



M 4000 Standard Multiple Light Beam Safety Device



SICK



- Housing with 3 nut grooves
- Configuration buttons
- Restart interlock (RES)
- External device monitoring (EDM)
- Beam coding
- LED / 7-segment display
- Application diagnostic output (ADO)
- Integrated laser alignment aid
- End cap with integrated LED
- Separate reset connection for receiver



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Technical data overview

Operating range	0.5 m ... 20 m / 15 m ... 70 m
Number of beams, type-dependent	2 ... 12
Beam distance, type-dependent	300 mm, 400 mm, 450 mm, 500 mm, 600 mm
Type according to EN 61 496	Type 4
Enclosure rating	IP 65

Product description

The M 4000 Standard multiple light beam safety device is the successor of MSL multiple light beam safety device that has been established in the market for many years. Efficient perimeter guarding solutions with maximum availability are realised due to the high optical range and additional integrated functions, which are easily configured via configuration buttons.

The integrated functions and status information ensure rapid commissioning and help to minimise machine down time. The modular concept achieves maximum machine security with economic considerations by harmonising the characteristics of the device precisely to the requirements. Interfaces and service concepts complete the product range to give an ideal industrial solution.

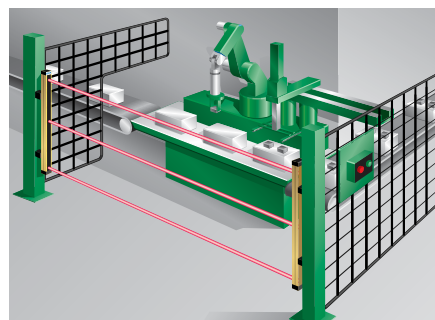
System added value

- Combination with SICK-Interfaces
- Safe integration in bus systems with UE 1000 series
- Direct integration in AS-interface Safety at Work bus systems

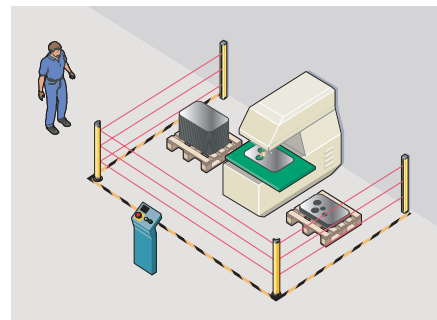
Areas of application

→ Further information on application finder www.sick.de

- Machine tool industry
- Material handling
- Packaging industry
- Stone production
- Automotive industry



Packaging industry: M 4000 Standard on a packing machine



Machine tool industry: M 4000 Standard with mirror columns on a punching machine

Ordering data

M 4000 Standard with M12 plug

Number of beams	Beam gap (mm)	Sender		Receiver	
		Type code	Part number	Type code	Part number
2	500	M40S-025000ARO	1 200 000	M40E-025000RR0	1 200 017
2	600	M40S-026000ARO	1 200 001	M40E-026000RR0	1 200 018
3	400	M40S-034000ARO	1 200 003	M40E-034000RR0	1 200 020
3	450	M40S-034500ARO	1 200 004	M40E-034500RR0	1 200 021
4	300	M40S-043000ARO	1 200 006	M40E-043000RR0	1 200 023

M 4000 Standard with M12 plug and integrated alignment aid

Number of beams	Beam gap (mm)	Sender		Receiver	
		Type code	Part number	Type code	Part number
2	500	M40S-025010ARO	1 200 011	M40E-025010RR0	1 200 028
2	600	M40S-026010ARO	1 200 012	M40E-026010RR0	1 200 029
3	400	M40S-034010ARO	1 200 013	M40E-034010RR0	1 200 030
3	450	M40S-034510ARO	1 200 014	M40E-034510RR0	1 200 031
4	300	M40S-043010ARO	1 200 015	M40E-043010RR0	1 200 032

M 4000 Standard with M12 plug and end cap with integrated LED ¹⁾

Number of beams	Beam gap (mm)	Sender		Receiver	
		Type code	Part number	Type code	Part number
2	500	M40S-025000ARO	1 200 000	M40E-025020RR0	1 200 033
2	600	M40S-026000ARO	1 200 001	M40E-026020RR0	1 200 034
3	400	M40S-034000ARO	1 200 003	M40E-034020RR0	1 200 035
3	450	M40S-034500ARO	1 200 004	M40E-034520RR0	1 200 036
4	300	M40S-043000ARO	1 200 006	M40E-043020RR0	1 200 037

¹⁾ Receiver only

M 4000 Standard with M12 plug, integrated alignment aid and end cap with integrated LED ¹⁾

