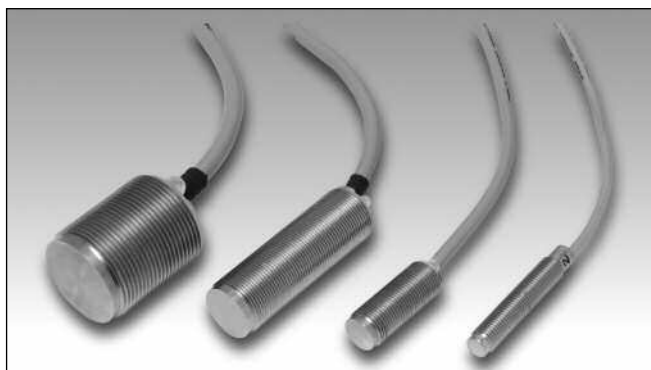


# Proximity Inductive Sensors DC Metal Face Types IA, M8, M12, M18 and M30

CARLO GAVAZZI



- Sensing distance: 1 to 15 mm
- Flush and non-flush types
- Long and short housing
- Rated operational voltage: 10 - 30 VDC
- Output: DC 100 mA, NPN or PNP
- Make and break switching function
- Output indication: by yellow LED
- Protection: reverse polarity, short circuit, transients
- Cable and plug versions



## Product Description

A family of metal face inductive proximity switches in industrial standard stainless steel housings (M8, M12, M18 and M30 types).

Output indication: by yellow LED.

Outputs are open collector NPN or PNP transistors. Available with cable and M8 or M12 plug.

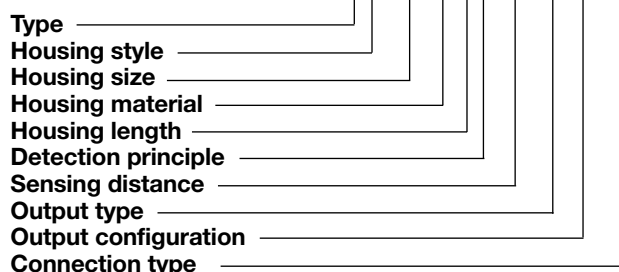
These sensors stand up to

abrasion and impact caused by flying metal chips, grit and misaligned or vibrating targets.

In addition, the stainless steel body resists against corrosion and chemical attack, by offering a higher level of protection for more reliable operation and longer life in harsh environments.

## Ordering Key

**IA08FLF01NOM5**



## Type Selection M8 and M12

Housing diameter	Connec- tion	Housing style	Rated operating distance S <sub>n</sub>	Ordering no. NPN Make switching	Ordering no. PNP Make switching	Ordering no. NPN Break switching	Ordering no. PNP Break switching
M8	Cable	Short	1 mm <sup>1)</sup>	IA 08 FSF 01 NO	IA 08 FSF 01 PO	IA 08 FSF 01 NC	IA 08 FSF 01 PC
M8	Plug	Short	1 mm <sup>1)</sup>	IA 08 FSF 01 NOM5	IA 08 FSF 01 POM5	IA 08 FSF 01 NCM5	IA 08 FSF 01 PCM5
M8	Cable	Long	1 mm <sup>1)</sup>	IA 08 FLF 01 NO	IA 08 FLF 01 PO	IA 08 FLF 01 NC	IA 08 FLF 01 PC
M8	Plug	Long	1 mm <sup>1)</sup>	IA 08 FLF 01 NOM5	IA 08 FLF 01 POM5	IA 08 FLF 01 NCM5	IA 08 FLF 01 PCM5
M8	Cable	Short	2 mm <sup>2)</sup>	IA 08 FSN 02 NO	IA 08 FSN 02 PO	IA 08 FSN 02 NC	IA 08 FSN 02 PC
M8	Plug	Short	2 mm <sup>2)</sup>	IA 08 FSN 02 NOM5	IA 08 FSN 02 POM5	IA 08 FSN 02 NCM5	IA 08 FSN 02 PCM5
M8	Cable	Long	2 mm <sup>2)</sup>	IA 08 FLN 02 NO	IA 08 FLN 02 PO	IA 08 FLN 02 NC	IA 08 FLN 02 PC
M8	Plug	Long	2 mm <sup>2)</sup>	IA 08 FLN 02 NOM5	IA 08 FLN 02 POM5	IA 08 FLN 02 NCM5	IA 08 FLN 02 PCM5
M12	Cable	Short	2 mm <sup>1)</sup>	IA 12 FSF 02 NO	IA 12 FSF 02 PO	IA 12 FSF 02 NC	IA 12 FSF 02 PC
M12	Plug	Short	2 mm <sup>1)</sup>	IA 12 FSF 02 NOM1	IA 12 FSF 02 POM1	IA 12 FSF 02 NCM1	IA 12 FSF 02 PCM1
M12	Cable	Long	2 mm <sup>1)</sup>	IA 12 FLF 02 NO	IA 12 FLF 02 PO	IA 12 FLF 02 NC	IA 12 FLF 02 PC
M12	Plug	Long	2 mm <sup>1)</sup>	IA 12 FLF 02 NOM1	IA 12 FLF 02 POM1	IA 12 FLF 02 NCM1	IA 12 FLF 02 PCM1
M12	Cable	Short	4 mm <sup>2)</sup>	IA 12 FSN 04 NO	IA 12 FSN 04 PO	IA 12 FSN 04 NC	IA 12 FSN 04 PC
M12	Plug	Short	4 mm <sup>2)</sup>	IA 12 FSN 04 NOM1	IA 12 FSN 04 POM1	IA 12 FSN 04 NCM1	IA 12 FSN 04 PCM1
M12	Cable	Long	4 mm <sup>2)</sup>	IA 12 FLN 04 NO	IA 12 FLN 04 PO	IA 12 FLN 04 NC	IA 12 FLN 04 PC
M12	Plug	Long	4 mm <sup>2)</sup>	IA 12 FLN 04 NOM1	IA 12 FLN 04 POM1	IA 12 FLN 04 NCM1	IA 12 FLN 04 PCM1

