



PRECISION VORTEX FLOWMETER

PRECISION INSTRUMENTS
ACCURATE MEASUREMENT



ABOUTUS Introduction

Anhui Jujie Automation Technology Co., Ltd. is located in Wuhu, Anhui Province, the city of makers. After ten years, Jujie Automation has continued to deepen its presence in the field of industrial automation. The annual production and sales volume of its newly launched liquid turbine flowmeters is over 10,000 units, and its paperless recording instruments have obtained multiple patent certifications and third-party certification tests. Jujie Automation carefully grasps every detail and is committed to providing users with considerate products and services.

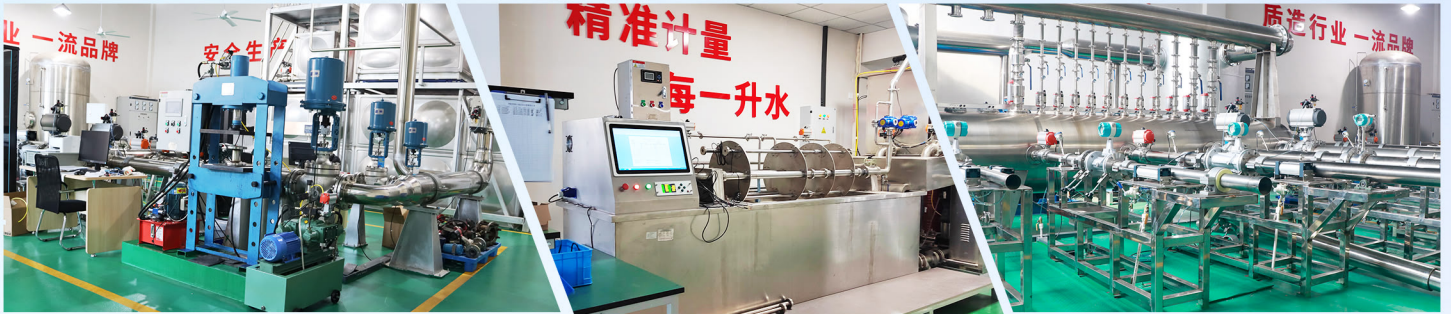
Certificate

Since its establishment, the company has applied for more than 10 patents, 8 software copyrights, and 3 registered trademarks. In 2023, the company passed the honorary titles of National Science and Technology Small and Medium Enterprises and National High-tech Enterprises. The company has also passed various certifications such as SGS, TUV, CE, CPA, ISO9001, ISO14001, ISO45001 and explosion-proof certifications for multiple products, laying a solid foundation for the development of the brand.



Factory

The 2,500-square-meter factory is equipped with various testing and calibration devices to ensure the quality of our products. It also has professional production and assembly lines and a complete warehousing system to protect our products.



