



# S30B-2011DA

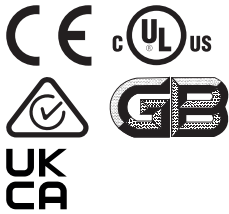
## S300

SAFETY LASER SCANNERS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Sub product family	Model	Scanning angle	Protective field range	Number of fields	Type	Part no.
S300 Professional	Sensor without system plug	270°	2 m	24	S30B-2011DA	1026822

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

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

### Detailed technical data

#### Features

<b>Sub product family</b>	S300 Professional
<b>Model</b>	Sensor without system plug
<b>Application</b>	Indoor
<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>	8
<b>Number of fields</b>	24
<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>	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>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>	Via RS-422
<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
Application 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>	

<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.

Transmission rate	≤ 500 kBaud
Length of cable	≤ 50 m
Conductor cross section	0.22 mm <sup>2</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.

## 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>	
Output signal switching devices (OSSDs)	2 x 250 mA
Application 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>	Polycarbonate
<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>	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

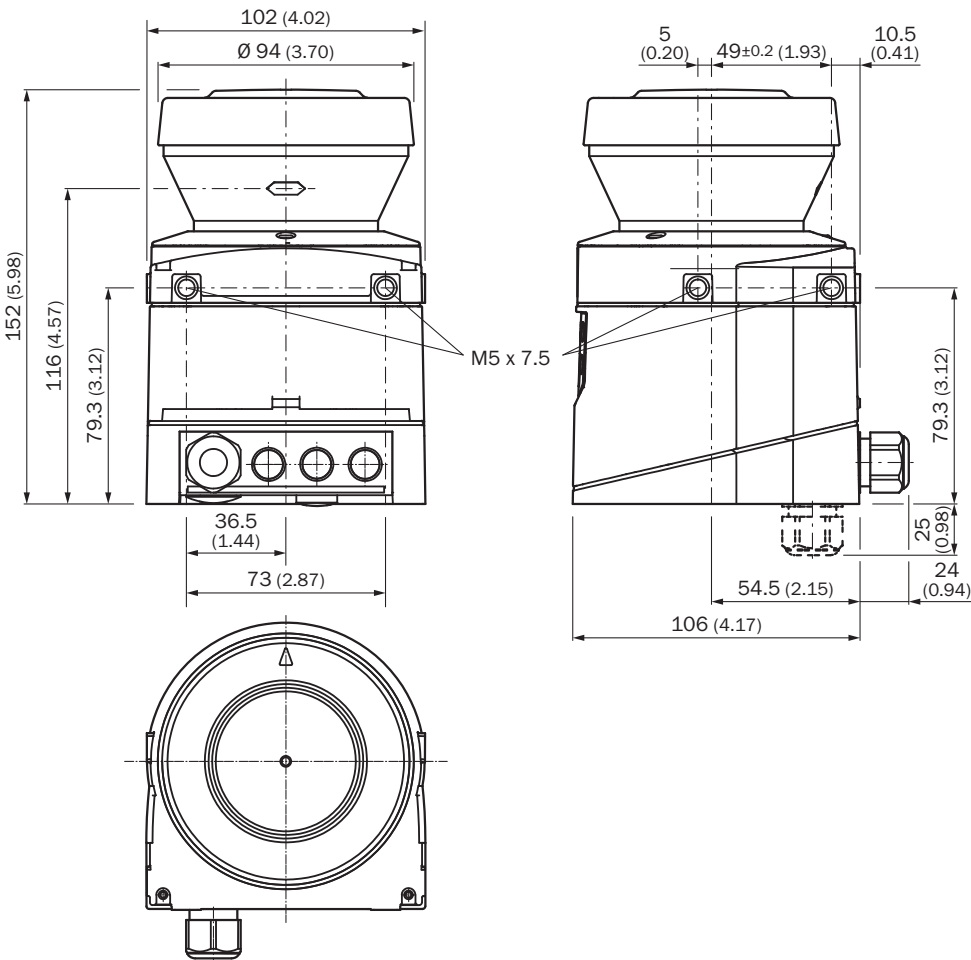
<b>Type of light</b>	Pulsed laser diode
<b>Wave length</b>	905 nm
<b>Detectable remission factor</b>	1.8 % ... > 1,000 %, reflectors
<b>Laser class</b>	1 (21 CFR 1040.10 and 1040.11, IEC 60825-1)

