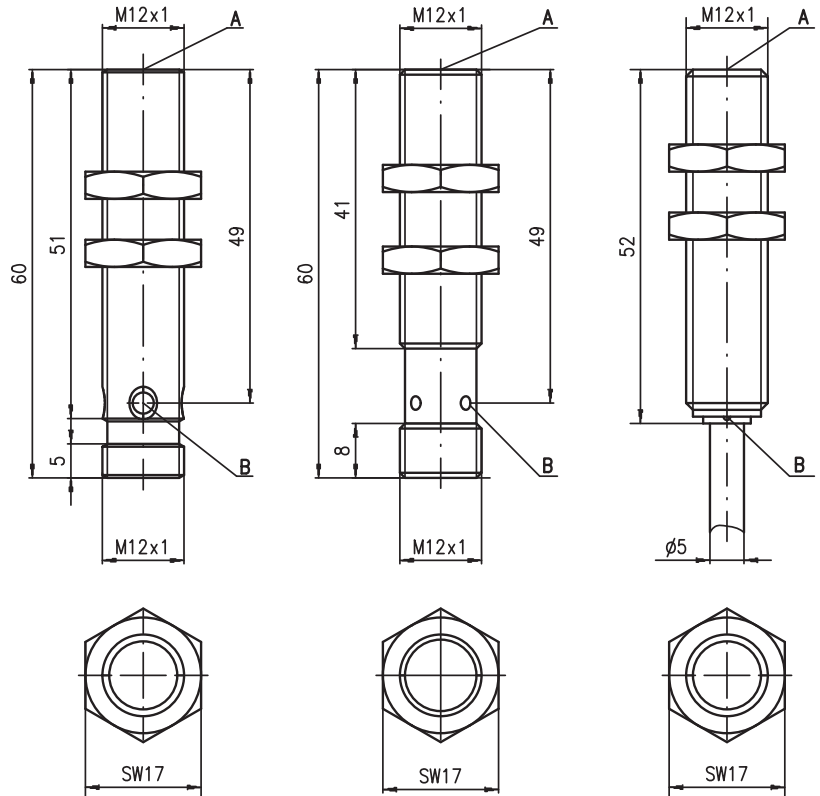


Dimensioned drawing

IS 212...-2E0-S12
IS 212...-4E0-S12

IS 212...-6E0-S12

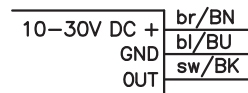


Tightening torque of the fastening nuts < 10Nm !

- A Active surface
- B Yellow indicator diode

Electrical connection

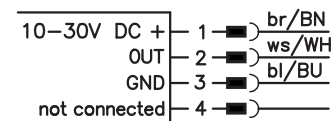
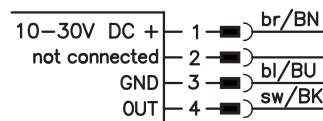
Cable



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.

en 03-2015/05 50110220

We reserve the right to make changes • DS_IS212E_en_50110220.fm



M12
2 mm
4 mm
6 mm



Embedded

- Slim and short cylindrical metal housing M12
- 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 012...)

Specifications

General specifications

	IS 212...-2E0...	IS 212...-4E0...	IS 212...-6E0...
Type of installation	embedded installation		
Typ. operating range limit S_n	2.0mm	4.0mm	6.0mm
Operating range S_a	0 ... 1.6mm	0 ... 3.2mm	0 ... 4.8mm

Electrical data

Operating voltage U_B ¹⁾	10 ... 30VDC		
Residual ripple σ	$\leq 20\%$ of U_B		
Output current I_L	$\leq 200\text{mA}$		
Open-circuit current I_0	$\leq 10\text{mA}$		
Residual current I_r	$\leq 100\mu\text{A}$		
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	$\leq 2\text{V}$		
Hysteresis H of S_r	$\leq 10\%$	$\leq 15\%$	$\leq 10\%$
Temperature drift of S_r	$\leq 10\%$ ²⁾		
Repeatability	$\leq 5\%$ ³⁾		

Timing

Switching frequency f	3kHz	2kHz	800Hz
Delay before start-up	$\leq 10\text{ms}$	$\leq 300\text{ms}$	$\leq 50\text{ms}$

Indicators

Yellow LED (visible from 360°)	switching state
--------------------------------	-----------------

Mechanical data

Housing	chromium-plated brass		
Standard surface plate	12 x 12mm ² , Fe360	12 x 12mm ² , Fe360	18 x 18mm ² , Fe360
Active surface	PBTP		
Weight (M12 plug/cable)	approx. 25g/ approx. 95g		
Connection type	M12 connector 4-pin or cable: 2m, PVC, 3 x 0.34mm ² , \varnothing 5.0mm		

