

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

CARLO GAVAZZI



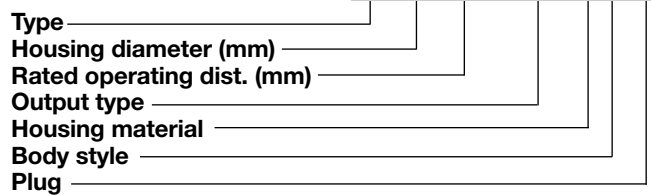
- Stainless steel housing, cylindrical
- Diameter: M12, M18, M30
- Short or long versions
- Sensing distance: 2 to 15 mm
- Power supply: 10 to 40 VDC
- Output: Transistor NPN/PNP, make or break switching
- Protection: Short-circuit and reverse polarity
- LED-indication for output ON
- 2 m cable or plug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

Product Description

Proximity switch in housings ranging from M12 to M30. Short or long versions in standard stainless steel housing. Made after Euronorm EN 50008.

Ordering Key

EI 1202 NPOSS-1



Type Selection DC Types, Cable and M12 Plug

| Housing diameter | Body style | Connec-tion | Rated operating dist. (S _a) | 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 | Short | Cable | 2 mm ¹⁾ | EI 1202 NPOSS | EI 1202 NPCSS | EI 1202 PPOSS | EI 1202 PPCSS |
| M12 | Short | Plug | 2 mm ¹⁾ | EI 1202 NPOSS-1 | EI 1202 NPCSS-1 | EI 1202 PPOSS-1 | EI 1202 PPCSS-1 |
| M12 | Long | Cable | 2 mm ¹⁾ | EI 1202 NPOSL | EI 1202 NPCSL | EI 1202 PPOSL | EI 1202 PPCSL |
| M12 | Long | Plug | 2 mm ¹⁾ | EI 1202 NPOSL-1 | EI 1202 NPCSL-1 | EI 1202 PPOSL-1 | EI 1202 PPCSL-1 |
| M12 | Short | Cable | 4 mm ²⁾ | EI 1204 NPOSS | EI 1204 NPCSS | EI 1204 PPOSS | EI 1204 PPCSS |
| M12 | Short | Plug | 4 mm ²⁾ | EI 1204 NPOSS-1 | EI 1204 NPCSS-1 | EI 1204 PPOSS-1 | EI 1204 PPCSS-1 |
| M12 | Long | Cable | 4 mm ²⁾ | EI 1204 NPOSL | EI 1204 NPCSL | EI 1204 PPOSL | EI 1204 PPCSL |
| M12 | Long | Plug | 4 mm ²⁾ | EI 1204 NPOSL-1 | EI 1204 NPCSL-1 | EI 1204 PPOSL-1 | EI 1204 PPCSL-1 |
| M18 | Short | Cable | 5 mm ¹⁾ | EI 1805 NPOSS | EI 1805 NPCSS | EI 1805 PPOSS | EI 1805 PPCSS |
| M18 | Short | Plug | 5 mm ¹⁾ | EI 1805 NPOSS-1 | EI 1805 NPCSS-1 | EI 1805 PPOSS-1 | EI 1805 PPCSS-1 |
| M18 | Long | Cable | 5 mm ¹⁾ | EI 1805 NPOSL | EI 1805 NPCSL | EI 1805 PPOSL | EI 1805 PPCSL |
| M18 | Long | Plug | 5 mm ¹⁾ | EI 1805 NPOSL-1 | EI 1805 NPCSL-1 | EI 1805 PPOSL-1 | EI 1805 PPCSL-1 |
| M18 | Short | Cable | 8 mm ²⁾ | EI 1808 NPOSS | EI 1808 NPCSS | EI 1808 PPOSS | EI 1808 PPCSS |
| M18 | Short | Plug | 8 mm ²⁾ | EI 1808 NPOSS-1 | EI 1808 NPCSS-1 | EI 1808 PPOSS-1 | EI 1808 PPCSS-1 |
| M18 | Long | Cable | 8 mm ²⁾ | EI 1808 NPOSL | EI 1808 NPCSL | EI 1808 PPOSL | EI 1808 PPCSL |
| M18 | Long | Plug | 8 mm ²⁾ | EI 1808 NPOSL-1 | EI 1808 NPCSL-1 | EI 1808 PPOSL-1 | EI 1808 PPCSL-1 |
| M30 | Short | Cable | 10 mm ¹⁾ | EI 3010 NPOSS | EI 3010 NPCSS | EI 3010 PPOSS | EI 3010 PPCSS |
| M30 | Short | Plug | 10 mm ¹⁾ | EI 3010 NPOSS-1 | EI 3010 NPCSS-1 | EI 3010 PPOSS-1 | EI 3010 PPCSS-1 |
| M30 | Long | Cable | 10 mm ¹⁾ | EI 3010 NPOSL | EI 3010 NPCSL | EI 3010 PPOSL | EI 3010 PPCSL |
| M30 | Long | Plug | 10 mm ¹⁾ | EI 3010 NPOSL-1 | EI 3010 NPCSL-1 | EI 3010 PPOSL-1 | EI 3010 PPCSL-1 |
| M30 | Short | Cable | 15 mm ²⁾ | EI 3015 NPOSS | EI 3015 NPCSS | EI 3015 PPOSS | EI 3015 PPCSS |
| M30 | Short | Plug | 15 mm ²⁾ | EI 3015 NPOSS-1 | EI 3015 NPCSS-1 | EI 3015 PPOSS-1 | EI 3015 PPCSS-1 |
| M30 | Long | Cable | 15 mm ²⁾ | EI 3015 NPOSL | EI 3015 NPCSL | EI 3015 PPOSL | EI 3015 PPCSL |
| M30 | Long | Plug | 15 mm ²⁾ | EI 3015 NPOSL-1 | EI 3015 NPCSL-1 | EI 3015 PPOSL-1 | EI 3015 PPCSL-1 |

