

TECHWAY INSTRUMENTS

VORTEX FLOWMETER

Introduction:

Vortex Flow meter is widely used for measuring and metering wide range of service medium for liquid, gas and steam application. It is widely used in Petroleum, chemical, metallurgy, heat supply industry, etc. Vortex Flow Meter is most preferred flow meter for flow measurement in steam and gas. It is also highly used for custody transfer application.

Principle of Operation:

Vortex flow meters make use of a principle called the von Karman effect. According to this principle, flow will alternately generate vortices when passing by a bluff body. In a vortex meter, the bluff body is a piece of material with a broad, flat front that extends vertically into the flow stream. Flow velocity is proportional to the frequency of the vortices. Flow rate is calculated by multiplying the area of the pipe times the velocity of the flow.



Technical Features:

- **No Moving Parts.**
- **Service Medium : Steam, Gas, Liquid**
- **Available for line size from 15 mm to 200 mm.**
- **Indicate Flow, Total and Cumulative Flow.**
- **High Accuracy.**
- **Temperature range upto 350 Deg.C.**
- **Pressure upto 64 Bar.**
- **Supply 24 V DC, 220 V AC, 3.6 V Battery Operated.**
- **Output 4 – 20 mA.**
- **Turndown Ratio 1: 30.**
- **K factor for calibration and error correction.**

Flow Range

Full tube vortex flow meter measuring range

Table 1: Vortex flow meter for gas:

Size mm	Meter factor/m ³	Normal Gas and Steam			
		Measuring range m ³ /h	Frequency Setting Hz	CH Selection	Amplification factor
15	350000	3-50	300~3900	CH3	500
20	145000	5-80	200~3000	CH3	500
25	80000	6-120	150~2500	CH3	500
32	35000	10-150	100~2200	CH3	500
40	19000	16-320	80~2000	CH3	500
50	9100	25-500	50~1200	CH3	500
65	4260	40-800	40~900	CH3	500
80	2300	60-1250	30~800	CH3	500
40	19000	16-320	80~2000	CH3	500
50	9100	25-500	50~1200	CH3	500
65	4260	40-800	40~900	CH3	500
80	2300	60-1250	30~800	CH3	500
100	1200	100-2000	25~600	CH3	500
125	580	150-3000	20~500	CH3	500
150	345	200-4500	15~400	CH3	500
200	145	300-8000	10~320	CH3	500

Table 2: The flow range of vortex flow meter for liquid.

Size mm	Meter factor/m ³	Liquid(Water)			
		Measuring range m ³ /h	Frequency Setting Hz	CH Selection	Amplification factor
15	350000	0.8-9	40~800	CH2	500
20	145000	1.2-15	30~600	CH2	500
25	80000	2-18	18~360	CH2	500
32	35000	2.5-30	15~300	CH2	500
40	19000	3 -48	10~250	CH2	500
50	9100	5-75	9~190	CH2	500
65	4260	8-120	8~160	CH2	500
80	2300	14-180	51~20	CH2	500
100	1200	22-300	4~100	CH2	500
125	580	40-450	3~90	CH2	500
150	345	56-660	2~60	CH2	500
200	145	100-1200	2~50	CH2	500

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