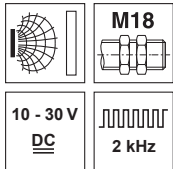


**IS 218**

**Inductive switches**

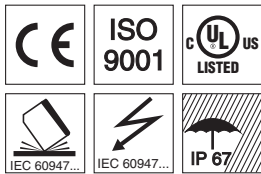
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**M18**  
8 mm  
20 mm

**non-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°

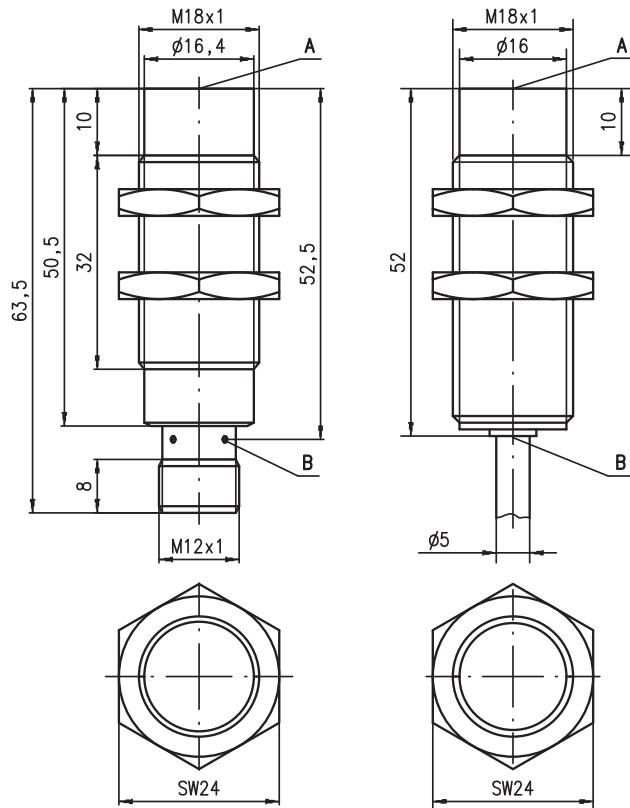


**Accessories:**

(available separately)

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

**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

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.

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  $U_B$  <sup>1)</sup>  
Residual ripple  $\sigma$   
Output current  $I_L$   
Open-circuit current  $I_0$   
Residual current  $I_r$   
Switching output/function

10 ... 30VDC  
 $\leq 20\%$  of  $U_B$   
 $\leq 200$ mA  
 $\leq 10$ 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

$\leq 2$ V  
 $\leq 10\%$   
 $\leq 10\%$  <sup>2)</sup>  
 $\leq 5\%$  <sup>3)</sup>

Timing

Switching frequency  $f$   
Delay before start-up

2kHz  
 $\leq 40$ ms  
200Hz  
 $\leq 100$ 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 24 mm<sup>2</sup>, Fe360  
PBTP  
approx. 50g/approx. 120g  
M12 connector 4-pin or  
cable: 2m, PVC, 3 x 0.34mm<sup>2</sup>,  $\varnothing$  5.0mm  
60 x 60 mm<sup>2</sup>, Fe360

Environmental data

Ambient temperature  
Protection class  
Protective circuit <sup>4)</sup>  
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  
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](http://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

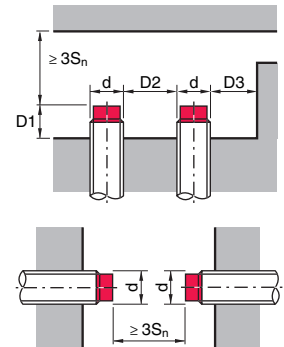
Tables

Reduction factors:  
for  $S_n = 8.0$ mm for  $S_n = 20.0$ mm

	1	Steel Fe360	1
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:

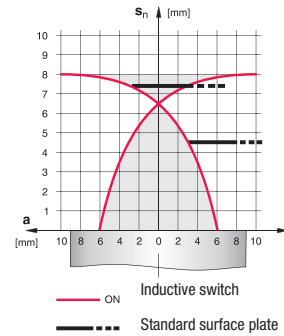


Ferromagnetic and non-ferromagnetic materials

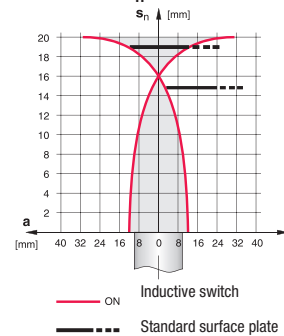
$S_n$ [mm]	D1 [mm]	D2 [mm]	D3 [mm]
8.0	10.0	32.0	11.0
20.0	20.0	50.0	21.0

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
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**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.

