User Manual

Rotary Flow Sensor

(JS11-11P/JS11-22P/JS11-P10)

Shanghai ChiMay Technology Co., Limited

www.chimaytech.com
www.shchimay.com

Preface

Safety Warnings

Please read the manual carefully before installation and operation after unpacking.

Hazard Indication Information

If multiple hazards exist, this manual will use the corresponding terms (Danger, Caution, Note) to indicate the maximum hazard.

Note

- Each instrument is subjected to aging tests and inspected by professional technical engineers before leaving the factory to ensure product quality. Factory parameters are set based on your requirements.
- This device is only suitable for measuring liquid flow (not suitable for gases, high-viscosity fluids, or fluids with impurities).
- When connecting the sensor with other instruments, please read the wiring instructions in the manual or contact the company's technical personnel.
- Do not exceed the rated pressure and temperature.
- Select the appropriate time interval for chemical compatibility.
- Disconnect the power before wiring.

Quality Assurance

The product is guaranteed to be free from defects due to material or manufacturing issues for at least one year from the date of shipment. During the warranty period, the company is responsible for free replacement or repair of the product. The warranty for replacement or repair of defective products is only valid for the original customer during the warranty period.

Please contact the company or the service center in your region for warranty support. Do not return the product without the company's permission.

Limitations

This warranty does not cover:

- Damage caused by force majeure, natural disasters, social unrest, war (declared or undeclared), terrorism, civil strikes, or government regulations.
- Damage caused by explosions, accidents, improper use, or installation.
- Damage caused by unauthorized repairs or attempts to repair.
- Damage caused by not following the product usage guidelines provided by the company.
- Transportation costs for returning the product to the company.
- Costs for adding or transferring parts or products during the warranty period.
- Travel expenses related to on-site repairs.

Content

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

Section 1: Introduction

1.1 Instrument Description

The rotary flow sensor is suitable for measuring fluids without solid particles, fibers, or high viscosity. The flow parts are made of wear-resistant materials, making it suitable for harsh environments. The five-blade rotor design ensures better dynamic balance, significantly improving the sensor's linear and repeatability accuracy. The sensor has a low flow rate of 0.1m/s, with a measurement range of 0.5m/s to 8m/s, ensuring accuracy (flow rate exceeding 1%). The sensor can be quickly installed on pipelines of various materials from DN15 to DN600. The sensor uses NPN open-collector output, high-speed pulse output, and can be directly connected to a flow transmitter or PLC. The standard square wave signal can be transmitted up to 300m, ensuring signal transmission and anti-interference.

1.2 Features of Rotary Flow Sensor

- Stable square wave signal with NPN open-collector output, strong driving capability.
- Five-blade rotor design for better dynamic balance and more stable measurement accuracy.
- Flow parts have high chemical corrosion resistance.
- Suitable for flow rates of 0.15～8.00m/s (0.5～26ft/s).
- Easy installation.
- IP68 protection level, suitable for harsh field environments.
- High reliability, maintenance-free.

1.3 Applications

- Pure water and water purification projects.
- Water treatment and recycling.
- Water flow monitoring.
- Food and beverage (food processing/high-temperature fermentation/beer).
- Industrial process control (industrial processes/monitoring).
- Filtration systems.
- Cooling water monitoring.
- Pump protection.

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

1.4 Technical Parameters

Flow Range: 0.15---8m/S

Pipe Diameter Range: DN15---DN600

Output Signal: Square wave, NPN open-collector; 40-42Hz/m/S;

Power Supply Voltage: DC5-24V

Measurement Accuracy:

Linear Accuracy: 1%

Repeatability Accuracy: 0.5%

Pressure and Temperature:

PP Body: 12.5bar@25℃-1.7bar@80℃

CPVC Body: 12.5bar@25℃-1.7bar@80℃

PVDF Body: 12.5bar@25℃-2.5bar@100℃

PTFE Body: 12.5bar@25℃-2.5bar@100℃

Metal Flow Sensor: 30bar@100℃

Flow Parts:

