

- General Info
- Temperature
- Pressure
- Flow
- Speed
- Weighing
- Process



Absolute Process Instruments, Inc.
 Manufacturer of Quality Signal Conditioners Transmitters & Isolators

Application Notes

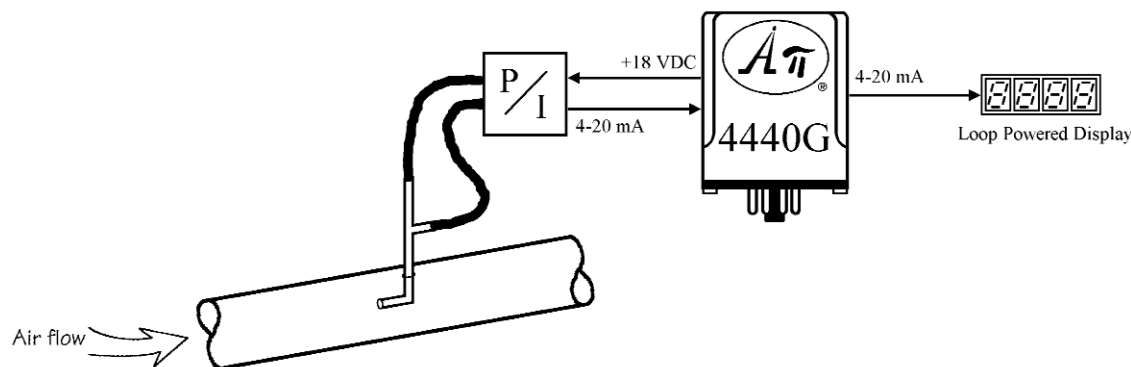
Air Flow Measurement

PROBLEM

Measure an air velocity value, convert it and display it as an air flow value.

SOLUTION

In accordance with Bernoulli's equation the velocity of a fluid stream is proportional to the square root of the difference in pressure (DP) between the direct impact and stagnation pressures as measured with a pitot tube. An **API 4440 G** Isolated DC to DC Transmitter with Square Root Extraction module performs the square root function on the 4-20 mA signal obtained from the P/I device and produces an interpolated 4-20 mA output signal of velocity. The **API 4440 G** provides power for the P/I device from its standard built-in +18 VDC loop excitation supply and its output loop is capable of driving up to a 1000 ohm load.



Since Flow = Velocity x Area, the cross sectional area of the pipe will determine the range of the scaling on the loop powered display. This allows the velocity value to be displayed as a flow rate. The optical isolation of the module protects against unwanted ground loops and electrical noise.



FREE APPLICATION ASSISTANCE
 Call  **Customer Service**
800-942-0315

Did You Know...?

Api plug-in and DIN style modules have a LIFE-TIME WARRANTY.