

Vortex Flow Meter

Temperature & Pressure Compensation



Overview

Vortex flowmeter work on the principle of generated vortex and relation between vortex and flow by theory of Karman and Strouhal.

Flange vortex flow meter is used in numerous branches of industry to measure the volume flow of liquids, gases and steam. Applications in the chemicals and petrochemicals industries, for example, in power generation and heat-supply systems involve widely differing fluids: saturated steam, superheated steam, compressed air, nitrogen, liquefied gases, flue gases, carbon dioxide, fully demineralized water, solvents, heat-transfer oils, boiler feedwaters, condensate, etc.

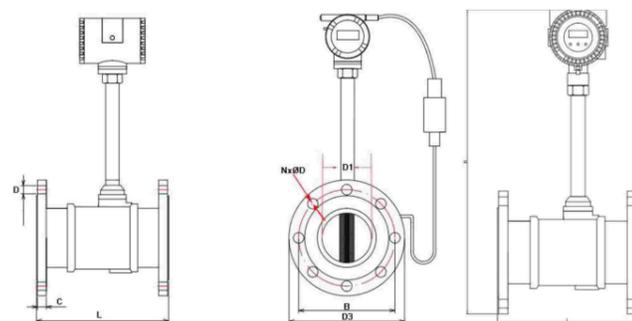
The change of pressure and temperature has great effect on the density of steam. Thus it is very important to implement T & P density compensation to get accurate measurement result of steam.

Features

- Vortex flow meter body is robust and universally applicable for liquids, gases and steam, optimized for steam applications;
- Vortex flow meter adopt Japan OVAL technology and design;
- There is no moving parts, no abrasion, non-wearing parts inside the vortex flow meter sensor, fully welded SS304 body (SS316 selectable);
- Requires very few power consumption: 24 VDC, 15 Watts max;
- With a variety of signals outputs and selection, such as 4-20mA, pulse with HART or pulse with RS485 are selectable;
- In the electronic device of measuring flow, vortex flow meter is the only one could resist wide temperature range up to highest temperature 350°C, digital flow meter highest processtemperature.

Dimensions

Size (DN) mm	Size Inc	Length L (mm)	Flange Outer Ø D3(mm)	Central Ø of Bolts Hole B (mm)	Flange Thickness C (mm)	N-ØD (mm)	Height H (mm)	Weight (kg)
25	1	170	115	85	16	4-14	450	6
32	1 1/4	170	140	100	16	4-18	462	6
40	1 1/2	190	150	110	16	4-18	465	6
50	2	190	165	125	18	4-18	473	6
65	2 1/4	220	185	145	18	8-18	487	6.5
80	3	220	200	160	18	8-18	500	7
100	4	240	220	180	18	8-18	533	7.5
125	5	260	250	210	18	8-18	560	12
150	6	280	285	240	22	8-22	608	18
200	8	300	340	295	22	12-22	640	30
250	10	360	405	355	26	12-26	705	40
300	12	400	460	410	26	12-26	752	55

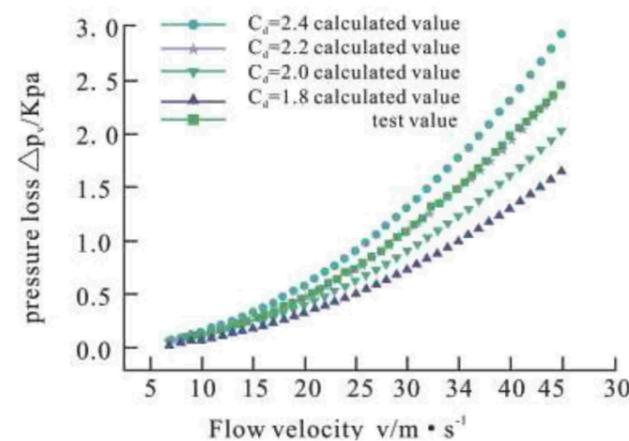


(Flange Connection: DIN2502 PN16)
Structure Drawing

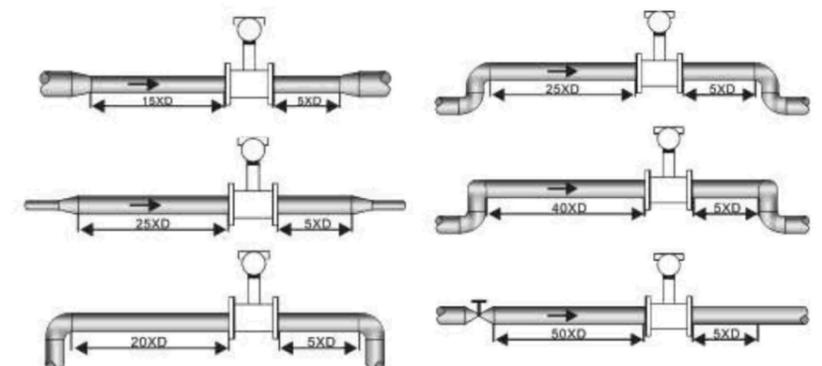
Parameters

Measured Medium	Liquid, Gas, Steam
Medium Temp.	-40°C ~ +250°C; -40°C ~ 350°C (high temperature type)
Nominal Pressure	0.6MPa, 1.0MPa, 1.6MPa, 2.5MPa, 4.0MPa, Other pressure optional
Accuracy	±1% (Flange type), ±1.5% (Insertion type)
Flow Range	Liquid:0.4-7.0m/s; Gas:4.0-60.0m/s; Steam:5.0-70.0m/s
Specifications Caliber	DN15-DN300(flange), DN80-DN2000(insertion type), DN15-DN100(thread)
Material	SS304 (standard) SS316 (optional)
Reynolds Number	Normal $2 \times 10^4 \sim 7 \times 10^6$
Resistance Coefficient	$C_d \leq 2.6$
Vibration Acceleration	$\leq 0.2g$
IIEP ATEX	IIG Exia IICT5 Ga
Ambient Condition	Ambient Temp. : -40°C~65°C (Non ex-proof site), -20°C~55°C (Ex-proof site) Relative Humidity : $\leq 85\%$
Power Supply	DC 12-24V or 3.6V lithium battery powered
Signal Output	4-20mA, Pulse
Communication	Rs485 Modbus RTU

Pressure Loss



Straight Pipe Length Recommendation



(D: Nominal Diameter mm)
Horizontal or Vertical (The Flow direction should always be upwards while vertical installation)