



# M4000 Adv. basic set 4-beam A/P L-muting

M4000 Advanced A/P

SAFETY MULTIBEAM SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ

### Ordering information

Scanning range	Number of beams	Beam separation	System part	Type	Part no.
0.5 m ... 4.5 m	4	300 mm	Set	M4000 Adv. basic set 4-beam A/P L-muting	1076888

**Included in delivery:** BEF-2SMGEAKU4 (1), DOL-0612G05M075KM0 (1), M40Z-043023TB0 (1), Muting arm kit (1), Muting arm kit (1), PSD02-2301 (1), UE403-A0930 (1), YF2A15-010UB5M2A15 (1)

Other models and accessories → [www.sick.com/M4000\\_Advanced\\_A\\_P](http://www.sick.com/M4000_Advanced_A_P)



### Detailed technical data

#### Features

<b>Scanning range</b>	0.5 m ... 4.5 m
<b>Number of beams</b>	4
<b>Beam separation</b>	300 mm
<b>Response time</b>	10 ms
<b>Synchronization</b>	Optical synchronisation

#### Safety-related parameters

<b>Type</b>	Type 4 (IEC 61496-1)
<b>Safety integrity level</b>	SIL 3 (IEC 61508)
<b>Category</b>	Category 4 (EN ISO 13849)
<b>Performance level</b>	PL e (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$6.6 \times 10^{-9}$ (EN ISO 13849)
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)
<b>Safe state in the event of a fault</b>	At least one OSSD is in the OFF state.

#### Functions

	Functions	Delivery status
<b>Beam coding</b>	✓	Contamination (OWS)
<b>Restart interlock</b>	✓	
<b>External device monitoring (EDM)</b>	✓	
<b>Configurable application diagnostic output</b>	✓	
<b>Safe SICK device communication via EFI</b>	✓	
<b>Differentiation between man and material (muting)</b>	✓	
Type of human-material differentiation	Flexible, configurable 4-signal muting	

## Interfaces

<b>System connection</b>	Hirschmann male connector M26, 12-pin
Permitted cable length	50 m <sup>1)</sup>
Permitted cross-section	≥ 0.75 mm <sup>2</sup>
<b>Configuration connection</b>	Female connector M8, 4-pin
<b>Configuration method</b>	PC with CDS (Configuration and Diagnostic Software)
<b>Display elements</b>	LEDs 7-segment display
<b>Application diagnostic output (ADO)</b>	✓

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

## Electrical data

<b>Protection class</b>	III (IEC 61140)
<b>Supply voltage <math>V_S</math></b>	24 V DC (19.2 V DC ... 28.8 V DC) <sup>1)</sup>
<b>Residual ripple</b>	≤ 10 % <sup>2)</sup>
<b>Power consumption</b>	≤ 0.6 A <sup>3)</sup>
<b>Output signal switching devices (OSSDs)</b>	2 PNP semiconductors, short-circuit protected, cross-circuit monitored <sup>4)</sup>
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	≤ 500 mA

<sup>1)</sup> 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.

<sup>2)</sup> Within the limits of  $V_S$ .

<sup>3)</sup> Without load.

<sup>4)</sup> Applies to the voltage range between -30 V and +30 V.

## Mechanical data

<b>Dimensions</b>	See dimensional drawing
<b>Housing cross-section</b>	52 mm x 55.5 mm
<b>Material</b>	
Housing	Aluminum alloy ALMGS1 0.5, powder coated
Front screen	Polycarbonate, scratch-resistant coating

## Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529)
<b>Ambient operating temperature</b>	-30 °C ... +55 °C
<b>Storage temperature</b>	-30 °C ... +70 °C
<b>Air humidity</b>	15 % ... 95 %, Non-condensing
<b>Shock resistance</b>	10 g, 16 ms (IEC 60068-2-29)

## Other information

<b>Wave length</b>	850 nm
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## Classifications

