

# Electrolytic Tilt Sensors

## L-Series



The **L Series of Electrolytic Tilt Sensors** are the sensor of choice for high accuracy/wide angular range measurements. Each handcrafted glass sensor is manufactured to exacting specifications and quality standards. Boasting impressive linear measurement ranges up to +/-80 degrees, the **L Series** also incorporates a specially designed dampening orifice, which attenuates output variations during rapid angular input changes. By combining the proper viscosity electrolyte with this unique feature, superior performance can be achieved in virtually any static or dynamic application. Other highlights include hermetic sealing, compact size, and are available in a variety of housing configurations, in both single and dual axis versions.

### Applications

- Industrial
- Aerospace
- Military
- Photonics
- Geotechnical
- Oceanographic
- Construction



| CHARACTERISTICS   | MODEL          |        |        |        |        |
|---|----------------|--------|--------|--------|--------|
|   | L-210          | L-211U | L211ND | L-212  | L-212T |
| Range (degrees)   | +/- 80         | +/- 60 | +/- 80 | +/- 60 | +/- 45 |
| Output (degrees) *  | 0.1            | 0.1    | 0.1    | 0.1    | 0.1    |
| Resolution (arc seconds)  | 30             | 30     | 30     | 30     | 30     |
| Null Repeatability (degrees) **   | 0.01           | 0.01   | 0.01   | 0.01   | 0.01   |
| Symmetry (1/2 Scale)  | 5              | 5      | 5      | 5      | 5      |
| Linearity @ 1/2 Scale (degrees) **  | 0.4            | 0.4    | 0.4    | 0.4    | 0.4    |
| Linearity @ FULL Scale (degrees) **   | 1              | 1      | 1      | 1      | 1      |
| Cross Coupling (null shift in degrees)  | 0.8            | 0.2    | 0.2    | 0.08   | 0.08   |
| <b>Time constant vs. Temperature (mSec)</b>   |                |        |        |        |        |
| +20 degC  | 20             | 40     | 20     | 100    | 40     |
| +80 degC  | 10             | 20     | 10     | 50     | 20     |
| -54 degC  | 160            | 320    | 160    | 800    | 320    |
| Null Impedance (Kohms) +/-20%   | 22             | 6.0    | 4.7    | 3.2    | 3.0    |
| Electrolyte   | C5             | C4     | C5     | U42    | C5     |
| Vibration Performance (null shift in degrees)<br>4.2g (RNS) 5 to 150 Hz 3.0 (RMS 150 to 500 Hz) | 0.1            | 0.1    | 0.1    | 0.08   | 0.08   |
| Temperature Range (Operating/Storage) ***   | -54 to +124 C° |        |        |        |        |

\* = Output levels derived using MUPI-3 Signal Conditioner.  
 \*\* = Higher accuracy models available. Consult factory for details.  
 \*\*\* = Extended ranges available. Consult factory for details.

**Note: The electrolyte used in these sensors is an Alcohol based fluid, contains no heavy metals, and is non-corrosive. The conductivity and viscosity can be custom tailored to satisfy widely varied applications.**