SMART
SENSOR
BUSINESS

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Figure can vary

Part no.: 50128183
IS 208FM/2NO.5-2E0-S8.3
Inductive switch

Contents

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Technical data

Basic data	
Series	208
Typ. operating range limit S_n	2 mm
Operating range S_a	0 ... 1.6 mm
Special design	
Special design	Reduction factor 1
Electrical data	
Protective circuit	Inductive protection Polarity reversal protection Short circuit protected
Performance data	
Supply voltage	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, NPN
Switching principle	NO (normally open)
Timing	
Switching frequency	100 Hz
Readiness delay	30 ms
Connection	
Number of connections	1 Piece(s)
Connection 1	
Type of connection	Connector
Function	Voltage supply Signal OUT
Thread size	M8
Type	Male
Material	Stainless steel
No. of pins	3 -pin
Mechanical data	
Design	Cylindrical

Thread size	M8 x 1 mm
Dimension (Ø x L)	8 mm x 45 mm
Type of installation	Embedded
Housing material	Stainless steel, V2A
Sensing face material	Stainless steel, AISI 303
Net weight	15 g
Housing color	Silver
Type of fastening	Via optional mounting device Mounting thread
Standard measuring plate	8 x 8 mm², Fe360

Operation and display	
Type of display	LED
Number of LEDs	1 Piece(s)

Environmental data	
Ambient temperature, operation	-25 ... 70 °C

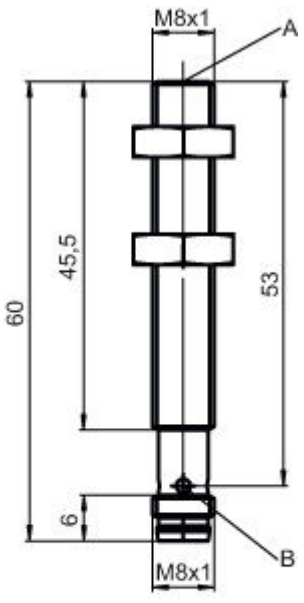
Certifications	
Degree of protection	IP 68 IP 67
Certifications	c UL US
Test procedure for EMC in accordance with standard	IEC 61000-4-3 IEC 61000-4-2 IEC 61000-4-4
Standards applied	IEC 60947-5-2

Correction factors	
Aluminum	1
Stainless steel	0.4
Copper	0.8
Brass	1.4

Classification	
eCl@ss 8.0	27270101
eCl@ss 9.0	27270101
ETIM 5.0	EC002714

Dimensioned drawings

All dimensions in millimeters

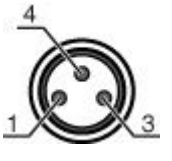


A Active surface
B Yellow LED

Electrical connection

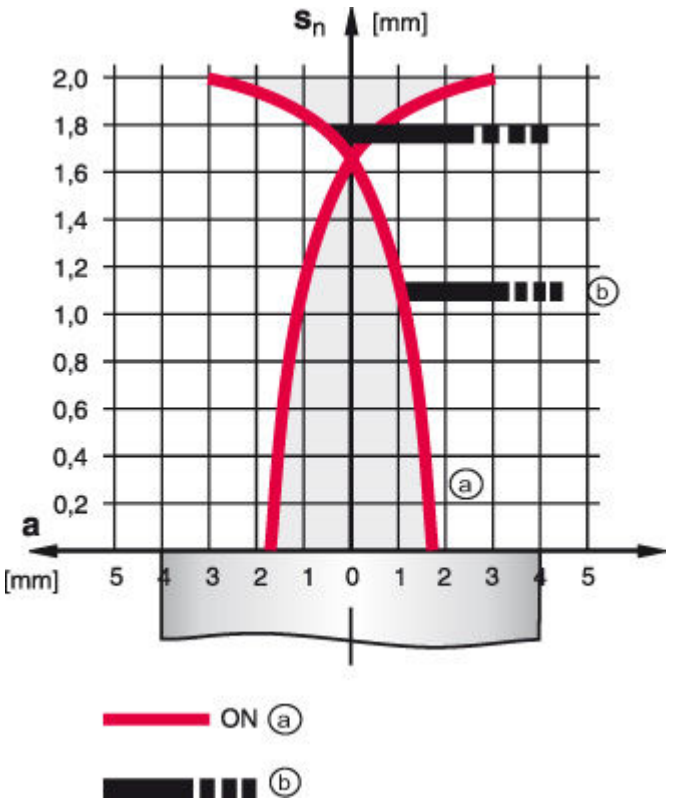
Connection 1	
Type of connection	Connector
Function	Voltage supply Signal OUT
Thread size	M8
Type	Male
Material	Stainless steel
No. of pins	3 -pin
Encoding	

