# Technical data sheet
# Inductive switch
Part no.: 50154826
IS 218MM/44.5F-12N-S12




For Illustration purposes only

**Contents**


- Technical data
- Dimensioned drawings
- Electrical connection
- Diagrams
- Operation and display
- Part number code
- Notes
- Accessories

# Technical data

Leuze

## Basic data

| | |
|---|---|
| **Series** | 218 |
| **type. operating range limit $S_n$** | 12 mm |
| **Operating range $S_a$** | 0 ... 9.7 mm |

## Special version

| | |
|---|---|
| **Special version** | Washdown at 100°C for 15 minutes |

## Characteristic parameters

## 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, 2 PNP transistor switching outputs |
| **Switching principle** | antivalent (NO + NC) |

## Time behavior

| | |
|---|---|
| **Switching frequency** | 1,500 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** | 50 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)** | 18 mm x 63.1 mm |
| **Thread size** | M18 x 1 mm |
| **Type of installation** | Non-embedded/non-flush |
| **Housing material** | AISI 316L |
| | Stainless steel |
| **Sensing face material** | Plastic, PPS |
| **Net weight** | 55 g |
| **Housing color** | White |
| **Type of fastening** | Mounting thread |
| **Standard measuring plate** | 36 x 36 mm², Fe360 |

## Operation and display

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

## Environmental data

| | |
|---|---|
| **Ambient temperature, operation** | -40 ... 80 °C |
| **Ambient temperature, storage** | -40 ... 80 °C |

## Certifications

| | |
|---|---|
| **Degree of protection** | IP 67 |
| | IP 68 |
| | IP 69K |
| **Approvals** | c UL US |
| **Test procedure for EMC in accordance with standard** | IEC 60947-5-2 |

## Correction factors

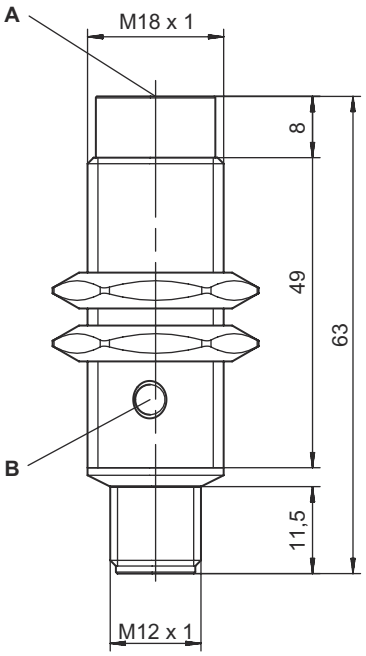
| | |
|---|---|
| **Aluminum** | 0.38 |
| **Stainless steel** | 0.65 |
| **Copper** | 0.3 |
| **Brass** | 0.42 |
| **Fe360 steel** | 1 |

## Classification

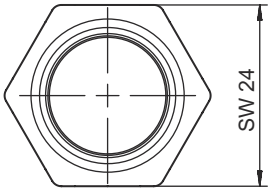
| | |
|---|---|
| **Customs tariff number** | 85365019 |
| **ECLASS 5.1.4** | 27270101 |
| **ECLASS 8.0** | 27270101 |
| **ECLASS 9.0** | 27270101 |
| **ECLASS 10.0** | 27270101 |
| **ECLASS 11.0** | 27270101 |
| **ECLASS 12.0** | 27274001 |
| **ECLASS 13.0** | 27274001 |
| **ECLASS 14.0** | 27274001 |
| **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




A Active surface
B Yellow LED

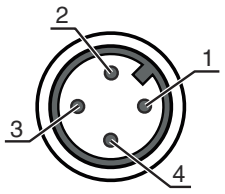



# Electrical connection

## Connection 1

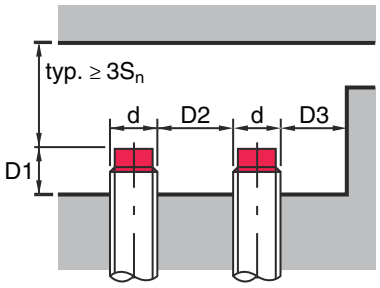
| | |
|---|---|
| **Function** | Signal OUT |
| | Voltage supply |
| **Type of connection** | Connector |
| **Thread size** | M12 |
| **Type** | Male |
| **Material** | Stainless steel |
| **No. of pins** | 4 -pin |
| **Encoding** | A-coded |

| Pin | Pin assignment |
|---|---|
| 1 | V+ |
| 2 | OUT 2 |
| 3 | GND |
| 4 | OUT 1 |

