



**Part no.: 50113478**  
**IS 204MP/4NO-1E5**  
**Inductive switch**



Figure can vary

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## Technical data

| <b>Basic data</b>                        |                                                                                                   |
|------------------------------------------|---------------------------------------------------------------------------------------------------|
| Series                                   | 204                                                                                               |
| Typ. operating range limit $S_n$         | 1.5 mm                                                                                            |
| Operating range $S_a$                    | 0 ... 1.2 mm                                                                                      |
| <b>Characteristic parameters</b>         |                                                                                                   |
| MTTF                                     | 870 years                                                                                         |
| <b>Electrical data</b>                   |                                                                                                   |
| Protective circuit                       | Inductive protection<br>Polarity reversal protection<br>Short circuit protected                   |
| <b>Performance data</b>                  |                                                                                                   |
| Supply voltage $U_B$                     | 10 ... 30 V , DC                                                                                  |
| Residual ripple                          | 0 ... 20 % , From $U_B$                                                                           |
| Open-circuit current                     | 0 ... 10 mA                                                                                       |
| Temperature drift, max. (in % of $S_r$ ) | 10 % , Over the entire operating temperature range                                                |
| Repeatability, max. (in % of $S_r$ )     | 5 % , For $U_B = 20 \dots 30$ V DC, ambient temperature<br>$T_a = 23 \text{ °C} \pm 5 \text{ °C}$ |
| Switching hysteresis                     | 10 %                                                                                              |
| <b>Outputs</b>                           |                                                                                                   |
| Number of digital switching outputs      | 1 Piece(s)                                                                                        |
| <b>Switching outputs</b>                 |                                                                                                   |
| Voltage type                             | DC                                                                                                |
| Switching current, max.                  | 200 mA                                                                                            |
| Residual current, max.                   | 0.1 mA                                                                                            |
| <b>Switching output 1</b>                |                                                                                                   |
| Switching element                        | Transistor , PNP                                                                                  |
| Switching principle                      | NO (normally open)                                                                                |
| <b>Timing</b>                            |                                                                                                   |
| Switching frequency                      | 3,000 Hz                                                                                          |
| Readiness delay                          | 10 ms                                                                                             |
| <b>Connection</b>                        |                                                                                                   |
| Number of connections                    | 1 Piece(s)                                                                                        |
| <b>Connection 1</b>                      |                                                                                                   |
| Type of connection                       | Cable                                                                                             |
| Function                                 | Signal OUT<br>Voltage supply                                                                      |
| Cable length                             | 2,000 mm                                                                                          |
| Sheathing material                       | PVC                                                                                               |
| Cable color                              | Gray                                                                                              |
| Number of conductors                     | 3 -wire                                                                                           |
| Wire cross section                       | 0.14 mm <sup>2</sup>                                                                              |
| <b>Mechanical data</b>                   |                                                                                                   |
| Design                                   | Cylindrical                                                                                       |

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|                          |                                   |
|--------------------------|-----------------------------------|
| Dimension (Ø x L)        | 4 mm x 25 mm                      |
| Type of installation     | Embedded                          |
| Housing material         | Stainless steel , V2A             |
| Sensing face material    | Plastic , Polyoxymethylene (POM)  |
| Net weight               | 39 g                              |
| Housing color            | Red, RAL 3000<br>Silver           |
| Standard measuring plate | 4.5 x 4.5 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                                   | III                                             |
| Certifications                                     | c UL US                                         |
| Test procedure for EMC in accordance with standard | IEC 61000-4-2<br>IEC 61000-4-3<br>IEC 61000-4-4 |
| Standards applied                                  | IEC 60947-5-2                                   |

### Correction factors

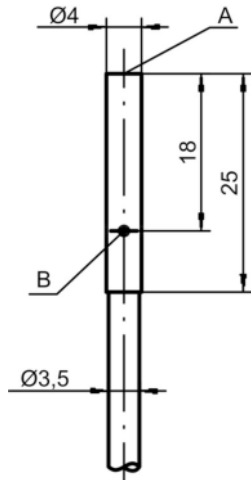
|                 |      |
|-----------------|------|
| Aluminum        | 0.4  |
| Stainless steel | 0.75 |
| Copper          | 0.4  |
| Brass           | 0.5  |
| Fe360 steel     | 1    |

### Classification

|                       |          |
|-----------------------|----------|
| Customs tariff number | 85365019 |
| eCl@ss 8.0            | 27270101 |
| eCl@ss 9.0            | 27270101 |
| ETIM 5.0              | EC002714 |
| ETIM 6.0              | EC002714 |

