S300 Mini
Safety Laser Scanner

Maximum safety in mini format –
contact-free, compact and easy to integrate

SICK
Sensor Intelligence.

S300 Mini – the world's smallest safety laser scanner from the world's largest safety portfolio

From the global market leader in safety applications: the S300 Mini safety laser scanner. After the success of the S3000, with the largest scanning range available on the market, and the compact S300, the S300 Mini is the next logical step in further miniaturization.

Diverse applications

Safety laser scanners enable non-contact monitoring of freely programmable areas. Like an optical radar, the compact systems scan their environment in a fan shape and identify any object in their detection zone. They are universally applicable in production areas and in storage spaces. For either mobile or stationary applications: The S300 Mini is an uncomplicated safety solution for all industrial sectors.

Save space and gain safety

- Easy integration thanks to very compact size
- Greater machine efficiency by removing barriers
- Vertical and horizontal protection possible
- Minimum installation effort as the sender and receiver are housed together
- Reduced downtime and brake wear on automated guided vehicles thanks to triple field functions

With a height of 116 mm, the S300 Mini is the smallest safety laser scanner in the world

Safety is not a question of size

Personal protection for many areas of application

The S300 Mini safety laser scanner is ideal for protecting hazardous areas, safeguarding hazardous points or access protection for machines and systems, as well as for protecting automated guided systems.

Cost-effective and easy to integrate

The S300 Mini's compact format and low weight make it easy to integrate. It will fit almost anywhere and individual application adjustment enables flexible safety solutions with simple handling – all at low cost. Because its threaded mounting holes are in exactly the same position, the S300 Mini can be mounted in place of an existing S300.

S300 Mini Remote for safeguarding AGVs

S300 Mini Standard as a pressure sensitive mat replacement

A lot of functions in a small space

- S300 Mini Standard design for simple stand-alone solutions
- S300 Mini Remote design for combination with the Flexi Soft safety controller
- Vertical and horizontal protection with 270° scanning angle
- Installation volume of only 850 cm³
- Footprint of 95 cm²

104 mm

$95\,cm^2$
minimum footprint

102 mm
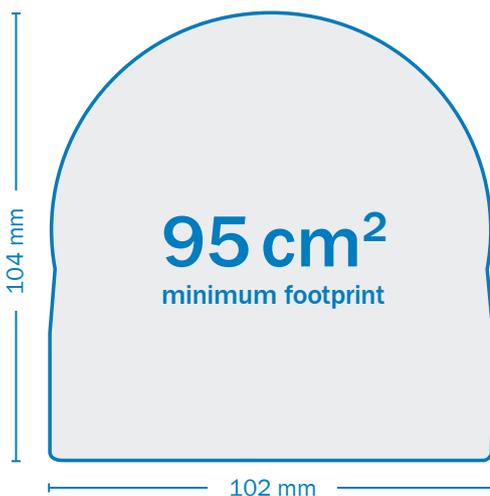
S300 Mini in **actual size:** 102 x 116 x 104 mm (W x H x D)

From a simple solution through to a wide range of functions

The S300 Mini Standard is ideal for simple tasks, with its outstanding price/performance ratio. The Remote version of the S300 Mini has an impressive range of functions in a very compact form.

S300 Mini Standard

Features
- A triple field set: one protective field, two warning fields
- Scanning range: 2 meters or 3 meters
- 270° scanning angle

