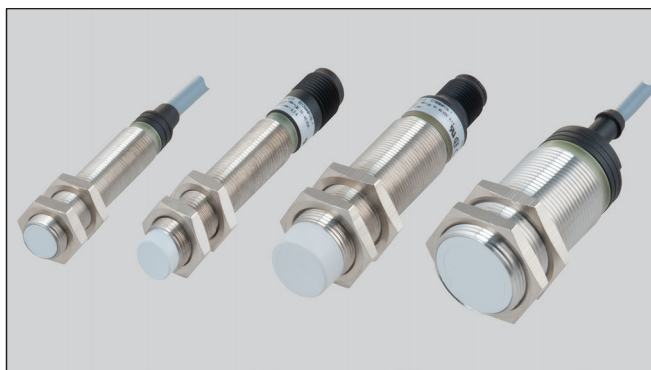


# Proximity Sensors Inductive Stainless Steel Housing Types EI, DC, M12, M18, M30



- Stainless steel housing, cylindrical
- Diameter: M12, M18, M30
- Short or long versions
- Sensing distance: 2 to 15 mm
- Power supply: 10 to 32 VDC
- Output: Transistor NPN/PNP, normally open or normally closed
- Protection: Short-circuit and reverse polarity
- LED-indication for output ON
- 2 m cable or plug M12

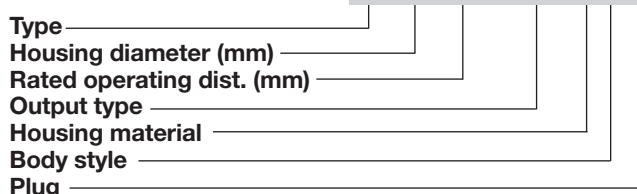
## Product Description

Proximity switch in housings ranging from M12 to M30. Short or long versions in standard stainless steel housing.

Made after EN 60947-5-2.

## Ordering Key

**EI 1202 NPOSS-1**



## Type Selection DC Types, Cable and M12 Plug

| Housing diameter | Body style | Connec-tion | Rated operating dist. (S <sub>n</sub> ) | Ordering no. Transistor NPN Normally open | Ordering no. Transistor NPN Normally closed | Ordering no. Transistor PNP Normally open | Ordering no. Transistor PNP Normally closed |
|------------------|------------|-------------|---|---|---|---|---|
| M12              | Short      | Cable       | 2 mm <sup>1)</sup>                      | EI 1202 NPOSS                             | EI 1202 NPCSS                               | EI 1202 PPOSS                             | EI 1202 PPCSS                               |
| M12              | Short      | Plug        | 2 mm <sup>1)</sup>                      | EI 1202 NPOSS-1                           | EI 1202 NPCSS-1                             | EI 1202 PPOSS-1                           | EI 1202 PPCSS-1                             |
| M12              | Long       | Cable       | 2 mm <sup>1)</sup>                      | EI 1202 NPOSL                             |   | EI 1202 PPOSL                             | EI 1202 PPCSL                               |
| M12              | Long       | Plug        | 2 mm <sup>1)</sup>                      | EI 1202 NPOSL-1                           |   | EI 1202 PPOSL-1                           | EI 1202 PPCSL-1                             |
| M12              | Short      | Cable       | 4 mm <sup>2)</sup>                      | EI 1204 NPOSS                             | EI 1204 NPCSS                               | EI 1204 PPOSS                             | EI 1204 PPCSS                               |
| M12              | Short      | Plug        | 4 mm <sup>2)</sup>                      | EI 1204 NPOSS-1                           |   | EI 1204 PPOSS-1                           | EI 1204 PPCSS-1                             |
| M12              | Long       | Cable       | 4 mm <sup>2)</sup>                      | EI 1204 NPOSL                             |   | EI 1204 PPOSL                             | EI 1204 PPCSL                               |
| M12              | Long       | Plug        | 4 mm <sup>2)</sup>                      | EI 1204 NPOSL-1                           |   | EI 1204 PPOSL-1                           | EI 1204 PPCSL-1                             |
| M18              | Short      | Cable       | 5 mm <sup>1)</sup>                      | EI 1805 NPOSS                             | EI 1805 NPCSS                               | EI 1805 PPOSS                             | EI 1805 PPCSS                               |
| M18              | Short      | Plug        | 5 mm <sup>1)</sup>                      | EI 1805 NPOSS-1                           | EI 1805 NPCSS-1                             | EI 1805 PPOSS-1                           | EI 1805 PPCSS-1                             |
| M18              | Long       | Cable       | 5 mm <sup>1)</sup>                      | EI 1805 NPOSL                             |   | EI 1805 PPOSL                             | EI 1805 PPCSL                               |
| M18              | Long       | Plug        | 5 mm <sup>1)</sup>                      | EI 1805 NPOSL-1                           |   | EI 1805 PPOSL-1                           | EI 1805 PPCSL-1                             |
| M18              | Short      | Cable       | 8 mm <sup>2)</sup>                      | EI 1808 NPOSS                             | EI 1808 NPCSS                               | EI 1808 PPOSS                             | EI 1808 PPCSS                               |
| M18              | Short      | Plug        | 8 mm <sup>2)</sup>                      | EI 1808 NPOSS-1                           |   | EI 1808 PPOSS-1                           | EI 1808 PPCSS-1                             |
| M18              | Long       | Cable       | 8 mm <sup>2)</sup>                      | EI 1808 NPOSL                             |   | EI 1808 PPOSL                             | EI 1808 PPCSL                               |
| M18              | Long       | Plug        | 8 mm <sup>2)</sup>                      | EI 1808 NPOSL-1                           |   | EI 1808 PPOSL-1                           | EI 1808 PPCSL-1                             |
| M30              | Short      | Cable       | 10 mm <sup>1)</sup>                     | EI 3010 NPOSS                             | EI 3010 NPCSS                               | EI 3010 PPOSS                             | EI 3010 PPCSS                               |
| M30              | Short      | Plug        | 10 mm <sup>1)</sup>                     |   |   | EI 3010 PPOSS-1                           |   |
| M30              | Long       | Cable       | 10 mm <sup>1)</sup>                     | EI 3010 NPOSL                             |   | EI 3010 PPOSL                             | EI 3010 PPCSL                               |
| M30              | Long       | Plug        | 10 mm <sup>1)</sup>                     |   |   | EI 3010 PPOSL-1                           |   |
| M30              | Short      | Cable       | 15 mm <sup>2)</sup>                     | EI 3015 NPOSS                             | EI 3015 NPCSS                               | EI 3015 PPOSS                             | EI 3015 PPCSS                               |
| M30              | Short      | Plug        | 15 mm <sup>2)</sup>                     | EI 3015 NPOSS-1                           |   | EI 3015 PPOSS-1                           |   |
| M30              | Long       | Cable       | 15 mm <sup>2)</sup>                     | EI 3015 NPOSL                             | EI 3015 NPCSL                               | EI 3015 PPOSL                             |   |
| M30              | Long       | Plug        | 15 mm <sup>2)</sup>                     |   |   | EI 3015 PPOSL-1                           |   |

