

## Technical data sheet

### Magnetically coded sensor

Part no.: 63001007

MC388-S1-C02M12-A

#### Contents

- Technical data
- Dimensioned drawings
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For illustration purposes only



Technical data

Basic data

|        |       |
|--------|-------|
| Series | MC388 |
|--------|-------|

Functions

|           |                                                                                                                                                                                                                 |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Functions | Integration in control circuits up to category 4 in accordance with EN ISO 13849-1<br>Safety system in combination with an evaluation unit such as the MSI-MC310 safety relay or the MSI 400 safety controller. |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Characteristic parameters

|                             |                                                                      |
|-----------------------------|----------------------------------------------------------------------|
| Mission time T <sub>M</sub> | 20 years, EN ISO 13849-1                                             |
| Category                    | Up to 4, depending on evaluation, 1 sensor connected, EN ISO 13849-1 |
| B10 <sub>a</sub>            | 20,000,000 number of cycles                                          |

Electrical data

|                                                                    |                                                                            |
|--------------------------------------------------------------------|----------------------------------------------------------------------------|
| Protective circuit                                                 | Current limitation<br>Short circuit protected, Via e.g. MSI-MC310, MSI 400 |
| Contact allocation                                                 | 1NC + 1NO                                                                  |
| Contact type                                                       | Reed contacts (magnetically sensitive)                                     |
| Requirement on the voltage supply when used acc. to cULus (UL 508) | Class 2 Circuits                                                           |

Outputs

|                         |            |
|-------------------------|------------|
| Max. switching voltage  | 27 V AC/DC |
| Switching current, max. | 500 mA     |

Time behavior

|               |      |
|---------------|------|
| Response time | 3 ms |
|---------------|------|

Connection

|                       |                      |
|-----------------------|----------------------|
| Number of connections | 1 Piece(s)           |
| Connection 1          |                      |
| Function              | Contact connection   |
| Type of connection    | Cable with connector |
| Cable length          | 200 mm               |
| Sheathing material    | PVC                  |
| Cable color           | Gray                 |
| Thread size           | M12                  |
| Material              | Metal                |
| No. of pins           | 4 -pin               |

Mechanical data

|                                                                             |                                                              |
|-----------------------------------------------------------------------------|--------------------------------------------------------------|
| Design                                                                      | Cubic                                                        |
| Dimension (W x H x L)                                                       | 25 mm x 13 mm x 88 mm                                        |
| Housing material                                                            | Plastic                                                      |
| Plastic housing                                                             | Glass fiber reinforced (PPS), self-extinguishing             |
| Net weight                                                                  | 134 g                                                        |
| Housing color                                                               | Red                                                          |
| Type of fastening                                                           | Through-hole mounting                                        |
| Installation position                                                       | Arbitrary, provided housing markings are aligned             |
| Switch type                                                                 | Type 4 interlock device, contactless actuation, EN ISO 14119 |
| Approach actuation directions                                               | 3-dimensional                                                |
| Mechanical life time                                                        | 10,000,000 actuation cycles                                  |
| External actuator                                                           | Magnetically coded                                           |
| Cut-out point (OFF), min.                                                   | 13 mm                                                        |
| Assured cut-out distance (Sar), min.                                        | 30 mm                                                        |
| Assured cut-in distance (Sao), max.                                         | 6 mm                                                         |
| Switching tolerance (without ferromagnetic materials in immediate vicinity) | -1 ... 1 mm                                                  |
| Distance to other magnetic sensors, min.                                    | 50 mm                                                        |
| Approach speed, min.                                                        | 0.05 m/s                                                     |

Environmental data

|                                   |               |
|-----------------------------------|---------------|
| Ambient temperature, operation    | -20 ... 70 °C |
| Degree of contamination, external | 3, EN 60947-1 |

