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DATA SHEET

# IME2S12-04N4DC0S02

IME2S
Non-contact safety switches

SICK Sensor Intelligence

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## NON-CONTACT SAFETY SWITCHES

# IME2S12-04N4DC0S02

### ORDERING INFORMATION

| Type | part no. |
|---|---|
| IME2S12-04N4DC0S02 | 1117664 |

Further device versions and accessories at www.sick.com/IME2S

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Sensor principle | Inductive |
| Number of safe outputs | 2 |
| Housing diameter | M12 |
| Sensing range $S_n$ | 4 mm [1] |
| Assured switch on distance $S_{ao}$ | 3.2 mm [1] |
| Assured switch off distance $S_{ar}$ | 6 mm [1] |
| Active sensor surfaces | 1 |
| Actuation frequency | ≤ 100 Hz |
| Items supplied | Including mounting nuts, brass, nickel-plated (2x) |

[1] Values apply for steel (FE360).

### SAFETY-RELATED PARAMETERS

| | |
|---|---|
| Safety integrity level | SIL 2 (IEC 61508) |
| Category | Category 2 (ISO 13849-1) |
| Performance level | PL d (ISO 13849-1) |
| $PFH_D$ (mean probability of a dangerous failure per hour) | $6.0 \times 10^{-8}$ [1] |
| $T_M$ (mission time) | 20 years (ISO 13849-1) |
| Type | Type 3 (ISO 14119-1) |
| Actuator coding level | Uncoded (EN ISO 14119) |
| Safe state in the event of a fault | At least one safety-related semiconductor output (OSSD) is in the OFF state. |

[1] At 40 °C and 1000 m above sea level.

### FUNCTIONS

| | |
|---|---|
| Safe series connection | With Flexi Loop (with diagnostics) |

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## INTERFACES

| | |
|---|---|
| Connection type | Male connector M12, 4-pin |
| Coupling nut material | Nickel-plated brass |
| Display elements | LEDs |
| Diagnostics indicator | ✓ |
| Status display | ✓ |

## ELECTRONICS

| | |
|---|---|
| Protection class | III (IEC 61140) |
| Rated insulation voltage $U_i$ | 28.8 V |
| Rated impulse withstand voltage $U_{imp}$ | 1,500 V |
| Supply voltage $V_s$ | 24 V DC (19.2 V DC ... 28.8 V DC) |
| Power consumption | ≤ 20 mA |
| Type of output | Self-monitoring semiconductor outputs (OSSDs) |
| Response time | ≤ 1 ms |
| Release time | ≤ 1 ms |
| Risk time | ≤ 20 ms |
| Switch-on time | 1 s |

## MECHANICS

| | |
|---|---|
| Design | Cylindrical |
| Housing diameter | M12 |
| Housing length | 65 mm |
| Thread length | 43 mm |
| Material | |
| Housing | Nickel-plated brass |
| Sensor surface | VISTAL® |
| Installation type | Non-flush |

## AMBIENT DATA

| | |
|---|---|
| Enclosure rating | IP67 (IEC 60529) |
| Ambient operating temperature | –25 °C ... +70 °C |
| Storage temperature | –25 °C ... +70 °C |
| Relative humidity | 50 %, at 70 °C (IEC 60947-5-2) |
| Vibration resistance | 10 Hz ... 55 Hz, 1 mm (IEC 60947-5-2) |
| EMC | IEC 60947-5-2<br>IEC 60947-5-3<br>IEC 61000-6-7 |

## CERTIFICATES

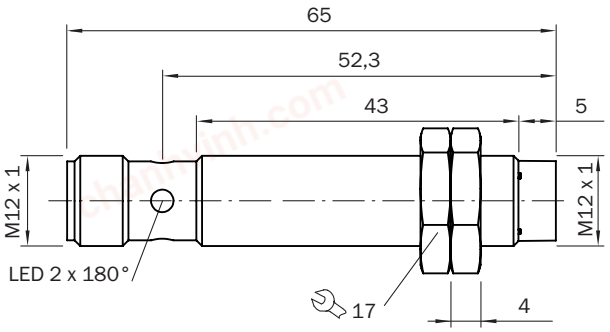
| | |
|---|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| UK-Type-Examination approval | ✓ |
| cULus certificate | ✓ |

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# NON-CONTACT SAFETY SWITCHES - IME2S12-04N4DC0S02

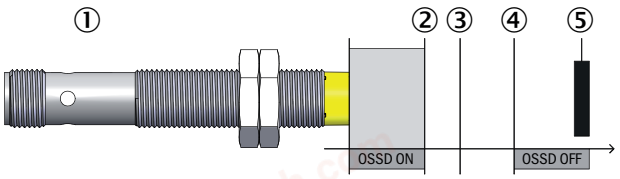
| | |
|---|---|
| EC-Type-Examination approval | ✓ |
| Third party certificate | ✓ |

## DIMENSIONAL DRAWING



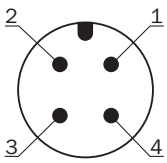

Dimensions in mm (inch)

## RESPONSE RANGE




① safety switch
② assured switch on distance $S_{ao}$
③ Sensing range $S_n$
④ assured switch off distance $S_{ar}$
⑤ actuator

## PINOUTS




| Pin | Designation | Description |
|---|---|---|
| 1 | +24 V DC | 24 V DC voltage supply |
| 2 | OSSD 1 | OSSD 1 output |
| 3 | 0 V DC | 0 V DC voltage supply |
| 4 | OSSD 2 | OSSD 2 output |
| | For details see operating instructions | |

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1117664

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Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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