

Proximity Sensors Inductive Nickel-Plated Brass Housing Types IA, M12, M18 and M30

5 years warranty

CARLO GAVAZZI



- Sensing distance: 2 to 15 mm
- Flush and non-flush types
- Long and short body
- Rated operational voltage: 10 - 40 VDC
- Output: DC 200 mA, NPN or PNP
- Make and break switching function
- LED-indication
- Protection: reverse polarity, short circuit, transients
- Cable and plug versions

Product Description

A family of inexpensive general purpose inductive proximity switches in industrial standard nickel-plated brass housings. M12, M18 and M30 types. They are able to handle simple applications

where a basic sensor provides adequate sensing performance. Output are open collector NPN or PNP transistors. Available with cable and M12 plug.

Ordering Key

IA12ASF02NOM1

Type _____
Housing style _____
Housing size _____
Housing material _____
Housing length _____
Detection principle _____
Sensing distance _____
Output type _____
Output configuration _____
Connection type _____

Type Selection

Housing diameter	Connec- tion	Body style	Rated operating distance S _n	Ordering no. NPN Make switching	Ordering no. PNP Make switching	Ordering no. NPN Break switching	Ordering no. PNP Break switching
M12	Cable	Short	2 mm ¹⁾	IA 12 DSF 02 NO	IA 12 DSF 02 PO		
M12	Plug	Short	2 mm ¹⁾	IA 12 ASF 02 NOM1	IA 12 ASF 02 POM1		
M12	Cable	Long	2 mm ¹⁾	IA 12 DLF 02 NO	IA 12 DLF 02 PO		
M12	Plug	Long	2 mm ¹⁾	IA 12 ALF 02 NOM1	IA 12 ALF 02 POM1		
M12	Cable	Short	4 mm ²⁾	IA 12 DSN 04 NO	IA 12 DSN 04 PO	IA 12 DSN 04 NC	IA 12 DSN 04 PC
M12	Plug	Short	4 mm ²⁾	IA 12 ASN 04 NOM1	IA 12 ASN 04 POM1	IA 12 ASN 04 NCM1	IA 12 ASN 04 PCM1
M18	Cable	Short	5 mm ¹⁾	IA 18 DSF 05 NO	IA 18 DSF 05 PO		
M18	Plug	Short	5 mm ¹⁾	IA 18 ASF 05 NOM1	IA 18 ASF 05 POM1		
M18	Cable	Long	5 mm ¹⁾		IA 18 DLF 05 PO		IA 18 DLF 05 PC
M18	Plug	Long	5 mm ¹⁾		IA 18 ALF 05 POM1		IA 18 ALF 05 PCM1
M18	Cable	Short	8 mm ²⁾	IA 18 DSN 08 NO	IA 18 DSN 08 PO	IA 18 DSN 08 NC	IA 18 DSN 08 PC
M18	Plug	Short	8 mm ²⁾	IA 18 ASN 08 NOM1	IA 18 ASN 08 POM1	IA 18 ASN 08 NCM1	IA 18 ASN 08 PCM1
M30	Cable	Short	10 mm ¹⁾	IA 30 DSF 10 NO	IA 30 DSF 10 PO		
M30	Plug	Short	10 mm ¹⁾	IA 30 ASF 10 NOM1	IA 30 ASF 10 POM1		
M30	Cable	Long	10 mm ¹⁾		IA 30 DLF 10 PO		IA 30 DLF 10 PC
M30	Plug	Long	10 mm ¹⁾		IA 30 ALF 10 POM1		
M30	Cable	Short	15 mm ²⁾	IA 30 DSN 15 NO	IA 30 DSN 15 PO		
M30	Plug	Short	15 mm ²⁾	IA 30 ASN 15 NOM1	IA 30 ASN 15 POM1		

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

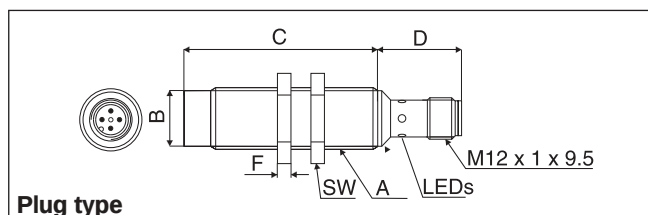
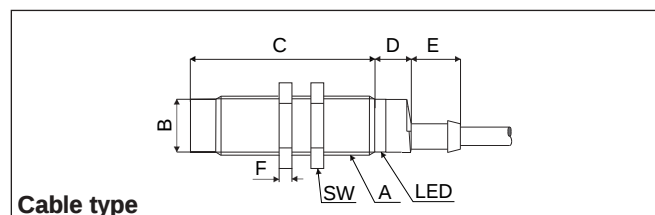
Specifications