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

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

## Type Selection M18 and M30

Housing diameter	Connection	Housing 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
M18	Cable	Short	5 mm <sup>1)</sup>	IA 18 FSF 05 NO	IA 18 FSF 05 PO	IA 18 FSF 05 NC	IA 18 FSF 05 PC
M18	Plug	Short	5 mm <sup>1)</sup>	IA 18 FSF 05 NOM1	IA 18 FSF 05 POM1	IA 18 FSF 05 NCM1	IA 18 FSF 05 PCM1
M18	Cable	Long	5 mm <sup>1)</sup>	IA 18 FLF 05 NO	IA 18 FLF 05 PO	IA 18 FLF 05 NC	IA 18 FLF 05 PC
M18	Plug	Long	5 mm <sup>1)</sup>	IA 18 FLF 05 NOM1	IA 18 FLF 05 POM1	IA 18 FLF 05 NCM1	IA 18 FLF 05 PCM1
M18	Cable	Short	8 mm <sup>2)</sup>	IA 18 FSN 08 NO	IA 18 FSN 08 PO	IA 18 FSN 08 NC	IA 18 FSN 08 PC
M18	Plug	Short	8 mm <sup>2)</sup>	IA 18 FSN 08 NOM1	IA 18 FSN 08 POM1	IA 18 FSN 08 NCM1	IA 18 FSN 08 PCM1
M18	Cable	Long	8 mm <sup>2)</sup>	IA 18 FLN 08 NO	IA 18 FLN 08 PO	IA 18 FLN 08 NC	IA 18 FLN 08 PC
M18	Plug	Long	8 mm <sup>2)</sup>	IA 18 FLN 08 NOM1	IA 18 FLN 08 POM1	IA 18 FLN 08 NCM1	IA 18 FLN 08 PCM1
M30	Cable	Short	10 mm <sup>1)</sup>	IA 30 FSF 10 NO	IA 30 FSF 10 PO	IA 30 FSF 10 NC	IA 30 FSF 10 PC
M30	Plug	Short	10 mm <sup>1)</sup>	IA 30 FSF 10 NOM1	IA 30 FSF 10 POM1	IA 30 FSF 10 NCM1	IA 30 FSF 10 PCM1
M30	Cable	Long	10 mm <sup>1)</sup>	IA 30 FLF 10 NO	IA 30 FLF 10 PO	IA 30 FLF 10 NC	IA 30 FLF 10 PC
M30	Plug	Long	10 mm <sup>1)</sup>	IA 30 FLF 10 NOM1	IA 30 FLF 10 POM1	IA 30 FLF 10 NCM1	IA 30 FLF 10 PCM1
M30	Cable	Short	15 mm <sup>2)</sup>	IA 30 FSN 15 NO	IA 30 FSN 15 PO	IA 30 FSN 15 NC	IA 30 FSN 15 PC
M30	Plug	Short	15 mm <sup>2)</sup>	IA 30 FSN 15 NOM1	IA 30 FSN 15 POM1	IA 30 FSN 15 NCM1	IA 30 FSN 15 PCM1
M30	Cable	Long	15 mm <sup>2)</sup>	IA 30 FLN 15 NO	IA 30 FLN 15 PO	IA 30 FLN 15 NC	IA 30 FLN 15 PC
M30	Plug	Long	15 mm <sup>2)</sup>	IA 30 FLN 15 NOM1	IA 30 FLN 15 POM1	IA 30 FLN 15 NCM1	IA 30 FLN 15 PCM1

