

Technical data sheet

Inductive switch

Part no.: 50154808

ISS 212FM.2/4NC.5F-3E0-S12

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For illustration purposes only



Technical data

Basic data

| | |
|-----------------------------------|--------------|
| Series | 212 |
| type. operating range limit S_n | 3 mm |
| Operating range S_a | 0 ... 2.4 mm |

Special version

| | |
|-----------------|--------------------|
| Special version | Reduction factor 1 |
|-----------------|--------------------|

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) | 10 %, Over the entire operating temperature range |
| Repeatability, max. (in % of S_r) | 5 %, Over the entire operating temperature range |
| Switching hysteresis | 20 % |

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 V |

Switching output 1

| | |
|---------------------|----------------------|
| Switching element | Transistor, PNP |
| Switching principle | NC (normally closed) |

Time behavior

| | |
|---------------------|--------|
| Switching frequency | 100 Hz |
| Readiness delay | 50 ms |

Connection

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

Connection 1

| | |
|--------------------------------------|-----------------|
| Function | Signal OUT |
| | Voltage supply |
| Type of connection | Connector |
| Tightening torque per thread section | 10 Nm |
| Thread size | M12 |
| Type | Male |
| Material | Stainless steel |
| No. of pins | 4 -pin |
| Encoding | A-coded |

Mechanical data

| | |
|--------------------------|---|
| Design | Cylindrical |
| Dimension (Ø x L) | 12 mm x 52 mm |
| Thread size | M12 x 1 mm |
| Type of installation | Embedded/flush |
| Housing material | Stainless steel |
| Stainless steel housing | AISI 316L |
| Sensing face material | Stainless steel, AISI 316L |
| Net weight | 20 g |
| Housing color | Silver |
| Type of fastening | Mounting thread Via optional mounting device |
| 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 |
|--------------------------------|---------------|

Certifications

| | |
|--|---------------|
| Degree of protection | IP 68 |
| | IP 69K |
| Approvals | c UL US |
| Test procedure for EMC in accordance with standard | IEC 60947-5-2 |

Correction factors

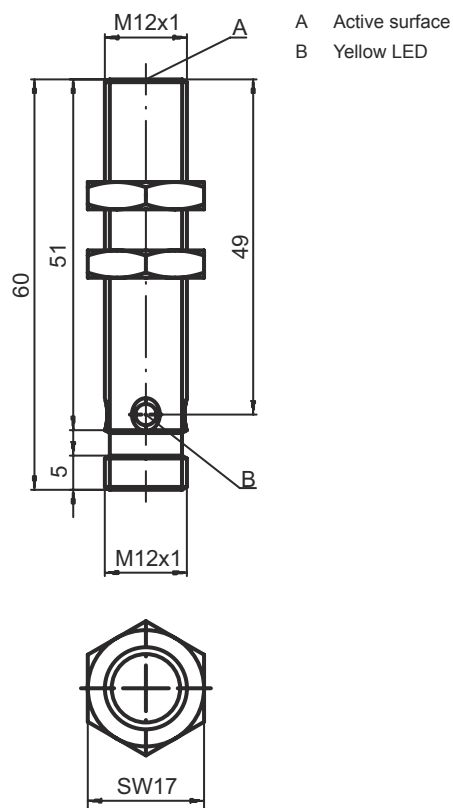
| | |
|-----------------|------|
| Aluminum | 0 |
| Stainless steel | 0.53 |
| Copper | 0 |
| Brass | 0.1 |
| Fe360 steel | 1 |

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

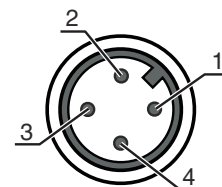


Electrical connection

Connection 1

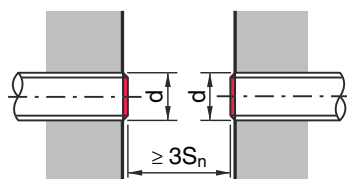
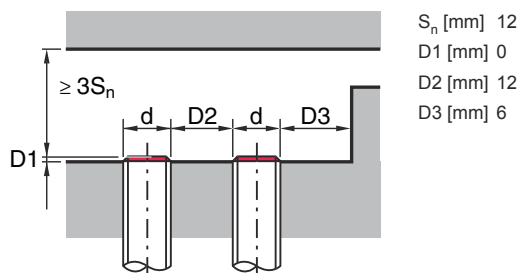
| | |
|--------------------|------------------------------|
| Function | Signal OUT Voltage supply |
| Type of connection | Connector |
| Thread size | M12 |
| Type | Male |
| Material | Stainless steel |
| No. of pins | 4 -pin |
| Encoding | A-coded |