<b>ECLASS 5.0</b>	27272703
<b>ECLASS 5.1.4</b>	27272703

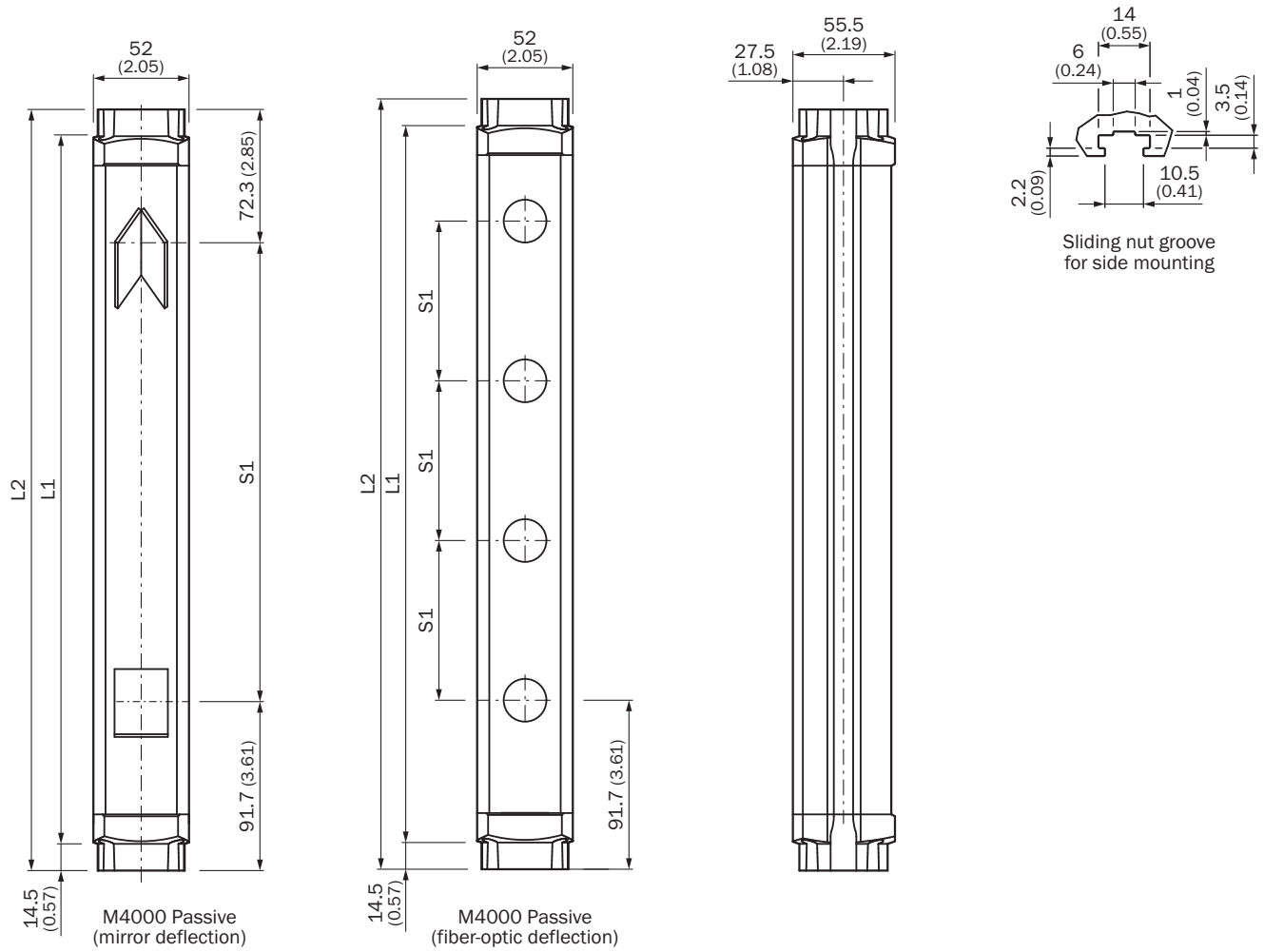
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SAFETY MULTIBEAM SENSORS

<b>ECLASS 6.0</b>	27272703
<b>ECLASS 6.2</b>	27272703
<b>ECLASS 7.0</b>	27272703
<b>ECLASS 8.0</b>	27272703
<b>ECLASS 8.1</b>	27272703
<b>ECLASS 9.0</b>	27272703
<b>ECLASS 10.0</b>	27272703
<b>ECLASS 11.0</b>	27272703
<b>ECLASS 12.0</b>	27272703
<b>ETIM 5.0</b>	EC001832
<b>ETIM 6.0</b>	EC001832
<b>ETIM 7.0</b>	EC001832
<b>ETIM 8.0</b>	EC001832
<b>UNSPSC 16.0901</b>	46171620

Dimensional drawing (Dimensions in mm (inch))

