

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

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- Sensing distance: 4 to 22 mm
- Flush and non-flush types
- Long and short body
- Rated operational voltage: 10 - 40 VDC
- Output: DC 200 mA, NPN or PNP
- Make switching function
- LED-indication
- Protection: reverse polarity, short circuit, transients
- Cable and plug versions

**5 years warranty**

## Product Description

A family of Extended range inductive proximity switches in industrial standard nickel-plated brass housings. M12, M18 and M30 types. They are able to handle applica-

tions where high sensing range is requested. Output are open collector NPN or PNP transistors. Available with cable and M12 plug.

## Ordering Key

**IA12ASF04NOM1**

Type	IA
Housing style	12
Housing size	ASF
Housing material	04
Housing length	NOM
Detection principle	1
Sensing distance	
Output type	
Output configuration	
Connection type	

## Type Selection

Housing diameter	Connection	Body style	Rated operating distance $S_n$	Ordering no. NPN Make switching	Ordering no. PNP Make switching
M12	Cable	Short	4 mm <sup>1)</sup>	IA 12 DSF 04 NO	IA 12 DSF 04 PO
M12	Plug	Short	4 mm <sup>1)</sup>	IA 12 ASF 04 NOM1	IA 12 ASF 04 POM1
M12	Cable	Short	8 mm <sup>2)</sup>	IA 12 DSN 08 NO	IA 12 DSN 08 PO
M12	Plug	Short	8 mm <sup>2)</sup>	IA 12 ASN 08 NOM1	IA 12 ASN 08 POM1
M18	Cable	Short	8 mm <sup>1)</sup>	IA 18 DSF 08 NO	IA 18 DSF 08 PO
M18	Plug	Short	8 mm <sup>1)</sup>	IA 18 ASF 08 NOM1	IA 18 ASF 08 POM1
M18	Cable	Short	14 mm <sup>2)</sup>	IA 18 DSN 14 NO	IA 18 DSN 14 PO
M18	Plug	Short	14 mm <sup>2)</sup>	IA 18 ASN 14 NOM1	IA 18 ASN 14 POM1
M30	Cable	Short	15 mm <sup>1)</sup>	IA 30 DSF 15 NO	IA 30 DSF 15 PO
M30	Plug	Short	15 mm <sup>1)</sup>	IA 30 ASF 15 NOM1	IA 30 ASF 15 POM1
M30	Cable	Short	22 mm <sup>2)</sup>	IA 30 DSN 22 NO	IA 30 DSN 22 PO
M30	Plug	Short	22 mm <sup>2)</sup>	IA 30 ASN 22 NOM1	IA 30 ASN 22 POM1

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

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

## Specifications

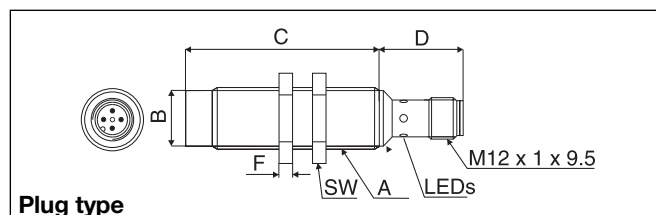
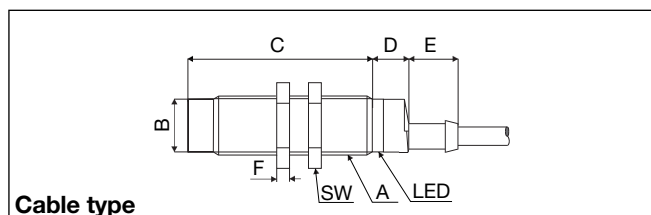
Rated operational voltage ( $U_B$ )	10 to 40 VDC (ripple incl.)	Protection	Reverse polarity, short-circuit, transients
Ripple	≤ 10%	Transient voltage	1 kV/0.5 J
Output current ( $I_o$ )	≤ 200 mA @ 50°C (≤ 150 mA @ 50-70°C)	Power ON delay ( $t_v$ )	50 ms
No load supply current ( $I_o$ )	IA 12 ≤ 10 mA IA 18 ≤ 10 mA IA 30 ≤ 10 mA	Operating frequency (f)	IA12 ..F 04 ≥ 1500 Hz IA12 DSN 08 ≥ 800 Hz IA18 ..F 08 ≥ 1400 Hz IA18 DSN 14 ≥ 700 Hz IA30 ..F 15 ≥ 700 Hz IA30 DSN 22 ≥ 500 Hz
Voltage drop ( $U_d$ )	Max. 2.5 VDC @ 200 mA		