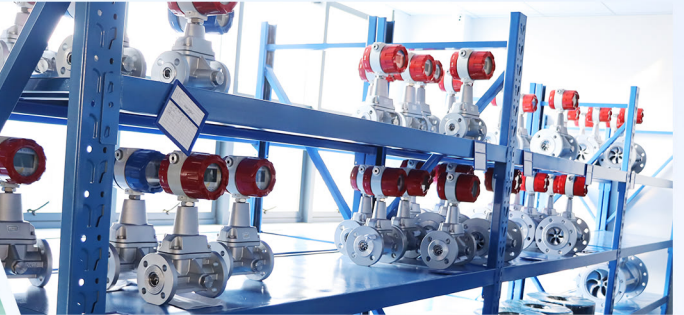
Liquid flow calibration device +

Small liquid flow calibration device +

Gas flow calibration device +



Workshop scene +

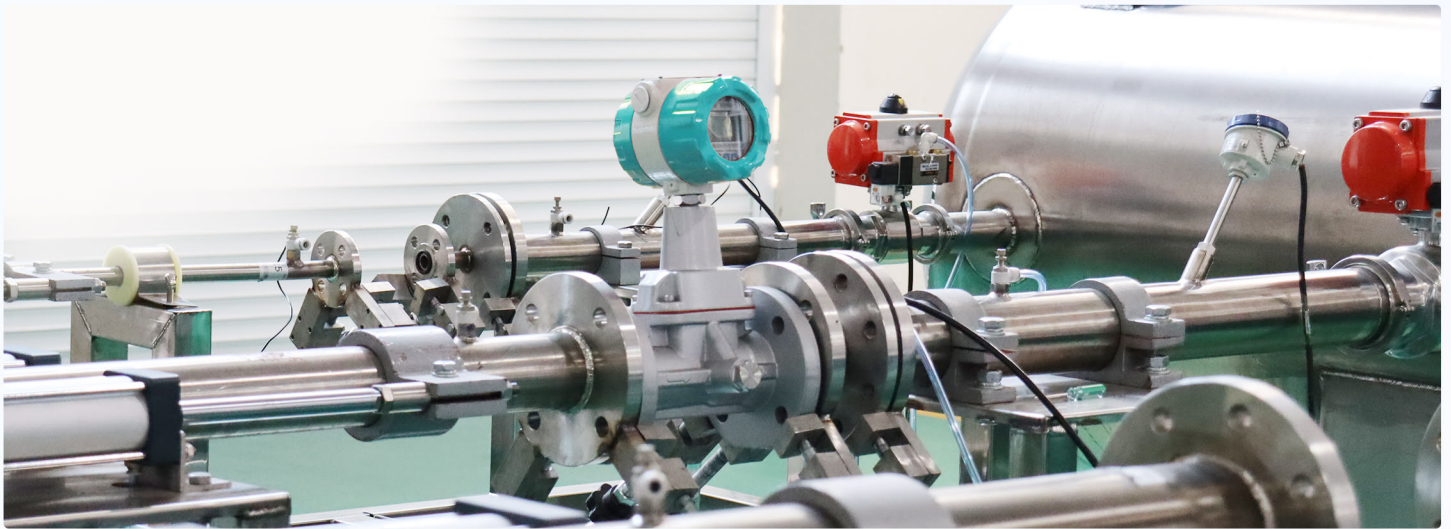


Adequate stock and fast delivery +



Precession Vortex Flowmeter ➤

The sonic nozzle gas flow calibration device issued by the provincial Bureau of Metrology +



Qualification



GTLUX Precession Vortex Flowmeter



The precession vortex flowmeter integrates flow collection, temperature and pressure detection and compensation functions, and is widely used in petroleum, chemical, electric power, metallurgy and other industries.

- Not easy to corrode, stable and reliable;
- 16-bit computer chip, high integration, small size and good performance;
- Dual detection technology improves detection signal strength and suppresses interference;
- Anti-seismic technology, suppresses interference signals from vibration and pressure;
- EEPROM technology, historical data can be saved for up to one year;
- Output pulse, 4~20mA analog signal, RS485 interface, transmission distance up to 1.2km.

Technical Parameters

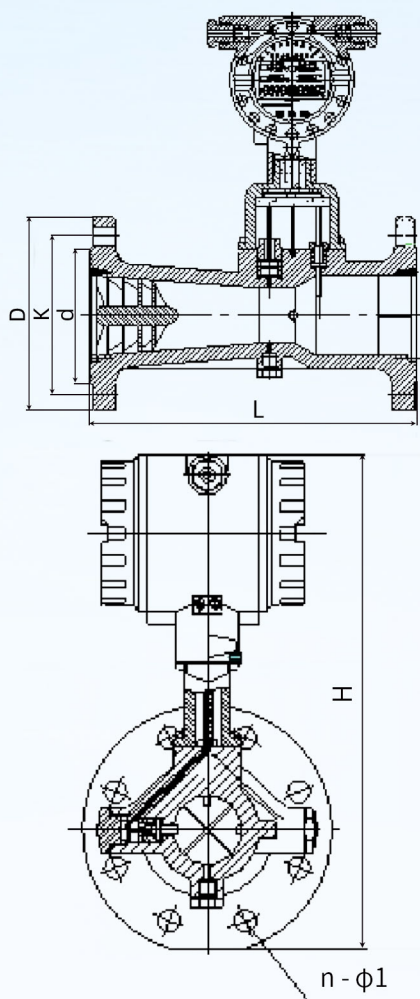
Medium	Natural gas, coal gas, compressed air and other gases
Diameter	DN15mm ~ DN200mm
Accuracy	1.0% /1.5%
Pressure	1.6MPa, 2.5MPa, 4.0MPa, 6.3MPa
Material	Aluminum alloy 304 stainless steel, 316L stainless steel
Temp	-20℃~+120℃, -20℃~+180℃, -20℃~+280℃
Conditions	Temp:-30℃~ 65℃, Humidity:5%~95%, Pressure:86KPa~106KPa
Power	3.6V Battery, 24VDC
Output	Pulse, 4-20mA, RS485
Alarm	Upper and lower limit alarms, valve closing alarms
EX sign	ExdIICT6 Gb
Protection	IP65

