



# S30A-6011GB

S3000 Expert

SAFETY LASER SCANNERS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
S30A-6011GB	1052108

The system plug has to be ordered separately. For details, see "Accessories, plug connectors and cables".

Other models and accessories → [www.sick.com/S3000\\_Expert](http://www.sick.com/S3000_Expert)

Illustration may differ



### Detailed technical data

#### Features

<b>Model</b>	Sensor without system plug
<b>Application</b>	Indoor
<b>Protective field range</b>	5.5 m
<b>Warning field range</b>	49 m (20 m at 20 % reflectivity)
<b>Distance measuring range</b>	49 m
<b>Number of simultaneously monitored protective fields</b>	≤ 4 <sup>1)</sup>
<b>Type of field set</b>	Triple field sets, dual field sets
<b>Number of field sets</b>	32 <sup>2)</sup>
<b>Number of fields</b>	64
<b>Number of monitoring cases</b>	32 <sup>3)</sup>
<b>Scanning angle</b>	190°
<b>Resolution (can be configured)</b>	30 mm, 40 mm, 50 mm, 70 mm, 150 mm
<b>Angular resolution</b>	0.5°, 0.25°, depending on range and resolution
<b>Response time</b>	60 ms <sup>4)</sup>
<b>Protective field supplement</b>	100 mm
<b>Number of multiple samplings</b>	2 ... 16, configurable
<b>Delay of automatic reset</b>	2 s ... 60 s, configurable

<sup>1)</sup> If several protective fields are monitored simultaneously, the shut-off signals must be connected to safe outputs on a Flexi Soft safety controller or routed via a safe EFI gateway.

<sup>2)</sup> In dual field mode 32, in triple field mode 21 field sets.

<sup>3)</sup> In combination with an additional static input via EFI or using the dynamic inputs on the device. Otherwise 16.

<sup>4)</sup> Depending on basic response time and multiple sampling.

## Safety-related parameters

<b>Type</b>	Type 3 (IEC 61496)
<b>Safety integrity level</b>	SIL 2 (IEC 61508)
<b>Category</b>	Category 3 (EN ISO 13849)
<b>Performance level</b>	PL d (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$8.0 \times 10^{-8}$
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)
<b>Safe state in the event of a fault</b>	At least one OSSD is in the OFF state.

## Functions

<b>Restart interlock</b>	✓
<b>External device monitoring (EDM)</b>	✓
<b>Multiple sampling</b>	✓
<b>Monitoring case switching</b>	✓
<b>Simultaneous monitoring</b>	✓
<b>Static protective field switching</b>	✓
<b>Dynamic protective field switching</b>	✓
<b>Contour as a reference</b>	✓
<b>Integrated configuration memory</b>	✓
<b>Measured data output</b>	Expanded (CMS), via RS-422
<b>Safe SICK device communication via EFI</b>	✓

## Electrical data

<b>Protection class</b>	II (EN 50178)
<b>Supply voltage V<sub>s</sub></b>	24 V DC (16.8 V DC ... 28.8 V DC)
<b>Power consumption</b>	$\leq 0.8 \text{ A}^{1)}$ $\leq 2.3 \text{ A}^{2)}$
<b>Outputs</b>	
Output signal switching devices (OSSDs)	2 x 500 mA
Application diagnostic outputs	3 x 100 mA <sup>3)</sup>

<sup>1)</sup> At 24 V DC without output load.

<sup>2)</sup> At 24 V DC including maximum output load.

<sup>3)</sup> Freely programmable, e.g. warning field, contamination, reset required.

## Mechanical data

<b>Dimensions (W x H x D)</b>	155 mm x 185 mm x 160 mm
<b>Weight</b>	3.3 kg
<b>Housing material</b>	Aluminum die cast
<b>Housing color</b>	RAL 1021 (yellow)
<b>Front screen material</b>	Polycarbonate
<b>Front screen surface finish</b>	Outside with scratch-resistant coating

## Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529)
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<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Storage temperature</b>	-25 °C ... +50 °C
<b>Vibration resistance</b>	IEC 60068-2-6, IEC 60068-2-64, IEC 60721-3-5, IEC TR 60721-4-5, IEC 61496-3
Class	5M1 (IEC 60721-3-5)
<b>Shock resistance</b>	IEC 60068-2-27, IEC 60721-3-5, IEC TR 60721-4-5, IEC 61496-3
Class	5M1 (IEC 60721-3-5)
Continuous shock	50 m/s <sup>2</sup> , 11 ms 100 m/s <sup>2</sup> , 16 ms