## Specifications (cont.)

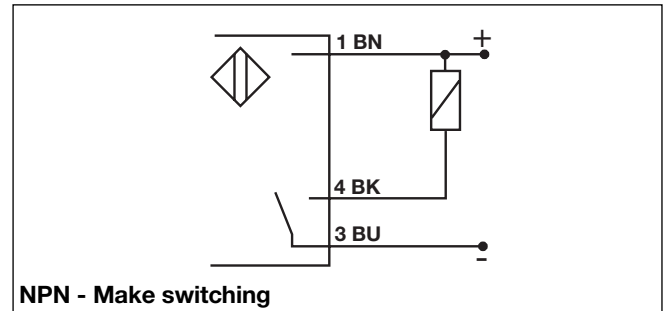
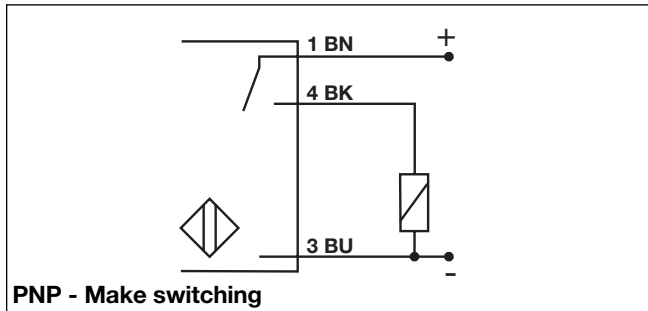
<b>Indication for output ON</b>	LED, yellow	<b>Connection</b>	
<b>Assured operating sensing distance (<math>S_a</math>)</b>	$0 \leq S_a \leq 0.81 \times S_n$	Cable	2 m, 3 x 0.3 mm <sup>2</sup> , grey PVC, oil proof
<b>Effective operating distance (<math>S_r</math>)</b>	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$	Plug	M12 x 1
<b>Usable operating distance (<math>S_u</math>)</b>	$0.85 \times S_r \leq S_u \leq 1.15 \times S_r$	Cables for plug (-1)	CONM series
<b>Repeat accuracy (R)</b>	$\leq 5\%$	<b>Degree of protection</b>	IP 67
<b>Differential travel (H) (Hysteresis)</b>	1 to 20% of sensing dist.	<b>Weight (cable/nuts included)</b>	<b>IA 12 .S.</b> 100 g <b>IA 18 .S.</b> 120 g <b>IA 30 .S.</b> 185 g
<b>Ambient temperature</b>		<b>Tightening torque</b>	<b>IA 12</b> 7.0 Nm (x) 15.0 Nm (y) <b>IA 18</b> 27.5 Nm <b>IA 30</b> 50.0 Nm
Operating	-25° to +70°C (-13° to +158°F)	<b>Approvals</b>	UL, CSA
Storage	-30° to +80°C (-22° to +176°F)	<b>CE-marking</b>	Yes
<b>Housing material</b>			
Body	Nickel-plated brass		
Front	Grey thermoplastic polyester		
Backpart			
Plug	NPB		
Cable	PBTP (black polyester)		
Nuts	NPB		

## Dimensions

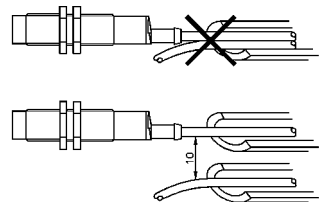
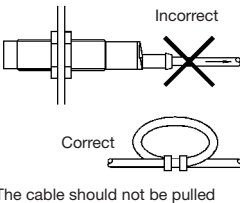
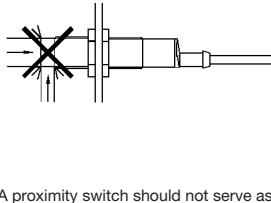
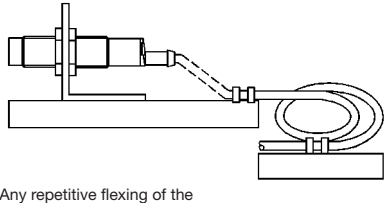
Type	A	B Ø mm	C mm	D mm	E mm	F mm	SW mm
IA 12 DSF 04 .O	M12 x 1 x 30	10.7	30	11	5.0	4	17
IA 12 ASF 04 .O M1	M12 x 1 x 30	10.7	30	25.2		4	17
IA 12 DSN 08 .O	M12 x 1 x 30	10.7	34	11	5.0	4	17
IA 12 ASN 08 .O M1	M12 x 1 x 30	10.7	34	25.2		4	17
IA 18 DSF 08 .O	M18 x 1 x 30	16.7	30	11.6	15.4	4	24
IA 18 ASF 08 .O M1	M18 x 1 x 30	16.7	30	25.0		4	24
IA 18 DSN 14 .O	M18 x 1 x 30	16.7	38	11.6	15.4	4	24
IA 18 ASN 14 .O M1	M18 x 1 x 30	16.7	38	25.0		4	24
IA 30 DSF 15 .O	M30 x 1.5 x 30	28	30	13.6	15.4	5	36
IA 30 ASF 15 .O M1	M30 x 1.5 x 30	28	30	25.0		5	36
IA 30 DSN 22 .O	M30 x 1.5 x 30	28	42	13.6	15.4	5	36
IA 30 ASN 22 .O M1	M30 x 1.5 x 30	28	42	25.0		5	36



## 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>
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## Delivery Contents

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

## Accessories

### M 12 connector

CONM13-A2	(90°, 2 m cable)
CONM13-A5	(90°, 5 m cable)
CONM13-S2	(straight, 2 m cable)
CONM13-S5	(straight, 5 m cable)