

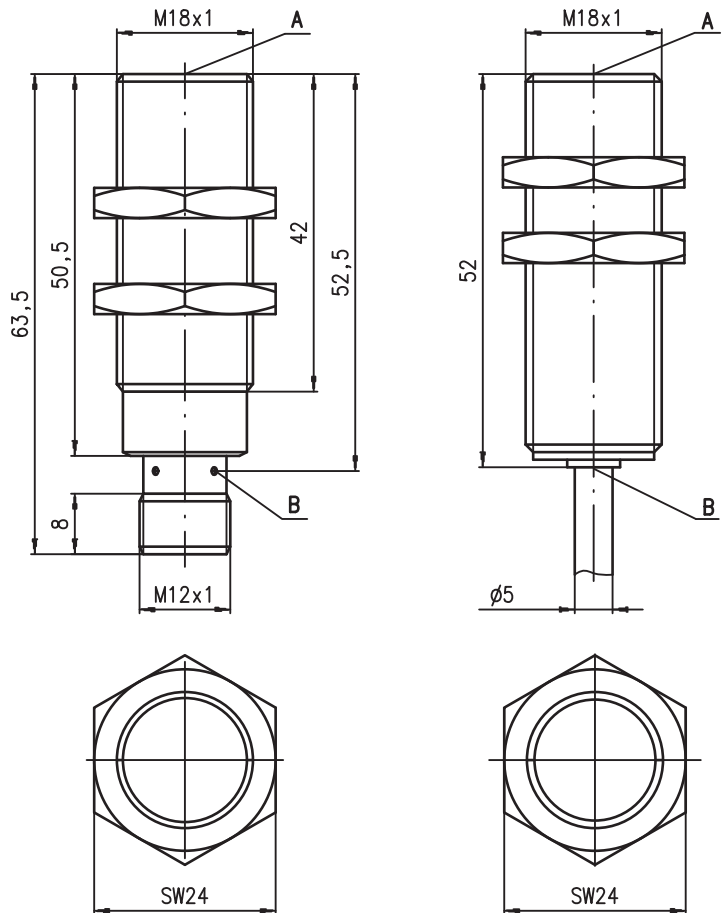
IS 218

Inductive switches

en 03-2015/05 50110213



Dimensioned drawing

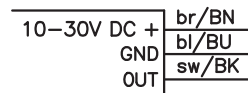


Tightening torque of the fastening nuts
 IS 218...5E0..., IS 218...8E0... < 20Nm !
 IS 218...12E... < 25Nm !

- A Active surface
- B Yellow indicator diode

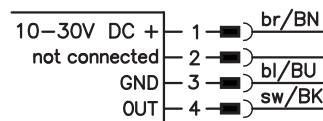
Electrical connection

Cable

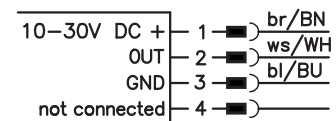


M12 connector

...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.



5 mm
8 mm
12 mm



Embedded

- Slim and short cylindrical metal housing M18
- Chromium-plated brass housing
- Built-in short circuit protection, inductive protection and polarity reversal protection
- LED for switching state visible from 360°



Accessories:

(available separately)

- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Mounting clamp (MC 018...)

We reserve the right to make changes • DS_IS218E_en_50110213.fm

Specifications

General specifications

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

IS 218...-5E0...	IS 218...-8E0...	IS 218...-12E...
embedded installation		
5.0mm	8.0mm	12.0mm
0 ... 4.0mm	0 ... 6.5mm	0 ... 9.7mm

Electrical data

Operating voltage U_B ¹⁾
 Residual ripple σ
 Output current I_L
 Open-circuit current I_0
 Residual current I_r
 Switching output/function .../4NO...
 .../4NC...
 .../2NO...
 .../2NC...

10 ... 30VDC
 $\leq 20\%$ of U_B
 ≤ 200 mA
 ≤ 10 mA
 $\leq 100\mu$ A
 PNP transistor, make-contact (NO)
 PNP transistor, break-contact (NC)
 NPN transistor, make-contact (NO)
 NPN transistor, break-contact (NC)

Voltage drop U_d
 Hysteresis H of S_r
 Temperature drift of S_r
 Repeatability

≤ 2 V
 $\leq 10\%$
 $\leq 10\%$ ²⁾
 $\leq 5\%$ ³⁾

Timing

Switching frequency f
 Delay before start-up

2kHz
 ≤ 40 ms
 1.5kHz
 ≤ 70 ms
 500Hz
 ≤ 50 ms

Indicators

Yellow LED (visible from 360°) switching state

Mechanical data

Housing chromium-plated brass
 Standard surface plate 18 x 18mm², Fe360 24 x 24mm², Fe360 36 x 36mm², Fe360
 Active surface PBTP
 Weight (M12 plug/cable) approx. 50g/
 approx. 165g
 Connection type M12 connector 4-pin or
 cable: 2m, PVC, 3 x 0.34mm², \varnothing 5.0mm

