

# Technical data sheet

## Inductive switch

Part no.: 50153114

IS D08MM/4NC-2E0

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For illustration purposes only



## Technical data

### Basic data

|                                   |              |
|-----------------------------------|--------------|
| Series                            | D08          |
| type. operating range limit $S_n$ | 2 mm         |
| Operating range $S_a$             | 0 ... 1.6 mm |

### Characteristic parameters

|      |           |
|------|-----------|
| MTTF | 342 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. | 100 mA     |
| Residual current, max.  | 0.1 mA     |
| Voltage drop            | $\leq 2$ V |

### Switching output 1

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

### Time behavior

|                     |          |
|---------------------|----------|
| Switching frequency | 1,500 Hz |
| Readiness delay     | 100 ms   |

### Connection

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

### Connection 1

|                      |                     |
|----------------------|---------------------|
| Function             | Signal OUT          |
|                      | Voltage supply      |
| Type of connection   | Cable               |
| Cable length         | 2,000 mm            |
| Sheathing material   | PVC                 |
| Cable color          | Black               |
| Number of conductors | 3 -wire             |
| Wire cross section   | 0.2 mm <sup>2</sup> |

### Mechanical data

|                                      |                                 |
|--------------------------------------|---------------------------------|
| Design                               | Cylindrical                     |
| Dimension ( $\varnothing \times L$ ) | 8 mm x 53 mm                    |
| Thread size                          | M8 x 1 mm                       |
| Type of installation                 | Embedded                        |
| Housing material                     | Metal                           |
| Metal housing                        | Stainless steel                 |
| Sensing face material                | Plastic, Polybutylene (PBT)     |
| Net weight                           | 25 g                            |
| Housing color                        | Red, RAL 3000                   |
|                                      | Silver                          |
| Type of fastening                    | Mounting thread                 |
| Standard measuring plate             | 12 x 12 mm <sup>2</sup> , 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

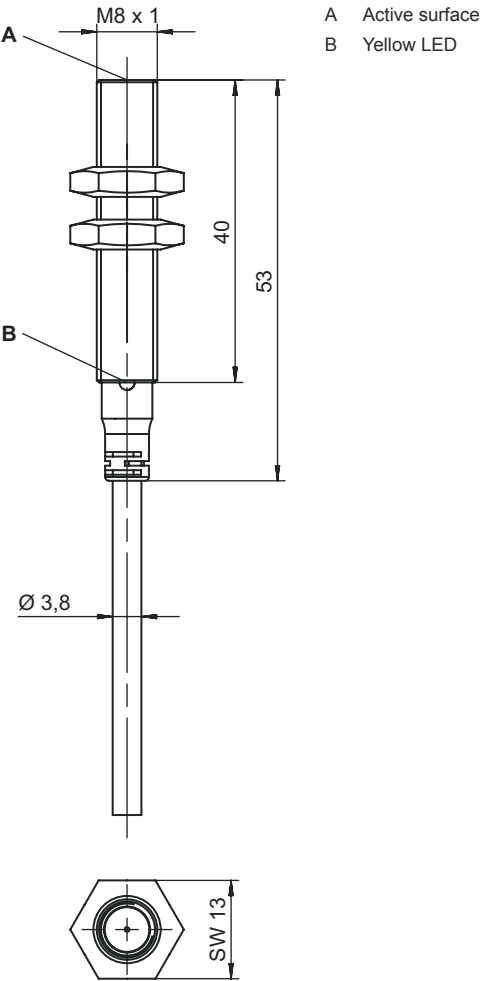
|                 |      |
|-----------------|------|
| Aluminum        | 0.38 |
| Stainless steel | 0.71 |
| Copper          | 0.31 |
| Brass           | 0.41 |
| Fe360 steel     | 1    |

### 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 |
| ETIM 5.0              | EC002714 |
| ETIM 6.0              | EC002714 |
| ETIM 7.0              | EC002714 |
| ETIM 8.0              | EC002714 |
| ETIM 9.0              | EC002714 |
| ETIM 10.0             | EC002714 |

