BP4115 Barometric Pressure Sensor

The Audon Electronics barometric pressure sensor combine a wide pressure measurement range, wide operating temperature range, high accuracy, low power use, and low cost into a small, rugged DIN rail mount package. These sensors are ideal for continuous barometric pressure measurement on weather stations and providing routine pressure measurements for correction of sensor outputs that are sensitive to barometric pressure fluctuations.

- Less than 1.5 % error over a pressure range of 15 to 115 kPa (4.43 to 33.96 in Hg)
- Operates over a wide temperature range, -40℃ to 125° C (-40 to 257 ℉).
- High voltage output (0 to 5 V) linearly proportional to barometric pressure.
- Low power use, less than 50 mW.
- Simple, compact, rugged design

Converting mV output to kPA

The relationship between the milliVolt output and pressure is linear. The conversion factor is 0.0218 kiloPascal per mV. The offset varies somewhat from sensor to sensor and is approximately 11.4 kPa. The range of the offset value is 10.8-12.0. By adjusting this value slightly the measured pressure can be matched to local reported pressure.

Normalizing to Sea Level

Before it is reported, atmospheric pressure is often normalized to sea level. The equation below can be used to find the difference in barometric pressure at a given elevation (E; in meters) and the equivalent pressure at sea level. That value (dP) is then added to the offset in the measurement instruction.

$$dP = 101.325\left\{1-\left(1-\frac{E}{44307.69231}\right)^{5.25328}\right\}$$

Specifications

- Pressure Range: 15 to 115kPa
- Output Voltage: 0.2 to 4.8V via screw terminals
- Power Supply: Typically 5V (4.85V to 5.35V) @ 7mA via screw terminals
- Operating Temperature: -40℃ to +125℃
- Accuracy: ±1.5%
- Sensitivity: 46mV/kPa
- Response Time: 1ms
- Output source current a full scale: 0.1mA
- Warm-up Time: 20mS
- Dimensions: 90mm x 57mm x 16mm
- Weight: 37g

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