## Classifications

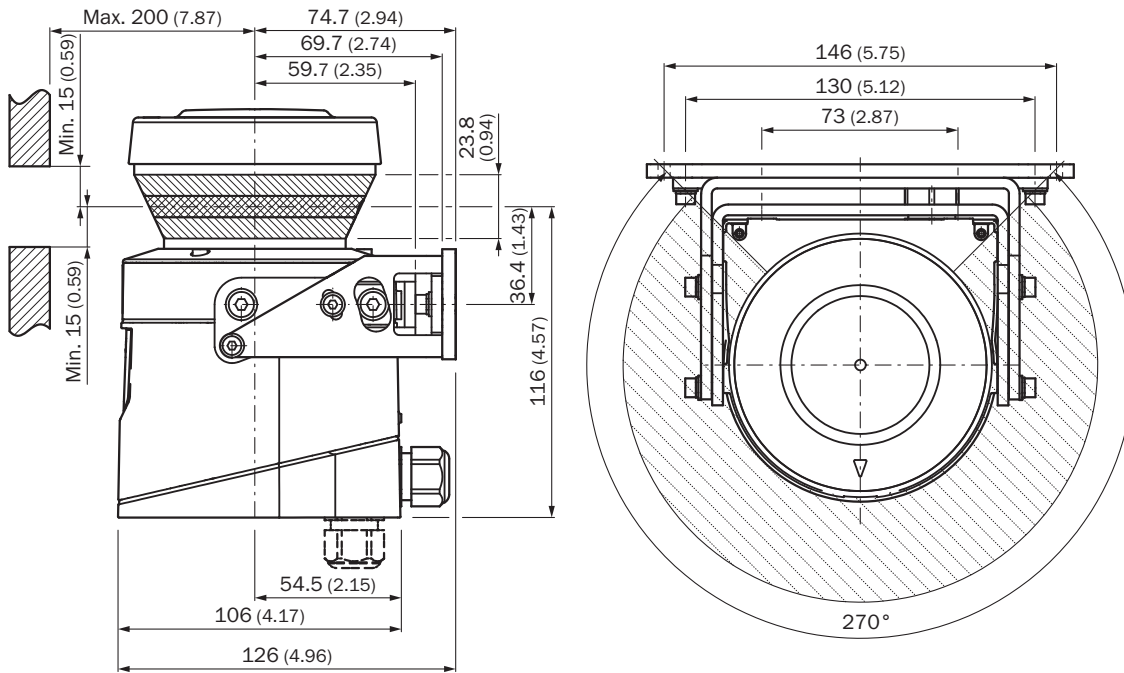
<b>ECLASS 5.0</b>	27272705
<b>ECLASS 5.1.4</b>	27272705
<b>ECLASS 6.0</b>	27272705
<b>ECLASS 6.2</b>	27272705
<b>ECLASS 7.0</b>	27272705
<b>ECLASS 8.0</b>	27272705
<b>ECLASS 8.1</b>	27272705
<b>ECLASS 9.0</b>	27272705
<b>ECLASS 10.0</b>	27272705
<b>ECLASS 11.0</b>	27272705
<b>ECLASS 12.0</b>	27272705
<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

Dimensional drawing (Dimensions in mm (inch))

