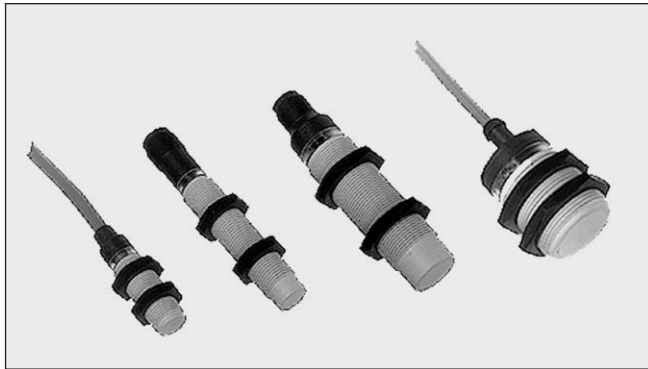


# Proximity Sensors Inductive Thermoplastic Polyester Housing Types IA, M12, M18 and M30, NAMUR

CARLO GAVAZZI



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



## Product Description

Proximity switch in M12, M18 and M30 polyester housings. Made in accordance with euronorms EN 50 227 and EN 60 947-5-2. For metal versions refer to type IA 12 E... Amplifier relay SD..... is available.

## Ordering Key

IA 12 CSF 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 <sub>n</sub> )	Ordering no. NAMUR
M12	Short	Cable	2 mm <sup>1)</sup>	IA 12 CSF 02 UC
M12	Short	Plug	2 mm <sup>1)</sup>	IA 12 CSF 02 UC M1
M12	Long	Cable	2 mm <sup>1)</sup>	IA 12 CLF 02 UC
M12	Long	Plug	2 mm <sup>1)</sup>	IA 12 CLF 02 UC M1
M12	Short	Cable	4 mm <sup>2)</sup>	IA 12 CSN 04 UC
M12	Short	Plug	4 mm <sup>2)</sup>	IA 12 CSN 04 UC M1
M12	Long	Cable	4 mm <sup>2)</sup>	IA 12 CLN 04 UC
M12	Long	Plug	4 mm <sup>2)</sup>	IA 12 CLN 04 UC M1
M18	Short	Cable	5 mm <sup>1)</sup>	IA 18 CSF 05 UC
M18	Short	Plug	5 mm <sup>1)</sup>	IA 18 CSF 05 UC M1
M18	Long	Cable	5 mm <sup>1)</sup>	IA 18 CLF 05 UC
M18	Long	Plug	5 mm <sup>1)</sup>	IA 18 CLF 05 UC M1
M18	Short	Cable	8 mm <sup>2)</sup>	IA 18 CSN 08 UC
M18	Short	Plug	8 mm <sup>2)</sup>	IA 18 CSN 08 UC M1
M18	Long	Cable	8 mm <sup>2)</sup>	IA 18 CLN 08 UC
M18	Long	Plug	8 mm <sup>2)</sup>	IA 18 CLN 08 UC M1
M30	Short	Cable	10 mm <sup>1)</sup>	IA 30 CSF 10 UC
M30	Short	Plug	10 mm <sup>1)</sup>	IA 30 CSF 10 UC M1
M30	Long	Cable	10 mm <sup>1)</sup>	IA 30 CLF 10 UC
M30	Long	Plug	10 mm <sup>1)</sup>	IA 30 CLF 10 UC M1
M30	Short	Cable	15 mm <sup>2)</sup>	IA 30 CSN 15 UC
M30	Short	Plug	15 mm <sup>2)</sup>	IA 30 CSN 15 UC M1
M30	Long	Cable	15 mm <sup>2)</sup>	IA 30 CLN 15 UC
M30	Long	Plug	15 mm <sup>2)</sup>	IA 30 CLN 15 UC M1

<sup>1)</sup> For flush mounting in metal

<sup>2)</sup> For non-flush mounting in metal



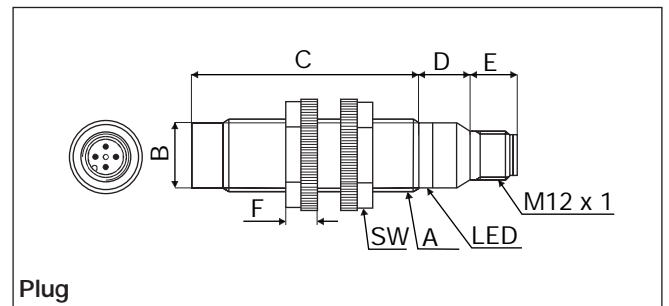
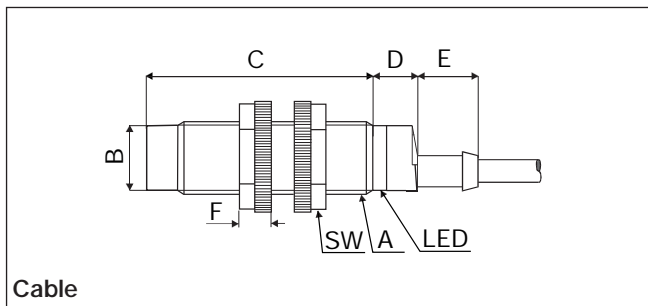
## Specifications