Pin	Pin assignment
1	V+
3	GND
4	OUT 1



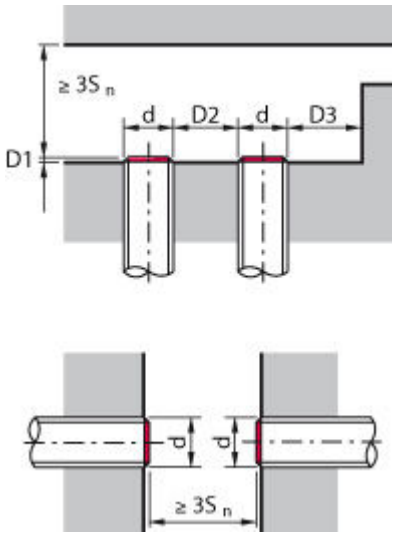
Diagrams

Embedded installation



S_n [mm]	2
D1 [mm]	0
D2 [mm]	12
D3 [mm]	1

Types with S_n = 2.0 mm



a Inductive switch
b Standard measuring plate

Operation and display

LEDs

LED	Display	Meaning
1	Yellow, flashing	No function reserve
	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
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
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. scanning range limit 1.0 mm / embedded installation 1E5: typ. scanning range limit 1.5 mm / embedded installation 2E0: typ. scanning range limit 2.0 mm / embedded installation 3E0: typ. scanning range limit 3.0 mm / embedded installation 4E0: typ. scanning range limit 4.0 mm / embedded installation 5E0: typ. scanning range limit 5.0 mm / embedded installation 6E0: typ. scanning range limit 6.0 mm / embedded installation 8E0: typ. scanning range limit 8.0 mm / embedded installation 10E: typ. scanning range limit 10.0 mm / embedded installation 12E: typ. scanning range limit 12.0 mm / embedded installation 20E: typ. scanning range limit 20.0 mm / embedded installation 22E: typ. scanning range limit 22.0 mm / embedded installation 2N5: typ. scanning range limit 2.5 mm / non-embedded installation 4N0: typ. scanning range limit 4.0 mm / non-embedded installation 8N0: typ. scanning range limit 8.0 mm / non-embedded installation 10N: typ. scanning range limit 10.0 mm / non-embedded installation 12N: typ. scanning range limit 12.0 mm / non-embedded installation 15N: typ. scanning range limit 15.0 mm / non-embedded installation 20N: typ. scanning range limit 20.0 mm / non-embedded installation 25N: typ. scanning range limit 25.0 mm / non-embedded installation 40N: typ. scanning range limit 40.0 mm / non-embedded installation
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

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

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 Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130844	KD U-M8-3A-P1-050	Connection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR
	50130837	KD U-M8-3A-V1-020	Connection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	50130832	KD U-M8-3A-V1-050	Connection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC
	50130865	KD U-M8-3W-P1-020	Connection cable	Connection 1: Connector, M8, Angled, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130867	KD U-M8-3W-P1-050	Connection cable	Connection 1: Connector, M8, Angled, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PUR
	50130860	KD U-M8-3W-V1-020	Connection cable	Connection 1: Connector, M8, Angled, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	50130862	KD U-M8-3W-V1-050	Connection cable	Connection 1: Connector, M8, Angled, Female, 3 -pin Connection 2: Open end Shielded: No Cable length: 5,000 mm Sheathing material: PVC

Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
	50130931	KDS U-M8-3A-M12-3A-P1-020	Interconnection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 3 -pin Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130932	KDS U-M8-3A-M12-3A-P1-050	Interconnection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Connector, M12, Axial, Male, A-coded, 3 -pin Shielded: No Cable length: 5,000 mm Sheathing material: PUR
	50130905	KDS U-M8-3A-M8-3A-P1-020	Interconnection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Connector, M8, Axial, Male, 3 -pin Shielded: No Cable length: 2,000 mm Sheathing material: PUR
	50130907	KDS U-M8-3A-M8-3A-P1-050	Interconnection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Connector, M8, Axial, Male, 3 -pin Shielded: No Cable length: 5,000 mm Sheathing material: PUR
	50130900	KDS U-M8-3A-M8-3A-V1-020	Interconnection cable	Connection 1: Connector, M8, Axial, Female, 3 -pin Connection 2: Connector, M8, Axial, Male, 3 -pin Shielded: No Cable length: 2,000 mm Sheathing material: PVC
	50130920	KDS U-M8-3W-M8-3A-P1-020	Interconnection cable	Connection 1: Connector, M8, Angled, Female, 3 -pin Connection 2: Connector, M8, Axial, Male, 3 -pin Shielded: No Cable length: 2,000 mm Sheathing material: PUR

Mounting technology - Mounting brackets

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

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Mounting technology - Other

	Part no.	Designation	Article	Description
	50132727	AC D08M-CS	Clamp	Contains: 2x M12 mounting nut Diameter, inner: 8 mm Design of mounting device: Mounting clamp Mounting bracket, 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
	50111497	MC 008K	Clamp	Diameter, inner: 8 mm Design of mounting device: Mounting clamp Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable Type of mounting device: Rigid Material: Plastic
	50111498	MC 008K-LS	Clamp	Diameter, inner: 8 mm Design of mounting device: Mounting clamp Mounting bracket, at system: Through-hole mounting Mounting bracket, at device: Clampable with limit stop Type of mounting device: Rigid Material: Plastic

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).