conditions, with the switching threshold being automatically adapted to the changing ambient conditions, such as dust gathering on the optical surfaces.

## Best background suppression in its class.

Background suppression offering more than just a good black/white displacement, i.e. object detection in front of reflective and moving backgrounds. The sensor has a 2nd sender LED allowing the sensor to see "spatially".

## Optimum ambient light suppression.

The photoelectric proximity switch needs to detect objects directly in front of an energy-saving lamp or a fluorescent lamp – no problem. Light from such sources is identified and suppressed.

## Hygienic and safe to use in aggressive environments.

Hydrofluoric acid, coolants, alcohols etc. cannot affect the fully Teflon-encapsulated versions – even when exposed for long periods.

It is the little things that make you "big": minimum size, maximum versatility. Three versions of the W4-3 series offer the users the following benefits for their application:

### Clearly visible light spot.

The integration of new pinpoint LEDs creates brilliant, tightly defined light spots. Thus, the photoelectric switches can be aligned easily and quickly, as the light spot is easy to see even in bright ambient conditions.

	<b>Photoelectric proximity switches BGS</b>
	<b>Photoelectric reflex switches</b>
	<b>Through-beam photoelectric switches</b>


 **IO-Link**

**ECOLAB**



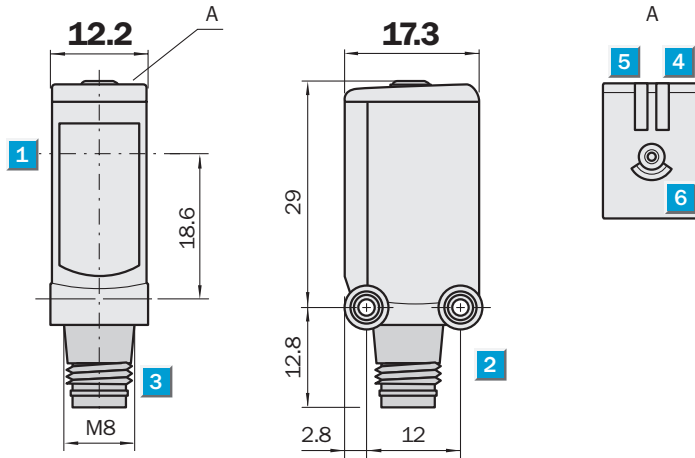
**SICK**

# Photoelectric reflex switch, WLG4S-3, for transparent objects

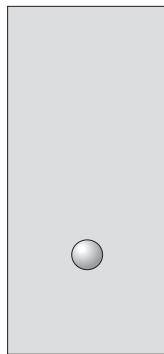

**Scanning range**  
 0 ... 5 m  
**Photoelectric reflex switch**

- Continuous adaptation of the switching threshold in case of lens contamination
- Stable operation thanks to temperature compensation
- Small, easily visible, tightly defined light spot
- Quick and easy commissioning through teach-in function
- Detection of glass objects with an attenuation of > 8%

## Dimensional drawing

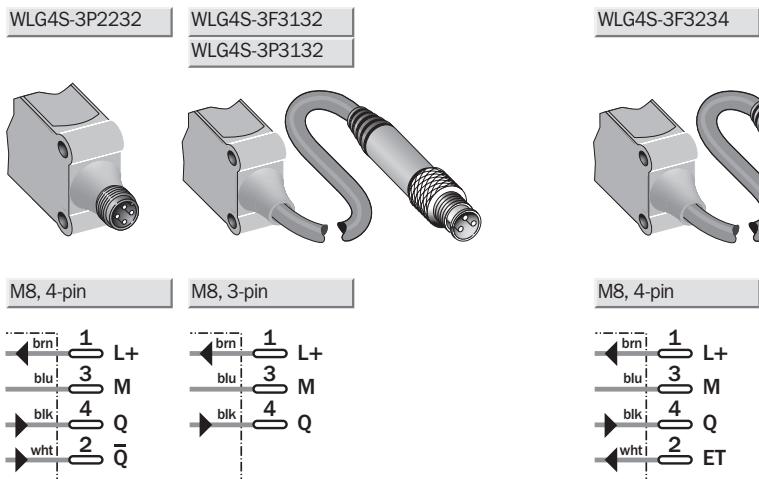
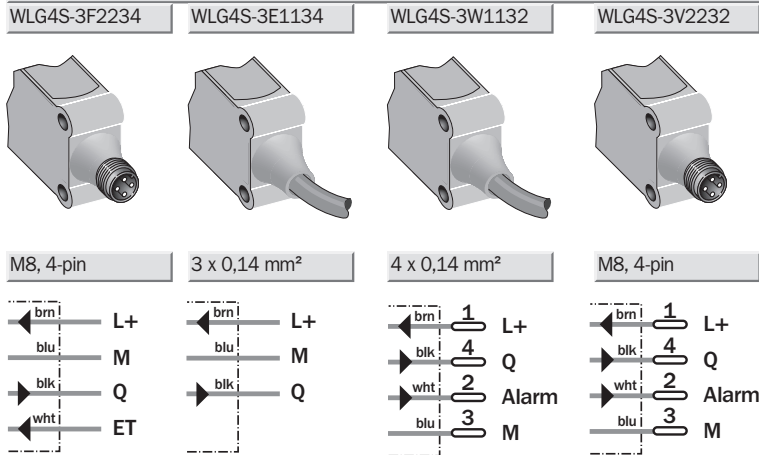