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 Back
EMC	Approved according to EN 50 080, EN 50 081	Connection	Grey thermoplastic polyester Black polyester
Power ON delay	$< 10 \text{ ms}$	Cable	2 m, 2 x 0.5 mm <sup>2</sup> , grey PVC, oil proof
Frequency of operating cycles (f)	IA12xxF02 1.400 Hz IA12xxN04 1.200 Hz IA18xxF05 500 Hz IA18xxN08 200 Hz IA30xxF10 300 Hz IA30xxN15 100 Hz	Plug Cables for plug (-1)	M12 x 1 CONH1A serie
Indication not activated	LED, yellow	Weight (cable excluded)	IA 12xx 10 g IA 18xxF05 18 g IA 18xxN08 20 g IA 30xxF10 50 g IA 30xxN15 70 g
Assured operating dist. ( $S_a$ )	$0 \leq S_a \leq 0.81 S_n$	Tightening torque	IA 12 1.8 Nm IA 18 2.6 Nm IA 30 7.5 Nm
Repeat accuracy (R)	$\leq 5\%$	Approvals	UL
		CE-marking	Yes

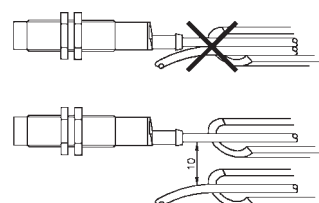
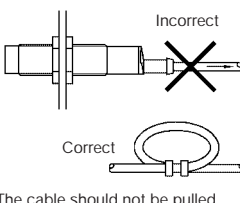
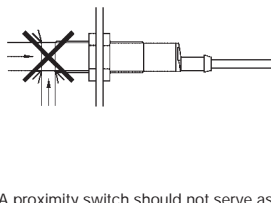
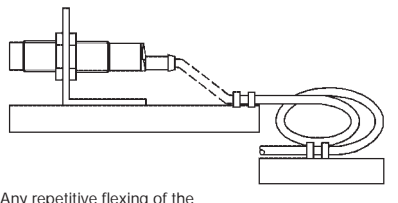
## Dimensions

Type	A	B Ø mm	C mm	D mm	E mm	F mm	SW mm
IA 12 CSF 02 UC	M12 x 1 x 30	10.7	30	11	5.0	8	17
IA 12 CLF 02 UC	M12 x 1 x 50	10.7	50	11	5.0	8	17
IA 12 CSF 02 UC M1	M12 x 1 x 30	10.7	30	12.6	11.9	8	17
IA 12 CLF 02 UC M1	M12 x 1 x 50	10.7	50	12.6	11.9	8	17
IA 12 CSN 04 UC	M12 x 1 x 30	10.7	34	11	5.0	8	17
IA 12 CLN 04 UC	M12 x 1 x 50	10.7	54	11	5.0	8	17
IA 12 CSN 04 UC M1	M12 x 1 x 30	10.7	34	12.6	11.9	8	17
IA 12 CLN 04 UC M1	M12 x 1 x 50	10.7	54	12.6	11.9	8	17
IA 18 CSF 05 UC	M18 x 1 x 30	16.7	30	11.6	15.4	8	24
IA 18 CLF 05 UC	M18 x 1 x 50	16.7	50	11.6	15.4	8	24
IA 18 CSF 05 UC M1	M18 x 1 x 30	16.7	30	13.1	11.9	8	24
IA 18 CLF 05 UC M1	M18 x 1 x 50	16.7	50	13.1	11.9	8	24
IA 18 CSN 08 UC	M18 x 1 x 30	16.7	38	11.6	15.4	8	24
IA 18 CLN 08 UC	M18 x 1 x 50	16.7	58	11.6	15.4	8	24
IA 18 CSN 08 UC M1	M18 x 1 x 30	16.7	38	13.1	11.9	8	24
IA 18 CLN 08 UC M1	M18 x 1 x 50	16.7	58	13.1	11.9	8	24
IA 30 CSF 10 UC	M30 x 1.5 x 30	28	30	13.6	15.4	10	36
IA 30 CLF 10 UC	M30 x 1.5 x 50	28	50	13.6	15.4	10	36
IA 30 CSF 10 UC M1	M30 x 1.5 x 30	28	30	13.6	11.9	10	36
IA 30 CLF 10 UC M1	M30 x 1.5 x 50	28	50	13.6	11.9	10	36
IA 30 CSN 15 UC	M30 x 1.5 x 30	28	42	13.6	15.4	10	36
IA 30 CLN 15 UC	M30 x 1.5 x 50	28	62	13.6	15.4	10	36
IA 30 CSN 15 UC M1	M30 x 1.5 x 30	28	42	13.6	11.9	10	36
IA 30 CLN 15 UC M1	M30 x 1.5 x 50	28	62	13.6	11.9	10	36

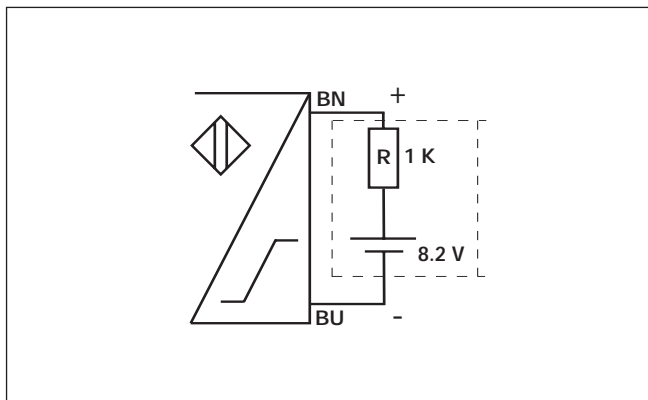
## Dimensions (cont.)



## 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>
---	---	--	--

## Wiring Diagram



## NAMUR, Amplifier Relays

- > SD 110/210.
- > SD 170/270.

Refer to Technical information.