

MODEL AFM-V

CLASSICAL VENTURI TECHNICAL BRIEF



Amity Flow Models AFM-V-F and AFM-V-W are ISO-5167/MFC-3M conventional or classical venturi meters per ASME. 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 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 AFM-V-F is a Classical ASME Venturi with Flange ends

MATERIALS:

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 AFM-V-F and AFM-V-W are designed to measure full pipe, clean gasses or liquids over various temperature and/or pressure ranges. Typical applications include 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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AFM-V-002-2016-TB-R1.4





GENERAL SPECIFICATIONS

ACCURACY:

- With rough cast convergent the percentage of uncertainty of the discharge coefficient is 0.7%
- With machined convergent the percentage of uncertainty of the discharge coefficient is 1.0%
- With a rough welded sheet iron convergent the percentage of uncertainty of the discharge coefficient is 1.5%.

RANGE ABILITY:

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

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 1 inch to 144 inches.

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 7-25% of differential and up depending on application conditions, beta ratio, and exit cone truncation ratio and can be engineered to meet your requirements.

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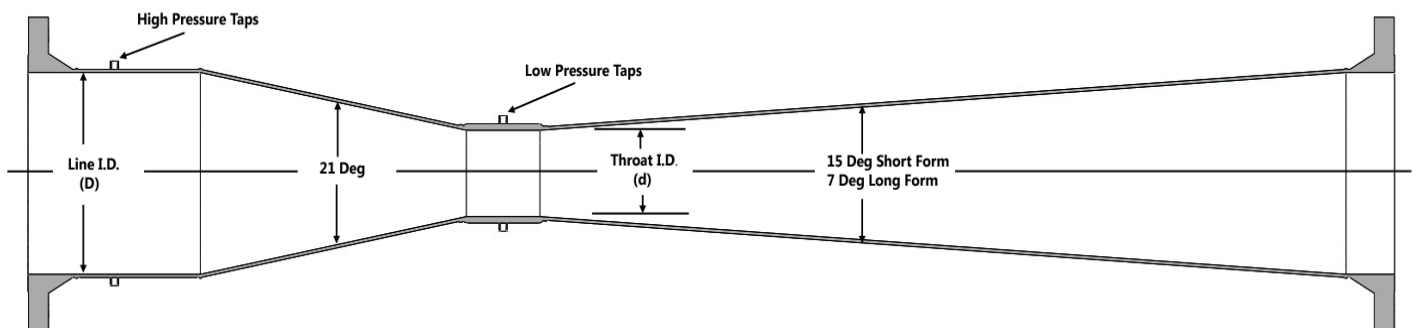
The Model AFM-V is an accurate Classical Venturi meter providing the highest discharge coefficient per ASME

Model AFM-V-F is a flanged end venturi meter.

Available in Short or Long form Designs.

Model AFM-V-W is a butt weld end design venturi meter.

Available in Short or Long form Designs and is fabricated to the dimensions per the engineering design from specified materials



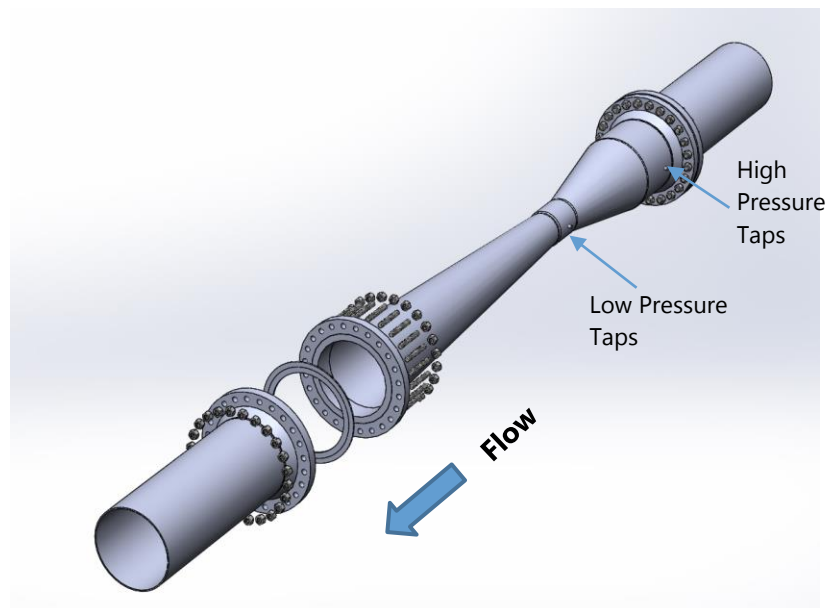
DP Cell Placement

*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 requirements

Per ASME piping requirements

Straight Downstream requirements

Per ASME piping requirements



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Both Amity Flow Models AFM-V-F and AFM-V-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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