S30A-4011GB

S3000 Expert

SAFETY LASER SCANNERS

SICK
Sensor Intelligence.

S30A-4011GB | S3000 Expert
SAFETY LASER SCANNERS

Ordering information

Type	Part no.
S30A-4011GB	1052107

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

Other models and accessories ➜ www.sick.com/S3000_Expert

Illustration may differ

Detailed technical data

Features

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

[1] 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.

[2] In dual field mode 32, in triple field mode 21 field sets.

[3] In combination with an additional static input via EFI or using the dynamic inputs on the device. Otherwise 16.

[4] Depending on basic response time and multiple sampling.

Safety-related parameters

Type	Type 3 (IEC 61496)
Safety integrity level	SIL 2 (IEC 61508)
Category	Category 3 (EN ISO 13849)
Performance level	PL d (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	8.0×10^{-8}
T_M (mission time)	20 years (EN ISO 13849)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Functions

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

Electrical data

Protection class	II (EN 50178)
Supply voltage V_s	24 V DC (16.8 V DC … 28.8 V DC)
Power consumption	≤ 0.8 A [1] ≤ 2.3 A [2]
Outputs	
Output signal switching devices (OSSDs)	2 x 500 mA
Application diagnostic outputs	3 x 100 mA [3]

[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

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

Ambient data

Enclosure rating	IP65 (EN 60529)

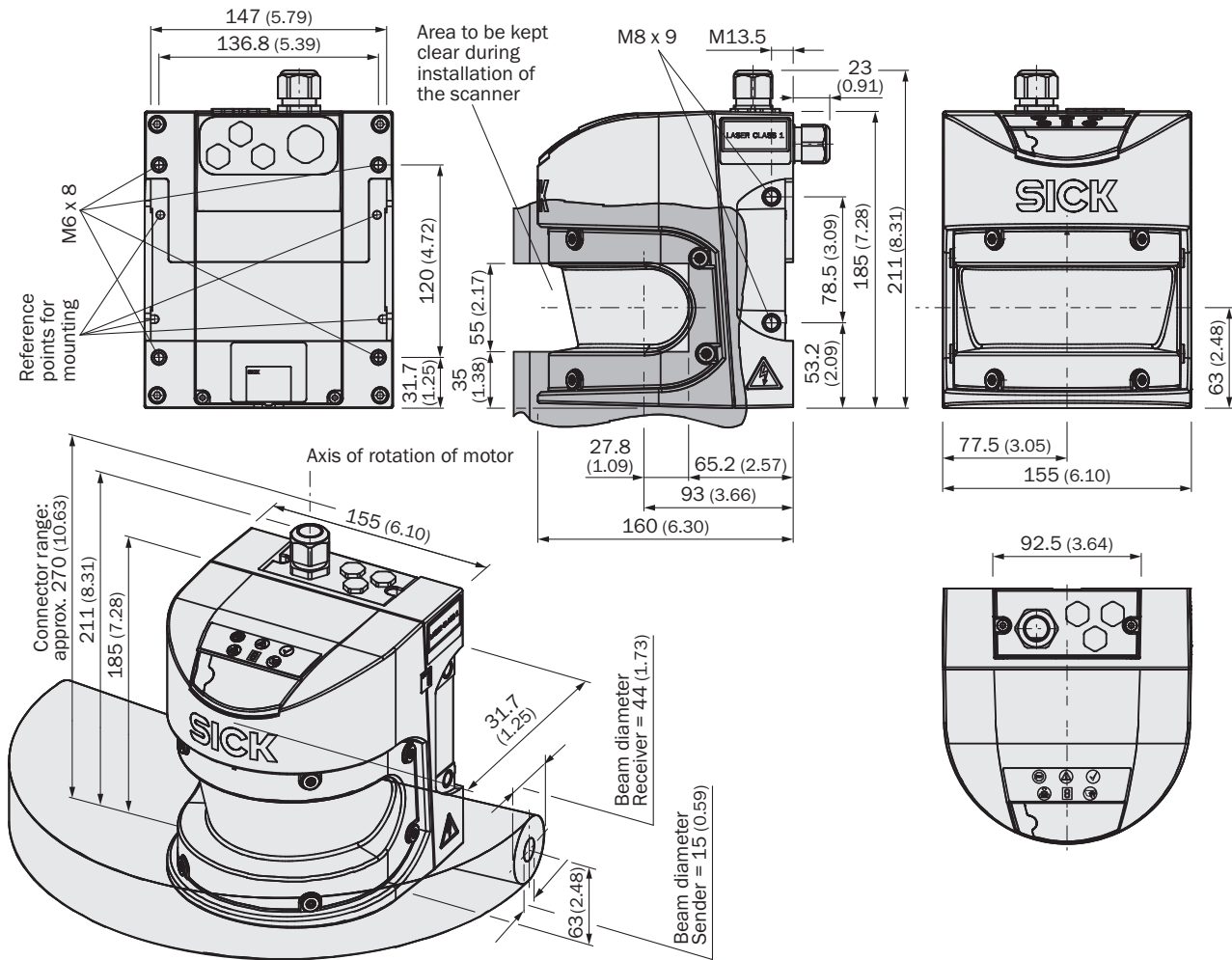|	
Ambient operating temperature	–10 °C ... +50 °C
Storage temperature	–25 °C ... +50 °C
Vibration resistance	IEC 60068-2-6, IEC 60068-2-64, IEC 60721-3-5, IEC TR 60721-4-5, IEC 61496-3
Class	5M1 (IEC 60721-3-5)
Shock resistance	IEC 60068-2-27, IEC 60721-3-5, IEC TR 60721-4-5, IEC 61496-3
Class	5M1 (IEC 60721-3-5)
Continuous shock	50 m/s², 11 ms 100 m/s², 16 ms

