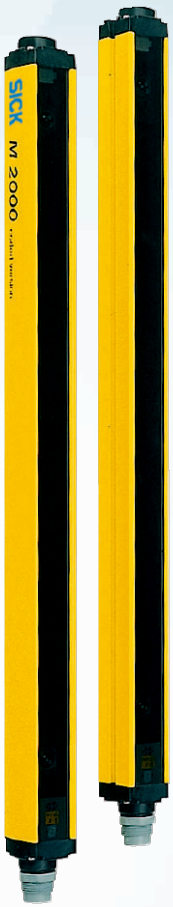
Data sheet



M20S-091A3A120

M2000 Standard

SAFETY MULTIBEAM SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
M20S-091A3A120	1016442

Other models and accessories → www.sick.com/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	9
Beam separation or resolution	170 mm
Response time	8 ms
Synchronization	Optical synchronization

Safety-related parameters

Type	Type 2 (IEC 61496-1)
Safety integrity level	SIL 1 (IEC 61508)
Category	Category 2 (EN ISO 13849)
Test rate (internal test)	13 /s (EN ISO 13849) [1]
Maximum demand rate	8 min^{-1} (EN ISO 13849) [2]
Performance level	PL c (EN ISO 13849)
PFH_D (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 requirements on a safety-related response of the device, at least 100 internal or external tests must be carried out.

Functions

	Functions	Delivery status
Beam coding	✓	Uncoded
Configurable scanning range	✓	

Interfaces

System connection	
Permitted cable length	60 m [1]
Permitted cross-section	≥ 1 mm²
Configuration method	Hard wired
Display elements	LEDs 7-segment display

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

Electronics

Protection class	III (IEC 61140)
Supply voltage V_S	24 V DC (19.2 V DC ... 28.8 V DC) [1]
Power consumption	≤ 3.7 W (DC)

[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.

Mechanics

Dimensions	See dimensional drawing
Housing cross-section	48 mm x 40 mm

Ambient data

Enclosure rating	IP65 (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 68-2-6)
Shock resistance	10 g/16 ms (IEC 68-2-29)

Other information

Wave length	950 nm

Classifications

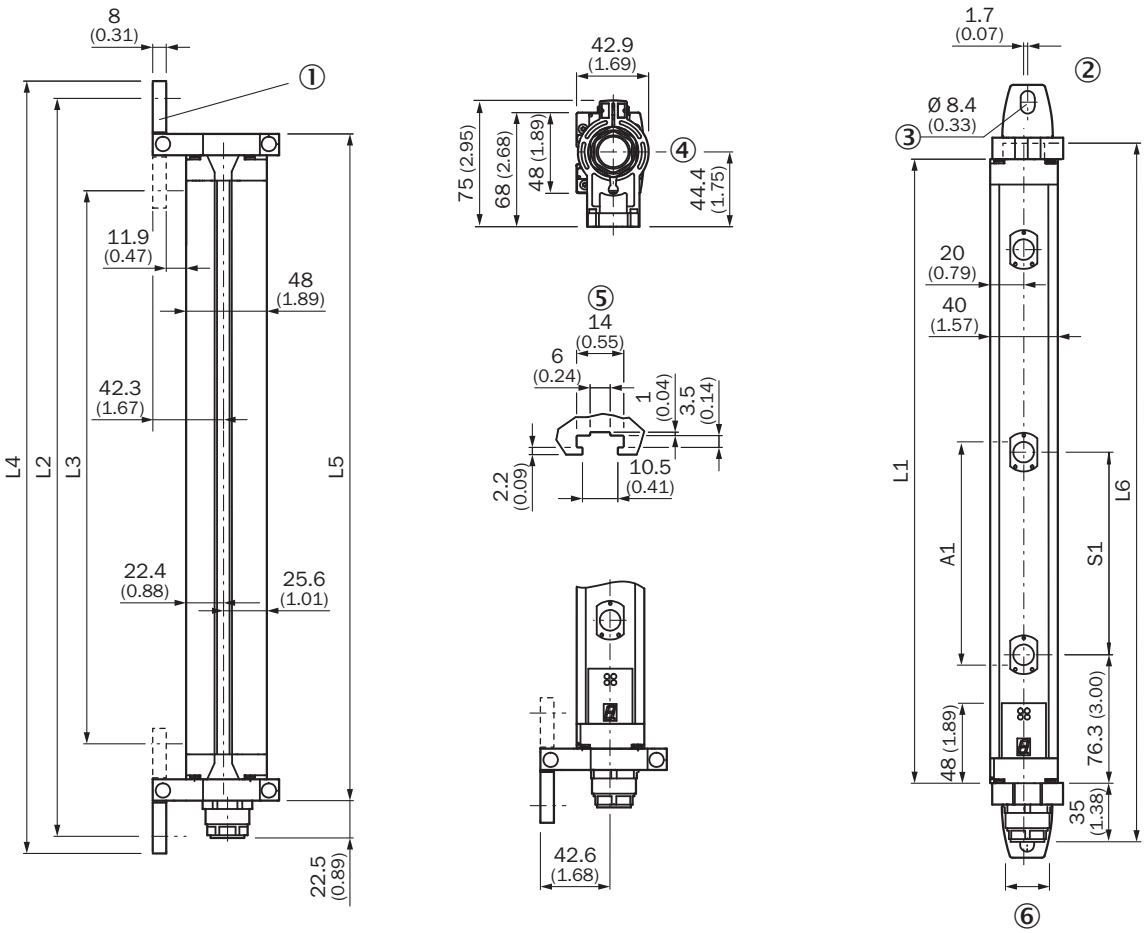
ECLASS 5.0	27272703
ECLASS 5.1.4	27272703
ECLASS 6.0	27272703
ECLASS 6.2	27272703
ECLASS 7.0	27272703
ECLASS 8.0	27272703
ECLASS 8.1	27272703
ECLASS 9.0	27272703
ECLASS 10.0	27272703
ECLASS 11.0	27272703
ECLASS 12.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832

