



Hybrid Tilt Sensor Pre-amplifiers generate AC bias for electrolytic tilt sensors and produce a DC output current which is a function of the tilt of the device. They require only a single power supply, which can vary over a wide range of voltage.

Electrolytic tilt sensors require AC excitation, without a DC component, to avoid electrolysis and plating effects in the sensor solution. Impellimax Tilt Sensor Pre-amps provide this AC excitation, and they demodulate the AC tilt sensor output signal into a DC signal.

The output signal can be configured as either a current sink or a voltage output, depending on the model selected. Either way, the signal is minimized at one extreme of rotation and maximized when the sensor is tilted fully the other way.

The output magnitude is typically ratiometric; that is, the output signal amplitude of the device increases when the power supply voltage increases. In many instances, this results in a simpler implementation than if the output were not ratiometric. This is because it is not necessary to regulate the supply voltage into the pre-amp, provided that the next stage in the signal chain is differential and can be referenced to some mid-point voltage by a resistive divider. Since the resistive divider is inherently ratiometric, the two effects cancel each other and the need for a voltage regulator is eliminated. As a result, unregulated battery power can give good results.

Alternative electrical and mechanical configurations are easily created, to suit your application requirements. Threshold detectors, linearizers, current-loop outputs, and many other functions can be added to the basic design. Many variations in packaging are also available, including leadless chip carrier (LCC), hermetic hybrid leaded packaging, micro thick-film surface mount, and glop-topped chip-on-board (COB). Contact the factory for details.

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