

CLASSICAL VENTURI TUBES



Approvals:



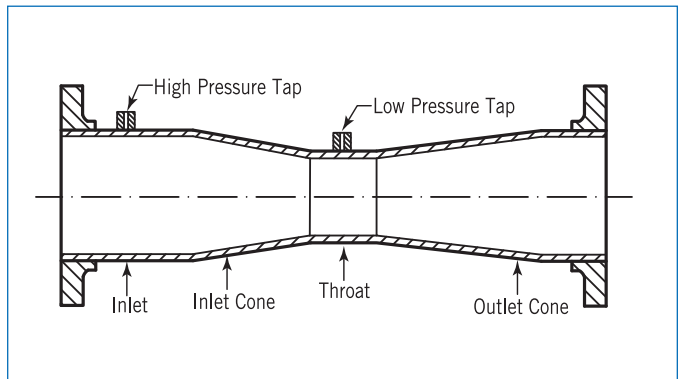
The classical venturi tube consists of a straight inlet section of the same diameter as the pipe and in which the high pressure tap is located a converging conical inlet section in which the cross section of the stream decreases and the velocity increases with a consequent increase of velocity head and decrease of pressure head.

The pressure taps are located one-quarter to one-half pipe diameter upstream of the inlet cone and at the middle of the throat section.

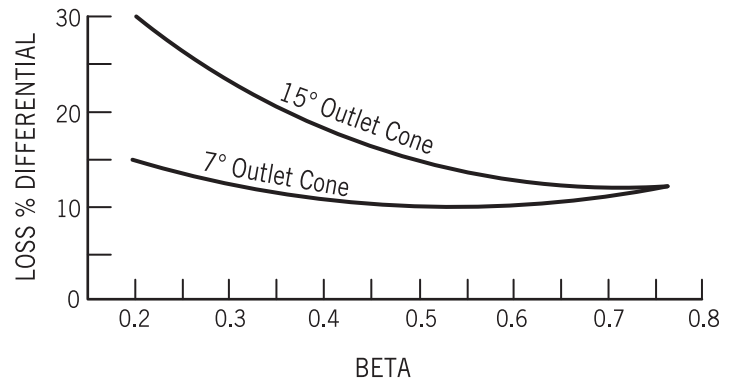
Technical Data

- ISO-5167-4 standard
- Beta ratio β : 0.3~0.75
- Minimum recommended reynold number: 75,000
- Minimum recommended pipe I.D: 3" (75mm)
- Size: 3"~72" available; bigger than 72" on request
- Material: A105, steel, stainless steel, available. Special material on request.

