senSe2

SIMPLY SAFE IN EVERY SENSE

Safety light curtains

SICK

Sensor Intelligence.

SIMPLY SAFE IN EVERY SENSE
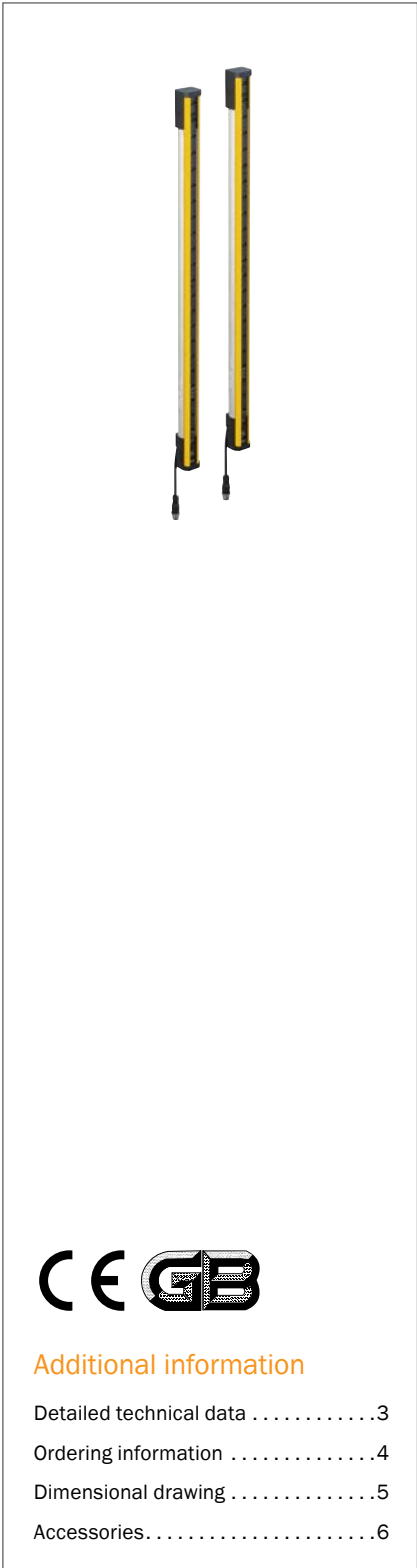
Product description

Reliably protecting people every day, keeping machines available and always keeping economic efficiency in mind – the senSe2 safety light curtain makes this all possible. It combines an appropriate safety standard with first-class usability. Simply switch on the light curtain and protect the application – without complicated set-up, but including real-time diagnostics and quick maintenance. Externally, the senSe2 has a clear and sophisticated design which ensures both perfect functionality and efficient machine integration. The ideal solution for cost-efficient protection of hazardous points as well as access areas which are only open to one side.

At a glance

- Intelligent design without blind zones; easy mounting
- Impact-proof housing
- Minimum configuration effort
- System connection: M12 male connector, 5-pin
- Certification complies with GB 4584 and EU guidelines
- Type 2 (IEC 61496), SIL 1 (EN 61062), PL c (EN ISO 13849)

Your benefits

- Cost-efficient protection of hazardous points as well as access areas which are only open to one side
- Simple machine integration
- Innovative housing concept for a long service life
- Easy commissioning thanks to integrated LED display and automatic calibration of protective field width
- Easy device replacement
- Profit from uniform implementation into your machine design thanks to the standardized connectivity

Additional information

➔ **www.sick.com/senSe2**

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

Detailed technical data

More detailed data can be found in the operating instructions. Download ➜ www.sick.com/senSe2

Features

Resolution	30 mm
Scanning range	6 m
Protective field height	300 mm … 1,200 mm (depending on type)
Response time	10 ms … 12 ms (depending on type)
No blind zones	✔
Synchronization	Optical synchronisation

Safety-related parameters

Type	Type 2 (IEC 61496-1)
Safety integrity level	SIL1 (IEC 61508)
Category	Category 2 (ISO 13849-1)
Performance level	PL c (ISO 13849-1)
PFH_D (mean probability of a dangerous failure per hour)	31×10^{-9}
T_M (mission time)	20 years (ISO 13849-1)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Functions

Protective operation	✔
Automatic calibration of the protective field width	✔

Interfaces

System connection	Male connector M12, 5-pin
Display elements	LEDs
Alignment quality display	4 alignment LEDs
Fieldbus, industrial network	
Integration via Flexi Soft safety controller	CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET [1]

[1] For additional information on Flexi Soft ➜ www.sick.com/Flexi_Soft.

