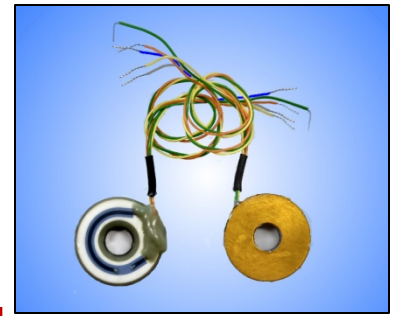




0728-1023-99

"Micro-arc" Wide Angle, Dual Track Electrolytic Tilt Sensor



Description

The **0728-1023-99** "Micro-arc" uses patented construction technology for this wide-angle sensor. The metal housing and ceramic electrode array are manufactured to precise tolerances for extreme sensor-to-sensor sensitivity, repeatability and ruggedness. This sensor features dual concurrent linear outputs, good vibration resistance, and superior cross axis properties. New sealing technologies allow for operation in a wider temperature range.

- Angle Range $\pm 180^\circ$
- Resolution .2 arc minutes
- Null Repeat $\pm .05^\circ$

Applications Include

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

Physical Dimensions

Diameter	0.850" (21.65mm)
Width	0.165" (4.20mm)
Diameter – mounting hole	0.260" (6.62mm)
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 = 1/2 Null Impedance (nom)

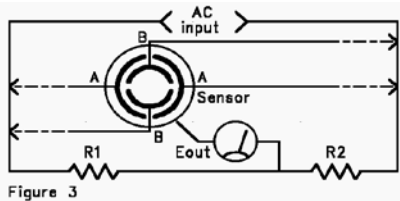


Figure 3

Operating Specifications

Operating Range (max.)	$\pm 180^\circ$
Linear Range (10 to 90%)	$\pm 80^\circ$
Linearity	$\pm 3\%$
Null Voltage	≤ 0.025 Volts
Null Current(max.)	0.2 mA (continuous)
Null Impedance (nom)	
Outer electrodes	10.0 K Ohms (25° C)
Inner electrodes	11.5 K Ohms (25° C)
(measured left to right electrode)see fig. 2	
Repeatability	$\pm .05^\circ$
Resolution	< 0.2 arc minute
Symmetry (typ)	$\leq 5\%$
Mech. Crosstalk / Deg. (typ)	0.005°
Operating Temperature	-20° C to +80° C
Storage Temperature	-20° C to +80° 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.

