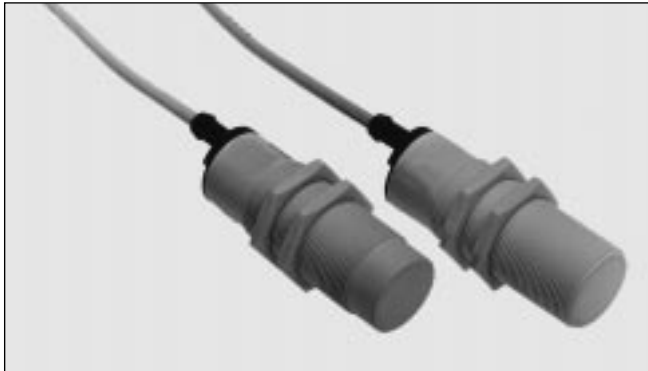


# Proximity Sensors Capacitive Thermoplastic Polyester Housing Types EC, M 18, M 30, Cable

CARLO GAVAZZI



- Thermoplastic polyester housing, cylindrical
- Diameter: M 18, M 30
- Adjustable sensing distance
- Power supply: 10 to 40 VDC  
20 to 250 VAC
- Output: Transistor NPN or PNP, make or break switching  
SCR, make or break switching
- Protection: Reverse polarity and short-circuit
- LED-indication for output ON
- 2 m cable

## Product Description

Proximity switch in M 18 and M 30 housings. NPN, PNP and AC outputs. Adjustable sensing distance. Polyester housing. Delivered with 2 m cable.

## Ordering Key

**EC 1808 NPO P**

Type: Capacitive proximity switch  
 Housing diameter (mm)  
 Rated operating dist. (mm)  
 Output type  
 Housing material

## Type Selection, Transistor NPN/PNP Output DC Types

Housing diameter	Rated operating dist. (S <sub>n</sub> ) <sup>3)</sup>	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 18	8 mm <sup>1)</sup>	EC 1808 NPOP	EC 1808 NPCP	EC 1808 PPOP	EC 1808 PPCP
M 30 <sup>4)</sup>	10 mm <sup>2)</sup>	EC 3010 NNOP	EC 3010 NNCP	EC 3010 PNOP	EC 3010 PNCP
M 30 <sup>4)</sup>	15 mm <sup>1)</sup>	EC 3015 NNAP		EC 3015 PNAP	

<sup>1)</sup> For non-flush mounting

<sup>2)</sup> For flush mounting

<sup>3)</sup> Object: Grounded steel plate

<sup>4)</sup> Not for new designs - for replacement part numbers contact sales office

## Type Selection, SCR Output AC Types

Housing diameter	Rated operating dist. (S <sub>n</sub> ) <sup>3)</sup>	Ordering no. SCR Make switching	Ordering no. SCR Break switching
M 18	8 mm <sup>1)</sup>	EC 1808 TBOP	EC 1808 TBCP
M 30 <sup>4)</sup>	15 mm <sup>1)</sup>	EC 3015 TBOP	EC 3015 TBCP

<sup>1)</sup> For non-flush mounting

<sup>2)</sup> For flush mounting

<sup>3)</sup> Object: Grounded steel plate

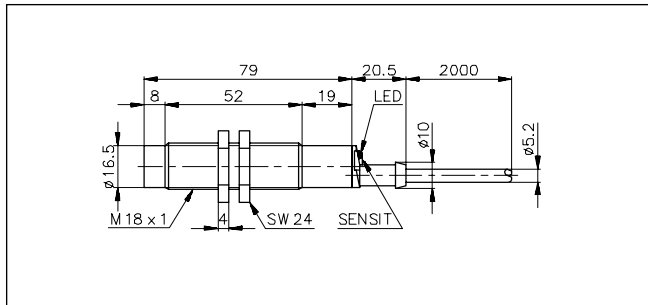
<sup>4)</sup> Not for new designs - for replacement part numbers contact sales office