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

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

## Specifications

|   |  |                                   |   |  |
|---|--|-----------------------------------|---|--|
| <b>Rated operational volt.</b> ( $U_B$ )                          | 10 to 32 VDC<br>(ripple included)  | <b>Usable operating dist. (S)</b> | $0.9 \times S_r \leq S_u \leq 1.1 \times S_r$   |  |
| <b>Ripple</b>   | $\leq 10\%$  | <b>Ambient temperature</b>        | Operating<br>Storage  |  |
| <b>Rated operational current (<math>I_a</math>)</b><br>Continuous | $\leq 200$ mA  |                                   | -25° to +70°C (-13° to +158°F)<br>-30° to +80°C (-22° to +176°F)  |  |
| <b>No-load supply current (<math>I_o</math>)</b>                  | Output ON: < 6.5 mA<br>Output OFF: < 2.7 mA  | <b>Degree of protection</b>       | IP 67   |  |
| <b>Voltage drop (<math>U_d</math>)</b>                            | $\leq 2$ VDC at max. load  | <b>Housing material</b>           | Body<br>Front<br>Back   |  |
| <b>Protection</b>   | Reverse polarity,<br>short-circuit, transients   |                                   | Stainless steel (1.4301)<br>Grey thermoplastic polyester<br>Black polyester                                   |  |
| <b>Transient voltage</b>  | $\leq 700$ V/0.5 J   | <b>Connection</b>                 | Cable   |  |
| <b>EMC</b>  | Approved according to<br>EN 60947-5-2  |                                   | 2 m, 3 x 0.3 mm <sup>2</sup> ,<br>grey PVC, oil proof<br>M12 x 1  |  |
| <b>Power ON delay</b>   | < 10 ms  |                                   | Cables for plug (-1)<br>CONx... series to be pur-<br>chased separately  |  |
| <b>Frequency of operating<br/>cycles (f)</b>                      | <b>EI 1202</b> 800 Hz<br><b>EI 1204</b> 500 Hz<br><b>EI 1805</b> 500 Hz<br><b>EI 1808</b> 400 Hz<br><b>EI 3010</b> 300 Hz<br><b>EI 3015</b> 100 Hz | <b>Weight (cable excluded)</b>    | <b>EI 12</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 |  |
| <b>Indication for output ON</b>                                   | LED, yellow  | <b>Tightening torque</b>          | <b>EI 12</b> 7.5 Nm (x)<br>17.5 Nm (y)<br><b>EI 18</b> 27.5 Nm<br><b>EI 30</b> 100.0 Nm                       |  |
| <b>Assured operating dist. (<math>S_a</math>)</b>                 | $0 \leq S_a \leq 0.81 S_n$   | <b>Approvals</b>                  | UL, CSA   |  |
| <b>Repeatability (R)</b>  | $\leq 5\%$   | <b>CE-marking</b>                 | Yes   |  |
| <b>Hysteresis (H) (Differential travel)</b>                       | 1 to 15% of sensing distance   |                                   |   |  |
| <b>Effective operating dist. (<math>S_r</math>)</b>               | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$  |                                   |   |  |