Body: PP/PC/PTFE/PVDF

Shaft and Bearing: Al2O3/ZrO2/SS316L/Hastelloy C/Titanium Alloy

O-ring: FPM/FPDM/Fluororubber

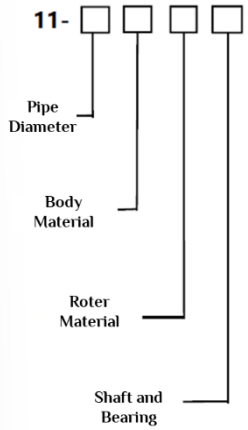
Rotor: PP/ABS/PVDF/PTFE

Protection Level: IP68

Connection Cable: High-quality shielded cable

1.5 Selection Information

1.5.1 Rotary Flow Sensor Selection Table



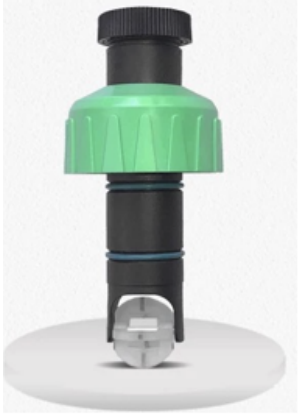
Flow Sensor							
11-	1	DN15-DN100					
	2	DN125-DN600					
			1	PP			
			2	PVDF			
			3	ABS			
			4	PTFE			
					P	PP	
					C	CPVC	
					V	PVDF	
					F	PTFE	
						Z	ZrO2
						S	SS316
						T	Titanium Alloy
						C	Hastelloy C



Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

1.5.2 Rotary Flow Sensor Selection Table

JS11-11P



Technical Parameter

Application	**Pure water reverse osmosis, ultrafiltration, water purification treatment, etc.**
Flow rate range	0.15-8m/S
Pipe diameter range	DN25-DN600
Signal output	Square wave, 45Hz/m/s
Temperature and pressure	12.5bar@25℃
Flow part material	PP/PVDF
Protection grade	IP68
Voltage supply	DC5-24V

JS11-22P

Technical Parameter

Application	**Chemical fields such as sulfuric acid, nitric acid, copper sulfate, etc., special for strong acids and alkalis**
Flow rate range	0.3-5m/S
Pipe diameter range	DN25-DN600
Signal output	Square wave, 45Hz/m/s
Temperature and pressure	12.5bar@25℃
Flow part material	PVDF
Protection grade	IP68
Voltage supply	DC5-24V

JS11-P10

Technical Parameter

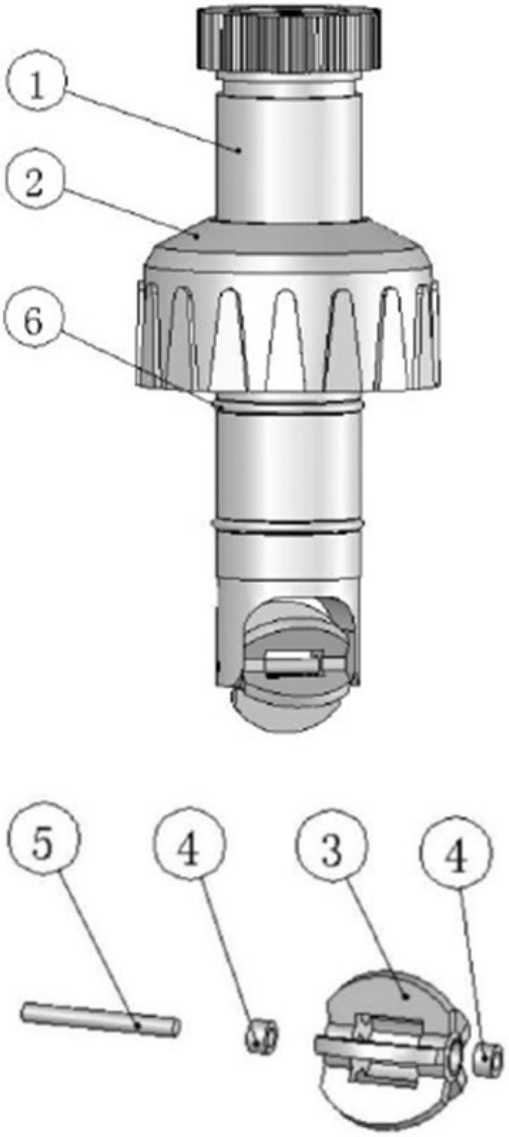
Application	**Special for smart agriculture, fertilizer applicator, and water purification treatment**
Flow rate range	0.3-5m/S
Pipe diameter range	DN15-DN50
Signal output	Square wave, 45Hz/m/s
Temperature and pressure	12.5bar@25℃
Flow part material	PP
Protection grade	IP68
Voltage supply	DC5-24V



Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

Section 2: Sensor Functions and Features

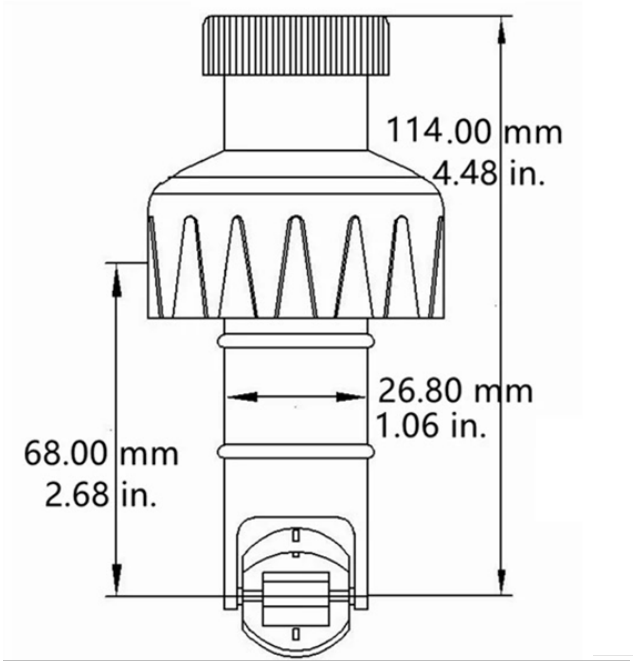
2.1 Sensor structure



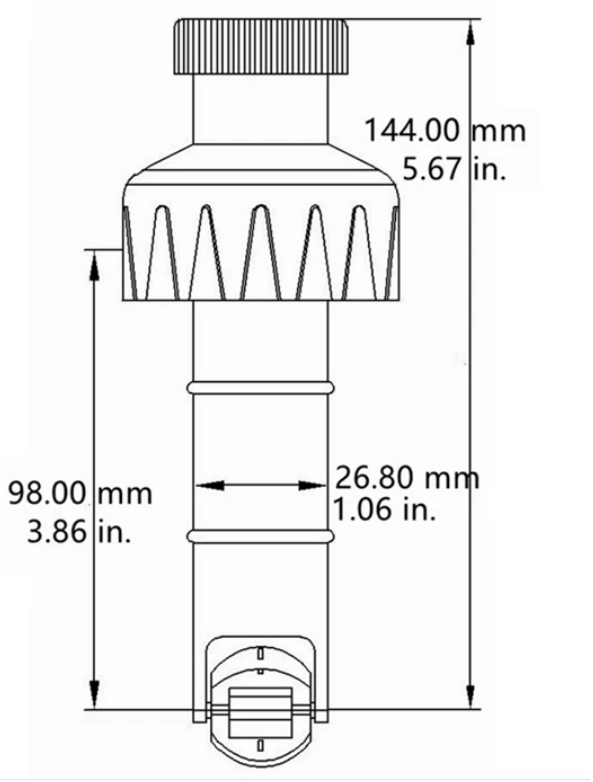
① Sensor body
② Locking nuts
③ Rotary
④ Bearing
⑤ Shaft
⑥ O-ring

