

# Proximity Sensors Inductive Stainless Steel Housing Types EI, DC, M 12, M 18, M 30

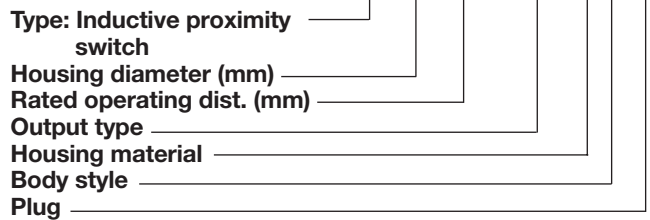


- Stainless steel housing, cylindrical
- Diameter: M 12, M 18, M 30
- Short or long versions
- Sensing distance: 2 to 15 mm
- Power supply: 10 to 40 VDC
- Output: Transistor NPN/PNP, make or break switching
- Protection: Short-circuit and reverse polarity
- LED-indication for output ON
- 2 m cable or plug M 12

## Product Description

Proximity switch in housings ranging from M 12 to M 30. Short or long versions in standard stainless steel housing. Made after Euronorm EN 50 008.

## Ordering Key EI 1202 NPOSS-1



## Type Selection DC Types, Cable and M 12 Plug

Housing diameter	Body style	Connec-tion	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
M 12	Short	Cable	2 mm <sup>1)</sup>	EI 1202 NPOSS	EI 1202 NPCSS	EI 1202 PPOSS	EI 1202 PPCSS
M 12	Short	Plug	2 mm <sup>1)</sup>	EI 1202 NPOSS-1	EI 1202 NPCSS-1	EI 1202 PPOSS-1	EI 1202 PPCSS-1
M 12	Long	Cable	2 mm <sup>1)</sup>	EI 1202 NPOSL	EI 1202 NPCSL	EI 1202 PPOSL	EI 1202 PPCSL
M 12	Long	Plug	2 mm <sup>1)</sup>	EI 1202 NPOSL-1	EI 1202 NPCSL-1	EI 1202 PPOSL-1	EI 1202 PPCSL-1
M 12	Short	Cable	4 mm <sup>2)</sup>	EI 1204 NPOSS	EI 1204 NPCSS	EI 1204 PPOSS	EI 1204 PPCSS
M 12	Short	Plug	4 mm <sup>2)</sup>	EI 1204 NPOSS-1	EI 1204 NPCSS-1	EI 1204 PPOSS-1	EI 1204 PPCSS-1
M 12	Long	Cable	4 mm <sup>2)</sup>	EI 1204 NPOSL	EI 1204 NPCSL	EI 1204 PPOSL	EI 1204 PPCSL
M 12	Long	Plug	4 mm <sup>2)</sup>	EI 1204 NPOSL-1	EI 1204 NPCSL-1	EI 1204 PPOSL-1	EI 1204 PPCSL-1
M 18	Short	Cable	5 mm <sup>1)</sup>	EI 1805 NPOSS	EI 1805 NPCSS	EI 1805 PPOSS	EI 1805 PPCSS
M 18	Short	Plug	5 mm <sup>1)</sup>	EI 1805 NPOSS-1	EI 1805 NPCSS-1	EI 1805 PPOSS-1	EI 1805 PPCSS-1
M 18	Long	Cable	5 mm <sup>1)</sup>	EI 1805 NPOSL	EI 1805 NPCSL	EI 1805 PPOSL	EI 1805 PPCSL
M 18	Long	Plug	5 mm <sup>1)</sup>	EI 1805 NPOSL-1	EI 1805 NPCSL-1	EI 1805 PPOSL-1	EI 1805 PPCSL-1
M 18	Short	Cable	8 mm <sup>2)</sup>	EI 1808 NPOSS	EI 1808 NPCSS	EI 1808 PPOSS	EI 1808 PPCSS
M 18	Short	Plug	8 mm <sup>2)</sup>	EI 1808 NPOSS-1	EI 1808 NPCSS-1	EI 1808 PPOSS-1	EI 1808 PPCSS-1
M 18	Long	Cable	8 mm <sup>2)</sup>	EI 1808 NPOSL	EI 1808 NPCSL	EI 1808 PPOSL	EI 1808 PPCSL
M 18	Long	Plug	8 mm <sup>2)</sup>	EI 1808 NPOSL-1	EI 1808 NPCSL-1	EI 1808 PPOSL-1	EI 1808 PPCSL-1
M 30	Short	Cable	10 mm <sup>1)</sup>	EI 3010 NPOSS	EI 3010 NPCSS	EI 3010 PPOSS	EI 3010 PPCSS
M 30	Short	Plug	10 mm <sup>1)</sup>	EI 3010 NPOSS-1	EI 3010 NPCSS-1	EI 3010 PPOSS-1	EI 3010 PPCSS-1
M 30	Long	Cable	10 mm <sup>1)</sup>	EI 3010 NPOSL	EI 3010 NPCSL	EI 3010 PPOSL	EI 3010 PPCSL
M 30	Long	Plug	10 mm <sup>1)</sup>	EI 3010 NPOSL-1	EI 3010 NPCSL-1	EI 3010 PPOSL-1	EI 3010 PPCSL-1
M 30	Short	Cable	15 mm <sup>2)</sup>	EI 3015 NPOSS	EI 3015 NPCSS	EI 3015 PPOSS	EI 3015 PPCSS
M 30	Short	Plug	15 mm <sup>2)</sup>	EI 3015 NPOSS-1	EI 3015 NPCSS-1	EI 3015 PPOSS-1	EI 3015 PPCSS-1
M 30	Long	Cable	15 mm <sup>2)</sup>	EI 3015 NPOSL	EI 3015 NPCSL	EI 3015 PPOSL	EI 3015 PPCSL
M 30	Long	Plug	15 mm <sup>2)</sup>	EI 3015 NPOSL-1	EI 3015 NPCSL-1	EI 3015 PPOSL-1	EI 3015 PPCSL-1