Areas of application
- As pressure sensitive mat replacement
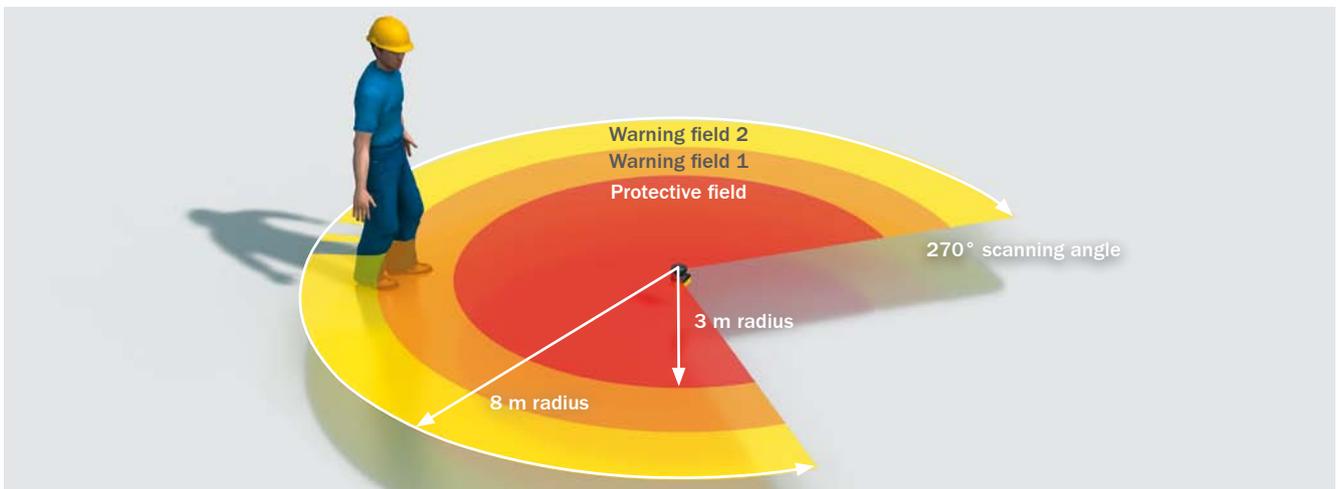- As a replacement for bumpers on smaller and simpler vehicles

S300 Mini Remote

Features
- Up to 16 triple field sets with two warning fields and one protective field each, as well as up to 32 monitoring cases.
- 270° scanning angle
- Up to 4 scanners on one Flexi Soft safety controller

Areas of application
- For more complex vehicles with greater functions

The S300 Mini's warning and protective fields enable flexible reaction to a variety of hazardous situations

Little effort for a lot of safety

Application example: protecting a small vehicle with two S300 Mini

S300 Mini Remote: maximum functionality in the minimum of space

- Cost-effective all-round vehicle protection possible
- Unbeatable cost-effectiveness – 270° scanning angle allows all-round protection with only two scanners
- Minimum cabling effort saves time and costs
- Simple configuration and diagnosis thanks to a central interface to the controller
- Very easy replacement of individual safety laser scanners

Flexi Soft: „outsourced intelligence"

The Flexi Soft central safety controller has a modular structure and is configured by means of the intuitive Flexi Soft Designer software. The SICK-specific EFI interface (EFI = Enhanced Function Interface) transmits data for the safety-related communication, enabling enhanced sensor functions.

Cost reduction with S300 Mini Remote

Saving on controller intelligence in the safety laser scanners themselves results in a crucial cost benefit: You only have to buy and program the control electronics once, in the form of the Flexi Soft. The SICK-specific EFI interface significantly reduces the amount of cabling you need.

Maximum safety in mini format
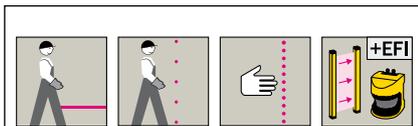
Product description

The S300 Mini safety laser scanner has an impressive ultra-compact design ensuring it can fit easily into any vehicle or machine design. Strong performance with up to 16 triple field sets to provide the ultimate in flexibility.

The triple field function enables a protective field and two warning fields to be operated at the same time. This minimizes downtimes and brake wear. The S300 Mini Remote has an internal interface (EFI) for safe device communication.

This allows the realization of advanced system solutions, for example with the Flexi Soft safety controller. Complete protection systems for vehicles and machines can easily be implemented within the system network. CDS (Configuration & Diagnostic Software) or the Flexi Soft Designer can be used to define protective and warning fields in a convenient way on a PC or laptop from an access point.