1) For flush mounting in metal

2) For non-flush mounting in metal

## Specifications

<b>Rated operational voltage (<math>U_B</math>)</b>	10 to 30 VDC	<b>Operating frequency (f)</b>	IA08Fxxxxxx 500 Hz IA12FxFxxxx 2000 Hz IA12FxFxxxx 1000 Hz IA18FxFxx 2000 Hz IA18FxFxx 1000 Hz IA18FxFxxM1 1000 Hz IA18FxFxxM1 500 Hz IA30FSFxx 2000 Hz IA30FSNxx 1000 Hz IA30FLFxx 300 Hz IA30FLNxx 150 Hz IA30FxFxxM1 2000 Hz IA30FxFxxM1 1000 Hz
<b>Ripple</b>	< 10%	<b>Indication for output ON</b>	LED, yellow
<b>Output current (<math>I_a</math>)</b>	≤ 100 mA @ 50°C	<b>Operating sensing distance (<math>S_a</math>)</b>	$0 \leq S_a \leq 0.81 \times S_n$
<b>No load supply current (<math>I_o</math>)</b>		<b>Effective operating distance (<math>S_r</math>)</b>	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
IA08Fxxxxxx ≤	< 10 mA	<b>Usable operating distance (<math>S_u</math>)</b>	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
IA12FxFxxxx ≤	< 10 mA	<b>Repeated accuracy (R)</b>	≤ 5%
IA12FxFxxxx ≤	< 20 mA	<b>Differential travel (H) (Hysteresis)</b>	1 to 20% of sensing dist.
IA18FxFxxxx ≤	< 10 mA	<b>Ambient temperature</b>	
IA18FxFxxxx ≤	< 20 mA	Operating	-25° to +70°C (-13° to +158°F)
IA30FxFxxxx ≤	< 10 mA	Storage	-25° to +70°C (-13° to +158°F)
IA30FxFxxxx ≤	< 20 mA	Humidity	35 to 95% RH (non-condensing)
<b>Voltage drop (<math>U_d</math>)</b>			
IA08	< 1.5 V		
IA12	< 2.0 V		
IA18	< 2.0 V		
IA30	< 2.0 V		
<b>Protection</b>	Reverse polarity, short-circuit, transients		
<b>Voltage transient</b>	1 kV		
<b>Power ON delay (<math>t_v</math>)</b>	< 10 ms		

