

Technical data sheet

Inductive switch

Part no.: 50154038

IS D12MM/2NO-4E0-M12

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For illustration purposes only



Technical data

Basic data

| | |
|-----------------------------------|--------------|
| Series | D12 |
| type. operating range limit S_n | 4 mm |
| Operating range S_a | 0 ... 3.2 mm |

Characteristic parameters

| | |
|------|-----------|
| MTTF | 326 years |
|------|-----------|

Electrical data

| | |
|--------------------|------------------------------|
| Protective circuit | Inductive protection |
| | Polarity reversal protection |
| | Short circuit protected |

Performance data

| | |
|--|--|
| Supply voltage U_B | 10 ... 30 V, DC |
| Residual ripple | 0 ... 10 %, From U_B |
| Open-circuit current | 0 ... 15 mA |
| Temperature drift, max. (in % of S_r) | 15 %, Over the entire operating temperature range |
| Repeatability, max. (in % of S_r) | 5 %, For $U_B = 20 ... 30$ VDC, ambient temperature $T_a = 23^\circ\text{C} \pm 5^\circ\text{C}$ |
| Switching hysteresis | 15 % |

Outputs

| | |
|-------------------------------------|------------|
| Number of digital switching outputs | 1 Piece(s) |
|-------------------------------------|------------|

Switching outputs

| | |
|-------------------------|--------------|
| Voltage type | DC |
| Switching current, max. | 200 mA |
| Residual current, max. | 0.1 mA |
| Voltage drop | ≤ 2.5 V |

Switching output 1

| | |
|---------------------|--------------------|
| Switching element | Transistor, NPN |
| Switching principle | NO (normally open) |

Time behavior

| | |
|---------------------|----------|
| Switching frequency | 1,000 Hz |
| Readiness delay | 100 ms |

Connection

| | |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

Connection 1

| | |
|--------------------|----------------|
| Function | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|--------------------------------|---------------------------------|
| Design | Cylindrical |
| Dimension (\varnothing x L) | 12 mm x 49.5 mm |
| Thread size | M12 x 1 mm |
| Type of installation | Embedded/flush |
| Housing material | Metal |
| Metal housing | Copper-nickel alloy |
| Sensing face material | Plastic, Polybutylene (PBT) |
| Net weight | 9 g |
| Housing color | Red, RAL 3000 |
| | Silver |
| Type of fastening | Mounting thread |
| Standard measuring plate | 12 x 12 mm ² , Fe360 |

Operation and display

| | |
|-----------------|------------|
| Type of display | LED |
| Number of LEDs | 1 Piece(s) |

Environmental data

| | |
|--------------------------------|---------------|
| Ambient temperature, operation | -25 ... 70 °C |
| Ambient temperature, storage | -25 ... 70 °C |

Certifications

| | |
|--|---------------|
| Degree of protection | IP 67 |
| Protection class | II |
| Approvals | c UL US |
| Test procedure for EMC in accordance with standard | IEC 61000-4-2 |
| | IEC 61000-4-3 |
| | IEC 61000-4-4 |
| Standards applied | IEC 60947-5-2 |

Correction factors

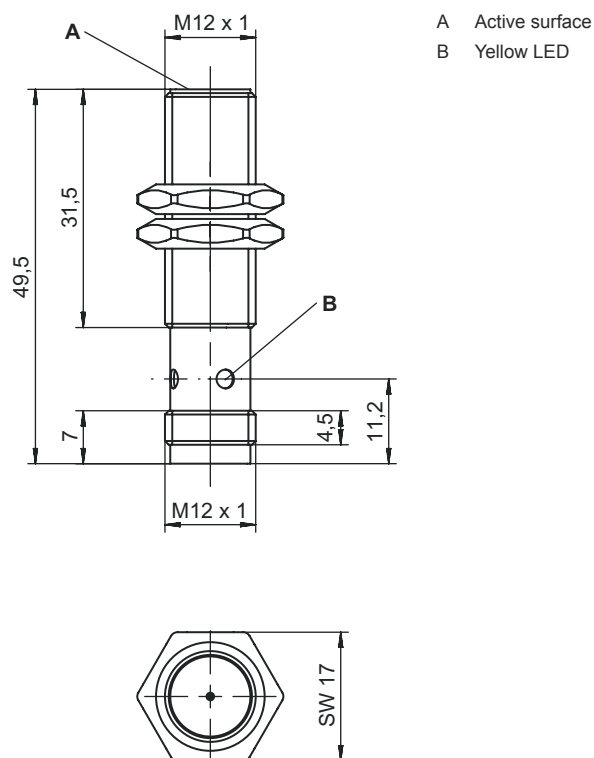
| | |
|-----------------|------|
| Aluminum | 0.5 |
| Stainless steel | 0.8 |
| Copper | 0.35 |
| Brass | 0.5 |
| Fe360 steel | 1 |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| ECLASS 5.1.4 | 27270101 |
| ECLASS 8.0 | 27270101 |
| ECLASS 9.0 | 27270101 |
| ECLASS 10.0 | 27270101 |
| ECLASS 11.0 | 27270101 |
| ECLASS 12.0 | 27274001 |
| ECLASS 13.0 | 27274001 |
| ECLASS 14.0 | 27274001 |
| ECLASS 15.0 | 27274001 |
| ECLASS 16.0 | 27274001 |
| ETIM 5.0 | EC002714 |
| ETIM 6.0 | EC002714 |
| ETIM 7.0 | EC002714 |
| ETIM 8.0 | EC002714 |
| ETIM 9.0 | EC002714 |
| ETIM 10.0 | EC002714 |
| UNSPSC 26.08 | 39122230 |

