

Proximity Sensors Inductive Stainless Steel Housing Types IA, M12, M18 and M30, NAMUR

CARLO GAVAZZI



- Stainless steel housing, cylindrical
- Diameter: M12, M18, M30
- Short or long versions
- Sensing distance: 2 to 15 mm
- Output: NAMUR EN 50 227
- Protection: Reverse polarity
- LED-indication
- 2 m cable or plug M12



Product Description

Proximity switch in M12, M18 and M30 stainless steel housing. Made in accordance with Euronorm EN 50 227 and EN 60 947-5-2. For thermoplastic housing refer to type IA 12C.... Amplifier relay SD.... is available.

Ordering Key

IA 12 ESF 02 UC M1

Type _____
Housing size _____
Housing type _____
Sensing function _____
Sensing distance _____
Output type _____
Plug _____

Type Selection

Housing diameter	Body style	Connection	Rated operating distance (S _n)	Ordering no. Namur
M12	Short	Cable	2 mm ¹⁾	IA 12 ESF 02 UC
M12	Short	Plug	2 mm ¹⁾	IA 12 ESF 02 UC M1
M12	Long	Cable	2 mm ¹⁾	IA 12 ELF 02 UC
M12	Long	Plug	2 mm ¹⁾	IA 12 ELF 02 UC M1
M12	Short	Cable	4 mm ²⁾	IA 12 ESN 04 UC
M12	Short	Plug	4 mm ²⁾	IA 12 ESN 04 UC M1
M12	Long	Cable	4 mm ²⁾	IA 12 ELN 04 UC
M12	Long	Plug	4 mm ²⁾	IA 12 ELN 04 UC M1
M18	Short	Cable	5 mm ¹⁾	IA 18 ESF 05 UC
M18	Short	Plug	5 mm ¹⁾	IA 18 ESF 05 UC M1
M18	Long	Cable	5 mm ¹⁾	IA 18 ELF 05 UC
M18	Long	Plug	5 mm ¹⁾	IA 18 ELF 05 UC M1
M18	Short	Cable	8 mm ²⁾	IA 18 ESN 08 UC
M18	Short	Plug	8 mm ²⁾	IA 18 ESN 08 UC M1
M18	Long	Cable	8 mm ²⁾	IA 18 ELN 08 UC
M18	Long	Plug	8 mm ²⁾	IA 18 ELN 08 UC M1
M30	Short	Cable	10 mm ¹⁾	IA 30 ESF 10 UC
M30	Short	Plug	10 mm ¹⁾	IA 30 ESF 10 UC M1
M30	Long	Cable	10 mm ¹⁾	IA 30 ELF 10 UC
M30	Long	Plug	10 mm ¹⁾	IA 30 ELF 10 UC M1
M30	Short	Cable	15 mm ²⁾	IA 30 ESN 15 UC
M30	Short	Plug	15 mm ²⁾	IA 30 ESN 15 UC M1
M30	Long	Cable	15 mm ²⁾	IA 30 ELN 15 UC
M30	Long	Plug	15 mm ²⁾	IA 30 ELN 15 UC M1

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal



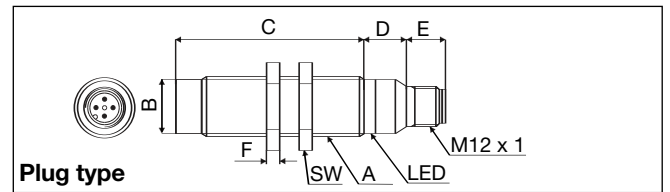
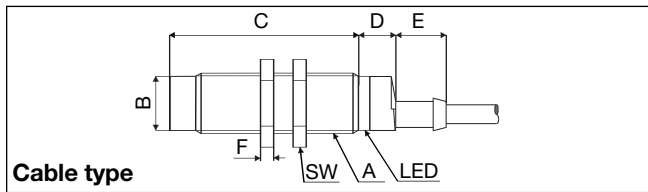
Specifications

Rated operational volt. (U_e) (U_B)	8.2 VDC 7 to 9 VDC (6 to 35 VDC, all specifications not observed in extended supply range)	Hysteresis (H) (Differential travel)	1 to 15% of sensing distance
Self-inductance	$\leq 500\mu\text{H}$	Effective operating dist. (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
Self-capacitance	$\leq 120 \text{ nF}$	Usable operating dist. (S)	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
No-load supply current (I_0)	Activated: $\leq 1 \text{ mA}$ Not activated: $\geq 2.2 \text{ mA}$ Max. 9.35 mA	Ambient temperature	Operating Storage
Protection	Reverse polarity	Degree of protection	IP 67 (Nema 1, 3, 4, 6, 13)
Transient voltage	$\leq 1 \text{ kV}/0.5 \text{ J}$	Housing material	Body Front Back
EMC	Approved according to EN 50 080, EN 50 081	Connection	Stainless Steel (1.4301) Grey thermoplastic polyester Black thermoplastic polyester
Power ON delay	$< 10 \text{ ms}$	Cable	2 m, 2 x 0.5 mm ² , grey PVC, oil proof M12 x 1
Frequency of operating cycles (f)	IA12xxF02 1.400 Hz IA12xxN04 1.200 Hz IA18xxF05 500 Hz IA18xxN08 200 Hz IA30xxF10 300 Hz IA30xxF15 100 Hz	Plug Cables for plug (-1)	CONH1A series
Indication not activated	LED, yellow	Weight (cable excluded)	IA 12xx 20 g IA 18xxF05 26 g IA 18xxN08 30 g IA 30xxF10 75 g IA 30xxN15 80 g
Assured operating dist. (S_a)	$0 \leq S_a \leq 0.81 S_n$	Tightening torque	IA 12 7.5 Nm IA 18 27.5 Nm IA 30 100 Nm
Repeat accuracy (R)	$\leq 5\%$	Approvals	UL
		CE-marking	Yes

