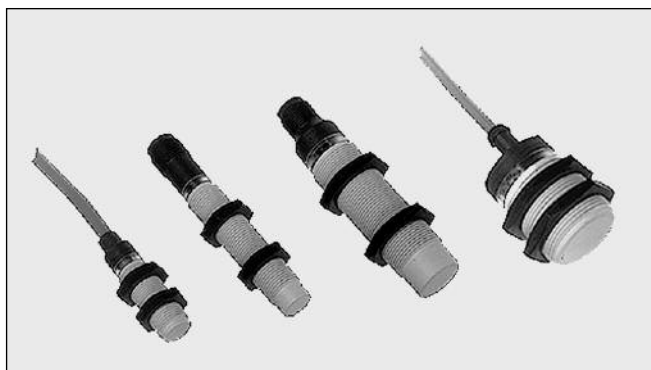


# Proximity Sensors Inductive Thermoplastic Polyester Housing Types EI, DC, M12, M18, M30

CARLO GAVAZZI



- Euronorm thermoplastic polyester housing, cylindrical
- Diameter: M12, M18, M30
- Sensing distance: 2 to 15 mm
- Power supply: 10 to 40 VDC
- Output: Transistor NPN/PNP, make or break switching
- Protection: Short-circuit, reverse polarity and overload
- LED-indication for output ON
- 2 m cable or M12 plug

## Product Description

Proximity switch in M12, M18 and M30 polyester housings. Made in accordance with euronorms EN 50 008 and EN 50 036. For metal versions refer to type. EI ...S.

## Ordering Key

**EI 1808 PPCPL-1**

Type \_\_\_\_\_  
Housing diameter (mm) \_\_\_\_\_  
Rated operating dist. (mm) \_\_\_\_\_  
Output type \_\_\_\_\_  
Housing material \_\_\_\_\_  
Body style \_\_\_\_\_  
Plug \_\_\_\_\_

## Type Selection DC Types, Cable and M12 Plug

Housing diameter	Body style	Conne- ction	Rated operating dist. (S <sub>n</sub> )	Ordering no. Transistor NPN Make switching	Ordering no. Transistor NPN Break switching	Ordering no. Transistor PNP Make switching	Ordering no. Transistor PNP Break switching
M12	Long	Cable	2 mm <sup>1)</sup>	EI 1202 NPOPL		EI 1202 PPOPL	
M12	Short	Cable	4 mm <sup>2)</sup>			EI 1204 PPOPS	
M12	Long	Cable	4 mm <sup>2)</sup>	EI 1204 NPOPL		EI 1204 PPOPL	
M18	Short	Cable	5 mm <sup>1)</sup>			EI 1805 PPOPS	
M18	Long	Cable	5 mm <sup>1)</sup>	EI 1805 NPOPL			
M18	Short	Cable	8 mm <sup>2)</sup>	EI 1808 NPOPS		EI 1808 PPOPS	
M18	Short	Plug	8 mm <sup>2)</sup>			EI 1808 PPOPS-1	
M18	Long	Cable	8 mm <sup>2)</sup>	EI 1808 NPOPL		EI 1808 PPOPL	EI 1808 PPCPL
M18	Long	Plug	8 mm <sup>2)</sup>			EI 1808 PPOPL-1	EI 1808 PPCPL-1
M30	Long	Cable	10 mm <sup>1)</sup>	EI 3010 NPOPL		EI 3010 PPOPL	EI 3010 PPCPL
M30	Short	Cable	15 mm <sup>2)</sup>	EI 3015 NPOPS			
M30	Long	Cable	15 mm <sup>2)</sup>			EI 3015 PPOPL	

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

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

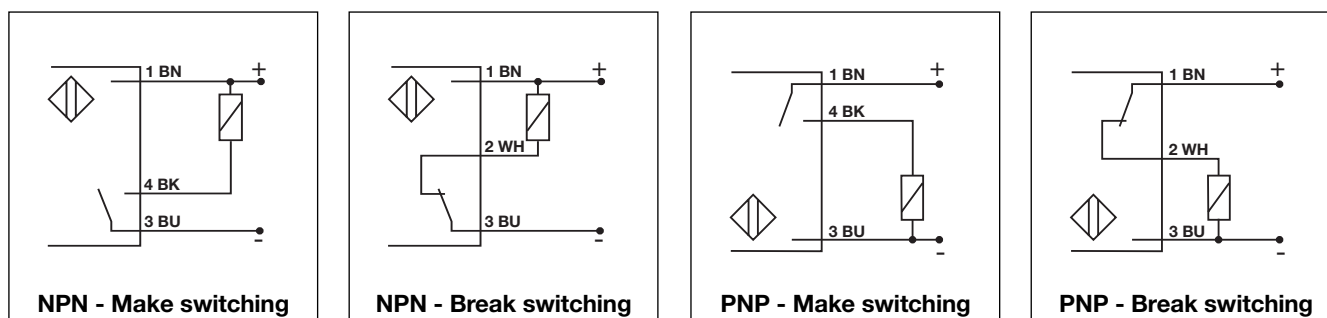
Make switching = Normally Open (NO)

Break switching = Normally Closed (NC)

