

The **MHT5100** tilt position sensor is a lightweight, general purpose design, with a compact high-grade polymer case for applications where it is necessary to monitor the angle of inclination during operation.

Available with five different measurement ranges between  $\pm 10^\circ$  and  $\pm 90^\circ$ , they are specified in industrial and automotive control measurement systems, such as road construction equipment, cranes and booms, scissor lifts, agricultural vehicles, container handling and hydraulic lifts.

With an advantage of fully encapsulated electronics, they operate in a variety of fluid conditions and are environmentally protected against the ingress of dust and water to IP68/IP69K.

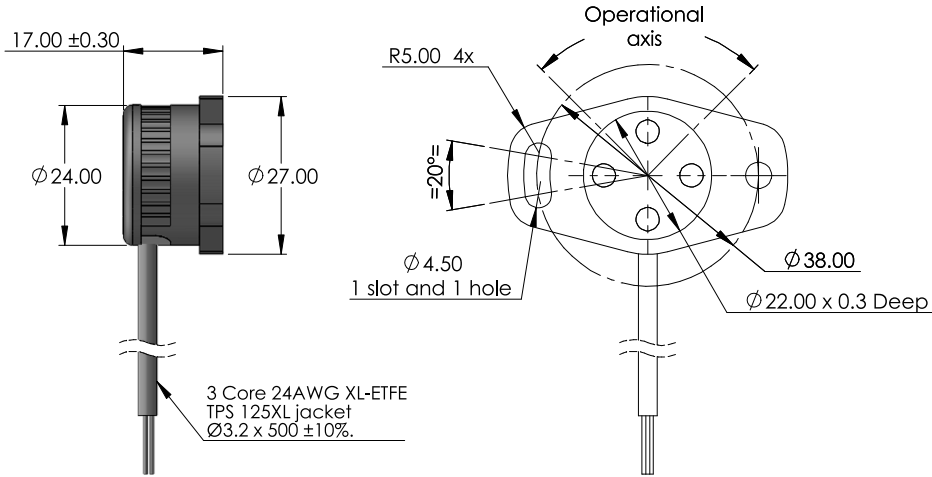
The sensor operates from a 6 to 30VDC unregulated supply and provides an analogue voltage output. The maximum operational temperature is  $125^\circ\text{C}$  ( $257^\circ\text{F}$ ).

### Key features and benefits

- Compact high-grade polymer case
- Measurement ranges  $\pm 10^\circ$ ,  $\pm 20^\circ$ ,  $\pm 30^\circ$ ,  $\pm 60^\circ$  and  $\pm 90^\circ$
- Resolution  $\pm 0.07^\circ$
- Easy set-up slot and hole mounting
- Maximum operating temperature  $125^\circ\text{C}$  ( $257^\circ\text{F}$ )
- Suitable for vibration and fluid applications
- Sensor operates from a 6 to 30 VDC supply
- Sealed to IP68/IP69K



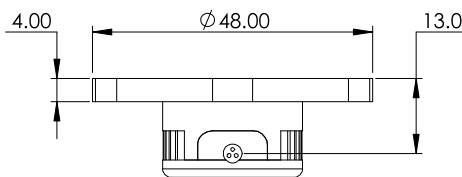
## MHT5100 – Tilt sensor



**Ordering Information**

**MHT5100-XXX**

Total tilt angle in degrees



Input Specification		
Supply voltage (Vs)	6 to 30 unregulated	VDC
Over voltage protection	Up to 60	VDC
Supply current	<20	mA
Reverse polarity protection	Up to -60	VDC
Power on settlement time	<500	ms
Output Specification		
Output type	Analogue voltage	
Voltage output (Vout)	10 - 90% Vs	0.5 - 1.5 VDC
Line regulation	Ratiometric with Vs	<0.01 %FS
Load resistance	>10K	Ohms
Output noise	<2	mV RMS
Performance Specification		
Measurement range	±10, 20, 30, 60, 90 and 120	°
Resolution	0.031	%measurement
Non-Linearity (see note 4)	<±0.5	%FS
Temperature coefficient (Vout)	<±0.011 TBD	%FS/°C
Bandwidth (-3dB)	1.5	Hz
Cross axis sensitivity	4%	Max
General Specification		
Weight (approx.)	20.0	grams
Protection/sealing	IP68 and IP69K	
Operational temperature	-40 to +125	See de-rating graph °C
Storage temperature	-55 to +125 °C	
Shock	1 metre on to concrete (Max 20,000g)	
Materials	Case - GF Polymer Module - Thermoplastic	
Max torque screw setting (M4 with washer)	1.8	Nm

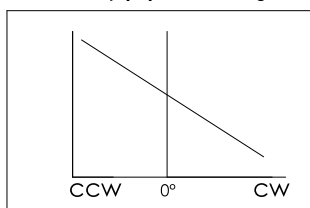
**Notes:**

1. Incorrect wiring may cause internal damage.
2. When cable exit facing down as shown, instrument is mid travel.
3. Do not operate sensor between 5.5V and 8V.
4. Non-linearity is calculated from least squares best fit method over the linear range.
5. General dimension tolerance is ±0.25mm.

Electrical connections (see note 1)

Wire Colour	Function
Red	Supply Voltage (Vs)
White	Output Voltage (Vout)
Black	Ground

Typical output after linearisation when viewed on top (lid) with slot on right



Input voltage de-rating graph

