



## Application Note AN1002

# Definitions of Electrolytic Tilt Sensor Operating Specifications

### Description

The purpose of this document is to define the terms used in the operating specifications of electrolytic tilt sensors.

### Terms and Definitions

<b>Operating Range</b>	The maximum range over which a monotonic output can be observed.
<b>Linear Range</b>	The maximum range over which the deviation of the output from a linear best fit is within a specified percentage value.
<b>Linearity</b>	The maximum deviation from a linear output as a percentage of the measurement range.
<b>Repeatability</b>	The maximum deviation in output when the sensor is tilted and then returned to its original position.
<b>Resolution</b>	The minimum incremental position change that generates a monotonic output.
<b>Symmetry</b>	The maximum deviation in output between two symmetrical positions on either side of null.
<b>Maximum Current at Null</b>	The maximum recommended current through the sensor at null at 23° C which will not cause damage to the sensor.
<b>Null Impedance</b>	The impedance between the outer electrodes when the sensor is in the null position at 23° C.
<b>Operating Temperature</b>	The temperature range over which typical output behavior is observed.
<b>Storage Temperature</b>	The temperature range that will not physically or chemically alter the sensor while it is not in use.
<b>24 Hour Stability</b>	The maximum variation in sensor output over a 24 hour period while the sensor remains stationary at null.
<b>Null Temperature Coefficient</b>	The maximum output change at null per degree of temperature change above or below 23° C.
<b>Scale Temperature Coefficient</b>	A coefficient to compensate for the change in gain caused by variations in temperature from 23° C.
<b>Null Offset</b>	The maximum deviation between the electrical null of the sensor and mechanical null where the sensor is parallel to the surface of the earth.
<b>Cross Axis Error</b>	Maximum deviation of the output on one axis while tilting along the perpendicular axis.
<b>Time Constant</b>	The amount of times it takes the sensor to output a value which is at least 63.2% of the final output.

## Contact Us

If you have any questions, please feel free to contact us by email or phone.

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