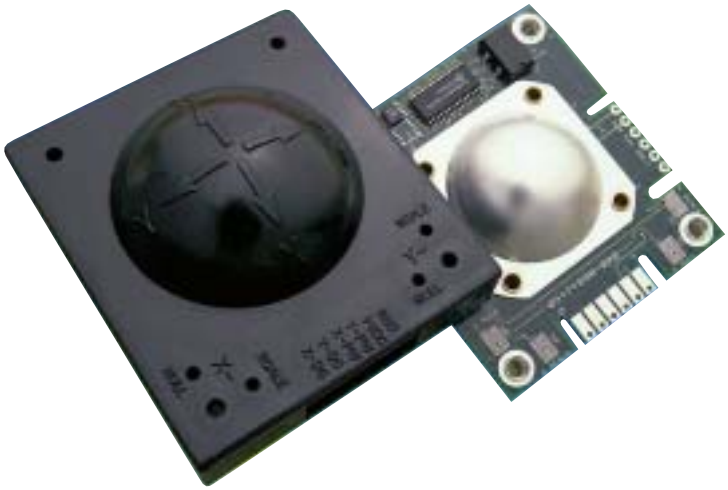
AccuStar® II/DAS 20

Dual Axis Clinometer

AccuStar® II/DAS-20 combines the function of two clinometers in one package. The unique dome shaped design features a capacitance based sensor which produces output signals directly proportional to the relative tilt in two axes.

Designed for high volume applications, AccuStar® II/DAS-20 is priced to compete with much less capable mercury switches and other low cost level sensors.

There are four output connections providing a choice of ratiometric, pulse width modulation (PWM) digital output. A mating connector (sold separately) provides the user with an easy plug-in connection. Null and scale factor are ajustable.



Features

- ❑ ***New microprocessor-based electronics***
- ❑ ***Two clinometers in one package***
- ❑ ***Adaptable design DC powered***
- ❑ ***Ratiometric and PW digital output in one model***
- ❑ ***Trimmable outputs***

Applications

- ❑ ***Platform leveling***
- ❑ ***Measure pitch and roll***
- ❑ ***Tip over protection for manlifts***
- ❑ ***Automatic leveling systems***
- ❑ ***Wheel alignment***

Performance Specifications

Range ..... ±20°
Threshold / Resolution 0.01
Linearity
Null to 10° ..... ±0.2°
10° to 12° ..... ±2.5%
12° to 15° ..... ±3.0%
15 to 20° ..... Monotonic
Null Repeatability ..... ±0.1
Frequency Response (-3db) ..... 0.25 Hz (0.50 Hz available, consult factory)

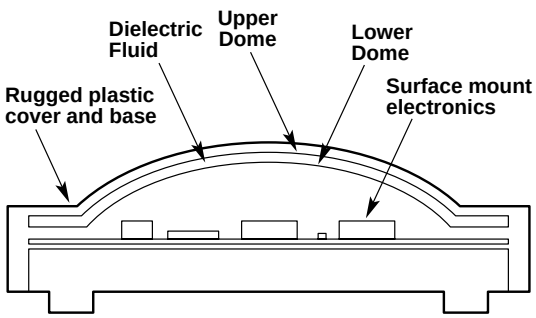
Environmental

Temperature Range
Operating ..... -20° to 65°C
Storage ..... -55° to 65°C
Temperature
Coefficient of Null ..... 0.01°/°C
Temperature Coefficient
of Scale Factor ..... 0.10%/°C

Electrical

Voltage Supply (nominal) 9 VDC
Voltage Supply Range ..... Regulated 5.0 to 15.0 VDC
Current ..... 10 mA
Analog Output
Scale Factor* @ 9 VDC 100 mV/degree ±10%
Load Resistance (min) .. 10K Ohms
Null Output ..... 1/2 supply voltage ±10%
Pulse Width Output
Null ..... 50% (duty cycle)
Scale Factor ..... 0.7% / degree (nominal)
Duty Cycle ..... $t_2 / (t_1 + t_2)$ t_1 and t_2 varies from 0.2 to 0.7 msec
Frequency ..... 100 Hz nominal