¹⁾ For flush mounting in metal

²⁾ For non-flush mounting in metal

Make switching = Normally Open (NO)

Break switching = Normally Closed (NC)

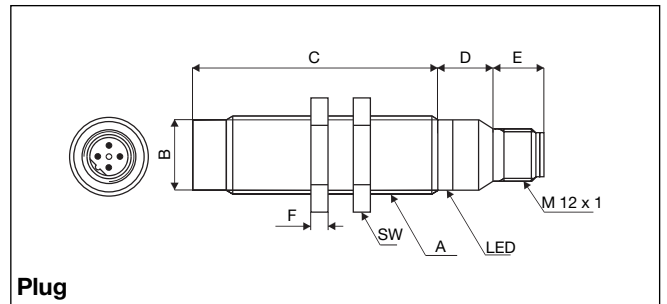
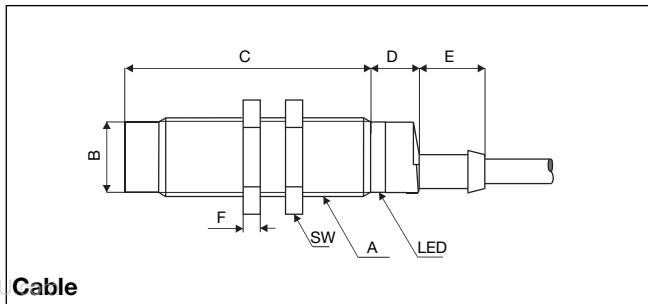
Specifications

