



# M4P-EO2500D00

deTem

**SAFETY MULTIBEAM SENSORS**

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
M4P-EA02500D00	1128438

Other models and accessories → [www.sick.com/deTem](http://www.sick.com/deTem)



### Detailed technical data

#### Features

<b>Product version</b>	deTem4
<b>Application</b>	Normal industrial environment
<b>Functional principle</b>	Sender/receiver
<b>System part</b>	Receiver
<b>Scanning range</b>	90 m
<b>Number of beams</b>	2
<b>Beam separation</b>	500 mm
<b>Response time</b>	20 ms
<b>Synchronization</b>	Optical synchronization
<b>End cap with integrated LED</b>	✓
<b>Items supplied</b>	Receiver Safety instruction Mounting instructions Operating instructions for download

#### Safety-related parameters

<b>Type</b>	Type 4 (IEC 61496)
<b>Safety integrity level</b>	SIL 3 (IEC 61508, IEC 62061)
<b>Category</b>	Category 4 (ISO 13849)
<b>Performance level</b>	PL e (ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$6.6 \times 10^{-9}$
<b>T<sub>M</sub> (mission time)</b>	20 years (ISO 13849)
<b>Safe state in the event of a fault</b>	At least one OSSD is in the OFF state.

## Functions

<b>Note</b>	The deTem4 safety light-beam sensor can be used with different function packages. The function packages are determined by the equipment used.
<b>Function package SP1</b>	Protective operation Beam coding Restart interlock External device monitoring (EDM) Application diagnostic output (ADO) IO-Link Equipment: Sender and receiver with SP1 system plug
<b>Function package SP2</b>	Function package SP1 included Manual adjustment of the protective field width Muting (2-signal muting) Partial muting Equipment: Sender with SP1 system plug and receiver with SP2 system plug
<b>Function package DMM4</b>	Function package SP2 included Transmitting power adjustment Muting (4-signal muting) Operating mode selection Inputs for safety sensors (SDI) Equipment: Sender and receiver with SP1 system plug and DMM4 extension module

## Interfaces

<b>System connection</b>	Depending on system plug (M12 male connector, 5-pin or 8-pin)
<b>Extension connection</b>	Depending on system plug (without extension connection or with M12 female connector, 5-pin)
<b>Configuration method</b>	DIP switch on system plug PC software via DMM4 (Safety Designer)
<b>Display elements</b>	Status LEDs
<b>Alignment aid</b>	Alignment quality via diagnostic LEDs
<b>End cap with integrated LED</b>	✓
<b>Application diagnostic output (ADO)</b>	✓
<b>IO-Link</b>	✓
<b>Near Field Communication (NFC)</b>	✓

## Electronics

<b>Protection class</b>	III (IEC 61140) <sup>1)</sup>
<b>Supply voltage <math>V_s</math></b>	24 V DC (19.2 V DC ... 28.8 V DC) <sup>2)</sup>
<b>Residual ripple</b>	$\leq 10\%$ <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	$\leq 2$ V DC
Current-carrying capacity per OSSD	$\leq 500$ mA
<b>Application diagnostic output (ADO)</b>	PNP semiconductor, short-circuit protected <sup>4)</sup>
Output voltage HIGH (active)	$\geq V_s - 3$ V
Output voltage LOW (deactivated)	High resistance
Current loading	$\leq 100$ mA

<sup>1)</sup> The system must be supplied with SELV/PELV in accordance with IEC 60204-1.

<sup>2)</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>3)</sup> Within the limits of  $V_s$ .