Number of beams	Beam gap (mm)	Sender		Receiver	
		Type code	Part number	Type code	Part number
2	500	M40S-025010ARO	1 200 011	M40E-025030RR0	1 200 038
2	600	M40S-026010ARO	1 200 012	M40E-026030RR0	1 200 039
3	400	M40S-034010ARO	1 200 013	M40E-034030RR0	1 200 040
3	450	M40S-034510ARO	1 200 014	M40E-034530RR0	1 200 041
4	300	M40S-043010ARO	1 200 015	M40E-043030RR0	1 200 042

¹⁾ Receiver only

continued overleaf

Additional options

- To order additional options, please change the appropriate digit of the type code
- Please see the ordering information for the related type code
- Note that the additional options Reset and Integrated Interface AS-interface Safety at Work cannot be combined

Additional option	Where to use	Change to the type code
Reset connection M12 socket	■ For receiver only	M40 # - # # # # # # # T #
Integrated Interface AS-interface Safety at Work	■ For sender and receiver	M40 # - # # # # # # # 2 A U #

Ordering information accessories

Assembly accessories

Designation	Description	Part number
Mounting kit 1	■ Mounting bracket rigid ■ 4 pieces	7 021 352
Mounting kit 2	■ Mounting bracket pivoting ■ 4 pieces	2 017 751
Mounting kit 6	■ Side bracket pivoting ■ 4 pieces	2 019 506
Mounting kit 12	■ Swivel-mount-bracket pivoting ■ 4 pieces	2 030 510

Connection

Description	Description	Cable length	Part number
Connecting cables for M 4000 Standard with M12 plug, 8-pin	■ M12 socket, 8-pin ■ Straight ■ Wire cross section 0.25 mm ² ■ PUR-halogen free	2.5 m	6 020 537
		5.0 m	6 020 354
		7.5 m	6 020 353
		10.0 m	6 020 352
		15.0 m	6 020 872

Detailed technical data

→ Further data you can find in the operating instructions.

General system data

Number of beams, type-dependent	2 ... 12
Beam gap, type-dependent	120 mm ... 600 mm
Scanning range, configurable	
Low scanning range	0.5 m ... 20 m
High scanning range	15 m ... 70 m
Protection class (IEC 536:1976)	III
Enclosure rating (IEC 60 529)	IP 65
Supply voltage U_V at device ¹⁾	24 V (19.2 V ... 28.8 V)
Residual ripple	max. ± 10 %
Synchronisation	Optical, without separate synchronisation
Type according IEC 61 496	Type 4
Type according IEC 61 508	SIL 3

Sender

Power consumption	max. 0.2 A
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Receiver

Output signal switching devices (OSSDs)	2 PNP semiconductors, short-circuit protected ²⁾ , cross-circuit monitored
Response time	
Up to 2 beams	9 ms
3 to 7 beams	10 ms
8 to 12 beams	11 ms
Switching voltage	
HIGH (active, U_{eff})	24 V ($U_V - 2.25$ V ... U_V)
LOW (inactive)	0 V (0 V ... 3.5 V)
Switching current	0 mA ... 500 mA
Power consumption	max. 0.6 A (without OSSD)
Application diagnostic output (ADO)	PNP semiconductors, short-circuit protected ²⁾
Switching voltage HIGH (active)	24 V ($U_V - 4.2$ V ... U_V)
Switching voltage LOW (inactive)	high resistance
Switching current	0 mA ... 100 mA
Alignment laser (optional)	Laser class 2 in compliance with IEC 60 825-1:2001; Optical power output < 1 mW Wavelength 630 nm ... 680nm (red)

Operating data

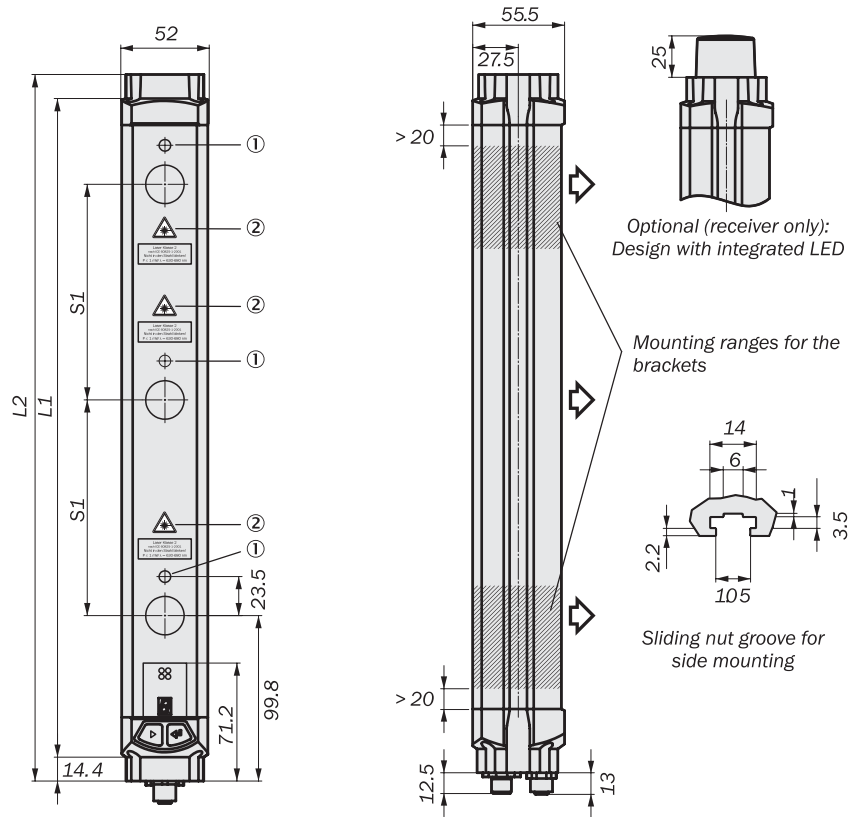
Connection	M12 plug, 8-pin
Cable length ³⁾	max. 15 m
Cable cross-section	min. 0.25 mm ²
Ambient operating temperature	0 °C ... +55 °C
Air humidity (non-dewing)	15 % ... 95 %
Storage temperature	-25 °C ... +70 °C
Rigidity	5 g, 10 Hz ... 55 Hz in compliance with IEC 60 068-2-6
Shock resistance	10 g, 16 ms in compliance with IEC 60 068-2-29

