

# AccuStar® II/DAS 20

## Dual Axis Clinometer

### DESCRIPTION

**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

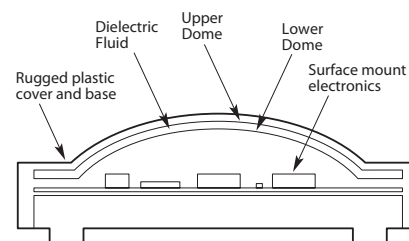
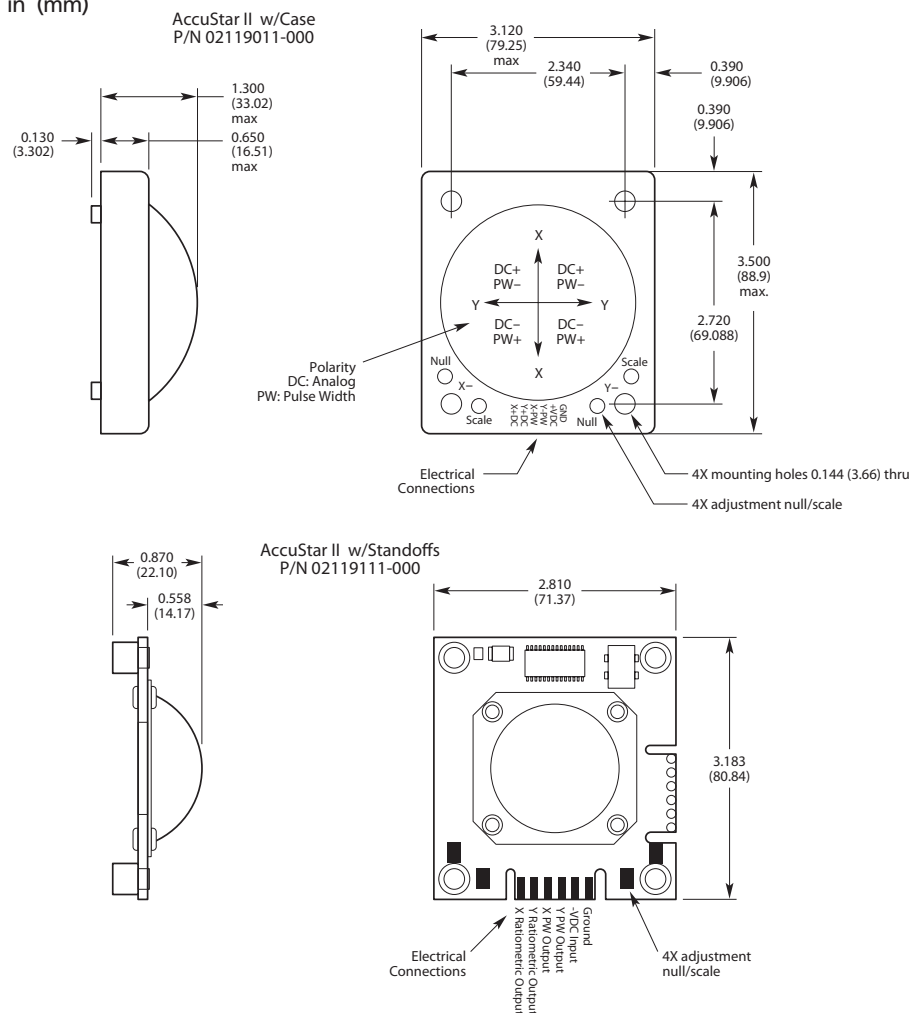
### performance specifications

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

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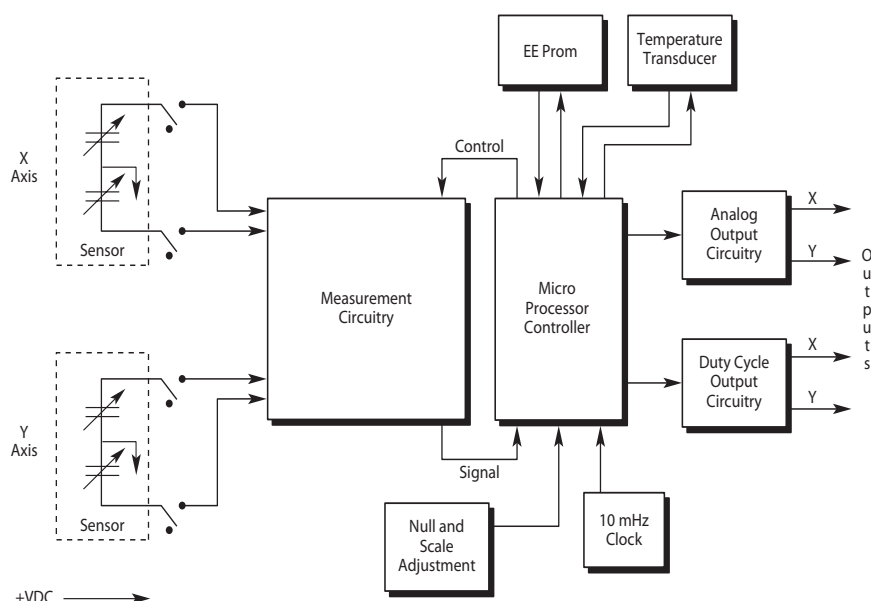
## dimensions

in (mm)



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.

## 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).