



M4P-ZA02500C00

deTem

SAFETY MULTIBEAM SENSORS

SICK
Sensor Intelligence.



Ordering information

deTem4 A/P

| | Scanning range | Number of beams | Beam separation | System part | Type | Part no. |
|---|----------------|-----------------|-----------------|-------------|----------------|----------|
| The system plug has to be ordered separately. For details, see "Accessories". | 8 m | 2 | 500 mm | Active unit | M4P-ZA02500C00 | 1102633 |

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 |
| 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 |
| 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 | | 550 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

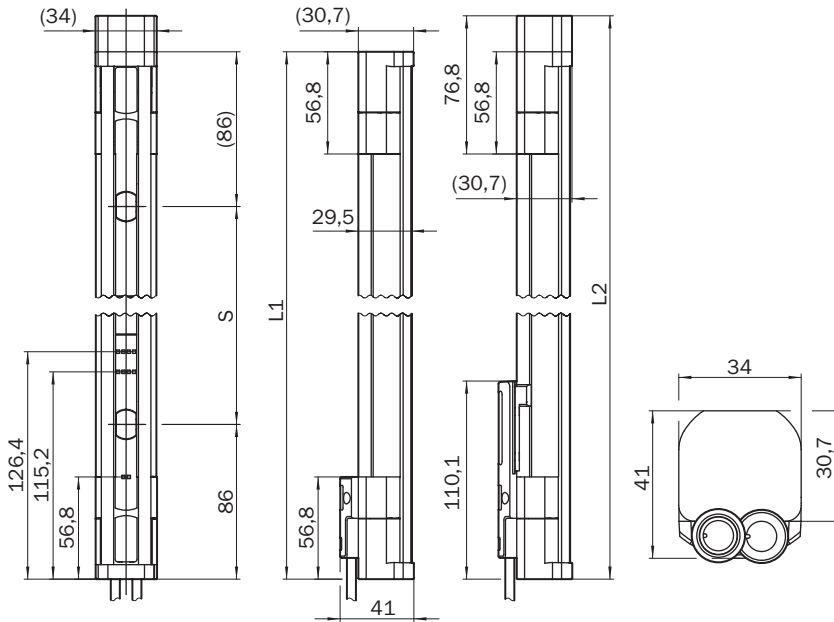
| | |
|----------------------|--------------------------------|
| Type of light | Near-infrared (NIR), invisible |
|----------------------|--------------------------------|

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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