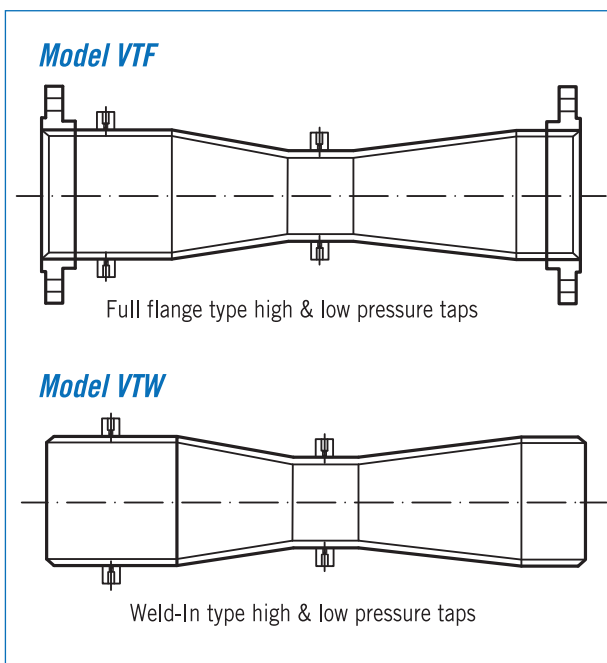
Classic Venturi Tube



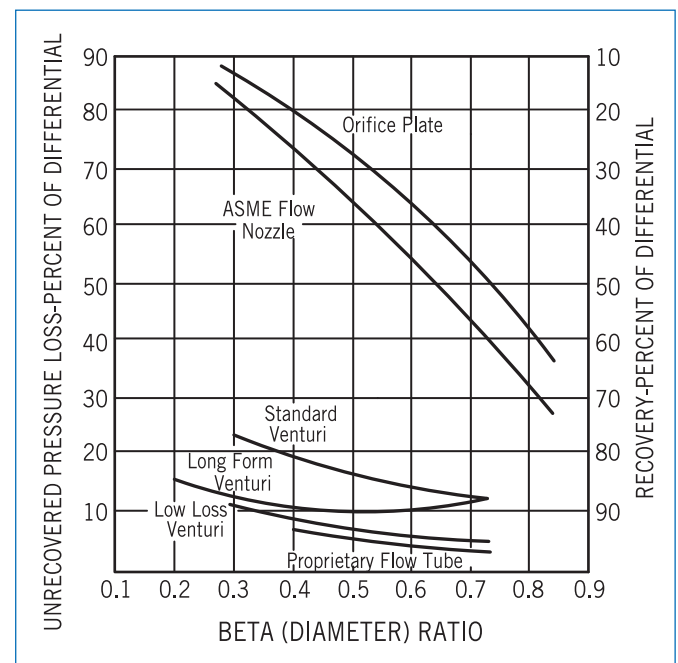
Venturi Pressure Loss



Representative Schematic

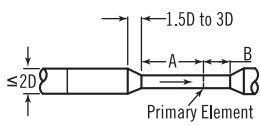
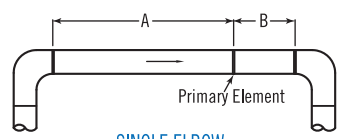
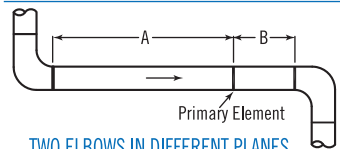
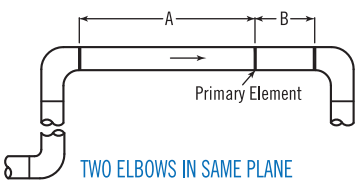
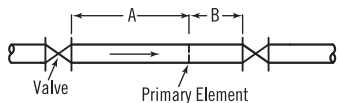
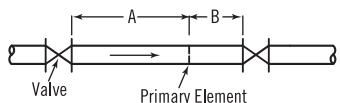
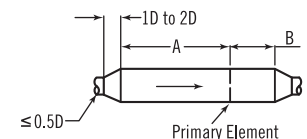


Pressure Loss Curves



ISO Standard 5167 Required

Straight Lengths for Orifice Nozzle ISA Venturi Nozzle and Venturi in Multiples of Pipe Diameter D

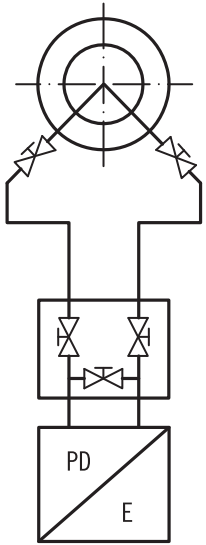
Upstream disturbance	Dimension	Device	β						
			0.2	0.3	0.4	0.5	0.6	0.7	0.75
 <p>REDUCER</p>	A	Orifices Nozzles	5	5	5	6	9	14	22
		Venturis		0.5	2.5	5.5	8.5	10.5	11.5
 <p>SINGLE ELBOW</p>	A	Orifices Nozzles	14	16	18	20	26	28	36
		Venturis		0.5	0.5	1.5	3	4	4.5
 <p>TWO ELBOWS IN DIFFERENT PLANES</p>	A	Orifices Nozzles	34	34	36	40	48	62	70
		Venturis		0.5	0.5	8.5	17.5	27.5	29.5
 <p>TWO ELBOWS IN SAME PLANE</p>	A	Orifices Nozzles	14	16	18	20	26	36	42
		Venturis		1.5	1.5	2.5	3.5	4.5	4.5
 <p>GATE VALVE, FULLY OPEN</p>	A	Orifices Nozzles	12	12	12	12	14	20	24
		Venturis		1.5	2.5	3.5	4.5	5.5	5.5
 <p>GLOBE VALVE, FULLY OPEN</p>	A	Orifices Nozzles	18	18	20	22	26	32	36
		Venturis							
 <p>EXPANDER</p>	A	Orifices Nozzles	16	16	16	18	22	30	38
		Venturis		1.5	1.5	2.5	3.5	5.5	6.5
Downstream length for all Pictured disturbances	B	Orifices Nozzles	4	5	6	6	7	7	8
		Venturis		4d	4d	4d	4d	4d	4d

Orifice / Nozzle / Venturi Tube Installed Guide

Liquid

DP-Flow Element

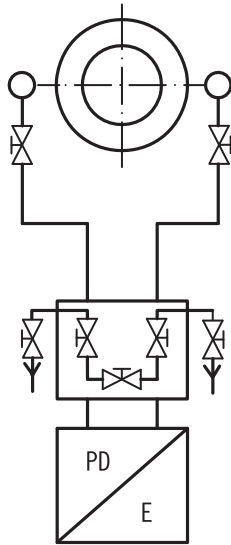
With 3-way manifold.