### Other information

<b>Type of light</b>	Pulsed laser diode
<b>Wave length</b>	905 nm
<b>Detectable remission factor</b>	1.8 % ... > 1,000 %, reflectors
<b>Laser class</b>	1 (21 CFR 1040.10 and 1040.11, IEC 60825-1)

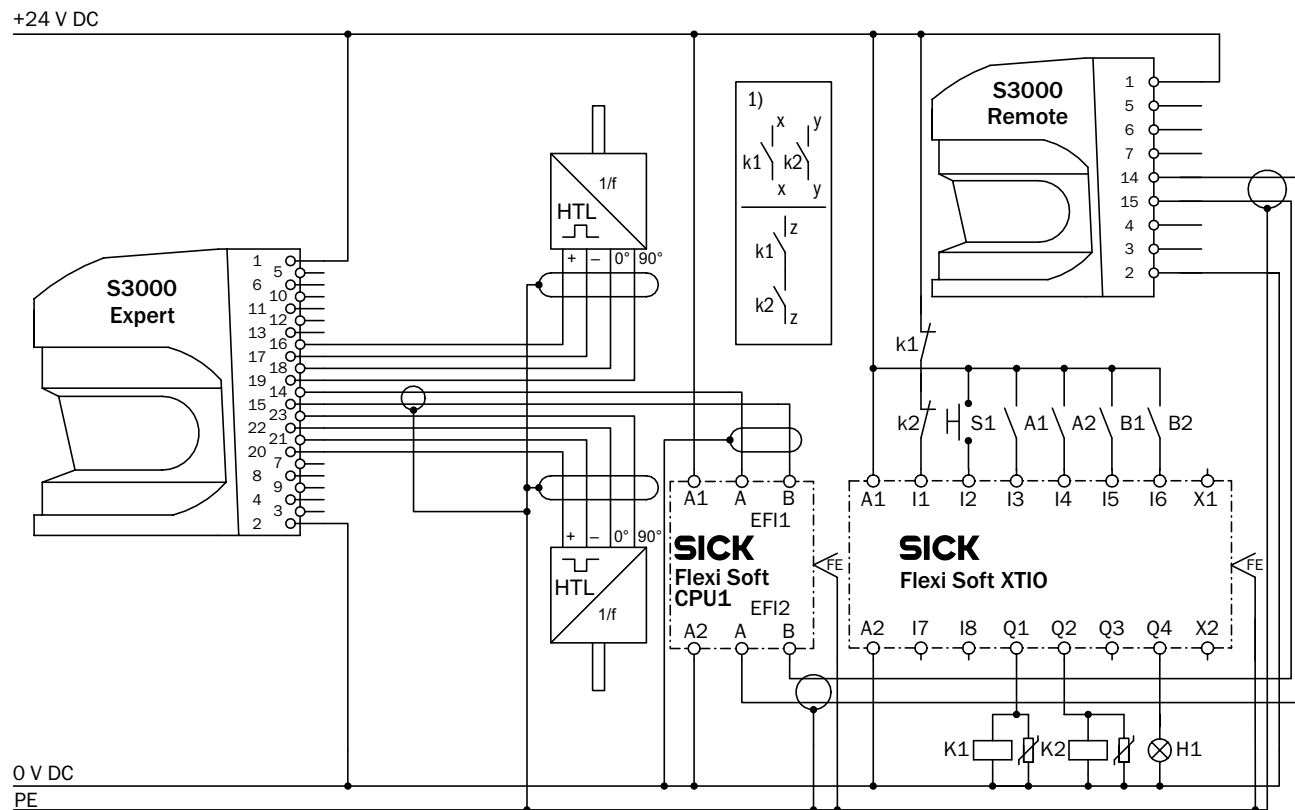
### Classifications

<b>ECLASS 5.0</b>	27272705
<b>ECLASS 5.1.4</b>	27272705
<b>ECLASS 6.0</b>	27272705
<b>ECLASS 6.2</b>	27272705
<b>ECLASS 7.0</b>	27272705
<b>ECLASS 8.0</b>	27272705
<b>ECLASS 8.1</b>	27272705
<b>ECLASS 9.0</b>	27272705
<b>ECLASS 10.0</b>	27272705
<b>ECLASS 11.0</b>	27272705
<b>ECLASS 12.0</b>	27272705
<b>ETIM 5.0</b>	EC002550
<b>ETIM 6.0</b>	EC002550
<b>ETIM 7.0</b>	EC002550
<b>ETIM 8.0</b>	EC002550
<b>UNSPSC 16.0901</b>	39121528



### Connection diagram

Protective field switching between two S3000 scanners with static and dynamic inputs