Certifications

|                                                            |                                                 |
|------------------------------------------------------------|-------------------------------------------------|
| Degree of protection                                       | IP 67                                           |
| Certifications                                             | c UL US<br>TÜV Süd (with suitable safety relay) |
| Test procedure for EMC in accordance with standard         | EN 60947-5-3<br>EN 61000-6-2<br>EN 61000-6-3    |
| Test procedure for oscillation in accordance with standard | EN 60947-5-3                                    |
| Test procedure for shock in accordance with standard       | EN 60947-5-3                                    |

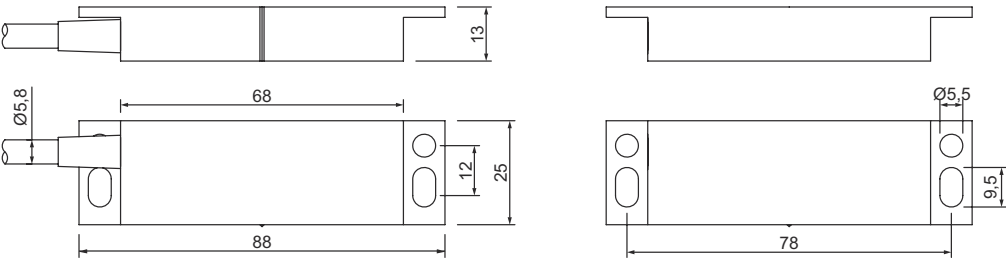
Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 90328900 |
| ECLASS 5.1.4          | 27272402 |
| ECLASS 8.0            | 27272402 |
| ECLASS 9.0            | 27272402 |
| ECLASS 10.0           | 27272402 |
| ECLASS 11.0           | 27272402 |
| ECLASS 12.0           | 27274401 |
| ECLASS 13.0           | 27274401 |
| ECLASS 14.0           | 27274401 |
| ETIM 5.0              | EC002544 |
| ETIM 6.0              | EC002544 |
| ETIM 7.0              | EC002544 |
| ETIM 8.0              | EC002544 |
| ETIM 9.0              | EC002544 |

Dimensioned drawings

All dimensions in millimeters

Dimensions of sensor and actuator

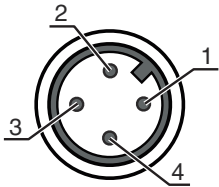


Electrical connection

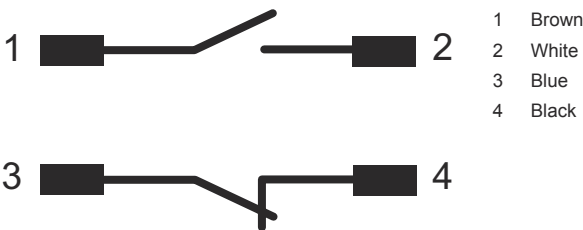
Connection 1

|                    |                                                           |
|--------------------|-----------------------------------------------------------|
| Function           | Contact connection                                        |
| Type of connection | Cable with connector                                      |
| Cable length       | 200 mm                                                    |
| Sheathing material | PVC                                                       |
| Cable color        | Gray                                                      |
| Wire cross section | 0.35 mm²                                                  |
| Thread size        | M12                                                       |
| Type               | Male                                                      |
| Material           | Metal                                                     |
| No. of pins        | 4 -pin                                                    |
| Encoding           | A-coded                                                   |
| Assignment         | Representation of contacts without activation by actuator |

| Pin | Pin assignment | Conductor color |
|-----|----------------|-----------------|
| 1   | NO             | Brown           |
| 2   | NO             | White           |
| 3   | NC             | Blue            |
| 4   | NC             | Black           |



Circuit diagrams



Notes



Observe intended use!



- ⌚ The product may only be put into operation by competent persons.
- ⌚ Only use the product in accordance with its intended use.

ATTENTION!



- ⌚ The sensor has no internal error detection and cannot assume a safe state in the case of failure.
- ⌚ To use the sensor in accordance with DIN EN 60947-5-3, a suitable evaluation unit must be connected.
- ⌚ In combination with a suitable evaluation unit, the sensor can be integrated in the control technology of safety systems up to Cat. 4 / PL e in accordance with EN ISO 13849-1 and SIL CL3 in accordance with IEC 62061.