

Part No. 501 10215



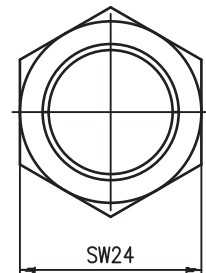
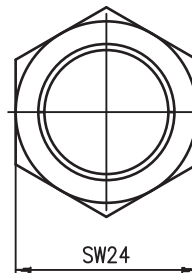
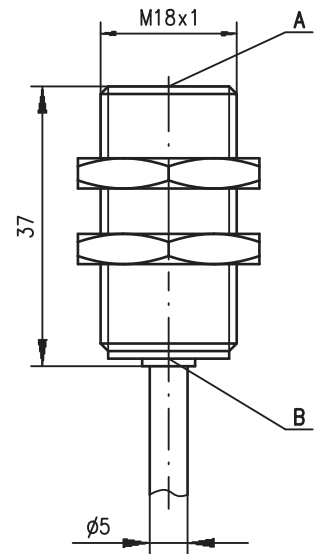
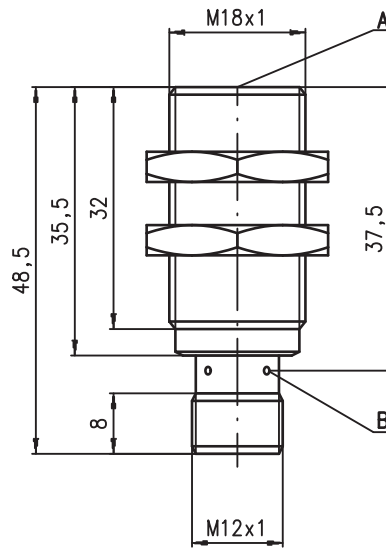
M18
5 mm
8 mm
12 mm



embedded
10 - 30 V
DC
2 kHz

- Slim and very 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

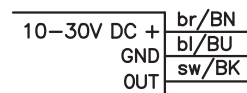


Tightening torque of the fastening nuts
ISS 218...5E0..., IS 218...8E0... < 20Nm !
ISS 218...12E... < 25Nm !

- A Active surface
- B Yellow indicator diode

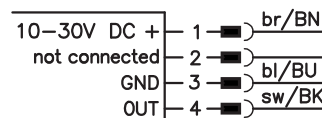
Electrical connection

Cable

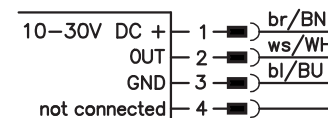


M12 connector

...NO... (normally open)

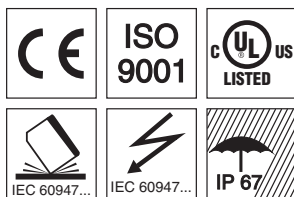


...NC... (normally closed)



...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.



Accessories:

(available separately)

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

We reserve the right to make changes • 218_03gb.fm

Specifications

General specifications

	ISS 218...-5E0...	ISS 218...-8E0...	ISS 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	$\leq 20\%$ of U_B
Output current I_L	≤ 200 mA
Open-circuit current I_0	≤ 10 mA
Residual current I_r	≤ 100 μ A
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	≤ 2 V
Hysteresis H of S_r	$\leq 10\%$
Temperature drift of S_r	$\leq 10\%$ ²⁾
Repeatability	$\leq 5\%$ ³⁾

Timing

Switching frequency f	2kHz	1.5kHz	500Hz
Delay before start-up	≤ 40 ms	≤ 70 ms	≤ 50 ms

Indicators

Yellow LED (visible from 360°)	switching state
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Mechanical data

Housing	chromium-plated brass
Standard surface plate	18 x 18mm ² , Fe360
Active surface	PBTP
Weight (M12 plug)	approx. 50g/ approx. 165g
Connection type	M12 connector 4-pin or cable: 2m, PVC, 3 x 0.34mm ² , \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
	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	ISS 218 MM/2NO-8E0-S12	501 09703
$S_n = 12$ mm	ISS 218 MM/4NO-12E-S12	501 09707
	ISS 218 MM/2NO-12E-S12	501 09708

Tables

Reduction factors:

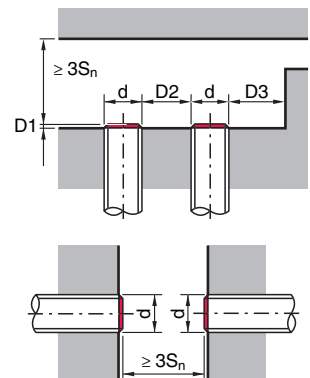
for $S_n = 5.0$ mm		for $S_n = 8.0$ mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.40	Copper	0.30
Aluminum	0.40	Aluminum	0.35
Brass	0.50	Brass	0.40
Stainless steel	0.80	Stainless steel	0.70

for $S_n = 12.0$ mm

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

Mounting

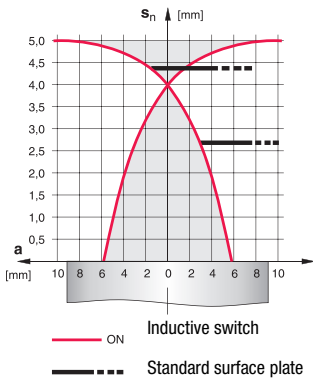
Embedded installation:



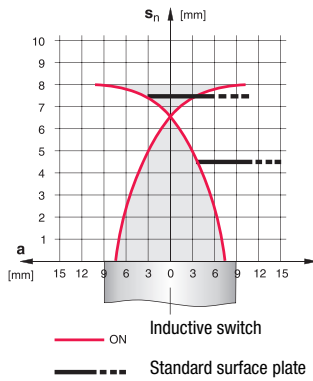
Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]
5.0	0	14.0	5.0
8.0	0.75	22.0	9.0
12.0	4.0	26.0	9.0

Diagrams

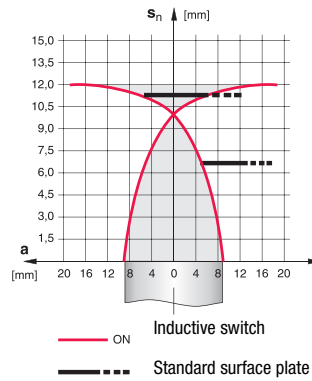
Models with $S_n = 5.0\text{mm}$



Models with $S_n = 8.0\text{mm}$



Models with $S_n = 12.0\text{mm}$



Type key

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

Operating principle / construction

ISS Inductive switch / short construction

Series

218 series with M12 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

Remarks

- **Approved purpose:**
Inductive switches are electronic sensors used for the inductive, contactless detection of objects.