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

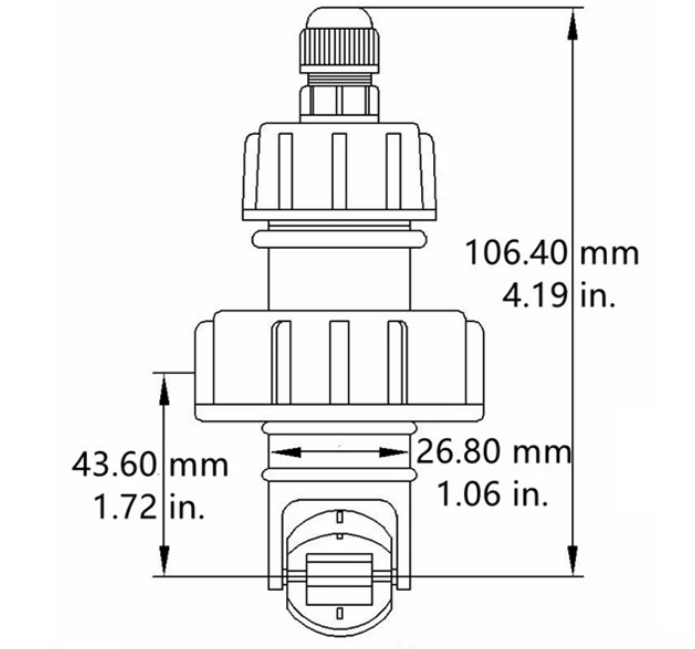
2.2 Sensor size



JS11-11P
For pipe diameter
DN20-DN100



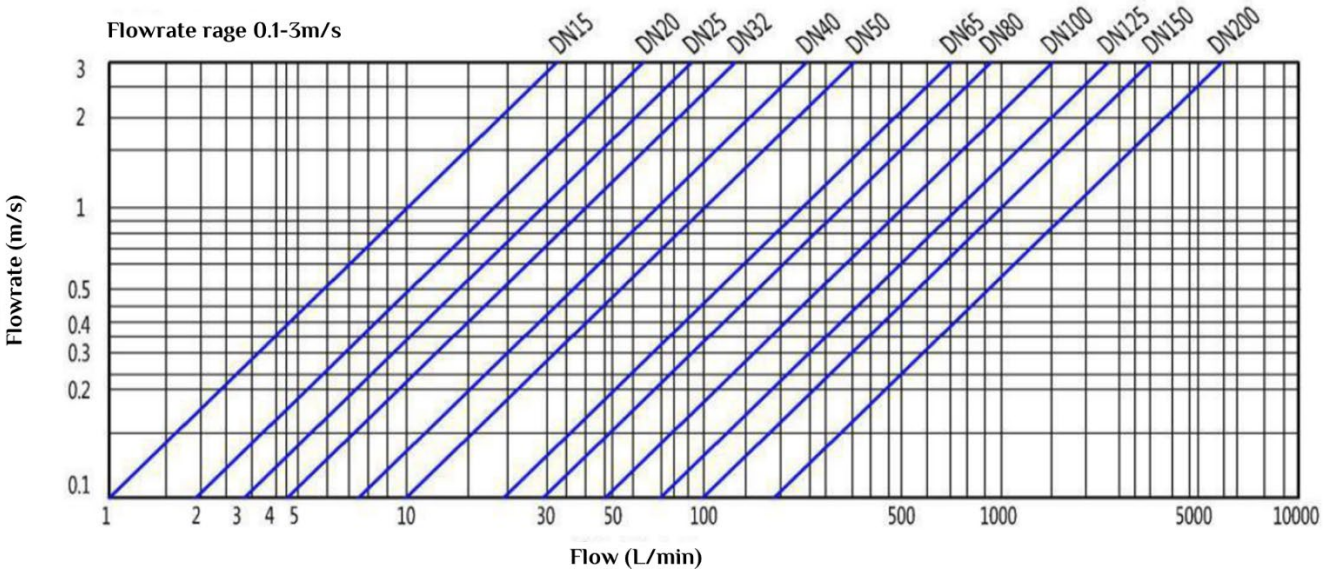
JS11-22
For pipe diameter
DN25-DN600



JS11-P10
Compact type
(special for agriculture)

