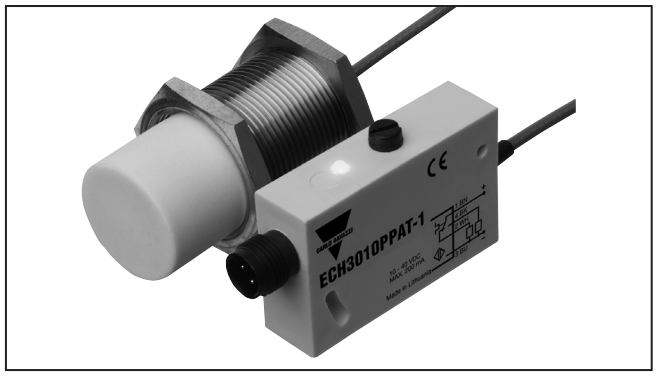
Proximity Sensors Capacitive High Temperature Type ECH, M30



- **For temperature applications, from -196°C to +180°C**
- **Sensor diameter: M30, teflon and stainless steel**
- **Adjustable sensing distance: 4 to 15 mm, factory set for 10 mm**
- **Power supply: 10 to 40 VDC**
- **Output: transistor NPN or PNP, make & break switching**
- **Protection: Reverse polarity, short-circuit, transients**
- **LED-indication for output ON**
- **Separate amplifier and sensor**
- **Plug connection**

CE

Product Description

Capacitive proximity switch for non-flush mounting with NPN or PNP open collector output. The sensor is provided with a separate teflon sensor head in M30 for temperature application within the range of -196°C and +180°C ambient temperature, e.g. plastic pellet/resin detection in plastic injection moulding machines and drying equipment, and detection of hot wax as used in e.g. car manufacturing.

Ordering Key

ECH 3010 PPA T-1

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

Type Selection

Housing diameter	Rated operating dist. (S_n)	Ordering no. NPN Make & break switching	Ordering no. PNP Make & break switching
M30	4 to 15 mm	**ECH 3010 NPAT-1**	**ECH 3010 PPAT-1**

Specifications

Rated operational volt. (U_e) (U_B)	12 to 36 VDC 10 to 40 VDC (ripple incl.)
Ripple	≤ 25%
No-load supply current (I_o)	≤ 12 mA
Rated operational current (I_e)	≤ 200 mA
OFF-state current (I_r)	≤ 100 µA
Voltage drop (U_d)	≤ 2.0 V
Protection	Reverse polarity, short-circuit, transients
Transient voltage	≤ 1 kV/0.5 J (prepared)
Frequency of operating cycles (f)	5 pulses per s
Indication for output ON	LED, yellow
Rated operating dist. (S_n) (adjustable)	4 to 15 mm factory set: 10 mm Reference object: Grounded steel plate. Other objects: Refer to “Reduction Factors”, Technical information.
Assured operating dist. (S_a)	$0 < S_a < 0.81 \times S_n$
Repeat accuracy (R)	<10%
Hysteresis (H) (Differential travel)	1 to 20% of sensing distance
Protection-EMC	
IEC 1000-4-2/EN 61000-4-2	± 4 kV contact discharge ± 8 kV air discharge
IEC 1000-4-3/EN 61000-4-3	> 10 V/m
IEC 1000-4-4/EN 61000-4-4	2 kV
IEC 1000-4-6/EN 61000-4-6	> 10 V_{rms}*
Effective operating dist. (I_r)	$0.9 \times S_n \le S_r \le 1.1 \times S_n$
Usable operating dist. (S_u)	$0.9 \times S_r \le S_u \le 1.1 \times S_r$
Ambient temperature	
Amplifier	
Operating	-25° to +70°C (-13° to +158°F)
Storage	-30° to +80°C (-22° to +176°F)
Sensor	
Operating	-196° to +180°C (-321° to +356°F)
Storage	-196° to +180°C (-321° to +356°F)
Cable	-55° to +200°C(-67° to +392°F)
Degree of protection	IP 67 (Nema 1, 3, 4, 6, 13)
Housing material	
Amplifier	Yellow thermoplastic polyester
Sensor	Teflon
Sensor thread	M30 x 1.5 stainless steel AISI 304

