



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 adjustable.

Features

- 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

■ 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 Voltage 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

■ Performance specifications

Range ±20°

Threshold / Resolution 0.01

Linearity

Null to 10° ±0.2°

10° to 12° ±2.5% of reading

12° to 15° ±3.0% of reading

15 to 20° Monotonic

Null Repeatability ±0.1

Frequency Response (-3db) 0.25 Hz

(0.50 Hz available, consult factory)

Weight

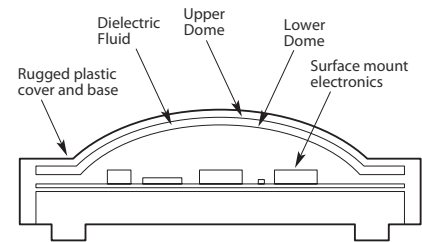
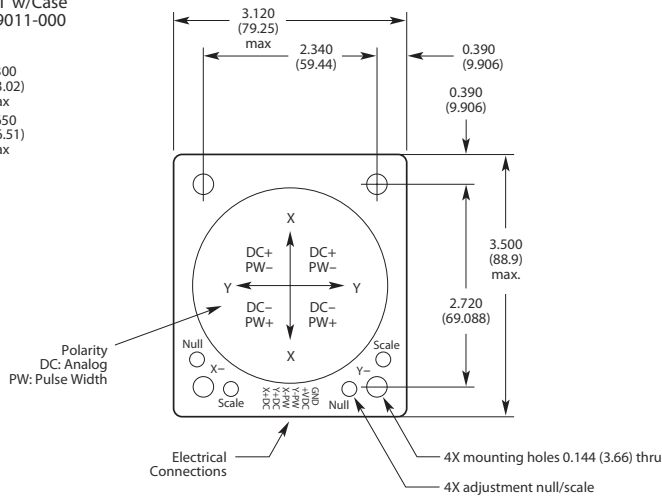
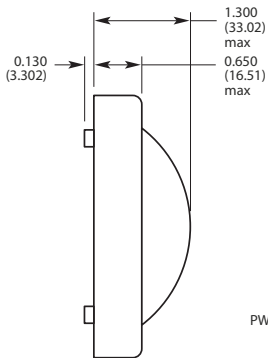
With Case 91 grams

Without Case 31 grams

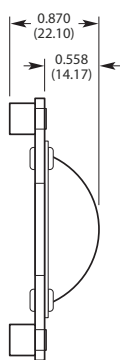
■ Dimensions (mm)

In (mm)

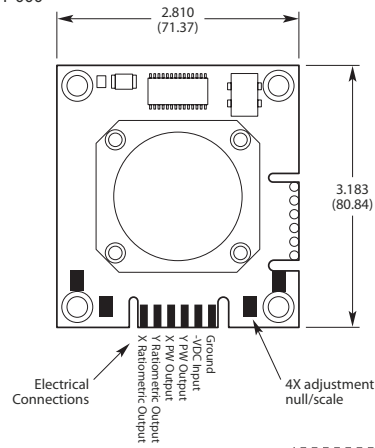
AccuStar II w/Case
P/N 02119011-000



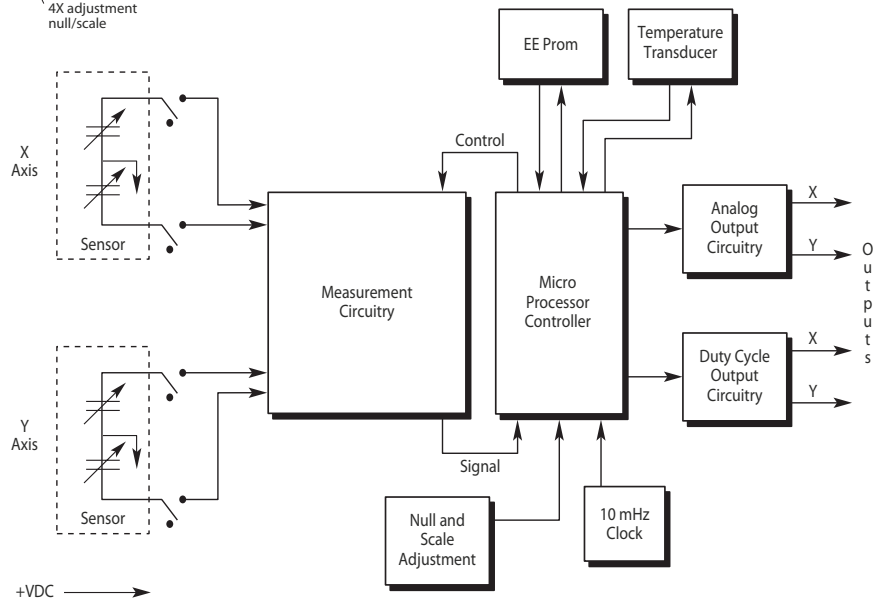
Physically the sensor is composed of two hermetically sealed domes spaced about 1/8" apart. The lower, polyester plastic dome has 4 capacitive plates while the aluminum, upper dome acts as a ground. A fluid with a high dielectric constant is sealed within the dome sandwich, leaving an air bubble space 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.



AccuStar II w/Standoffs
P/N 02119111-000



■ Dual axis block diagram



■ Ordering information

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).

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