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

2.3 Flowrate curve chart



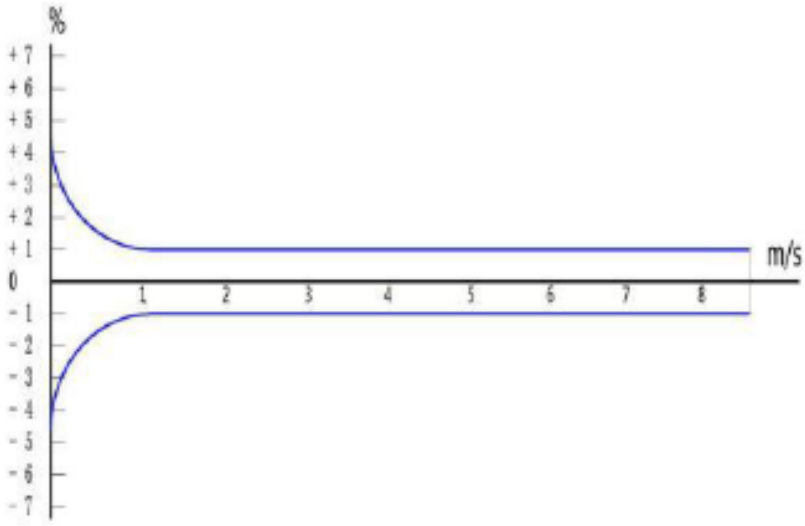
2.4 Flowrate and flow comparison table

DN \ Flow	0.3	1.0	2.0	3.0	4.0	5.0	6.0
20	0.3393	1.1310	2.2619	3.3929	4.5239	5.6549	6.8760
25	0.5301	1.7671	3.5243	5.3014	7.0686	8.8357	10.603
40	1.3572	4.5239	9.0478	13.572	18.096	22.616	27.143
50	2.1206	7.0686	14.173	21.206	28.274	35.343	42.412
65	3.5838	11.946	23.892	35.838	47.784	59.730	71.675
80	5.4287	18.096	36.191	54.287	72.382	90.478	108.57
100	8.4823	28.274	56.549	84.823	113.10	141.37	169.65
150	19.085	63.617	127.23	190.85	254.47	318.09	381.70
200	33.929	113.10	226.19	339.29	452.39	565.49	678.58
300	76.340	254.47	508.94	763.41	1017.9	1272.3	1526.8
400	135.72	452.39	904.78	1357.2	1809.6	2261.9	2714.3
500	212.06	706.86	1413.7	2120.6	2827.4	3534.3	4241.1
600	350.36	1017.9	2035.8	3053.6	4071.5	5089.4	6107.3

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

2.5 Flow Accuracy Curve and Rotor Life Parameters

Flow Accuracy Curve



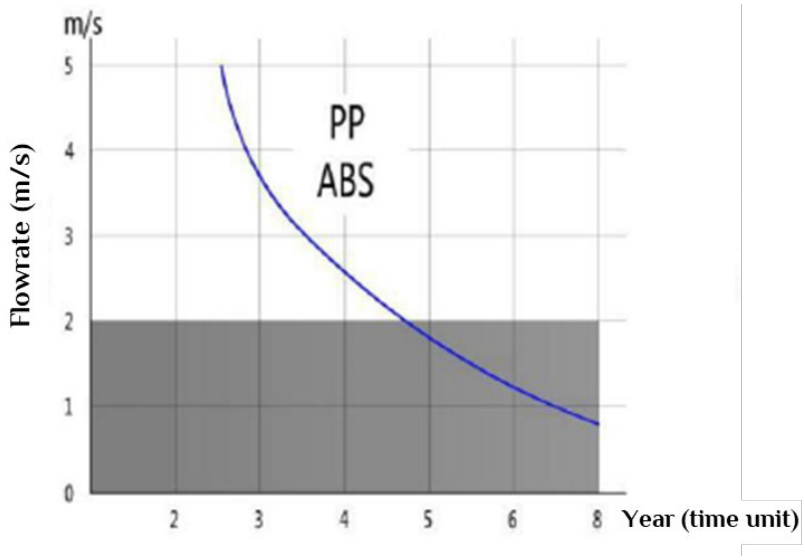
Note: The faster the flow velocity, the higher the measurement accuracy of the flow meter (low flow velocity measurement accuracy is relatively low).