At a glance

- Very compact design
- 2 m or 3 m protective field range
- 270° scan angle
- Up to 16 switchable field sets (16 protective fields, 32 warning fields)
- EFI interface for safe SICK device communication
- Selectable resolution for hand, leg or body detection
- Contour as reference for vertical applications
- Easy-to-configure fields and functions

Your benefits

- Simple integration due to ultra-compact design
- Easy installation, commissioning and maintenance for stationary and mobile applications
- Unbeatable cost-effectiveness – 270° scan angle allows complete application protection with only two scanners
- Variety of field sets guarantees safety and productivity when protecting vehicles or moving machine parts
- Easy modular expansions, simple cabling and additional functions using SICK safety controllers with EFI
- Easy to manage, reducing costs and work time
- Reduction of downtimes and brake wear thanks to triple field function
- Decades of proven safety technology guarantee maximum reliability and availability – even under difficult conditions

➜ www.mysick.com/en/S300_Mini

For more information, just enter the link and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.

CE c(UL)us

Detailed technical data

You can find more detailed data in the operating instructions. Download at www.mysick.com.

General data

Laser protection class	1 (CFR 1040.10 and 1040.11, CDRH 21, IEC 60825-1)
Enclosure rating	IP 65 (EN 60529)
Protection class	III (EN 50178 and EN 60950)
Safety-related parameters	
Type	Type 3 (EN 61496-1)
Safety integrity level	SIL2 (IEC 61508), SILCL2 (EN 62061)
Category	Category 3 (EN ISO 13849)
Performance level	PL d (EN ISO 13849)
PFHd (mean probability of a dangerous failure per hour)	8.0×10^{-8} (EN ISO 13849)
T_M (Mission Time)	20 years (EN ISO 13849)
Ambient operating temperature from ... to	−10 °C ... +50 °C
Type of light	Pulsed laser diode
Wave length	905 nm
Housing color	RAL 1021 (yellow), RAL 9005 (black)
Housing material	Die-cast aluminum
Front screen material	Polycarbonat
Front screen surface finish	Outside with scratch-resistant coating
Dimensions (W x H x D)	102 mm x 116 mm x 105 mm
Weight	0.8 kg, without connecting cables

Functional data

	S300 Mini Standard	S300 Mini Remote
Scanning angle	270°	
Protective field range, radial	2 m / 3 m (depending on type)	
Number of field sets	1	16
Type of field sets	Triple field sets with 1 protective field and 2 warning fields each	
Number of monitoring cases	1	32
Remission	1.8 % ... > 1,000 %, reflectors	
Response time	80 ms	
Resolution	30 mm, 40 mm, 50 mm, 70 mm, selectable 30 mm, 40 mm, 50 mm, 70 mm, 150 mm, selectable (depending on type)	
Angular resolution	0.5°	
Protective field supplement	100 mm	
Warning field range	8 m	
Distance measuring range	30 m	
Number of multiple samplings	2 ... 16, configurable via CDS	
Delay of automatic reset	2 s ... 60 s, configurable	

Electrical data

	S300 Mini Standard	S300 Mini Remote
Connection type	Connecting cable with round plug connector	
Connecting cable length	250 mm	
Diameter of round plug connector	15 mm	
Supply voltage V_s	24 V DC (16.8 V DC ... 30 V DC)	
Power consumption	≤ 0.25 A (24 V DC) [1] ≤ 1.35 A (24 V DC) [2]	
Universal I/Os	2	–
Number of inputs		
Static control inputs (with EFI)	–	5 [4]
External device monitoring (EDM)	1 [3]	–
Restart/reset	1 [3]	–
Standby	1 [3]	1 [4]
Number of outputs		Depends on the configuration of the connected EFI device
Reset required	1 [3]	–
Safety outputs (OSSD)	2	–
Output for warning field	2 [3]	–
Configuration and diagnostics interface Transmission rate	RS-232 38.4 kBaud	
Safe device communication via EFI/SDL		
Transmission rate	–	≤ 500 kBaud
Cable length	–	20 m [5]
Galvanized decoupling	–	–

[1] Without output load.

