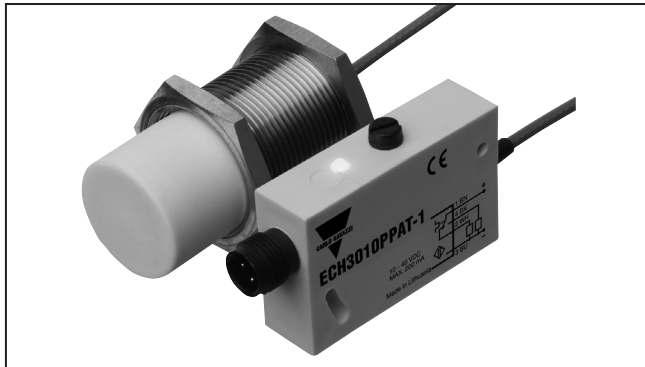


Proximity Sensors Capacitive High Temperature Type ECH, M30



- 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



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 _a) (U _B)	12 to 36 VDC 10 to 40 VDC (ripple incl.)	Hysteresis (H) (Differential travel)	1 to 20% of sensing distance
Ripple	≤ 25%	Protection-EMC IEC 1000-4-2/EN 61000-4-2	± 4 kV contact discharge ± 8 kV air discharge
No-load supply current (I ₀)	≤ 12 mA	IEC 1000-4-3/EN 61000-4-3	> 10 V/m
Rated operational current (I _e)	≤ 200 mA	IEC 1000-4-4/EN 61000-4-4	2 kV
OFF-state current (I _r)	≤ 100 µA	IEC 1000-4-6/EN 61000-4-6	> 10 V _{rms} *
Voltage drop (U _d)	≤ 2.0 V	Effective operating dist. (I _r)	0.9 x S _n ≤ S _r ≤ 1.1 x S _n
Protection	Reverse polarity, short-circuit, transients	Usable operating dist. (S _u)	0.9 x S _r ≤ S _u ≤ 1.1 x S _r
Transient voltage	≤ 1 kV/0.5 J (prepared)	Ambient temperature	
Frequency of operating cycles (f)	5 pulses per s	Amplifier	
Indication for output ON	LED, yellow	Operating	-25° to +70°C (-13° to +158°F)
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.	Storage	-30° to +80°C (-22° to +176°F)
Assured operating dist. (S _a)	0 < S _a < 0.81 x S _n	Sensor	
Repeat accuracy (R)	<10%	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

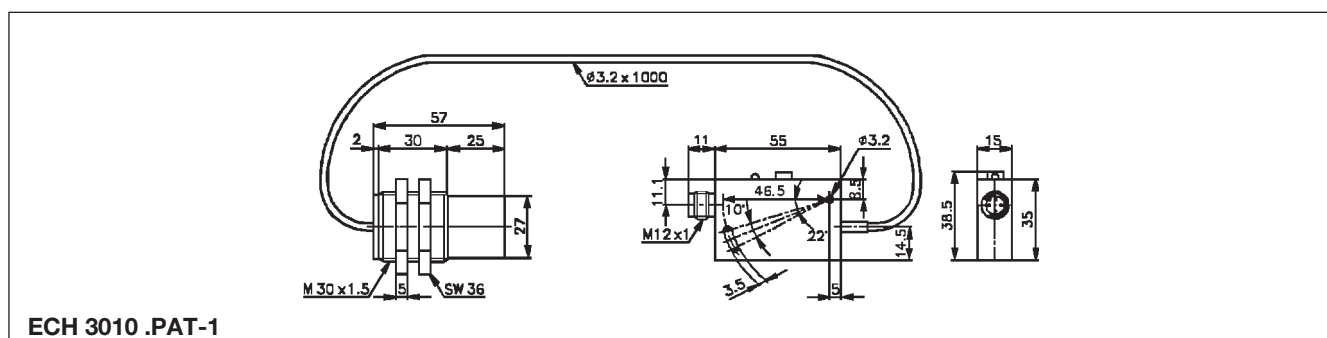
* Not observed around the oscillator frequency: 0.15 - 1 MHz



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		

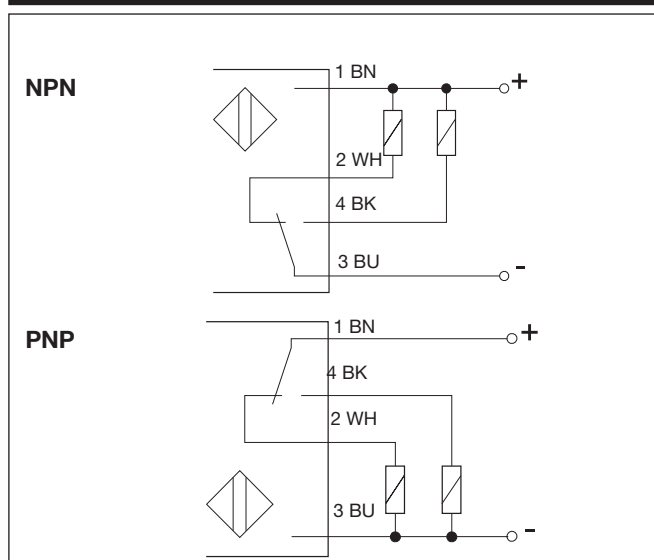
Dimensions



Installation Hints

<p><i>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</i></p>	<p><i>Relief of cable strain</i></p> <p>Incorrect</p> <p>Correct</p> <p>The cable should not be pulled</p>	<p><i>Protection of the sensing face</i></p> <p>A proximity switch should not serve as mechanical stop</p>	<p><i>Switch mounted on mobile carrier</i></p> <p>Any repetitive flexing of the cable should be avoided</p>
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Wiring Diagrams



Accessories

Refer to "Accessories", Technical information.

Delivery Content

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