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

### Mechanics

<b>Dimensions</b>	See dimensional drawing
<b>Housing cross-section</b>	30.7 mm x 34 mm
<b>Material</b>	
Housing	Aluminum extruded profile
Front screen	Polycarbonate, scratch-resistant coating

### Ambient data

<b>Enclosure rating</b>	IP65 (IEC 60529) IP67 (IEC 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>Vibration resistance</b>	5 ... 150 Hz, 3,5 mm / 1 g (EN 60068-2-6)
<b>Shock resistance</b>	15 g / 6 ms (EN 60068-2-27)
<b>Class</b>	3M4 (IEC TR 60721-4-3)
<b>EMC</b>	According to IEC 61496-1, IEC 61000-6-2, IEC 61000-6-4

### Classifications

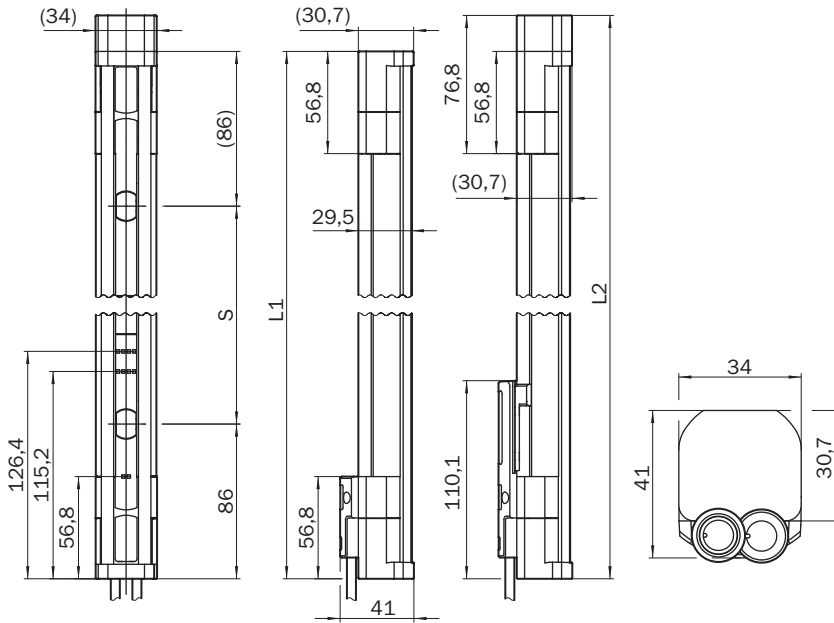
<b>ECLASS 5.0</b>	27272703
<b>ECLASS 5.1.4</b>	27272703
<b>ECLASS 6.0</b>	27272703
<b>ECLASS 6.2</b>	27272703
<b>ECLASS 7.0</b>	27272703
<b>ECLASS 8.0</b>	27272703
<b>ECLASS 8.1</b>	27272703
<b>ECLASS 9.0</b>	27272703
<b>ECLASS 10.0</b>	27272703
<b>ECLASS 11.0</b>	27272703
<b>ECLASS 12.0</b>	27272703
<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

### Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>ULus approval</b>	✓
<b>cUL approval</b>	✓

EC-Type-Examination approval	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

Dimensional drawing



Dimensions in mm (inch)

Number of beams	Beam separation S	L1 (height without top LED)	L2 (height with top LED)
1	-	313	-
2	500	672	692
3	400	972	992
4	300	1072	1092

