

# APPLICATION NEWSLETTER

## POSITIVE DISPLACEMENT METER TESTING

Positive displacement meters are used by gas utilities to bill large volume customers such as commercial, large residential, and small industrial accounts. Rotating vanes or impellers in the meters trap a volume of gas entering the meters. The vanes turn and deliver the fixed volume of gas to the exhaust side of the meter. The gas must be able to flow through the meters with a minimum amount of resistance in order to be metered accurately. The resistance to flow is measured as a differential pressure (between 0.1" H<sub>2</sub>O and 2.0" H<sub>2</sub>O) from the inlet to the outlet of the meters.

Contamination of the rotating vanes, measuring chamber, gears, or bearings will increase the resistance to rotation and

significantly reduce the accuracy of the metering accuracy. Resistance to rotation also increases the differential pressure across the meter. This can be measured to determine if the meter needs to be repaired.

Due to the rotation of the vanes, pulsating pressure makes this a difficult measurement to determine. Analog gauges bounce and have poor resolution. They are not adequate for test purposes. A digital manometer eliminates these problems. Pulsation is dampened by averaging pressure measurements at rates that can be set from 0.1 seconds up to 25 seconds depending on the needs of the application. Resolution to 0.01" H<sub>2</sub>O takes care of any remaining reading errors.

