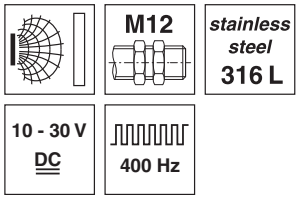
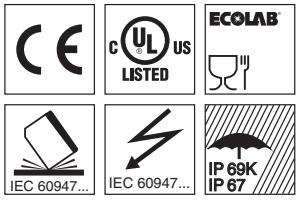
IS 212 Food & Beverage — Inductive switches

en 02-2017/03 50110224



- Slim and short cylindrical metal housing M12x1
- V4A / AISI 316L stainless steel housing
- ECOLAB tested
- For food and beverage applications
- Built-in short circuit protection, inductive protection and polarity reversal protection
- LED for switching state visible from 360°

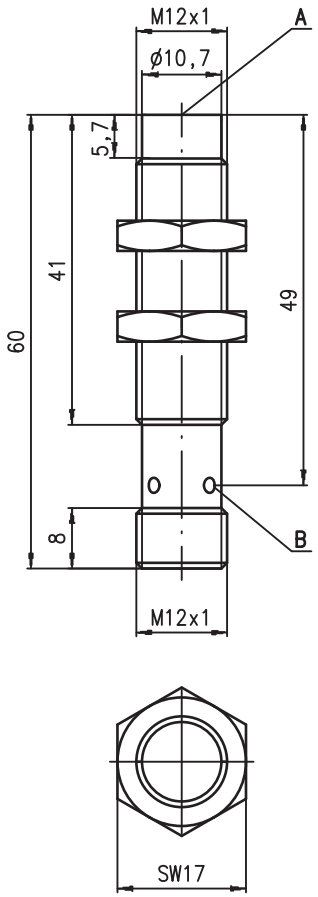


Accessories:

(available separately)

- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Mounting clamp (MC 012…)

Dimensioned drawing



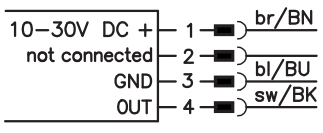
Tightening torque of the fastening nuts < 20Nm !

A Active surface
B Yellow indicator diode

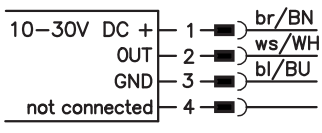
Electrical connection

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_IS212N.5F_en_50110224.fm

Specifications

General specifications		**IS 212...-10N...**
Type of installation		non-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		≤ 15% 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%
Temperature drift of S_r		≤ 10% [2]
Repeatability		≤ 5% [3]
Timing		
Switching frequency f		400Hz
Delay before start-up		≤ 40ms
Indicators		
Yellow LED (visible from 360°)		switching state
Mechanical data		
Housing		stainless steel AISI 316L (DIN 1.4404)
Standard surface plate		30 x 30mm², Fe360
Active surface		stainless steel AISI 316L (DIN 1.4404)
Weight (M12 plug)		approx. 80g
Connection type		M12 connector, 4-pin
Environmental data		
Ambient temperature		-25°C ... +85°C
Protection class		IP 67, IP 68, IP 69K
Environmentally tested acc. to		ECOLAB
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)
Certifications		UL 508, CSA C22.2 No.14-13 [1] [5]

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
5) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

Order guide

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

	Designation	Part No.
S_n = 10mm	IS 212 FM/4N0.5F-10N-S12	501 09738

Tables

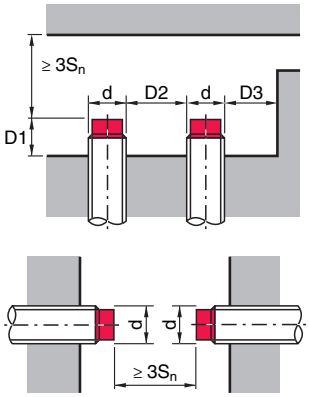
Reduction factors: for S_n = 10.0mm

Steel Fe360	1
Copper	0.80
Aluminum	1.00
Brass	1.40
Stainless steel	0.65 [1]

1) Surface plate min. 2mm thick

Mounting

Non-embedded installation:

