

# TD4PO series

electronic tilt switches



- Omni-directional (horizontal plane)
- up to 2 x trigger angles
- PNP or NPN outputs
- 0.1A continuous output (max. 250mA 10s)
- M12 Male Connector or wire ended
- Replaces TQG Series
- RoHS Compliant



## Specifications

Output		dual PNP or NPN (see Fig. 3 for details)
Output load	DC	150mA continuous, 250mA max. 10 sec (protected against back EMF)
Short circuit protection		Yes (10s max)
Supply voltage	DC	8 - 30V
Current consumption		≤ 25mA
Polarity protection		Yes
Boot up time		<10ms
Housing		Plastic injection moulded (PBTP) (Contact factory for other options)
Dimensions (approx.)	L x W x H	40 x 40 x 25mm
Mounting		M3 screws
Connection		M12 5 pin male connector (others to special order) or PUR cable
Weight		approx. 50g
Ambient temperature		-25°C to +85°C (storage and operating)
Relative humidity		0 - 100%
Sealing	IEC60529	IP67
Shock resistance	max.	10g
Measuring range	detection angles	2 x omni-directional switch points factory programmable
Centering function		pre-centered at 0°, range ±5°
Frequency response	(-3dB)	0 - 0.5Hz
Accuracy		±0.4°
Offset Error		0° (after zeroing / centering)
Resolution		0.09°
Temperature coefficient	typical	±0.04°/K

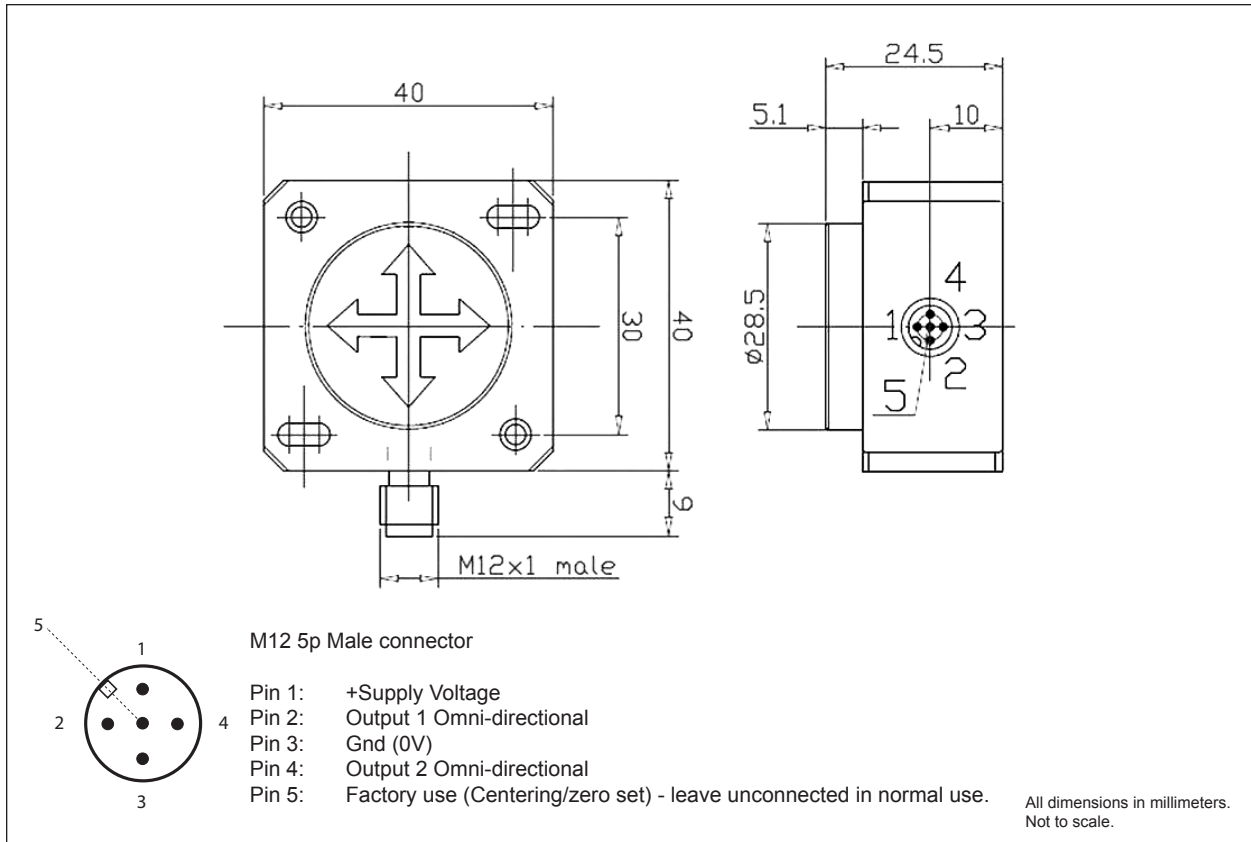
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## electronic tilt switches