Dimensioned drawings

All dimensions in millimeters

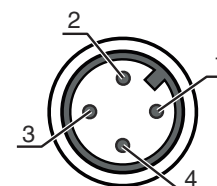


Electrical connection

Connection 1

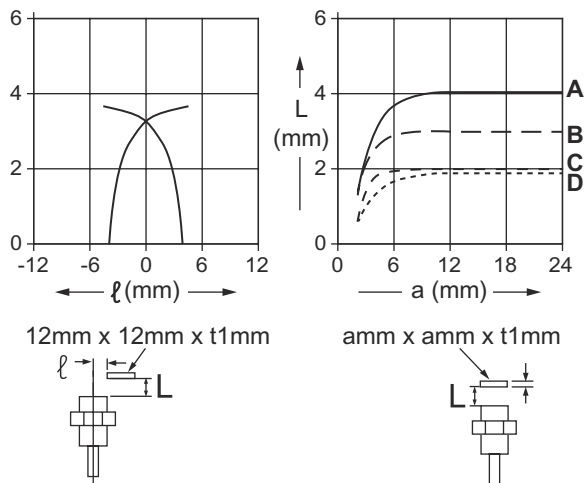
| | |
|--------------------|----------------|
| Function | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Metal |
| No. of pins | 4 -pin |
| Encoding | A-coded |

| Pin | Pin assignment |
|-----|----------------|
| 1 | V+ |
| 2 | not connected |
| 3 | GND |
| 4 | OUT |



Diagrams

Embedded/flush installation



Operation and display

| LED | Display | Meaning |
|-----|--------------------------|----------------------------------|
| 1 | Yellow, continuous light | Switching output/switching state |

Part number code

Part designation: IS AAABB/CCC-DDD-EEE

| | |
|------------|---|
| IS | Operating principle / construction IS: inductive switch, standard design |
| AAA | Series D08: series with M8 x 1 external thread D12: series with M12 x 1 external thread D18: series with M18 x 1 external thread D22: series in cubic design with 18 x 18 mm D30: series with M30 x 1.5 external thread |
| BB | Housing MM: metal housing (active surface: plastic) / metric thread PP: Plastic housing |
| CCC | Output current / supply 2NC: NPN transistor, NC contact 2NO: NPN transistor, NO contact 4NC: PNP transistor, NC contact 4NO: PNP transistor, NO contact |

Part number code

| | |
|------------|--|
| DDD | <p>Measurement range / type of installation</p> <p>2E0: typ. range limit 2.0 mm / embedded/flush installation 2N5: typ. range limit 2.5 mm / non-embedded/non-flush installation 4E0: typ. range limit 4.0 mm / embedded/flush installation 4N0: typ. range limit 4.0 mm / non-embedded/non-flush installation 5E0: typ. range limit 5.0 mm / embedded/flush installation 8E0: typ. range limit 8.0 mm / embedded/flush installation 8N0: typ. range limit 8.0 mm / non-embedded/non-flush installation 10E: typ. range limit 10.0 mm / embedded/flush installation 12N: typ. range limit 12.0 mm / non-embedded/non-flush installation 15E: typ. range limit 15.0 mm / embedded/flush installation 15N: typ. range limit 15.0 mm / non-embedded/non-flush installation 16N: typ. range limit 16.0 mm / non-embedded/non-flush installation 30N: typ. range limit 30.0 mm / non-embedded/non-flush installation</p> |
| EEE | <p>Electrical connection</p> <p>n/a: cable, standard length 2000 mm, 3-wire M8.3: M8 connector, 3-pin (plug) M12: M12 connector, 4-pin (plug)</p> |

| Note | |
|------|--|
| | <p>↪ A list with all available device types can be found on the Leuze website at www.leuze.com.</p> |

Notes

| ⚠ Observe intended use! | |
|-------------------------|--|
| | <p>↪ This product is not a safety sensor and is not intended as personnel protection.</p> <p>↪ The product may only be put into operation by competent persons.</p> <p>↪ Only use the product in accordance with its intended use.</p> |

| ⚠ For UL applications: | |
|------------------------|--|
| | <p>↪ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</p> |

Accessories

Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|---|
| | 50130654 | KD U-M12-4A-P1-020 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR |

Accessories

| | Part no. | Designation | Article | Description |
|--|----------|--------------------|------------------|---|
| | 50130657 | KD U-M12-4A-P1-050 | Connection cable | Application: Oil and lubricant resistant Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR |
| | 50130648 | KD U-M12-4A-V1-020 | Connection cable | Application: Chemical resistant Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC |
| | 50130652 | KD U-M12-4A-V1-050 | Connection cable | Application: Chemical resistant Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC |

Mounting technology - Other

| | Part no. | Designation | Article | Description |
|--|----------|-------------|---------|---|
| | 50111499 | MC 012K | Clamp | Diameter, inner: 12 mm Design of mounting device: Mounting clamp Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Rigid Material: Plastic |

Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.