



M4M-ZA04300D20

deTem

SAFETY MULTIBEAM SENSORS

SICK
Sensor Intelligence.



Ordering information

| Type | part no. |
|----------------|----------|
| M4M-ZA04300D20 | 1096014 |

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



Detailed technical data

Features

| | |
|------------------------------------|---------------------------------------------------------------------------------------------------|
| Product version | deTem4 LT Muting 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 | 4 |
| Beam separation | 300 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) | 6.8×10^{-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

| | |
|----------------------------------------------------------|---|
| Beam coding | ✓ |
| Restart interlock | ✓ |
| Differentiation between man and material (muting) | ✓ |
| C1 muting release | ✓ |
| Concurrence monitoring | ✓ |
| Monitoring of total muting time | ✓ |
| Sensor gap monitoring | ✓ |
| Muting with override | ✓ |
| Exit monitoring | ✓ |
| End of muting by ESPE | ✓ |

Interfaces

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|-------------------------------------------------|---------------------------------------|
| System connection | Male connector M12, 8-pin |
| Connection for muting sensors | 2 × female connector, M12, 5-pin |
| Connection for reset/override pushbutton | Female connector M12, 5-pin |
| Configuration method | Hard wired |
| Display elements | LEDs |
| Alignment aid | Alignment quality via diagnostic LEDs |
| End cap with integrated LED | ✓ |
| Application diagnostic output (ADO) | ✓ |
| 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 | ≤ 10 % ³⁾ |
| Power consumption typical | 7 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) | ≥ $V_S - 3$ 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.

Mechanics

| | |
|-------------------|-------------------------|
| Dimensions | See dimensional drawing |
|-------------------|-------------------------|

| | | |
|-----------------|--------------|------------------------------------------|
| Material | Housing | Aluminum extruded profile |
| | Front screen | Polycarbonate, scratch-resistant coating |
| Weight | | 925 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 ... 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

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

Classifications

| | |
|-----------------------|----------|
| ECLASS 5.0 | 27272703 |
| ECLASS 5.1.4 | 27272703 |
| ECLASS 6.0 | 27272703 |
| ECLASS 6.2 | 27272703 |
| ECLASS 7.0 | 27272703 |
| ECLASS 8.0 | 27272703 |
| ECLASS 8.1 | 27272703 |
| ECLASS 9.0 | 27272703 |
| ECLASS 10.0 | 27272703 |
| ECLASS 11.0 | 27272703 |
| ECLASS 12.0 | 27272703 |
| ETIM 5.0 | EC001832 |
| ETIM 6.0 | EC001832 |
| ETIM 7.0 | EC001832 |
| ETIM 8.0 | EC001832 |
| UNSPSC 16.0901 | 46171620 |

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)



Recommended accessories

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

| | Brief description | Type | part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|
| Safety relays | | | |
|  | <ul style="list-style-type: none"> Applications: Evaluation unit Compatible sensor types: Safety sensors with OSSDs Connection type: Front connector with spring terminals Restart interlock: yes External device monitoring (EDM): Integrated Outputs: 2 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe) Housing width: 18 mm | RLY3-OSSD200 | 1085344 |
|  | <ul style="list-style-type: none"> Applications: Evaluation unit Compatible sensor types: Safety sensors with OSSDs Connection type: Front connector with spring terminals Restart interlock: yes External device monitoring (EDM): Integrated Outputs: 3 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe) Housing width: 18 mm | RLY3-OSSD300 | 1099969 |
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: FlexFix bracket for 2 devices (e.g. sender and receiver), can be aligned $\pm 15^\circ$, including M5 screw Material: Plastic Details: Plastic Packing unit: 4 pieces | BEF-1SHABPKU4 | 2066614 |

| | Brief description | Type | part no. |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A18-020UA5XLEAX | 2095652 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A18-050UA5XLEAX | 2095653 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 8-pin, straight, A-coded • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 8-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A18-100UA5XLEAX | 2095654 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Male connector, M12, 5-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 2 m, 5-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A15-020UB5M2A15 | 2096009 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Male connector, M12, 5-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 5 m, 5-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A15-050UB5M2A15 | 2096010 |
|  | <ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, straight, A-coded • Connection type head B: Male connector, M12, 5-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 10 m, 5-wire, PUR, halogen-free • Description: Sensor/actuator cable, unshielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation | YF2A15-100UB5M2A15 | 2096011 |
| Safety switches | | | |
|  | <ul style="list-style-type: none"> • Switch type: Reset pushbutton • N/O contacts: 1 • Connection type Detail: Plug connector, M12, 5-pin • Suitable for muting applications (with UE403): no • Suitable for reset/override applications (with deTec4): yes • Suitable for muting applications (with DMM4): yes • Items supplied: Including retaining clip, "RESET" cover and "RESET/OVERRIDE" cover | ER12-SB3C5 | 6045316 |

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:

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