AMSYS

SMi PRESSURE SENSORS

AutoZero Technique

Supporting customer success in Automotive,
Medical and Industrial markets since 1991

06 November 2013

Agenda

- AutoZero Technique
- AutoZero Process Guide
  - Step-By-Step Process
  - AutoZero Graphic Illustration

AutoZero Technique

- Used to compensate for temperature shifts over 5 to 10^{o} C, stresses due to package mounting, and part-to-part variation.

- Take Zero Pressure reading, V_{O1}, at Temperature T_1

- Take new Pressure reading, V_{P1} and subtract V_{O1}, to obtain V_P reading. Use sensitivity from initial calibration to derive the Pressure Value.

AutoZero Process Guide

STEP 1: **Environmental Conditions**: Pressure = 0 PSI @ Temperature, T1

- ❑ Take pressure measurement, P01
- ❑ Store P01 as new offset value

STEP 2: **Environmental Conditions:** Pressure = A PSI @ Temperature, T1

- ❑ Take pressure measurement, PA1
- ❑ New Pressure Value, PA = PA1 – P01

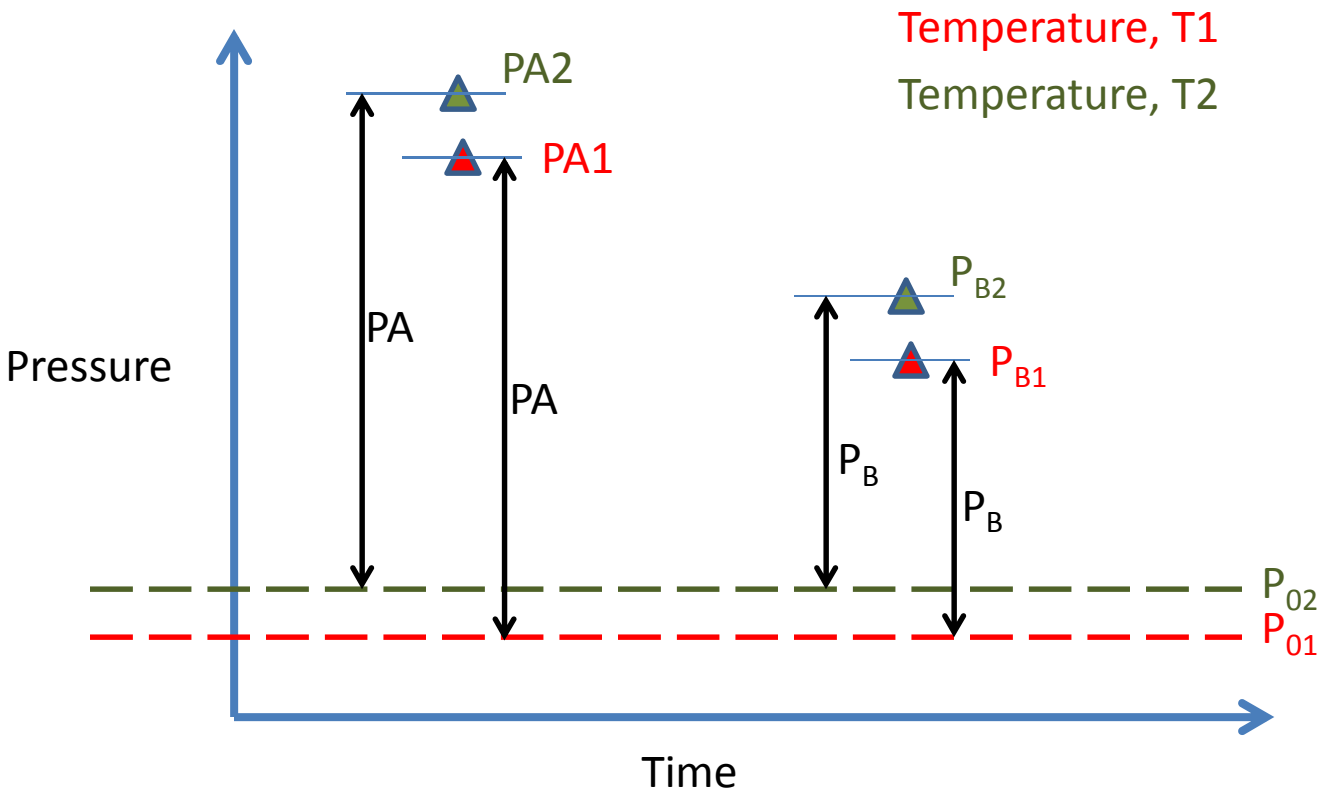
STEP 3: **Environmental Conditions:** Pressure = B PSI @ Temperature, T1

- ❑ Take pressure measurement, PB1
- ❑ New Pressure Value, PB = PB1 – P01

STEP 3: **Repeat Step 1 when possible as noted below:**

- ❑ If T1 increases or decreases more than 5oC
- ❑ When Pressure at sensor equals 0 PSI
  - For example, when system is at power up or power down.

AutoZero Process Guide



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