



M20E-04130A122

M2000 Standard

MULTIPLE LIGHT BEAM SAFETY DEVICES

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
M20E-04130A122	1018191

1.) Concerns installation as a replacement part for previous type 2 device in machine: Regarding Machinery Directive 2006/42/EC, Article 1, Paragraph (2a) this type 2 device may only be used as a replacement part for identical PL d / SIL2 devices within the EU if the machine was put into circulation before 2015-05-10. Keep this note with your machine documentation. If the machine is sold on, this note and the information it contains must be passed on to every subsequent buyer. 2.) Concerns installation on new machines: Due to the amendment to the EN/IEC 61496-1 standard, this type 2 device may only be installed on new machines up to PL c / SIL1 as of 2015-05-10.

Other models and accessories → www.sick.de/M2000_Standard



Detailed technical data

Features

Scanning range	0 m ... 25 m, configurable
Low scanning range	0 m ... 6 m
Great scanning range	2 m ... 25 m
Number of beams	4
Beam separation or resolution	300 mm
Response time	8 ms
Synchronization	Optical synchronisation

Safety-related parameters

Type	Type 2 (EN 61496)
Safety integrity level	SIL1 (IEC 61508) SILCL1 (EN 62061)
Category	Category 2 (EN ISO 13849)
Test rate (internal test)	13 /s (EN ISO 13849) ¹⁾
Maximum demand rate	≤ 8 /min (EN ISO 13849) ²⁾
Performance level	PL c (EN ISO 13849)
PFHd (mean probability of a dangerous failure per hour)	6.6 x 10 ⁻⁹ (EN ISO 13849)
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.

¹⁾ Internal test. The test rate may not be exceeded if an external test is performed.

²⁾ Between two demands on a safety-related response of the device, at least 100 internal or external tests must be carried out.

Functions

	Functions	Delivery status
External device monitoring (EDM)	✓	Non-coded
Beam coding	✓	
Configurable scanning range	✓	

Interfaces

System connection		
	Connection type	Male connector M12, 8-pin
	Permitted cable length	$\leq 15 \text{ m}$ ¹⁾
	Permitted cross-section	$\geq 0.25 \text{ mm}^2$
Configuration method		Hard wired
Display elements		LEDs 7-segment display
Fieldbus, industrial network		
	Integration via Flexi Soft safety controller	CANopen, DeviceNet, EtherCAT, EtherNet/IP, Modbus TCP, PROFIBUS DP, PROFINET ²⁾

¹⁾ Depending on load, power supply and wire cross-section. The technical specifications must be observed.

²⁾ For further information on Flexi Soft, please see sens:Control – safe control solutions product catalog or -> www.sick.com/FlexiSoft.

Electrical data

Protection class		III (EN 50178)
Supply voltage V_S		24 V DC (19.2 V DC ... 28.8 V DC) ¹⁾
Power consumption		$\leq 5 \text{ W (DC)}$
Safety outputs (OSSD)		
	Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored ²⁾
	Switching voltage HIGH	24 V DC ($V_S - 2.25 \text{ V DC}$... V_S)
	Switching voltage LOW	$\leq 1 \text{ V DC}$
	Switching current	$\leq 500 \text{ mA}$

