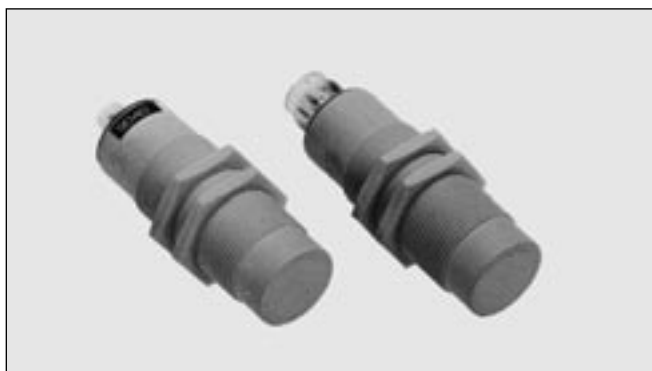


Proximity Sensors Capacitive Thermoplastic Polyester Housing Types EC, M18, M30, Plug

CARLO GAVAZZI



- Thermoplastic polyester housing, cylindrical
- Diameter: M18, M30
- Sensing distance: 8 and 15 mm
- Power supply: 10 to 40 VDC
20 to 250 VAC
- Output: Transistor NPN/PNP, make and break switching
SCR, make or break switching
- Protection: Reverse polarity
- LED-indication for output ON
- Plug connection

Product Description

Proximity switch in M18 and M30 housing. Thyristor and transistor NPN and PNP. Plug version. Standard housing diameters M18 and M30. M12 and M18 plugs available. Refer to Technical Information.

Ordering Key

EC 3015 NNA P-1

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

Type Selection

Housing diameter	Rated operating dist. (S _n) ²⁾	Ordering no. Transistor NPN Make/break switching	Ordering no. Transistor PNP Make/break switching	Ordering no. SCR Make switching	Ordering no. SCR Break switching
M18	8 mm ¹⁾			EC 1808 TBOP-2	EC 1808 TBOP-2
M30	15 mm ¹⁾	EC 3015 NNAP-1	EC 3015 PNAP-1	EC 3015 TBOP-2	EC 3015 TBOP-2

¹⁾ For non-flush mounting ²⁾ Object: Grounded steel plate

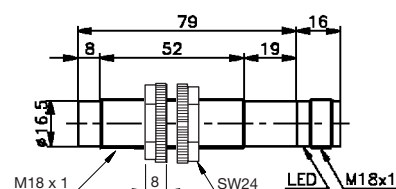
Specifications

	Transistor NPN/PNP	SCR
Rated operational volt. (U _e) (U _B)	12 to 36 VDC 10 to 40 VDC (ripple included)	24 to 240 VAC, 50 to 60 Hz 20 to 265 VAC, 50 to 60 Hz
Ripple	≤ 10%	-
Rated operational current (I _e) Continuous Short-time	≤ 200 mA ≤ 200 mA	≤ 500 mA ≤ 2.5 A, max. 20 ms
No-load supply current (I _o)	≤ 10 mA (no load)	
Minimum load current	-	≤ 10 mA
OFF-state current (I _r)	-	≤ 2.6 mA
Voltage drop (U _d)	≤ 2 VDC at max. load	≤ 10 VAC at load ≥ 20 mA
Protection	Reverse polarity	Transil (transient protection)
Transient voltage	≤ 1 kV/0.5 J (prepared)	≤ 5 kV/0.5 J (prepared)
Power ON delay	-	EC 18 ≤ 350 ms EC 3015 TBOP ≤ 300 ms EC 3015 TBOP ≤ 100 ms
Frequency of operating cycles (f)	60 Hz	10 Hz
Indication for output ON	LED, yellow	LED, yellow

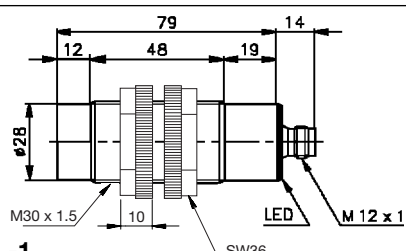
Specifications (cont.)

	Transistor NPN/PNP	SCR
Rated operating dist. (S_n)	15 mm Reference object: Grounded steel plate. Other objects: Refer to "Reduction Factors", Technical information.	EC 18 8 mm EC 30 15 mm Reference object: Grounded steel plate. Other objects: Refer to "Reduction Factors", Technical information.
Repeat accuracy (R)	≤ 10%	≤ 10%
Hysteresis (H) (Differential travel)	1 to 20 % of sensing distance	1 to 20% of sensing distance
Effective operating dist. (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$	$0.9 \times S_n \leq S_u \leq 1.1 \times S_n$
Usable operating dist. (S_u)	$0.8 \times S_r \leq S_u \leq 1.2 \times S_r$	EC 18 $0.9 \times S_r \leq S_u \leq 1.1 \times S_r$ EC 30 $0.8 \times S_r \leq S_u \leq 1.2 \times S_r$
Ambient temperature Operating Storage	-25° to +70°C (-13° to +158°F) -30° to +80°C (-22° to +176°F)	-25° to +70°C (-13° to +158°F) -30° to +80°C (-22° to +176°F)
Degree of protection	IP 67 (Nema 1, 3, 4, 6, 13)	IP 67 (Nema 1, 3, 4, 6, 13)
Housing material	Yellow thermoplastic polyester	Yellow thermoplastic polyester
Connector	M12 x 1 mm plug nylon, black	M18 x 1 mm plug nylon, black
Weight	EC 30 90 g	EC 18 40 g EC 30 90 g
Tightening torque	EC 30 7.5 Nm	EC 18 2.6 Nm EC 30 7.5 Nm

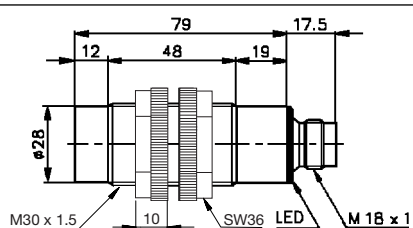
Dimensions



EC 1808 ...P-2

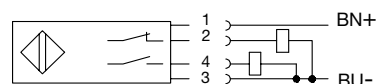


EC 3015-1

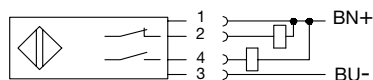


EC 3015-2

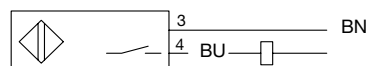
Wiring Diagrams



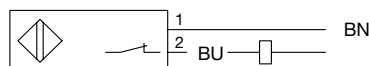
PNAP



NNAP

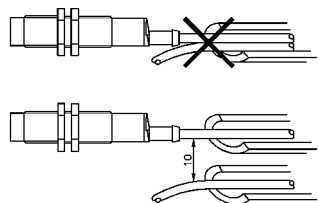
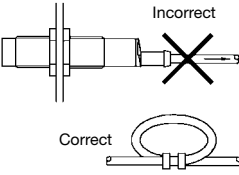
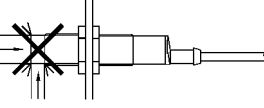
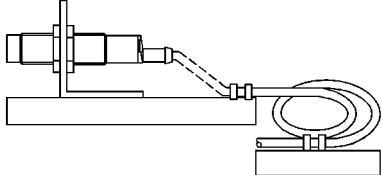


TBOP



TBCP

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>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>
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Accessories

Refer to "Accessories", Technical information.

Power Supplies

Power supplies VDC: > SS 130/140.

Power supplies with amplifier relays: > SV 190.