Electrical data

Protection class	III (IEC 61140) [1]
Supply voltage V_S	24 V DC (19.2 V … 28.8 V)
Ripple	≤ 10 % [2]
Output signal switching devices (OSSDs)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored [3]
ON state, switching voltage HIGH	24 V DC (V_S – 2.25 V DC … V_S)
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 300 mA

[1] SELV/PELV safety/protective extra-low voltage.
[2] Within the limits of V_S.
[3] Applies to the voltage range between –30 V and +30 V.

Mechanical data

Dimensions	See dimensional drawing
Housing material	Aluminum extruded profile

Ambient data

Enclosure rating	IP65 (IEC 60529)
Ambient operating temperature	–30 °C … +55 °C
Storage temperature	–30 °C … +70 °C
Air humidity	15 % … 95 %, Non-condensing
Vibration resistance	IEC 60068-2-6
Shock resistance	10 g, 16 ms (IEC 60068-2-27)

Other information

Wave length	850 nm
Type of light	Near-infrared (NIR), invisible

Ordering information

Resolution	Scanning range	Protective field height	Sender		Receiver	
			Type	**Part no.**	**Type**	**Part no.**
30 mm	6 m	300 mm	C2C-SN03030A10000	1112972	C2C-EN03030A10000	1112979
		450 mm	C2C-SN04530A10000	1112973	C2C-EN04530A10000	1112980
		600 mm	C2C-SN06030A10000	1112974	C2C-EN06030A10000	1112981
		750 mm	C2C-SN07530A10000	1112975	C2C-EN07530A10000	1112982
		900 mm	C2C-SN09030A10000	1112976	C2C-EN09030A10000	1112983
		1,050 mm	C2C-SN10530A10000	1112977	C2C-EN10530A10000	1112984
		1,200 mm	C2C-SN12030A10000	1112978	C2C-EN12030A10000	1112985

Dimensional drawing (Dimensions in mm)
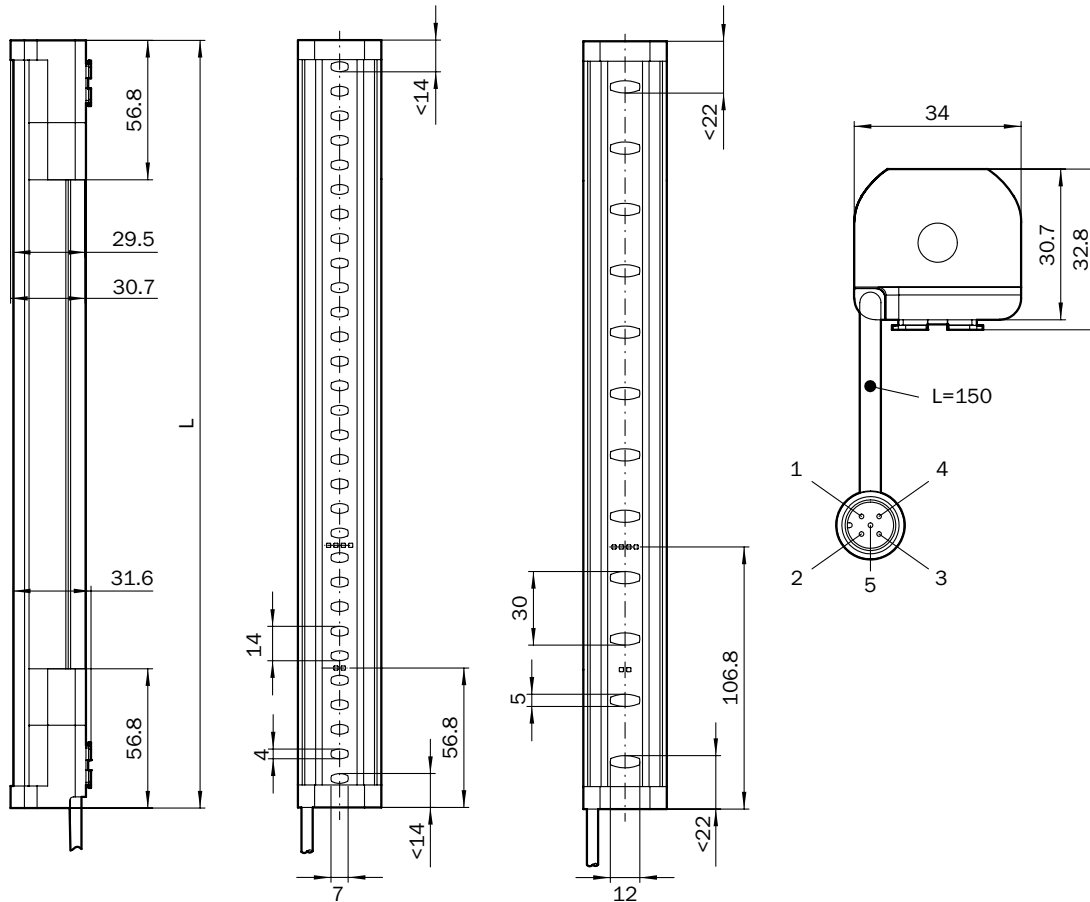
Protective field height	L
300	313
450	463
600	613
750	763
900	913
1,050	1,063
1,200	1,213

