

## Technical data sheet

### Inductive switch

Part no.: 50141475

ISS 212MM/44-4E0-S12

#### Contents

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



Figure can vary



## Technical data

### Basic data

Series	212
Typ. operating range limit $S_n$	4 mm
Operating range $S_a$	0 ... 3.24 mm

### Special version

Special version	Antivalent
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### Characteristic parameters

MTTF	750 years
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### Electrical data

Protective circuit	Polarity reversal protection
	Short circuit protected
	Transient protection

### Performance data

Supply voltage $U_B$	10 ... 36 V, DC
Residual ripple	0 ... 10 %, From $U_B$
Open-circuit current	0 ... 16 mA
Temperature drift, max. (in % of $S_r$ )	19 %
Repeatability, max. (in % of $S_r$ )	10 %
Switching hysteresis	20 %

### Outputs

Number of digital switching outputs	2 Piece(s)
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### Switching outputs

Voltage type	DC
Switching current, max.	200 mA
Residual current, max.	0.05 mA
Voltage drop	≤ 2 V

### Switching output 1

Switching element	Transistor, PNP
Switching principle	NO contact – Antivalent

### Switching output 2

Switching element	Transistor, PNP
Switching principle	NC contact – Antivalent

### Timing

Switching frequency	2,000 Hz
Readiness delay	50 ms

### Connection

Number of connections	1 Piece(s)
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### 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
Thread size	M12 x 1 mm
Dimension (Ø x L)	12 mm x 50.2 mm
Type of installation	Embedded
Housing material	Metal
Metal housing	Nickel-plated brass
Sensing face material	Plastic, Polybutylene (PBT)
Net weight	15 g
Housing color	Gray
	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	-30 ... 80 °C

### Certifications

Degree of protection	IP 67
Protection class	II
Certifications	c UL US
Test procedure for EMC in accordance with standard	EN 61000-4-2, -3, -4, -8

### Correction factors

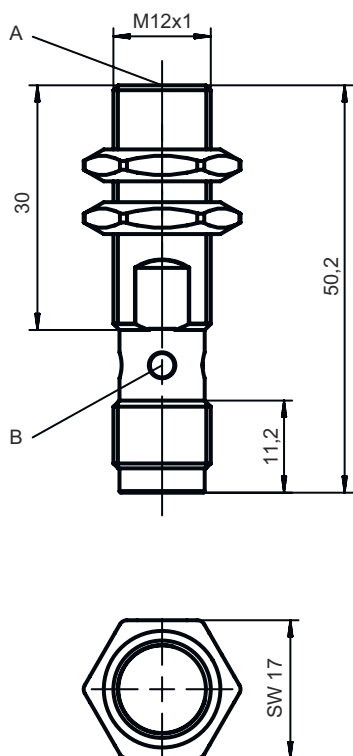
Aluminum	0.5
Stainless steel	0.7
Copper	0.3
Brass	0.5
Fe360 steel	1

### Classification

Customs tariff number	85365019
eCl@ss 5.1.4	27270101
eCl@ss 8.0	27270101
eCl@ss 9.0	27270101
eCl@ss 10.0	27270101
eCl@ss 11.0	27270101
ETIM 5.0	EC002714
ETIM 6.0	EC002714
ETIM 7.0	EC002714

# Dimensioned drawings

All dimensions in millimeters

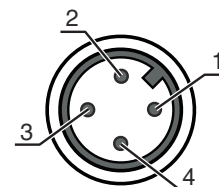


## Electrical connection

### Connection 1

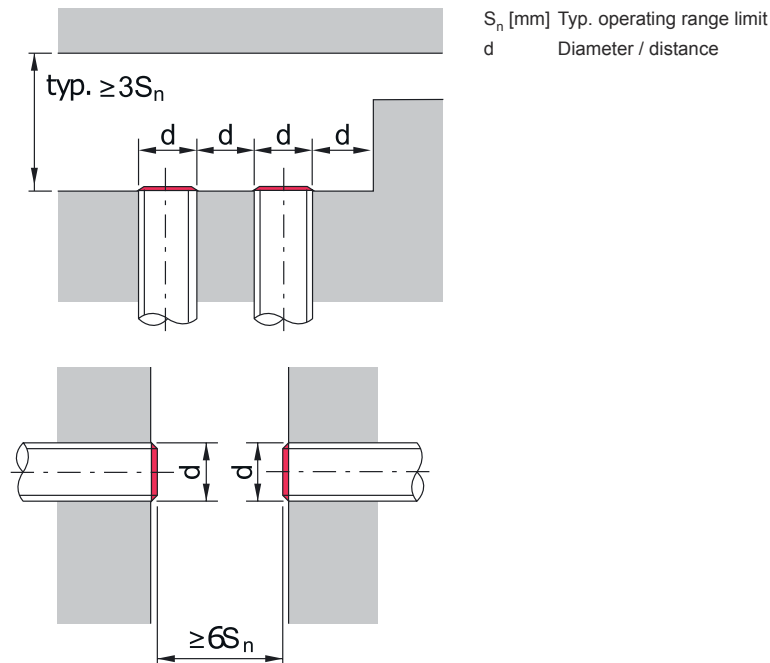
Function	Signal OUT Voltage supply
Type of connection	Connector
Thread size	M12
Type	Male
Material	Metal
No. of pins	4 -pin
Encoding	A-coded

