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Leuze electronic

the sensor people

Part no.: 50109713
IS 230MM/4NO-10E-S12
Inductive switch

CE

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Figure can vary

Contents

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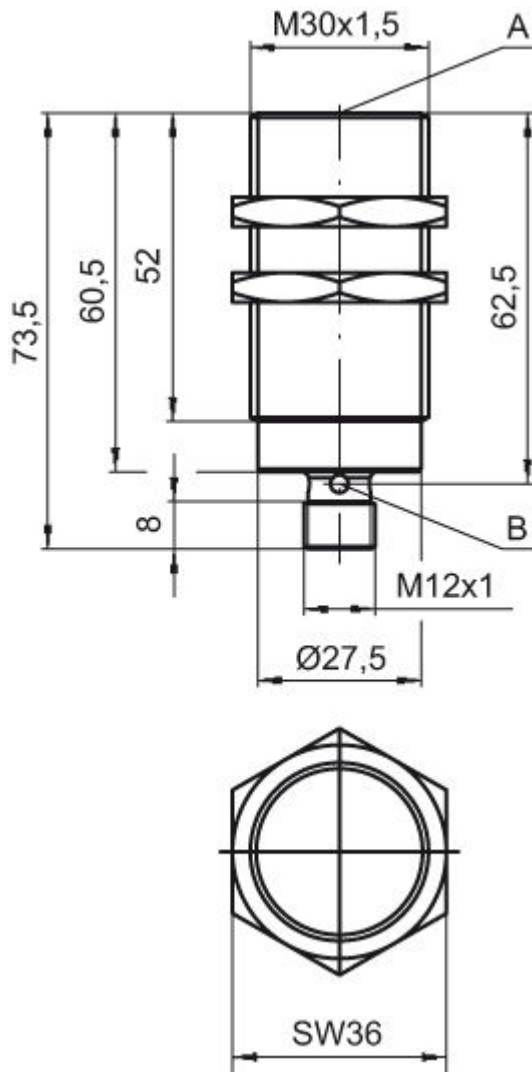- Notes
- Accessories

Technical data

Basic data	
Series	230
Typ. operating range limit S_n	10 mm
Operating range S_a	0 ... 8.1 mm

Characteristic parameters	
MTTF	930 years

Electrical data	
Protective circuit	Polarity reversal protection Inductive protection Short circuit protected

Performance data	
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 … 30 V DC, ambient temperature T_a = 23 °C ± 5 °C
Switching hysteresis	20 %

Outputs	
Number of digital switching outputs	1 Piece(s)

Switching outputs	
Voltage type	DC
Switching current, max.	200 mA
Switching voltage	Low: ≤2V
Residual current, max.	0.1 mA
Voltage drop	2 V

Switching output 1	
Switching element	Transistor, PNP
Switching principle	NO (normally open)

Timing	
Switching frequency	1,200 Hz
Readiness delay	70 ms

Connection	
Number of connections	1 Piece(s)

Connection 1	
Type of connection	Connector
Function	Voltage supply Signal OUT
Thread size	M12
Type	Male
Material	Metal
No. of pins	4 -pin
Encoding	A-coded

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Part no.: 50109713 – IS 230MM/4NO-10E-S12 – Inductive switch

Mechanical data	
Design	Cylindrical
Thread size	M30 x 1.5 mm
Dimension (Ø x L)	30 mm x 63.5 mm
Type of installation	Embedded
Housing material	Metal, Nickel-plated brass
Sensing face material	Plastic, Polybutylene (PBT)
Net weight	130 g
Housing color	Silver Red, RAL 3000
Type of fastening	Mounting thread
Standard measuring plate	30 x 30 mm², 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
Certifications	c UL US
Test procedure for EMC in accordance with standard	IEC 61000-4-3 IEC 61000-4-2 IEC 61000-4-4
Standards applied	IEC 60947-5-2

Correction factors	
Aluminum	0.45
Stainless steel	0.8
Copper	0.4
Brass	0.55
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

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A Active surface
B Yellow LED

Electrical connection

Connection 1	
Type of connection	Connector
Function	Voltage supply Signal OUT
Thread size	M12
Type	Male
Material	Metal
No. of pins	4 -pin
Encoding	A-coded

