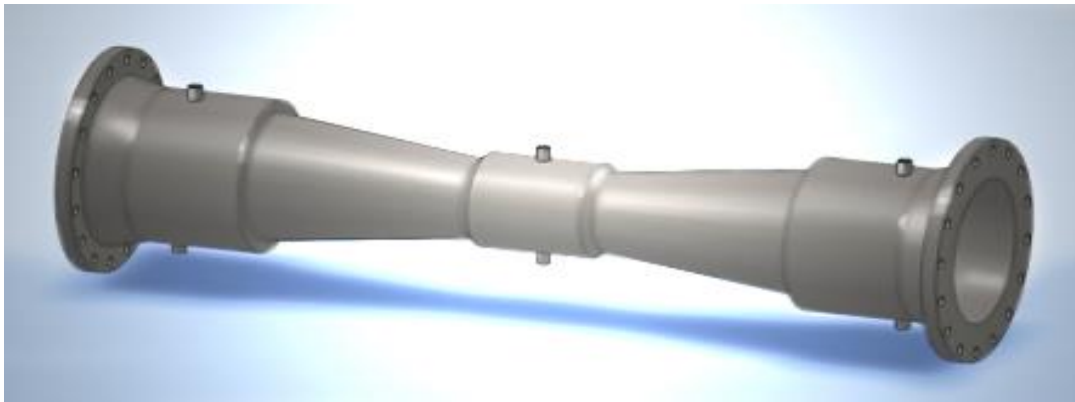


MODEL AVM-BD

BI-DIRECTIONAL VENTURI TECHNICAL BRIEF



Amity Flow Models AVM-BD-F is a Bi Directional highly accurate modified Venturi meter and has flanged end designs and AVM-BD-W is a butt weld end design. At Amity Flow we have the unique ability to control the entire fabrication process start to finish which allows for repeatability: our flow meter designs match our products. Amity Flow has manufactured and sold Venturi tubes for over 43 years under other labels, and we are in the unique position of supplying our Venturi flow meters to our competitors.



Model AVM-BD-F is a Flanged Bi Directional Venturi 2" and Larger Sizes

MATERIAL OF CONSTRUCTION:

The flow element can be constructed using any weldable and machinable materials. A list of suitable materials includes but is not limited to: Carbon Steel, Chrome Moly, Inconel, 304 Stainless Steel, 316 Stainless Steel, Aluminum, Hastelloy B & C, Duplex S/S, Monel and Tantalum.

APPLICATIONS:

The AVM-BD-F and AVM-BD-W are designed to measure full pipe, clean gasses or liquids over various temperature and/or pressure ranges. Typical applications include custody transfer or bi-directional flow of potable water, high pressure steam, combustion air, compressor surge control, oxygen & nitrogen, alcohol, ethylene, chlorine and many other gasses and liquids.

DESIGN:

All applicable codes and standards are considered such as section 8 of the Boiler and Pressure Vessel Code as well as ASME B31.1 and 31.3 ASME fluid meters, MFC-3M-1985, ISO 5167, BS-7045, compliant. The meter can be designed for use with Raised Face, Flat Face, Weld End or Ring Joint Flanges of any flange rating of either U.S. or foreign standards.



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General Specifications

ACCURACY:

- +/-0.25% of actual flow (Flow Calibrated) in both directions
- +/-0.50% of actual flow. (Uncalibrated) in both directions

RANGE ABILITY:

- 10:1 or better depending upon the secondary equipment selected per flow direction.

OPERATING CONDITIONS:

- Line Fluid Capability: Gas or liquid full pipe flow.
- Clean with minimal particulate contamination.
- Temperature Range: Cryogenic to Superheated Steam
- Line Pressure Capacity: From full vacuum to the limits of materials.

LINE SIZE CAPABILITY:

- Between 2 inch to 144 inches and Larger

BETA RATIO CAPABILITY:

- Custom sized and designed for Beta ratio range between 0.30 through 0.75.

PIPE REYNOLDS NUMBER RD CAPABILITY:

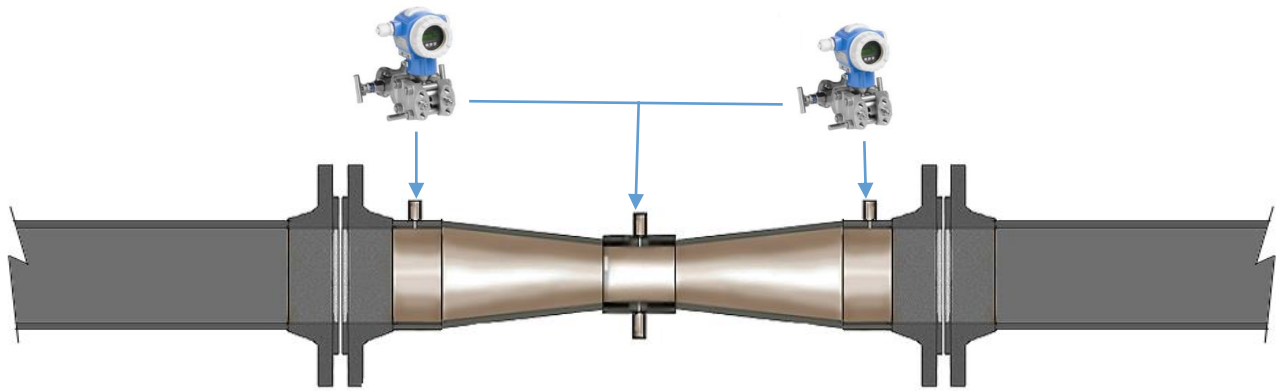
- Discharge coefficient is constant above 75,000 RD
- Discharge coefficient bias and random error between 12,000 RD and 75,000 RD is empirically established and highly repeatable.

