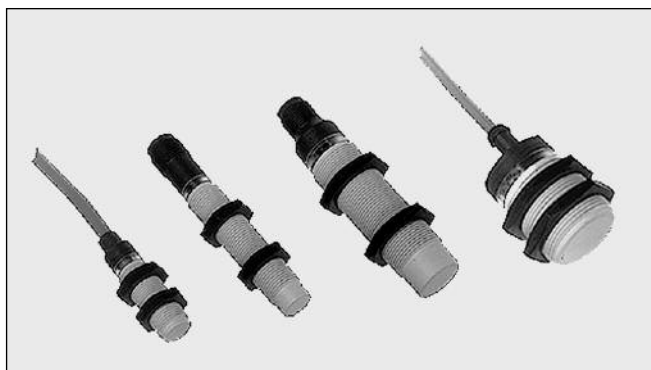


# Proximity Sensors Inductive Thermoplastic Polyester Housing Types EI, DC, M12, M18, M30

CARLO GAVAZZI



- Euronorm thermoplastic polyester housing, cylindrical
- Diameter: M12, M18, M30
- Flush and non-flush types
- Long and short body versions
- Sensing distance: 2 to 15 mm
- Power supply: 10 to 40 VDC
- Output: Transistor NPN/PNP, Normally open or Normally closed
- 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.

## 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	Connection	Rated operating dist. (S <sub>n</sub> )	Ordering no. Transistor NPN Normally open	Ordering no. Transistor PNP Normally open	Ordering no. Transistor PNP Normally closed
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	EI 1805 PPOPL	
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

## Specifications

Rated operational volt. (U <sub>a</sub> ) (U <sub>B</sub> )	12 to 36 VDC 10 to 40 VDC (ripple incl.)	Frequency of operating cycles (f)	EI 1202 800 Hz EI 1204 500 Hz EI 1805 500 Hz EI 1808 400 Hz EI 3010 300 Hz EI 3015 100 Hz
Ripple	≤ 10%	Indication for output ON	LED, yellow
Rated operational current (I <sub>e</sub> ) Continuous	≤ 200 mA	Assured operating dist. (S <sub>a</sub> )	0 ≤ S <sub>a</sub> ≤ 0.81 S <sub>n</sub>
No-load supply current (I <sub>o</sub> )	Output ON: < 6.5 mA Output OFF: < 2.7 mA	Repeat accuracy (R)	≤ 5%
Voltage drop (U <sub>d</sub> )	≤ 2 VDC at max. load	Hysteresis (H) (Differential travel)	1 to 15% of sensing distance
Protection	Reverse polarity, short-circuit, transients	Effective operating dist. (S <sub>i</sub> )	0.9 × S <sub>n</sub> ≤ S <sub>r</sub> ≤ 1.1 × S <sub>n</sub>
Transient voltage	≤ 700 V/0.5 J	Usable operating dist. (S)	0.9 × S <sub>r</sub> ≤ S <sub>u</sub> ≤ 1.1 × S <sub>r</sub>
Power ON delay	< 10 ms		



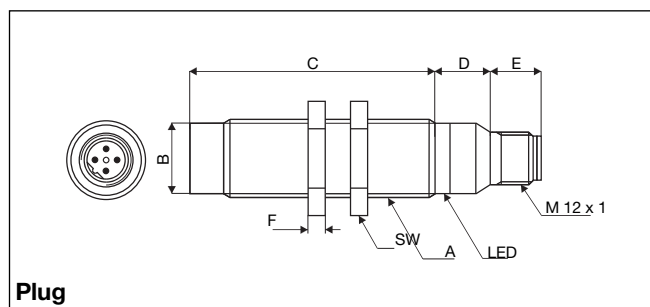
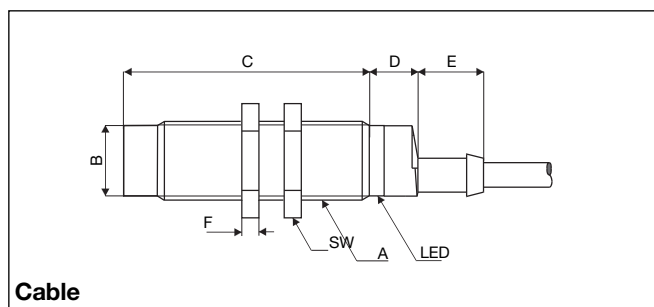
## Specifications (cont.)