Requirements for ensuring accuracy:

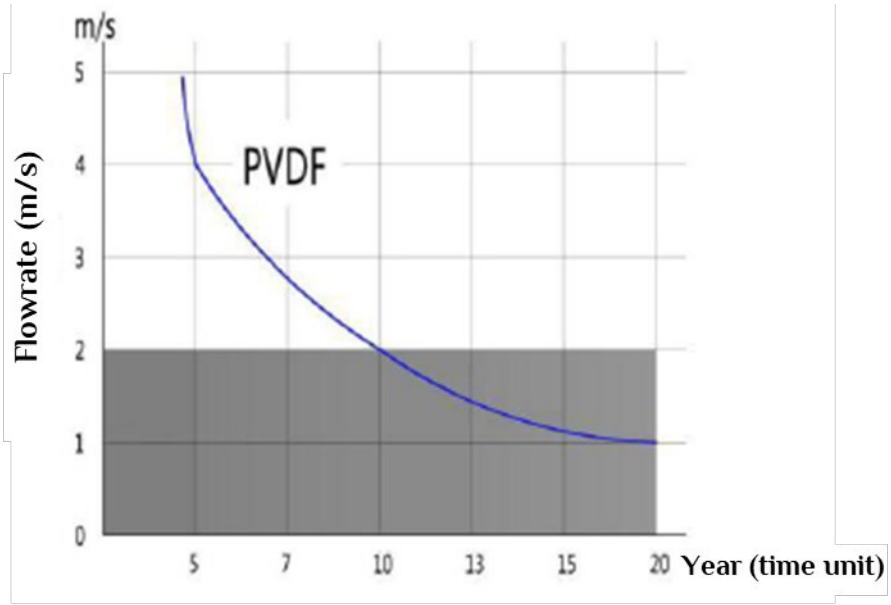
- Ensure full pipe and avoid low flow velocity areas.
- Ensure straight pipe installation requirements; insufficient straight pipe length and unstable fluid flow will increase errors.
- Avoid installing in areas where bubbles accumulate (highest point). If there are too many bubbles, it is recommended to install an exhaust valve or install at a 45-degree offset from the vertical line.
- Avoid installing near large frequency converters or large motors with high magnetic or electric fields to reduce interference with the flow meter.

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

Rotor Life Curve



- PP and ABS rotors have a normal lifespan of 2 to 5 years.
- Environments with many particulate impurities will shorten the rotor's lifespan; a filter should be installed in special environments.
- Strong oxidizing acids or highly corrosive media will also shorten the rotor's lifespan.

