

# LUGB Vortex Flowmeter

## Overview

LUGB swirl flowmeter is also called as vortex flowmeter, it is a new type of flowmeter which is developed according to fluid vibration theory, widely used for fluid measurement in petroleum, chemical industry, metallurgy, paper and other industries. This flowmeter has no movable parts, strong reliability, high precision, long life, can accurately measure the instantaneous flow and accumulative flow of the medium in a wide flow range, not influenced by medium temperature, pressure, viscosity and components, while with no blocking, not getting stuck, not easy to scale, high temperature and high pressure resistance, safety explosion-proof, suitable for harsh environments. Flowmeter includes integrated display and remote display, it can also output pulse signal, current signal or 485, Hart protocol and network with microcomputer.

## Features

1. No removable parts, corrosion proof, stable and reliable, long service life, long-term operation without special maintenance.
2. Use 16-bit computer chip, high integration, small size, good performance, powerful overall instrument function.
3. According to requirements of different users, there are various high, medium and low converter (electronic meter) configurations.
4. Various structures, split, integrated flange, clamp and so on, integrated flange can integrate flow probe, microprocessor, pressure and temperature sensor. With built-in combination, make the structure more compact, can directly measure fluid flow, pressure and temperature. For gas measurement, can realize automatic real-time tracking compensation and compression factor correction.
5. According to user requirements, can use dual detection technique which can effectively improve the strength of the detection signal, and to suppress the interference caused by the vibration of the line.
6. Use convertor (electronic meter) with domestic leading intelligent vibration resistance technology which effectively suppresses interference signals caused by the vibration and pressure fluctuations.
7. Use Chinese characters, English dot matrix display with more display digits, easy and intuitive to read.
8. Converter (electronic meter) can output frequency, pulse, equivalent, four-wire 4-20mA, three-wire 4-20mA and two-wire 4-20mA, analog signals, RS485 interface, Hart protocol output.
9. Use EEPROM technology, convenient for parameter setting, can be saved permanently.
10. Historical data can be saved up to a year.

11. Overall unit is with low-power consumption, with lithium battery power supply, or external power supply of 12V, 24V.

## Operating Principle

When the fluid with specific flow rate flowing through the vortex body in flow field, in the downstream of cylinder generates a pair of alternating and neat vortex rows (Vortex), firstly generates on the one side of the cylinder, then generates on the other side of the cylinder. This theory of vortex first nominated by Karman and it was named as Karman vortex row, and gives the relationship of the frequency and velocity, where the coefficients are named as Hal Lancaster number.

## Main Technical Parameters

Specification and basic parameters of gas vortex flow meter

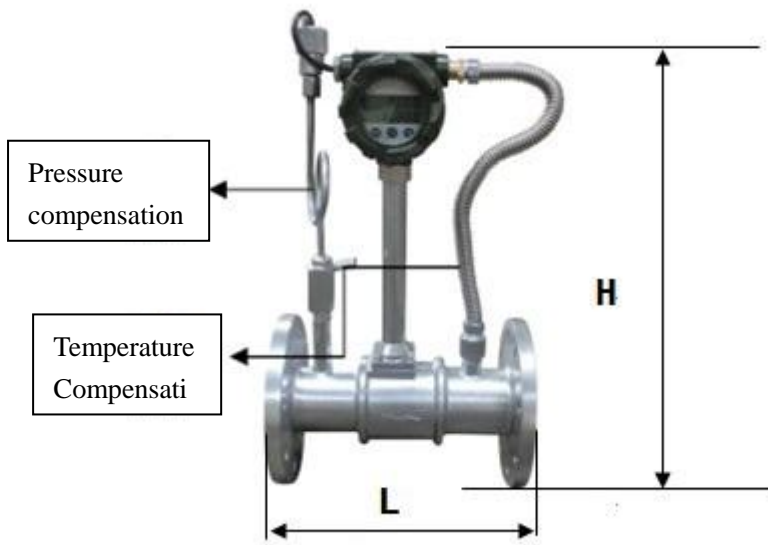
Inside Nominal Diameter DN (mm)	Flow Range m <sup>3</sup> /h	Working Pressure MPa	Accuracy Level	Repeatability	Installing Form				
15	0.4~3.5	1.0 1.6 2.5 4.0 6.3 10.0 16.0 25.0 42.0	1.0 1.5	0.33 0.5	Split type Clamp type Flange type				
20	1.2~9								
32	1.6~15								
40	2.5~20								
50	3.5~35								
65	6~60								
80	9~90								
100	14~140								
125	22~220					0.6 1.0 1.6 2.5 4.0 6.3 10.0			
150	32~320								
200	56~560								
250	100~800								
300	150~1200								

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Inside Nominal Diameter DN (mm)	Flow Range m <sup>3</sup> /h	Working Pressure MPa	Accuracy Level	Repeatability	Installing Form
15	3.5~25	1.0	1.0 1.5	0.33 0.5	Split type Clamp type Flange type
20	13~70	1.6			
32	15~150	2.5			
40	25~210	4.0 6.3			

50	35~320	10.0			
65	48~480	16.0			
80	90~750	25.0			
100	150~1200	42.0			
125	180~1700	0.6			
150	320~2500	1.0			
200	550~4500	1.6			
250	1100~7000	2.5			
300	1500~10000	4.0			
		6.3			
		10.0			

**Installing shape and size**



Caliber	L (Length) mm	H (Height) mm	G (weight) kg
15 20	240	400	3
25	240	400	3
32	280	450	3.5
40	280	450	3.5
50	300	500	4
65	300	500	4.5
80	400	550	5
100	400	550	5.5
125	400	600	6
150	450	650	6.5
200	450	650	10
250	500	700	15
300	500	700	20

Can make special size according to users' requirement.

LUCB	Vortex Flowmeter	
Convertor Type	I	Ordinary type
	II	Chinese and English first generation digital type
	III	Chinese and English second generation digital type
	IV	No convertor, only pulse amplifier
Connection Method	A <sub>1</sub>	Flanged joint
	A <sub>2</sub>	Flanged clamping
	A <sub>3</sub>	Threaded connection
	A <sub>4</sub>	Clamp connection
Measured Medium	B <sub>1</sub>	Normal temperature liquid
	B <sub>2</sub>	High temperature liquid
	B <sub>3</sub>	Normal temperature gas, no temperature and pressure compensation
	B <sub>3Z</sub>	Normal temperature gas, temperature and pressure compensation
	B <sub>4</sub>	High temperature gas, no temperature and pressure

		compensation
	B <sub>4</sub> Z	High temperature gas, temperature and pressure compensation
	B <sub>5</sub>	Saturated vapor
	B <sub>6</sub>	Superheated vapor
Inside Nominal Diameter	D10~350	D10~350mm
Nominal Pressure	P1.6~P32	1.6mpa~32MPa
Operating Environment	B	Explosion-proof type
	P	Ordinary type
Output Signal	E <sub>1</sub>	Pulse or equivalent
	E <sub>2</sub>	4-20mA Two-wire system 4-20mA
	E <sub>3</sub>	Three-wire system 4-20mA+pulse
	E <sub>4</sub>	RS485 interface, Mudbus
	E <sub>5</sub>	232 interface, Mudbus
	E <sub>6</sub>	Hart protocol +4-20mA output