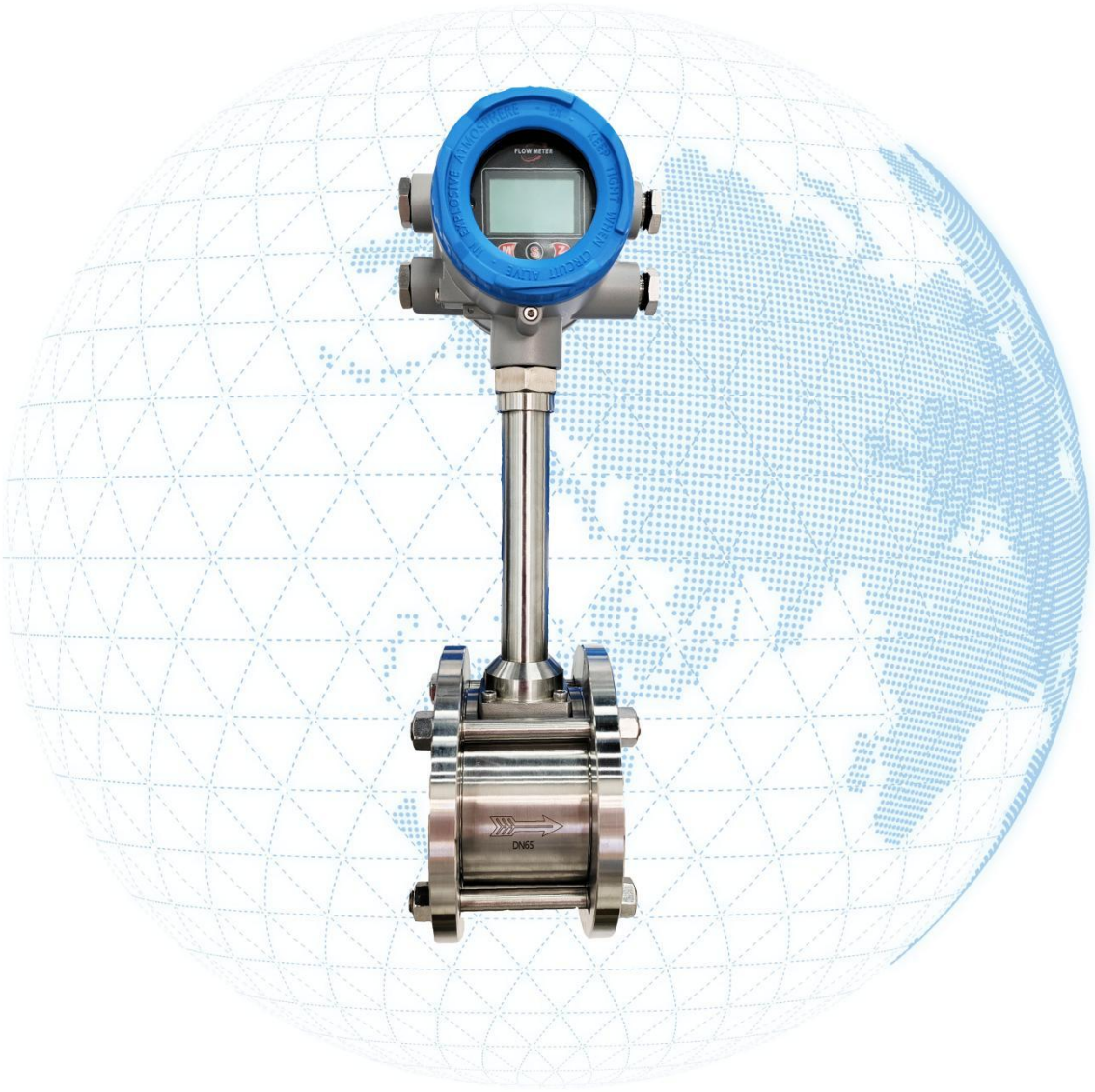
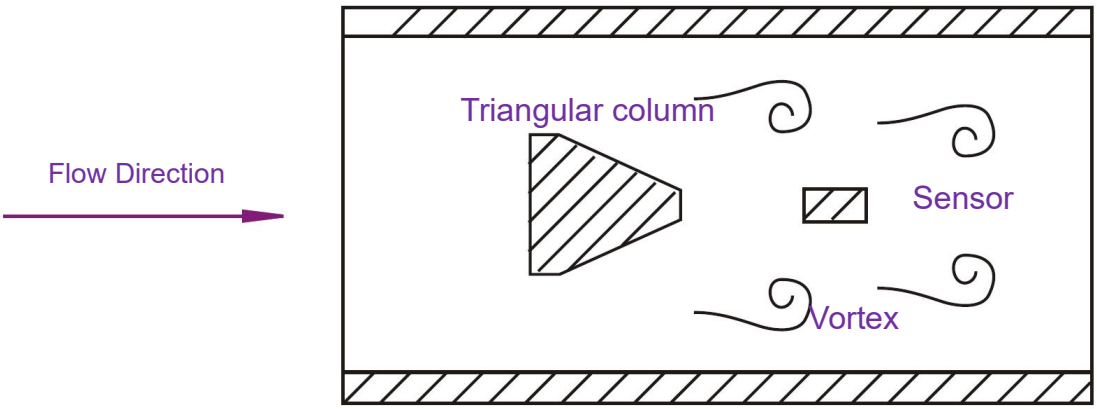
Product Manual | Vertex Flow Meter-Vavorda



