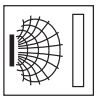


IS 208

Inductive switches

en 02-2015/05 50110217



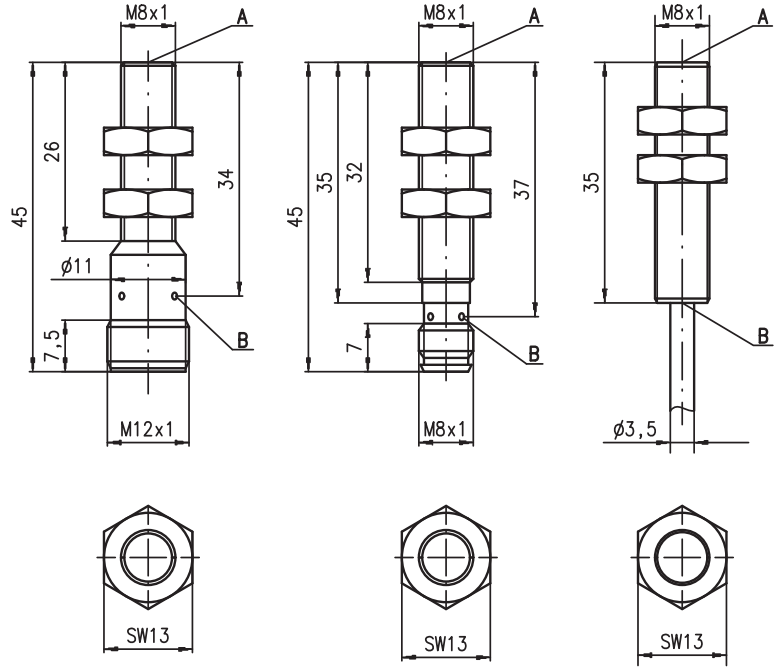
**M8**  
**1.5 mm**  
**2 mm**



**10 - 30 V**  
**DC**  
**5 kHz**  
**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°

Dimensioned drawing

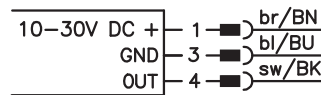


**Tightening torque of the fastening nuts < 10Nm !**

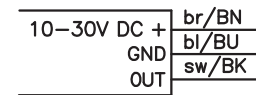
- A** Active surface
- B** Yellow indicator diode

Electrical connection

M8 connector

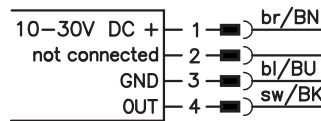


Cable

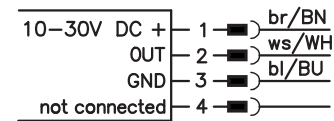


M12 connector

...NO... (normally open)



...NC... (normally closed)



**...NO...-S12 (normally open):**  
**...NC...-S12 (normally closed):**

3-pin or 4-pin M12 connection cables can be used.  
**only** 4-pin M12 connection cables can be used.

We reserve the right to make changes • DS\_IS208E\_en\_50110217.fm



**Accessories:**

(available separately)

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

## Specifications

### General specifications

Type of installation  
 Typ. operating range limit  $S_n$   
 Operating range  $S_a$

**IS 208...-1E5...**  
 embedded installation  
 1.5mm  
 0 ... 1.2mm

**IS 208...-2E0...**  
 2.0mm  
 0 ... 1.6mm

### Electrical data

Operating voltage  $U_B$  <sup>1)</sup>  
 Residual ripple  $\sigma$   
 Output current  $I_L$   
 Open-circuit current  $I_0$   
 Residual current  $I_r$   
 Switching output/function

10 ... 30VDC  
 $\leq 20\%$  of  $U_B$   
 $\leq 200$ mA  
 $\leq 10$ mA  
 $\leq 100\mu$ A  
 .../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  $U_d$   
 Hysteresis H of  $S_r$   
 Temperature drift of  $S_r$   
 Repeatability

$\leq 2$ V  
 $\leq 5\%$   
 $\leq 10\%$  <sup>2)</sup>  
 $\leq 4.7\%$  <sup>3)</sup>