Flow Range

Diameter(mm)	Gas range(m³/h)	Liquid range(m³/h)	Pressure(Mpa)	Accuracy	Repeatability
DN15	1~10	0.4~2	1.6 2.5 4.0 6.3	1.0 1.5	≤2.5MPa Aluminum alloy ≥ 4.0MPa Stainless steel
DN20	2~20	0.8~4			
DN25	3~30	1.2~6			
DN32	4~50	2~10			
DN40	7~100	4~20			
DN50	10~150	6~30			
DN65	15~200	8~40			
DN80	30~400	16~80			
DN100	50~700	28~140			
DN125	60~1000	40~200			
DN150	150~2000	60~300			
DN200	240~3600	80~400			

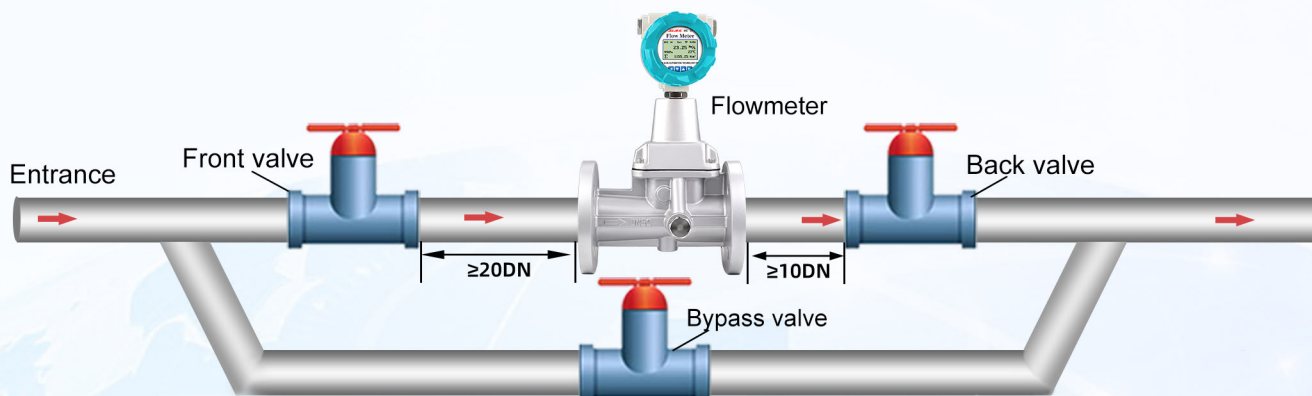
* Accuracy: System accuracy corrected for temperature and pressure

