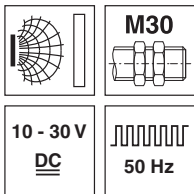


IS 230 factor 1

Inductive switches

en_01-2015/01 50128378

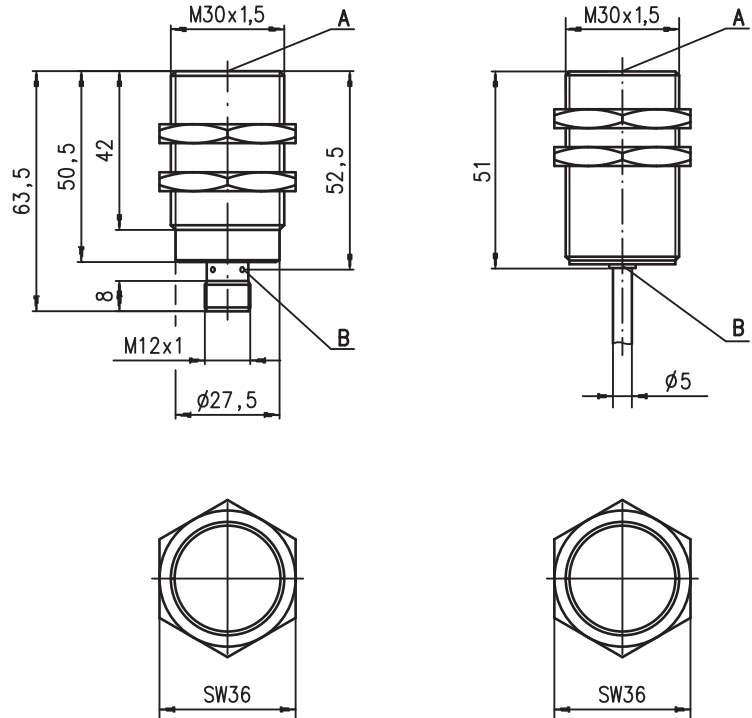


10 mm

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 < 50Nm !

- 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	bl/BU
GND	3	sw/BK
OUT	4	

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.

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_50128378.fm

Specifications

General specifications

Type of installation
Typ. operating range limit S_n
Operating range S_a

IS 230...-10E...

embedded installation
10.0mm
0 ... 8.1mm

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
 $\leq 200\text{mA}$
 $\leq 10\text{mA}$
 $\leq 100\mu\text{A}$
.../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

$\leq 2\text{V}$
 $\leq 15\%$
 $\leq 10\%$ 2)
 $\leq 0.3\text{mm}$ 3)

Timing

Switching frequency f
Delay before start-up

50Hz
 $\leq 50\text{ms}$

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)
60 x 60 mm², Fe360
V2A stainless steel (1.4305, AISI 303)
approx. 140g/approx. 190g
M12 connector, 4-pin, or
cable: 2m, PUR, 3 x 0.34mm², Ø 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
1kV
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 $U_B = 20 \dots 30\text{VDC}$, 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.

$S_n = 10\text{mm}$	Designation	Part no.
	IS 230 FM/2NO.5-10E	50128166
	IS 230 FM/4NO.5-10E	50128164
	IS 230 FM/2NO.5-10E-S12	50128165
	IS 230 FM/4NO.5-10E-S12	50128163
	Additional types on request	

Tables

Reduction factors for surface plates made of:
for $S_n = 10.0\text{mm}$

Steel Fe360	1
Copper	0.8
Aluminum	1
Brass	1.3
Stainless steel	0.6 ¹⁾

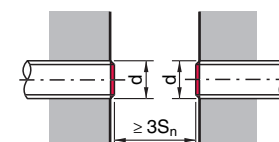
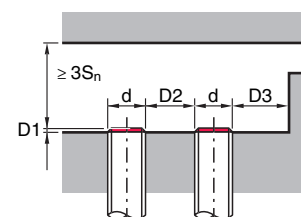
Reduction factors for installation in:
for $S_n = 10.0\text{mm}$

Steel Fe360	0.9
Aluminum	0.8
Brass	0.8
Stainless steel	0.9

1) Surface plate min. 2mm thick

Mounting

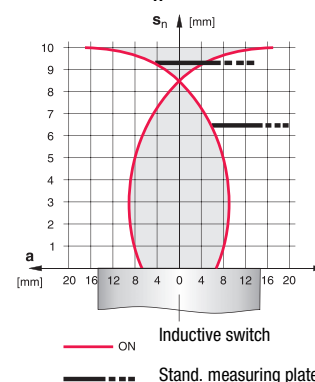
Embedded installation:



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

Diagrams

Models with $S_n = 10.0\text{mm}$



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 230 factor 1

Inductive switches

Part number code

I	S		2	3	0		F	M	/	4	N	0	.	5	-	1	0	E	-	S	1	2
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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 10.0mm / embedded installation

Electrical connection

N/A Cable, PUR, standard length 2000mm

S12 M12 connector, 4-pin, axial

