



# Elbow Flow Meter

## Specialty Flow Meter

### Description

In the limited instances where, in the opinion of Primary Flow Signal, Inc., superior flow meter solutions are impractical or impossible, the “Elbow Flow Meter” as defined by the ASME in paper number 63-WA-17, as well as other applicable reference works including Miller, is considered and recommended, after careful review of application requirements. An example of a typical elbow meter installation would be metering off a header with multiple legs ending in elbows which do not have adequate laying length availability to install an HVT-Halmi Venturi(or other standardized) primary element. A properly designed and calibrated elbow flow meter will serve as a effective flow meter with high repeatability, and accuracy as good as the capabilities of the calibration laboratory permit.

### Common Materials

- Carbon Steel
- 304 / 316SS
- Chrome Moly

### Other Materials Available

- Aluminum
- Tantalum
- Hastelloy B & C
- Duplex S/S
- Monel
- Zirconium
- Titanium
- 321 SS

### Specifications

**Line Size:** Unlimited

**Head loss % of Differential:** : Not Applicable

**Basic Accuracy (% of Total):** +/- 0.25 (Calibrated) +/- 4.00 (Uncalibrated)

**Minimum pipe Reynolds number:** Must be greater than 50,000

**Required Straight Piping:** Per RW Miller, ISO5167-2 Table 3, 0.75 Beta Orifice

**Beta Range:** Not Applicable

**Useful Service Life:** Very Long

**Service Functional Limits:** Clear liquid, gas, contaminated and solid-bearing line fluid

### Applications

- Raw Water / Wellfields
- WTP Influent / Effluent
- Pumping Stations
- Water Distribution / Billing
- Reclaimed Water
- Industrial
- Commercial
- Oil and Gas

### Special Features

- Extended product life with no moving parts
- Lower susceptibility to erosion
- No downstream installation effect; minimal upstream effect
- No annular chambers therefore no plugging
- Useful for flow measurement at high velocities
- Turndown ratio of 10:1, 20:1, 50:1 and greater can be achieved depending on the specific model and design of the meter as well as the type of secondary instrumentation system utilized
- Repeatability of  $\pm 0.20\%$
- Mounts in any position
- Plasma spray treatment available for additional hardness in abrasive flow applications