

# MICS3-CCAZ90PZ1

microScan3

**SAFETY LASER SCANNERS** 





### Ordering information

| Туре            | part no. |
|-----------------|----------|
| MICS3-CCAZ90PZ1 | 1100393  |

Other models and accessories → www.sick.com/microScan3

Illustration may differ



#### Detailed technical data

#### **Features**

| Product version                           | microScan3 Pro - PROFINET                                     |
|---|---|
| Model                                     | Sensor without system plug                                    |
| Application                               | Indoor  |
| Protective field range                    | 9 m   |
| Warning field range                       | 64 m  |
| Collision protection field range          | 19 m (on reference target)                                    |
| Number of simultaneously monitored fields | ≤ 4 <sup>1)</sup>   |
| Number of fields                          | 128   |
| Number of monitoring cases                | 128   |
| Scanning angle                            | 275°  |
| Resolution (can be configured)            | 30 mm<br>40 mm<br>50 mm<br>60 mm<br>70 mm<br>150 mm<br>200 mm |
| Angular resolution                        | 0.1°  |
| Response time                             | 115 ms  |
| Protective field supplement               | 100 mm  |

 $<sup>^{1)}</sup>$  Protection, warning or contour detection fields.

## Safety-related parameters

|      | T 0 (IFO 04 400)   |
|------|--------------------|
| Туре | Type 3 (IEC 61496) |
|      |                    |

| Safety integrity level  | SIL 2 (IEC 61508)                               |
|---|---|
| Category  | Category 3 (EN ISO 13849)                       |
| Performance level   | PL d (EN ISO 13849)                             |
| $\ensuremath{PFH_D}$ (mean probability of a dangerous failure per hour) | 8.0 x 10 <sup>-8</sup>                          |
| T <sub>M</sub> (mission time)   | 20 years (EN ISO 13849)                         |
| Safe state in the event of a fault                                      | The safety outputs via the network are logic 0. |

## **Functions**

| Restart interlock                 | ✓            |
|-----------------------------------|--------------|
| Multiple sampling                 | ✓            |
| Monitoring case switching         | ✓            |
| Simultaneous monitoring           | ✓            |
| Static protective field switching | ✓            |
| Collision protection field        | ✓            |
| Safe contour detection            | ✓            |
| Contour as a reference            | ✓            |
| Integrated configuration memory   | ✓            |
| Measured data output              | Via Ethernet |

#### Interfaces

| Connection type                         |  |
|---|--|
| Voltage supply                          | 1 x male connector, M12, 5-pin, L-coded                          |
| Fieldbus, industrial network            | 2 x female connector, RJ45 for push-pull male connector (copper) |
| Outputs                                 |  |
| OSSD pairs                              | 0  |
| Safety outputs via network              | 8  |
| Configuration method                    | PC with Safety Designer (Configuration and Diagnostic Software)  |
| Configuration and diagnostics interface | USB 2.0, Mini-USB, Ethernet                                      |
| Fieldbus, industrial network            | PROFINET   |
| Protocol                                | PROFIsafe  |
| Supported protocol versions             | PROFINET specification V2.3                                      |
|   | PROFIsafe profile in accordance with specification V2.6.1        |
|   | PROFIsafe profile in accordance with specification V2.4          |
| GSDML                                   | According to GSDML specification V2.33                           |
| Cycle time                              | 1 ms, 2 ms, 4 ms, 8 ms, 16 ms                                    |
| Conformance                             | Conformance Class C  |
| Network management                      | SNMP   |
|   | MIB-2  |
|   | LLDP in accordance with IEEE 802.1AB                             |
|   | MRP client support   |
| Net load                                | Net load class III in accordance with security level 1 test      |
| Switch properties                       | 2 port real-time switch compliant with IEEE 802                  |
| Port properties                         | 100Base-TX   |

|                       | Auto-negotiation                                       |
|-----------------------|--|
|                       | Auto-crossover (MDIX)                                  |
|                       | Auto-polarity  |
| Diagnostics           | I&M data sets 0 5                                      |
|                       | PROFINET alarms  |
| Additional services   | PROFlenergy  |
|                       | F_iPar_CRC   |
|                       | Acyclic read-/write services for communication via TCI |
|                       | SNTP (client and server)                               |
| Additional interfaces | TCP/IP communication via port 9000                     |
| Display elements      | Graphic color display, LEDs                            |