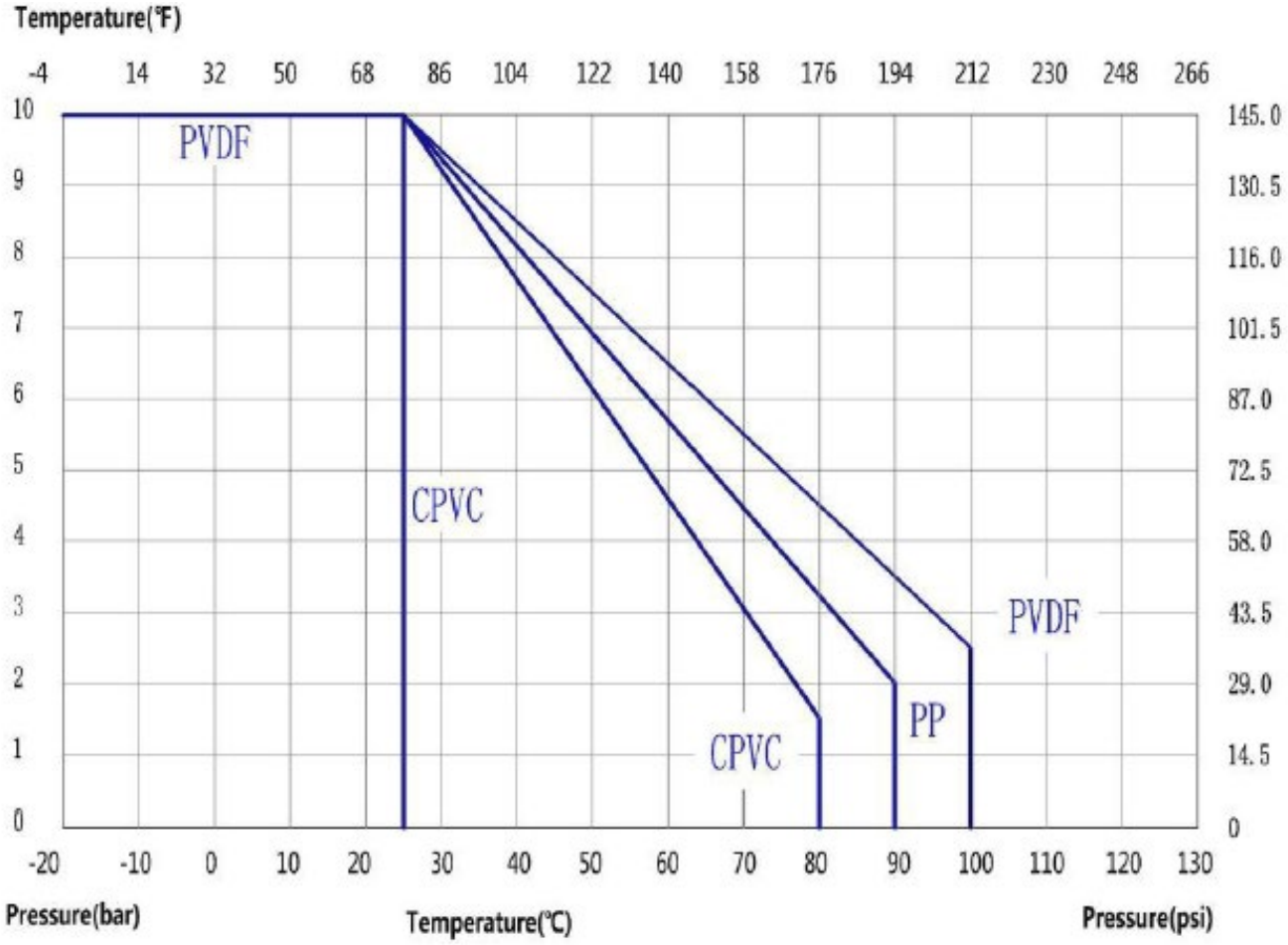


- PVDF and PTFE rotors have a normal lifespan of 4 to 9 years.
- Environments with many particulate impurities will shorten the rotor's lifespan; a filter should be installed in special environments.
- Strong oxidizing acids or highly corrosive media will also shorten the rotor's lifespan.

