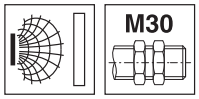
en 03-2015/05 50110212



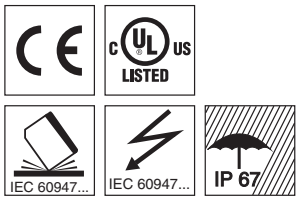


15 mm
40 mm



non-embedded

- Slim and short cylindrical metal housing M30
- Chromium-plated brass housing
- Built-in short circuit protection, inductive protection and polarity reversal protection
- LED for switching state visible from 360°



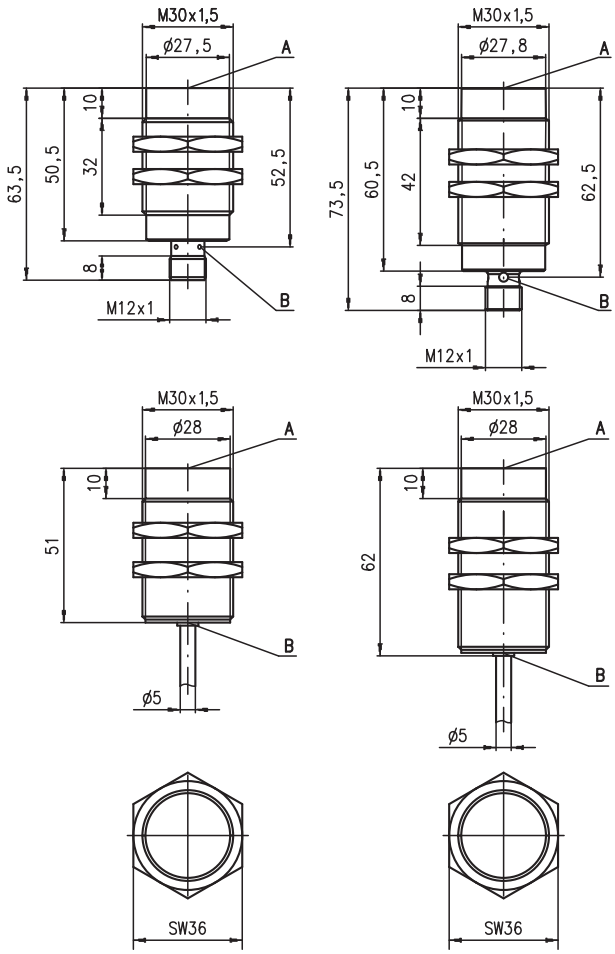
Accessories:

(available separately)

- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Mounting clamp (MC 030…)

Dimensioned drawing

IS 230…-15N… **IS 230…-40N…**

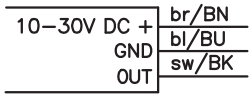


Tightening torque of the fastening nuts < 40 Nm !

A Active surface
B Yellow indicator diode

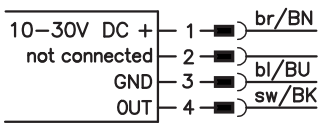
Electrical connection

Cable

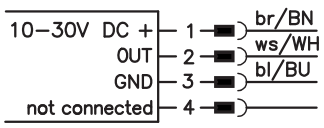


M12 connector

…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.

We reserve the right to make changes • DS_IS230N_en_50110212.fm

Specifications

		IS 230…-15N…	IS 230…-40N…
General specifications			
Type of installation		non-embedded installation	
Typ. operating range limit S_n		15.0mm	40.0mm
Operating range S_a		0 … 12.1mm	0 … 32.4mm
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		≤ 15%	≤ 10%
Temperature drift of S_r		≤ 10% 2)	
Repeatability		≤ 5% 3)	
Timing			
Switching frequency f		700Hz	100Hz
Delay before start-up		≤ 300ms	≤ 200ms
Indicators			
Yellow LED (visible from 360°)		switching state	
Mechanical data			
Housing		chromium-plated brass	
Standard surface plate		45 x 45mm², Fe360	120 x 120mm², Fe360
Active surface		PBTP	
Weight (M12 plug/cable)		approx. 145g/approx. 210g	
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

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.

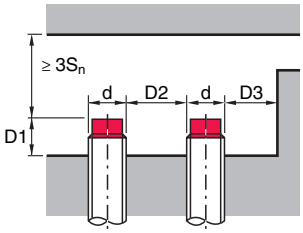
Tables

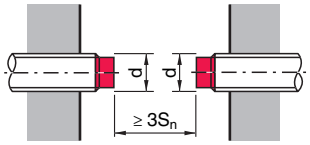
Reduction factors:

for S_n = 15.0mm		for S_n = 40.0mm	
Steel Fe360	1	Steel Fe360	1
Copper	0.43	Copper	0.37
Aluminum	0.49	Aluminum	0.42
Brass	0.53	Brass	0.47
Stainless steel	0.84	Stainless steel	0.78

Mounting

Non-embedded installation:

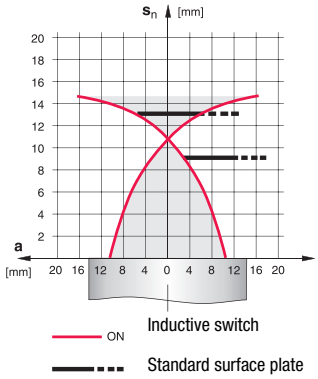




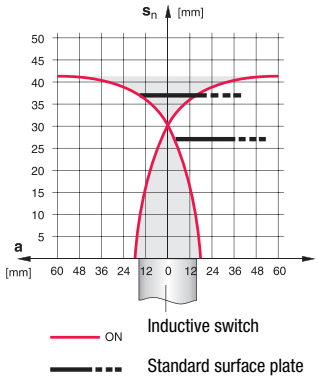
Ferromagnetic and non-ferromagnetic materials				
S_n [mm]	D1 [mm]		D2 [mm]	D3 [mm]
15.0	13.0		45.0	15.0
40.0	Fe360:	35.0	120.0	30.0
	Aluminum:	25.0		
	Brass:	25.0		
	Stainless steel:	20.0		

Diagrams

Models with **S_n = 15.0mm**



Models with **S_n = 40.0mm**



Type key

I	S		2	3	0		M	M	/	4	N	O	-	1	5	N	-	S	1	2

Operating principle / construction

IS	Inductive switch / Standard

Series

230	Series with M30 x 1.5 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

15N	Typ. scan range limit 15.0 mm / non-embedded installation
40N	Typ. scan range limit 40.0 mm / non-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 = 15 mm	IS 230 MM/4NO-15N	50109716
	IS 230 MM/4NO-15N-S12	50109717
	IS 230 MM/4NC-15N	50129370
	IS 230 MM/2NO-15N	50109718
	IS 230 MM/2NC-15N	50129371
S_n = 40 mm	IS 230 MM/4NO-40N	50109726
	IS 230 MM/4NO-40N-S12	50109727
	IS 230 MM/2NO-40N	50109728