



# M4C-ZA02500C10

deTem

**SAFETY MULTIBEAM SENSORS**

**SICK**  
Sensor Intelligence.



### Ordering information

| Type           | part no. |
|----------------|----------|
| M4C-ZA02500C10 | 1102644  |

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



### Detailed technical data

#### Features

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

#### Safety-related parameters

|                                                                           |                                        |
|---------------------------------------------------------------------------|----------------------------------------|
| <b>Type</b>                                                               | Type 4 (IEC 61496-1)                   |
| <b>Safety integrity level</b>                                             | SIL 3 (IEC 61508)                      |
| <b>Category</b>                                                           | Category 4 (ISO 13849-1)               |
| <b>Performance level</b>                                                  | PL e (ISO 13849-1)                     |
| <b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b> | $5.3 \times 10^{-9}$                   |
| <b>T<sub>M</sub> (mission time)</b>                                       | 20 years (ISO 13849-1)                 |
| <b>Safe state in the event of a fault</b>                                 | At least one OSSD is in the OFF state. |

#### Interfaces

|                          |                  |
|--------------------------|------------------|
| <b>System connection</b> | Plug, M12, 5-pin |
|--------------------------|------------------|

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| <b>Display elements</b>               | LEDs                                  |
| <b>Alignment aid</b>                  | Alignment quality via diagnostic LEDs |
| <b>Near Field Communication (NFC)</b> | ✓                                     |

## Electronics

|                                                |                                                                                      |
|------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Protection class</b>                        | III (IEC 61140) <sup>1)</sup>                                                        |
| <b>Supply voltage V<sub>S</sub></b>            | 24 V DC (19.2 V DC ... 28.8 V DC) <sup>2)</sup>                                      |
| <b>Residual ripple</b>                         | ≤ 10 % <sup>3)</sup>                                                                 |
| <b>Power consumption typical</b>               | 2.4 W (DC)                                                                           |
| <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 <sub>S</sub> – 2.25 V DC ... V <sub>S</sub> )                             |
| OFF state, switching voltage LOW               | ≤ 2 V DC                                                                             |
| Current-carrying capacity per OSSD             | ≤ 500 mA                                                                             |

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

<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<sub>S</sub>.

<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> | 31 mm x 34 mm                            |
| <b>Material</b>              |                                          |
| Housing                      | Aluminum extruded profile                |
| Front screen                 | Polycarbonate, scratch-resistant coating |
| <b>Weight</b>                | 550 g (± 50 g)                           |
| <b>Cable bend radius</b>     |                                          |
| Stationary position          | > 12 x cable diameter                    |
| Flexible use                 | > 15 x cable diameter                    |

## Ambient data

|                                      |                                           |
|--------------------------------------|-------------------------------------------|
| <b>Enclosure rating</b>              | IP65 (IEC 60529)<br>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)                    |

## Other information

|                      |                                |
|----------------------|--------------------------------|
| <b>Type of light</b> | Near-infrared (NIR), invisible |
|----------------------|--------------------------------|