Other information

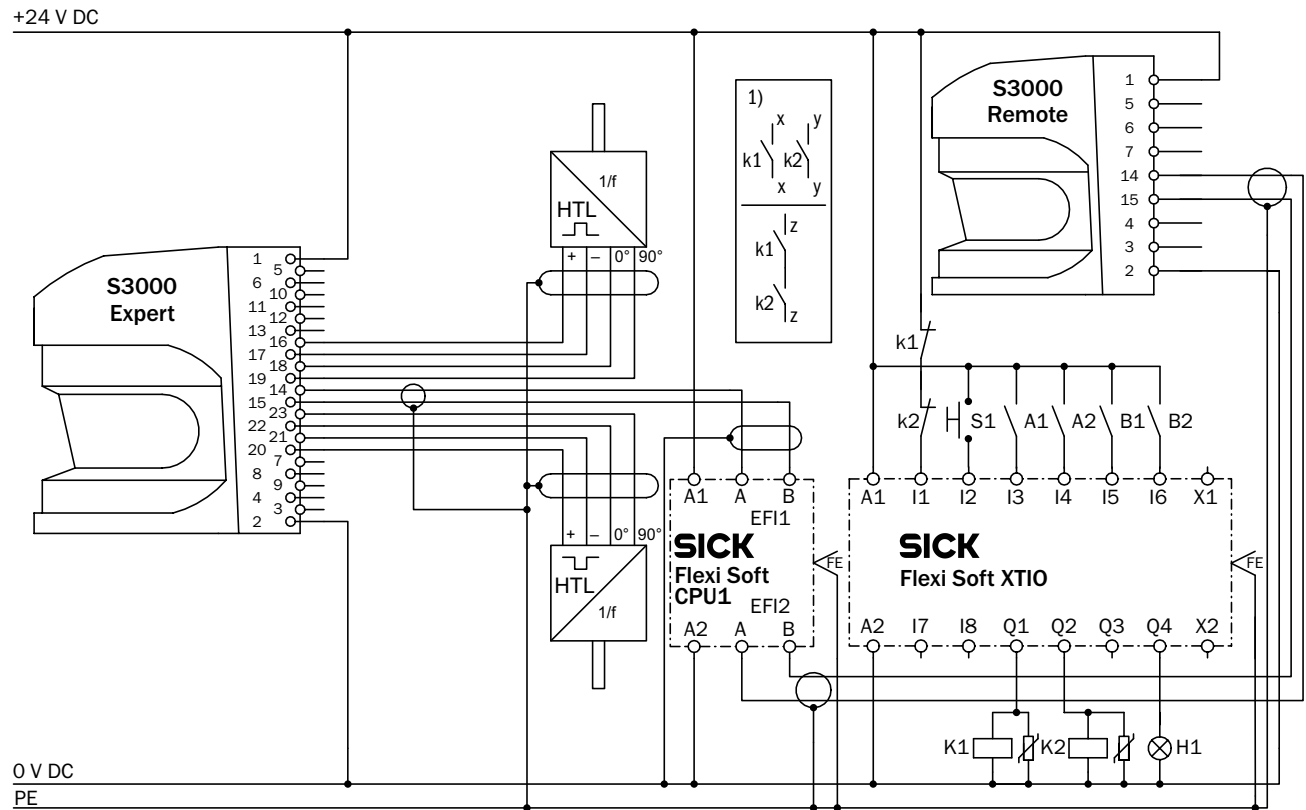|	
Type of light	Pulsed laser diode
Wave length	905 nm
Detectable remission factor	1.8 % ... > 1,000 %, reflectors
Laser class	1 (21 CFR 1040.10 and 1040.11, IEC 60825-1)