ETIM 7.0	EC001832
ETIM 8.0	EC001832
UNSPSC 16.0901	46171620

Certificates

ACMA declaration of conformity	✓
China RoHS	✓
ULus approval	✓
cUL approval	✓

Dimensional drawing

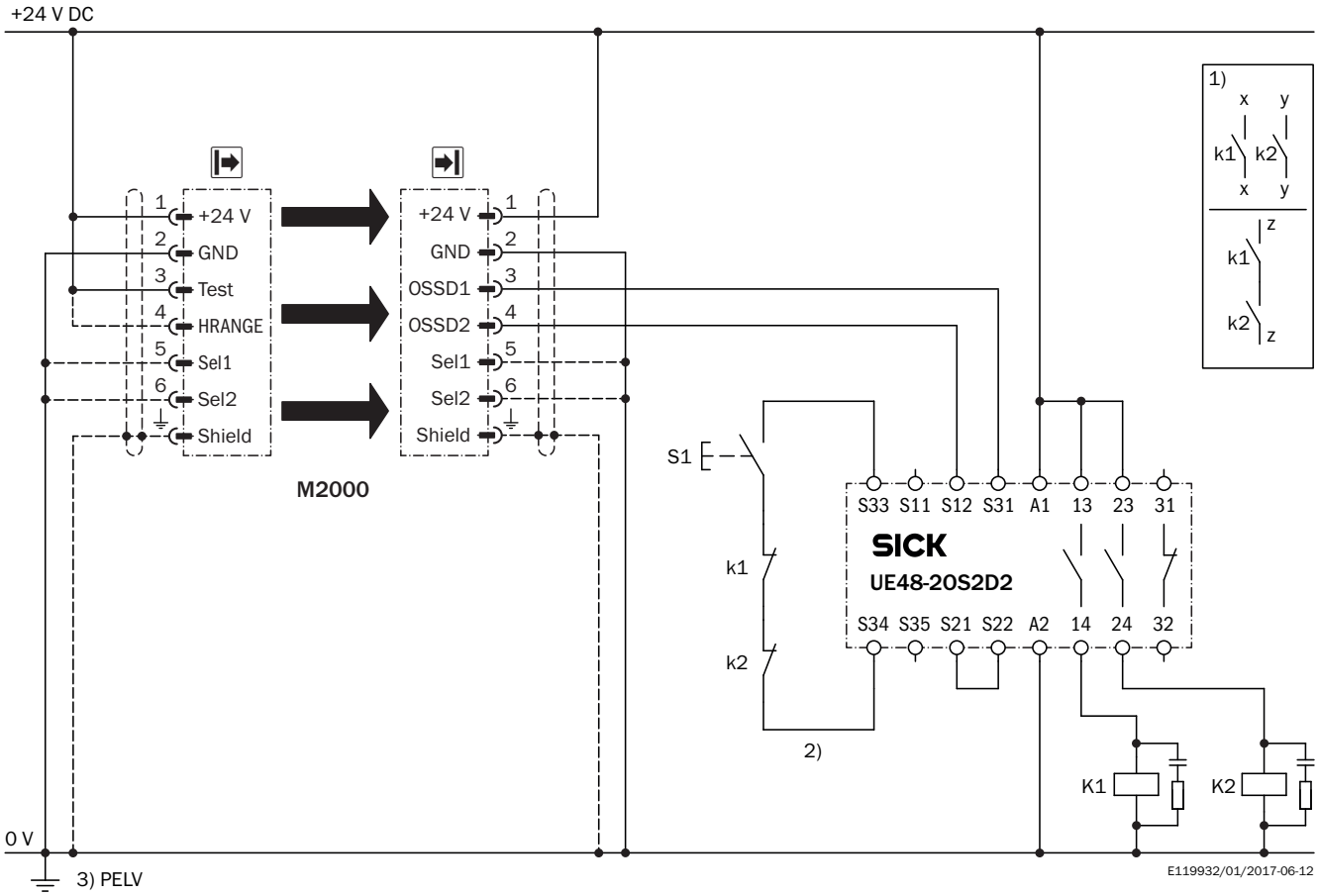


Dimensions in mm (inch)

			L1	L2	L3	L4	L5	L6
2	500	-	630	697	588	718	655	675
3	400	-	931	998	888	1,019	956	976
4	300	-	1,031	1,098	989	1,119	1,056	1,076
6	-	170	916	983	874	1,004	941	960
7	-	170	1,073	1,140	1,031	1,161	1,098	1,118
8	-	116	851	919	809	939	877	896

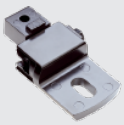
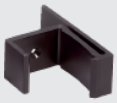
			L1	L2	L3	L4	L5	L6
8	-	170	1,231	1,298	1,189	1,319	1,256	1,275
9	-	170	1,388	1,455	1,346	1,476	1,413	1,433

Connection diagram M2000 Standard with 7-pin system connection for UE48-20S with restart interlock and external device monitoring



Recommended accessories

Other models and accessories ➜ www.sick.com/M2000_Standard

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Mounting kit 2, rotatable, swivel mount • **Material:** Plastic • **Details:** Polyamide PA6 • **Packing unit:** 4 pieces • **Suitable for:** All protective field heights	BEF-2SMMEAKU4	2019659
	• **Description:** Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers • **Packing unit:** 4 pieces • **Suitable for:** All protective field heights	BEF-3WNGBAST4	7021352
	• **Description:** Omega bracket, rotatable, fixable with only one screw, for mounting on the swivel mount • **Packing unit:** 4 pieces • **Suitable for:** All protective field heights in large housing	BEF-2SMMEAAL4	2044847
	• **Description:** Mounting kit 6, side bracket, rotatable • **Material:** Zinc diecast • **Details:** Zinc diecast • **Packing unit:** 4 pieces • **Suitable for:** All protective field heights	BEF-1SHABAZN4	2019506
Commissioning aids and test equipment			
	• **Product:** Alignment aids • **Dimensions (W x H x L):** 19 mm 67.3 mm 66.9 mm • **Description:** Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!	AR60	1015741
	• **Product:** Alignment aids • **Description:** Adapter AR60 for housing cross-section 48 mm x 40 mm	AR60 adapter, 48x40	4032461
	• **Product:** Alignment aids • **Description:** Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column	AR60 adapter, 48x40, PU3H	4056731

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com