Steam

DP-Flow Element

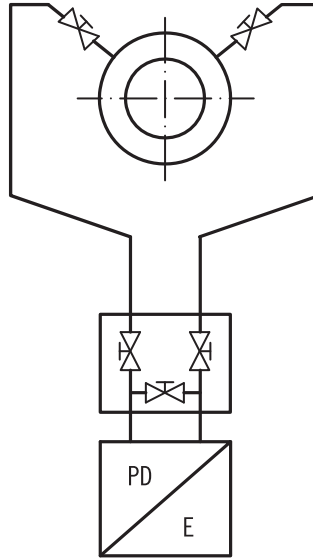
With 5-way manifold and condense pots



Dry Gas

DP-Flow Element

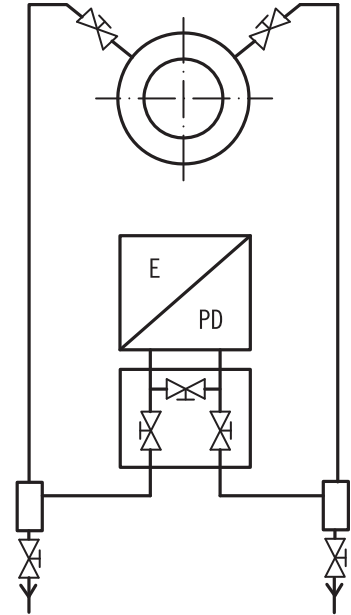
With 3-way manifold



Humid Gas

DP-Flow Element

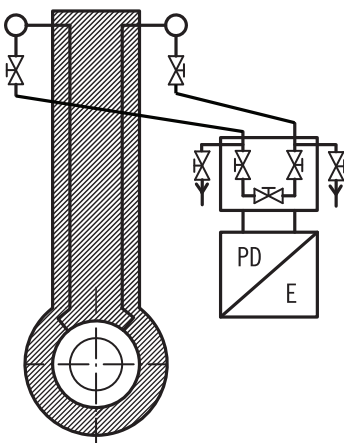
With 3-way manifold and drain pot



Steam

DP-Flow Element on top mounting

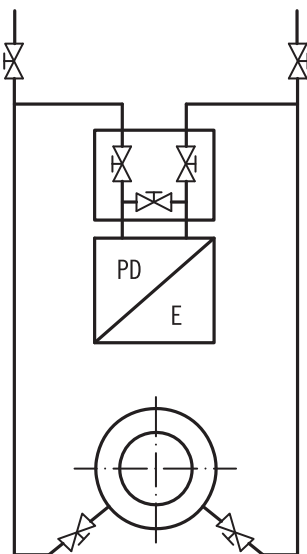
With condense pots



Liquid

DP-Flow Element on top mounting

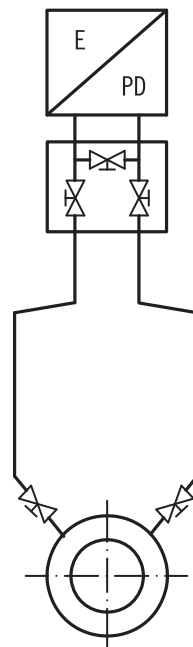
With 3-way manifold and vent valves



Gas, dry and humid

DP-Flow Element on top mounting

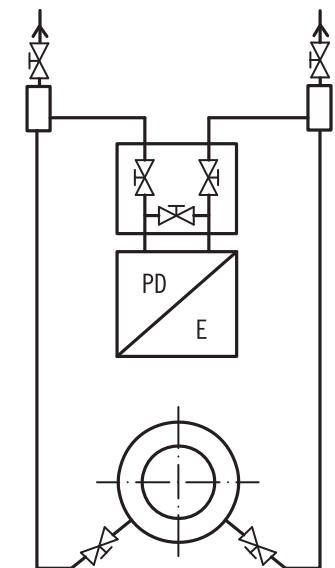
With 3-way manifold



Gaseous Fluid

DP-Flow Element on top mounting

With 3-way manifold and vent pots



Ordering Information

Individual Specification				Requirement		Requirement	
1	Model No.						
2	P&ID No.						
3	Line No.						
4	Service						
Meter							
5	Type of Element						
6	Size & Process Connection						
7	Pressure Taps						
8	Taps Connection						
9	Wetted Parts Material						
10	Condensate or Sealing Chamber						
11	Diff. Pressure (mmH ₂ O)	Design	Calculated				
12	Beta Ratio	Design	Calculated				
13	Calculation STD	Design	Calculated				
14	Painting						
15	Fluid	Phase					
16	Flow Range	Flow unit					
17	Flow Rate	Max.	Nor.				
18	Temp. (°C)	Max.	Nor.				
19	Press. (kg/cm ² G)	Max.	Nor.				
20	Viscosity @Cp	Cp/Cv					
21	SpGr @Cp./@Base	Mol. Wt.					
22	Pipe Size (mm)	I.D	O.D				
23	Pipe Material	Pipe Schedule No.					
24	Max. Permissible Pressure Loss (mmH ₂ O)						
25	Tag No.						

* Please fill in above block on request.