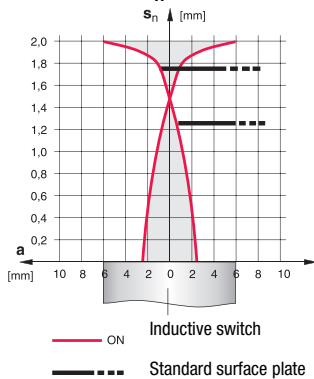
Environmental data

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	
	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)	

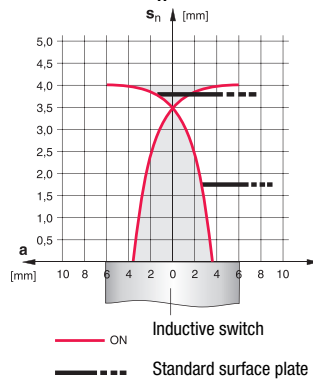
- 1) Observe the safety regulations and installation instructions regarding power supply and wiring; for UL applications: only for use in "Class 2" circuits acc. to NEC
- 2) Over the entire operating temperature range
- 3) For $U_B = 20 \dots 30\text{VDC}$, ambient temperature $T_a = 23^\circ\text{C} \pm 5^\circ\text{C}$
- 4) 1=polarity reversal protection, 2=short circuit protection, 3=inductive protection for all outputs

Diagrams

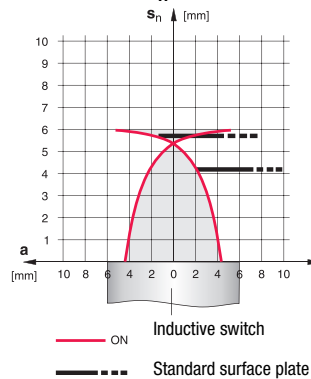
Models with $S_n = 2.0\text{mm}$



Models with $S_n = 4.0\text{mm}$



Models with $S_n = 6.0\text{mm}$



Tables

Reduction factors:

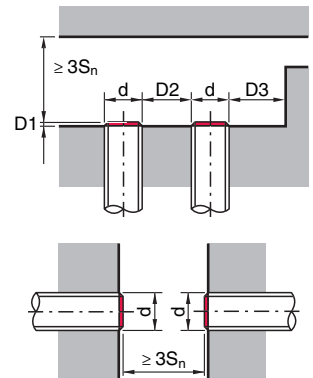
for $S_n = 2.0\text{mm}$		for $S_n = 4.0\text{mm}$	
Steel Fe360	1	Steel Fe360	1
Copper	0.20	Copper	0.40
Aluminum	0.30	Aluminum	0.44
Brass	0.40	Brass	0.54
Stainless steel	0.85	Stainless steel	0.80

for $S_n = 6.0\text{mm}$

Steel Fe360	1
Copper	0.25
Aluminum	0.30
Brass	0.40
Stainless steel	0.70

Mounting

Embedded installation:



Ferromagnetic and non-ferromagnetic materials				
S_n [mm]	D1 [mm]	D2 [mm]	D3 [mm]	
2.0	0	6.0	2.0	
4.0	0	12.0	4.0	
6.0	2.0	18.0	6.0	

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.

Type key

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

Operating principle / construction
IS Inductive switch / Standard

Series
212 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
2E0 Typ. scan range limit 2.0mm / embedded installation

4E0 Typ. scan range limit 4.0mm / embedded installation

6E0 Typ. scan range limit 6.0mm / 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

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

	Designation	Part No.
S_n = 2mm	IS 212 MM/4NO-2E0	50109664
	IS 212 MM/4NO-2E0-S12	50109665
	IS 212 MM/4NC-2E0	50129350
	IS 212 MM/4NC-2E0-S12	50111870
	IS 212 MM/2NO-2E0	50109666
	IS 212 MM/2NC-2E0	50129415
S_n = 4mm	IS 212 MM/4NO-4E0	50109672
	IS 212 MM/4NO-4E0-S12	50109673
	IS 212 MM/4NC-4E0	50129353
	IS 212 MM/4NC-4E0-S12	50109674
	IS 212 MM/2NO-4E0	50109675
	IS 212 MM/2NO-4E0-S12	50129354
	IS 212 MM/2NC-4E0	50114380
	IS 212 MM/2NC-4E0-S12	50109677
S_n = 6mm	IS 212 MM/4NO-6E0	50109678
	IS 212 MM/2NO-6E0	50109682