<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

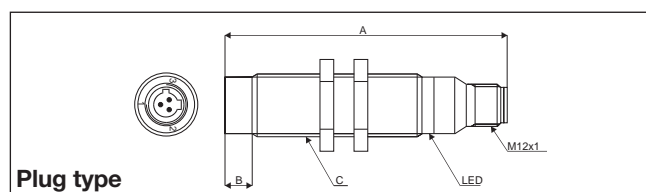
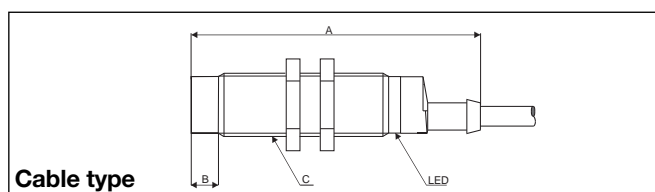
<b>Rated operational volt.</b> ( $U_e$ )	12 to 36 VDC
( $U_B$ )	10 to 40 VDC (ripple included)
<b>Ripple</b>	$\leq 10\%$
<b>Rated operational current</b> ( $I_a$ )	
Continuous	$\leq 200$ mA
<b>No-load supply current</b> ( $I_0$ )	Output ON: $< 6.5$ mA Output OFF: $< 2.7$ mA
<b>Voltage drop</b> ( $U_d$ )	$\leq 2$ VDC at max. load
<b>Protection</b>	Reverse polarity, short-circuit, transients
<b>Transient voltage</b>	$\leq 700$ V/0.5 J
<b>EMC</b>	Approved according to EN 50 080, EN 50 081
<b>Power ON delay</b>	$< 10$ ms
<b>Frequency of operating cycles</b> (f)	<b>EI 1202</b> 800 Hz <b>EI 1204</b> 500 Hz <b>EI 1805</b> 500 Hz <b>EI 1808</b> 400 Hz <b>EI 3010</b> 300 Hz <b>EI 3015</b> 100 Hz
<b>Indication for output ON</b>	LED, yellow
<b>Assured operating dist.</b> ( $S_a$ )	$0 \leq S_a \leq 0.81 S_n$