E112713/00/2014-03-06

Combination of safety laser scanners and incremental encoders with Flexi Soft safety controller

S3000 Expert with incremental encoders (x 2) for safe protective field switching based on dynamic input signals of the incremental encoders (speed)

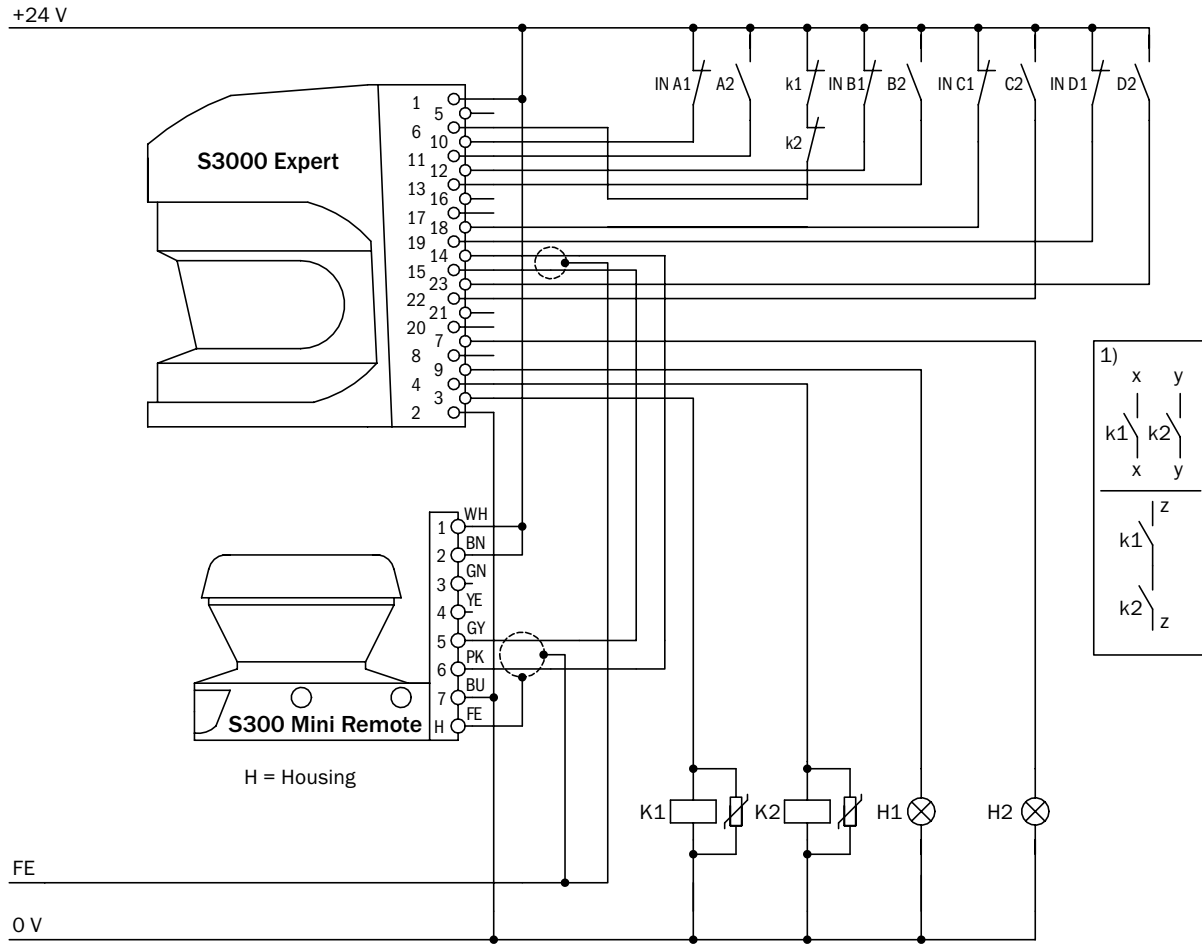
Protective field switching with static and dynamic inputs of two scanners in combination with a Flexi Soft safety controller via EFI (Enhanced Function Interface)

Speed signals are transferred from scanner 1 to scanner 2 via EFI and Flexi Soft

#### Comments

<sup>1)</sup> Output circuits: These contacts are to be connected to the controller such that, with the output circuit open, the dangerous state is disabled. For categories 4 and 3, this integration must be dual-channel (x/y paths). Single-channel insertion in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.

Protective field switching between an S3000 Expert and an S300 Mini Remote with static inputs



E112714/00/2014-03-06

S3000 Expert with S300 Mini Remote in an EFI system with relays/contactors

Operating mode: without restart interlock, with external device monitoring


Static protective field switching by the S3000 control inputs IN A to D. The protective fields affect the OSSDs on the S3000 Expert.

