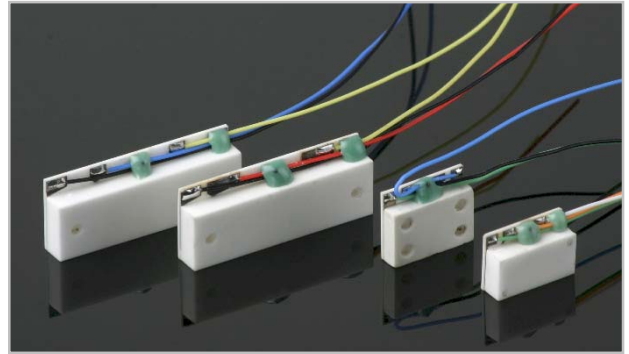


Electrolytic Tilt Sensors – SH50050 Ceramic Series

The **SH 50050 Ceramic Series** of single axis **Electrolytic Tilt Sensors** utilize advanced ceramic materials, bonded together with glass, resulting in a rugged hermetically sealed package. The 96% alumina material body is molded into intricate and precise shapes, that determine range, sensitivity, and dynamic response. The molded body also incorporates a reference surface for easy mounting and even heat transfer for uniform thermal stability. The conductivity and viscosity of the electrolyte can be altered to provide the desired performance and response. These high accuracy, low cost angle sensors are ideally suited for OEM applications that require sub-arc second resolution, with limited space availability.



Applications

- **Construction Lasers** • **Aerospace** • **Industrial** • **Geophysical Tilt Meters** • **Oceanographic**
- **Weapons Aiming** • **Magnetometer Correction** • **Machine Tools** • **Camera Systems**

Specifications

| Characteristic | Model | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| | SH50054-A-003 | SH50055-A-009 | SH50056-A-003 | SH50056-A-008 | SH50058-A-003 |
| Linear Range (arc degrees) *** | +/-3 | +/-0.5 | +/-60 | +/-60 | +/-10 |
| Total Range | +/-6 | +/-1 | +/-80 | +/-80 | +/-15 |
| Output (mV/arc second) | 0.4 | 1.0 | - | - | - |
| Output (mV/arc degree) * | - | - | 160 | 160 | 420 |
| Resolution (arc degrees) * | <.0003 | <.0001 | <.001 | <.001 | <.0005 |
| Null Repeatability (arc degrees) | <.0008 | <.0008 | <.02 | <.02 | <.001 |
| Symmetry @ 1/2 linear scale (%) | <2 | <2 | <2 | <2 | <2 |
| Accuracy @ 1/2 Linear Scale (%FS) ** | <2 | - | <0.8 | <0.8 | <2 |
| Accuracy @ Full Scale (%FS) | <8 | - | <3 | <3 | <5 |
| Null Impedance (Kohms) +/-20% | 12 | 1 | 8 | 8 | 40 |
| Null Stability, 12 hrs. @ 25 deg.C (arc deg's, typ.) | <.0005 | <.0005 | <.005 | <.005 | <.001 |
| Shock Survival (G's, minimum) | 100 | 100 | 100 | 100 | 100 |
| Temperature Range (deg. C) | | | | | |
| Operating | -54 to +125 | | | | |
| Storage | -76 to +150 | | | | |
| Temp. Coefficient of Scale (%/deg.C, typ.) | 0.6 | 0.6 | 0.1 | 0.1 | 0.1 |

* = 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.