Working principle

The LUGB type vortex flowmeter is a flowmeter designed and manufactured using the Karman principle theory of the relationship between the generation of vortices and the flow rate. It can be used to measure the flow of steam, gas and low viscosity liquids. A triangular column (vortex) generating body is inserted into the fluid, and a regular Karman vortex is formed alternately behind the triangular prism, and the separation frequency of the scoring is proportional to the flow velocity(V) of the measured medium. Therefore, the flow rate of the measured fluid can be calculated by detecting the number of vortices by the flow meter sensor head, and the signal processing circuit calculates the volume flow rate of the measured medium according to the sensor aperture.



$F=Sr * V/(1-1.27 * d/D)$ $Q=3600*F/K$ $M=Q * \rho$

Note:

F - Vortex frequency produced by fluid flowing through the triangular prism (Hz)

Q- -volume flow (m^3/h)

M - mass flow (kg/h)

Sr - Strohar coefficient (dimensionless)

V - the average velocity of the fluid in the pipe (m/s)

D - Vortex flow sensor inner diameter (m)

P - fluid density (kg/m^3)

K - vortex street flow sensor coefficient (number of pulses / m^3)

The K value is the number of pulses generated per cubic meter of fluid flowing through the sensor (the number of vortices generated on the back side of the triangular prism). Different vortex flow sensor apertures have different meter values K, and the K value can only be calibrated by the flow calibration device. Acquired.

Product standard: JB/T9249-1999、JJG1029-2007

Flange standard: HG/T20592-2009(Default standard)

Product feature

- High accuracy and good repeatability
- The detection element is not in contact with the fluid, and the performance is stable and the reliability is high.
- Simple and firm structure, movable parts, reliable operation for a long time
- Wide measurement range with a range ratio of 1:10 (special up to 15)
- The pressure loss is small, about 1/4~1/2 of the orifice flowmeter

Technical parameters

Measuring medium:	Liquid, gas, saturated steam, superheated steam
Medium flow rate:	Liquid 0.5~7 m/s, gas 4~40 m/s, steam 7~70 m/s
Accuracy level:	Liquid 1.0, gas 1.5, insert type 2.5
Possible range of measurement:	Reynolds number is $5*10^3$~$7*10^8$
Normal measurement range:	Reynolds number is $2*10^4$~$7*10^6$
Nominal diameter:	DN15~DN300 (pipeline type, clamping), DN150~DN2000 (insert type or customized)
Medium temperature:	-40~80°C, medium temperature -40~250°C, high temperature -40~350°C
Nominal pressure:	1.0~6.3MPa (>6.3 for customize)
Installation method:	Flange type, insert type, clamp type
Output signal:	Voltage pulse: low level ≤ 1V, high level ≥ 6V 2-wire system 4-20mA (with RS485, HART)

	Pulse frequency 0.1~3000Hz
Power supply:	3-wire pulse output 12V, 24VDC optional 2-wire power supply 24VDC Local display type 3.6V lithium 7.5AH battery, life > 2 years
Load resistance:	500Ω (when powered by 24VDC)
Electrical interface:	M20*1.5, 1/2" NPT
Body material:	SS304, SS316L (or for customize)
Head material:	Cast aluminum housing, stainless steel housing (or for customize)
Environmental conditions:	Temperature -20~+60℃, relative humidity 5% ~ 90%
Protection level:	IP65
Explosion-proof grade:	ExdIIBT4Gb, ExiaIIBT4Ga