Product Size



DN (mm)	Pressure (Mpa)	L(mm)	H(mm)	D(mm)	K (mm)	N×d
15	1.6、 2.5、 4.0、 6.3	162	305	105	75	4-φ14
20	1.6、 2.5、 4.0、 6.3	162	305	105	75	4-φ14
25	1.6、 2.5、 4.0、 6.3	183	315	115	85	4-φ14
32	1.6、 2.5、 4.0、 6.3	200	330	140	100	4-φ18
40	1.6、 2.5、 4.0、 6.3	234	340	150	110	4-φ18
50	1.6、 2.5、 4.0	234	355	165	125	4-φ18
	6.3		365	180	135	
65	1.6、 2.5、 4.0	304	370	185	145	4-φ18
	6.3		390	205	160	8-φ22
80	1.6、 2.5、 4.0	330	390	200	160	8-φ18
	6.3		400	215	170	8-φ22
100	1.6	410	410	220	180	8-φ18
	2.5		420	235	190	8-φ22
	4.0		420	235	190	
125	1.6	517	435	250	210	8-φ18
	2.5		435	270	220	8-φ26
	4.0		455	270	220	8-φ26
150	1.6	580	470	285	240	8-φ22
	2.5		490	300	250	8-φ26
	4.0		490	300	250	
200	1.6	700	525	640	295	12-φ22
	2.5		540	360	310	12-φ26
	4.0		550	375	320	12-φ30

Installation instructions



- ▲ The sensor can be installed vertically, horizontally according to the flow direction.
- ▲ Supports should be installed upstream and downstream of the flowmeter to eliminate the influence of pipeline vibration.
- ▲ The installation site of the sensor should have enough space to facilitate the inspection and maintenance of the flowmeter.
- ▲ Interference from strong external magnetic fields should be avoided.
- ▲ Attending to the pressure range of the pressure sensor configured by the flowmeter to avoid overpressure.
- ▲ The upstream and downstream pipelines of the flowmeter should be coaxial to avoid shear stress.
- ▲ The valves of the flowmeter should be opened slowly to avoid damaging the vortexer.
- ▲ The flowmeter connects power supply (8-24) VDC based on the "Electrical Performance Index". No a 220VAC or 380VAC
- ▲ Users are not allowed to change the wiring method of the EX system or twist the output lead connectors at will.
- ▲ No opening the back cover at will to change the instrument parameters when the flow meter is running.
- ▲ Check the leakage at the flow meter flange regularly.

Structure and Working Principle

Structure

1.Vortex generator

Made of aluminum alloy, with spiral blades at a certain angle, it is fixed at the front of the contraction section of the shell, forcing the fluid to produce a strong vortex flow.

2.Shell

It has a flange and a fluid channel of a certain shape. According to different working pressures, the shell material can be cast aluminum alloy or stainless steel.

3.Intelligent flow totalizer

It consists of temperature and pressure detection analog channels, flow detection digital channels, microprocessor units, liquid crystal drive circuits and other auxiliary circuits, and is equipped with an external signal interface.

4.Temperature sensor

Pt100 platinum resistor is a temperature sensitive element. Within a certain range, the resistance value is in a corresponding relationship with the temperature.

5.Temperature sensor

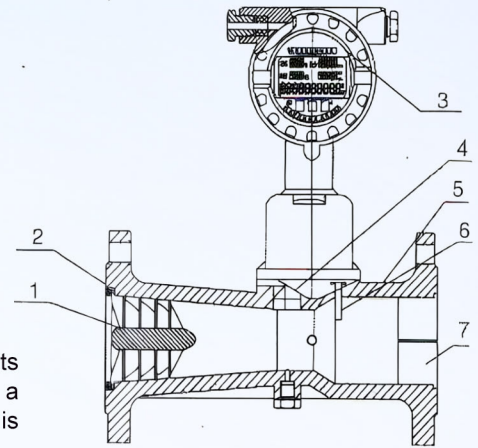
The piezoresistive diffusion silicon bridge is a sensitive element. The resistance of its bridge arm will change as expected under the action of external pressure. Under a certain excitation current, the potential difference between the two output ends is proportional to the external pressure.

6.Piezoelectric crystal sensor

It is installed near the throat of the expansion section of the shell and can detect the frequency signal of the vortex precession.