## Dimensions

| Type            | A              | B<br>Ø mm | C<br>mm | D<br>mm | E<br>mm | F<br>mm | SW<br>mm |
|-----------------|----------------|-----------|---------|---------|---------|---------|----------|
| EI 1202 xPxSS   | M12 x 1 x 30   | 10.7      | 30      | 11      | 5.0     | 4       | 17       |
| EI 1202 xPxSL   | M12 x 1 x 50   | 10.7      | 50      | 11      | 5.0     | 4       | 17       |
| EI 1202 xPxSS-1 | M12 x 1 x 30   | 10.7      | 30      | 12.6    | 11.9    | 4       | 17       |
| EI 1202 xPxSL-1 | M12 x 1 x 50   | 10.7      | 50      | 12.6    | 11.9    | 4       | 17       |
| EI 1204 xPxSS   | M12 x 1 x 30   | 10.7      | 34      | 11      | 5.0     | 4       | 17       |
| EI 1204 xPxSL   | M12 x 1 x 50   | 10.7      | 54      | 11      | 5.0     | 4       | 17       |
| EI 1204 xPxSS-1 | M12 x 1 x 30   | 10.7      | 34      | 12.6    | 11.9    | 4       | 17       |
| EI 1204 xPxSL-1 | M12 x 1 x 50   | 10.7      | 54      | 12.6    | 11.9    | 4       | 17       |
| EI 1805 xPxSS   | M18 x 1 x 30   | 16.7      | 30      | 11.6    | 15.4    | 4       | 24       |
| EI 1805 xPxSL   | M18 x 1 x 50   | 16.7      | 50      | 11.6    | 15.4    | 4       | 24       |
| EI 1805 xPxSS-1 | M18 x 1 x 30   | 16.7      | 30      | 13.1    | 11.9    | 4       | 24       |
| EI 1805 xPxSL-1 | M18 x 1 x 50   | 16.7      | 50      | 13.1    | 11.9    | 4       | 24       |
| EI 1808 xPxSS   | M18 x 1 x 30   | 16.7      | 38      | 11.6    | 15.4    | 4       | 24       |
| EI 1808 xPxSL   | M18 x 1 x 50   | 16.7      | 58      | 11.6    | 15.4    | 4       | 24       |
| EI 1808 xPxSS-1 | M18 x 1 x 30   | 16.7      | 38      | 13.1    | 11.9    | 4       | 24       |
| EI 1808 xPxSL-1 | M18 x 1 x 50   | 16.7      | 58      | 13.1    | 11.9    | 4       | 24       |
| EI 3010 xPxSS   | M30 x 1.5 x 30 | 28        | 30      | 13.6    | 15.4    | 5       | 36       |
| EI 3010 xPxSL   | M30 x 1.5 x 50 | 28        | 50      | 13.6    | 15.4    | 5       | 36       |
| EI 3010 xPxSS-1 | M30 x 1.5 x 30 | 28        | 30      | 13.6    | 11.9    | 5       | 36       |
| EI 3010 xPxSL-1 | M30 x 1.5 x 50 | 28        | 50      | 13.6    | 11.9    | 5       | 36       |
| EI 3015 xPxSS   | M30 x 1.5 x 30 | 28        | 42      | 13.6    | 15.4    | 5       | 36       |
| EI 3015 xPxSL   | M30 x 1.5 x 50 | 28        | 62      | 13.6    | 15.4    | 5       | 36       |
| EI 3015 xPxSS-1 | M30 x 1.5 x 30 | 28        | 42      | 13.6    | 11.9    | 5       | 36       |
| EI 3015 xPxSL-1 | M30 x 1.5 x 50 | 28        | 62      | 13.6    | 11.9    | 5       | 36       |