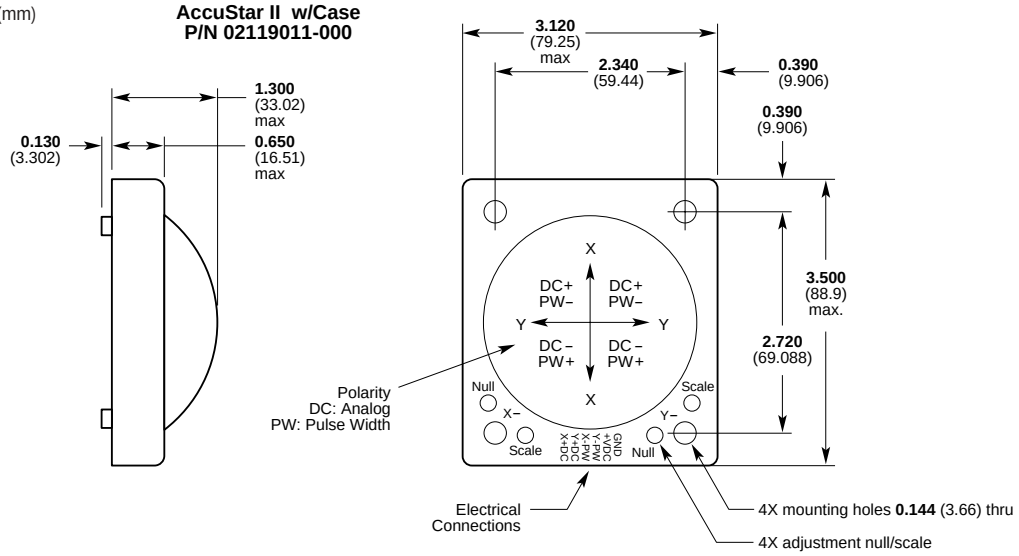
Physically the sensor is composed of two hermetically sealed domes spaced about 1/8" apart. The lower, polyester plastic dome has 4 capacitive plates while the aluminum, upper dome acts as a ground. A fluid with a high dielectric constant is sealed within the dome sandwich, leaving an air bubble space about the size of a quarter. The bubble is centered at level position and will move from one side to the other as the device is tilted.



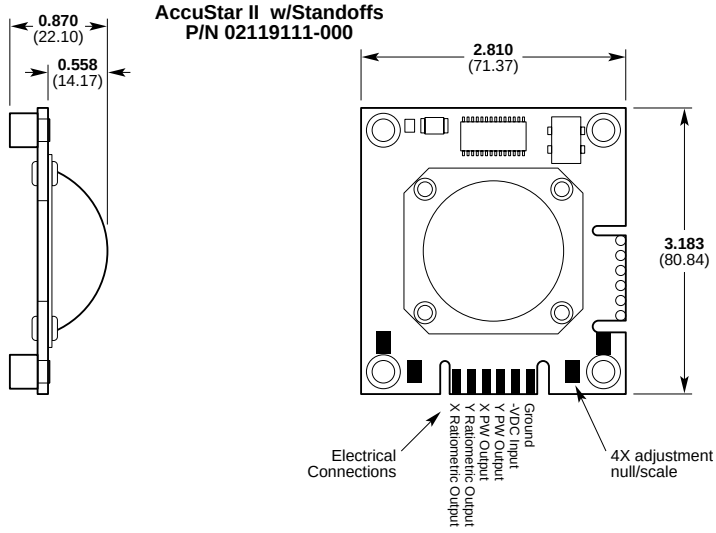
Dimensions

in (mm)

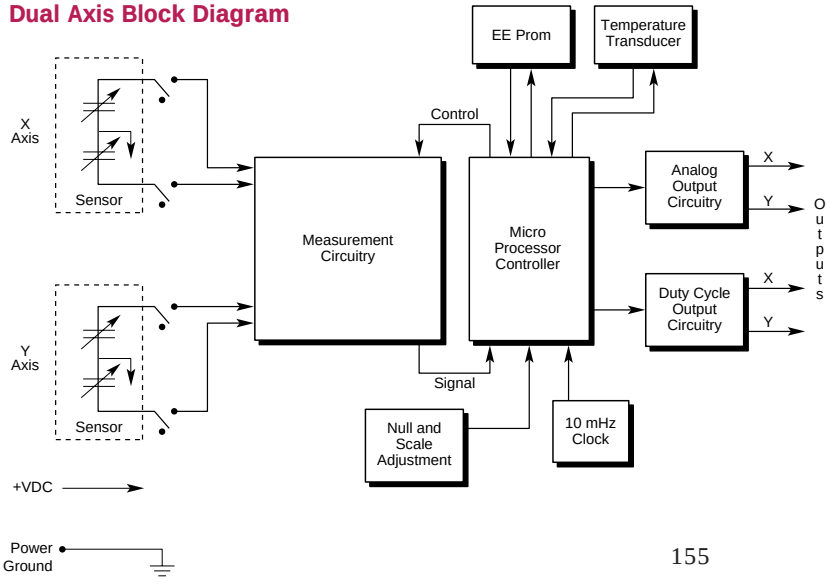
AccuStar II w/Case
P/N 02119011-000



AccuStar II w/Standoffs
P/N 02119111-000



Dual Axis Block Diagram



How to Order

Part Number	Description
02119011-000	Clinometer w/case
02119111-000	Clinometer w/standoffs
09-01-1061A	Mating Molex connector

Note: Connector is recommended for model 02119011-000 (Clinometer w/case).