## Specifications

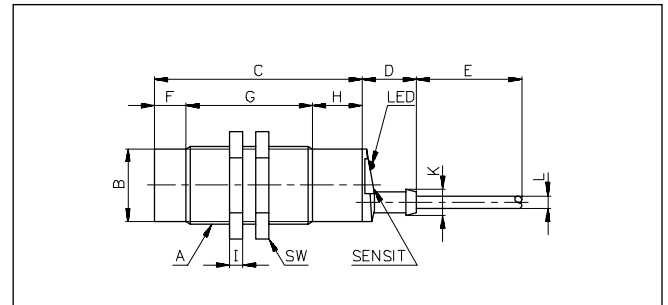
	Transistor NPN/PNP		SCR	
<b>Rated operational volt.</b> ( $U_a$ ) ( $U_B$ )	12 to 36 VDC 10 to 40 VDC (ripple included)		20 to 250 VAC, 50 to 60 Hz	
<b>Ripple</b>	≤ 10%			
<b>Rated operational current</b> ( $I_o$ ) Continuous Short-time	≤ 200 mA ≤ 200 mA		≤ 500 mA ≤ 2.5 A, max. 20 ms	
<b>No-load supply current</b> ( $I_o$ )	<b>EC 1808</b>	≤ 12 mA (no load)		
	<b>EC 3010</b>	≤ 20 mA (no load)		
<b>Minimum load current</b>			≤ 10 mA	
<b>OFF-state current</b> ( $I_r$ )			≤ 2.6 mA	
<b>Voltage drop</b> ( $U_d$ )	<b>EC 18</b> <b>EC 30</b>	≤ 2.8 VDC at max. load ≤ 2.5 VDC at max. load	≤ 10 VAC at loads ≥ 20 mA	
<b>Protection</b>	Reverse polarity, short-circuit ( <b>EC 18</b> )		Transil (transient protection)	
<b>Transient voltage</b>	<b>EC 1808</b>	≤ 3 kV/0.5 J (prepared)	≤ 5 kV/0.5 J (prepared)	
<b>Power ON delay</b>			<b>EC 18</b>	≤ 350 ms
			<b>EC 3015 TBCP</b>	≤ 300 ms
			<b>EC 3015 TBOP</b>	≤ 100 ms
<b>Frequency of operating cycles</b> (f)	<b>EC 1808</b> <b>EC 3010</b>	25 Hz 30 Hz	<b>EC 18</b> <b>EC 30</b>	10 Hz 10 Hz
<b>Indication for output ON</b>	LED, yellow		LED, yellow	
<b>Rated operating dist.</b> ( $S_n$ ) (adjustable)	<b>EC 1808</b>	2 to 10 mm, factory set at 8 mm	<b>EC 18</b> <b>EC 30</b>	2 to 10 mm, factory set at 8 mm 5 to 15 mm, factory set at 15 mm
<b>Rated operating dist.</b> ( $S_n$ ) (fixed)	<b>EC 3010</b>	10 mm Reference object: Grounded steel plate. Other objects: Refer to "Reduction Factors", Technical information		
<b>Repeat accuracy</b> (R)	≤ 10%		≤ 10%	
<b>Hysteresis</b> (H) (Differential travel)	1 to 20% of sensing distance		1 to 20% of sensing distance	
<b>Effective operating dist.</b> ( $S_r$ )	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$		$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$	
<b>Usable operating dist.</b> ( $S_u$ )	<b>EC 18</b> <b>EC 30</b>	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ $0.8 \times S_r \leq S_u \leq 1.15 \times S_r$	<b>EC 18</b> <b>EC 30</b>	$0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ $0.8 \times S_r \leq S_u \leq 1.15 \times S_r$
<b>Ambient temperature</b> Operating Storage	<b>EC 1808</b> <b>EC 3010</b> <b>EC 18</b> <b>EC 30</b>	-25° to +70°C (-13° to +158°F) 0° to +70°C (+32° to +158°F) -30° to +80°C (-22° to +176°F) -30° to +80°C (-22° to +176°F)	<b>EC 18</b> <b>EC 30</b> <b>EC 18</b> <b>EC 30</b>	-25° to +70°C (-13° to +158°F) -25° to +70°C (-13° to +158°F) -30° to +80°C (-22° to +176°F) -30° to +80°C (-22° to +176°F)
<b>Degree of protection</b>	IP 67 (Nema 1, 3, 4, 6, 13)		IP 67 (Nema 1, 3, 4, 6, 13)	
<b>Housing material</b> Body Back	Yellow thermoplastic polyester Black thermoplastic polyester		Yellow thermoplastic polyester Black thermoplastic polyester	
<b>Cable</b>	2 m, 3 x 0.25 mm <sup>2</sup> grey PVC, oil proof		2 m, 2 x 0.5 mm <sup>2</sup> grey PVC, oil proof	
<b>Weight</b>	<b>EC 18</b> <b>EC 30</b>	120 g 170 g	<b>EC 18</b> <b>EC 30</b>	120 g 170 g
<b>Tightening torque</b>	<b>EC 18</b> <b>EC 30</b>	2.6 Nm 7.5 Nm	<b>EC 18</b> <b>EC 30</b>	2.6 Nm 7.5 Nm
<b>Approvals</b> <b>CE-marking</b>	UL, CSA Yes (only <b>EC1808 NPOP</b> and <b>EC1808NPCP</b> )		UL, CSA Yes	

## Dimensions

Type	A Ø mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	SW Ø mm	K Ø mm	L
EC 3010	M30 x 1.5	28	79	20.5	2000	1	59	19	5	36	10	5.2
EC 3015	M30 x 1.5	28	79	20.5	2000	12	48	19	5	36	10	5.2



EC 18



EC 30

## 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.