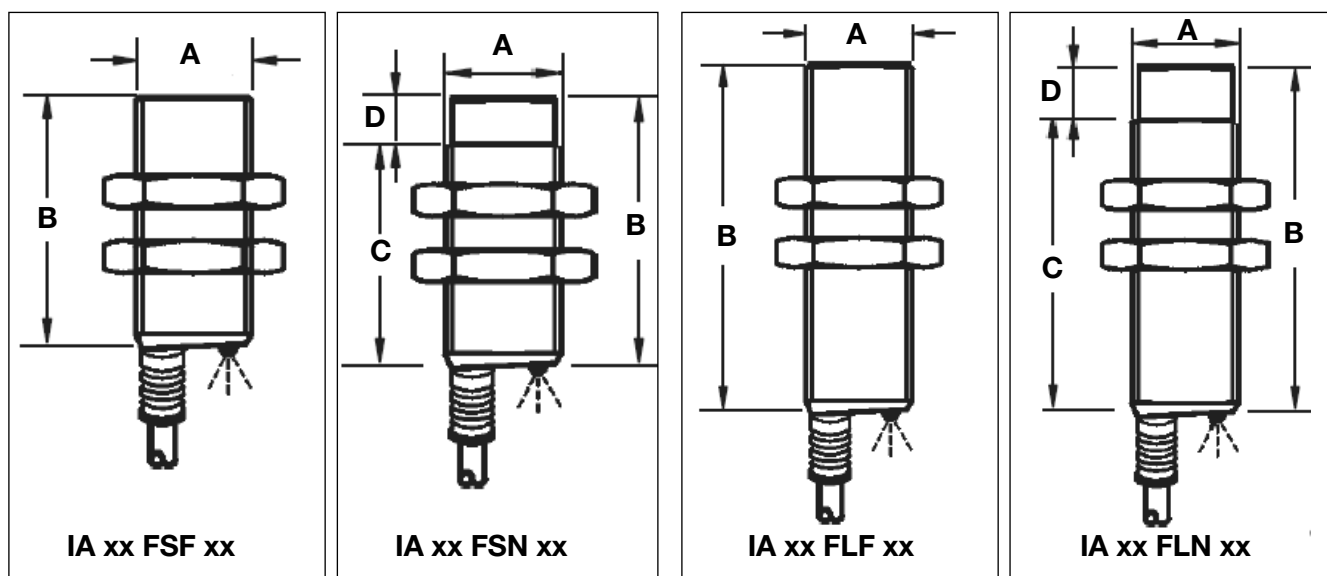
## Specifications (cont.)

<b>Housing material</b>		<b>Tightening torque</b>	
Body	Stainless steel AISI 304	IA08	4.5 Nm
Front	Stainless steel AISI 304	IA12	25.0 Nm
Backpart		IA18	60.0 Nm
Plug	PA-66	IA30	230.0 Nm
Cable	PVC		
Nuts	Stainless steel	<b>Approvals</b>	CSA
<b>Connection</b>		<b>CE-marking</b>	Yes
Cable			
IA08	2 m, 3 x 0.15 mm <sup>2</sup> , Ø 3 mm, Grey PVC		
IA12	2 m, 3 x 0.15 mm <sup>2</sup> , Ø 4 mm, Grey PVC		
IA18	2 m, 3 x 0.15 mm <sup>2</sup> , Ø 4 mm, Grey PVC		
IA30	2 m, 3 x 0.50 mm <sup>2</sup> , Ø 5.8 mm, Grey PVC		
Plug			
IA08	M8 x 1		
IA12, IA18, IA30	M12 x 1		
Cables for plug (-1)	CONH1A/CONH1O series		
<b>Degree of protection</b>	IP 67		
<b>Weight</b>			
IA08FSFxx	33 g		
IA08FSFxxM5	33 g		
IA08FLFxx	33 g		
IA08FLFxxM5	18 g		
IA08FSNxx	32 g		
IA08FSNxxM5	32 g		
IA08FLNxx	32 g		
IA08FLNxxM5	17 g		
IA12FSFxx	31 g		
IA12FSFxxM1	40 g		
IA12FLFxx	67 g		
IA12FLFxxM1	153 g		
IA12FSNxx	30 g		
IA12FSNxxM1	38 g		
IA12FLNxx	65 g		
IA12FLNxxM1	144 g		
IA18FSFxx	110 g		
IA18FSFxxM1	74 g		
IA18FLFxx	153 g		
IA18FLFxxM1	94 g		
IA18FSNxx	92 g		
IA18FSNxxM1	70 g		
IA18FLNxx	144 g		
IA18FLNxxM1	91 g		
IA30FSFxx	146 g		
IA30FSFxxM1	200 g		
IA30FLFxx	217 g		
IA30FLFxxM1	187 g		
IA30FSNxx	138 g		
IA30FSNxxM1	200 g		
IA30FLNxx	207 g		
IA30FLNxxM1	179 g		