## Specifications

<b>Rated operational volt.</b> ( $U_e$ ) ( $U_B$ )	12 to 36 VDC 10 to 40 VDC (ripple incl.)	<b>Hysteresis (H)</b> (Differential travel)	1 to 15% of sensing distance
<b>Ripple</b>	≤ 10%	<b>Effective operating dist.</b> ( $S_r$ )	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
<b>Rated operational current</b> ( $I_a$ ) Continuous	≤ 200 mA	<b>Usable operating dist.</b> ( $S$ )	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
<b>No-load supply current</b> ( $I_o$ )	Output ON: < 6.5 mA Output OFF: < 2.7 mA	<b>Ambient temperature</b> Operating	-25° to +70°C (-13° to +158°F)
<b>Voltage drop</b> ( $U_d$ )	≤ 2 VDC at max. load	Storage	-30° to +80°C (-22° to +176°F)
<b>Protection</b>	Reverse polarity, short-circuit, transients	<b>Degree of protection</b>	IP 67 (Nema 1, 3, 4, 6, 13)
<b>Transient voltage</b>	≤ 700 V/0.5 J	<b>Housing material</b> Body	Grey thermoplastic polyester
<b>EMC</b>	Approved acc. to EN 50 080, EN 50 081	Back	Black polyester
<b>Power ON delay</b>	< 10 ms	<b>Connection</b> Cable	2 m, 3 x 0.3 mm <sup>2</sup> , grey PVC, oil proof
<b>Frequency of operating cycles</b> (f)		Plug	M 12 x 1
<b>EI 1202</b>	800 Hz	Cables for plug (-1)	CONH1A serie
<b>EI 1204</b>	500 Hz	<b>Weight</b> (cable excluded)	
<b>EI 1805</b>	500 Hz	<b>EI12</b>	10 g
<b>EI 1808</b>	400 Hz	<b>EI 1805</b>	18 g
<b>EI 3010</b>	300 Hz	<b>EI 1808</b>	20 g
<b>EI 3015</b>	100 Hz	<b>EI 3010</b>	50 g
<b>Indication for output ON</b>	LED, yellow	<b>EI 3015</b>	70 g
<b>Assured operating dist.</b> ( $S_a$ )	$0 \leq S_a \leq 0.81 S_n$	<b>Tightening torque</b>	
<b>Repeat accuracy</b> (R)	≤ 5%	<b>EI 12</b>	1.8 Nm
		<b>EI 30</b>	7.5 Nm
		<b>EI 18</b>	2.6 Nm
		<b>Approvals</b>	UL, CSA
		<b>CE-marking</b>	Yes

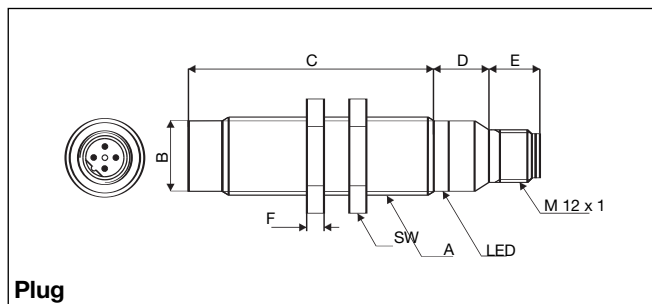
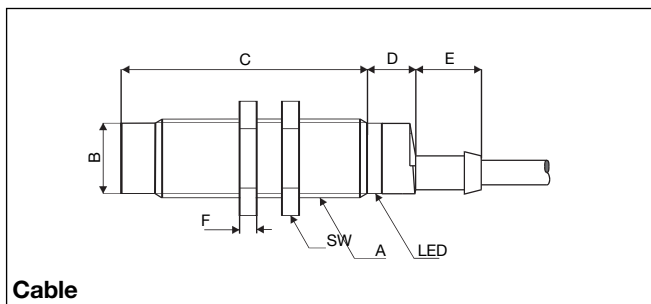
## Wiring Diagrams



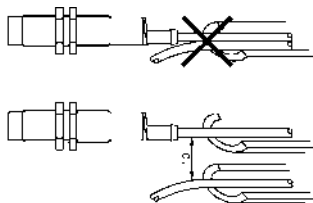
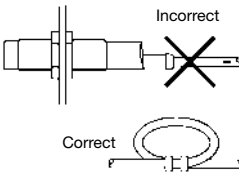
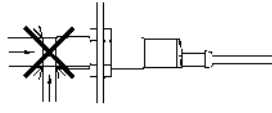
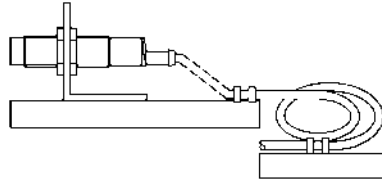
## Dimensions

Type	A	B (Ø mm)	C (mm)	D (mm)	E (mm)	F (mm)	SW (mm)
EI 1202 XPXPL	M 12 x 1 x 50	10.7	50	11	5.0	8	17
EI 1204 XPXPS	M 12 x 1 x 30	10.7	34	11	5.0	8	17
EI 1204 XPXPL	M 12 x 1 x 50	10.7	54	11	5.0	8	17
EI 1805 XPXPS	M 18 x 1 x 30	16.7	30	11.6	15.4	8	24
EI 1805 XPXPL	M 18 x 1 x 50	16.7	50	11.6	15.4	8	24
EI 1808 XPXPS	M 18 x 1 x 30	16.7	38	11.6	15.4	8	24
EI 1808 XPXPL	M 18 x 1 x 50	16.7	58	11.6	15.4	8	24
EI 1808 XPXPL-1	M 18 x 1 x 50	16.7	58	13.1	11.9	8	24
EI 3010 XPXPL	M 30 x 1.5 x 50	28	50	13.6	15.4	10	36
EI 3015 XPXPS	M 30 x 1.5 x 30	28	42	13.6	15.4	10	36
EI 3015 XPXPL	M 30 x 1.5 x 50	28	62	13.6	15.4	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>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>
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## Power Supplies

- Power supplies VAC: > SS 110.
- Power supplies VDC: > SS 130/140.
- Power supplies with amplifier relays: > SV 190.