

Ammonia Plant Saves \$11,000 with Rosemount™ Conditioning Orifice Plate Technology

RESULTS

- Reduced material, labor, and procurement costs
- Reduced straight run piping required for measurement
- Provided accurate measurement in dynamic flow conditions



APPLICATION

Inlet water pipe for steam producing process

CUSTOMER

Ammonia plant in the Midwest United States

CHALLENGE

An ammonia plant required a better solution for taking measurements in the inlet water pipe that runs to the economizer (the process that uses waste heat from the plant to produce steam). The piping design creates dynamic flow conditions causing inaccurate measurement at the existing Differential Pressure (DP) measurement point.

The 3-in. diameter inlet water pipe runs approximately 20 ft. above ground level for about 50 ft. to the existing DP flow meter. After the existing DP measurement point, the water feed pipe makes a 90-degree turn that extends 50 ft. to the top of the economizer. The measurement point meets all the requirements of a DP flow application but the dynamic condition of the flow (swirling flow) caused inaccurate measurement.

SOLUTION

The customer wanted to retrofit the existing DP primary element and not have to redesign the current piping layout. Emerson™ supplied the Rosemount Conditioning Orifice Plate which is designed for applications with limited pipe run, only requiring two pipe diameters from an upstream flow disturbance such as double elbows, valves, and reducers. This unique design achieves an accuracy of ± 0.5 percent, making it the best performing DP primary element.

The Rosemount Conditioning Orifice Plate provided an accurate measurement and eliminated the dynamic flow conditions that had previously hindered the measurement point. The company estimated savings of \$11,000 by reducing material, labor, and procurement costs.

By requiring less straight run, the company saved thousands of dollars in material, labor, and procurement costs.



Rosemount Conditioning Orifice Plate

RESOURCES






Emerson Chemical Industry

[Emerson.com/Industries/Chemical](https://emerson.com/Industries/Chemical)

Rosemount 1595 Conditioning Orifice Plate

[Emerson.com/Rosemount/Rosemount-1595-Conditioning-Orifice-Plate](https://emerson.com/Rosemount/Rosemount-1595-Conditioning-Orifice-Plate)




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Global Headquarters

Emerson Automation Solutions




6021 Innovation Blvd.
Shakopee, MN 55379, USA

 +1 800 999 9307 or +1 952 906 8888
 +1 952 949 7001
 RFQ.RMD-RCC@Emerson.com

Europe Region

Emerson Automation Solutions Europe GmbH




Neuhofstrasse 19a P.O. Box 1046
CH 6340 Baar, Switzerland

 +41 (0) 41 768 6111
 +41 (0) 41 768 6300
 RFQ.RMD-RCC@Emerson.com

Middle East and Africa Region

Emerson Automation Solutions




Emerson FZE P.O. Box 17033,
Jebel Ali Free Zone - South 2
Dubai, United Arab Emirates

 +971 4 8118100
 +971 4 8865465
 RFQ.RMTMEA@Emerson.com

Asia Pacific Region

Emerson Automation Solutions

1 Pandan Crescent
Singapore 128461

 +65 6777 8211
 +65 6777 0947
 Enquiries@AP.Emerson.com

00830-0800-4828, Rev BA