¹⁾ The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

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

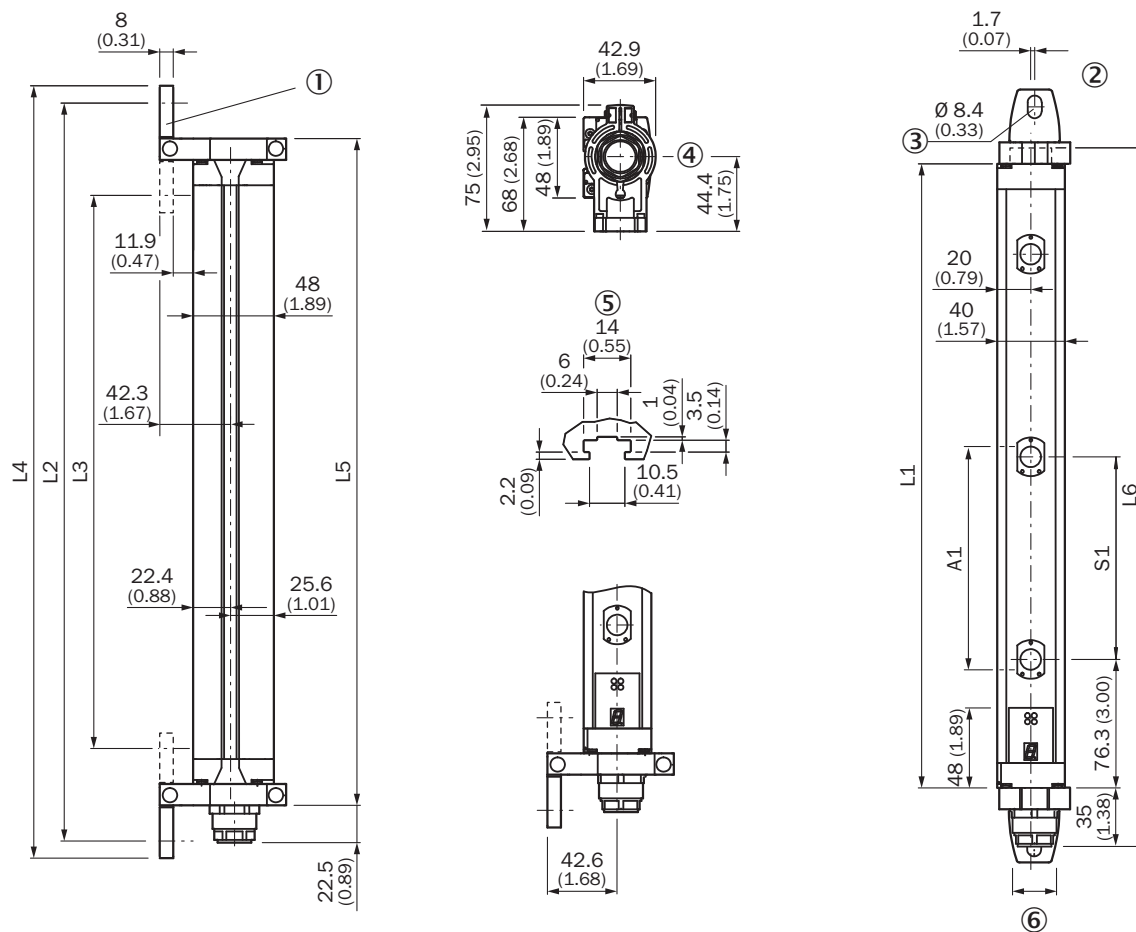
Mechanical data

Housing cross-section	48 mm x 40 mm
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Ambient data

Enclosure rating	IP 65 (EN 60529)
Ambient operating temperature	0 °C ... +55 °C
Storage temperature	-25 °C ... +70 °C
Air humidity	15 % ... 95 %, Non-condensing
Vibration resistance	5 g, 10 Hz ... 55 Hz (IEC 60068-2-6)
Shock resistance	10 g, 16 ms (IEC 60068-2-29)

Dimensional drawing (dimensions in mm (inch))



Recommended accessories

Other models and accessories → www.sick.de/M2000_Standard

	Brief description	Type	Part no.
Mounting brackets and mounting plates			
	4 pieces, Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers	BEF-3WNGBAST4	7021352
Terminal and alignment brackets			
	4 pieces, Mounting kit 6, side bracket, rotatable, Zinc diecast	BEF-1SHABAZN4	2019506
	4 pieces, Omega bracket, rotatable, fixable with only one screw, for mounting on the swivel mount	BEF-2SMMEAAL4	2044847

	Brief description	Type	Part no.
	4 pieces, Mounting kit 2, rotatable, swivel mount, Polyamide PA6	BEF-2SMMEAKU4	2019659
Alignment aids			
	Laser alignment aid for various sensors, laser class 2 (IEC 60825): Never look into the beam.	AR60	1015741
	Adapter AR60 for housing cross-section 48 mm x 40 mm	Adapter AR60, 48x40	4032461
	Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column	Adapter AR60, 48x40, PU3H	4056731

Australia

Phone +61 3 9457 0600
1800 33 48 02 – tollfree
E-Mail sales@sick.com.au

Belgium/Luxembourg

Phone +32 (0)2 466 55 66
E-Mail info@sick.be

Brasil

Phone +55 11 3215-4900
E-Mail marketing@sick.com.br

Canada

Phone +1 905 771 14 44
E-Mail information@sick.com

Česká republika

Phone +420 2 57 91 18 50
E-Mail sick@sick.cz

China

Phone +86 4000 121 000
E-Mail info.china@sick.net.cn
Phone +852-2153 6300
E-Mail ghk@sick.com.hk

Danmark

Phone +45 45 82 64 00
E-Mail sick@sick.dk

Deutschland

Phone +49 211 5301-301
E-Mail info@sick.de

España

Phone +34 93 480 31 00
E-Mail info@sick.es

France

Phone +33 1 64 62 35 00
E-Mail info@sick.fr

Great Britain

Phone +44 (0)1727 831121
E-Mail info@sick.co.uk

India

Phone +91-22-4033 8333
E-Mail info@sick-india.com

Israel

Phone +972-4-6801000
E-Mail info@sick-sensors.com

Italia

Phone +39 02 27 43 41
E-Mail info@sick.it

Japan

Phone +81 (0)3 5309 2112
E-Mail support@sick.jp

Magyarország

Phone +36 1 371 2680
E-Mail office@sick.hu

Nederland

Phone +31 (0)30 229 25 44
E-Mail info@sick.nl

Norge

Phone +47 67 81 50 00
E-Mail sick@sick.no

Österreich

Phone +43 (0)22 36 62 28 8-0
E-Mail office@sick.at

Polska

Phone +48 22 837 40 50
E-Mail info@sick.pl

România

Phone +40 356 171 120
E-Mail office@sick.ro

Russia

Phone +7-495-775-05-30
E-Mail info@sick.ru

Schweiz

Phone +41 41 619 29 39
E-Mail contact@sick.ch

Singapore

Phone +65 6744 3732
E-Mail sales.gsg@sick.com

Slovenija

Phone +386 (0)1-47 69 990
E-Mail office@sick.si

South Africa

Phone +27 11 472 3733
E-Mail info@sickautomation.co.za

South Korea

Phone +82 2 786 6321/4
E-Mail info@sickkorea.net

Suomi

Phone +358-9-25 15 800
E-Mail sick@sick.fi

Sverige

Phone +46 10 110 10 00
E-Mail info@sick.se

Taiwan

Phone +886-2-2375-6288
E-Mail sales@sick.com.tw

Türkiye

Phone +90 (216) 528 50 00
E-Mail info@sick.com.tr

United Arab Emirates

Phone +971 (0) 4 8865 878
E-Mail info@sick.ae

USA/México

Phone +1(952) 941-6780
1 800-325-7425 – tollfree
E-Mail info@sickusa.com

More representatives and agencies
at www.sick.com