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



Diagrams

Embedded/flush installation



Operation and display

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

Part number code

Part designation: **ISX** **YYY** **ZZ**/**AAA**.**BB**-**CCC**-**DDD**-**DDD**

| | |
|------------|---|
| ISX | <p>Operating principle / construction IS: inductive switch, standard design ISS: inductive switch, short construction</p> |
| YYY | <p>Series 203: series with Ø 3 mm 204: series with Ø 4 mm 205: series with M5 x 0.5 external thread 206: series with Ø 6.5 mm 208: series with M8 x 1 external thread 212: series with M12 x 1 external thread 218: series with M18 x 1 external thread 230: series with M30 x 1.5 external thread 240: series in cubic design 244: series in cubic design 255: series with 5 x 5 mm² cross section 288: series with 8 x 8 mm² cross section</p> |
| ZZ | <p>Housing / thread MM: metal housing (active surface: plastic) / metric thread FM: Full-metal housing (active surface: stainless steel AISI 316L) / metric thread MP: metal housing (active surface: plastic) / smooth (without thread) .2: New version</p> |
| AAA | <p>Output current / supply 4NO: PNP transistor, NO contact 4NC: PNP transistor, NC contact 2NO: NPN transistor, NO contact 2NC: NPN transistor, NC contact 1NO: relay, NO contact / AC/DC 1NC: Relay, NC contact / AC/DC 44: 2 PNP transistor switching outputs, antivalent (NO + NC) 22: 2 NPN transistor switching outputs, antivalent (NO + NC) L: IO-Link interface X: pin not used</p> |

Part number code

| | |
|------------|---|
| BB | <p>Special equipment n/a: no special equipment 5F: Food version 5: housing material V2A (1.4305, AISI 303)</p> |
| CCC | <p>Measurement range / type of installation 1E0: typ. range limit 1.0 mm / embedded/flush installation 1E5: typ. range limit 1.5 mm / embedded/flush installation 2E0: typ. range limit 2.0 mm / embedded/flush installation 3E0: typ. range limit 3.0 mm / embedded/flush installation 4E0: typ. range limit 4.0 mm / embedded/flush installation 5E0: typ. range limit 5.0 mm / embedded/flush installation 6E0: typ. range limit 6.0 mm / embedded/flush installation 8E0: typ. range limit 8.0 mm / embedded/flush installation 10E: typ. range limit 10.0 mm / embedded/flush installation 12E: typ. range limit 12.0 mm / embedded/flush installation 15E: typ. range limit 15.0 mm / embedded/flush installation 20E: typ. range limit 20.0 mm / embedded/flush installation 22E: typ. range limit 22.0 mm / embedded/flush installation 2N5: typ. range limit 2.5 mm / non-embedded/non-flush installation 4N0: typ. range limit 4.0 mm / non-embedded/non-flush installation 8N0: typ. range limit 8.0 mm / non-embedded/non-flush installation 10N: typ. range limit 10.0 mm / non-embedded/non-flush installation 12N: typ. range limit 12.0 mm / non-embedded/non-flush installation 14N: typ. range limit 14.0 mm / non-embedded/non-flush installation 15N: typ. range limit 15.0 mm / non-embedded/non-flush installation 20N: typ. range limit 20.0 mm / non-embedded/non-flush installation 22N: typ. range limit 22.0 mm / non-embedded/non-flush installation 25N: typ. range limit 25.0 mm / non-embedded/non-flush installation 40N: typ. range limit 40.0 mm / non-embedded/non-flush installation</p> |
| DDD | <p>Electrical connection n/a: cable, standard length 2000 mm S12: M12 connector, 4-pin, axial 200-S12: cable, length 200 mm with M12 connector, 4-pin, axial 200-S8.3: cable, length 200 mm with M8 connector, 3-pin, axial S8.3: M8 connector, 3-pin, axial 005-S8.3: cable, length 500 mm with M8 connector, 3-pin, axial 050: cable, standard length 5000 mm, 3-wire</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> <p>↪ These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/ CYJV7 or PVVA/PVVA7)</p> |

Further information

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 |
| | 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 |
| | 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.