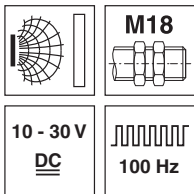


IS 218 factor 1

Inductive switches

en_01-2015/01 50128377

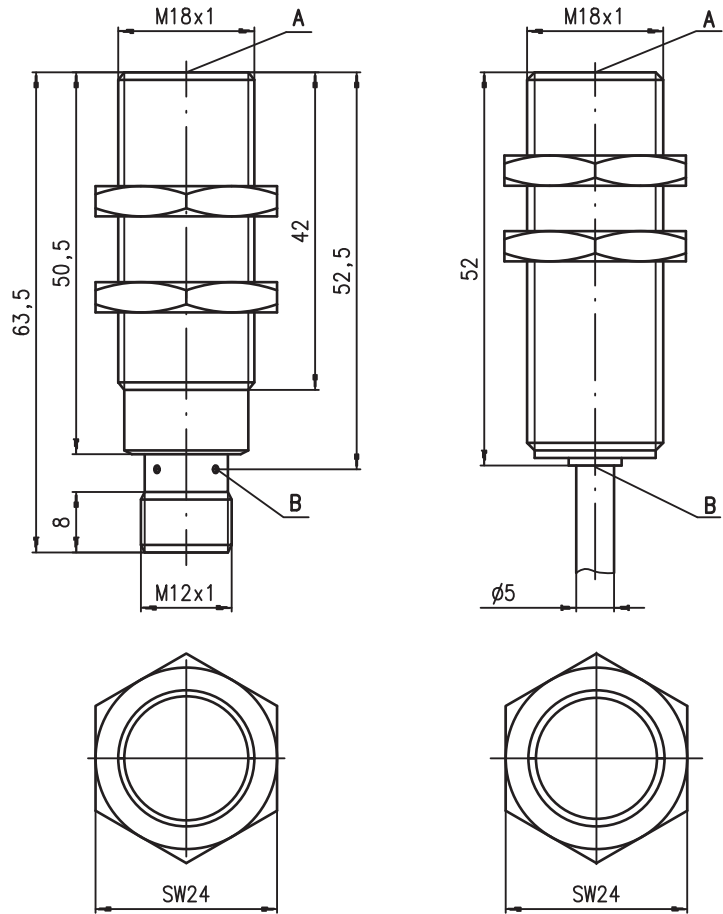


5 mm

Embedded

- Switching distance independent of object property (factor 1 sensor)
- Slim and short cylindrical metal housing M18x1
- V2A / AISI 303 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 < 30Nm!

- 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)

...NC... (normally closed)

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

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



...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.

We reserve the right to make changes • DS_IS218E_F1_en_50128377.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...-5E0...
 embedded installation
 5.0mm
 0 ... 4mm

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
 ≤ 100 μ A
 .../4NO... PNP transistor, NO contact
 .../4NC... PNP transistor, NC contact
 .../2NO... NPN transistor, NO contact
 .../2NC... NPN transistor, NC contact

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

≤ 2 V
 $\leq 15\%$
 $\leq 10\%$ 2)
 ≤ 0.3 mm 3)

Timing

Switching frequency f
 Delay before start-up

100Hz
 ≤ 25 ms

Indicators

Yellow LED (visible from 360°)
 switching state 4)

Mechanical data

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

V2A stainless steel (1.4305, AISI 303)
 30 x 30mm², Fe360
 V2A stainless steel (1.4305, AISI 303)
 approx. 50g/approx. 115g
 M12 connector, 4-pin, or
 cable: 2m, PUR, 3 x 0.34mm², \varnothing 5mm

Environmental data

Ambient temperature
 Degree of protection
 Protective circuit 5)
 Standards applied
 Electromagnetic compatibility

-25°C ... +70°C
 IP 67, IP 68, IP 69K
 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 4 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.
- 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) Continuous LED: $0 \leq S \leq 0.8S_r$; flashing LED: $0.8S_r \leq S \leq S_r$
- 5) 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.

$S_n = 5$ mm	Designation	Part no.
	IS 218 FM/2NO.5-5E0	50128172
	IS 218 FM/4NO.5-5E0	50128170
	IS 218 FM/2NO.5-5E0-S12	50128171
	IS 218 FM/4NO.5-5E0-S12	50128169
	Additional types on request	

Tables

Reduction factors for surface plates made of:
 for $S_n = 5.0$ mm

Steel Fe360	1
Copper	0.8
Aluminum	1
Brass	1.3
Stainless steel	0.7 ¹⁾

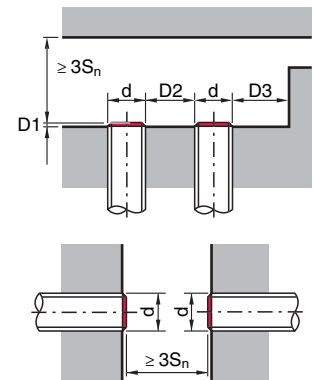
Reduction factors for installation in:
 for $S_n = 5.0$ mm

Steel Fe360	0.9
Aluminum	0.9
Brass	0.9
Stainless steel	0.9

1) Surface plate min. 2mm thick

Mounting

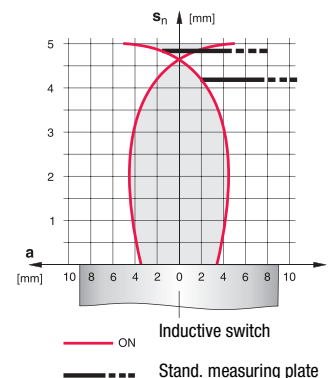
Embedded installation:



Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]
5.0	0	12.0	6.0

Diagrams

Models with $S_n = 5.0$ 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.

IS 218 factor 1

Inductive switches

Part number code

I	S	2	1	8	F	M	/	4	N	O	.	5	-	5	E	0	-	S	1	2
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Operating principle / construction

IS Inductive switch / Standard

Series

218 Series with M18 x 1 external thread

Housing / thread

FM Full-metal housing (one piece, gap-free) / metric thread

Output function

4NO PNP transistor, NO contact

4NC PNP transistor, NC contact

2NO NPN transistor, NO contact

2NC NPN transistor, NC contact

Properties / Special equipment

5 Housing material V2A (1.4305, AISI 303)

Measurement range / type of installation

5E0 Typ. scan range limit 5.0mm / embedded installation

Electrical connection

N/A Cable, PUR, standard length 2000mm

S12 M12 connector, 4-pin, axial