Pin	Pin assignment
1	V+
2	n.c.
3	GND

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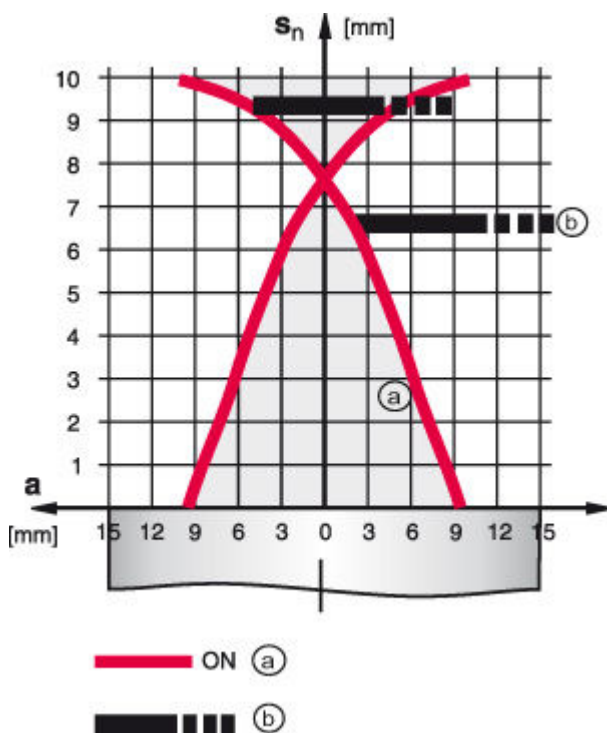
Pin	Pin assignment
4	OUT 1

Diagrams

Embedded installation
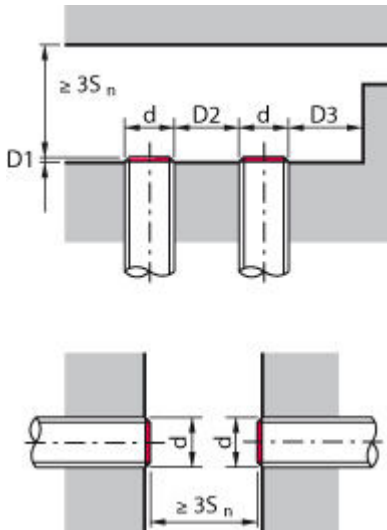
S_n [mm]	10
D1 [mm]	0
D2 [mm]	30
D3 [mm]	10

Types with S_n = 10.0 mm

ON (a)

(b)

a   Inductive switch
b   Standard measuring plate

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	**Operating principle / construction:** IS: inductive switch, standard design ISS: inductive switch, short construction
YYY	**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
ZZ	**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)
AAA	**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)
BB	**Special equipment:** n/a: no special equipment 5F: food version 5: housing material V2A (1.4305, AISI 303)
CCC	**Measurement range / type of installation:** 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 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 15N: typ. range limit 15.0 mm / non-embedded installation 20N: typ. range limit 20.0 mm / non-embedded installation 25N: typ. range limit 25.0 mm / non-embedded installation 40N: typ. range limit 40.0 mm / non-embedded installation

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DDD	**Electrical connection:** n/a: cable, PVC, standard length 2000 mm S12: M12 connector, 4-pin, axial 200-S12: cable, PVC, length 200 mm with M12 connector, 4-pin, axial 200-S8.3: cable, PVC, length 200 mm with M8 connector, 3-pin, axial S8.3: M8 connector, 3-pin, axial 005-S8.3: cable, PVC, length 500 mm with M8 connector, 3-pin, axial

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

	Part no.	Designation	Article	Description
	50130692	KD U-M12-4W-P1-020	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130694	KD U-M12-4W-P1-050	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR
	50130688	KD U-M12-4W-V1-020	Connection cable	Connection 1: Connector, M12, Angled, Female, A-coded, 4 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	50130690	KD U-M12-4W-V1-050	Connection cable	Connection 1: Connector, M12, Angled, 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
	50113510	BT D30M.5	Mounting bracket	Diameter, inner: 30.2 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
	50132730	AC D30M-CS	Clamp	Contains: 2x M36 mounting nut Diameter, inner: 30 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
	50111503	MC 030K	Clamp	Diameter, inner: 30 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
	50111504	MC 030K-LS	Clamp	Diameter, inner: 30 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