Rated operational voltage (U_B)	10 to 40 VDC (ripple incl.)	Ambient temperature	
Ripple	≤ 10%	Operating	-25° to +70°C (-13° to +158°F)
Output current (I_o)	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)	Storage	-30° to +80°C (-22° to +176°F)
No load supply current (I_o)	IA 12 ≤ 10 mA IA 18 ≤ 10 mA IA 30 ≤ 10 mA	Housing material	
Voltage drop (U_d)	Max. 2.5 VDC @ 200 mA	Body	Nickel-plated brass
Protection	Reverse polarity, short-circuit, transients	Front	Grey thermoplastic polyester
Transient voltage	1 kV/0.5 J	Backpart	
Power ON delay (t_v)	50 ms	Plug	NPB
Operating frequency (f)	IA12 ..F 02 ≤ 2000 Hz IA12 DSN 04 ≤ 2000 Hz IA18 ..F 05 ≤ 1500 Hz IA18 DSN 08 ≤ 1500 Hz IA30 ..F 10 ≤ 700 Hz IA30 DSN 15 ≤ 700 Hz	Cable	PBTP (black polyester)
Indication for output ON	LED, yellow	Nuts	NPB
Assured operating sensing distance (S_a)	$0 \leq S_a \leq 0.81 \times S_n$	Connection	
Effective operating distance (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$	Cable	2 m, 3 x 0.3 mm ² , grey PVC, oil proof M12 x 1
Usable operating distance (S_u)	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$	Plug	CONH1A/CONH1O series
Repeat accuracy (R)	≤ 5%	Cables for plug (-1)	
Differential travel (H) (Hysteresis)	1 to 15% of sensing dist.	Degree of protection	IP 67
		Weight (cable/nuts included)	IA 12 .S. 100 g IA 12 .L. 105 g IA 18 .S. 120 g IA 18 .L. 130 g IA 30 .S. 185 g IA 30 .L. 195 g
		Tightening torque	IA 12 7.0 Nm (x) 15.0 Nm (y) IA 18 27.5 Nm IA 30 50.0 Nm
		Approvals	UL, CSA
		CE-marking	Yes

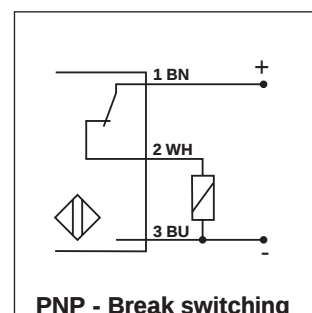
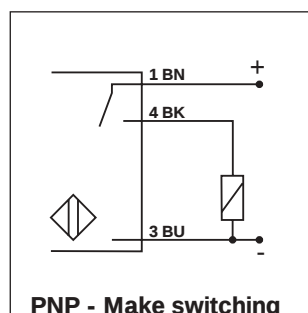
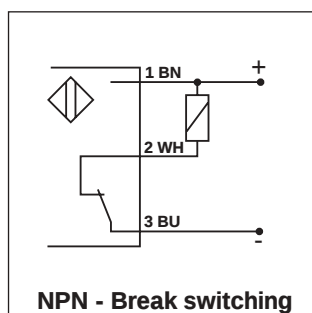
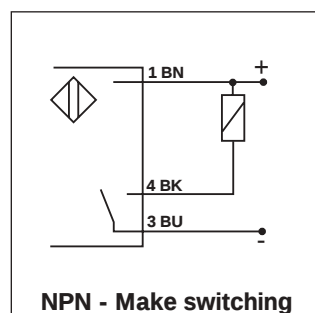
Dimensions

Type	A	B Ø mm	C mm	D mm	E mm	F mm	SW mm
IA 12 DSF 02 .O	M12 x 1 x 30	10.7	30	11	5.0	4	17
IA 12 ASF 02 .O M1	M12 x 1 x 30	10.7	30	25.2		4	17
IA 12 DLF 02 .O	M12 x 1 x 50	10.7	50	11	5.0	4	17
IA 12 ALF 02 .O M1	M12 x 1 x 50	10.7	50	25.2		4	17
IA 12 DSN 04 .O	M12 x 1 x 30	10.7	34	11	5.0	4	17
IA 12 ASN 04 .O M1	M12 x 1 x 30	10.7	34	25.2		4	17
IA 18 DSF 05 .O	M18 x 1 x 30	16.7	30	11.6	15.4	4	24
IA 18 ASF 05 .O M1	M18 x 1 x 30	16.7	30	25.0		4	24
IA 18 DLF 05 ..	M18 x 1 x 50	16.7	50	11.6	15.4	4	24
IA 18 ALF 05 .O M1	M18 x 1 x 50	16.7	50	25.0		4	24
IA 18 DSN 08 .O	M18 x 1 x 30	16.7	38	11.6	15.4	4	24
IA 18 ASN 08 .O M1	M18 x 1 x 30	16.7	38	25.0		4	24
IA 30 DSF 10 .O	M30 x 1.5 x 30	28	30	13.6	15.4	5	36
IA 30 ASF 10 .O M1	M30 x 1.5 x 30	28	30	25.0		5	36
IA 30 DLF 10 ..	M30 x 1.5 x 50	28	50	13.6	15.4	5	36
IA 30 ALF 10 .O M1	M30 x 1.5 x 50	28	50	25.0		5	36
IA 30 DSN 15 .O	M30 x 1.5 x 30	28	42	13.6	15.4	5	36
IA 30 ASN 15 .O M1	M30 x 1.5 x 30	28	42	25.0		5	36

Dimensions (cont.)



Wiring Diagrams



Installation Hints

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	Relief of cable strain Incorrect Correct The cable should not be pulled	Protection of the sensing face A proximity switch should not serve as mechanical stop	Switch mounted on mobile carrier Any repetitive flexing of the cable should be avoided
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Delivery Contents

- Inductive proximity switch IA..
- 2 nuts NPB
- Packaging: plastic bag

Accessories

M12 connector

CONH10-A2	(90°, 2 m cable)
CONH10-A5	(90°, 5 m cable)
CONH10-S2	(straight, 2 m cable)
CONH10-S5	(straight, 5 m cable)



Detection Diagrams