[2] Including maximum output load.

[3] Availability depends on the configuration of the universal I/Os.

[4] The S300 Mini Remote can only be operated on an S3000/S300 safety laser scanner, on a safety controller Flexi Soft or on a sens:Control device via EFI.

[5] Use only pre-assembled extension cables.

Ordering information

Delivery S300 Mini

- Safety laser scanner
- Operating instructions and CDS (Configuration & Diagnostic Software) on CD-ROM
- Adhesive label "important information"

The extension cable has to be ordered separately!

Designation	Protective field range	Model name	Part no.
S300 Mini Standard	2 m	S32B-2011BA	1050932
	3 m	S32B-3011BA	1056430
S300 Mini Remote	2 m	S32B-2011EA	1051884
	3 m	S32B-3011EA	1056431

Dimensional drawing

All dimensions in mm

Connection diagrams

You can find more connection diagrams at www.mysick.com

S300 Mini Standard with restart interlock and external device monitoring
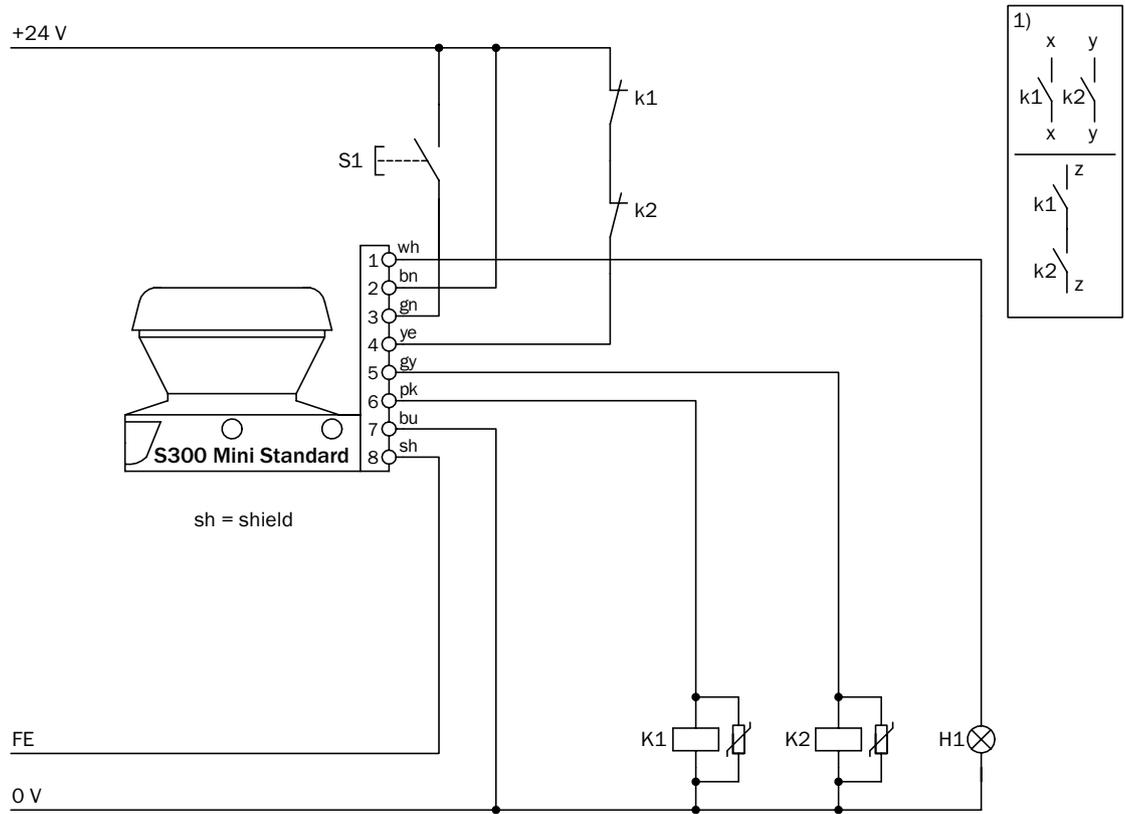
- S300 Mini Standard in conjunction with relays/contactors
