



AccuStar™ II / DAS 20 Dual Axis Clinometer

- ▣ Range: $\pm 20^\circ$ ($\pm 10^\circ$ linear)
- ▣ Linearity: 0.2° ($\pm 10^\circ$)
 3% ($\pm 10 \dots \pm 15^\circ$)
above monotonic increasing
- ▣ Output: analog 100 mV/°, PWM: 0.7%/°
- ▣ Supply voltage: 9 VDC



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.

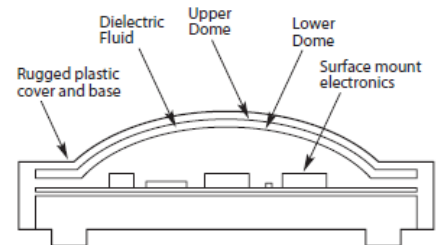
▣ Features

- Microprocessor-Based Electronics
- Two Clinometers In One Package
- Adaptable Design DC Powered
- Ratiometric and PW Digital Output in One Model
- Trimmable Outputs

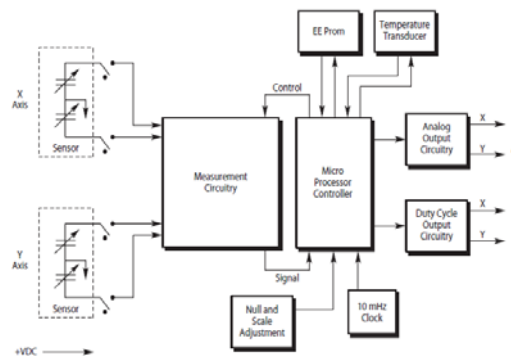
▣ Applications

- Platform Leveling
- Measure Pitch and Roll
- Tip Over Protection for Manlifts
- Automatic Leveling Systems
- Wheel Alignment

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.



Block Diagram:



Specifications

Performance:

Range:	±20°
Threshold / Resolution:	0.01°
Linearity:	
0 ... 10°	±0.2°
10° ... 12°	±2.5 % of reading
12° ... 15°	±3.0 % of reading
15° ... 20°	Monotonic
Null Repeatability:	±0.1°
Frequency Response (-3 dB)	0.25 Hz (0.50 Hz on request)
Weight:	
with case	91 g
without case	31 g

Environmental:

Operating Temperature Range:	-20 ... +65 °C
Storage Temperature Range:	-55 ... +65 °C

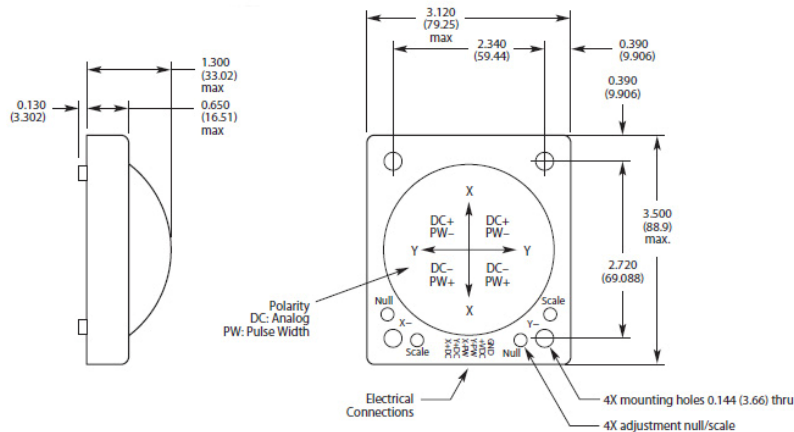
Temperature Coefficient Null:	0.01°/K
Temp. Coefficient Scale Factor:	0.10% /K

Electrical:

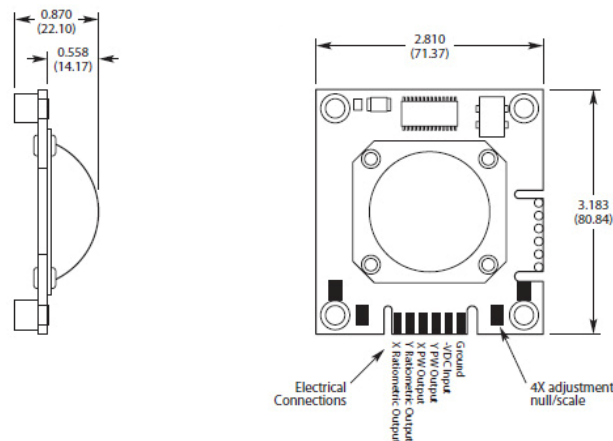
Voltage Supply, nominal:	9 VDC
Voltage Supply Range:	5.0 ... 15.0 VDC regulated
Current:	10 mA
Analog Output:	
Scale factor at 9 VDC	100 mV/° ±10 %
Load Resistance (min)	10 kOhm
Null Voltage	1/2 supply ±10 %
Pulse Width output:	
Tilt 0°	50 % (duty cycle)
Scale Factor, nominal	0.7 %/°
Duty Cycle	$t_2 / (t_1 + t_2)$, t_1 and t_2 varies from 0.2 ... 0.7 ms
Frequency, nominal:	100 Hz

Dimensions

with case:



without case:



All dimensions in "inch", values in brackets in "mm", approx. values. These drawings are for information only and not intended for construction purpose. Please ask for detailed drawings.

Ordering Information

Description	Part Number
Clinometer AccuStar II with case	0211 9011-000
Clinometer AccuStar II without case	0211 9111-000
Mating Molex Connector (Connector is recommended for model with case)	09-01-106A

Due to continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.

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