<b>Ambient temperature</b>	
Operating	-25° to +70°C (-13° to +158°F)
Storage	-30° to +80°C (-22° to +176°F)
<b>Degree of protection</b>	IP 67 (Nema 1, 3, 4, 6, 13)
<b>Housing material</b>	
Body	Grey thermoplastic polyester
Back	Black polyester
<b>Connection</b>	
Cable	2 m, 3 x 0.3 mm <sup>2</sup> , grey PVC, oil proof
Plug	M 12 x 1
Cables for plug (-1)	CONH1A serie

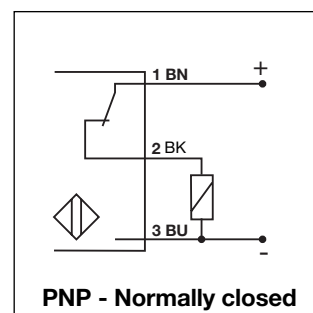
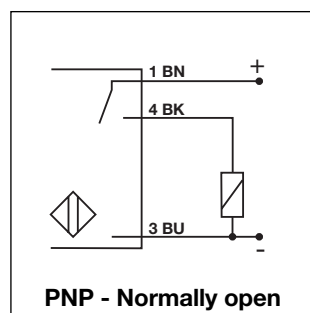
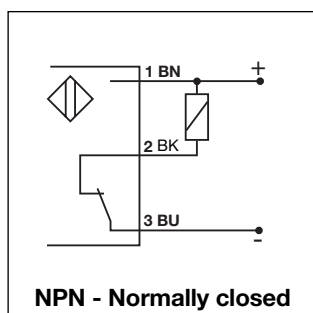
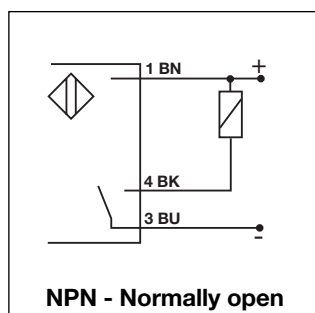
<b>Weight (cable excluded)</b>	
EI12	10 g
EI 1805	18 g
EI 1808	20 g
EI 3010	50 g
EI 3015	70 g
<b>Tightening torque</b>	
EI 12	1.8 Nm
EI 18	2.6 Nm
EI 30	7.5 Nm
<b>Approvals</b>	UL, CSA
<b>CE-marking</b>	Yes
<b>EMC</b>	Approved acc. to EN 50 080, EN 50 081

## Dimensions

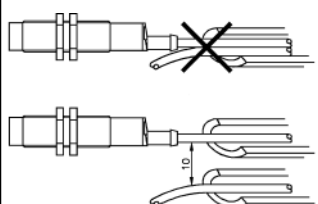
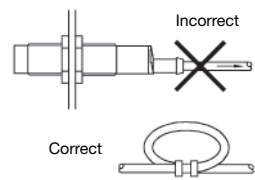
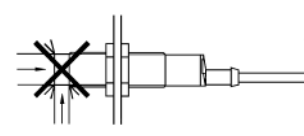
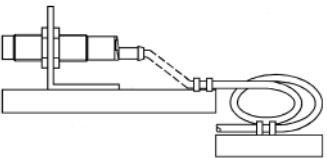
Type	A	B (Ø mm)	C (mm)	D (mm)	E (mm)	F (mm)	SW (mm)
EI 1202 XPXPL	M 12 x 1 x 50	10.7	50	11	5.0	8	17
EI 1204 XPXPS	M 12 x 1 x 30	10.7	34	11	5.0	8	17
EI 1204 XPXPL	M 12 x 1 x 50	10.7	54	11	5.0	8	17
EI 1805 XPXPS	M 18 x 1 x 30	16.7	30	11.6	15.4	8	24
EI 1805 XPXPL	M 18 x 1 x 50	16.7	50	11.6	15.4	8	24
EI 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



## 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>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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## Power Supplies

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