McCROMETER

V-Cone Application Guide

Industry: Chemical, Petrochemical Processing

Application: An international manufacturer of chemical products/ components from air.

Measurement Challenge/Difficulty: These continuous/batch processes needed a method to measure flows of chemical components and products from skid mounted units installed at various types of industries worldwide. They were required to reduce space and weight, and increase accuracy.

Previous Method: They had used several types of older technology differential pressure flowmeters (orifice plates, venturi tubes, and averaging pitot tubes).

Solution: McCrometer and their local representative firms gathered all the available process conditions on the customer's skid units. After sizings were run to determine the accurate performance of the V-Cone, an analysis of the reduction in weight and space on each skid was detailed. It was found that the reduction in pipe runs and weight (from both pipe runs and the V-Cones), together with the increased accuracy and the long term maintenance reductions were significant enough to cover the cost of switching several skid units worldwide to the V-Cone.

Date Installed: 1999, 2001, 2003, and 2004

Submitted by: McCrometer's Process Industry Sales

Additional Comments: Because accuracy is critical to their clients' operations, the customer uses outside laboratory calibration to confirm the accuracies of the V-Cones. The customer also uses Non-Destructive Testing (Hydrostatic, X-Ray, and Dye Penetration) to ensure the safety of the product(s) and conformance to ANSI Standards on their skid mounted units which may be located inside, or nearby, their clients' plants. The turndown requirement on these flowmeters can be greater than 10:1, and some have been designed and built with larger than 20 – 25:1 turndowns.

Literature No.
24510-48/Rev. 1.0

Industry:
Chemical

Niche Market:
Chemical & Petrochemical Processing

Process:
Gas & Liquid Measurement

Product:
Gas & Liquid Products/Components from Air.

Fluid(s):
Air, Nitrogen, Oxygen, Carbon Dioxide, and Hydrogen.

Viscosity:
Varies – 1.929e-02 centipoises(cP)

Flow Rate:
Varies by Line/Unit Size – 10,000 Nm3/hr or ~500TPD

Pressure:
Varies by Line Size – Typically Low Pressure

Temperature:
Varies

Size:
Various sizes from 8" to 36" in diameter.

Date:
March 2004

Submitted by:
McCrometer Sales & Manufacturer's Representative Sales Teams

3255 West Stetson Avenue • Hemet, CA 92545-7799 • 951-652-6811 • Fax 951-652-3078