

# HIGH-ACCURACY BAROMETER

## FEATURES:

- **High Accuracy**
- **Excellent Long-Term Stability**
- **Low Power Consumption**
- **Instant Warm-Up**
- **Fast Response**

Climatronics High-Accuracy Barometer (P/N 102347) is an ultra-high accuracy barometric pressure transducer mounted in a weatherproof enclosure. It is a form, fit, and function replacement for our previous barometers. Long term reliability and stability in demanding application environments are achieved by the combination of ceramic capacitive sensor and a proprietary custom IC analog circuit.

The fundamentally simple design and thermally stable glass fused ceramic sensing capsule is coupled with the sophisticated capacitance charge-balance type IC circuit where accurate signal conditioning and environmental compensation is performed. Standard accuracy is 0.05% with 0.01% non-repeatability and 0.1%/100°F thermal performance. And even tighter specs are available!

The barometric pressure transducer adheres to strict quality standards including MIL-I-45208A and ANSI-Z540-1. The calibration of the transducer is NIST traceable.

The High-Accuracy Barometer can be provided with a range of either 500 – 1100 hPa or 800 – 1100 hPa.



## SPECIFICATIONS

### Performance Data

Accuracy :	<±0.05% FS
Non-Linearity	End to point method: ±0.05% FS Best fit straight line method: ±0.03% FS
Hysteresis:	0.01% FS
Non-Repeatability:	0.01% FS
Resolution:	Infinite, limited only by output noise level (0.005% FS)
Thermal Effect **	Compensated Range: 30° to 120°F (-1° to 49°C)
Thermal Zero Shift	Barometric: <±0.2% FS/100°F (±0.18% FS/50°C) Other Ranges: <±0.1% FS/100°F (±0.09% FS/50°C)
Thermal Coefficient Sensitivity:	<±0.1% FS/100°F (±0.09% FS/50°C)
Long Term Stability:	<±0.1% FS over 6 months at 70±F
Static Acceleration Effect:	<±0.01% FS/G
Warm-up:	<±0.04% FS shift after turn on for 20 minutes at constant temperature & pressure.
Time Constant:	<10 ms to reach 90% final output with step function pressure input.

### Environmental Data

Operating Temperature:	0° to 175°F (-18° to 80°C)
Storage Temperature:	-65° to 250°F (-54° to 120°)
Vibration:	2 g from 5Hz to 500Hz continuous any axis
Acceleration:	10 g maximum
Shock:	50 g operating, 1/2 sine 10 ms
Pressure fitting:	1/8" -27 NPT internal
Electrical connection:	2 ft. multiconductor cable
Weight (approx.)	9 ounces (0.25 Kg)

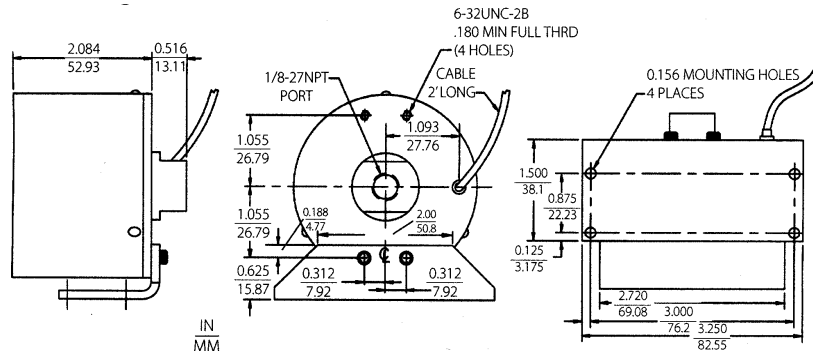
### Electrical Data

Full Scale Output: **	5.00 VDC, internally adjustable, factory set within ±5 mV
Zero Pressure Output:	0 mV, internally adjustable, factory set within ±5 mV
Excitation Power:	Nominal 24 VDC, 8 mA (0.2 watts), 20 to 32 VDC. Internal regulation minimizes effect of excitation variation, 0.005%
Electrical Circuit: ***	Four-terminal circuit for units with 0 to 5 VDC output
Isolation:	The insulation resistance between all signal leads tied together and case ground is 100 megohms minimum at 25 VDC
Output Impedance	< 5 ohms (effective)
Output Noise	< 200 microvolts RMS (0 Hz to 100 Hz).

\* Accuracy as RSS of non-linearity, hysteresis, and non-repeatability. Higher accuracy units available on special order.

\*\* Calibrated into 50K ohm load, operable into loads of 5000 ohms or greater. You can attenuate output to match your data system.

\*\*\* For best performance, either negative excitation or negative output should be connected to case. Unit calibrated at the factory with negative excitation connected to case.



**Climatronics Corporation**  
140 Wilbur Place  
Bohemia, NY 11716-2404

TEL: 631-567-7300  
FAX: 631-567-7585  
E-Mail: sales@climatronics.com