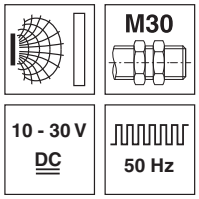
IS 230 factor 1 — Inductive switches

en_01-2015/01 50128378



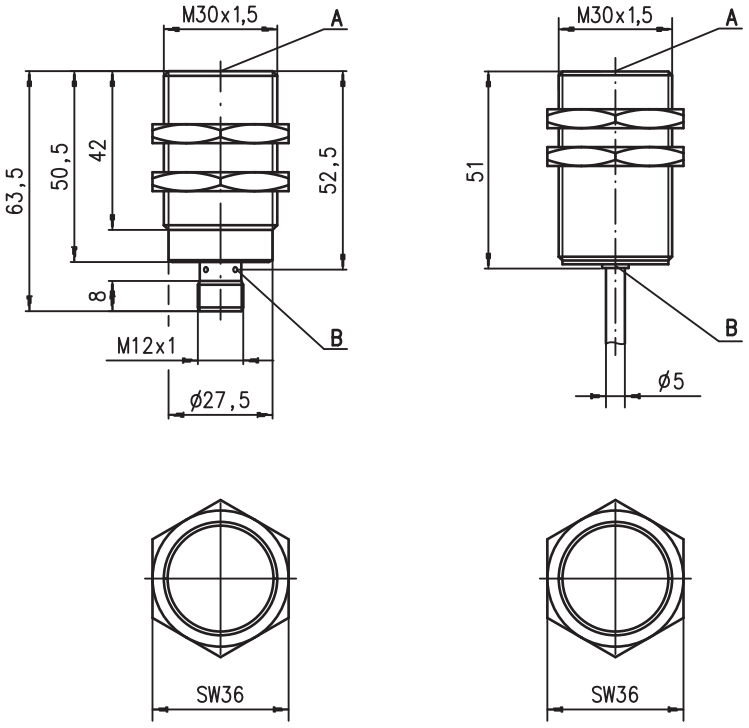


10 mm

Embedded

- Switching distance independent of object property (factor 1 sensor)
- Slim and short cylindrical metal housing M30x1.5
- 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

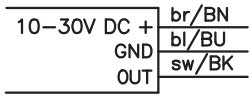


Tightening torque of the fastening nuts < 50 Nm !

A Active surface
B Yellow indicator diode

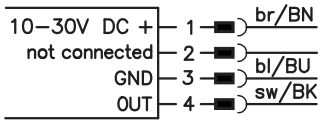
Electrical connection

Cable

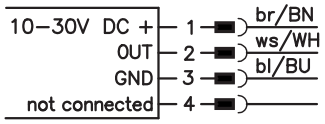


M12 connector

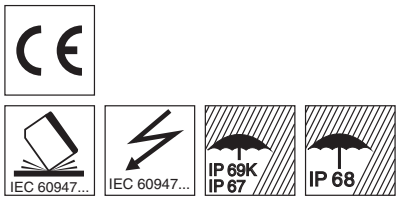
…NO… (normally open)



…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 030…)

We reserve the right to make changes • DS_IS230E_F1_en_501283 78.fm

Specifications

General specifications		**IS 230…-10E…**
Type of installation		embedded installation
Typ. operating range limit S_n		10.0mm
Operating range S_a		0 … 8.1mm
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, NO contact
	…/4NC…	PNP transistor, NC contact
	…/2NO…	NPN transistor, NO contact
	…/2NC…	NPN transistor, NC contact
Voltage drop U_d		≤ 2V
Hysteresis H of S_r		≤ 15%
Temperature drift of S_r		≤ 10% [2]
Repeatability		≤ 0.3mm [3]
Timing		
Switching frequency f		50Hz
Delay before start-up		≤ 50ms
Indicators		
Yellow LED (visible from 360°)		switching state [4]
Mechanical data		
Housing		V2A stainless steel (1.4305, AISI 303)
Standard measuring plate		60 x 60mm², Fe360
Active surface		V2A stainless steel (1.4305, AISI 303)
Weight (M12 plug/cable)		approx. 140g/approx. 190g
Connection type		M12 connector, 4-pin, or cable: 2m, PUR, 3 x 0.34mm², Ø 5mm
Environmental data		
Ambient temperature		-25°C … +70°C
Degree of protection		IP 67, IP 68, IP 69K
Protective circuit [5]		1, 2, 3
Standards applied		IEC/EN 60947-5-2
Electromagnetic compatibility		IEC 60255-5 — 1kV IEC 61000-4-2 — Level 4 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.
2) Over the entire operating temperature range
3) For U_B = 20 … 30VDC, ambient temperature T_a = 23°C ± 5°C
4) Continuous LED: 0 ≤ S ≤ 0.8S_r; flashing LED: 0.8S_r ≤ S ≤ 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.

	Designation	Part no.
S_n = 10mm	IS 230 FM/2N0.5-10E	50128166
	IS 230 FM/4N0.5-10E	50128164
	IS 230 FM/2N0.5-10E-S12	50128165
	IS 230 FM/4N0.5-10E-S12	50128163

Additional types on request

Tables

Reduction factors for surface plates made of:
for S_n = 10.0mm

Steel Fe360	1
Copper	0.8
Aluminum	1
Brass	1.3
Stainless steel	0.6[1]

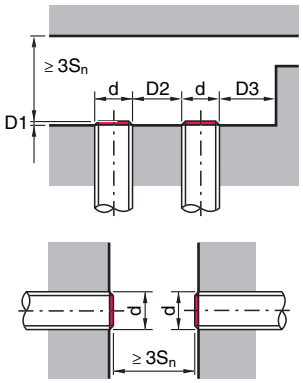
Reduction factors for installation in:
for S_n = 10.0mm

Steel Fe360	0.9
Aluminum	0.8
Brass	0.8
Stainless steel	0.9

1) Surface plate min. 2mm thick

Mounting

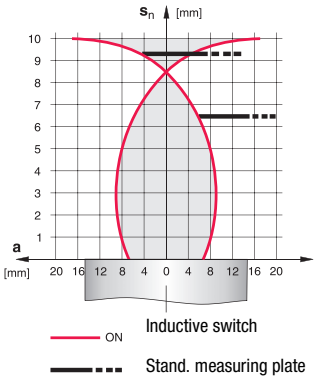
Embedded installation:



Ferromagnetic and non-ferromagnetic materials			
S_n [mm]	**D1 [mm]**	**D2 [mm]**	**D3 [mm]**
10.0	0	30.0	20.0

Diagrams

Models with **S_n = 10.0mm**

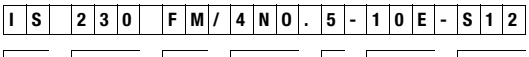


Remarks

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.

Part number code



Operating principle / construction

IS	Inductive switch / Standard

Series

230	Series with M30 x 1.5 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

10E	Typ. scan range limit 10.0 mm / embedded installation

Electrical connection

N/A	Cable, PUR, standard length 2000 mm
S12	M12 connector, 4-pin, axial