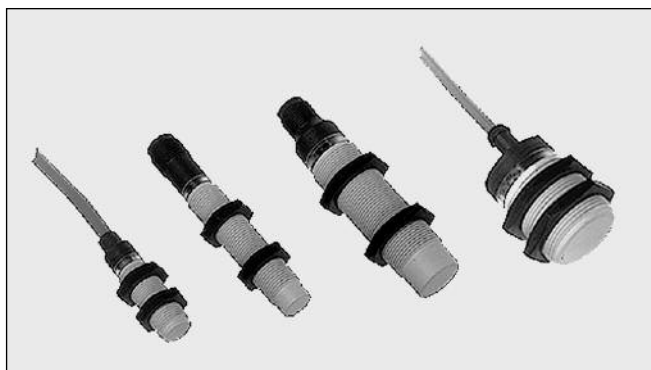


# Proximity Sensors Inductive Thermoplastic Polyester Housing Types EI, DC, M12, M18, M30

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- 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> )<br>(U <sub>B</sub> ) | 12 to 36 VDC<br>10 to 40 VDC (ripple incl.) | Frequency of operating cycles (f)           | EI 1202 800 Hz<br>EI 1204 500 Hz<br>EI 1805 500 Hz<br>EI 1808 400 Hz<br>EI 3010 300 Hz<br>EI 3015 100 Hz |
| Ripple   | ≤ 10%                                       | Indication for output ON                    | LED, yellow  |
| Rated operational current (I <sub>e</sub> )<br>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<br>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                                     |   |  |

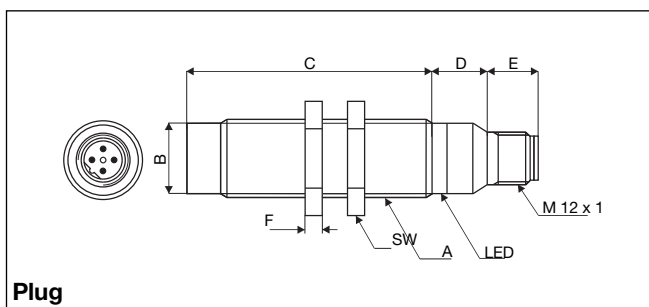
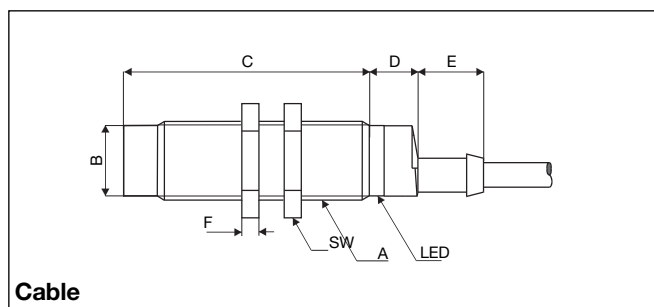


## Specifications (cont.)

|  |   |  |
|--|---|--|
| <b>Ambient temperature</b><br>Operating<br>Storage             | -25° to +70°C (-13° to +158°F)  | <b>Weight (cable excluded)</b><br><b>EI12</b> 10 g<br><b>EI 1805</b> 18 g<br><b>EI 1808</b> 20 g<br><b>EI 3010</b> 50 g<br><b>EI 3015</b> 70 g |
|  | -30° to +80°C (-22° to +176°F)  |  |
| <b>Degree of protection</b>                                    | IP 67 (Nema 1, 3, 4, 6, 13)   | <b>Tightening torque</b><br><b>EI 12</b> 1.8 Nm<br><b>EI 18</b> 2.6 Nm<br><b>EI 30</b> 7.5 Nm  |
| <b>Housing material</b><br>Body<br>Back                        | Grey thermoplastic polyester<br>Black polyester                                   |  |
| <b>Connection</b><br>Cable<br><br>Plug<br>Cables for plug (-1) | 2 m, 3 x 0.3 mm <sup>2</sup> , grey PVC,<br>oil proof<br>M 12 x 1<br>CONH1A serie | <b>Approvals</b> UL, CSA<br><b>CE-marking</b> Yes<br><b>EMC</b> Approved acc. to EN 50 080,<br>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