## Adjustments possible



- 1 Optical axis
- 2 Mounting hole M3
- 3 Connector
- 4 LED signal strength indicator green: power on
- 5 LED signal strength indicator orange: status of received light beam
- 6 Teach button

## Connection type



**See Accessories chapter**  
 Connector, M8, 4-pin  
 Mounting systems  
 Reflectors

WLG4S-3		E1134	F2234	V2232	W113	P2232	P3132	F3132	F3234		
<b>Detection of transparent objects</b>	✓										
<b>Attenuation along light beam</b>	> 8 %										
<b>Scanning range typ. max.</b>	0 ... 5 m										
<b>Scanning range, recommended</b>	0 ... 3 m										
Relating to	Reflector PL80A										
Sensitivity adjustment	Teach-in: single-teach button										
	Teach-in: single-teach button & cable										
<b>Light source, light type</b>	Pinpoint LED, red light, 650 nm <sup>1)</sup>										
Light spot diameter	45 mm at 1.5 m distance										
Polarisation filter	✓										
<b>Supply voltage V<sub>s</sub></b>	DC 10 ... 30 V <sup>2)</sup>										
Ripple	≤ 5 Vss <sup>3)</sup>										
Power consumption	≤ 20 mA <sup>4)</sup>										
<b>Switching outputs</b>	NPN, Q										
	PNP, Q										
	PNP, Q and Q̄										
Switching mode	Dark-switching										
	Light and dark-switching										
Output current I <sub>a</sub> max	≤ 100 mA										
Response time	< 0.5 ms <sup>5)</sup>										
Switching frequency	1,000 Hz <sup>6)</sup>										
Alarm output	Pre-failure signalling output										
<b>Connection type</b>	Cable, PVC, 2 m <sup>7)</sup>										
	Connector, M8, 3-pin,										
	Cable with plug, M8, 3-pin, 100 mm <sup>7)</sup>										
	Cable with plug, M8, 4-pin, 100 mm <sup>7)</sup>										
<b>Circuit protection</b>	V <sub>s</sub> connections reverse-polarity protected / Output Q and Q̄ not short-circuit protected / Interference suppression										
<b>Enclosure rating</b>	IP 66, IP 67										
<b>Ambient temperature operation</b>	-40 °C ... +60 °C										
<b>Ambient temperature storage</b>	-40 °C ... +75 °C										
<b>Weight</b>	Ca. 30 g										
<b>Housing material</b>	Bayblend, PMMA										

<sup>1)</sup> Average service life 100,000 h at Ta = +25 °C

<sup>2)</sup> Limit values, reverse-polarity protected

operation in short-circuit protected network max. 8 A

<sup>3)</sup> May not exceed or fall short of

V<sub>s</sub> tolerances

<sup>4)</sup> Without load

<sup>5)</sup> Signal transit time with resistive load

<sup>6)</sup> With light/dark ratio 1:1

<sup>7)</sup> Do not bend below 0 °C

**Teach-in function**

**Programming via teach-in button**

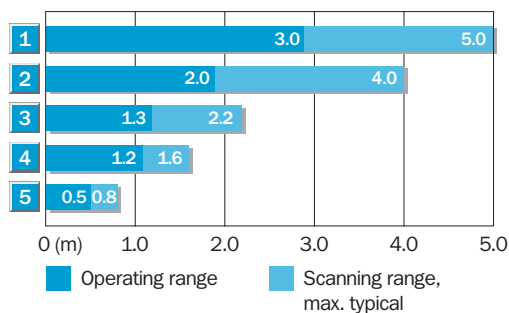
Standard mode (switching threshold adaptation): sensor adjusts the switching threshold to the ambient conditions. Sensor has clear sight of the reflector.

No object in the beam path: press teach-in button for > 2 s until yellow LED indicator lights up again. Sensor is ready to operate.

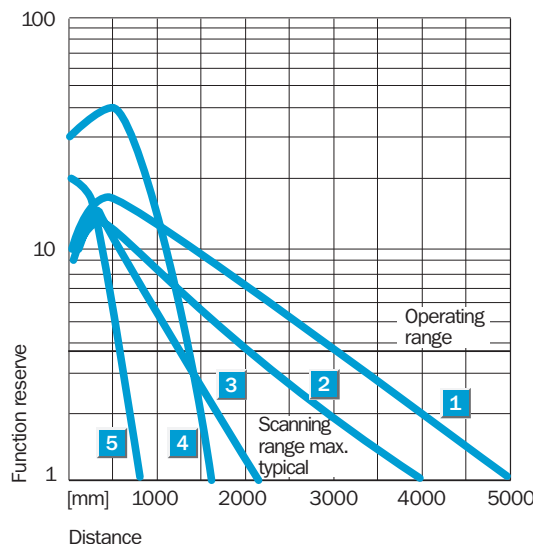
**Switch off switching threshold adaptation:** sensor works statically with a switching threshold of 50 %. Sensor has clear sight of the reflector. No object in the beam path: press teach-in button for > 8s until yellow LED indicator flashes twice.

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 REF-IRF-56	0 ... 0.5 m



**Order information**

Type	Order no.
WLG4S-3E1134	1042085
WLG4S-3F2234	1042084
WLG4S-3V2232	1042087
WLG4S-3W1132	1042086
WLG4S-3P2232	1044186
WLG4S-3P3132	1043839
WLG4S-3F3132	1043838
WLG4S-3F3234	1043840