



# S30B-2011GB

S300 Expert

SAFETY LASER SCANNERS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
S30B-2011GB	1050193

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

Other models and accessories → [www.sick.com/S300\\_Expert](http://www.sick.com/S300_Expert)

system plug not supplied with delivery



### Detailed technical data

#### Features

<b>Protective field range</b>	2 m
<b>Warning field range</b>	8 m (at 15 % reflectivity)
<b>Distance measuring range</b>	30 m
<b>Type of field set</b>	Triple field sets
<b>Number of field sets</b>	16
<b>Number of fields</b>	48
<b>Number of monitoring cases</b>	32 <sup>1)</sup>
<b>Scanning angle</b>	270°
<b>Resolution (can be configured)</b>	30 mm, 40 mm, 50 mm, 70 mm
<b>Angular resolution</b>	0.5°
<b>Response time</b>	80 ms <sup>2)</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> In combination with an additional static input via EFI or using the dynamic inputs on the device. Otherwise eight.

<sup>2)</sup> Depending on basic response time and multiple sampling.

#### Safety-related parameters

<b>Type</b>	Type 3 (IEC 61496)
<b>Safety integrity level</b>	SIL2 (IEC 61508) SILCL2 (EN 62061)
<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 x 10 <sup>-8</sup> (EN ISO 13849)
<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>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>	✓
<b>Extended measured data output (CMS)</b>	✓
<b>Safe SICK device communication via EFI</b>	✓

## Interfaces

<b>Connection type</b>	System plug with or without connecting cable
<b>Universal I/Os</b>	5 <sup>1)</sup>
<b>Inputs</b>	
External device monitoring (EDM)	1 <sup>2)</sup>
Reset/restart	1 <sup>2)</sup>
Static control inputs	3 <sup>3)</sup>
Static control inputs with EFI	5 <sup>4)</sup>
Dynamic control inputs (incremental encoder)	2 <sup>5)</sup>
Standby	1
<b>Outputs</b>	
OSSD pairs	1
Diagnostic outputs	3 <sup>6)</sup>
<b>Configuration method</b>	PC with CDS (Configuration and Diagnostic Software)
<b>Configuration and diagnostics interface</b>	RS-232
Transmission rate	38.4 kBaud
<b>Data interface</b>	RS-422
Transmission rate	≤ 500 kBaud
<b>Safe SICK device communication via EFI</b>	
Transmission rate	≤ 500 kBaud
Cable length	≤ 50 m
Conductor cross-section	0.22 mm <sup>2</sup>
<b>Fieldbus, industrial network</b>	

<sup>1)</sup> Freely programmable, e.g., external device monitoring input, reset input, contamination warning, reset required.

<sup>2)</sup> Availability depends on the configuration of the universal I/Os.

<sup>3)</sup> 2+1; additional input is only available if reset and reset required are not being used.

<sup>4)</sup> In combination with an EFI device (Flexi Soft or EFI gateway) five static control inputs are available. Otherwise three.

<sup>5)</sup> Two of the static switching signals can be used either as dynamic or as static switching signals.

<sup>6)</sup> Freely programmable, e.g. warning field, contamination, reset required.

<sup>7)</sup> For a suitable EFI-gateway see modules and gateways in the accessory section of connection systems.

Integration via EFI gateways CANopen, Ethernet, PROFIBUS DP, PROFIBUS PROFIsafe, PROFINET PROFIsafe <sup>7)</sup>

- 1) Freely programmable, e.g., external device monitoring input, reset input, contamination warning, reset required.  
 2) Availability depends on the configuration of the universal I/Os.  
 3) 2+1; additional input is only available if reset and reset required are not being used.  
 4) In combination with an EFI device (Flexi Soft or EFI gateway) five static control inputs are available. Otherwise three.  
 5) Two of the static switching signals can be used either as dynamic or as static switching signals.  
 6) Freely programmable, e.g. warning field, contamination, reset required.  
 7) For a suitable EFI-gateway see modules and gateways in the accessory section of connection systems.

### Electrical data

<b>Protection class</b>	II (EN 50178, EN 60950)
<b>Supply voltage V<sub>s</sub></b>	24 V DC (16.8 V DC ... 30 V DC)
<b>Power consumption</b>	≤ 0.33 A <sup>1)</sup> ≤ 1.7 A <sup>2)</sup>
<b>Outputs</b>	
Safety outputs (OSSD)	2 x 250 mA
Diagnostic outputs	3 x 100 mA <sup>3)</sup>

- 1) At 24 V DC without output load.  
 2) At 24 V DC including maximum output load.  
 3) Freely programmable, e.g. warning field, contamination, reset required.