Classifications

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

Dimensional drawing (Dimensions in mm (inch))

Area to be kept clear during installation of the scanner

Axis of rotation of motor

Reference points for mounting

M6 x 8

M8 x 9 — M13.5

LASER CLASS 1

147 (5.79)
136.8 (5.39)
120 (4.72)
55 (2.17)
35 (1.38)
31.7 (1.25)

23 (0.91)
78.5 (3.09)
185 (7.28)
211 (8.31)
53.2 (2.09)

27.8 (1.09)
65.2 (2.57)
93 (3.66)
160 (6.30)

77.5 (3.05)
155 (6.10)
63 (2.48)

Connector range: approx. 270 (10.63)
211 (8.31)
185 (7.28)
155 (6.10)
31.7 (1.25)
63 (2.48)

Beam diameter Receiver = 44 (1.73)
Beam diameter Sender = 15 (0.59)

92.5 (3.64)

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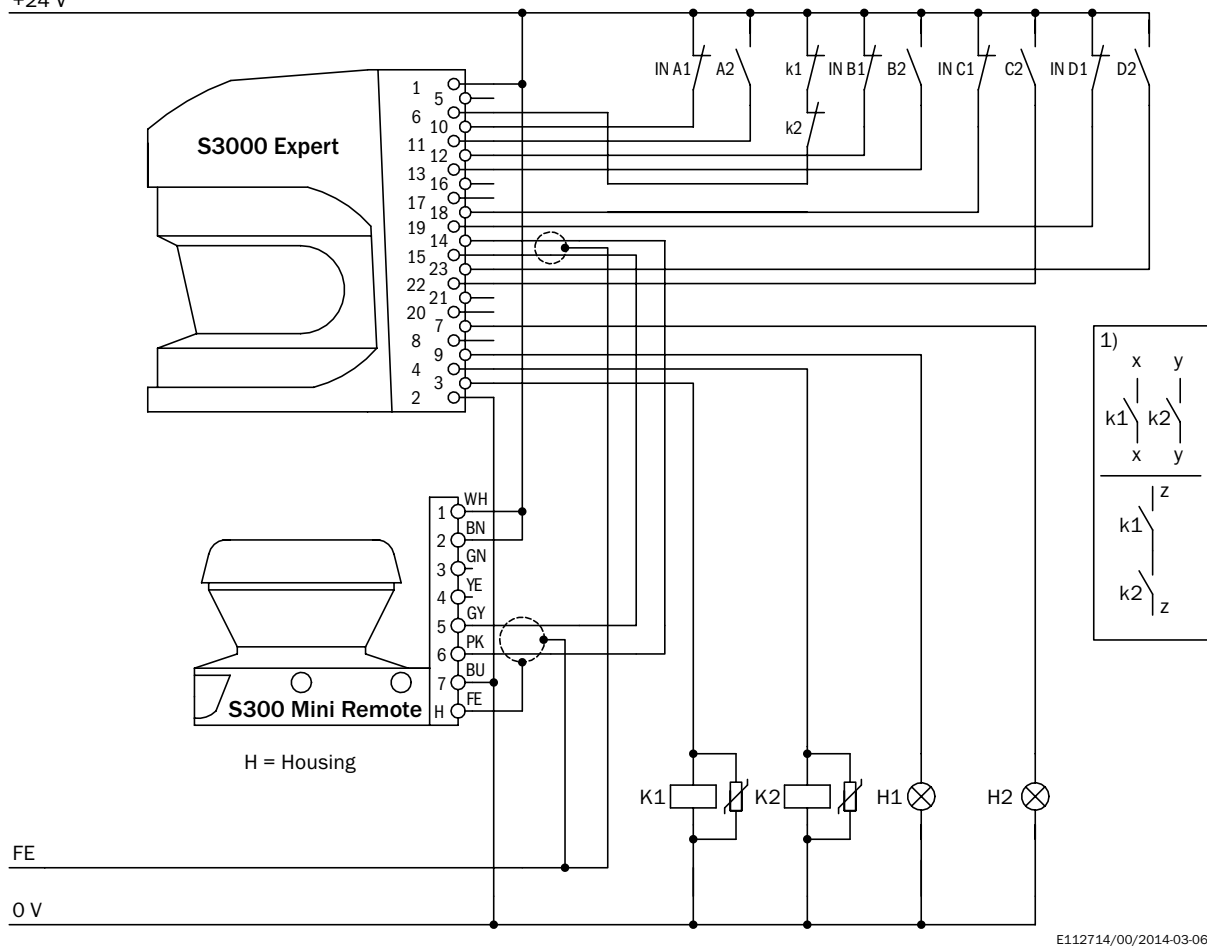
Protective field switching with static and dynamic inputs of two scanners in combination with a Flexi Soft safety controller via EFI (Enhanced Function Interface)

