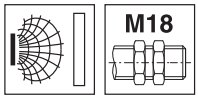
en 03-2015/05 50110213

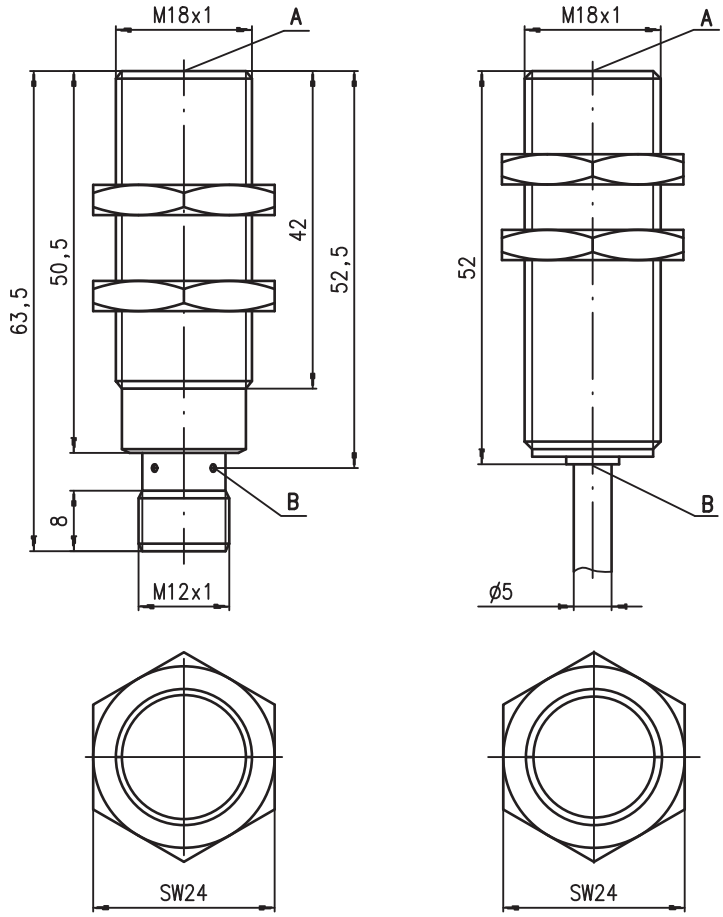


5 mm
8 mm
12 mm

Embedded

- 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

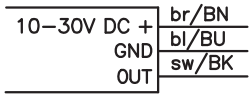


Tightening torque of the fastening nuts
IS 218…5E0…, IS 218…8E0… < 20Nm !
IS 218…12E… < 25Nm !

A Active surface
B Yellow indicator diode

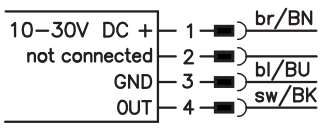
Electrical connection

Cable

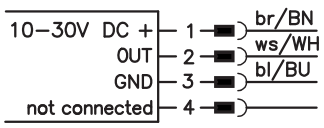


M12 connector

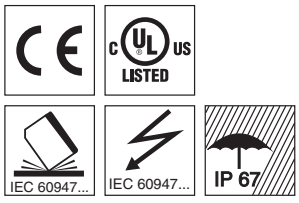
…NO… (normally open)



…NC… (normally closed)



…NO…-S12 (normally open): 3-pin **or** 4-pin M12 connection cables can be used.
…NC…-S12 (normally closed): **only** 4-pin M12 connection cables can be used.



Accessories:

(available separately)

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

Specifications

General specifications	IS 218…-5E0…	IS 218…-8E0…	IS 218…-12E…
Type of installation	embedded installation		
Typ. operating range limit S_n	5.0mm	8.0mm	12.0mm
Operating range S_a	0 … 4.0mm	0 … 6.5mm	0 … 9.7mm
Electrical data			
Operating voltage U_B 1)	10 … 30VDC		
Residual ripple σ	≤ 20% of U_B		
Output current I_L	≤ 200mA		
Open-circuit current I_0	≤ 10mA		
Residual current I_r	≤ 100µA		
Switching 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)		
Voltage drop U_d	≤ 2V		
Hysteresis H of S_r	≤ 10%		
Temperature drift of S_r	≤ 10% 2)		
Repeatability	≤ 5% 3)		
Timing			
Switching frequency f	2kHz	1.5kHz	500Hz
Delay before start-up	≤ 40ms	≤ 70ms	≤ 50ms
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, Ø 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 … 30VDC, ambient temperature T_a = 23°C ± 5°C
4) 1=polarity reversal protection, 2=short circuit protection, 3=inductive protection for all outputs

Tables

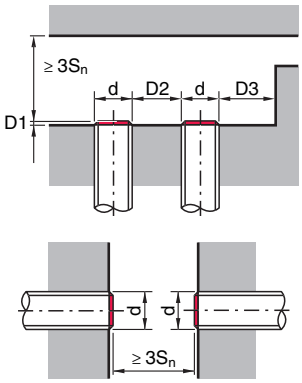
Reduction factors:

for S_n = 5.0mm		for S_n = 8.0mm	
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 = 12.0mm	
Steel Fe360	1
Copper	0.20
Aluminum	0.26
Brass	0.33
Stainless steel	0.63

Mounting

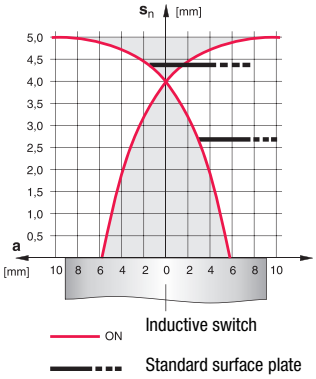
Embedded installation:



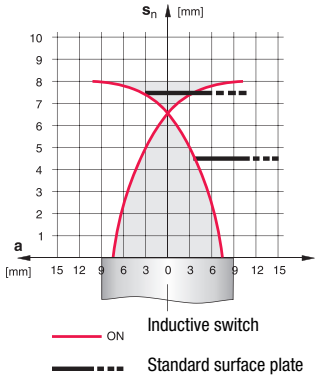
Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]
5.0	0	14.0	5.0
8.0	0.75	22.0	9.0
12.0	4.0	26.0	9.0

Diagrams

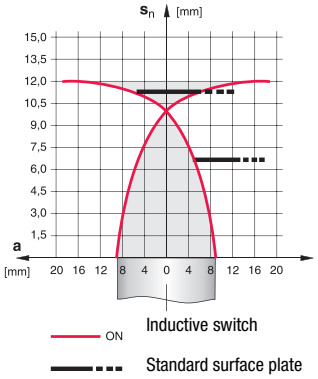
Models with S_n = 5.0mm



Models with S_n = 8.0mm



Models with S_n = 12.0mm



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	0	-	S	1	2

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 5.0 mm / embedded installation
8E0	Typ. scan range limit 8.0 mm / embedded installation
12E	Typ. scan range limit 12.0 mm / embedded installation

Electrical connection

N/A	Cable, PVC, standard length 2000 mm
S12	M12 connector, 4-pin, axial
200-S12	Cable, PVC, length 200 mm 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 = 5 mm	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 = 8 mm	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 = 12 mm	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