

Proximity Sensors Capacitive High Temperature Type ECH, M30

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- 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 _e) (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 _o)	≤ 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 _f)	≤ 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	-25° to +70°C (-13° to +158°F)
Indication for output ON	LED, yellow	Operating	-30° to +80°C (-22° to +176°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	-196° to +180°C (-321° to +356°F)
Assured operating dist. (S _a)	0 < S _a < 0.81 x S _n	Sensor	-196° to +180°C (-321° to +356°F)
Repeat accuracy (R)	<10%	Operating	-55° to +200°C (-67° to +392°F)
		Storage	
		Cable	
		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

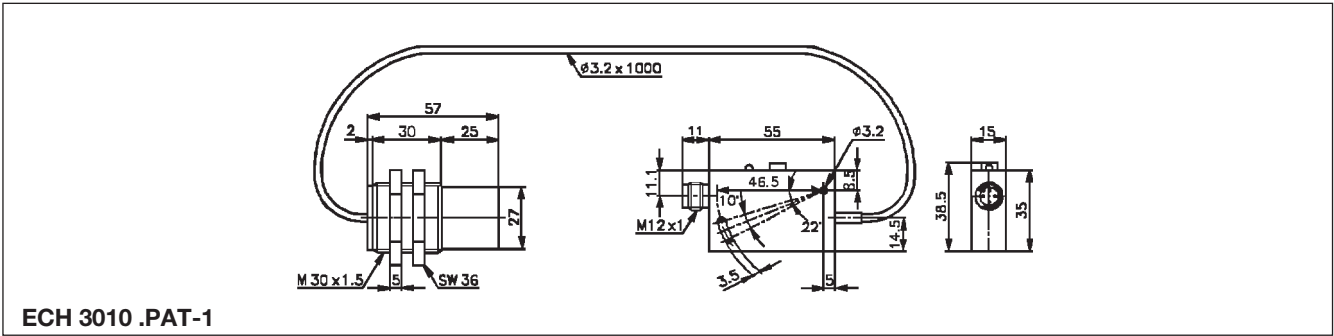
* Not observed around the oscillator frequency: 0.15 - 1 MHz



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

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

Relief of cable strain

Incorrect

Correct

The cable should not be pulled

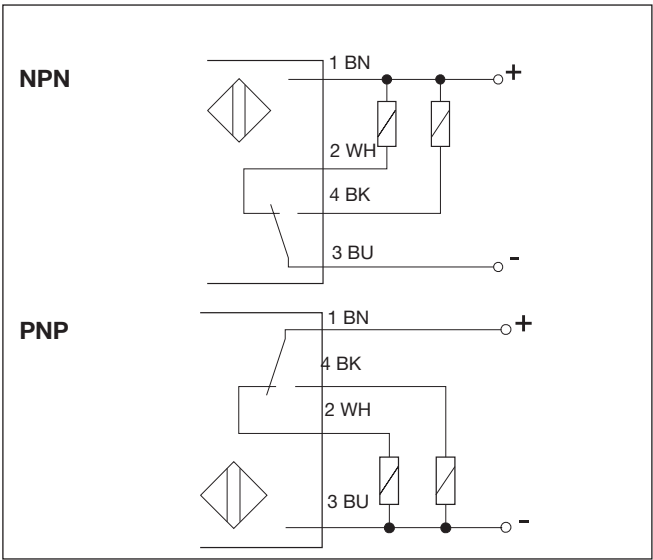
Protection of the sensing face

A proximity switch should not serve as mechanical stop

Switch mounted on mobile carrier

Any repetitive flexing of the cable should be avoided

Wiring Diagrams



Accessories

Refer to “Accessories”, Technical information.

Delivery Content

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