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595 OLD WILLETS PATH
HAUPPAUGE NY 11788
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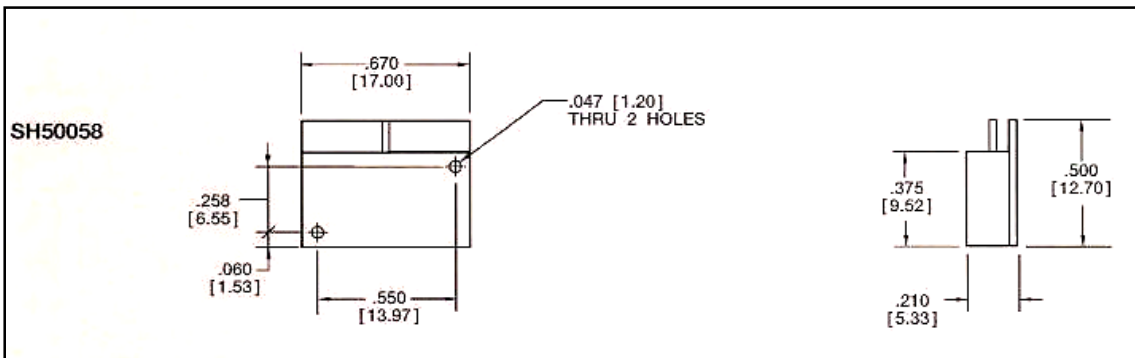
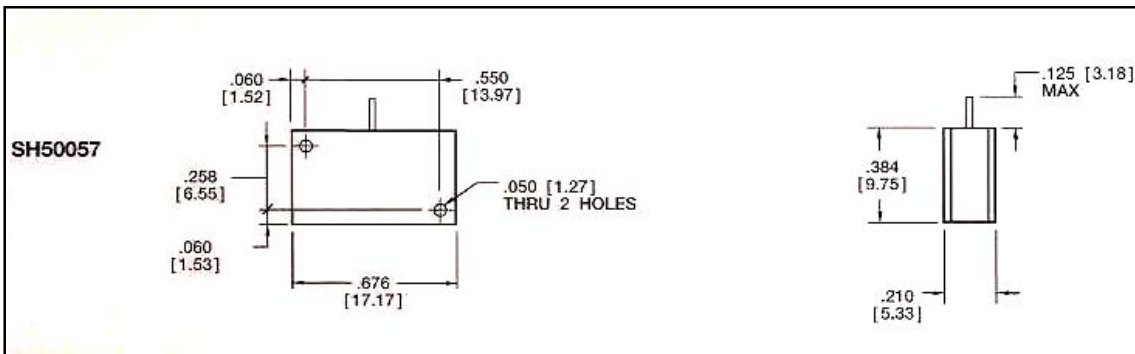
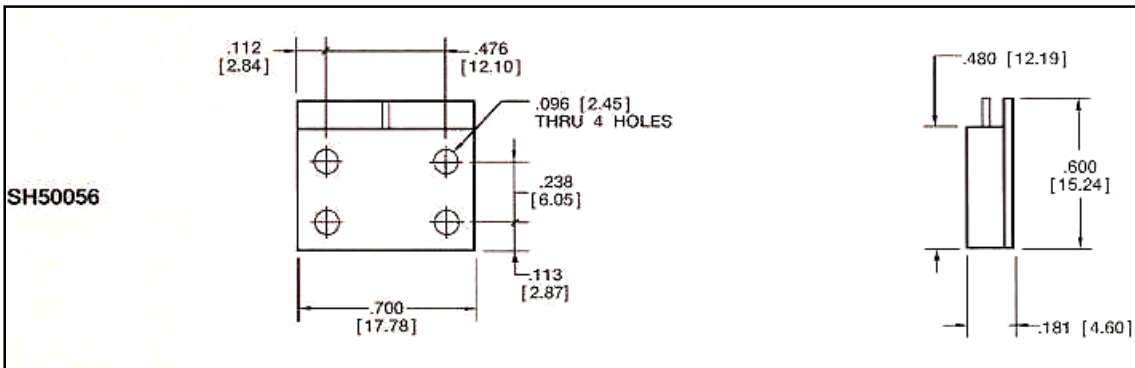
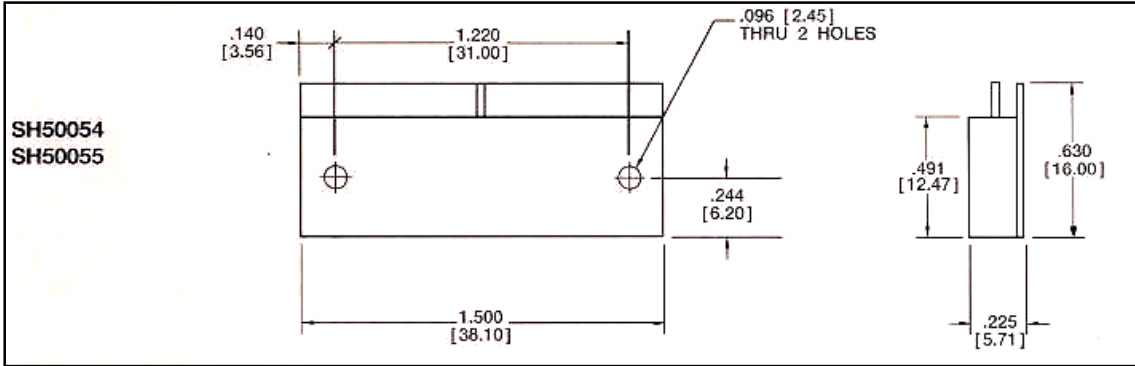
Specifications are subject to change without notice!



Doc.# SDS-116-3106

Electrolytic Tilt Sensors – *SH50050 Ceramic Series*

Dimensions in inches (mm)



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Electrolytic Tilt Sensors – *SH50050 Ceramic Series*

Electrical Connections

| Wire Color | Function | SH50054-A-003 | SH50055-A-009 | SH50056-A-003 | SH50056-A-008 | SH50058-A-003 |
|-------------|----------|---------------|---------------|---------------|---------------|---------------|
| Red | output | • | | • | | |
| Yellow | output | • | • | | | • |
| Blue | output | | • | | • | |
| Green | output | | | • | • | |
| Orange | output | | | | | • |
| Gray | output | | | | | |
| Green | neutral | | | | | • |
| Black | neutral | • | • | • | • | |
| | | | | | | |
| Wire Length | | 6.5" | 18" | 6" | 6" | 12" |
| Wire Size | | 30awg | 30awg | 30awg | 30awg | 30awg |



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