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

Comments

[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, 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

[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, 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

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 ± 5°. 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
Others			
	• **Connection type head A:** Male connector, M8, 4-pin, straight • **Connection type head B:** Male connector, USB-A, straight • **Cable:** 10 m, 4-wire, PVC • **Description:** 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	DSL-8U04G10M025KM1	6034575
	• **Connection type head A:** Male connector, M8, 4-pin, straight • **Connection type head B:** Male connector, USB-A, straight • **Cable:** 2 m, 4-wire, PVC • **Description:** 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	DSL-8U04G02M025KM1	6034574
	• **Connection type head A:** System plug • **Description:** Without cable, Not for use of incremental encoders, integrated configuration storage, For S3000 Standard, Advanced, Remote, Professional and Expert • **Items supplied:** With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12	SX0A-A0000B	2023797
	• **Connection type head A:** Flying leads • **Connection type head B:** Flying leads • **Cable:** 2-wire, twisted pair, 120 Ohm, PVC • **Description:** Shielded • **Note:** Fitting for EFI connections • **Items supplied:** By the meter	EFI connecting cable	6029448
	• **Connection type head A:** Flying leads • **Connection type head B:** Flying leads • **Cable:** 13-wire, AWG20, PVC • **Description:** Unshielded • **Items supplied:** By the meter	Connecting cable	6025729
	• **Connection type head A:** Flying leads • **Connection type head B:** Flying leads • **Cable:** 17-wire, AWG20, PVC • **Description:** Unshielded • **Items supplied:** By the meter	Connecting cable	6025730
	• **Connection type head A:** System plug • **Description:** Without cable, For use of incremental encoders, integrated configuration storage, For S3000 Professional and Expert • **Items supplied:** With 1 x cable gland M20, 2 x cable gland M12, 1 x blanking plug M20, 6 x blanking plug M12	SX0A-A0000D	2023310

	Brief description	Type	Part no.
	• **Connection type head A:** System plug • **Cable:** 5 m, 13-wire, PVC • **Description:** Pre-assembled, For use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert • **Connection systems:** Flying leads • **Items supplied:** With 1 x cable gland M20, 2 x cable gland M12, 1 x blanking plug M20, 6 x blanking plug M12	SX0A-B1305D	2027176
	• **Connection type head A:** System plug • **Cable:** 10 m, 13-wire, PVC • **Description:** Pre-assembled, For use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert • **Connection systems:** Flying leads • **Items supplied:** With 1 x cable gland M20, 2 x cable gland M12, 1 x blanking plug M20, 6 x blanking plug M12	SX0A-B1310D	2027177
	• **Connection type head A:** System plug • **Cable:** 5 m, 17-wire, PVC • **Description:** Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert • **Connection systems:** Flying leads • **Items supplied:** With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12	SX0A-B1705B	2027174
	• **Connection type head A:** System plug • **Cable:** 10 m, 17-wire, PVC • **Description:** Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert • **Connection systems:** Flying leads • **Items supplied:** With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12	SX0A-B1710B	2027175
	• **Connection type head A:** System plug • **Cable:** 20 m, 17-wire, PVC • **Description:** Pre-assembled, Not for use of incremental encoders, integrated configuration storage, unshielded, For S3000 Professional and Expert • **Connection systems:** Flying leads • **Items supplied:** With 1 x cable gland M20, 1 x blanking plug M20, 2 x blanking plug M12	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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