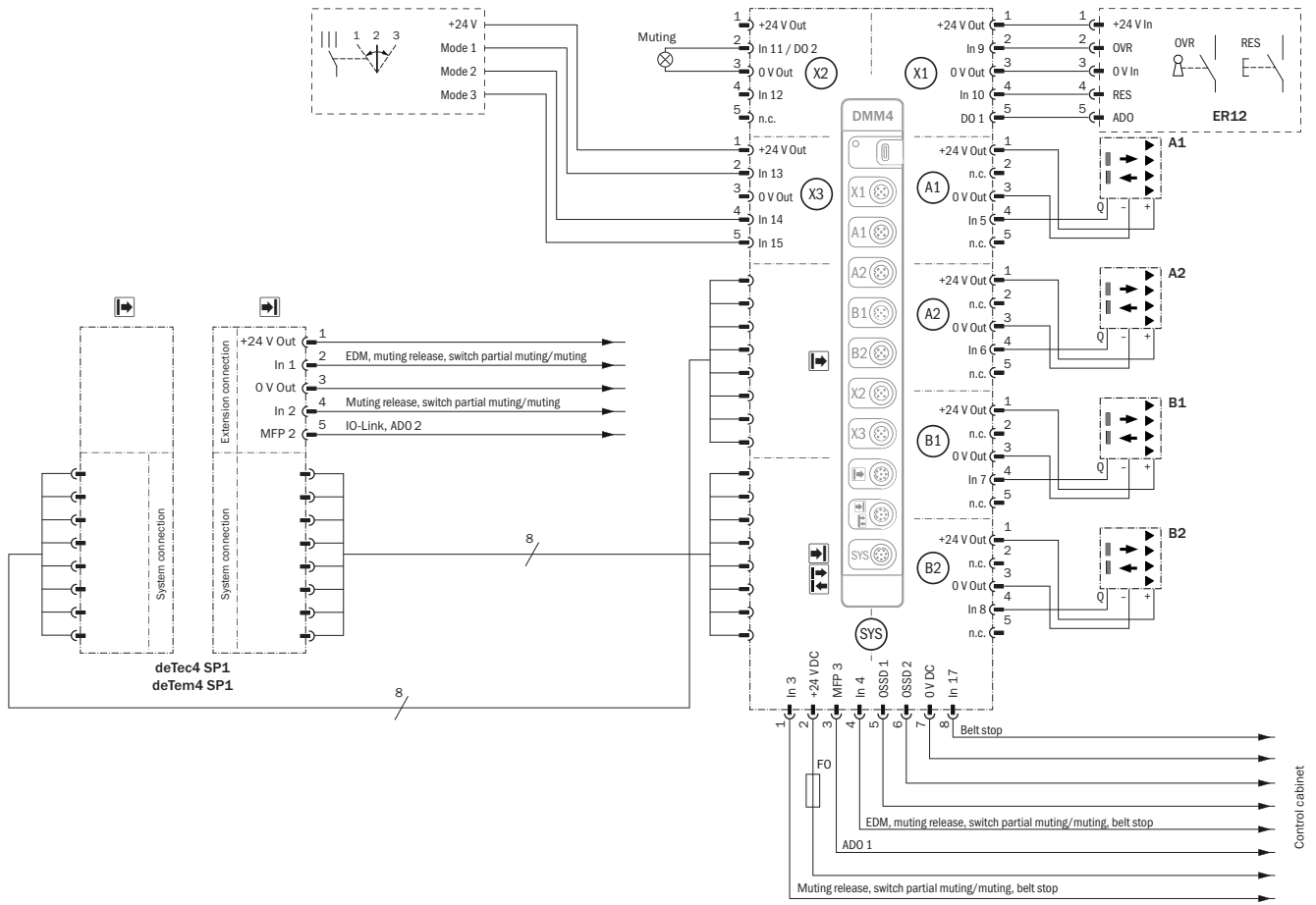
Connection diagram deTec4 / deTem4 on DMM4, connection example, muting, reset, override, SDI



E416641/00/2024-12-20

The requirements in the operating instructions of the devices used must be adhered to.

Connection diagram deTec4 / deTem4 on DMM4, muting, reset, override, operating mode selection



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### Recommended accessories

Other models and accessories → [www.sick.com/deTem](http://www.sick.com/deTem)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> QuickFix bracket for 2 devices (e.g. sender and receiver)</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>	BEF-3SHABPKU4	2098710
	<ul style="list-style-type: none"> <li><b>Description:</b> FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned <math>\pm 15^\circ</math>, including M5 screw</li> <li><b>Material:</b> Plastic</li> <li><b>Details:</b> Plastic</li> <li><b>Packing unit:</b> 4 pieces</li> </ul>	BEF-1SHABPKU4	2066614
	<ul style="list-style-type: none"> <li><b>Description:</b> Muting arm bracket for deTec safety light curtain or deTem safety multibeam sensor</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> deTec, deTem</li> </ul>	Muting arm bracket	2106455
	<ul style="list-style-type: none"> <li><b>Description:</b> Muting arm, short</li> <li><b>Suitable for:</b> deTec, deTem</li> </ul>	Muting arm, short	2111924
	<ul style="list-style-type: none"> <li><b>Description:</b> Muting arm, long</li> <li><b>Suitable for:</b> deTec, deTem</li> </ul>	Muting arm, long	2111923

## 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)