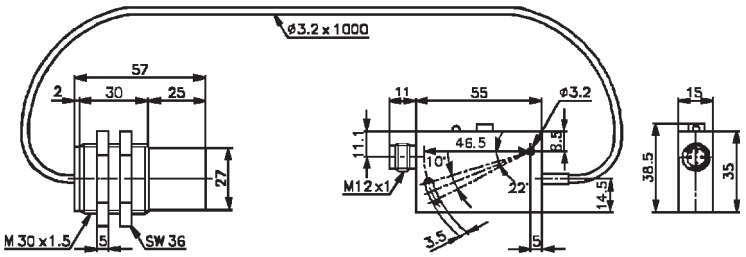
* Not observed around the oscillator frequency: 0.15 - 1 MHz

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Specifications cont.

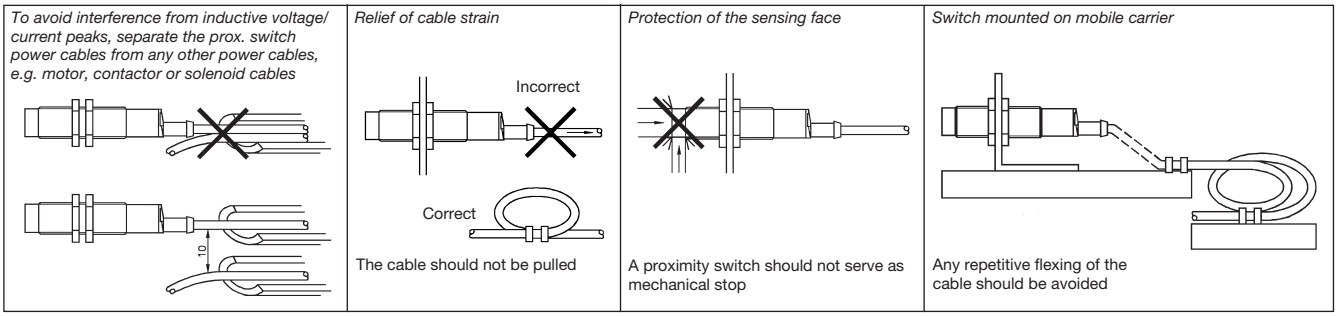
Cable (Sensor)	1 m teflon (shielded)	**Tightening torque** (Sensor)	Max. 80 Nm
Plug (Amplifier)	CON.14NF..	**CE marking**	Yes
Weight			
Amplifier	45 g		
Sensor	90 g		
Nut	18 g		

Dimensions

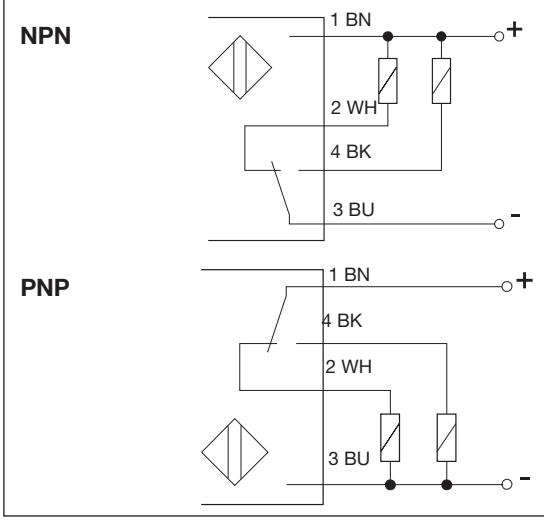


ECH 3010 .PAT-1

Installation Hints



Wiring Diagrams



Accessories

Refer to “Accessories”, Technical information.

Delivery Content

- Proximity switch: ECH 3010...
- 2 nuts
- Screw driver
- Installation instructions
- Packaging: carton box

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