

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

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

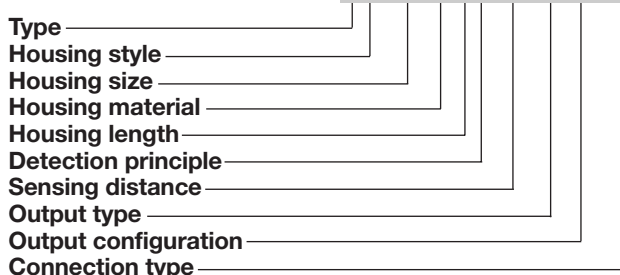
Product Description

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 appli-

cations 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 Selection

Housing diameter	Connection	Body style	Rated operating distance S _n	Ordering no. NPN Make switching	Ordering no. PNP Make 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 PO	
M12	Plug	Long	2 mm ¹⁾		IA 12 ALF 02 POM1	
M12	Cable	Short	4 mm ²⁾	IA 12 DSN 04 NO	IA 12 DSN 04 PO	
M12	Plug	Short	4 mm ²⁾	IA 12 ASN 04 NOM1	IA 12 ASN 04 POM1	
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	
M18	Cable	Short	8 mm ²⁾	IA 18 DSN 08 NO	IA 18 DSN 08 PO	
M18	Plug	Short	8 mm ²⁾	IA 18 ASN 08 NOM1	IA 18 ASN 08 POM1	
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



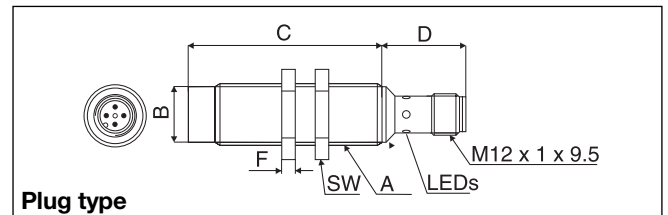
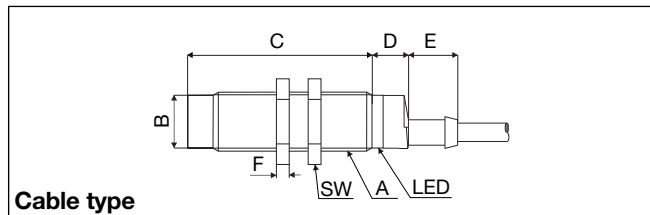
Specifications

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 ≤ S _a ≤ 0.81 × S _n	Connection	
Effective operating distance (S_e)	0.9 × S _n ≤ S _r ≤ 1.1 × 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 × S _r ≤ S _u ≤ 1.1 × S _r	Plug	M12 x 1
Repeat accuracy (R)	≤ 5%	Cables for plug (-1)	CONH1A serie
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

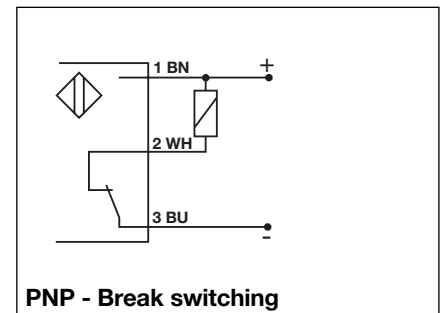
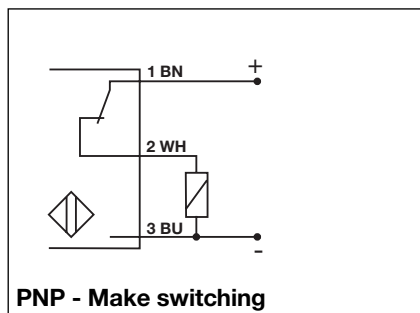
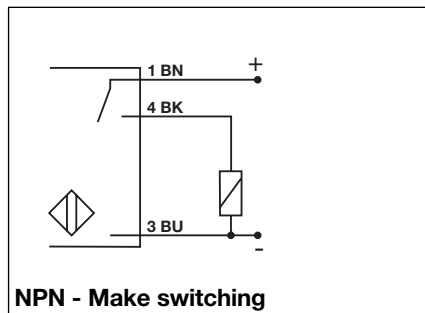
Dimensions

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

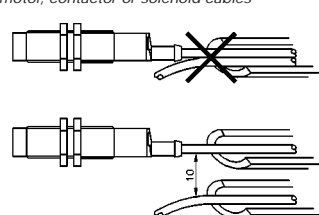
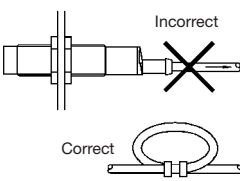
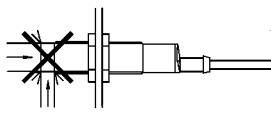
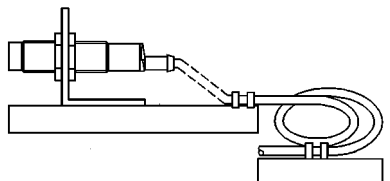
Dimensions (cont.)



Wiring Diagrams



Installation Hints

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

Delivery Contents

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

Accessories

M 12 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