Selection table

1. Process connection			
1-Flange type	2-Flange clamping type	3-Insert type	T-Others

2. Measured medium			
1-Gas	2-Liquid	3-Saturated steam	4-Superheated steam

3. Nominal diameter
Write the value directly for example: DN15-write”015” DN200-write”200”

4. Nominal ressure				
C-1.6MPa	D-2.5MPa	E-4.0MPa	F-6.3MPa	T-for customize

5. Signal output				
0	1	2	3	4
Local display	3 wire pulse output	3 wire pulse output + HART	4-20mA	4-20Ma+HART

6. Display head	
N—Without	B-LCD display

7. Electrical interface		
M-M20*1.5	N-1/2”NPT	X—Customization

8. Power supply				
1-DC12V (Only for 3-wire pulse output)	2-24VDC	3- lithium battery 3.6V 7.5AH	4-220V	X-Customization

9. Body material		
P1-SS304	P2-SS316L	X-Customization

10. Housing material			
N-Cast aluminum	P1-SS304	P2-SS316L	X-Customization

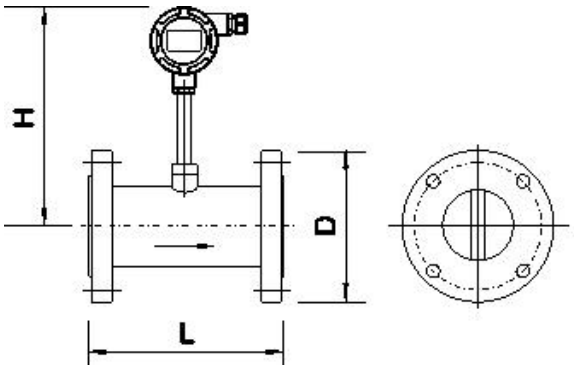
11. Operating temperature				
E-≤80℃	I-≤150℃	J-≤250℃	E-≤350℃	X-Customization

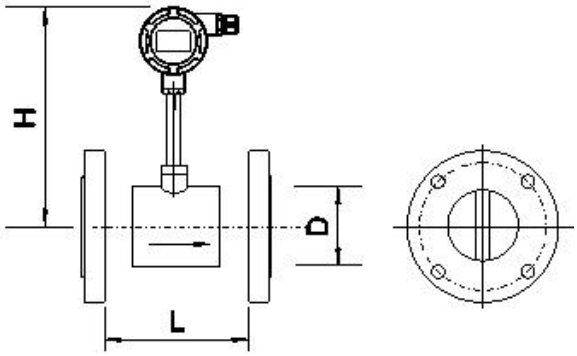
12. Optional function			
N	W	Y	Z
Without	Temperature compensation	Pressure compensation	Temperature &Pressure compensation

13. Explosion proof		
N-N/A	i-Exia II CT6Ga	e-Exd II CT6Gb

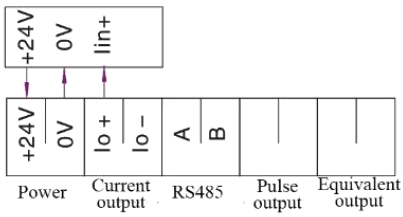
LUGB- 1 2 3 4 5 6 7 8

Product structure

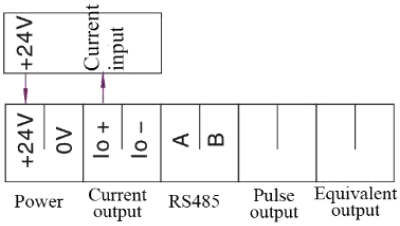




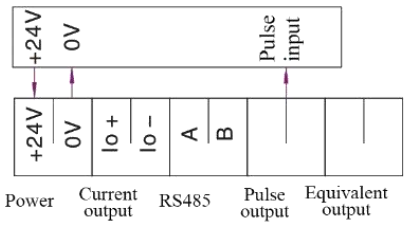
Instruments wiring



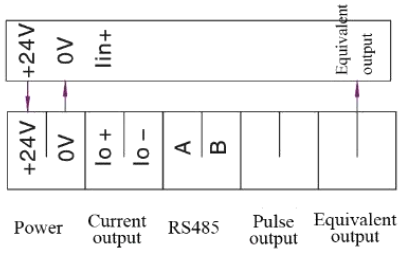
3 wires current output



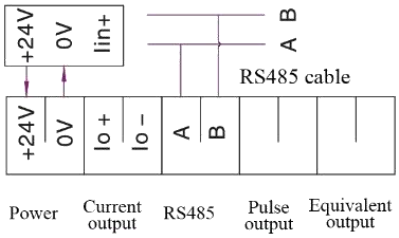
2 wires current output



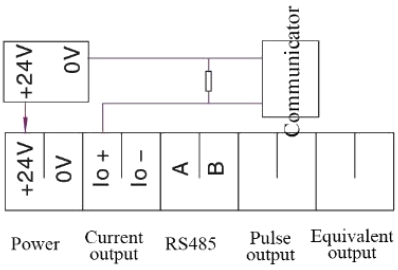
3 wires pulse output



3 wires equivalent output



RS485 Communication



HARTCommunication(2 wire)

Instrava
INDUSTRIAL MEASUREMENT
& CONTROL INSTRUMENTS

Chengdu JSH New Material CO., LTD.

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Email : info@instrava.com

Whatsapp

Wechat

Manufacturer 1 : Zigong City, Sichuan Province, China

Manufacturer 2 : Chengdu City, Sichuan Province, China