

IS 218

Inductive switches

en 02-2010/03 50110214



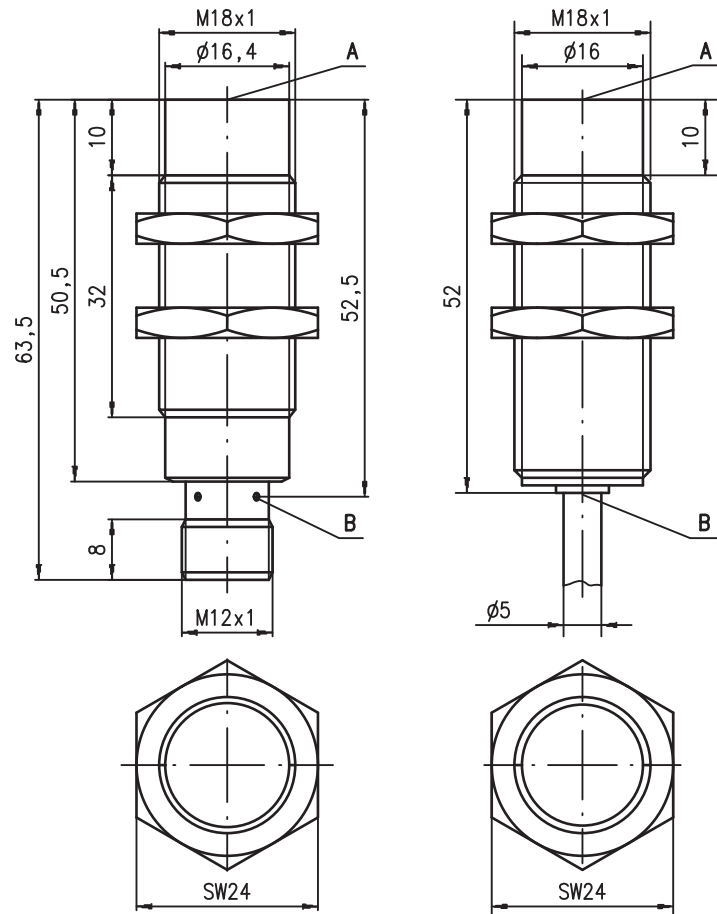
M18
8 mm
20 mm



10 - 30 V
DC
non-embedded
2 kHz

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

Dimensioned drawing

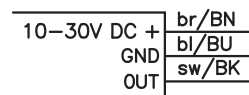


Tightening torque of the fastening nuts
IS 218...8N0... < 20Nm !
IS 218...20N... < 25Nm !

- A Active surface
- B Yellow indicator diode

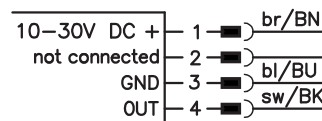
Electrical connection

Cable

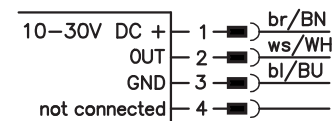


M12 connector

...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.

We reserve the right to make changes • DS_IS_218_N_en.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...-8NO...

non-embedded installation
 8.0mm
 0 ... 6.5mm

IS 218...-20N...

20.0mm
 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
 .../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

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

Timing

Switching frequency f
 Delay before start-up

2kHz
 ≤ 40 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
 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
 IEC 60255-5
 IEC 61000-4-2
 IEC 61000-4-3
 IEC 61000-4-4
 1 kV
 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

Order guide

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

	Designation	Part No.
$S_n = 8$ mm	IS 218 MM/4NO-8NO	50109696
	IS 218 MM/4NO-8NO-S12	50109697
	IS 218 MM/2NO-8NO	50109698
$S_n = 20$ mm	IS 218 MM/4NO-20N	50109709
	IS 218 MM/2NO-20N	50111953

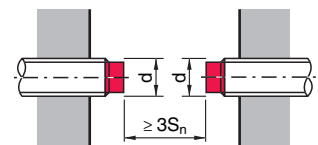
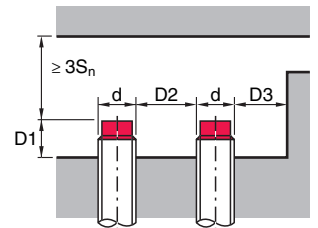
Tables

Reduction factors:

for $S_n = 8.0$ mm		for $S_n = 20.0$ mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.40	Copper	0.35
Aluminum	0.50	Aluminum	0.40
Brass	0.50	Brass	0.45
Stainless steel	0.80	Stainless steel	0.66

Mounting

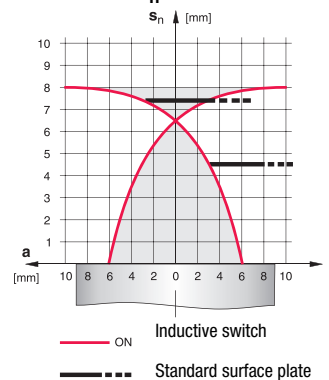
Non-embedded installation:



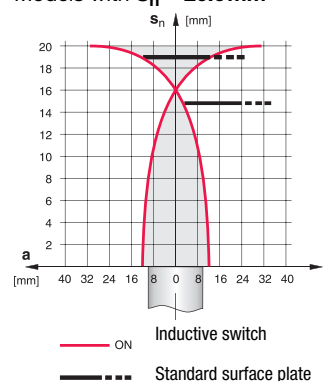
Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]
8.0	10.0	32.0	11.0
20.0	20.0	50.0	21.0

Diagrams

Models with $S_n = 8.0$ mm



Models with $S_n = 20.0$ mm



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

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

Remarks

- **Approved purpose:**

The inductive switches are electronic sensors for the inductive, contactless detection of objects.

This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.