## Dimensioned drawings

All dimensions in millimeters



A Active surface  
B Yellow LED

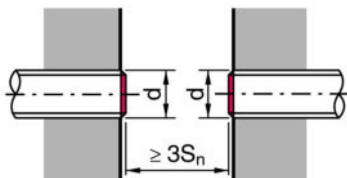
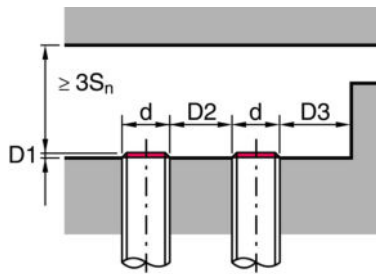
## Electrical connection

| Connection 1         |                              |
|----------------------|------------------------------|
| Type of connection   | Cable                        |
| Function             | Signal OUT<br>Voltage supply |
| Cable length         | 2,000 mm                     |
| Sheathing material   | PVC                          |
| Cable color          | Gray                         |
| Number of conductors | 3 -wire                      |
| Wire cross section   | 0.14 mm <sup>2</sup>         |

| Conductor color | Conductor assignment |
|-----------------|----------------------|
| Brown           | V+                   |
| Blue            | GND                  |
| Black           | OUT 1                |

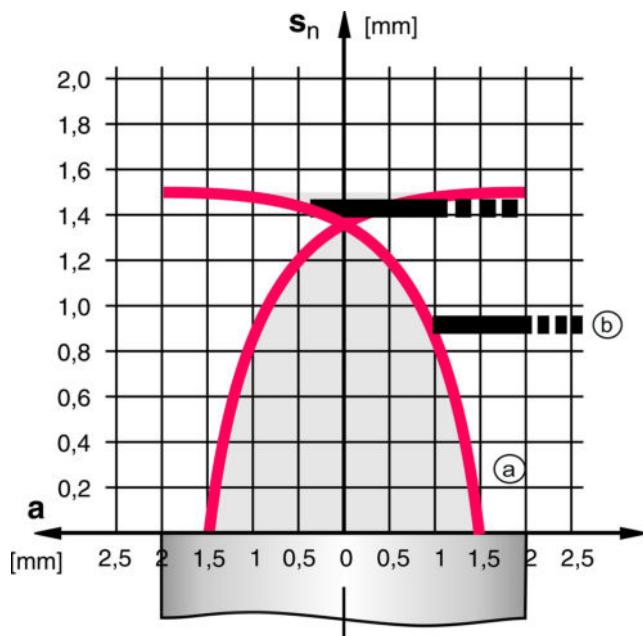
## Diagrams

### Embedded installation



|            |     |
|------------|-----|
| $S_n$ [mm] | 1.5 |
| D1 [mm]    | 0   |
| D2 [mm]    | 1   |
| D3 [mm]    | 1.5 |

### Types with $S_n = 1.5$ mm



— ON (a)

— (b)

- a Inductive switch
- b Standard measuring plate

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## Operation and display

### LEDs

| 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 | <b>Operating principle / construction:</b><br>IS: inductive switch, standard design<br>ISS: inductive switch, short construction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| YYY | <b>Series:</b><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 mm <sup>2</sup> cross section<br>288: series with 8 x 8 mm <sup>2</sup> cross section                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ZZ  | <b>Housing / thread:</b><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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| AAA | <b>Output current / supply:</b><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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| BB  | <b>Special equipment:</b><br>n/a: no special equipment<br>5F: food version<br>5: housing material V2A (1.4305, AISI 303)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| CCC | <b>Measurement range / type of installation:</b><br>1E0: typ. range limit 1.0 mm / embedded installation<br>1E5: typ. range limit 1.5 mm / embedded installation<br>2E0: typ. range limit 2.0 mm / embedded installation<br>3E0: typ. range limit 3.0 mm / embedded installation<br>4E0: typ. range limit 4.0 mm / embedded installation<br>5E0: typ. range limit 5.0 mm / embedded installation<br>6E0: typ. range limit 6.0 mm / embedded installation<br>8E0: typ. range limit 8.0 mm / embedded installation<br>10E: typ. range limit 10.0 mm / embedded installation<br>12E: typ. range limit 12.0 mm / embedded installation<br>15E: typ. range limit 15.0 mm / embedded installation<br>20E: typ. range limit 20.0 mm / embedded installation<br>22E: typ. range limit 22.0 mm / embedded installation<br>2N5: typ. range limit 2.5 mm / non-embedded installation<br>4N0: typ. range limit 4.0 mm / non-embedded installation<br>8N0: typ. range limit 8.0 mm / non-embedded installation<br>10N: typ. range limit 10.0 mm / non-embedded installation<br>12N: typ. range limit 12.0 mm / non-embedded installation<br>14N: typ. range limit 14.0 mm / non-embedded installation<br>15N: typ. range limit 15.0 mm / non-embedded installation<br>20N: typ. range limit 20.0 mm / non-embedded installation<br>22N: typ. range limit 22.0 mm / non-embedded installation<br>25N: typ. range limit 25.0 mm / non-embedded installation<br>40N: typ. range limit 40.0 mm / non-embedded installation |
| DDD | <b>Electrical connection:</b><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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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### Note

A list with all available device types can be found on the Leuze electronic 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

### Mounting technology - Other

|                                                                                     | Part no. | Designation | Article | Description                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------|----------|-------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50134200 | MC 004K     | Clamp   | Diameter, inner: 5 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 |

### Note

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