Dimensioned drawings

All dimensions in millimeters



Electrical connection

Connection 1

|                      |                |
|----------------------|----------------|
| Function             | Signal OUT     |
|                      | Voltage supply |
| Type of connection   | Cable          |
| Cable length         | 2,000 mm       |
| Sheathing material   | PVC            |
| Cable color          | Black          |
| Number of conductors | 3 -wire        |
| Wire cross section   | 0.2 mm²        |

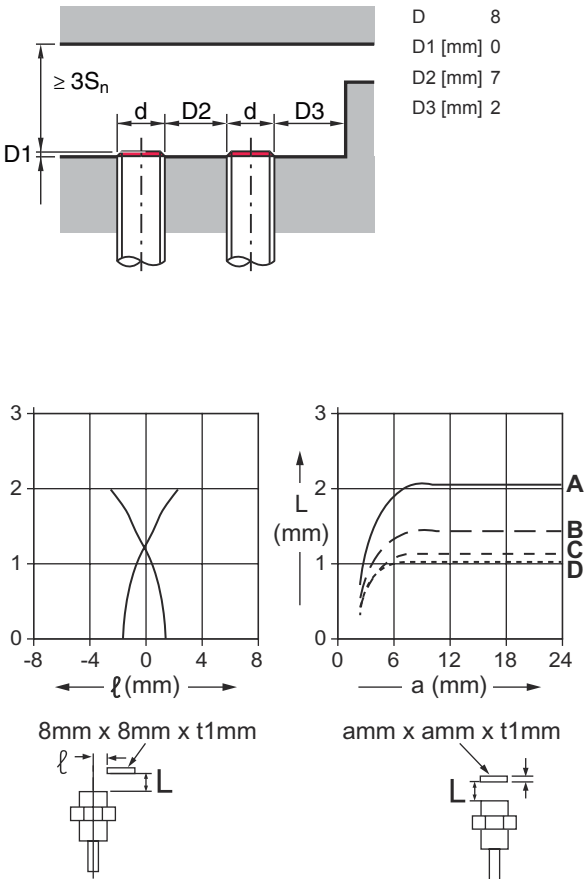
Conductor color

Conductor assignment

|       |       |
|-------|-------|
| Brown | V+    |
| Blue  | GND   |
| Black | OUT 1 |

Diagrams

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

Part number code

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

Note



A list with all available device types can be found on the Leuze website at [www.leuze.com](http://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                                                                                                                                                             |
|-------------------------------------------------------------------------------------|----------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130842 | KD U-M8-3A-P1-020 | Connection cable | Connection 1: Connector, M8, Axial, Female, 3 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2.000 mm<br>Sheathing material: PUR |

## Accessories

|                                                                                   | Part no. | Designation       | Article          | Description                                                                                                                                                              |
|-----------------------------------------------------------------------------------|----------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50130844 | KD U-M8-3A-P1-050 | Connection cable | Connection 1: Connector, M8, Axial, Female, 3 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 5.000 mm<br>Sheathing material: PUR  |
|                                                                                   | 50130837 | KD U-M8-3A-V1-020 | Connection cable | Connection 1: Connector, M8, Axial, Female, 3 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: No<br>Cable length: 2.000 mm<br>Sheathing material: PVC  |
|                                                                                   | 50130860 | KD U-M8-3W-V1-020 | Connection cable | Connection 1: Connector, M8, Angled, Female, 3 -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 - Mounting brackets

|                                                                                     | Part no. | Designation | Article          | Description                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|----------|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50113550 | BT D08M.5   | Mounting bracket | Diameter, inner: 8 mm<br>Design of mounting device: Angle, L-shape<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Rigid<br>Material: Stainless steel |

## Mounting technology - Other

|                                                                                     | Part no. | Designation | Article | Description                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|----------|-------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50111497 | MC 008K     | Clamp   | Diameter, inner: 8 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                 |
|  | 50111498 | MC 008K-LS  | Clamp   | Diameter, inner: 8 mm<br>Design of mounting device: Mounting clamp<br>Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Clampable with limit stop<br>Type of mounting device: Rigid<br>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.