W4S-3 Inox: Smaller, stronger, better

The most advanced photoelectric switch series in its class
Best-in-class for exacting requirements

W4S-3 Inox – simply unbeatable

SICK advances the development of food and beverage systems, with a new sensor range tailored to the trend for ever-shorter, more comprehensive cleaning regimes with ever more aggressive cleaning agents.

With the W4-3 series, SICK has developed a real benchmark and best-in-class solution among photoelectric switches, with an optimum mix of material and technical/design benefits. It has been created to provide many years of reliable and smooth operation in harsh daily food and beverage production.

IO-Link

Do you want to adjust and monitor the sensor via your control system? No problem with IO-Link. With some minor modifications, communication can be established directly with the sensor, without the need for additional changes to your existing standard M8/M12 connecting cable.

More info: www.sick.com

UNCOMPROMISING HYGIENE

The W43-S Inox is smooth all around, largely free from corners/joints and constructed in V4A/316L stainless steel. Cleaning agents run off slowly. Further benefits: resistance up to 70 °C and, sealed beyond IP 69K using current test methods, and continuous performance under all known environmental and cleaning conditions.
The W4S-3 Inox photoelectric reflex switch is based on proven W43-S technology. Its automatic switching threshold adjustment continuously adapts to environmental conditions. Pin-point sender LEDs simplify adjustment and can generate a light spot with laser-like precision.

The W4S-3 is the first background suppression sensor to be equipped with 2 sender LEDs, enabling it to see “spatially”. The result: among all comparable sensors on the market, the W4S-3 Inox offers by far the most accurate background suppression. The sensor can distinguish clearly between object and background.

Using its easily visible light spot, the W4S-3 Inox can be aligned quickly and easily. Elaborate fixing is not required. Teach-in is just as straightforward and convenient, using an easy-to-sterilise teach-in button. Set-up, diagnostics and adjustment can be performed remotely via IO-Link, or cable.
W4S-3 Inox – perfect in many industries

The W4S-3 Inox photoelectric switch sets the benchmark in terms of materials, design and technology. It withstands aggressive production and cleaning procedures for longer, detecting even difficult objects (e.g. PET bottles) under particularly critical conditions. Due to their compact construction, the sensors fit into machine environments where space is at a premium. Moving and reflective machine parts in the background do not adversely influence the sensor due to the precise background suppression.

One of the most demanding requirements can be the production of fresh fruit juices in a hygienically sealed press or a bottling system where sensors must be remotely operated. The production and cleaning processes for such applications places enormous demands on the construction of sensors. The W4S-3 Inox photoelectric switch sets the benchmark in this application area and clearly demonstrates significant technical achievement.

When filling and packaging pharmaceuticals, the sensors must withstand toughest conditions within a sterile environment. Sterile boxes are increasingly cleaned with H₂O₂ steam – not a problem for the W4S-3 Inox.

Machine parts which are in contact with foods must be cleaned effectively, presenting a challenge to sensor technology. The solution: easy-to-sterilise W4S-3 photoelectric switches with rounded housing on which no bacteria can settle. Although the housings are made of stainless steel, cleaning agents do not drip off too quickly and can take full effect.
This is where strict requirements apply, similar to the food industry; however, machines are often small and compact. Not a problem for the W4S-3 Inox sensor. Compact design and different ranges make it the product of choice for many applications in pharmaceutical production and packaging.

Speed and high resolution are required in electronic production. The machines must operate at high speed and the sensor technology must cope with fast-moving and reflective backgrounds. For wet chemical production parts, the sensors are exposed to corrosive spray mists or vapours. No problem for the W4S-3 Inox.

Reflective glass and PET bottles, wet conditions and aggressive cleaning procedures: the robust W4S-3 Inox photoelectric switch is tailor-made for bottling processes in the beverage industry. It proves to be reliable in all areas of production with automatic switching threshold adaptation and superior hygienic properties when used in splash zones.
Technical strengths in robust housings

1. Optical axis, sender (all types) - receiver, through-beam and reflex type
2. Optical axis, receiver (BGS and FGS only)
3. Display LED green, operating voltage active
4. Display LED yellow, light received status
5. M3 internal thread, continuous
6. M8 plug 4-pin, 3-pin

**General technical data**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing material</td>
<td>Stainless steel 14435, AISI 316L</td>
</tr>
<tr>
<td>Front screen</td>
<td>SiOx-coated PMMA</td>
</tr>
<tr>
<td>Size</td>
<td>44.0 x 22.0 x 15.0 mm</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>10 ... 30 V DC</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-40 ... +70 °C</td>
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<tr>
<td>Fixing hole</td>
<td>With M3 internal thread</td>
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<tr>
<td>Light sender, type of light</td>
<td>Red light, pin-point technology</td>
</tr>
<tr>
<td>Approvals</td>
<td>&gt;&gt; IP 69K, Ecolab+, UL, CE</td>
</tr>
<tr>
<td>Types of connection</td>
<td>M8 3-pin and 4-pin, cable 2 m, cable plug M8 and M12</td>
</tr>
<tr>
<td>Connections</td>
<td>PNP, NPN, light switching, dark switching, antivalent, external teach-in via cable, alarm, IO-Link</td>
</tr>
<tr>
<td>Adjustment types</td>
<td>Fixed adjustment, teach-in button, teach-in via cable, IO-Link</td>
</tr>
</tbody>
</table>
The W4S-3 Inox series

BGS photoelectric proximity switch 180 mm
• Smaller light spot of Ø 6 mm approx., homogenous across the entire scanning distance
• Best BGS sensor in its class

