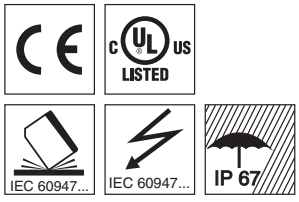
IS 208 — Inductive switches

en 02-2015/05 50110218

2.5 mm
4 mm

non-embedded

- Slim and short cylindrical metal housing M8
- Stainless steel housing
- Built-in short circuit protection, inductive protection and polarity reversal protection
- LED for switching state visible from 360°

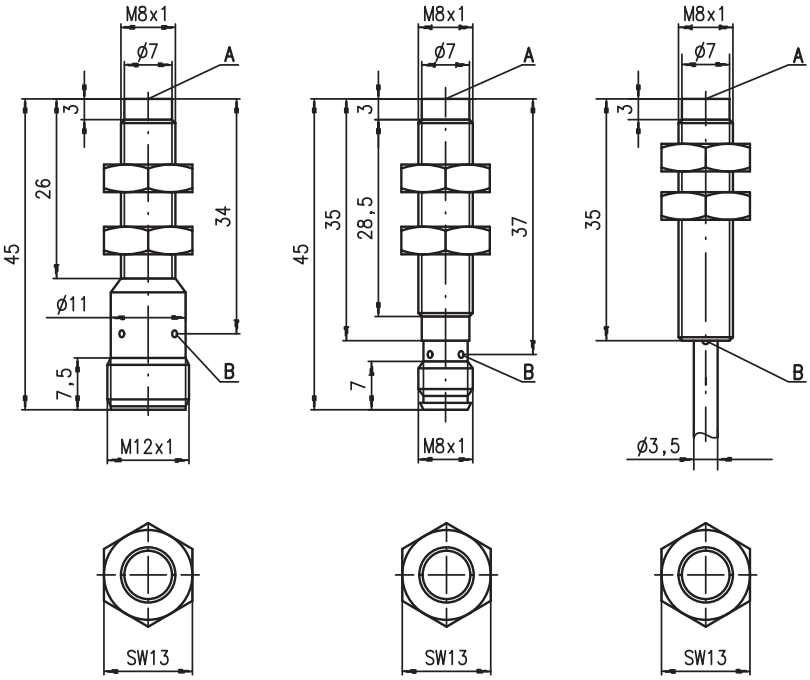


Accessories:

(available separately)

- M8 connectors (D M8…)
- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Mounting clamp (MC 008…)

Dimensioned drawing

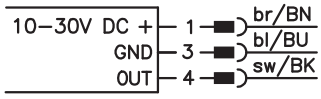


Tightening torque of the fastening nuts < 10 Nm !

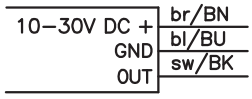
A Active surface
B Yellow indicator diode

Electrical connection

M8 connector

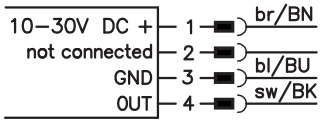


Cable

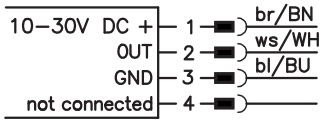


M12 connector

…NO… (normally open)



…NC… (normally closed)



…NO…-S12 (normally open): 3-pin **or** 4-pin M12 connection cables can be used.
…NC…-S12 (normally closed): **only** 4-pin M12 connection cables can be used.

Specifications

		IS 208…-2N5…	IS 208…-4N0…
General specifications			
Type of installation		non-embedded installation	
Typ. operating range limit S_n		2.5mm	4.0mm
Operating range S_a		0 … 2.0mm	0 … 3.2mm
Electrical data			
Operating voltage U_B 1)		10 … 30VDC	
Residual ripple σ		≤ 20% of U_B	
Output current I_L		≤ 200mA	
Open-circuit current I_0		≤ 10mA	
Residual current I_r		≤ 100µA	
Switching output/function	…/4NO…	PNP transistor, make-contact (NO)	
	…/4NC…	PNP transistor, break-contact (NC)	
	…/2NO…	NPN transistor, make-contact (NO)	
	…/2NC…	NPN transistor, break-contact (NC)	
Voltage drop U_d		≤ 2V	
Hysteresis H of S_r		≤ 5%	≤ 20%
Temperature drift of S_r		≤ 10% 2)	
Repeatability		≤ 4.8% 3)	≤ 5%
Timing			
Switching frequency f		5kHz	3.5kHz
Delay before start-up		≤ 10ms	
Indicators			
Yellow LED (visible from 360°)		switching state	
Mechanical data			
Housing		stainless steel	
Standard surface plate		8 x 8mm², Fe360	12 x 12mm², Fe360
Active surface		PBTP	
Weight (M8 plug/cable)		approx. 12g/approx. 70g	
Connection type		M8 connector, 3-pin, or M12 connector, 4-pin, or cable: 2m, PVC, 3 x 0.14mm², Ø 3.5mm	
Environmental data			
Ambient temperature		-25°C … +70°C	
Protection class		IP 67	
Protective circuit 4)		1, 2, 3	
Standards applied		IEC/EN 60947-5-2	
Electromagnetic compatibility		IEC 60255-5	1kV
		IEC 61000-4-2	Level 3 air 8kV (ESD)
		IEC 61000-4-3	Level 3 10V/m (RFI)
		IEC 61000-4-4	Level 3 2kV (Burst)

