



M4P-ZA02500D00

deTem

SAFETY MULTIBEAM SENSORS

SICK
Sensor Intelligence.



Ordering information

deTem4 A/P

Scanning range	Number of beams	Beam separation	End cap with integrated LED	System part	Type	Part no.
8 m	2	500 mm	✓	Active unit	M4P-ZA02500D00	1102635

The system plug has to be ordered separately. For details, see "Accessories".

Other models and accessories → www.sick.com/deTem



Detailed technical data

Features

Application	Normal industrial environment
Functional principle	Active/passive
System part	Active unit
Scanning range	8 m
Dimension of the light path	Typical 0.5 m ... 8 m
Number of beams	2
Beam separation	500 mm
Response time	20 ms
End cap with integrated LED	✓
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)	6.6×10^{-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.

Functions

Protective operation	✓
Beam coding	✓
Restart interlock	✓

External device monitoring (EDM)	✓
Differentiation between man and material (muting)	✓
Type of human-material differentiation	Flexible 2-signal 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
End cap with integrated LED	✓
Application diagnostic output (ADO)	✓
IO-Link	✓
Near Field Communication (NFC)	✓

Electrical data

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⁾
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 ($V_S - 2.25$ V DC ... V_S)
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 500 mA
Application diagnostic output (ADO)	PNP semiconductor, short-circuit protected ⁴⁾
Output voltage HIGH (active)	$\geq V_S - 3$ V
Output voltage LOW (deactivated)	High resistance
Current loading	≤ 100 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.

Mechanical data

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		+ 565 g (± 50 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 g, 10 Hz ... 55 Hz (IEC 60068-2-6)
Shock resistance	10 g, 16 ms (IEC 60068-2-27)

Other information

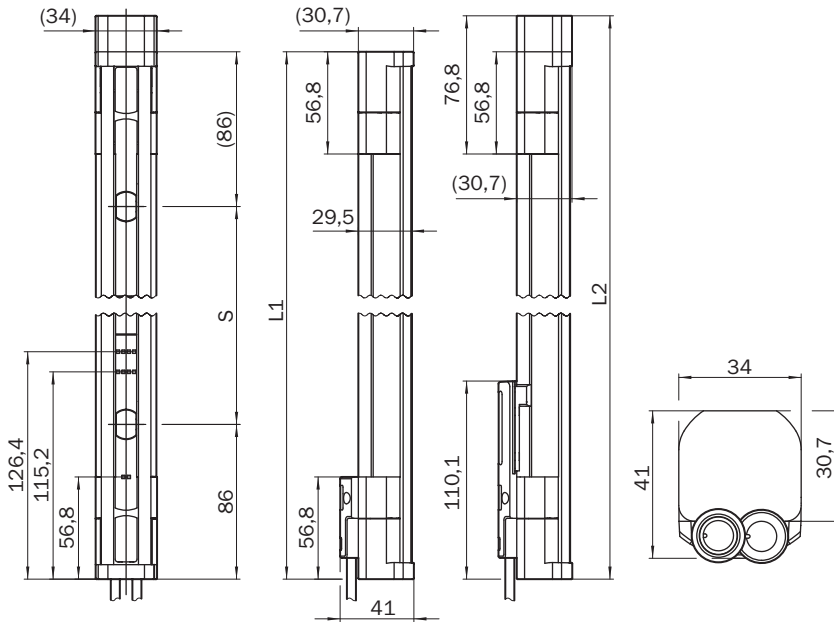
Type of light	Near-infrared (NIR), invisible
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Classifications

eCl@ss 5.0	27272703
eCl@ss 5.1.4	27272703
eCl@ss 6.0	27272703
eCl@ss 6.2	27272703
eCl@ss 7.0	27272703
eCl@ss 8.0	27272703
eCl@ss 8.1	27272703
eCl@ss 9.0	27272703
eCl@ss 10.0	27272703
eCl@ss 11.0	27272703
eCl@ss 12.0	27272703
ETIM 5.0	EC001832
ETIM 6.0	EC001832
ETIM 7.0	EC001832
ETIM 8.0	EC001832
UNSPSC 16.0901	46171620

Dimensional drawing (Dimensions in mm (inch))