**Comments**

<sup>1)</sup> Output circuits: These contacts are to be connected to the controller such that, with the output circuit open, the dangerous state is disabled. For categories 4 and 3, this integration must be dual-channel (x/y paths). Single-channel insertion in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.



**Recommended accessories**

Other models and accessories → [www.sick.com/S3000\\_Expert](http://www.sick.com/S3000_Expert)

	Brief description	Type	Part no.
Mounting brackets and plates			
	1 piece, Visor for heavy duty mounting kit (2080350), steel, painted (RAL 1021)	Heavy duty sight	2083733

	Brief description	Type	Part no.
	1 piece, Mounting bracket, heavy-duty version, with protection cover, for floor mounting, adjustable longitudinal and lateral axes via alignment plate, height adjustment possible. Tilt angle $\pm 5^\circ$ . Additional mounting brackets are not required., steel, painted (RAL 1021)	Heavy-duty mounting kit	2080350
	1 piece, mounting bracket for direct mounting, from the rear, on wall or machine, not adjustable, Aluminum	Mounting kit 1	2015623
	1 piece, mounting bracket for rear mounting on wall or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623), Aluminum	Mounting kit 2	2015624
	1 piece, mounting bracket for rear mounting on wall, floor, or machine, adjustable longitudinal and lateral axes, only in conjunction with mounting kit 1 (2015623) and 2 (2015624), Aluminum	Mounting kit 3	2015625
Plug connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 13-wire, AWG20, PVC</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Items supplied:</b> By the meter</li> </ul>	Connecting cable	6025729
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 17-wire, AWG20, PVC</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Items supplied:</b> By the meter</li> </ul>	Connecting cable	6025730
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Flying leads</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Cable:</b> 2-wire, twisted pair, 120 Ohm, PVC</li> <li>• <b>Description:</b> Shielded</li> <li>• <b>Note:</b> Fitting for EFI connections</li> <li>• <b>Items supplied:</b> By the meter</li> </ul>	EFI connecting cable	6029448
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Male connector, USB-A, straight</li> <li>• <b>Cable:</b> 2 m, 4-wire, PVC</li> <li>• <b>Description:</b> Unshielded, Configuration cable with integrated RS-232 transducer on USB for connecting a sensor configuration connection (M8, 4-pin) to the USB interface of a PC</li> </ul>	DSL-8U04G02M025KM1	6034574
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight</li> <li>• <b>Connection type head B:</b> Male connector, USB-A, straight</li> <li>• <b>Cable:</b> 10 m, 4-wire, PVC</li> <li>• <b>Description:</b> Unshielded, Configuration cable with integrated RS-232 transducer on USB for connecting a sensor configuration connection (M8, 4-pin) to the USB interface of a PC</li> </ul>	DSL-8U04G10M025KM1	6034575
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Description:</b> Without cable, Not for use of incremental encoders, integrated configuration storage, For S3000 Standard, Advanced, Remote, Professional and Expert</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12</li> </ul>	SX0A-A0000B	2023797
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Description:</b> Without cable, For use of incremental encoders, integrated configuration storage, For S3000 Professional and Expert</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 2 x cable gland M12, 1 x blanking plug M20, 6 x blanking plug M12</li> </ul>	SX0A-A0000D	2023310



	Brief description	Type	Part no.
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Cable:</b> 5 m, 13-wire, PVC</li> <li>• <b>Description:</b> Pre-assembled, For use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 2 x cable gland M12, 1 x blanking plug M20, 6 x blanking plug M12</li> </ul>	SX0A-B1305D	2027176
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Cable:</b> 10 m, 13-wire, PVC</li> <li>• <b>Description:</b> Pre-assembled, For use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 2 x cable gland M12, 1 x blanking plug M20, 6 x blanking plug M12</li> </ul>	SX0A-B1310D	2027177
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Cable:</b> 5 m, 17-wire, PVC</li> <li>• <b>Description:</b> Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12</li> </ul>	SX0A-B1705B	2027174
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Cable:</b> 10 m, 17-wire, PVC</li> <li>• <b>Description:</b> Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12</li> </ul>	SX0A-B1710B	2027175
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> System plug</li> <li>• <b>Cable:</b> 20 m, 17-wire, PVC</li> <li>• <b>Description:</b> Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert</li> <li>• <b>Connection systems:</b> Flying leads</li> <li>• <b>Items supplied:</b> With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12</li> </ul>	SX0A-B1720B	2027816

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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Contacts and other locations –[www.sick.com](http://www.sick.com)