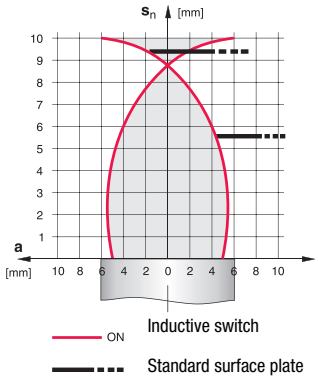


Ferromagnetic and non-ferromagnetic materials

S_n [mm]	Installation in	D1 [mm]	D2 [mm]	D3 [mm]
10.0	Aluminum	13.0	108.0	24.0
	Steel Fe360	22.0		
	Brass	15.0		
	Stainless steel	21.0		

Diagrams

Models with **S_n = 10.0mm**

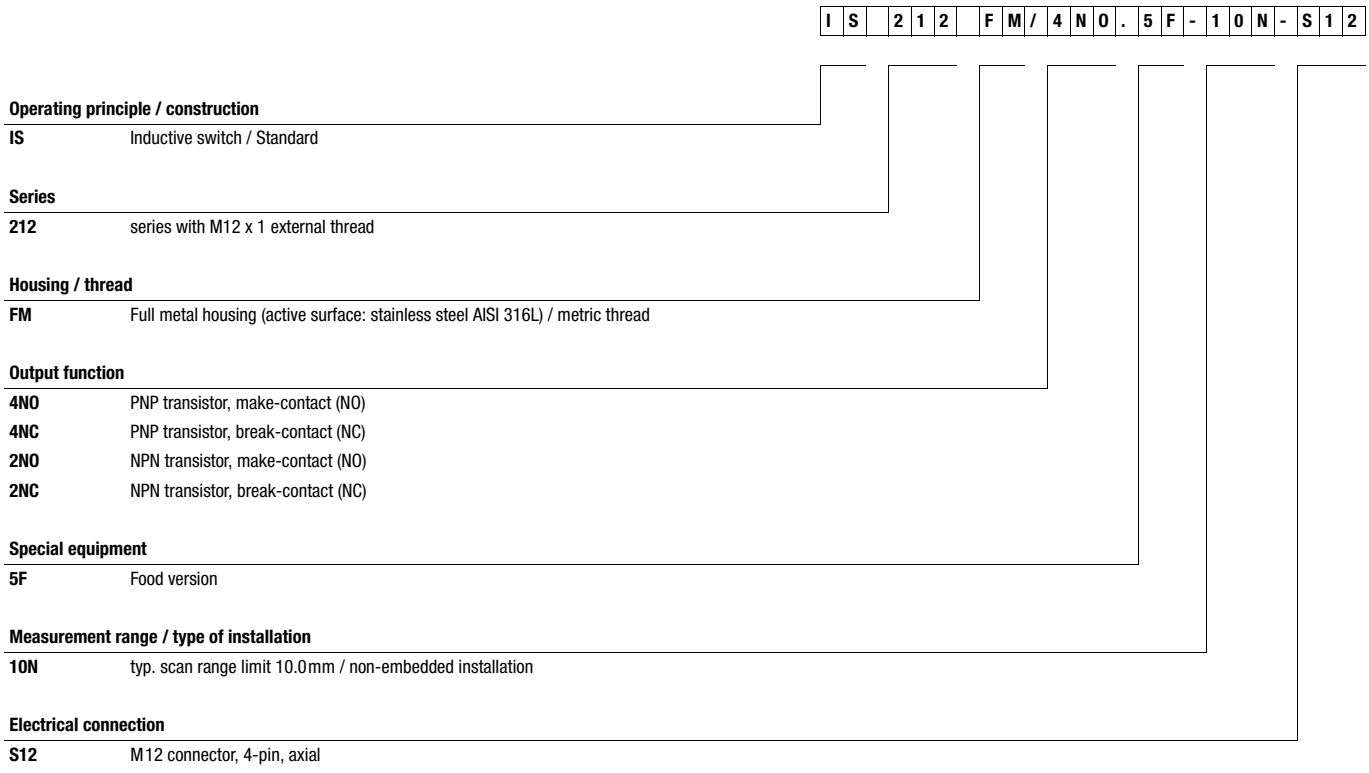


Remarks

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.

Type key


I S 2 1 2 F M / 4 N O . 5 F - 1 0 N - S 1 2
Operating principle / construction
IS Inductive switch / Standard
Series
212 series with M12 x 1 external thread
Housing / thread
FM Full metal housing (active surface: stainless steel AISI 316L) / 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)
Special equipment
5F Food version
Measurement range / type of installation
10N typ. scan range limit 10.0mm / non-embedded installation
Electrical connection
S12 M12 connector, 4-pin, axial