Accessories

Mounting systems

Terminal and alignment brackets

Alignment brackets

Figure	Description	Packing unit	Type	Part no.
	QuickFix bracket for 1 device (e.g. sender or receiver), plastic	2 pieces	BEF-3SHABPKU2	2066048
	QuickFix bracket for 2 devices (e.g. sender and receiver), plastic	4 pieces	BEF-3SHABPKU4	2098710
	FlexFix bracket for 1 device (e.g. sender or receiver), can be aligned ± 15°, including M5 screw, plastic	2 pieces	BEF-1SHABPKU2	2098709
	FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned ± 15°, including M5 screw, plastic	4 pieces	BEF-1SHABPKU4	2066614
	Compact FlexFix bracket for 1 device (e.g. sender or receiver), can be aligned ± 15°, including M5 screw, for mounting with countersunk screws, plastic	2 pieces	BEF-1SHTBPKU2	2117730
	Compact FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned ± 15°, including M5 screw, for mounting with countersunk screws, plastic	4 pieces	BEF-1SHTBPKU4	2117731
	Swivel mount bracket for 1 device (e.g. sender or receiver), 360° alignment possible, consisting of swivel mount port and swivel mount adapter, including M5 screw, plastic	2 pieces	BEF-2SMJEPKU2	2121685
	Swivel mount bracket for 2 devices (e.g. sender or receiver), 360° alignment possible, consisting of swivel mount port and swivel mount adapter, including M5 screw, plastic	4 pieces	BEF-2SMJEPKU4	2118584
	Flat mount bracket comprising one A bracket and one B bracket for one device (e.g., sender or receiver), plastic	2 pieces	BEF-3SHAHPKU2	2121705
	Flat mount bracket comprising two A brackets and two B brackets for two devices (e.g., sender and receiver), plastic	4 pieces	BEF-3SHAHPKU4	2118327
	FlexFix mounting kit for 1 device, e.g. sender or receiver (FlexFix bracket, alignment tool and assembly materials for installation in PU3H device columns), plastic	2 pieces	BEF-1SHABBKU2	2073543
	FlexFix replacement bracket (mounting kit for replacement of swivel mount brackets 2019649 and 2019659 or side bracket 2019506 with the FlexFix bracket when using the wells provided), Aluminum (anodised), plastic	4 pieces	BEF-1SHABS004	2100345

Device protection (mechanical)

Front screen protection

Figure	Description	Suitable for	Packing unit	Type	Part no.
	Self-adhesive protective film for the front screen (protects sensors from damage by flying sparks and welding beads)	Sufficient for two sensors with a protective field height of 2.100 mm	1 piece	Self-adhesive protective film	2069268

Other mounting accessories

Mounting tools

Figure	Description	Packing unit	Type	Part no.
	Alignment tool for aligning sensors in areas with limited accessibility, e.g. device columns	1 piece	Alignment tool	4084133

Connection systems

Plug connectors and cables

Connecting cables

- **Model:** PUR, halogen-free, unshielded

Figure	Connection type		Conductor cross-section	Length of cable	Type	Part no.
	Female connector, M12, 5-pin, straight	Flying leads	0.34 mm²	2 m	YF2A15-020UB5XLEAX	2095617
				5 m	YF2A15-050UB5XLEAX	2095618
				10 m	YF2A15-100UB5XLEAX	2095619
				15 m	YF2A15-150UB5XLEAX	2095620
				20 m	YF2A15-200UB5XLEAX	2095614
				30 m	YF2A15-300UB5XLEAX	2095621
	Female connector, M12, 5-pin, angled	Flying leads	0.34 mm²	2 m	YG2A15-020UB5XLEAX	2095772
				5 m	YG2A15-050UB5XLEAX	2095773
				10 m	YG2A15-100UB5XLEAX	2095774