Laser scanner

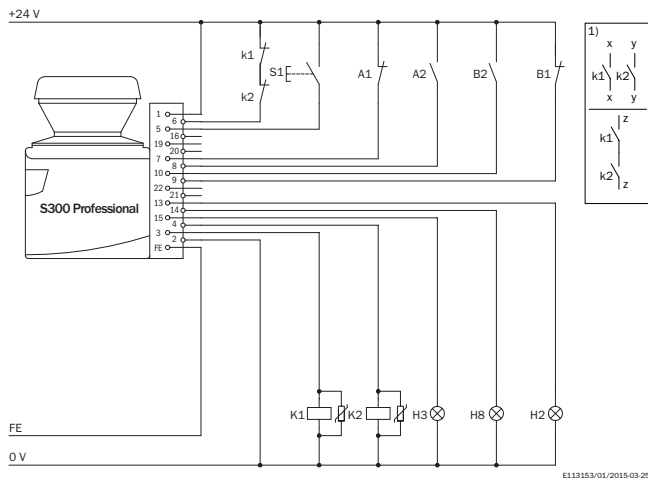


## Scan plane origin



## Connection diagram

S300 Professional: protective field switching with two static inputs



S300 Professional in connection with relays/contactors

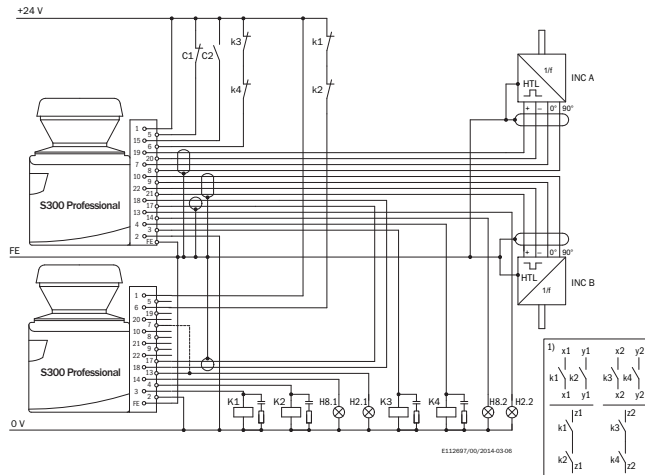
Operating mode: With restart interlock and external device monitoring

Protective field switching with control inputs IN A and IN B

### Comments

<sup>1)</sup> Output circuits: These contacts must be incorporated into the control such that the dangerous state is brought to an end if the output circuit is open. For categories 4 and 3, they must be incorporated on two channels (x, y paths). Single-channel incorporation into the control (z path) is only possible with a single-channel control and taking the risk analysis into account.

### Protective field switching between two S300 with static and dynamic inputs



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

Operating mode: with restart interlock and external device monitoring

Dynamic protective field switching by the incremental encoders A and B on the host

Static protective field switching using the control input IN C on the host






The protective fields affect the related OSSDs on host or guest

#### Comments

1) 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, the integration must be dual-channel (x/y paths). Single-channel integration in the control (z path) is only possible with a single-channel control and taking the risk analysis into account.

### Recommended accessories

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

Brief description		Type	Part no.
Mounting brackets and plates			
	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
Others			
	<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



	Brief description	Type	Part no.
	<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 S300 Standard, Advanced, Expert and Professional</li> <li><b>Items supplied:</b> With 1 x cable gland M16, 1 x blanking plug M16, 2 x blanking plug M12</li> </ul>	SX0B-A0000G	2032807
	<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> 15-wire, AWG20, PVC</li> <li><b>Description:</b> Unshielded</li> <li><b>Note:</b> On 100 m reel</li> <li><b>Items supplied:</b> By the meter</li> </ul>	Connecting cable	6030795
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> System plug</li> <li><b>Cable:</b> 10 m, 11-wire, PVC</li> <li><b>Description:</b> Pre-assembled, For use of incremental encoders, integrated configuration storage, unshielded, For S300 Advanced, Expert and Professional</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Items supplied:</b> With 1 x cable gland M16, 2 x cable gland M12, 1 x blanking plug M16, 6 x blanking plug M12</li> </ul>	SX0B-B1110J	2032858
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> System plug</li> <li><b>Cable:</b> 5 m, 15-wire, PVC</li> <li><b>Description:</b> Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S300 Advanced, Expert and Professional</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Items supplied:</b> With 1 x cable gland M16, 1 x blanking plug M16, 2 x blanking plug M12</li> </ul>	SX0B-B1505G	2034264
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> System plug</li> <li><b>Cable:</b> 10 m, 15-wire, PVC</li> <li><b>Description:</b> Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S300 Advanced, Expert and Professional</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Items supplied:</b> With 1 x cable gland M16, 1 x blanking plug M16, 2 x blanking plug M12</li> </ul>	SX0B-B1510G	2034265
	<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 S300 Expert and Professional</li> <li><b>Items supplied:</b> With 1 x cable gland M16, 2 x cable gland M12, 1 x blanking plug M16, 6 x blanking plug M12</li> </ul>	SX0B-A0000J	2032856
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> System plug</li> <li><b>Cable:</b> 5 m, 11-wire, PVC</li> <li><b>Description:</b> Pre-assembled, For use of incremental encoders, integrated configuration storage, unshielded, For S300 Advanced, Expert and Professional</li> <li><b>Connection systems:</b> Flying leads</li> <li><b>Items supplied:</b> With 1 x cable gland M16, 2 x cable gland M12, 1 x blanking plug M16, 6 x blanking plug M12</li> </ul>	SX0B-B1105J	2032857
	<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

## 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)