| | | | |
|--|--|--|---|
| Rated operational volt. (U_e) (U_B) | 12 to 36 VDC 10 to 40 VDC (ripple included) | Effective operating dist. (S_r) | $0.9 \times S_n \leq S_r \leq 1.1 \times S_n$ |
| Ripple | $\leq 10\%$ | Usable operating dist. (S) | $0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ |
| Rated operational current (I_a) Continuous | ≤ 200 mA | Ambient temperature Operating | -25° to +70°C (-13° to +158°F) |
| No-load supply current (I_o) | Output ON: < 6.5 mA Output OFF: < 2.7 mA | Storage | -30° to +80°C (-22° to +176°F) |
| Voltage drop (U_d) | ≤ 2 VDC at max. load | Degree of protection | IP 67 (Nema 1, 3, 4, 6, 13) |
| Protection | Reverse polarity, short-circuit, transients | Housing material Body | Stainless steel (1.4301) |
| Transient voltage | ≤ 700 V/0.5 J | Front | Grey thermoplastic polyester |
| EMC | Approved according to EN 50 080, EN 50 081 | Back | Black polyester |
| Power ON delay | < 10 ms | Connection Cable | 2 m, 3 x 0.3 mm ² , grey PVC, oil proof M12 x 1 |
| 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 | Plug | CONH1A serie |
| Indication for output ON | LED, yellow | Cables for plug (-1) | |
| Assured operating dist. (S_a) | $0 \leq S_a \leq 0.81 S_n$ | Weight (cable excluded) | EI 12 10 g EI 1805 18 g EI 1808 20 g EI 3010 50 g EI 3015 70 g |
| Repeat accuracy (R) | $\leq 5\%$ | Tightening torque | EI 12 7.5 Nm (x) 17.5 Nm (y) EI 18 27.5 Nm EI 30 100.0 Nm |
| Hysteresis (H) (Differential travel) | 1 to 15% of sensing distance | Approvals | UL, CSA |
| | | CE-marking | Yes |

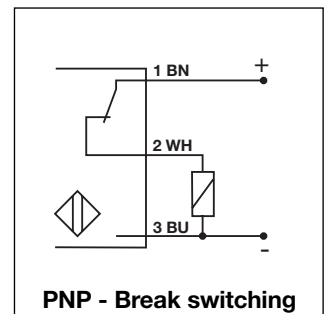
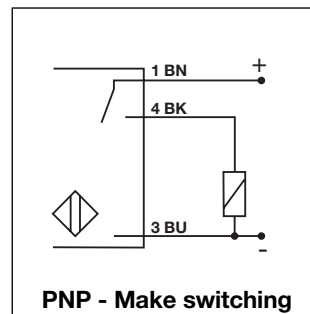
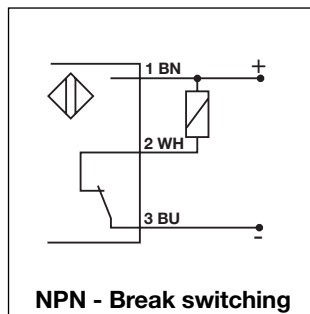
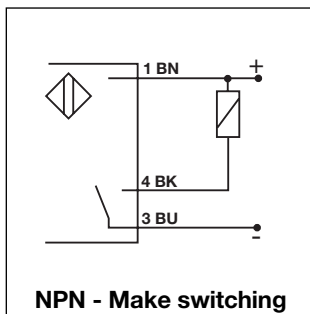
Dimensions

| Type | A | B Ø mm | C mm | D mm | E mm | F mm | G mm | H mm | I mm | SW mm | K Ø mm | L Ø 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 | | |

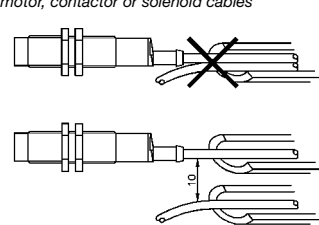
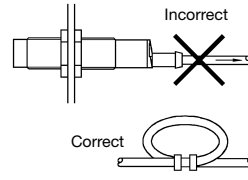
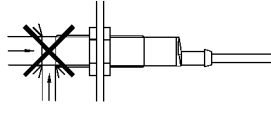
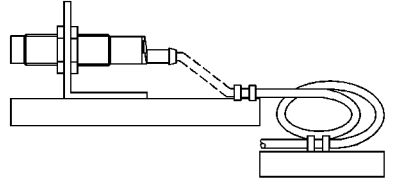
Dimensions (cont.)



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>Incorrect</p> <p>Correct</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> |
|---|---|--|--|

Power Supplies

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