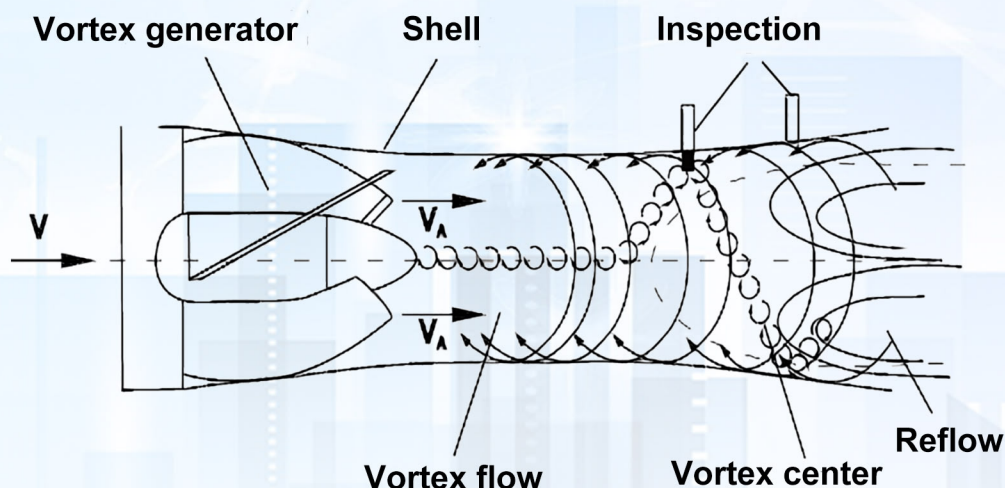
7.Derotator

Fixed at the outlet section of the shell, its function is to eliminate the vortex flow to reduce the impact on the performance of downstream instruments



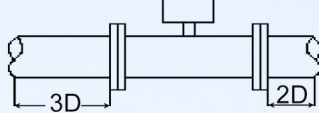
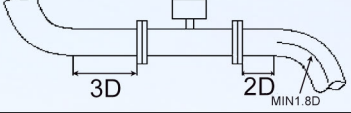
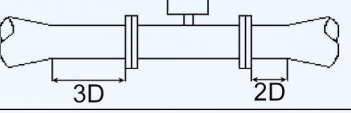
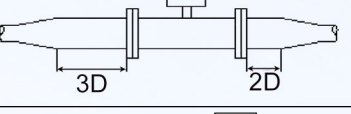
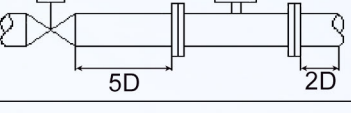
Working Principle

The flow profile of the flow sensor is similar to the profile of the Venturi tube (Figure 2). A set of spiral guide vanes are placed on the inlet side. When the fluid enters the flow sensor, the guide vanes force the fluid to produce a violent vortex flow. When the fluid enters the diffusion section, the vortex flow is affected by the backflow and begins to rotate secondary, forming a gyroscopic vortex precession phenomenon. The precession frequency is proportional to the flow rate and is not affected by the physical properties and density of the fluid. The detection element measures the precession frequency of the secondary rotation of the fluid and can obtain good linearity within a wide flow range. The signal is amplified, filtered, and shaped by the preamplifier to be converted into a pulse signal proportional to the flow rate, and then sent to the microprocessor for integration processing together with the temperature, pressure and other detection signals, and finally the measurement results (instantaneous flow, cumulative flow, temperature, and pressure data) are displayed on the LCD screen.



Straight Pipe Section

Suggestions are as follows:

Instruction	Diagram
Straight pipe: The length of the straight pipe section on the upstream side is at least 3D, and the length on the downstream side is at least 2D. (D: the nominal diameter of flowmeter)	 I
Bending pipe: The length of the straight pipe section on the upstream side is at least 3D, and the length on the downstream side is at least 2D.	 II
Shrink pipe: The length of the straight pipe section on the upstream side is at least 3D, and the length on the downstream side is at least 2D.	 III
Expanding pipe: The length of the straight pipe section on the upstream side is at least 3D, and the length on the downstream side is at least 2D.	 IV
Valve: If there is a valve on the upstream side, the straight pipe length on the upstream side must be at least 5D, and the length on the downstream side must be at least 2D.	 V