#### Electronics

| Protection class           | III (EN 61140)              |
|----------------------------|-----------------------------|
| Supply voltage $V_{\rm s}$ | 24 V DC (16.8 V DC 30 V DC) |
| Power consumption typical  | 7.2 W                       |

#### Mechanics

| Dimensions (W x H x D)      | 112 mm x 163.1 mm x 111.1 mm           |
|-----------------------------|--|
| Housing material            | Aluminum                               |
| Housing color               | RAL 1021 (yellow), RAL 9005 (black)    |
| Optics cover material       | Polycarbonate                          |
| Optics cover surface finish | Outside with scratch-resistant coating |

#### Ambient data

| Enclosure rating              | IP65 (IEC 60529)   |
|-------------------------------|--|
| Ambient light immunity        | ≤ 40 klx (IEC 61496-3) <sup>1)</sup>   |
| Ambient operating temperature | -10 °C +50 °C  |
| Storage temperature           | -25 °C +70 °C  |
| Vibration resistance          | IEC 60068-2-6, IEC 60068-2-64, IEC 60721-3-5, IEC TR 60721-4-3, IEC 61496-1, IEC 61496-3 |
| Class                         | 5M1 (IEC 60721-3-5)  |
|                               | 3M4 (IEC TR 60721-4-3)   |
| Shock resistance              | IEC 60068-2-27, IEC 60721-3-5, IEC TR 60721-4-3, IEC 61496-1, IEC 61496-3                |
| Class                         | 5M1 (IEC 60721-3-5)  |
|                               | 3M4 (IEC TR 60721-4-3)   |
| Continuous shock              | 100 m/s², 16 ms  |
|                               | 150 m/s², 6 ms   |
| EMC                           | IEC 61496-1, IEC 61000-6-2, IEC 61000-6-4  |

 $<sup>^{(1)}</sup>$  Typical ambient light immunity, for ambient light sources directly in the scan plane in accordance with IEC 61496-3:  $\leq$  3 klx.

#### Other information

| Type of light               | Pulsed laser diode    |
|-----------------------------|-----------------------|
| Wave length                 | 845 nm                |
| Detectable remission factor | 1.8% to several 1000% |

| Laser class | 1 (21 CFR 1040.10 and 1040.11, IEC 60825-1) |
|-------------|---|
|-------------|---|

#### Certificates

| EU declaration of conformity  | ✓        |
|---|----------|
| UK declaration of conformity  | <b>√</b> |
| ACMA declaration of conformity  | <b>√</b> |
| China RoHS  | ✓        |
| cULus certificate   | ✓        |
| Profinet certificate  | ✓        |
| PROFIsafe certificate   | ✓        |
| EC-Type-Examination approval  | ✓        |
| China GB certificate  | ✓        |
| PROFlenergy certificate   | ✓        |
| Information according to Art. 3 of Data Act (Regulation EU 2023/2854) | ✓        |

#### Classifications

| ECLASS 5.0     | 27272705 |
|----------------|----------|
| ECLASS 5.1.4   | 27272705 |
| ECLASS 6.0     | 27272705 |
| ECLASS 6.2     | 27272705 |
| ECLASS 7.0     | 27272705 |
| ECLASS 8.0     | 27272705 |
| ECLASS 8.1     | 27272705 |
| ECLASS 9.0     | 27272705 |
| ECLASS 10.0    | 27272705 |
| ECLASS 11.0    | 27272705 |
| ECLASS 12.0    | 27272705 |
| ETIM 5.0       | EC002550 |
| ETIM 6.0       | EC002550 |
| ETIM 7.0       | EC002550 |
| ETIM 8.0       | EC002550 |
| UNSPSC 16.0901 | 39121528 |

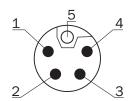
#### **Pinouts Ethernet**



| Pin | Designation | Description |
|-----|-------------|-------------|
| 1   | TX+         | Send data + |
| 2   | TX-         | Send data - |

| Pin                                    | Designation | Description    |
|--|-------------|----------------|
| 3                                      | RX+         | Receive data + |
| 4                                      | -           | Reserved       |
| 5                                      | -           | Reserved       |
| 6                                      | RX-         | Receive data - |
| 7                                      | -           | Reserved       |
| 8                                      | -           | Reserved       |
| Housing                                | SH          | Shielding      |
| For details see operating instructions |             |                |