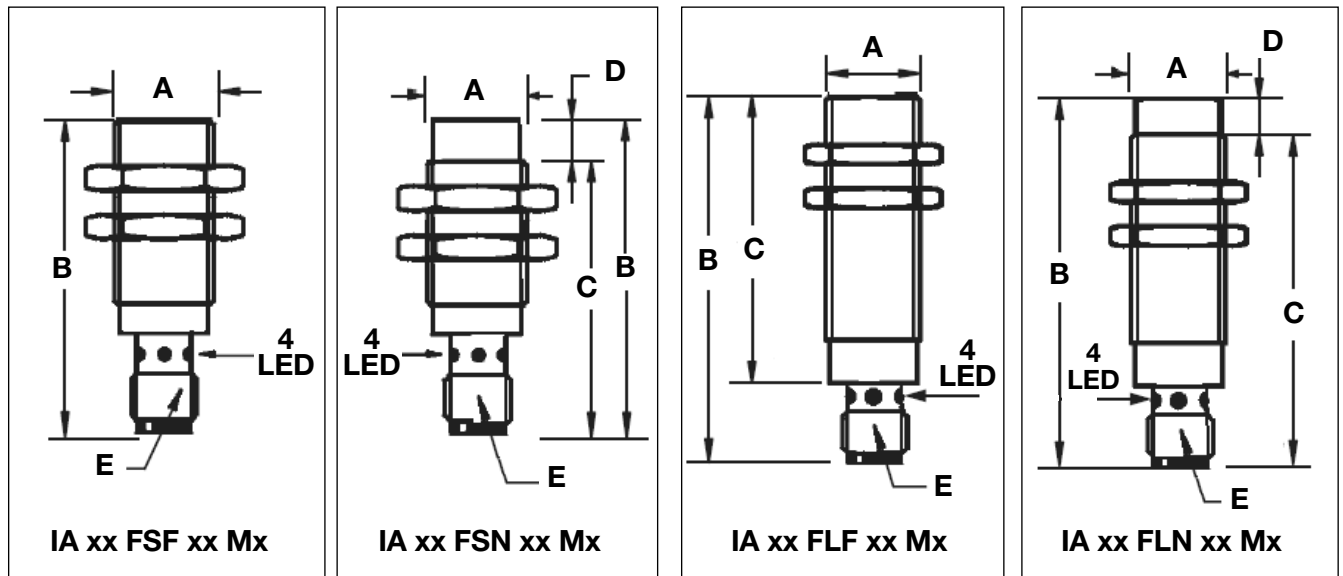
## Dimensions

Type	Description	A mm	B mm	C mm	D mm	E mm
IA 08 FSF 01 xx	M8 x 1 x 30	M8 x 1	30	-	-	-
IA 08 FSF 01 xx M5	M8 x 1 x 45	M8 x 1	45	-	-	M8 x 1
IA 08 FLF 01 xx	M8 x 1 x 45	M8 x 1	45	-	-	-
IA 08 FLF 01 xx M5	M8 x 1 x 60	M8 x 1	60	40	-	M8 x 1
IA 08 FSN 02 xx	M8 x 1 x 30	M8 x 1	30	26	4	-
IA 08 FSN 02 xx M5	M8 x 1 x 45	M8 x 1	45	41	4	M8 x 1
IA 08 FLN 02 xx	M8 x 1 x 45	M8 x 1	45	41	4	-
IA 08 FLN 02 xx M5	M8 x 1 x 60	M8 x 1	60	56	4	M8 x 1
IA 12 FSF 02 xx	M12 x 1 x 30	M12 x 1	30	-	-	-
IA 12 FSF 02 xx M1	M12 x 1 x 50	M12 x 1	50	-	-	M12 x 1
IA 12 FLF 02 xx	M12 x 1 x 50	M12 x 1	50	-	-	-
IA 12 FLF 02 xx M1	M12 x 1 x 68	M12 x 1	68	42	-	M12 x 1
IA 12 FSN 04 xx	M12 x 1 x 30	M12 x 1	30	22	8	-
IA 12 FSN 04 xx M1	M12 x 1 x 50	M12 x 1	50	42	8	M12 x 1
IA 12 FLN 04 xx	M12 x 1 x 50	M12 x 1	50	42	8	-
IA 12 FLN 04 xx M1	M12 x 1 x 68	M12 x 1	68	60	8	M12 x 1
IA 18 FSF 05 xx	M18 x 1 x 35	M18 x 1	35	-	-	-
IA 18 FSF 05 xx M1	M18 x 1 x 48	M18 x 1	48	-	-	M12 x 1
IA 18 FLF 05 xx	M18 x 1 x 55	M18 x 1	55	-	-	-
IA 18 FLF 05 xx M1	M18 x 1 x 79	M18 x 1	79	65	-	M12 x 1
IA 18 FSN 08 xx	M18 x 1 x 35	M18 x 1	35	23	12	-
IA 18 FSN 08 xx M1	M18 x 1 x 48	M18 x 1	48	36	12	M12 x 1
IA 18 FLN 08 xx	M18 x 1 x 55	M18 x 1	55	43	12	-
IA 18 FLN 08 xx M1	M18 x 1 x 79	M18 x 1	79	67	12	M12 x 1
IA 30 FSF 10 xx	M30 x 1.5 x 35	M30 x 1.5	35	-	-	-
IA 30 FSF 10 xx M1	M30 x 1.5 x 48	M30 x 1.5	48	-	-	M12 x 1
IA 30 FLF 10 xx	M30 x 1.5 x 55	M30 x 1.5	55	-	-	-
IA 30 FLF 10 xx M1	M30 x 1.5 x 78	M30 x 1.5	78	-	-	M12 x 1
IA 30 FSN 15 xx	M30 x 1.5 x 35	M30 x 1.5	35	25	10	-
IA 30 FSN 15 xx M1	M30 x 1.5 x 48	M30 x 1.5	48	38	10	M12 x 1
IA 30 FLN 15 xx	M30 x 1.5 x 55	M30 x 1.5	55	45	10	-
IA 30 FLN 15 xx M1	M30 x 1.5 x 78	M30 x 1.5	78	68	10	M12 x 1