BGS photoelectric proximity switch 120 mm laser-like
• With laser-like light spot < 2 mm between 50 and 80 mm
• Ideally suited to positioning tasks and tasks requiring high reproducibility

FGS sensor 200 mm
• If no reflector can be mounted, backgrounds up to 300 mm serve as reflector alternative.
• Smaller spot of Ø 6 mm approx., homogenous across the entire scanning distance

Photoelectric switch for transparent objects
• Autocollimated optics reduces the space required by sensor and reflector, thereby offering advantages when installed on small machines where space is limited.
• Automatic switching threshold adaptation compensates for dirt/temperature/drift effects.
• Easy adjustment, range up to 5 m

Photoelectric reflex switch 4 m
• Autocollimated optics reduces the space required by sensor and reflector, thereby offering advantages when installed on small machines where space is limited.
• Detects even very small gaps between objects thanks to a small light spot
• Without external adjustment

Through-beam photoelectric switch
• Small precise light spot enables the mounting of several photoelectric switches in close proximity without mutual interference

Order information

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Order no.</th>
<th>Description</th>
<th>Adjustment</th>
<th>Connection/output</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTB4S-3P2265V</td>
<td>1045091</td>
<td>BGS sensor 180 mm</td>
<td>Teach-in via cable</td>
<td>Plug M8 4-pin, PNP, light-switching</td>
</tr>
<tr>
<td>WTB4S-3P2235V</td>
<td>1045093</td>
<td>BGS sensor 120 mm laser-like</td>
<td>Teach-in via cable</td>
<td>Plug M8 4-pin, PNP, light-switching</td>
</tr>
<tr>
<td>WTF4S-3P2265V</td>
<td>1045094</td>
<td>FGS scanner 300 mm</td>
<td>Teach-in via cable</td>
<td>Plug M8 4-pin, PNP, dark-switching</td>
</tr>
<tr>
<td>WLG4S-3F2235V</td>
<td>1045098</td>
<td>Glass photoelectric switch 5 m</td>
<td>Teach-in via cable</td>
<td>Plug M8 4-pin, PNP, dark-switching</td>
</tr>
<tr>
<td>WL4S-3P2230V</td>
<td>1045095</td>
<td>Autocollimation photoelectric switch 4 m</td>
<td>none</td>
<td>Plug M8, 4-pin, PNP, antivalent</td>
</tr>
<tr>
<td>WL4S-3F2130V</td>
<td>1045096</td>
<td>Autocollimation photoelectric switch 4 m</td>
<td>none</td>
<td>Plug M8, 3-pin, PNP, dark-switching</td>
</tr>
<tr>
<td>WL4S-3E2130V</td>
<td>1045097</td>
<td>Autocollimation photoelectric switch 4 m</td>
<td>none</td>
<td>Plug M8, 3-pin, NPN, dark-switching</td>
</tr>
<tr>
<td>WSE4S-3F2130</td>
<td>1045099</td>
<td>Through-beam photoelectric switch 5 m</td>
<td>none</td>
<td>Plug M8, 3-pin, PNP, dark-switching</td>
</tr>
</tbody>
</table>

Available soon

<table>
<thead>
<tr>
<th>IO-Link</th>
<th>Monitoring and adjusting via controller</th>
</tr>
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<tbody>
<tr>
<td>HygTeach</td>
<td>Adjustment directly on the sensor without compromise to IP rating and hygiene requirements</td>
</tr>
<tr>
<td>Cable connection</td>
<td>2 m cable and a pigtail option with inline M8 or M12 connector</td>
</tr>
<tr>
<td>Flush type</td>
<td>Via a threaded connector, connects the sensor whilst maintaining hygiene compliance:  • Integrated cable with protection  • No threads, edges or joints</td>
</tr>
<tr>
<td>Accessories</td>
<td>Field mounted module enabling easy remote teach-in via cable</td>
</tr>
<tr>
<td>Food grade connection cables</td>
<td>IP 69K connection cable M8 3-pin or 4-pin</td>
</tr>
</tbody>
</table>
FACTORY AUTOMATION

With its intelligent sensors, safety systems, and auto iden applications, SICK realises comprehensive solutions for factory automation.

- Non-contact detecting, counting, classifying, and positioning of any types of object
- Accident protection and personal safety using sensors, as well as safety software and services

LOGISTICS AUTOMATION

Sensors made by SICK form the basis for automating material flows and the optimisation of sorting and warehousing processes.

- Automated identification with bar code and RFID reading devices for the purpose of sorting and target control in industrial material flow
- Detecting volume, position, and contours of objects and surroundings with laser measurement systems

PROCESS AUTOMATION

Analyzers and Process Instrumentation by SICK MAIHAK provides for the best possible acquisition of environmental and process data.

- Complete systems solutions for gas analysis, dust measurement, flow rate measurement, water analysis or, respectively, liquid analysis, and level measurement as well as other tasks

Worldwide presence with subsidiaries in the following countries:

- Australia
- Belgium/Luxembourg
- Brasil
- Ceská Republika
- China
- Danmark
- Deutschland
- España
- France
- Great Britain
- India
- Israel
- Italia
- Japan
- Nederlands
- Norge
- Österreich
- Polska
- Republic of Korea
- Republika Slovenija
- România
- Russia
- Schweiz
- Singapore
- Suomi
- Sverige
- Taiwan
- Türkiye
- USA/Canada/México

Please find detailed addresses and additional representatives and agencies in all major industrial nations at www.sick.com

Handed over by: