CLASSICAL VENTURI TUBES

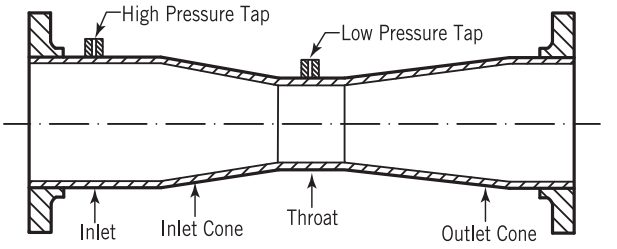
Approvals:

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 decrese 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.

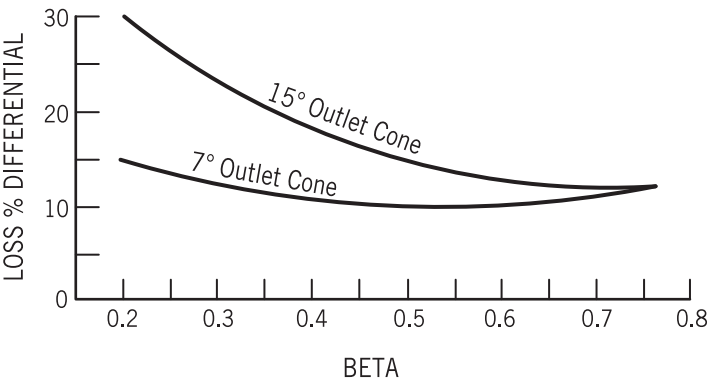
Technical Data

- **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

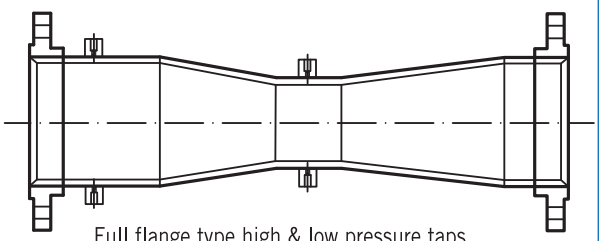


Venturi Pressure Loss



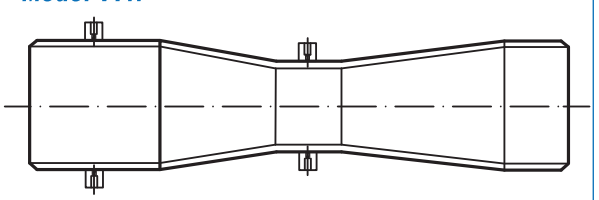
Representative Schematic

Model VTF



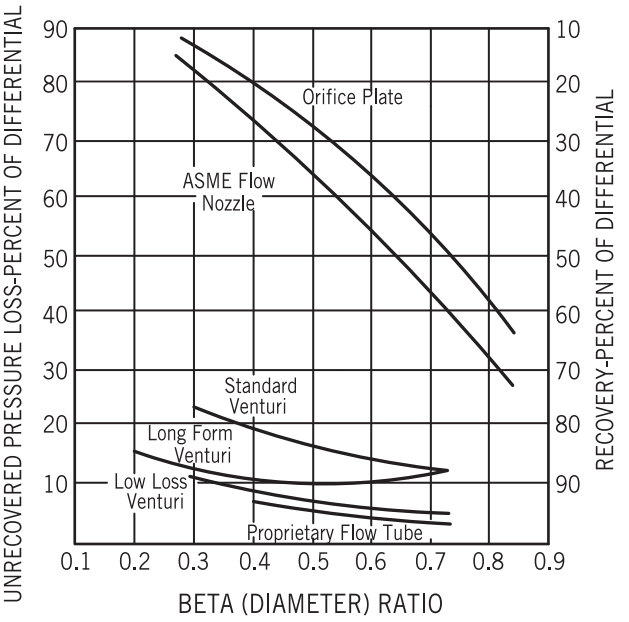
Full flange type high & low pressure taps

Model VTW



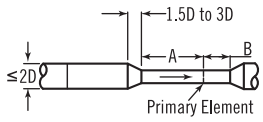
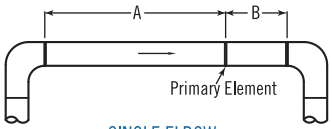
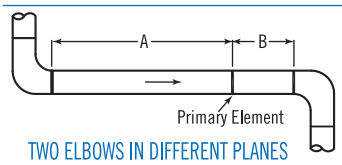
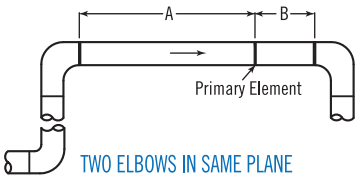
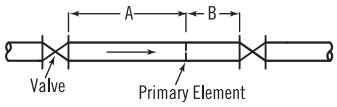
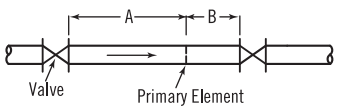
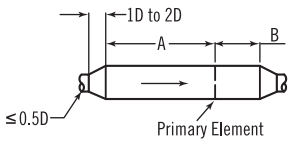
Weld-In type high & low pressure taps

Pressure Loss Curves



ISO Standard 5167 Required

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

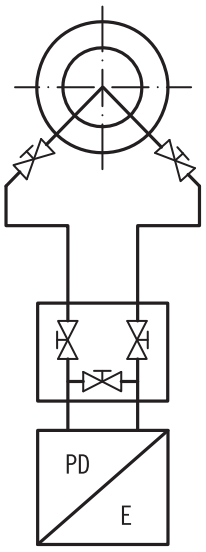
Upstream disturbance	Dimension	Device	β 0.2	0.3	0.4	0.5	0.6	0.7	0.75
 REDUCER	A	Orifices Nozzles	5	5	5	6	9	14	22
		Venturis		0.5	2.5	5.5	8.5	10.5	11.5
 SINGLE ELBOW	A	Orifices Nozzles	14	16	18	20	26	28	36
		Venturis		0.5	0.5	1.5	3	4	4.5
 TWO ELBOWS IN DIFFERENT PLANES	A	Orifices Nozzles	34	34	36	40	48	62	70
		Venturis		0.5	0.5	8.5	17.5	27.5	29.5
 TWO ELBOWS IN SAME PLANE	A	Orifices Nozzles	14	16	18	20	26	36	42
		Venturis		1.5	1.5	2.5	3.5	4.5	4.5
 GATE VALVE, FULLY OPEN	A	Orifices Nozzles	12	12	12	12	14	20	24
		Venturis		1.5	2.5	3.5	4.5	5.5	5.5
 GLOBE VALVE, FULLY OPEN	A	Orifices Nozzles	18	18	20	22	26	32	36
		Venturis							
 EXPANDER	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

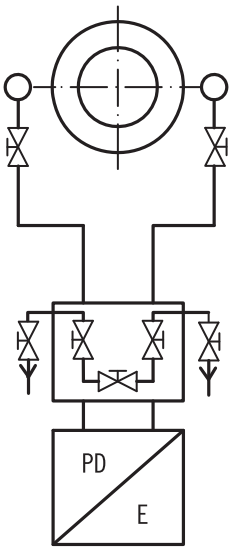
With 3-way manifold.



Steam

DP-Flow Element

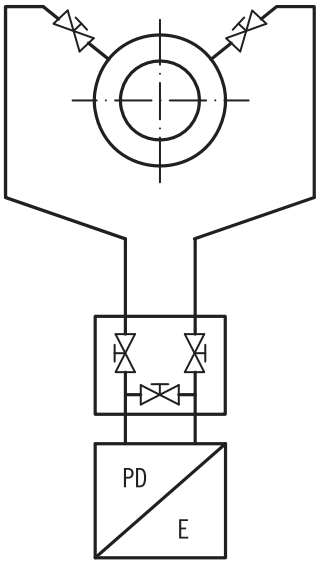
With 5-way manifold and condense pots



Dry Gas

DP-Flow Element

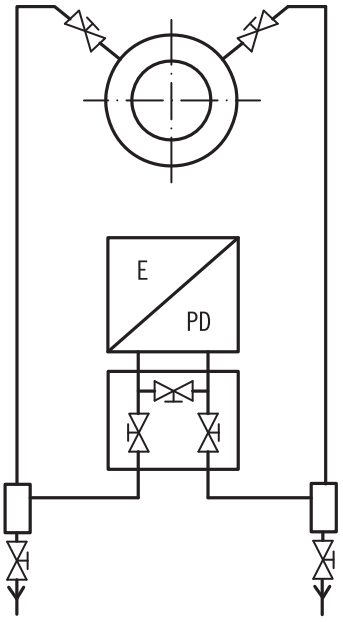
With 3-way manifold



Humid Gas

DP-Flow Element

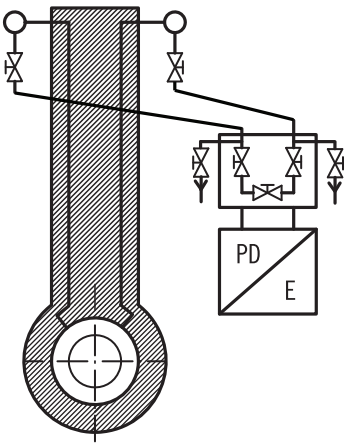
With 3-way manifold and drain pot



Steam

DP-Flow Element on top mounting

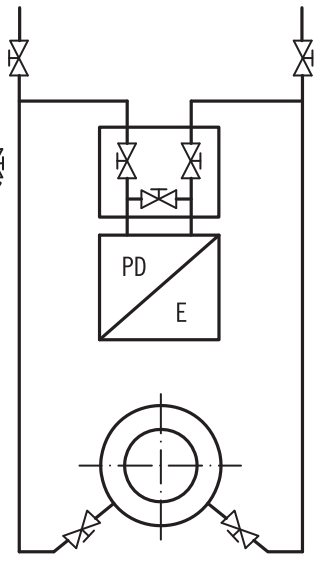
With condense pots



Liquid

DP-Flow Element on top mounting

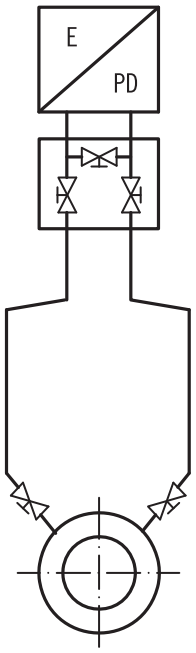
With 3-way manifold and vent valves



Gas, dry and humid

DP-Flow Element on top mounting

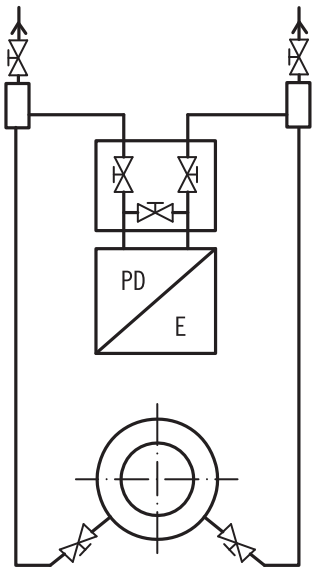
With 3-way manifold



Gaseous Fluid

DP-Flow Element on top mounting

With 3-way manifold and vent pots



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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_2O)	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. (℃)	Max.	Nor.				
19	Press. (kg/cm^2G)	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_2O)						
25	Tag No.						

* Please fill in above block on request.