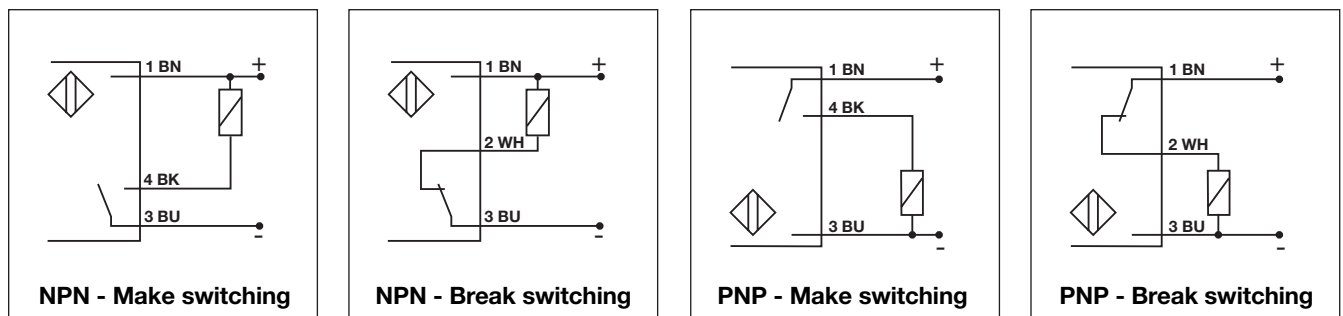
## Dimensions: cable type



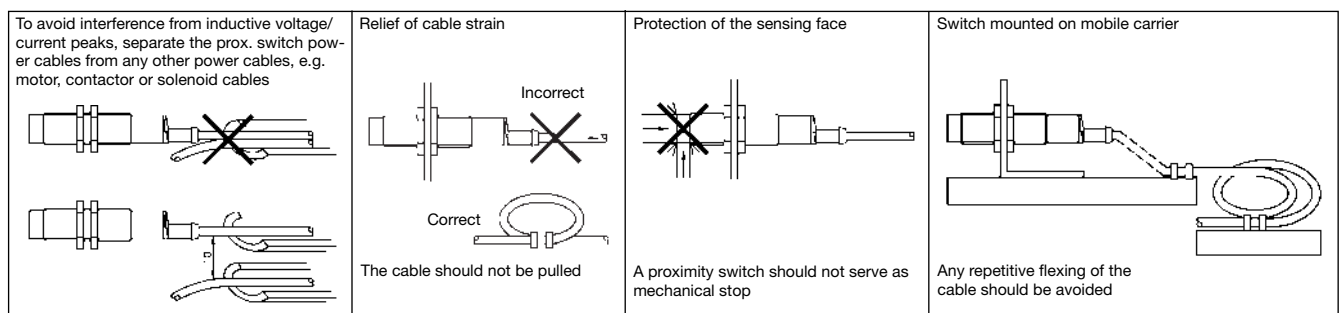
## Dimensions: plug type



## Wiring Diagrams



## Installation Hints



## Delivery Contents

- Inductive proximity switch IA..
- 2 stainless steel nuts
- 1 stainless steel washer
- Packaging: plastic bag