### Timing

Switching frequency f  
 Delay before start-up

5kHz  
 $\leq 10$ ms

### Indicators

Yellow LED (visible from 360°)

switching state

### Mechanical data

Housing  
 Standard surface plate  
 Active surface  
 Weight (M8 plug/cable)  
 Connection type

stainless steel  
 8 x 8mm<sup>2</sup>, Fe360  
 PA12  
 approx. 8g/approx. 70g  
 M8 connector, 3-pin, or  
 M12 connector, 4-pin, or  
 cable: 2m, PVC, 3 x 0.14mm<sup>2</sup>,  $\varnothing$  3.5mm

### Environmental data

Ambient temperature  
 Protection class  
 Protective circuit <sup>4)</sup>  
 Standards applied  
 Electromagnetic compatibility

-25°C ... +70°C  
 IP 67  
 1, 2, 3  
 IEC/EN 60947-5-2  
 IEC 60255-5  
 IEC 61000-4-2  
 IEC 61000-4-3  
 IEC 61000-4-4

1kV  
 Level 3 air 8kV (ESD)  
 Level 3 10V/m (RFI)  
 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  $U_B = 20 \dots 30$ VDC, ambient temperature  $T_a = 23^\circ\text{C} \pm 5^\circ\text{C}$
- 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.

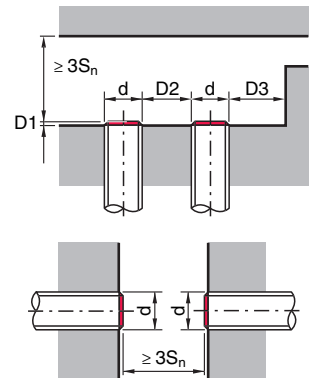
## Tables

### Reduction factors:

for $S_n = 1.5$ mm		for $S_n = 2.0$ mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.20	Copper	0.25
Aluminum	0.25	Aluminum	0.25
Brass	0.35	Brass	0.35
Stainless steel	0.70	Stainless steel	0.65

## Mounting

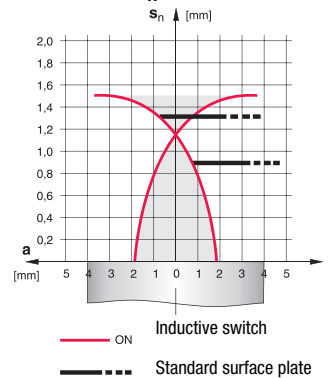
### Embedded installation:



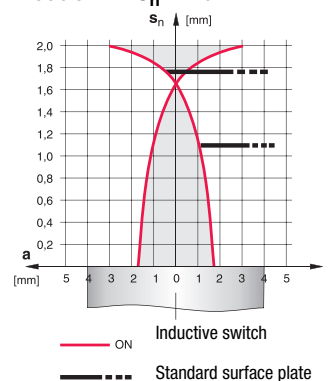
Ferromagnetic and non-ferromagnetic materials			
$S_n$ [mm]	D1 [mm]	D2 [mm]	D3 [mm]
1.5	0	2.0	1.5
2.0	0	6.0	2.0

## Diagrams

### Models with $s_n = 1.5$ mm



### Models with $S_n = 2.0$ mm



## Type key

I	S	2	0	8	/	M	M	/	4	N	O	-	2	E	O	-	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

**1E5** typ. scan range limit 2.0mm / embedded installation

**2E0** typ. scan range limit 2.0mm / embedded installation

### Electrical connection

**N/A** cable, PVC, standard length 2000mm

**S8.3** M8 connector, 3-pin, axial

**S12** M12 connector, 4-pin, axial

**200-S8.3** cable, PVC, length 200mm with M8 connector, 3-pin, axial

## Order guide

The sensors listed here are preferred types; current information at [www.leuze.com](http://www.leuze.com).

	Designation	Part No.
<b>S<sub>n</sub> = 1.5mm</b>	IS 208 MM/4NO-1E5	50109636
	IS 208 MM/4NO-1E5-S8.3	50109640
	IS 208 MM/4NO-1E5-S12	50109641
	IS 208 MM/4NC-1E5-S8.3	50129345
	IS 208 MM/4NC-1E5-S12	50129346
<b>S<sub>n</sub> = 2mm</b>	IS 208 MM/4NO-2E0	50109652
	IS 208 MM/4NO-2E0-S8.3	50109653
	IS 208 MM/4NC-2E0	50113211
	IS 208 MM/4NC-2E0-S8.3	50109654
	IS 208 MM/2NO-2E0	50109655
	IS 208 MM/2NO-2E0-S8.3	50109656
	IS 208 MM/2NC-2E0	50129348