## Certificates

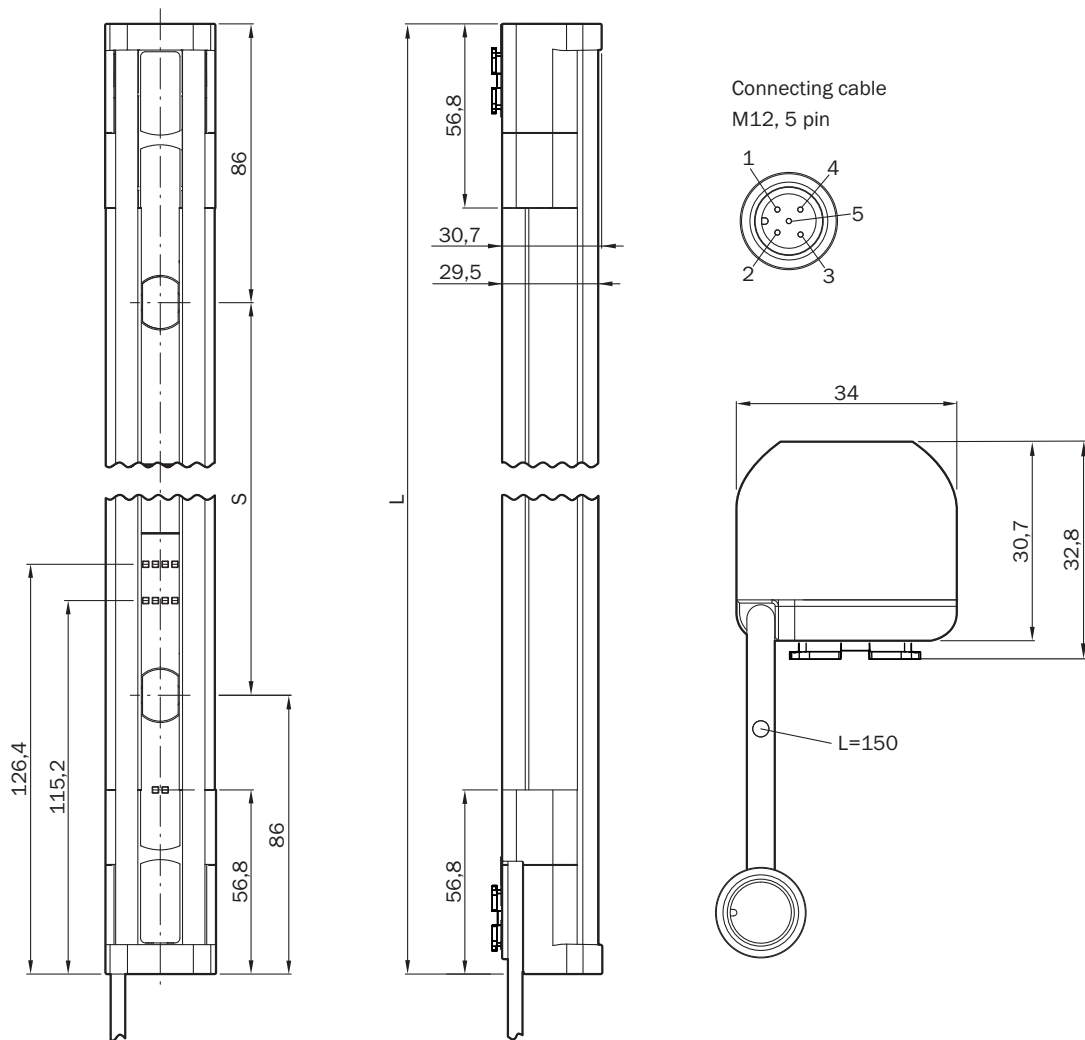
|                                       |   |
|---------------------------------------|---|
| <b>EU declaration of conformity</b>   | ✓ |
| <b>UK declaration of conformity</b>   | ✓ |
| <b>ACMA declaration of conformity</b> | ✓ |

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

### 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 |

## Dimensional drawing Active unit



| Number of beams | Beam separation S | L    |
|-----------------|-------------------|------|
| 2               | 500               | 672  |
| 4               | 300               | 1072 |

### Recommended accessories

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

|                                                                                     | Brief description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Type               | part no. |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------|
| Safety relays                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |          |
|    | <ul style="list-style-type: none"> <li><b>Applications:</b> Evaluation unit</li> <li><b>Compatible sensor types:</b> Safety sensors with OSSDs</li> <li><b>Connection type:</b> Front connector with spring terminals</li> <li><b>Restart interlock:</b> yes</li> <li><b>External device monitoring (EDM):</b> Integrated</li> <li><b>Outputs:</b> 2 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe)</li> <li><b>Housing width:</b> 18 mm</li> </ul> | RLY3-OSSD200       | 1085344  |
|    | <ul style="list-style-type: none"> <li><b>Applications:</b> Evaluation unit</li> <li><b>Compatible sensor types:</b> Safety sensors with OSSDs</li> <li><b>Connection type:</b> Front connector with spring terminals</li> <li><b>Restart interlock:</b> yes</li> <li><b>External device monitoring (EDM):</b> Integrated</li> <li><b>Outputs:</b> 3 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe)</li> <li><b>Housing width:</b> 18 mm</li> </ul> | RLY3-OSSD300       | 1099969  |
| 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  |
| connectors and cables                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                    |          |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 2 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                    | YF2A15-020UB5XLEAX | 2095617  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 5 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                    | YF2A15-050UB5XLEAX | 2095618  |
|  | <ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 10 m, 5-wire, PUR, halogen-free</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation</li> </ul>                                   | YF2A15-100UB5XLEAX | 2095619  |

## 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)