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DATA SHEET

M4P-ZA02500C00

deTem
Safety multibeam sensors

SICK

Sensor Intelligence



SAFETY MULTIBEAM SENSORS

M4P-ZA02500C00

ORDERING INFORMATION

Type	part no.
M4P-ZA02500C00	1102633

Further device versions and accessories at www.sick.com/deTem



DETAILED TECHNICAL DATA

FEATURES

Product version	deTem4 A/P
Application	Normal industrial environment
Functional principle	Active/passive
System part	Active unit
Scanning range	3.2 m
Dimension of the light path	Typical 0.5 m ... 3.2 m
Number of beams	2
Beam separation	500 mm
Response time	20 ms
Items supplied	Active unit Safety instruction Mounting instructions Operating instructions for download

SAFETY-RELATED PARAMETERS

Type	Type 4 (IEC 61496-1)
Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (ISO 13849-1)
Performance level	PL e (ISO 13849-1)
PFH _d (mean probability of a dangerous failure per hour)	6.6 x 10 ⁻⁹
T _m (mission time)	20 years (ISO 13849-1)

Safe state in the event of a fault	At least one OSSD is in the OFF state.
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FUNCTIONS

Note	The deTem4 A/P safety light-beam sensor can be used with different function packages. The function packages are determined by the equipment used.
Function package SP1	Protective operation Beam coding Restart interlock External device monitoring (EDM) Application diagnostic output (ADO) IO-Link Equipment: Active unit with SP1 system plug
Function package SP2	Function package SP1 included Muting (2-signal muting) Equipment: Active unit with SP2 system plug
Function package DMM4	Function package SP2 included Muting (4-signal muting) Operating mode selection Inputs for safety sensors (SDI) Equipment: Active unit with SP1 system connector and DMM4 extension module
Beam coding	✓
Restart interlock	✓
Differentiation between man and material (muting)	✓
Concurrence monitoring	✓
Monitoring of total muting time	✓
Sensor gap monitoring	✓
Muting with override	✓
Exit monitoring	✓
Entry and exit monitoring	✓
End of muting by ESPE	✓

INTERFACES

System connection	Depending on system plug (M12 male connector, 5-pin or 8-pin)
Extension connection	Depending on system plug (without extension connection or with M12 female connector, 5-pin)
Configuration method	DIP switch on system plug
Display elements	LEDs
Alignment aid	Alignment quality via diagnostic LEDs
Application diagnostic output (ADO)	✓
IO-Link	✓
Near Field Communication (NFC)	✓

ELECTRONICS

Protection class	III (IEC 61140) ¹⁾
Supply voltage V_s	24 V DC (19.2 V DC ... 28.8 V DC) ²⁾
Residual ripple	$\leq 10\%$ ³⁾

¹⁾ SELV/PELV safety/protective extra-low voltage.

²⁾ 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.

³⁾ Within the limits of V_s .

⁴⁾ Applies to the voltage range between -30 V and +30 V.

Power consumption typical	4 W (DC)
Output signal switching devices (OSSDs)	2 PNP semiconductors, short-circuit protected, cross-circuit monitored ⁴⁾
ON state, switching voltage HIGH	24 V DC ($V_s - 2.25 \text{ V DC} \dots V_s$)
OFF state, switching voltage LOW	$\leq 2 \text{ V DC}$
Current-carrying capacity per OSSD	$\leq 500 \text{ mA}$
Application diagnostic output (ADO)	PNP semiconductor, short-circuit protected ⁴⁾
Output voltage HIGH (active)	$\geq V_s - 3 \text{ V}$
Output voltage LOW (deactivated)	High resistance
Current loading	$\leq 100 \text{ mA}$

¹⁾ SELV/PELV safety/protective extra-low voltage.

²⁾ 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.

³⁾ Within the limits of V_s .

⁴⁾ Applies to the voltage range between -30 V and +30 V.

MECHANICS

Dimensions	See dimensional drawing
Housing cross-section	30.7 mm x 34 mm
Material	
Housing	Aluminum extruded profile
Front screen	Polycarbonate, scratch-resistant coating
Weight	550 g ($\pm 50 \text{ g}$)

AMBIENT DATA

Enclosure rating	IP65 (IEC 60529) IP67 (IEC 60529)
Ambient operating temperature	-30 °C ... +55 °C
Storage temperature	-30 °C ... +70 °C
Air humidity	15 % ... 95 %, Non-condensing
Vibration resistance	5 ... 150 Hz, 3,5 mm / 1 g (EN 60068-2-6)
Shock resistance	15 g / 6 ms (EN 60068-2-27)
Class	3M4 (IEC TR 60721-4-3)