Connection cables

Figure	Connection type		Model	Length of cable	Items supplied	Type	Part no.
	Female connector, M12, 5-pin, straight	Male connector, M12, 5-pin, straight	PUR, halogen-free, unshielded	0.6 m	–	YF2A15-C60UB5M2A15	2096006
				1 m	–	YF2A15-010UB5M2A15	2096007
				2 m	–	YF2A15-020UB5M2A15	2096009
				5 m	–	YF2A15-050UB5M2A15	2096010
				10 m	–	YF2A15-100UB5M2A15	2096011
				15 m	–	YF2A15-150UB5M2A15	2096171
		Male connector, M12, 8-pin, straight	PVC, unshielded	0.25 m	Packaging unit: 2 pcs.	DSL-1285GM25034KM1	2070987
		Male connector, M26, 12-pin, straight	PVC, unshielded	0.25 m	Packaging unit: 2 pcs.	DSL-6182GM25034KM1	2070989
		Male connector, M26, 7-pin, straight	PVC, unshielded	0.25 m	Packaging unit: 2 pcs.	DSL-6187GM25034KM1	2070988

Adapters and distributors

T-junctions

Figure	Description	Type	Part no.
	T-piece for simultaneous connection to sender and receiver, splits the cable from the control cabinet to the sender and receiver, 5-pin	DSC-1205T000025KM0	6030664

Power supply units and power supply cables

Figure	Input voltage	Output voltage	Output current	Type	Part no.
Illustration may differ	100 V AC … 240 V AC	24 V DC	≤ 2.1 A	PS50WE24V	7028789
			≤ 3.9 A	PS95WE24V	7028790

Reflectors and optics

Alignment aids

Figure	Description	Type	Part no.
	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!	AR60	1015741
	Adapter AR60 for senSe2	AR60 adapter, senSe2	4070854

Deflector mirrors

- **Mirror material:** Glass

Figure	Description	Items supplied	Suitable for protective field height	Type	Part no.
	Horizontal deflection	Incl. mounting kit swivel mount	150 mm … 300 mm	PNS125-034	1019425
			150 mm … 450 mm	PNS125-049	1019426
			150 mm … 600 mm	PNS125-064	1019427
			150 mm … 750 mm	PNS125-079	1019428
			150 mm … 900 mm	PNS125-094	1019429
			150 mm … 1,050 mm	PNS125-109	1019430
			150 mm … 1,200 mm	PNS125-124	1019431
			150 mm … 300 mm	PNS75-034	1019414
			150 mm … 450 mm	PNS75-049	1019415
			150 mm … 600 mm	PNS75-064	1019416
			150 mm … 750 mm	PNS75-079	1019417
			150 mm … 900 mm	PNS75-094	1019418
			150 mm … 1,050 mm	PNS75-109	1019419
			150 mm … 1,200 mm	PNS75-124	1019420

Optics cloths

Figure	Description	Type	Part no.
	Cloth for cleaning optical surfaces	Lens cloth	4003353

Further accessories

Test and monitoring tools

Figure	Description	Type	Part no.
	30 mm diameter	Test rod 30 mm	2069275
	Test rod holder	BEF-3WNAAAAL1	2052249

Mirror columns and device columns

Mirror columns with protective field height mirror

Figure	Suitable for protective field height	Mirror length	Column height	Type	Part no.
	≤ 1,050 mm	1,082 mm	1,281.5 mm	PM3C13-00030000	1043453
	≤ 1,350 mm	1,382 mm	1,569 mm	PM3C15-00030000	1077525
	≤ 1,500 mm	1,532 mm	1,716.5 mm	PM3C17-00030000	1043454
	≤ 1,650 mm	1,682 mm	2,016.5 mm	PM3C19-00030000	1043455
	≤ 1,800 mm	1,832 mm	2,216.5 mm	PM3C20-00030000	1043456
	≤ 1,950 mm	1,982 mm	2,269 mm	PM3C22-00030000	1093216
	≤ 2,100 mm	2,132 mm	2,419 mm	PM3C24-00030000	1093217

Device columns with two external mounting grooves

Figure	Suitable for protective field height: deTec	Max. installation length	Column height	Type	Part no.
	≤ 900 mm	965 mm	985 mm	PU3H96-00000000	2045490
	≤ 1,050 mm	1,165 mm	1,185 mm	PU3H11-00000000	2045641
	≤ 1,200 mm	1,265 mm	1,285 mm	PU3H13-00000000	2045642
	≤ 1,500 mm	1,550 mm	1,570 mm	PU3H15-00000000	2068813
	≤ 1,650 mm	1,720 mm	1,740 mm	PU3H17-00000000	2045643
	≤ 1,950 mm	2,020 mm	2,040 mm	PU3H21-00000000	2045644
	≤ 2,100 mm	2,250 mm	2,270 mm	PU3H22-00000000	2045645
		2,400 mm	2,420 mm	PU3H24-00000000	2045646

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