1) Observe the safety regulations and installation instructions regarding power supply and wiring; for UL applications: only for use in "Class 2" circuits acc. to NEC
2) Over the entire operating temperature range
3) For U_B = 20 … 30VDC, ambient temperature T_a = 23°C ± 5°C
4) 1=polarity reversal protection, 2=short circuit protection, 3=inductive protection for all outputs

Remarks

Operate in accordance with 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 the intended use.

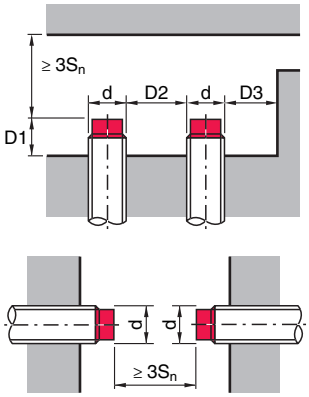
Tables

Reduction factors:

for S_n = 2.5mm		for S_n = 4.0mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.20	Copper	0.42
Aluminum	0.25	Aluminum	0.45
Brass	0.35	Brass	0.52
Stainless steel	0.70	Stainless steel	0.74

Mounting

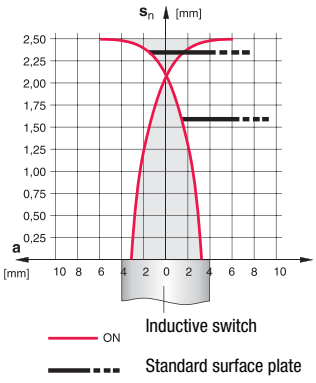
Non-embedded installation:



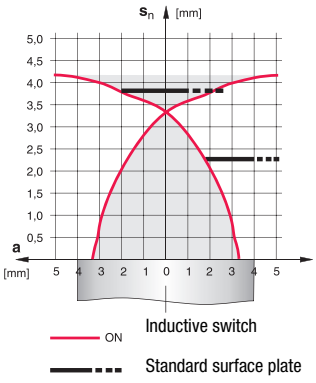
Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]
2.5	8.0	10.0	4.0
4.0	6.0	14.0	6.0

Diagrams

Models with s_n = 2.5mm



Models with S_n = 4.0mm



Type key

I	S		2	0	8		M	M	/	4	N	0	-	2	N	5	-	S	8	.	3

Operating principle / construction

IS	Inductive switch / Standard

Series

208	series with M8 x 1 external thread

Housing / thread

MM	metal housing (active surface: plastic) / metric thread

Output function

4NO	PNP transistor, make-contact (NO)
4NC	PNP transistor, break-contact (NC)
2NO	NPN transistor, make-contact (NO)
2NC	NPN transistor, break-contact (NC)

Measurement range / type of installation

2N5	typ. scan range limit 2.5 mm / non-embedded installation
4N0	typ. scan range limit 4.0 mm / non-embedded installation

Electrical connection

N/A	cable, PVC, standard length 2000 mm
S8.3	M8 connector, 3-pin, axial
S12	M12 connector, 4-pin, axial
200-S8.3	cable, PVC, length 200 mm with M8 connector, 3-pin, axial

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

	Designation	Part No.
S_n = 2.5 mm	IS 208 MM/4NO-2N5	50109645
	IS 208 MM/4NO-2N5-S8.3	50109646
	IS 208 MM/4NO-2N5-S12	50109647
	IS 208 MM/4NC-2N5-S8.3	50129347
S_n = 4 mm	IS 208 MM/4NO-4N0	50109658
	IS 208 MM/4NO-4N0-S8.3	50109659
	IS 208 MM/4NC-4N0	50129349
	IS 208 MM/4NC-4N0-S8.3	50109660
	IS 208 MM/2NO-4N0	50109661
	IS 208 MM/2NO-4N0-S8.3	50109662
	IS 208 MM/2NC-4N0-S8.3	50109663