- Operating mode: with restart interlock (universal I/O 1 must be configured as reset) and external device monitoring (universal I/O 2 must be configured as EDM)
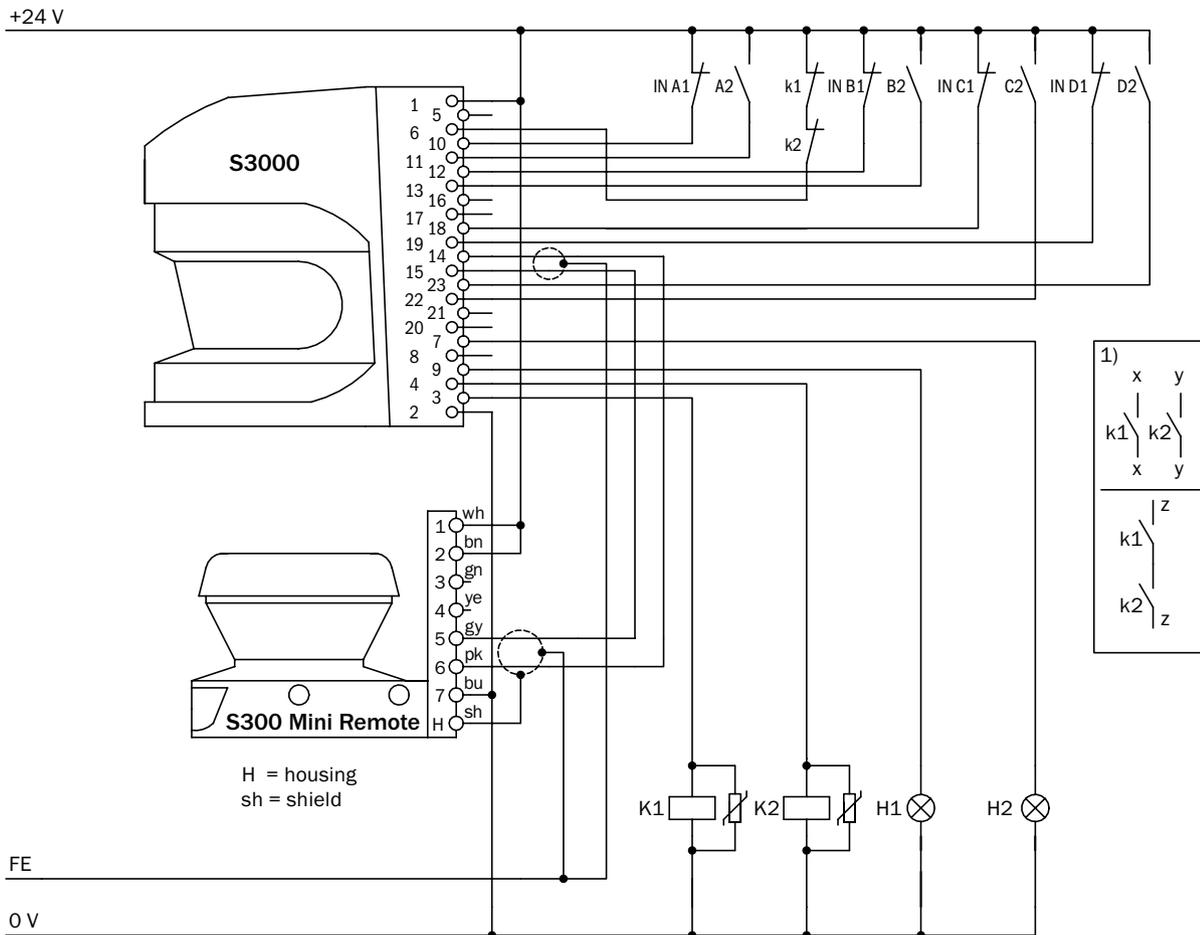
S300 Mini Standard on UE10-3OS safety relay
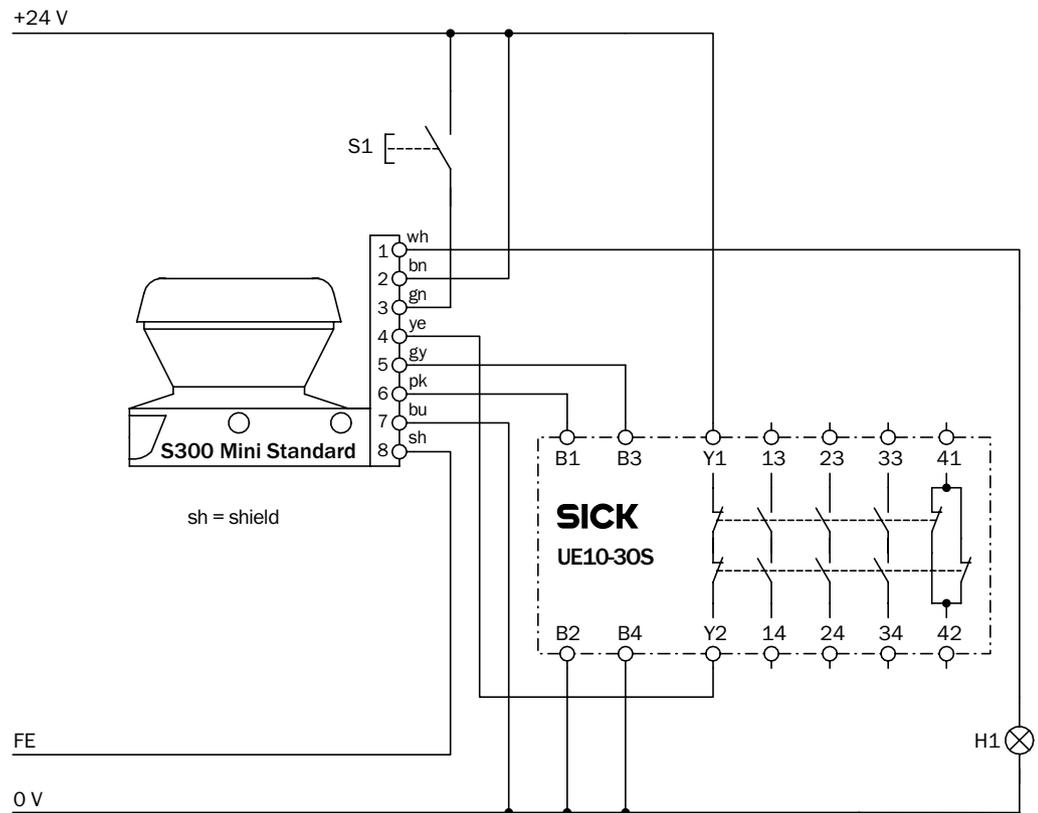
- S300 Mini Standard on UE10-3OS safety relay
- Operating mode: with restart interlock (universal I/O 1 must be configured as reset) and external device monitoring (universal I/O 2 must be configured as EDM)