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



## Diagrams

### Embedded installation



## Operation and display

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

## Part number code

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

<b>ISX</b>	<b>Operating principle / construction</b> IS: inductive switch, standard design ISS: inductive switch, short construction
<b>YYY</b>	<b>Series</b> 203: series with $\varnothing$ 3 mm 204: series with $\varnothing$ 4 mm 205: series with M5 x 0.5 external thread 206: series with $\varnothing$ 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 mm <sup>2</sup> cross section 288: series with 8 x 8 mm <sup>2</sup> cross section
<b>ZZ</b>	<b>Housing / thread</b> 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)

## Part number code

<b>AAA</b>	<p><b>Output current / supply</b>                  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)</p>
<b>BB</b>	<p><b>Special equipment</b>                  n/a: no special equipment                  5F: food version                  5: housing material V2A (1.4305, AISI 303)</p>
<b>CCC</b>	<p><b>Measurement range / type of installation</b>                  1E0: typ. range limit 1.0 mm / embedded installation                  1E5: typ. range limit 1.5 mm / embedded installation                  2E0: typ. range limit 2.0 mm / embedded installation                  3E0: typ. range limit 3.0 mm / embedded installation                  4E0: typ. range limit 4.0 mm / embedded installation                  5E0: typ. range limit 5.0 mm / embedded installation                  6E0: typ. range limit 6.0 mm / embedded installation                  8E0: typ. range limit 8.0 mm / embedded installation                  10E: typ. range limit 10.0 mm / embedded installation                  12E: typ. range limit 12.0 mm / embedded installation                  15E: typ. range limit 15.0 mm / embedded installation                  20E: typ. range limit 20.0 mm / embedded installation                  22E: typ. range limit 22.0 mm / embedded installation                  2N5: typ. range limit 2.5 mm / non-embedded installation                  4N0: typ. range limit 4.0 mm / non-embedded installation                  8N0: typ. range limit 8.0 mm / non-embedded installation                  10N: typ. range limit 10.0 mm / non-embedded installation                  12N: typ. range limit 12.0 mm / non-embedded installation                  14N: typ. range limit 14.0 mm / non-embedded installation                  15N: typ. range limit 15.0 mm / non-embedded installation                  20N: typ. range limit 20.0 mm / non-embedded installation                  22N: typ. range limit 22.0 mm / non-embedded installation                  25N: typ. range limit 25.0 mm / non-embedded installation                  40N: typ. range limit 40.0 mm / non-embedded installation</p>
<b>DDD</b>	<p><b>Electrical connection</b>                  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>

## Notes

**Observe intended use!**

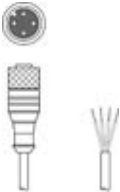



	<ul style="list-style-type: none"> <li> This product is not a safety sensor and is not intended as personnel protection.</li> <li> The product may only be put into operation by competent persons.</li> <li> Only use the product in accordance with its intended use.</li> </ul>
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**For UL applications:**


	<ul style="list-style-type: none"> <li> For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> </ul>
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## Accessories



### Connection technology - Connection cables

	Part no.	Designation	Article	Description
	50130654	KD U-M12-4A-P1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130657	KD U-M12-4A-P1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR
	50130648	KD U-M12-4A-V1-020	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	50130652	KD U-M12-4A-V1-050	Connection cable	Connection 1: Connector, M12, Axial, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC


### Mounting technology - Mounting brackets

	Part no.	Designation	Article	Description
	50113549	BT D12M.5	Mounting bracket	Diameter, inner: 12 mm Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Rigid Material: Stainless steel


### Mounting technology - Other

	Part no.	Designation	Article	Description
	50132728	AC D12M-CS	Clamp	Diameter, inner: 12 mm Design of mounting device: Mounting clamp Fastening, at system: Screw type, Through-hole mounting Mounting bracket, at device: insertable, Clampable with limit stop Type of mounting device: Clampable, With limit stop Material: Metal
	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

## Accessories

	Part no.	Designation	Article	Description
	50111500	MC 012K-LS	Clamp	Diameter, inner: 12 mm Design of mounting device: Mounting clamp Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable with limit stop 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.