

Vortex Gas/Liquid Flow Meter

◆◆◆ WSL-LWGY/ WSL-LWQ Series Vortex Gas/Liquid Flow Meter



Vortex Flow meter is one kind of main flow meters in the international for detection and metering the liquid, gas and steam. It is widely used in Petroleum, chemical, metallurgy, heat supply industry, etc.

Features

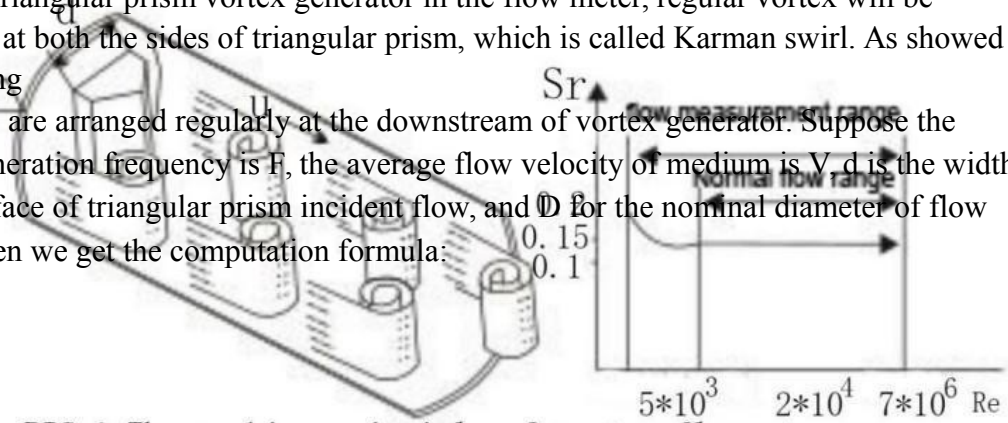
- ★ Detecting element does not touch with flow medium, with high reliability and strong flexibility for medium
- ★ No moving parts, wear resistance, structure is simple and fastness
- ★ Good earthquake resistance
- ★ The allowed working temperature is wide from -40°C to +350°C
- ★ Wide range, High accuracy
- ★ Pulse signal output or two-wire system 4-20mA current signal output.

$$f = S_r \frac{\bar{V}}{(1 \sim 1.25d/D) d}$$

principle

Setting a triangular prism vortex generator in the flow meter, regular vortex will be generated at both the sides of triangular prism, which is called Karman swirl. As showed on the drawing

1.1, vortex are arranged regularly at the downstream of vortex generator. Suppose the vortex generation frequency is F , the average flow velocity of medium is V , d is the width of the surface of triangular prism incident flow, and D for the nominal diameter of flow meter. Then we get the computation formula:



PIC 1: The working principle of vortex flowmeter

Technical parameters

Items	Specifications
Measured Medium	Liquid, Gas, Steam
Medium Temp.	-40 ~ +200°C ; -40 ~ +280°C ; 40 ~ +350°C
Nominal Pressure	1.6MPa ; 2.5MPa ; 4.0MPa ; 64MPa(Other pressure can be custom)
Accuracy	±1.0%,±1.5%
Measuring range ratio	1:8-1:30(Standard air condition as reference), 1:8-1:40(Normal Temperature as reference)
Flow range	Liquid: 0.4-7.0m/s; Gas:4.0-60.0m/s; Steam:5.0-70.0m/s
Specifications	DN15 ~ DN600
Material	1Cr18Ni9Ti
Reynolds number	Normal $2 \times 10^4 \sim 7 \times 10^6$
Resistance	$Cd \leq 2.6$
coefficient	
Vibration acceleration	allowed LUGB $\leq 0.2g$
Ex-proof class	IP65 ExiaIICT6 Ga
Ambient condition	Ambient Temp. -40°C-65°C(Non Display on site); -20°C-55°C(Display on site)
	Relative humidity: $\leq 5\% \sim 93\%$
	Pressure: 86-106kPa
Power Supply	12-24V/DC or 3.6V battery powered
Signal Output	Pulse frequency signal2-3000Hz,Low level $\leq 1V$,high level $\geq 6V$
	Two-wire system 4-20 signal(isolated output),Load ≤ 500