## Pinouts Voltage supply



| Pin                                    | Designation | Description                |
|--|-------------|----------------------------|
| 1                                      | +24 V DC    | Supply voltage +24 V DC    |
| 2                                      | n.c.        | Not connected              |
| 3                                      | 0 V DC      | Supply voltage 0 V DC      |
| 4                                      | n.c.        | Not connected              |
| 5                                      | FE          | Functional earth/shielding |
| For details see operating instructions |             |                            |

#### Recommended accessories

Other models and accessories → www.sick.com/microScan3

|                                    | Brief description  | Туре            | part no. |
|------------------------------------|--|-----------------|----------|
| system plugs and extension modules |  |                 |          |
| 100                                | Description: Integrated configuration memory, System connection: voltage supply: 1 x M12 male connector, 5-pin, L-coded; EtherNet: 2 x RJ45 female connector for push-pull male connector (copper) | MICSX-CPNNZZZZ1 | 2087905  |

|               | Brief description  | Туре  | part no. |  |
|---------------|--|---|----------|--|
| connectors ar | connectors and cables  |   |          |  |
|               | Connection type head A: Female connector, M12, 5-pin, straight, L-coded Connection type head B: Flying leads 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  | YF2L15-020UH1XLEAX  | 2099599  |  |
|               | Connection type head A: Female connector, M12, 5-pin, straight, L-coded Connection type head B: Flying leads 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   | YF2L15-100UH1XLEAX  | 2099627  |  |
|               | Connection type head A: Female connector, M12, 5-pin, straight, L-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 20 m, 5-wire, PUR, halogen-free Description: Sensor/actuator cable, unshielded Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation   | YF2L15-200UH1XLEAX  | 2099628  |  |
| Mounting sys  | tems   |   |          |  |
|               | Description: Mounting bracket, heavy-duty version, with protection cover, for floor mounting, height adjustment possible from 90 310 mm, scanner tilt angle: ± 5°. Additional mounting brackets are not required.      Dimensions (W x H x L): 200 mm x 366 mm x 269 mm      Material: Steel     Details: Steel, painted (RAL 1021)     Color: RAL 1021 (yellow)     Packing unit: 1 piece | Heavy-duty mounting kit for floor mounting                          | 2102289  |  |
|               | <ul> <li>Description: Mounting bracket with protection of optics hood</li> <li>Material: Stainless steel</li> <li>Details: Stainless steel V2A (1.4301), powder-coated IGP-DURA face 5803A</li> <li>Color: RAL 9005 (black)</li> <li>Packing unit: 1 piece</li> </ul>  | 1b mounting kit   | 2074242  |  |
| 6.00          | Description: Mounting bracket     Material: Stainless steel     Details: Stainless steel V2A (1.4301), powder-coated IGP-DURA face 5803A     Color: RAL 9005 (black)     Packing unit: 1 piece   | Mounting kit 1a   | 2073851  |  |
| 4             | Description: Alignment bracket, alignment with cross-wise axis and depth axis possible, distance between mounting surface and device: 22.3 mm, only in conjunction with mounting kit 1a (2073851) or 1b (2074242)     Material: Stainless steel     Details: Stainless steel V2A (1.4301), powder-coated IGP-DURA face 5803A     Color: RAL 9005 (black)     Packing unit: 1 piece         | Mounting kit 2a   | 2073852  |  |
|               | Description: Mounting bracket 150 mm for floor mounting of microScan3     Material: Stainless steel     Details: Stainless steel     Color: Uncoated     Packing unit: 1 piece     Items supplied: Bracket and 4 x M5 screws for attaching the microScan3  | Mounting brack-<br>et 150 mm for<br>floor mounting<br>of microScan3 | 2112950  |  |
|               | <ul> <li>Description: Mounting bracket 300 mm for floor mounting of microScan3</li> <li>Material: Stainless steel</li> <li>Details: Stainless steel</li> <li>Color: Uncoated</li> <li>Packing unit: 1 piece</li> <li>Items supplied: Bracket and 4 x M5 screws for attaching the microScan3</li> </ul>   | Mounting brack-<br>et 300 mm for<br>floor mounting<br>of microScan3 | 2112951  |  |
|               | Description: Alignment bracket, alignment with cross-wise axis and depth axis possible, distance between mounting surface and device: 52.3 mm, only in conjunction with mounting kit 1a (2073851) or 1b (2074242)     Material: Stainless steel     Details: Stainless steel V2A (1.4301), powder-coated IGP-DURA face 5803A     Color: RAL 9005 (black)     Packing unit: 1 piece         | Mounting kit 2b   | 2074184  |  |

## SICK AT A GLANCE

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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