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

- 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.

S300 Mini Remote: protective field switching with a Flexi Soft safety controller
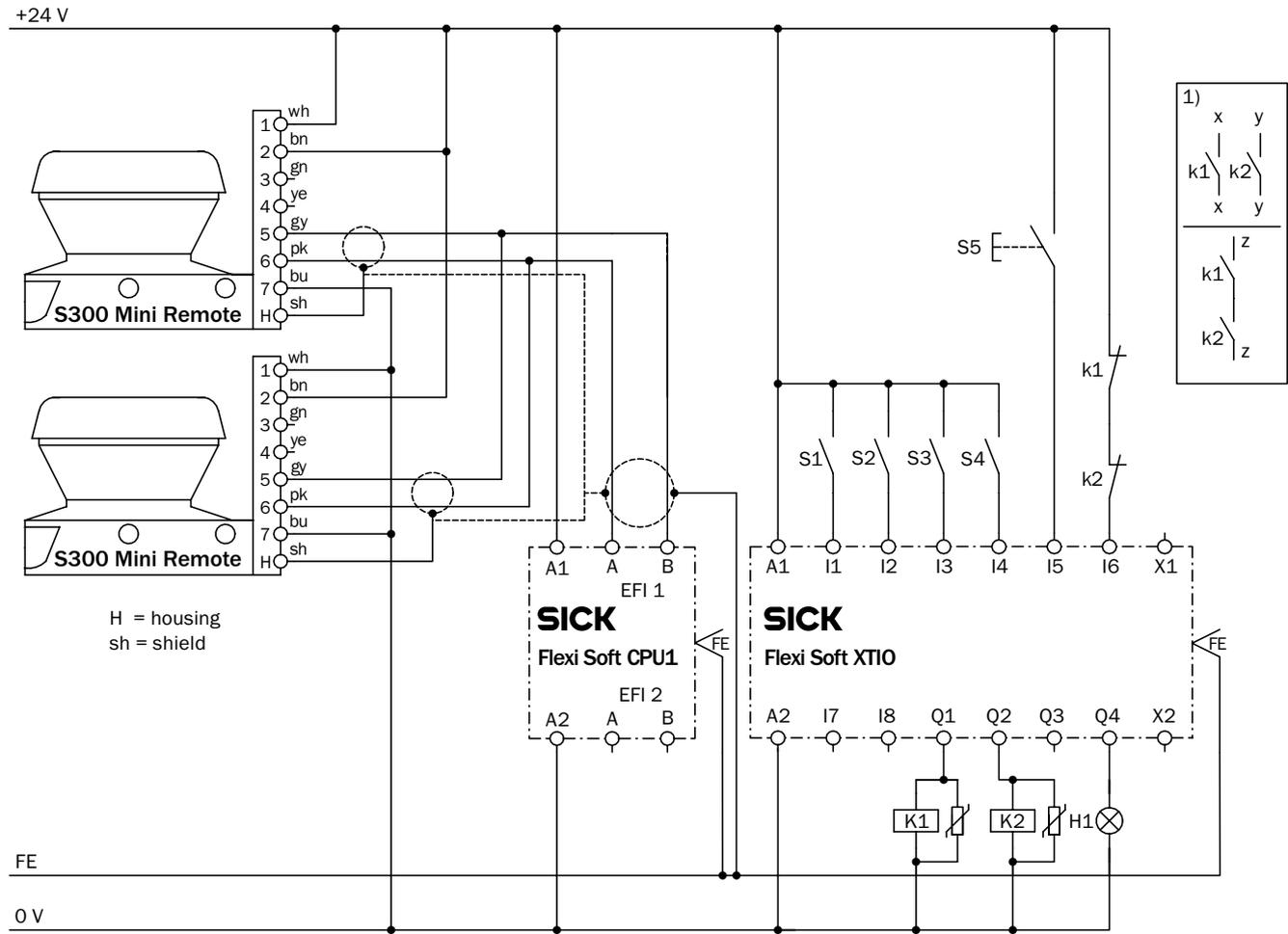
- Two S300 Mini Remote
- Protective field evaluation and switching via EFI using a Flexi Soft safety controller