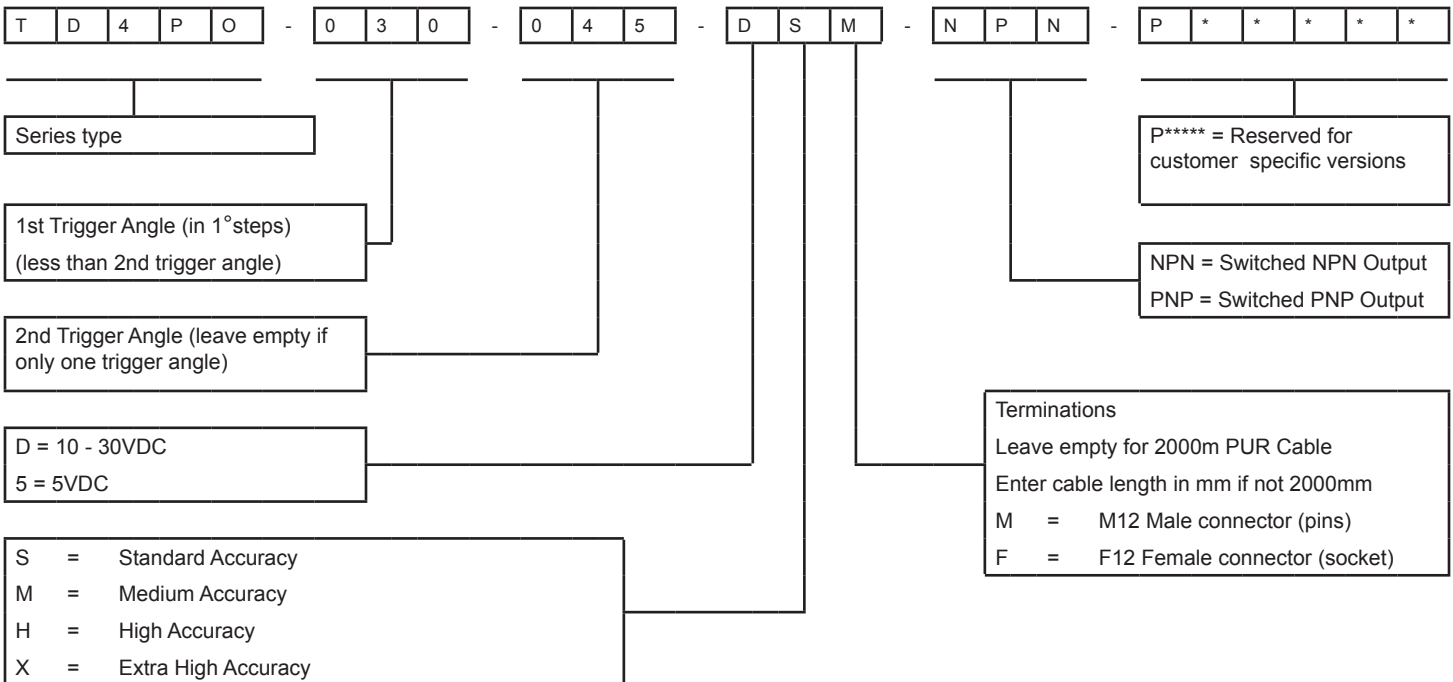


Dimensions and mounting holes

Fig. 1



### Ordering Codes



Mounting Orientation

Fig. 2



The default 0° position is when the switch is mounted horizontally and no acceleration (or tilt) is applied.

When mounting, please ensure sufficient space is left to allow for the cable (when selected) or the M12 connector. Undue stress on the cable and connector should be avoided.

Output Function

Fig. 3

**PNP Output:**

- at 0° ; safe area, outputs 1 & 2: conducting.
- at trigger 1 angle; alert area, output 1: non-conducting
- at trigger 2 angle; unsafe area, outputs 1 & 2: non-conducting

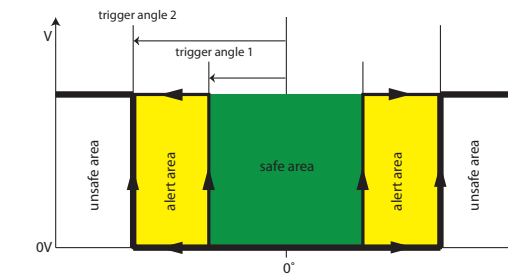
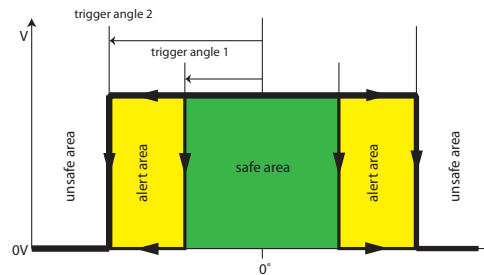
**NPN Output:**

- at 0° ; safe area, outputs 1 & 2: non-conducting.
- at trigger 1 angle; alert area, output 1: conducting.
- at trigger 2 angle; unsafe area, outputs 1 & 2: conducting.

If the switch is unpowered, the outputs are off (non-conducting).

Hysteresis: 0.2° Safe > unsafe delay = 500ms. Unsafe > safe delay = 1000ms.

PNP Out (V<sub>supply</sub>) with external pull down resistor



NPN Out (V<sub>supply</sub>) with external pull up resistor

Centering (zeroing) should be done within 1 minute after power up.  
 After zeroing, there is an extra 1 minute left to repeat the centering.  
 Connect the centering input to ground for more than 0.5s  
 In normal use, the centering input pin should be left unconnected.

This device is not a "safety" device. For full redundancy (ISO13849), two devices should be used in the application.