METHANE FROM FLARING TOOLKIT

Elbow Flow Meter

How do I measure flow? > Elbow Flow Meter

An elbow flow meter measures the flow of fluid due to the change in pressure as it flows around a pipe elbow.

How it Works

When fluid flows around a pipe bend there is an increase in pressure with radius, i.e. the pressure at the outer wall of the bend is higher than that at the inner wall.

The pressures at the inside and outside of the bend can be measured via pressure tappings in the pipe and the flow rate of fluid determined using the difference between the two measured pressures.

IMAGE TO FOLLOW

Advantages

Limitations

- Well suited for simple, robust metering
- Low cost
- Low space requirements
- No restriction to flow in the flare line

- Not suited for low flow and velocities where the differential pressure is too low
- No design standards for elbow meters in gas service
- Meter may need initial calibration against an ultrasonic meter
- Higher uncertainty than ultrasonic meters. Some measurement uncertainty associated with prediction of flare gas density
- Application of ASME design standard is limited to liquid (incompressible) line fluids

Go Deeper

- To follow

Case study

No case study available at this time.

How do I measure flow?

Flow: Ultrasonic & Sonar Clamp-on Flow Meters

Vortex Flow Meter

Flow: Coriolis Flow Meter

Flow: Ultrasonic Flow Meter

L2F Optical Flow Meter