PERMANENT PRESSURE LOSS:

- Varies from 7-15% of differential and up depending on application conditions and beta ratio.

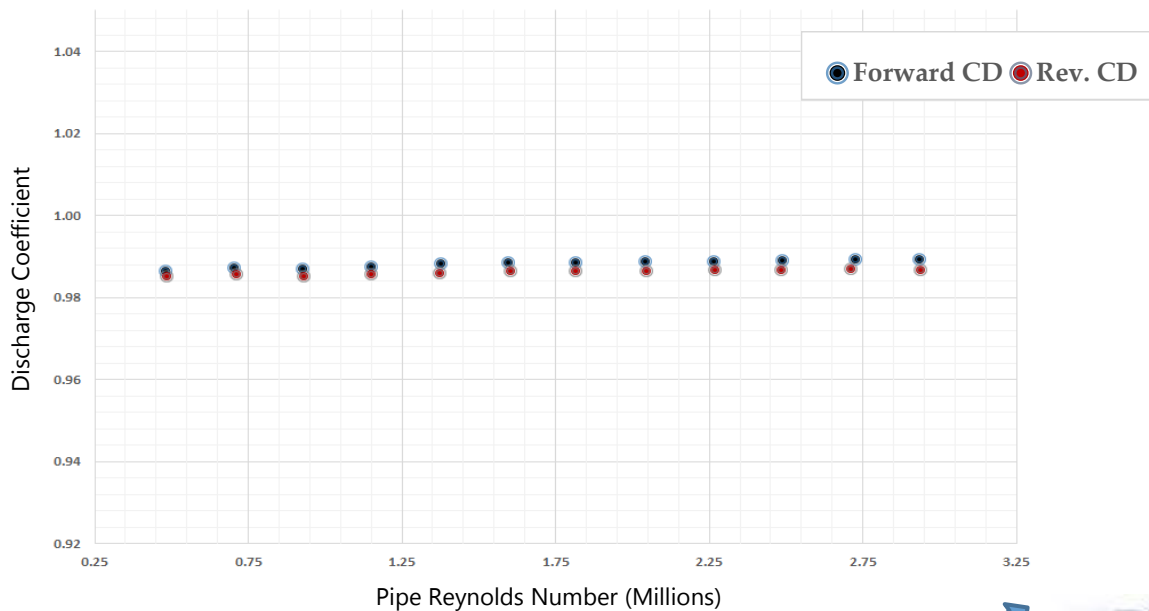
MODEL AVM-BD

BI-DIRECTIONAL VENTURI TECHNICAL BRIEF



AVM-BD-F Flanged Venturi With Two DP Cells

16" Bi Directional Flow Lab Calibration



DP Cell Placement

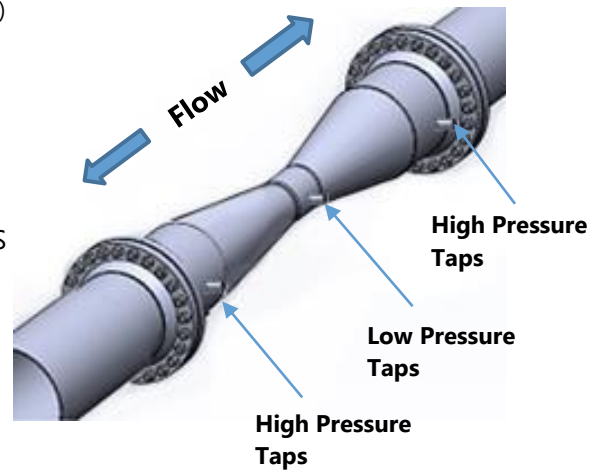
*For Liquid Applications:

All Impulse piping must have minimum 80 mm per meter slope DOWN to the flow Transmitter(s).

For Gas Applications:

All Impulse piping must have minimum 80 mm per meter slope UPWARDS to the flow Transmitter(s)

Straight Upstream requirement as a general guideline are 10 pipe diameters in both directions.



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MODEL AVM-BD

BI-DIRECTIONAL VENTURI TECHNICAL BRIEF



Both Amity Flow Models AFM-BD-F and AFM-BD-W are constructed to the latest codes, materials and maximum design criteria for the application. The calculation data and the beta ratio will be based upon the customers operating conditions to assure the best possible accuracy through the specified flow range.

Amity has manufactured Venturi tubes for over 43 years under other labels; today we service our clients directly. From customer-specific design through fabrication and testing, we control the entire process for unsurpassed quality, accuracy and repeatability. All models and installation designs can accurately be used on almost any fluid as well as liquid, gas, and vapor flows.

Amity Flow has official certification and authorization in the following categories:

- ASME U Stamp, 2014 Section VIII Div.1 for the manufacturing of Pressure Vessels
- National Board Certified R Stamp for the repairing and alteration of Pressure Vessels
- ASME PP Stamp for the fabrication and assembly of Pressure Piping
- PED (European Pressure Equipment Directive) certified welders and weld procedures
- 87 certified weld procedures and welders for ASME, AWS and PED
- Weld processes include SMAW, GTAW, FCAW, SAW and GMAW



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