<b>Repeat accuracy</b> (R)	$\leq 5\%$
<b>Hysteresis</b> (H) (Differential travel)	1 to 15% of sensing distance
<b>Effective operating dist.</b> ( $S_r$ )	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$
<b>Usable operating dist.</b> ( $S$ )	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$
<b>Ambient temperature</b>	
Operating	$-25^\circ$ to $+70^\circ$ C ( $-13^\circ$ to $+158^\circ$ F)
Storage	$-30^\circ$ to $+80^\circ$ C ( $-22^\circ$ to $+176^\circ$ F)
<b>Degree of protection</b>	IP 67 (Nema 1, 3, 4, 6, 13)
<b>Housing material</b>	
Body	Stainless steel (1.4301)
Front	Grey thermoplastic polyester
Back	Black polyester
<b>Connection</b>	
Cable	2 m, $3 \times 0.3$ mm <sup>2</sup> , grey PVC, oil proof
Plug	M 12 x 1
Cables for plug (-1)	CONH1A serie
<b>Weight</b> (cable excluded)	<b>EI 12</b> 10 g <b>EI 1805</b> 18 g <b>EI 1808</b> 20 g <b>EI 3010</b> 50 g <b>EI 3015</b> 70 g
<b>Tightening torque</b>	<b>EI 12</b> 1.8 Nm <b>EI 18</b> 2.6 Nm <b>EI 30</b> 7.5 Nm

## Dimensions

Type	A mm	B mm	C
EI 1202 .P.SS	46	0	M 12 x 1 x 30
EI 1202 .P.SL	66	0	M 12 x 1 x 50
EI 1202 .P.SS-1	54.5	0	M 12 x 1 x 30
EI 1202 .P.SL-1	74.5	0	M 12 x 1 x 50
EI 1204 .P.SS	50	4	M 12 x 1 x 30
EI 1204 .P.SL	70	4	M 12 x 1 x 50
EI 1204 .P.SS-1	58.5	4	M 12 x 1 x 30
EI 1204 .P.SL-1	78.5	4	M 12 x 1 x 50
EI 1805 .P.SS	57	0	M 18 x 1 x 30
EI 1805 .P.SL	77	0	M 18 x 1 x 50
EI 1805 .P.SS-1	55	0	M 18 x 1 x 30
EI 1805 .P.SL-1	75	0	M 18 x 1 x 50
EI 1808 .P.SS	65	8	M 18 x 1 x 30
EI 1808 .P.SL	85	8	M 18 x 1 x 50
EI 1808 .P.SS-1	63	8	M 18 x 1 x 30
EI 1808 .P.SL-1	83	8	M 18 x 1 x 50

Type	A mm	B mm	C
EI 3010 .P.SS	59	0	M 30 x 1.5 x 30
EI 3010 .P.SL	79	0	M 30 x 1.5 x 50
EI 3010 .P.SS-1	55.5	0	M 30 x 1.5 x 30
EI 3010 .P.SL-1	75.5	0	M 30 x 1.5 x 50
EI 3015 .P.SS	65	12	M 30 x 1.5 x 30
EI 3015 .P.SL	85	12	M 30 x 1.5 x 50
EI 3015 .P.SS-1	63	12	M 30 x 1.5 x 30
EI 3015 .P.SL-1	83	12	M 30 x 1.5 x 50



## Wiring Diagrams

Refer to "Wiring Diagrams",  
Technical information.

## Installation Hints

Refer to "Installation Hints",  
Technical information.

## Power Supplies

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