0728-1025-99

"Micro-arc" Wide Angle Electrolytic Tilt Sensor

Description

The **0728-1025-99** "Micro-arc" uses ceramic construction technology. This wide-angle sensor is manufactured to precise tolerances for extreme sensor-to-sensor sensitivity and repeatability. The 0728-1025-99-sensor features linear output to ±75°, good vibration resistance, and superior cross axis properties. Glass sealing technologies allow for operation in a wider temperature range.

- *Angle Range* *± 85°*
- *Resolution* *.2 arc minutes*
- *Null Repeat* *± .05°*

Applications Include

» Off Road and Construction Vehicles
» Medical Instruments
» Navigational and GPS Compensation
» Robotic and Automotive Applications
» Oceanographic Instrumentation

Physical Dimensions

Height	0.850" (21.59mm)
Width	0.750" (19.05mm)
Diameter – mounting hole	0.0625" (1.59mm)
Wire length (min)	6" (152.4mm)

Sensor Test Circuitry

Tests were conducted by exciting the left and right electrodes with an AC signal of 400 Hz and an rms voltage to produce the maximum current at null as per operating specifications. Output readings are taken between the center electrode and the center of the balanced resistors R1 and R2. Tests were conducted at a temperature of +25° C. See sensor test circuitry in figure 3. Output curve is shown in figure 1.

Description of Test Values

AC input voltage = Null Current (max) times Null Impedance (nom)

Eout = Angle of tilt from null (Direction of tilt determined by phase of Eout)

R1 =R2 = ½ Null Impedance (nom)

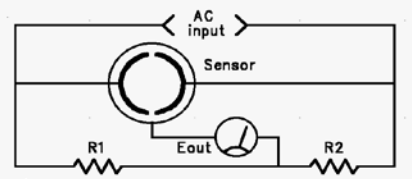


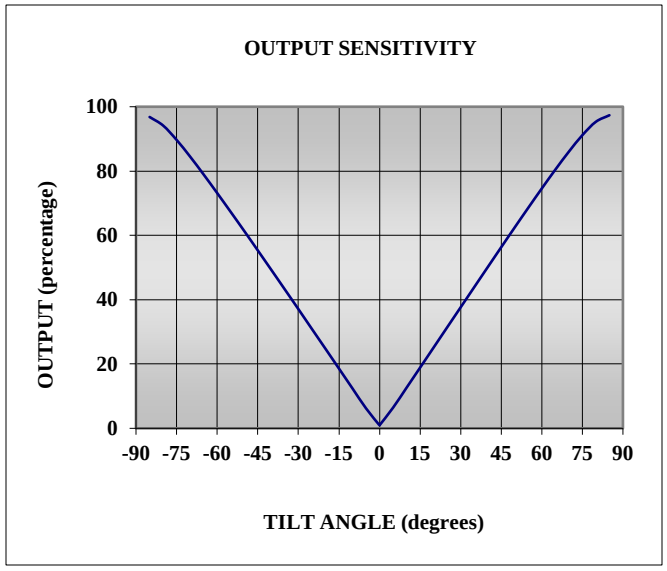
Figure 3

Caution!-Ensure that all test and operating circuits are entirely free of direct current. Direct current will cause level damage and/or instability.

Operating Specifications

Operating Range (max.)	± 85°
Linear Range (10 to 90%)	± 75°
Linearity	±3%
Null Voltage	≤0.025 Volts
Null Current(max.)	0.2 mA (continuous)
Null Impedance (nom)	10.0 K Ohms (25°C)
(measured left to right electrode)see fig. 2	
Repeatability	±.05 °
Resolution	< 0.2 arc minutes
Symmetry (typ)	≤ 5%
Mech. Crosstalk / Deg. (typ)	0.005°
Operating Temperature	-20° C to +100° C
Storage Temperature	-20° C to +100° C
Time Constant (1) [2]	≤ 100 msec
Materials	non-magnetic

Note: Null Impedance of the sensor may be modified to individual requirements upon special order.



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