Accessories

Mounting systems

Figure	Property	Assembly / Adjustment	Remark	Type	Part no.	S300 Mini Standard	S300 Mini Remote
		For rear mounting on wall or machine	–	Mounting kit 1a	2034324	●	●
	Mounting brackets	For rear mounting on wall or machine with protection of optics cover	–	Mounting kit 1b	2034325	●	●
		Cross-wise adjustment possible	Only in conjunction with mounting kit 1a or 1b	Mounting kit 2	2039302	●	●
	Mounting plate	Longitudinal adjustment possible	Only in conjunction with mounting kit 2	Mounting kit 3	2039303	●	●

Extension cables

Figure	Connection type	Direction of cable outlet	Cable length	Type	Part no.		
	M12 x 7	Straight	2.5 m	DOL-1SS2G2M5E15KM3	6042337	–	●
			5 m	DOL-1SS2G5M0E15KM3	6042338	–	●
			7.5 m	DOL-1SS2G7M5E15KM3	6042339	–	●
			10 m	DOL-1SS2G10ME15KM3	6042340	–	●
			15 m	DOL-1SS2G15ME15KM3	6042341	–	●
			20 m	DOL-1SS2G20ME15KM3	6042342	–	●
	M12 x 7 + FE	Straight	2.5 m	DOL-127SG2M5E25KM0	6020537	●	–
			5 m	DOL-127SG05ME25KM0	6020354	●	–
			7.5 m	DOL-127SG7M5E25KM0	6020353	●	–
			10 m	DOL-127SG10ME25KM0	6020352	●	–
			20 m	DOL-127SG20ME25KM0	6033096	●	–
		Angled	5 m	DOL-127SW05ME25KM0	6021342	●	–
			7.5 m	DOL-127SW7M5E25KM0	6034783	●	–
			10 m	DOL-127SW10ME25KM0	6035566	●	–
			15 m	DOL-127SW15ME25KM0	6021343	●	–

Configuration connection cables

Figure	Remark	Connection type	Cable length	Type	Part no.		
	For connecting the configuration connection to the serial interface on the PC	M8 x 4, SUB-D 9-pin	2 m	DSL-8D04G02M025KM1	6021195	●	●
			10 m	DSL-8D04G10M025KM1	2027649	●	●
	For connecting the configuration connection to the USB interface on the PC	M8 x 4, USB-A	2 m	DSL-8U04G02M025KM1	6034574	●	●
			10 m	DSL-8U04G10M025KM1	6034575	●	●
Illustration may differ	Configuration connection cable	Connector RS-232, USB	35 cm	Converter RS-232 to USB	6035396	●	●

Power supply units

Figure	Input voltage	Output voltage	Maximum output current	Type	Part no.	S300 Mini Standard	S300 Mini Remote
	100 V AC … 240 V AC	24 V DC	2.1 A	Power supply	7028789	●	●
			3.9 A	Power supply	7028790	●	●

Configuration software

Figure	Description	Type	Part no.		
	CDS (Configuration & Diagnostic Software)	CDS	2032314	●	●

Cleaning agent

Figure	Description	Type	Part no.		
	Plastic cleaner and care product, anti-static	Plastic cleaner	5600006	●	●

Others

Figure	Description	Items supplied	Type	Part no.		
	Spare part set optic cover	With replacement seal and screws	Spare part set optic cover	2039248	●	●
	Cloth for cleaning the front screen	–	Optical cleaning cloth	4003353	●	●

SICK at a glance

Leading technologies

With a staff of more than 5,000 and over 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.

Unique product range

- Non-contact detecting, counting, classifying, positioning and measuring of any type of object or media
- Accident and operator protection with sensors, safety software and services
- Automatic identification with bar code and RFID readers
- Laser measurement technology for detecting the volume, position and contour of people and objects
- Complete system solutions for analysis and flow measurement of gases and liquids

Comprehensive services

- SICK LifeTime Services – for safety and productivity
- Application centers in Europe, Asia and North America for the development of system solutions under real-world conditions
- E-Business Partner Portal www.mysick.com – price and availability of products, requests for quotation and online orders

Worldwide presence with subsidiaries in the following countries:

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USA

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

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