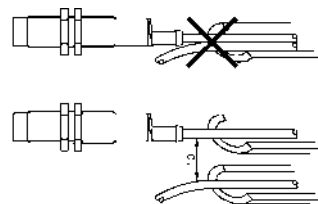
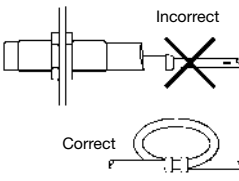
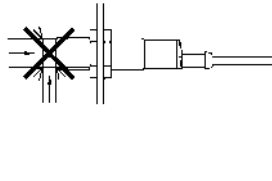
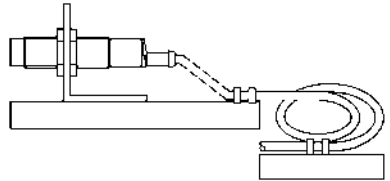
Dimensions

Type	A	B Ø mm	C mm	D mm	E mm	F mm	SW mm
IA 12 ESF 02 UC	M12 x 1 x 30	10.7	30	11	5.0	4	17
IA 12 ELF 02 UC	M12 x 1 x 50	10.7	50	11	5.0	4	17
IA 12 ESF 02 UC M1	M12 x 1 x 30	10.7	30	12.6	11.9	4	17
IA 12 ELF 02 UC M1	M12 x 1 x 50	10.7	50	12.6	11.9	4	17
IA 12 ESN 04 UC	M12 x 1 x 30	10.7	34	11	5.0	4	17
IA 12 ELN 04 UC	M12 x 1 x 50	10.7	54	11	5.0	4	17
IA 12 ESN 04 UC M1	M12 x 1 x 30	10.7	34	12.6	11.9	4	17
IA 12 ELN 04 UC M1	M12 x 1 x 50	10.7	54	12.6	11.9	4	17
IA 18 ESF 05 UC	M18 x 1 x 30	16.7	30	11.6	15.4	4	24
IA 18 ELF 05 UC	M18 x 1 x 50	16.7	50	11.6	15.4	4	24
IA 18 ESF 05 UC M1	M18 x 1 x 30	16.7	30	13.1	11.9	4	24
IA 18 ELF 05 UC M1	M18 x 1 x 50	16.7	50	13.1	11.9	4	24
IA 18 ESN 08 UC	M18 x 1 x 30	16.7	38	11.6	15.4	4	24
IA 18 ELN 08 UC	M18 x 1 x 50	16.7	58	11.6	15.4	4	24
IA 18 ESN 08 UC M1	M18 x 1 x 30	16.7	38	13.1	11.9	4	24
IA 18 ELN 08 UC M1	M18 x 1 x 50	16.7	58	13.1	11.9	4	24
IA 30 ESF 10 UC	M30 x 1.5 x 30	28	30	13.6	15.4	5	36
IA 30 ELF 10 UC	M30 x 1.5 x 50	28	50	13.6	15.4	5	36
IA 30 ESF 10 UC M1	M30 x 1.5 x 30	28	30	13.6	11.9	5	36
IA 30 ELF 10 UC M1	M30 x 1.5 x 50	28	50	13.6	11.9	5	36
IA 30 ESN 15 UC	M30 x 1.5 x 30	28	42	13.6	15.4	5	36
IA 30 ELN 15 UC	M30 x 1.5 x 50	28	62	13.6	15.4	5	36
IA 30 ESN 15 UC M1	M30 x 1.5 x 30	28	42	13.6	11.9	5	36
IA 30 ELN 15 UC M1	M30 x 1.5 x 50	28	62	13.6	11.9	5	36

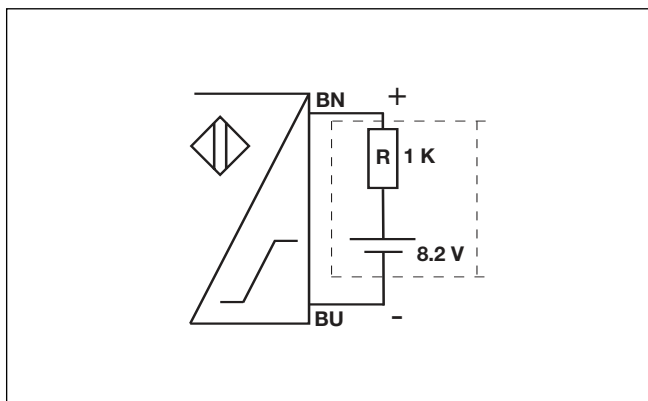
Dimensions (cont.)



Installation Hints

<p><i>To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables</i></p> 	<p><i>Relief of cable strain</i></p>  <p>Incorrect</p> <p>Correct</p> <p>The cable should not be pulled</p>	<p><i>Protection of the sensing face</i></p>  <p>A proximity switch should not serve as mechanical stop</p>	<p><i>Switch mounted on mobile carrier</i></p>  <p>Any repetitive flexing of the cable should be avoided</p>
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Wiring Diagram



Power Supplies

> SD 110/210 Refer to Technical information.
 > SD 170/270