¹⁾ The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60 204-1. Suitable power supplies are available as accessories from SICK (Siemens type series 6 EP 1)

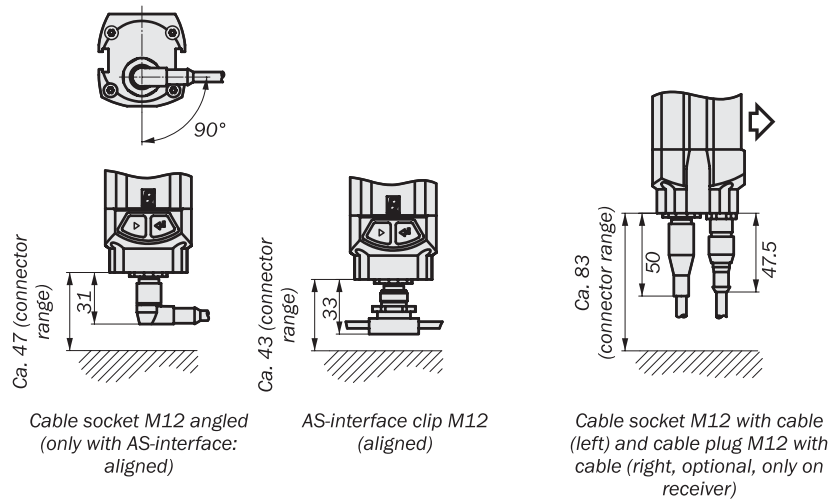
²⁾ Applies to the voltage range between -30 V and +30 V

³⁾ Depending on load, power supply and cable cross-section. The technical specifications must be observed

Dimensional drawings



- ① Laser output opening (receiver with integrated alignment aid only)
- ② Laser warning label (receiver with integrated alignment only)



Dimensional drawing M 4000 Standard receiver, sender mirror image (mm)

Number of beams	Beam gap S1 [mm]	Dimension L1 [mm]	Dimension L2 [mm]
2	500	643	672
2	600	743	772
3	400	943	972
3	450	1043	1072
4	300	1043	1072

If you use the M 4000 Standard with optional end cap with integrated LED, the dimension L2 of the receiver increases by 25 mm.

SICK Industrial Safety Systems

Laser Scanners

- S 3000
- PLS
- PLS short range
- RLS

Light Curtains

- C 4000 Micro
- C 4000 Basic
- C 4000 Standard/Advanced
- C 4000 Entry/Exit
- C 2000
- LGT

Multiple Light Beam Safety Devices

- M 4000
- MSL
- MSL/MSM
- M 2000

Safety Photoelectric Switches

- L 4000 systems
- WSU/WEU 26/2
- WS/WE 12-2 with LE 20
- WS/WE 18-2 with LE 20
- WS/WE 24-2 with LE 20
- WS/WE 27-2 with LE 20
- VS/VE 18-2 with LE 20

Safety Switches, Safety Sensors and Safety Operating Devices

- Safety position switches
- Safety switches with separate actuator
- Safety locking devices
- Safety sensors
- Safety operating devices

SICK Industrial Safety Systems

Safety Bus Modules UE 1000 series

- UE 4120, UE 4150, UE 4155
- UE 4212, UE 4215, UE 4231, UE 4232
- UE 4400 series in preparation

Compact Safety Controller UE 100 series

- UE 440
- UE 470

Safety Relays UE 10 series

- UE 10 to UE 48

Software

- Safexpert



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