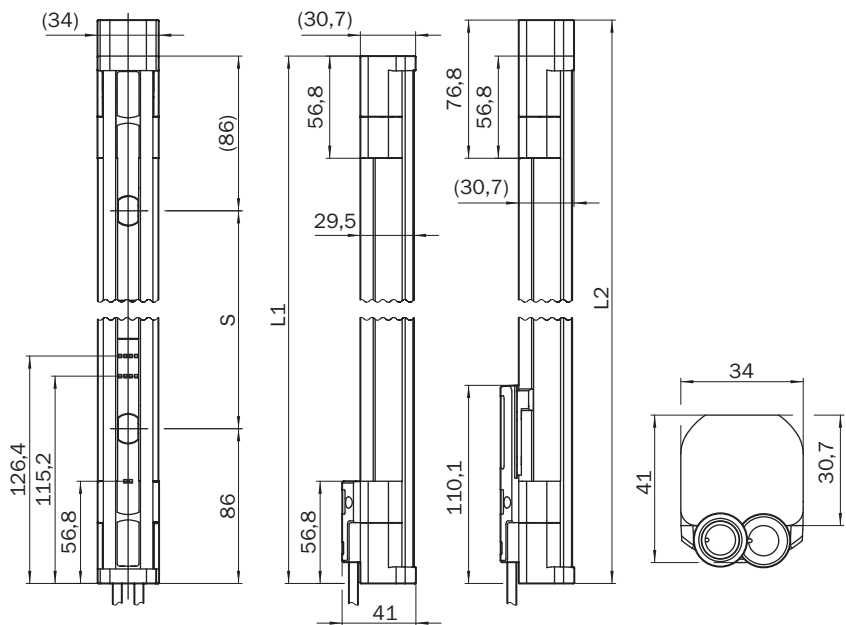
OTHER INFORMATION

Type of light	Near-infrared (NIR), invisible
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CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ULus approval	✓
cUL approval	✓
EC-Type-Examination approval	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

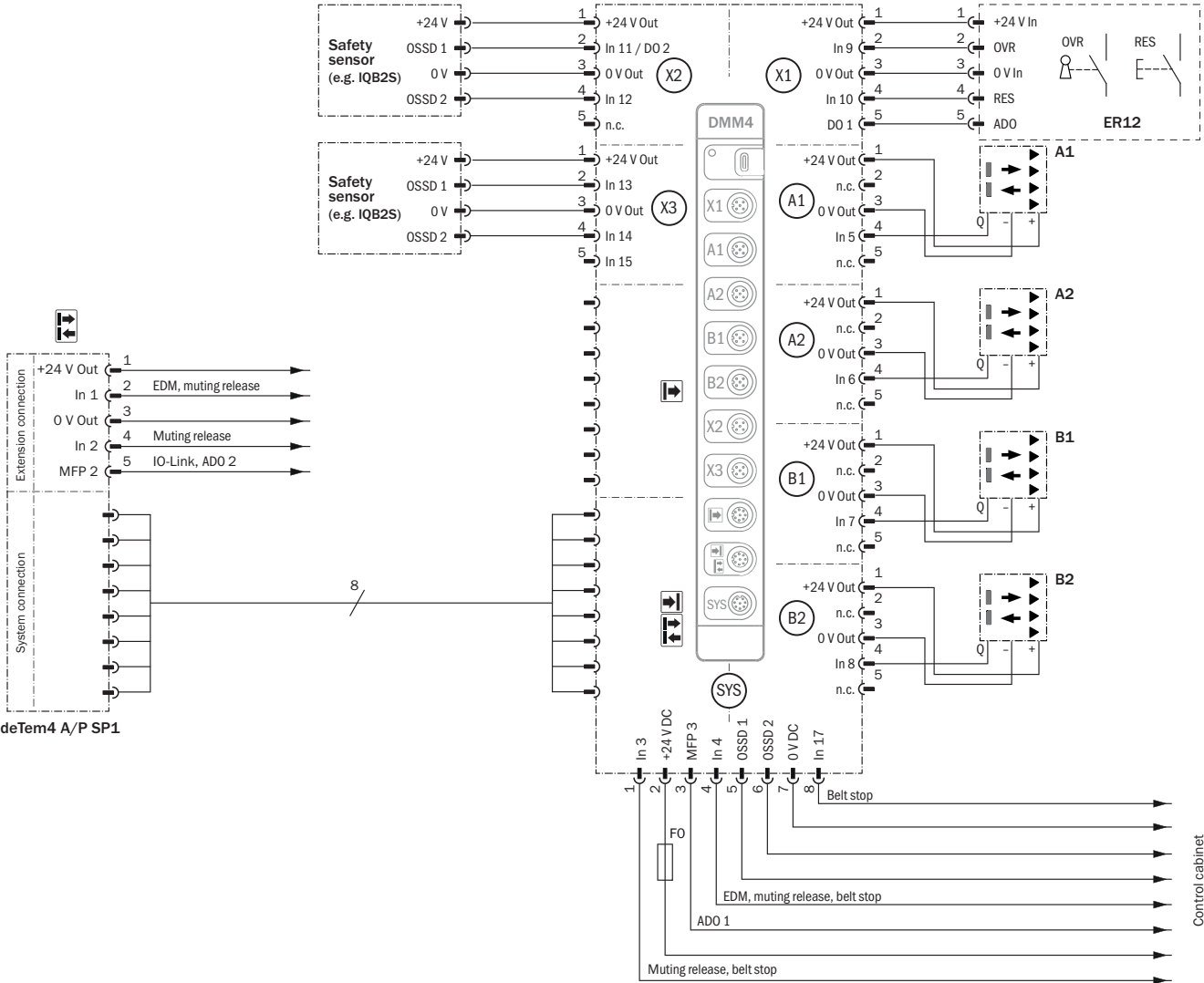
DIMENSIONAL DRAWING ACTIVE UNIT



Dimensions in mm (inch)