Selection Instructions

Precession vortex flowmeter selection table				
Model		Instructions		
GTLUX	- □ - □ - □ - □ - □ - □	Precession vortex flowmeter		
Diameter	15	Flow range: 1~10m³/h		
	20	Flow range: 2~20m³/h		
	25	Flow range: 3~30m³/h		
	32	Flow range: 4~50m³/h		
	40	Flow range: 7~100m³/h		
	50	Flow range: 10~150m³/h		
	65	Flow range: 15~200m³/h		
	80	Flow range: 30~400m³/h		
	100	Flow range: 50~700m³/h		
	125	Flow range: 60~1000m³/h		
	150	Flow range: 150~2000m³/h		
	200	Flow range: 240~3600m³/h		
Type	A	Standard temp and pressure compensation, output pulse/4~20mA/RS485, 24VDC and lithium battery dual power supply		
	B	With HART protocol output		
Connection	L	Threaded connection (custom)		
	F	Flange connection (default)		
	K	Clamp connection (custom)		
Material	A	Aluminium alloy		
	S	SS304		
	L	SS316L		
Explosion-proof	-	Non-marked and non-explosion-proof		
	E	Explosion proof (ExiaIICT5 / ExdIICT6)18		
Pressure	N	Normal pressure 1.6MPA		
	HPx	-1 pressure 2.5MPA;-2 pressure 4.0MPA;-3 pressure 6.3MPA		

Application

The precession vortex flowmeter has passed the sonic nozzle gas flow calibration with a certificate issued by the Provincial Metrology Bureau. Output signal: pulse, 4-20mA, RS485, with HART protocol output. Connection: threaded connection, flange connection, clamp connection. Body material: aluminum alloy, 304, 316L. Standard temperature and pressure compensation function. Lithium battery dual power supply. Optional explosion-proof type.

Measuring Medium

Natural gas

Compressed
airLiquefied
gasCarbon
dioxide

Nitrogen

Hydrogen

Oxygen

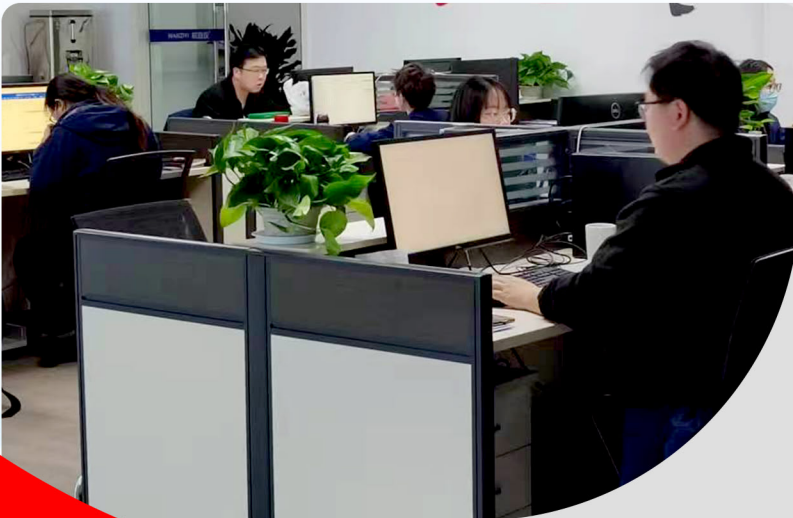
Methane

More media
consulting engineers

Service

Jujie Automation has a complete after-sales system. We carefully grasp every detail from pre-sales, sales and after-sales, and are committed to providing users with better products and better service-oriented enterprises.

Jujie Automation is willing to work hand in hand with you for win-win cooperation!



Service system Service System

Professional engineers are online 24/7 to help you solve various problems such as product installation, measurement interference, operation and use.

You can contact customer service through multiple platforms such as the company's official website and company store. .

Online
ContactTelephone
ContactVideo
GuidanceReservation
Door

☎ 400-167-6978

✉ winnasheng@jujietech.com

🌐 <http://www.jujea-tech.com>

📍 Room 06-07, L-shaped plant, Broadcom Technology Park, No. 98,
Guandoumen Road, Jiujiang Economic Development Zone, Wuhu City, Anhui Province