CANADA PIPELINE ACCESSORIES

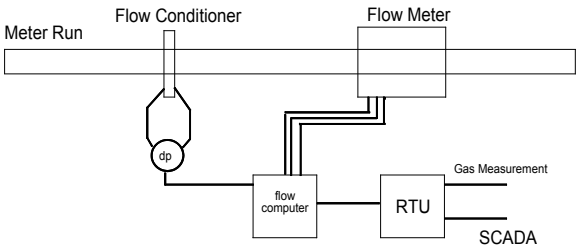
Tech Note: Using a CPA Flow Conditioner for Secondary Measurement

There is a reduction in measurement uncertainty of the metering system when a secondary meter is employed. Although, costs of the secondary meter heavily affect the choice to install one. Conveniently, the CPA 50E can also be utilized as a secondary meter when it is installed for flow conditioning.

The flow conditioner or the flanges holding it cab be tapped for differential pressure signals.

The differential pressure signals are sent to a differential pressure transducer and then to an open port of the flow computer. The flow computer carries out a simple orifice plate calculation. This calculation can then be used for a primary to secondary flow measurement comparison.

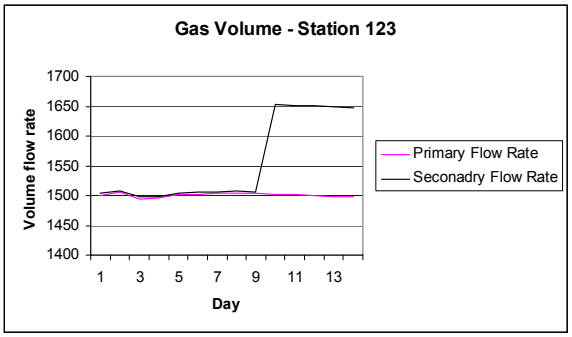
The differential pressure signals follow a square root relationship to flow rate. Calibrations at flow labs have shown the signal to be extremely linear and to deviate from reference meters throughout the flow range by no more than $\pm$ 0.3 percent.



The flow rate comparison can be set up utilizing:

$$\frac{A-B}{A} \times 100 = \text{Primary to Secondary Flow Rate}$$

The parameters are then set to alarm when the difference between them exceeds operationally defined values. The comparison could look something like this:



On day nine of the month, something has gone wrong with the measurement and a measurement technician should investigate.