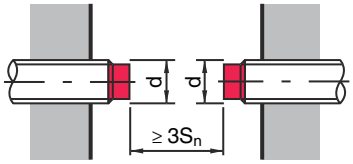


# Diagrams

## Non-embedded/non-flush installation




$S_n$ [mm] 12
D1 [mm] 16
D2 [mm] 37
D3 [mm] 18




# Operation and display

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

# Part number code

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

| | |
|---|---|
| **ISX** | **Operating principle / construction**<br>IS: inductive switch, standard design<br>ISS: inductive switch, short construction |
| **YYY** | **Series**<br>203: series with Ø 3 mm<br>204: series with Ø 4 mm<br>205: series with M5 x 0.5 external thread<br>206: series with Ø 6.5 mm<br>208: series with M8 x 1 external thread<br>212: series with M12 x 1 external thread<br>218: series with M18 x 1 external thread<br>230: series with M30 x 1.5 external thread<br>240: series in cubic design<br>244: series in cubic design<br>255: series with 5 x 5 mm² cross section<br>288: series with 8 x 8 mm² cross section |
| **ZZ** | **Housing / thread**<br>MM: metal housing (active surface: plastic) / metric thread<br>FM: Full-metal housing (active surface: stainless steel AISI 316L) / metric thread<br>MP: metal housing (active surface: plastic) / smooth (without thread)<br>.2: New version |
| **AAA** | **Output current / supply**<br>4NO: PNP transistor, NO contact<br>4NC: PNP transistor, NC contact<br>2NO: NPN transistor, NO contact<br>2NC: NPN transistor, NC contact<br>1NO: relay, NO contact / AC/DC<br>1NC: Relay, NC contact / AC/DC<br>44: 2 PNP transistor switching outputs, antivalent (NO + NC)<br>22: 2 NPN transistor switching outputs, antivalent (NO + NC)<br>L: IO-Link interface<br>X: pin not used |
| **BB** | **Special equipment**<br>n/a: no special equipment<br>5F: Food version<br>5: housing material V2A (1.4305, AISI 303) |

# Part number code

| | |
|---|---|
| **CCC** | **Measurement range / type of installation**<br>1E0: typ. range limit 1.0 mm / embedded/flush installation<br>1E5: typ. range limit 1.5 mm / embedded/flush installation<br>2E0: typ. range limit 2.0 mm / embedded/flush installation<br>3E0: typ. range limit 3.0 mm / embedded/flush installation<br>4E0: typ. range limit 4.0 mm / embedded/flush installation<br>5E0: typ. range limit 5.0 mm / embedded/flush installation<br>6E0: typ. range limit 6.0 mm / embedded/flush installation<br>8E0: typ. range limit 8.0 mm / embedded/flush installation<br>10E: typ. range limit 10.0 mm / embedded/flush installation<br>12E: typ. range limit 12.0 mm / embedded/flush installation<br>15E: typ. range limit 15.0 mm / embedded/flush installation<br>20E: typ. range limit 20.0 mm / embedded/flush installation<br>22E: typ. range limit 22.0 mm / embedded/flush installation<br>2N5: typ. range limit 2.5 mm / non-embedded/non-flush installation<br>4N0: typ. range limit 4.0 mm / non-embedded/non-flush installation<br>8N0: typ. range limit 8.0 mm / non-embedded/non-flush installation<br>10N: typ. range limit 10.0 mm / non-embedded/non-flush installation<br>12N: typ. range limit 12.0 mm / non-embedded/non-flush installation<br>14N: typ. range limit 14.0 mm / non-embedded/non-flush installation<br>15N: typ. range limit 15.0 mm / non-embedded/non-flush installation<br>20N: typ. range limit 20.0 mm / non-embedded/non-flush installation<br>22N: typ. range limit 22.0 mm / non-embedded/non-flush installation<br>25N: typ. range limit 25.0 mm / non-embedded/non-flush installation<br>40N: typ. range limit 40.0 mm / non-embedded/non-flush installation |
| **DDD** | **Electrical connection**<br>n/a: cable, standard length 2000 mm<br>S12: M12 connector, 4-pin, axial<br>200-S12: cable, length 200 mm with M12 connector, 4-pin, axial<br>200-S8.3: cable, length 200 mm with M8 connector, 3-pin, axial<br>S8.3: M8 connector, 3-pin, axial<br>005-S8.3: cable, length 500 mm with M8 connector, 3-pin, axial<br>050: cable, standard length 5000 mm, 3-wire |

**Note**

- A list with all available device types can be found on the Leuze website at www.leuze.com.

# Notes

**Observe intended use!**

- This product is not a safety sensor and is not intended as personnel protection.
- The product may only be put into operation by competent persons.
- Only use the product in accordance with its intended use.

**For UL applications:**

- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).

# Accessories

## Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50130654 | KD U-M12-4A-P1-020 | Connection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PUR |
|  | 50130657 | KD U-M12-4A-P1-050 | Connection cable | Application: Oil and lubricant resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: PUR |
|  | 50148349 | KD U-M12-4A-T0-020 F+B | Connection cable | Application: Hygienic and wet areas, Chemical resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: TPE |
|  | 50148350 | KD U-M12-4A-T0-050 F+B | Connection cable | Application: Chemical resistant, Hygienic and wet areas<br>Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5,000 mm<br>Sheathing material: TPE |
|  | 50130648 | KD U-M12-4A-V1-020 | Connection cable | Application: Chemical resistant<br>Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PVC |
|  | 50130688 | KD U-M12-4W-V1-020 | Connection cable | Application: Chemical resistant<br>Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2,000 mm<br>Sheathing material: PVC |

## Mounting technology - Other

| | Part no. | Designation | Article | Description |
|---|---|---|---|---|
|  | 50111501 | MC 018K | Clamp | Diameter, inner: 18 mm<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Rigid<br>Material: Plastic |

# Accessories

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