

Gas Supplier Improves Billing Accuracy with Differential Pressure Flowmeter

RESULTS

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



APPLICATION

Gas flowmetering

CUSTOMER

A major supplier of gases and gas handling equipment

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 flowmeters 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 flowmetering technologies in the past without complete satisfaction, including but not limited to thermal mass flowmeters, turbine meters, and rotameters. Gas flowmetering 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 flowrates 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.

SOLUTION

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

Orifice technology is proven with well established standards that both 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 and 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 so configuration was 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 3051SFP ensured accurate billing for their customers.



Rosemount 3051 SFP Integral Orifice Flowmeter

RESOURCES

Emerson Process Management Chemical Industry

<http://www2.emersonprocess.com/en-US/industries/Chemical/Pages/index.aspx>

Rosemount 3051 SFP Integral Orifice Flowmeter

<http://www2.emersonprocess.com/en-US/brands/rosemount/Flow/DP-Flow-Products/Integral-Orifice-Flowmeters/Pages/index.aspx>

The Emerson logo is a trade mark and service mark of Emerson Electric Co. Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc. All other marks are the property of their respective owners.

Standard Terms and Conditions of Sale can be found at www.rosemount.com/terms_of_sale

Emerson Process Management

Rosemount Division
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 906-8889
www.rosemount.com

Emerson Process Management

Blegistrasse 23
P.O. Box 1046
CH 6341 Baar
Switzerland
Tel +41 (0) 41 768 6111
Fax +41 (0) 41 768 6300

Emerson FZE

P.O. Box 17033
Jebel Ali Free Zone
Dubai UAE
Tel +971 4 811 8100
Fax +971 4 886 5465

Emerson Process Management

Emerson Process Management Asia Pacific
Private Limited
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com

ROSEMOUNT®

For more information:
www.rosemount.com


EMERSON™
Process Management