### Mechanical data

<b>Dimensions (W x H x D)</b>	102 mm x 152 mm x 106 mm
<b>Weight</b>	1.2 kg
<b>Housing material</b>	Aluminum die cast
<b>Housing color</b>	RAL 1021 (yellow)
<b>Optics cover material</b>	Polycarbonat
<b>Optics cover surface finish</b>	Outside with scratch-resistant coating

### Ambient data

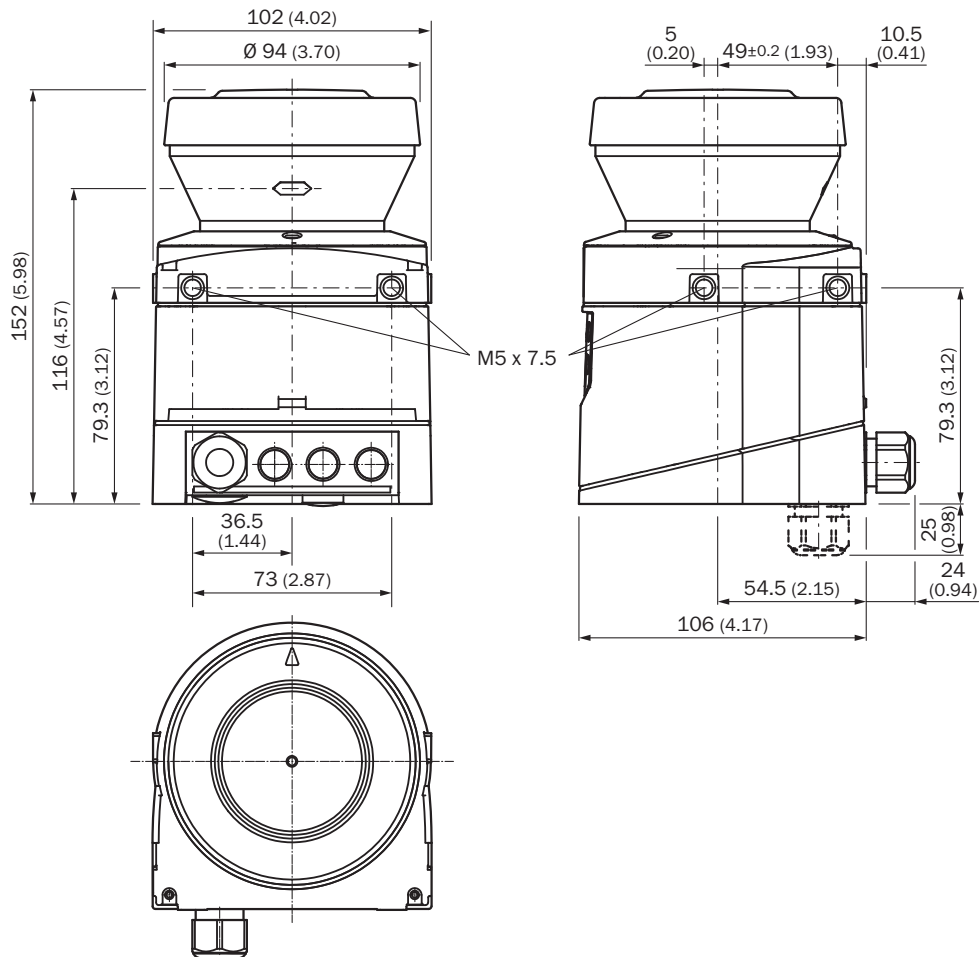
<b>Enclosure rating</b>	IP65 (EN 60529)
<b>Ambient operating temperature</b>	-10 °C ... +50 °C
<b>Storage temperature</b>	-25 °C ... +50 °C
<b>Vibration resistance</b>	5 g, 10 Hz ... 150 Hz (IEC 61496-1, IEC 61496-3)
<b>Shock resistance</b>	10 g, 16 ms (IEC 61496-1, IEC 61496-3)

### Other information

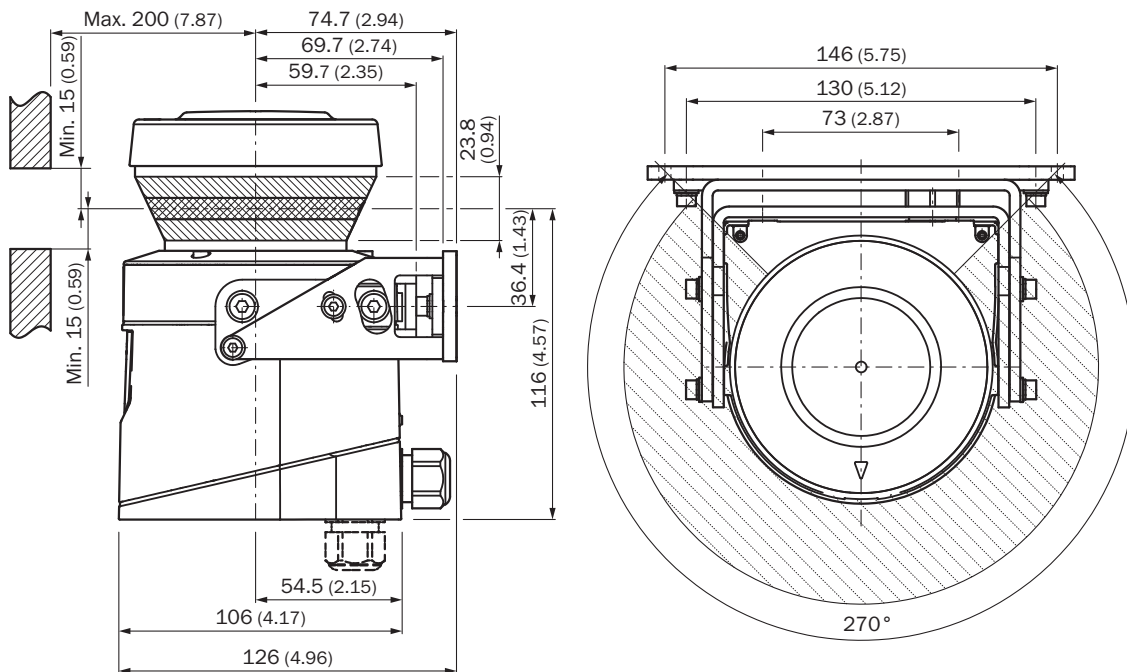
<b>Type of light</b>	Pulsed laser diode
<b>Wave length</b>	905 nm
<b>Detectable remission</b>	1.8 % ... > 1,000 %, reflectors
<b>Laser class</b>	1 (21 CFR 1040.10 and 1040.11, IEC 60825-1)

