



GAS SUPPLIER IMPROVES BILLING ACCURACY WITH INTEGRAL ORIFICE DIFFERENTIAL PRESSURE FLOW METER

Customer

A major supplier of gases and gas handling equipment

Application

Gas flow metering

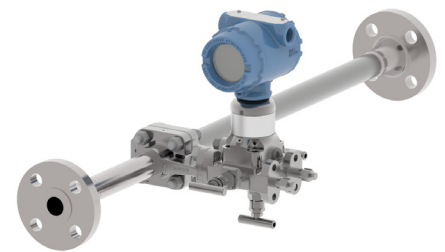
Challenge

Asia's extensive industrial base requires gases to be supplied from bulk stations or from gas processing equipment on site. Such gases are critical to the operation of the gas supplier's customers and many need accurate flow meters to control the process and to meter the amount of gas they use.

In this industry, the predominant concern is accuracy of billing. Other concerns include reliability, safety, and uptime. The gas supplier had used many different flow metering technologies in the past without complete satisfaction, including but not limited to thermal mass flow meters, turbine meters, and rotameters. Gas flow metering is difficult due to small line size applications, which are prone to flow errors caused by pipe internal diameter (ID) uncertainty and orifice plate misalignment. Also, varying pressures and temperatures coupled with low flow rates provide an added challenge. The pressure and temperature variations affect all of the flow equation parameters: discharge coefficient, velocity of approach factor, gas expansion factor, bore diameter, differential pressure, and density. Rosemount™ 3051S MultiVariable™ Transmitter provides real time, fully compensated mass flow measurement, reducing sources of traditional DP flow uncertainty.

Results

- Improved billing accuracy
- Improved reliability, safety, and uptime
- Simplified installation and reduced cost



Rosemount 3051 SFP Integral Orifice Flow Meter

GAS SUPPLIER IMPROVES BILLING ACCURACY WITH INTEGRAL ORIFICE DIFFERENTIAL PRESSURE FLOW METER

Solution

Emerson engineers provided the gas supplier with a highly reliable solution involving orifice plates with the Rosemount 3051SFP Integral Orifice Flow Meter. The 3051SFP combines the Rosemount 1195 Integral Orifice Plate and the Rosemount 3051S MultiVariable Mass Flow Transmitter, providing a completely assembled, ready-to-install flow meter, reducing cost and simplifying installation.

Orifice technology is proven, with well-established standards that suppliers and customers can agree upon. This technology is reliable, increasing uptime and safety. Due to the low flow rates and small line sizes, the Rosemount 1195 Integral Orifice Plate was provided. The honed body of the integral orifice reduces ID uncertainty. Also, the self-centering design eliminates plate misalignment.

The 3051SMV Transmitter measures process pressure, temperature, and differential pressure simultaneously and dynamically calculates 'real-time', fully compensated mass flow. Fully compensated mass flow reduces sources of traditional DP flow uncertainty caused by pressure and temperature variation.

The 3051SFP delivers unprecedented mass flow accuracy of +/-0.8% over 14:1 flow turndown. For the gas supplier, this performance means reduced variability, improved reliability, and safety.

The gas supplier's staff used the PC-based Engineering Assistant® software package to configure the 3051SMV. The configuration software package contains a built-in physical property database, making configuration quick and easy.

Engineers at the gas supplier were impressed with the results of improved accuracy of billing and increased reliability, safety, and uptime. Along with the ease of installation, the Rosemount 3051SFP ensured accurate billing for their customers.

The Rosemount 3051S MultiVariable Transmitter provides real time, fully compensated mass flow measurement, reducing sources of traditional DP flow uncertainty.

The Rosemount 3051SFP ensures accurate billing for their customers.

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