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 $U_B = 20 \dots 30$ 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

Tables

Reduction factors:

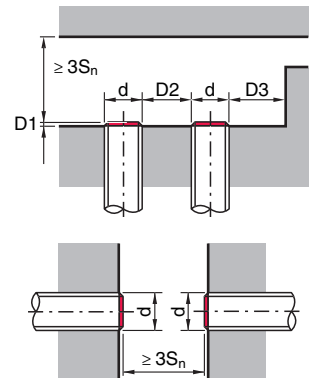
for $S_n = 5.0$ mm		for $S_n = 8.0$ mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.40	Copper	0.30
Aluminum	0.40	Aluminum	0.35
Brass	0.50	Brass	0.40
Stainless steel	0.80	Stainless steel	0.70

for $S_n = 12.0$ mm

Steel Fe360	1
Copper	0.20
Aluminum	0.26
Brass	0.33
Stainless steel	0.63

Mounting

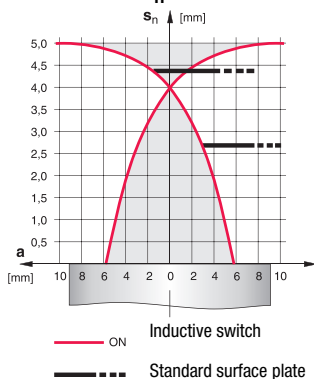
Embedded installation:



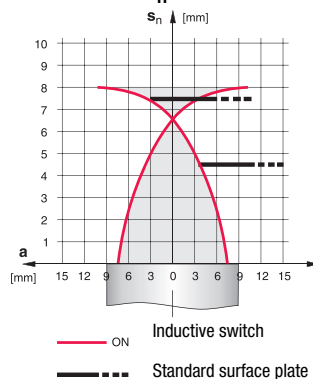
Ferromagnetic and non-ferromagnetic materials				
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]	
5.0	0	14.0	5.0	
8.0	0.75	22.0	9.0	
12.0	4.0	26.0	9.0	

Diagrams

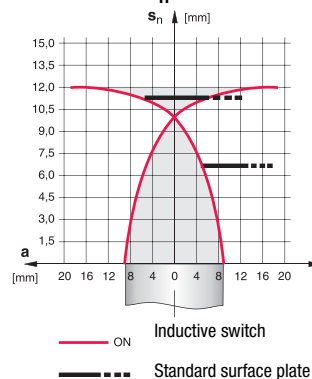
Models with $S_n = 5.0$ mm



Models with $S_n = 8.0$ mm



Models with $S_n = 12.0$ mm



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.

Type key

I	S	2	1	8	M	M	/	4	N	O	-	8	E	O	-	S	1	2
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Operating principle / construction
IS Inductive switch / Standard

Series
218 Series with M18 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
5E0 Typ. scan range limit 5.0mm / embedded installation

8E0 Typ. scan range limit 8.0mm / embedded installation

12E Typ. scan range limit 12.0mm / embedded installation

Electrical connection
N/A Cable, PVC, standard length 2000mm

S12 M12 connector, 4-pin, axial

200-S12 Cable, PVC, length 200mm with M12 connector, 4-pin, axial

Order guide

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

	Designation	Part No.
S_n = 5mm	IS 218 MM/4NO-5E0	50109692
	IS 218 MM/4NO-5E0-S12	50109693
	IS 218 MM/4NC-5E0	50118521
	IS 218 MM/4NC-5E0-S12	50127466
	IS 218 MM/2NO-5E0	50109694
S_n = 8mm	IS 218 MM/4NO-8E0	50109700
	IS 218 MM/4NO-8E0-S12	50109701
	IS 218 MM/4NC-8E0	50129364
	IS 218 MM/4NC-8E0-S12	50109702
	IS 218 MM/2NO-8E0	50112104
	IS 218 MM/2NO-8E0-S12	50109704
	IS 218 MM/2NC-8E0	50129367
	IS 218 MM/2NC-8E0-S12	50109705
S_n = 12mm	IS 218 MM/4NO-12E	50109706
	IS 218 MM/4NO-12E-S12	50114427
	IS 218 MM/4NC-12E-S12	50129366
	IS 218 MM/2NO-12E	50111954