Number of beams	Beam separation S	L1	L2
2	500	672	692
4	300	1072	1092

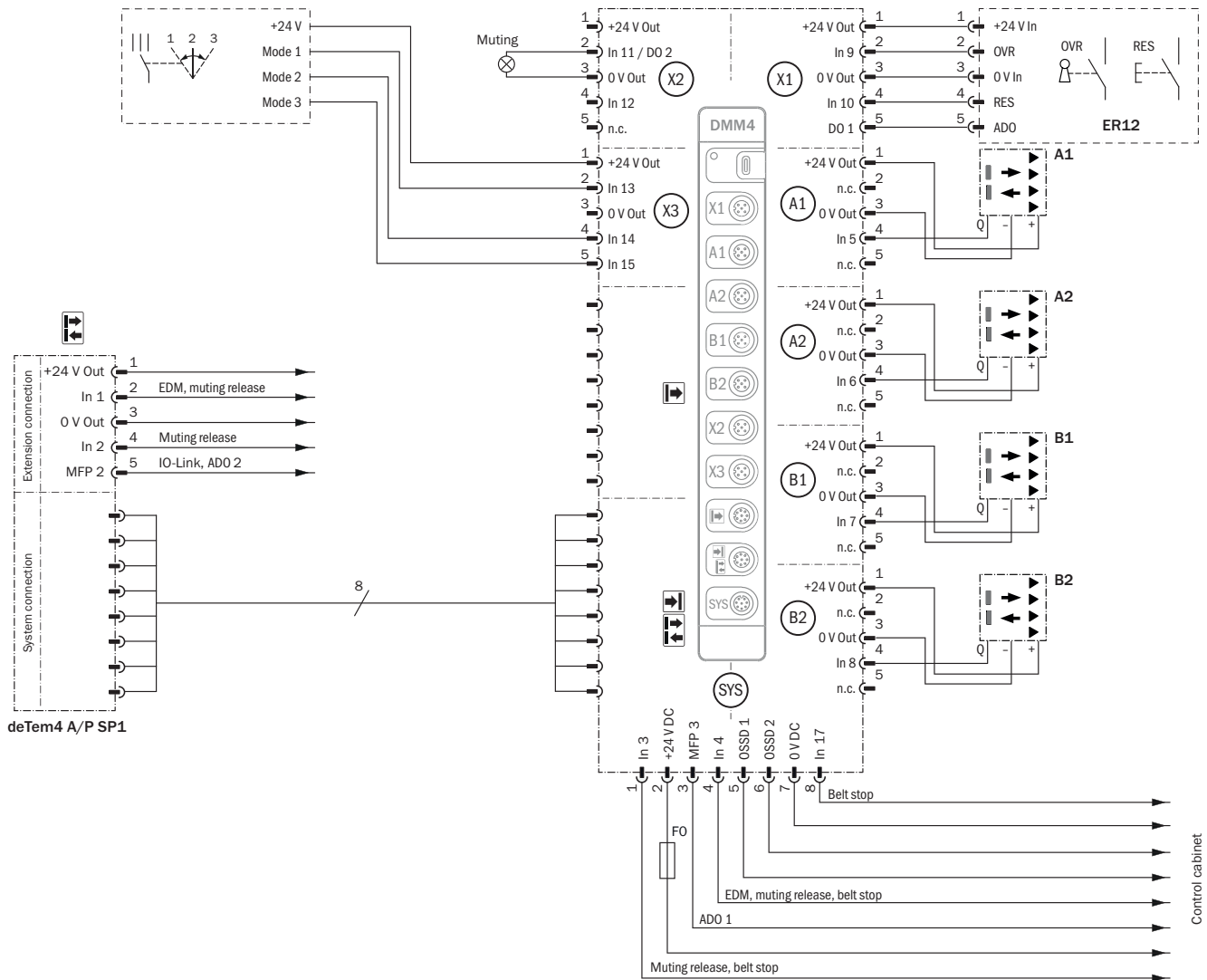
CONNECTION DIAGRAM DETEM4 A/P ON DMM4, CONNECTION DIAGRAM, MUTING, RESET, OVERRIDE, SDI



E416699/00/2024-12-20

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

CONNECTION DIAGRAM DETEM4 A/P ON DMM4, CONNECTION EXAMPLE, MUTING, RESET, OVERRIDE, OPERATING MODE SELECTION



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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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