

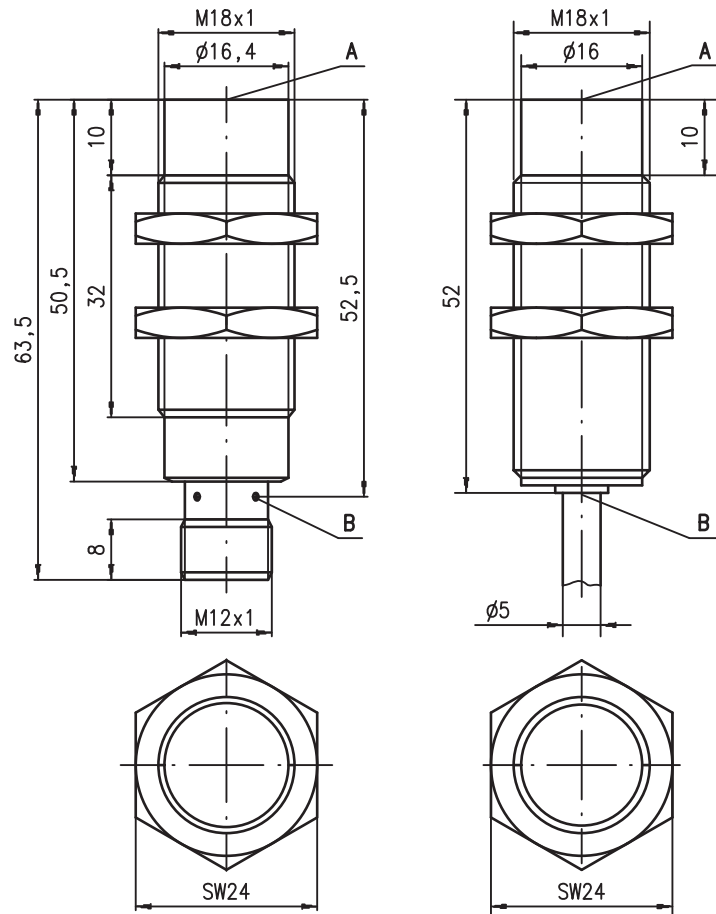
IS 218

Inductive switches

en 04-2016/07 50110214



Dimensioned drawing



M18
8 mm
12 mm
20 mm



non-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°



Tightening torque of the fastening nuts

- IS 218...8N0... < 20Nm !
- IS 218...12N... < 25Nm !
- IS 218...20N... < 25Nm !

- A Active surface
- B Yellow indicator diode

Electrical connection

Cable

10-30V DC +	br/BN
GND	bl/BU
OUT	sw/BK

M12 connector

...NO... (normally open)

10-30V DC +	1	br/BN
not connected	2	
GND	3	bl/BU
OUT	4	sw/BK

...NC... (normally closed)

10-30V DC +	1	br/BN
OUT	2	ws/WH
GND	3	bl/BU
not connected	4	



...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_IS218N_en_50110214.fm



Accessories:

(available separately)

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

Specifications

General specifications

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

IS 218...-8N0...	IS 218...-12N...	IS 218...-20N...
non-embedded installation		
8.0mm	12.0mm	20.0mm
0 ... 6.5mm	0 ... 9.7mm	0 ... 16.2mm

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

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
 5kHz
 ≤ 60 ms
 200Hz
 ≤ 100 ms

Indicators

Yellow LED (visible from 360°) switching state

Mechanical data

Housing
 Standard surface plate
 Active surface
 Weight (M12 plug/cable)
 Connection type

chromium-plated brass
 24 x 24mm², Fe360 36 x 36mm², Fe360 60 x 60mm², Fe360
 PBTP
 approx. 50g/approx. 120g
 M12 connector 4-pin or
 cable: 2m, PVC, 3 x 0.34mm², \varnothing 5.0mm

Environmental data

Ambient temperature
 Protection class
 Protective circuit ⁴⁾
 Standards applied
 Electromagnetic compatibility

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

Tables

Reduction factors:

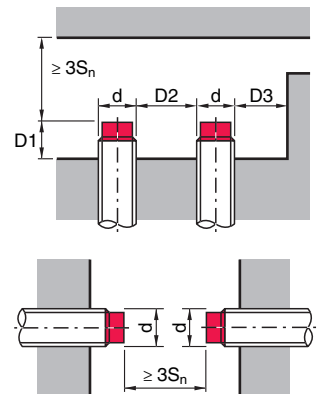
for $S_n = 8.0$ mm		for $S_n = 12.0$ mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.40	Copper	0.40
Aluminum	0.50	Aluminum	0.45
Brass	0.50	Brass	0.55
Stainless steel	0.80	Stainless steel	0.75

for $S_n = 20.0$ mm

Steel Fe360	1
Copper	0.35
Aluminum	0.40
Brass	0.45
Stainless steel	0.66

Mounting

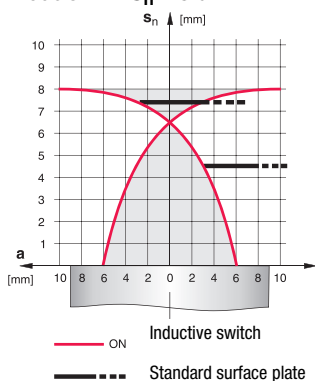
Non-embedded installation:



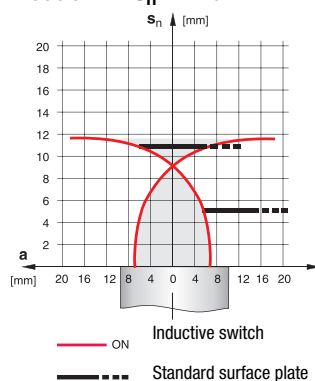
Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]
8.0	10.0	32.0	11.0
12.0	18.0	57.0	27.0
20.0	20.0	50.0	21.0

Diagrams

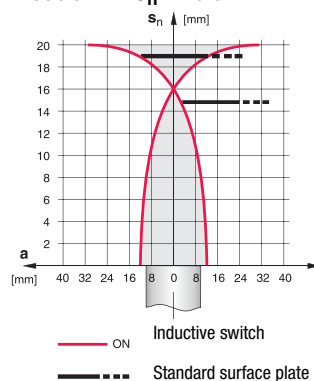
Models with $S_n = 8.0$ mm



Models with $S_n = 12.0$ mm



Models with $S_n = 20.0$ 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	0	-	8	N	0	-	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
8NO typ. scan range limit 8.0mm / non-embedded installation

12N typ. scan range limit 12.0mm / non-embedded installation

20N typ. scan range limit 20.0mm / non-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 = 8mm	IS 218 MM/4NO-8NO	50109696
	IS 218 MM/4NO-8NO-S12	50109697
	IS 218 MM/4NC-8NO	50129360
	IS 218 MM/4NC-8NO-S12	50129361
	IS 218 MM/2NO-8NO	50109698
	IS 218 MM/2NO-8NO-S12	50109699
	IS 218 MM/2NC-8NO	50129362
	IS 218 MM/2NC-8NO-S12	50129363
S_n = 12mm	IS 218 MM/4NO-12N-S12	50134095
S_n = 20mm	IS 218 MM/4NO-20N	50109709
	IS 218 MM/4NC-20N	50129365
	IS 218 MM/2NO-20N	50111953

