# Installation and Set-up Instructions

1. Prepare horizontal oriented mounting plane with holes for four #6 screws, spaced as shown.

2. Clean the mounting plane and the mounting surface of the clinometer.

3. Secure clinometer to the mounting plane snugly with four #6 screws.

4. Make electrical connections in accordance with diagram, and apply power.

5. If desired, the null and/or scale factor of each axis may be adjusted as follows. *Caution — performing this operation voids the factory calibration!*

   a. Electrically connect a miniature screwdriver or paper clip to power ground (a test lead with alligator clip on both ends is handy for this operation, but not required).

   b. Sensor is in *normal mode* when powered up. To put the sensor in *calibration mode,* insert the tip of the screwdriver (or paper clip) through the null and scale adjustment holes in the case until it bottoms out on the circuit board, in the following sequence (X null, X scale, Y null, Y scale). For models without a case, simply touch the square pads on the circuit board, which are appropriately marked, in the sequence noted above.

   c. Now with the sensor in *calibration mode,* adjust the *null output of either axis by tapping the screwdriver (or paper clip) on the X null or Y null pad. This will start the null output of the appropriate axis to index up or down. Tap repeatedly, or hold down for a rapid adjustment. To change the direction of the adjustment, tap the scale adjustment pad for the same axis one time.

   * *Output voltage at null (ie; with sensor level) is ½ the supply voltage. For the pulse width output the duty cycle will be 50% (nominal).*

6. To adjust scale factor (output level), place the appropriate axis of the sensor at angle between +/-15 degrees. Repeat the adjustment process above using the scale adjustment holes or pads. To change the direction of adjustment, tap the null adjustment pad for the same axis one time.

   *Note – check null output after making scale adjustments! Adjust if necessary, and re-check scale factor.*

7. Repeat entire procedure for opposite axis.

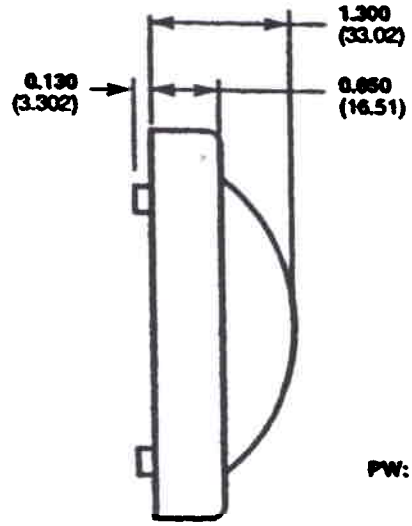
8. Remove power when completed. This stores the new calibration information.

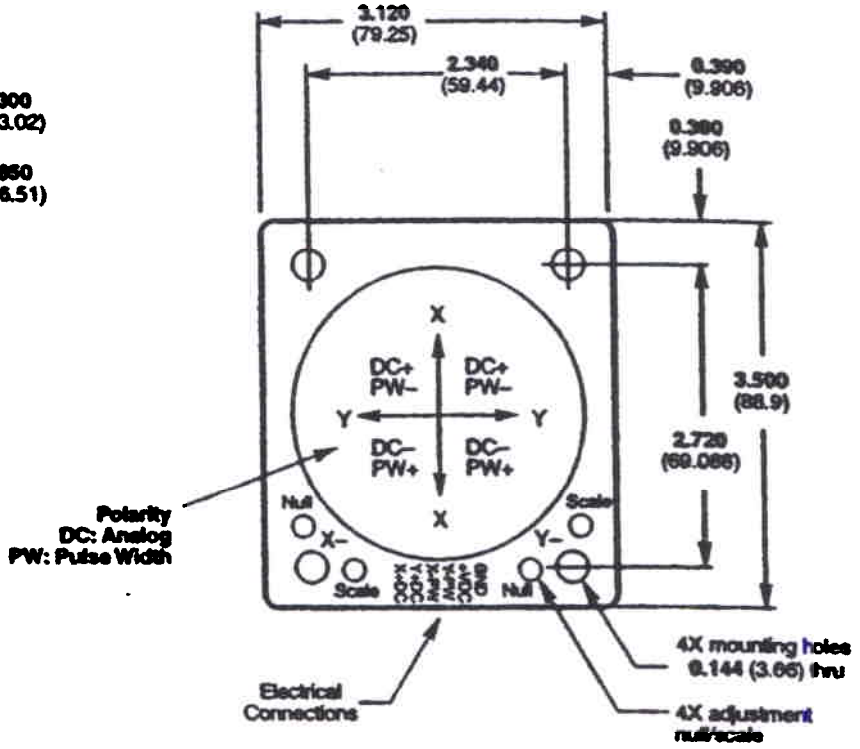
9. Reapply power, and sensor is ready for operation.

# PHYSICAL DIMENSIONS

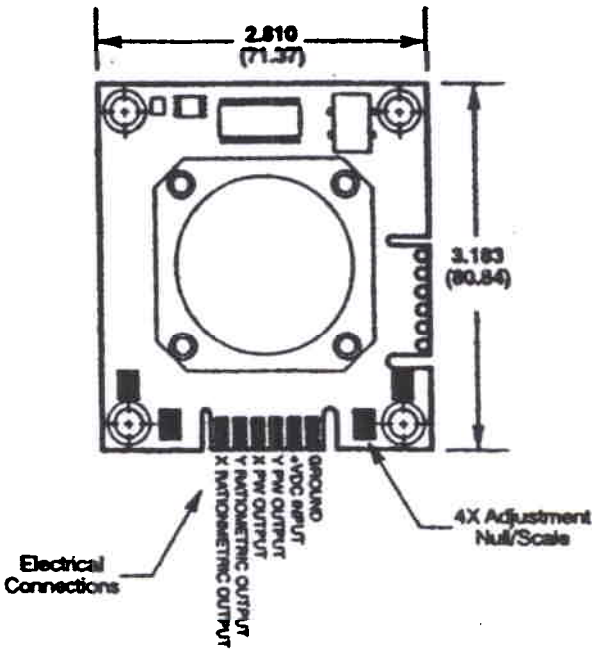
## 'WITH CASE' P/N 02119011-000

**Dimensions** in (mm)
(Nominal)




## 'WITH STANDOFFS' P/N 02119111-000

# 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)** | 0.25Hz (nominal) |

## 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** | +5.0 to +15.0 VDC (Regulated) |
| **Current** | 10mA |
| **Analog Output** | |
| **Scale Factor @ 9 VDC** | 100mV/degree (±10%) |
| **Load Resistance (min)** | 10K Ohms |
| **Null Output** | 1/2 supply voltage (±10%) |
| **Pulse Width Output** | |
| **Null** | 50% |
| **Scale Factor** | 0.7% / degree (nominal) |
| **Duty Cycle** | $t_2/(t_1+t_2)$ $t_1$ and $t_2$ varies from 2.0 to 7.0 msec |
| **Frequency** | 100 Hz nominal |

Note: All specifications are subject to change without notice!

Booklet #09110034-000

# Distribuidor

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