Dimensional drawing (Dimensions in mm (inch))

Laser scanner

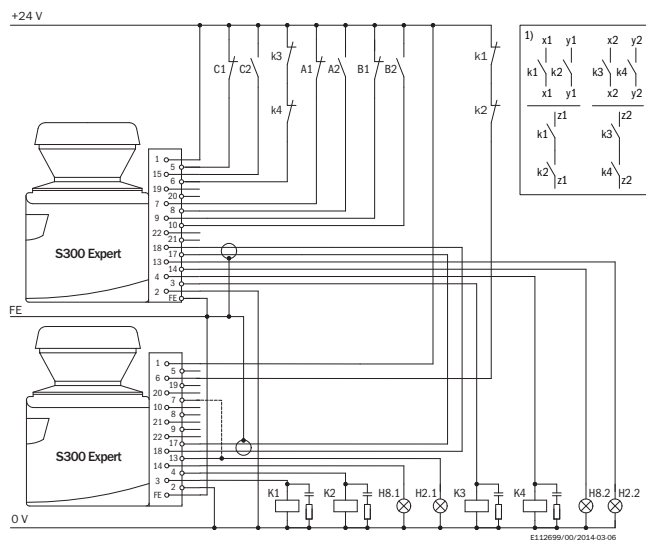


### Origin of scan plane



### Connection diagram

S300 Expert with S300 Expert in host/guest connection with relays/contactors



S300 Expert with S300 Expert in host/guest connection with relays/contactors

Operating mode: with external device monitoring and without restart interlock

Static protective field switching using the control inputs A, B and C

The protective fields affect the related OSSDs on host or guest

#### 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/S300\\_Expert](http://www.sick.com/S300_Expert)

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
<b>Mounting brackets and plates</b>			
	1 piece, mounting bracket for rear mounting on wall or machine	Mounting kit 1a	2034324
	1 piece, mounting bracket for rear mounting on wall or machine with protection of optics hood	Mounting kit 1b	2034325
	1 piece, mounting bracket, adjustable lateral axis, only in conjunction with mounting kit 1a (2034324) or 1b (2034325)	Mounting kit 2	2039302
	1 piece, mounting plate, adjustable longitudinal axis, only in conjunction with mounting kit 2 (2039302)	Mounting kit 3	2039303
<b>Plug connectors and cables</b>			
	Head A: cable Head B: cable Cable: PVC, unshielded On 100 m reel	Connecting cable	6030795
	Head A: cable Head B: cable Cable: PVC, shielded Fitting for EFI connections	EFI connecting cable	6029448
	Head A: male connector, M8, 4-pin, straight Head B: male connector, USB-A, straight Cable: PVC, unshielded, 2 m	DSL-8U04G02M025KM1	6034574
	Head A: male connector, M8, 4-pin, straight Head B: male connector, USB-A, straight Cable: PVC, unshielded, 10 m	DSL-8U04G10M025KM1	6034575
	Head A: system plug Cable: without cable Not for use of incremental encoders, integrated configuration storage	SX0B-A0000G	2032807
	Head A: system plug Cable: without cable For use of incremental encoders, integrated configuration storage	SX0B-A0000J	2032856
	Head A: system plug Cable: pre-assembled, For use of incremental encoders, integrated configuration storage, PVC, unshielded, 5 m	SX0B-B1105J	2032857
	Head A: system plug Cable: pre-assembled, For use of incremental encoders, integrated configuration storage, PVC, unshielded, 10 m	SX0B-B1110J	2032858
	Head A: system plug Cable: pre-assembled, Not for use of incremental encoders, integrated configuration storage, PVC, unshielded, 5 m	SX0B-B1505G	2034264
	Head A: system plug Cable: pre-assembled, Not for use of incremental encoders, integrated configuration storage, PVC, unshielded, 10 m	SX0B-B1510G	2034265

## 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.”

## WORLDWIDE PRESENCE:

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