Active unit



Number of beams	Beam separation S	L1	L2
2	500	672	692
4	300	1.072	1.092



Recommended accessories

Other models and accessories → www.sick.com/deTem

	Brief description	Type	Part no.
Connection modules			
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
	Connector for connecting an IO-Link master and up to 2 muting sensors to a safety light curtain or a multiple light beam safety device	IO-Link connector	2092757
	Connector for connecting 2 muting sensors and a muting lamp to a safety light curtain or a multiple light beam safety device	Muting connector	2092758
Muting accessories			
	Sensor bracket G6 and P250	BEF-2KHAAKU1	2113145

	Brief description	Type	Part no.
	Universal holder for round steel arms and muting arms, for mounting sensors or reflectors	BEF-KHS-N01	2044953
	Muting arm bracket	Muting arm bracket	2106455
	Muting arm, long	Muting arm, long	2111923
	Muting arm, short	Muting arm, short	2111924
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A15-020UB5XLEAX	2095617
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A15-050UB5XLEAX	2095618
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 10 m	YF2A15-100UB5XLEAX	2095619
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A18-020UA5XLEAX	2095652
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A18-050UA5XLEAX	2095653
	Head A: female connector, M12, 8-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 10 m	YF2A18-100UA5XLEAX	2095654
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 2 m	YF2A15-020UB5M2A15	2096009
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 5 m	YF2A15-050UB5M2A15	2096010
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: male connector, M12, 5-pin, straight, A-coded Cable: Sensor/actuator cable, PUR, halogen-free, unshielded, 10 m	YF2A15-100UB5M2A15	2096011
Reflectors			
	Rectangular, screw connection, 51 mm x 61 mm, PMMA/ABS, Screw-on, 2 hole mounting	P250	5304812
Terminal and alignment brackets			
	4 pieces, FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned $\pm 15^\circ$, including M5 screw, plastic	BEF-1SHABPKU4	2066614
	4 pieces, QuickFix bracket for 2 devices (e.g. sender and receiver), plastic	BEF-3SHABPKU4	2098710

	Brief description	Type	Part no.
Photoelectric sensors			
	GL10-P4151	GL10-P4151	1069860
	GL6-P0211S49	GL6-P0211S49	1070568
	GTB10-P4411S01	GTB10-P4411S01	1066852
	GTB6-P7441S56	GTB6-P7441S56	1077541
Safety switching amplifier			
	<ul style="list-style-type: none"> • Applications: Output expansion module for OSSDs • Compatible sensor types: Safety sensors with OSSDs • Connection type: Front connector with spring terminals • Restart interlock: no • External device monitoring (EDM): Via path • Outputs: 2 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe) • Housing width: 18 mm 	RLY3-OSSD100	1085343
	<ul style="list-style-type: none"> • Applications: Output expansion module for OSSDs • Compatible sensor types: Safety sensors with OSSDs • Connection type: Front connector with spring terminals • Restart interlock: no • External device monitoring (EDM): Via path • Outputs: 4 enabling current paths (safe), 1 feedback current path (for use as external device monitoring, not safe), 1 signaling current path (not safe) • Housing width: 28 mm 	RLY3-OSSD400	1099971
SP1 system plug			
	<ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 5-pin • Extension connection: - 	1000	2076832
	<ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 5-pin • Extension connection: Female connector M12, 5-pin 	1100	2076833
	<ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 8-pin • Extension connection: - 	1200	2076834
	<ul style="list-style-type: none"> • System plug: SP1 • Connection type: Male connector M12, 8-pin • Extension connection: Female connector M12, 5-pin 	1300	2076835
SP2 system plug			
	<ul style="list-style-type: none"> • System plug: SP2 • Connection type: Male connector M12, 5-pin • Extension connection: Female connector M12, 5-pin 	2100	2093098
	<ul style="list-style-type: none"> • System plug: SP2 • Connection type: Male connector M12, 8-pin • Extension connection: Female connector M12, 5-pin 	2300	2093100
Sensor Integration Gateway			
	<ul style="list-style-type: none"> • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, PROFINET, REST API • Product category: IO-Link Master 	SIG200-0A0412200	1089794

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Description: The SIG200 Sensor Integration Gateway is an IO-Link master with 4 configurable ports through which the IO-Link devices or standard inputs or standard outputs can be connected to a PLC or cloud application using the REST API. • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, EtherNet/IP™, REST API • Product category: IO-Link Master 	SIG200-0A0512200	1089796
	<ul style="list-style-type: none"> • Further functions: Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • Connection CONFIG: 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • Logic editor: yes • Communication interface: IO-Link, USB, Ethernet, REST API • Product category: IO-Link Master 	SIG200-0A0G12200	1102605

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.”

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