Passive unit



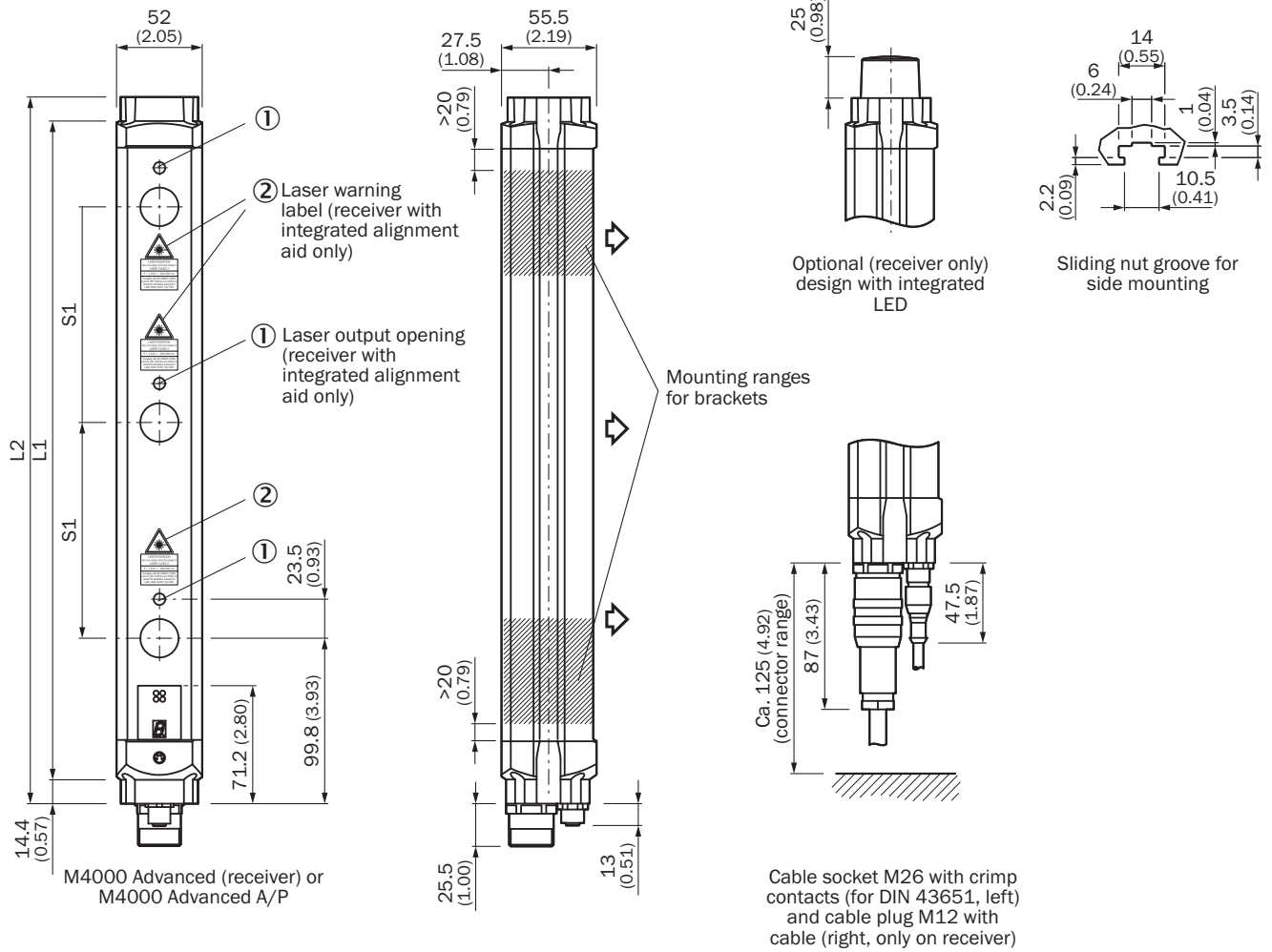
Deflector unit

		<b>L1</b>	<b>L2</b>
2	500	643	672
4	300	1,043	1,072

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## SAFETY MULTIBEAM SENSORS

Active unit











Sender/receiver in one housing

		L1	L2
2	500	643	672
4	300	1,043	1,072

## Recommended accessories

Other models and accessories → [www.sick.com/M4000\\_Advanced\\_A\\_P](http://www.sick.com/M4000_Advanced_A_P)

	Brief description	Type	Part no.
	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!, 19 mm x 67.3 mm x 66.9 mm	AR60	1015741
	Adapter AR60 for M4000 and M4000 Curtain	AR60 adapter, M4000	4040006

	Brief description	Type	Part no.
Muting accessories			
	Parallel muting (2 sensors), muting sensor brackets for mounting on M4000 housing profile or device columns with external mounting grooves	Muting arm kit M4000, 2 sensors, parallel muting	2060157
Mounting brackets and 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, including spacer discs	BEF-2SMGEAAL4	2044846
	4 pieces, Mounting kit 12, rotatable, swivel mount	BEF-2SMGEAKU4	2030510
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M26, 12-pin, straight, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Crimp contacts</li> <li>• <b>Permitted cross-section:</b> 0.5 mm<sup>2</sup> ... 1.5 mm<sup>2</sup></li> <li>• <b>Note:</b> 12 crimping contacts enclosed</li> </ul>	DOS-0612G000GA3KM0	6020757
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M26, 12-pin, angled, A-coded</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Crimp contacts</li> <li>• <b>Permitted cross-section:</b> 0.5 mm<sup>2</sup> ... 1.5 mm<sup>2</sup></li> <li>• <b>Note:</b> 12 crimping contacts enclosed</li> </ul>	DOS-0612W000GA3KM0	6020758
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M26, 12-pin, straight</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 12-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Connection systems:</b> Flying leads</li> </ul>	DOL-0612G05M075KM0	2022545
Switching amplifiers			
	<ul style="list-style-type: none"> <li>• <b>Applications:</b> Muting switching amplifier</li> <li>• <b>Compatible sensor types:</b> M4000 Advanced multiple light beam safety devices</li> </ul>	UE403-A0930	1026287

## 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](http://www.sick.com)