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

2.6 Pressure and Temperature

Max pressure and working temperature



Pressure and Temperature:

PP Body: 12.5bar@25℃-1.7bar@80℃

CPVC Body: 12.5bar@25℃-1.7bar@80℃

PVDF Body: 12.5bar@25℃-2.5bar@100℃

PTFE Body: 12.5bar@25℃-2.5bar@100℃

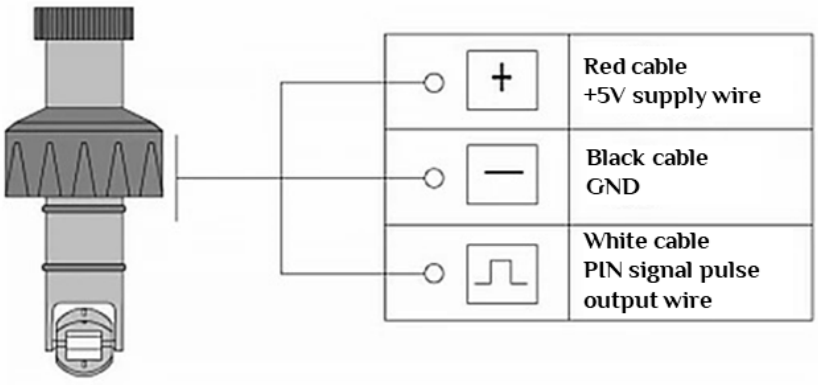
Metal Flow Sensor: 30bar@25℃

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

Section 3: Sensor Installation

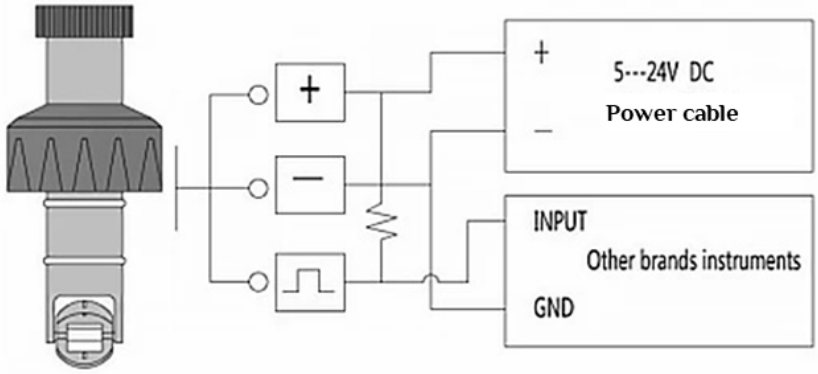
3.1 Sensor Wiring Methods

Wiring methods with other brand flow transmitters



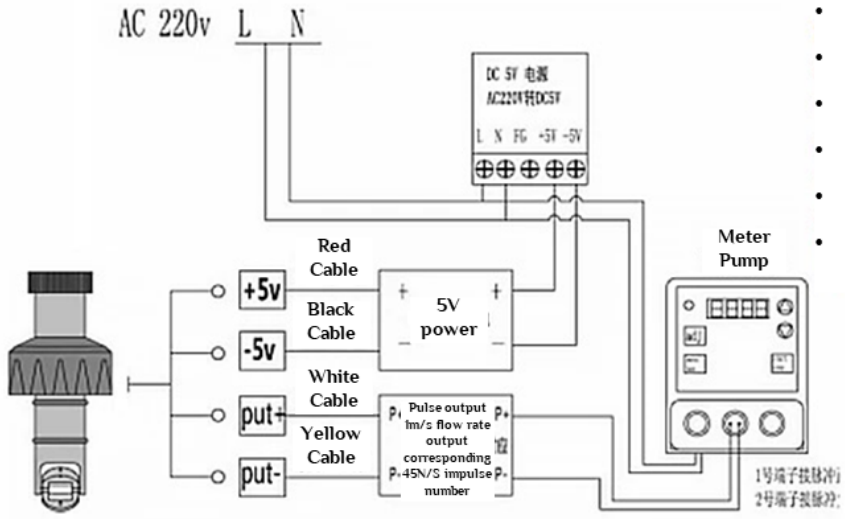
Wiring with transmitter

- +5V: +5V supply wiring (red cable)
- PIN: PIN (white cable)
- GND: GND ground wiring (black/yellow cable)



Three-wire wiring method

- DC5-24V supply
- Positive power: +5V (red cable)
- PIN: PIN (white cable)
- Negative power: GND (black cable)
- Signal GND (black cable)
- Feature: negative power and signal share the GND wiring

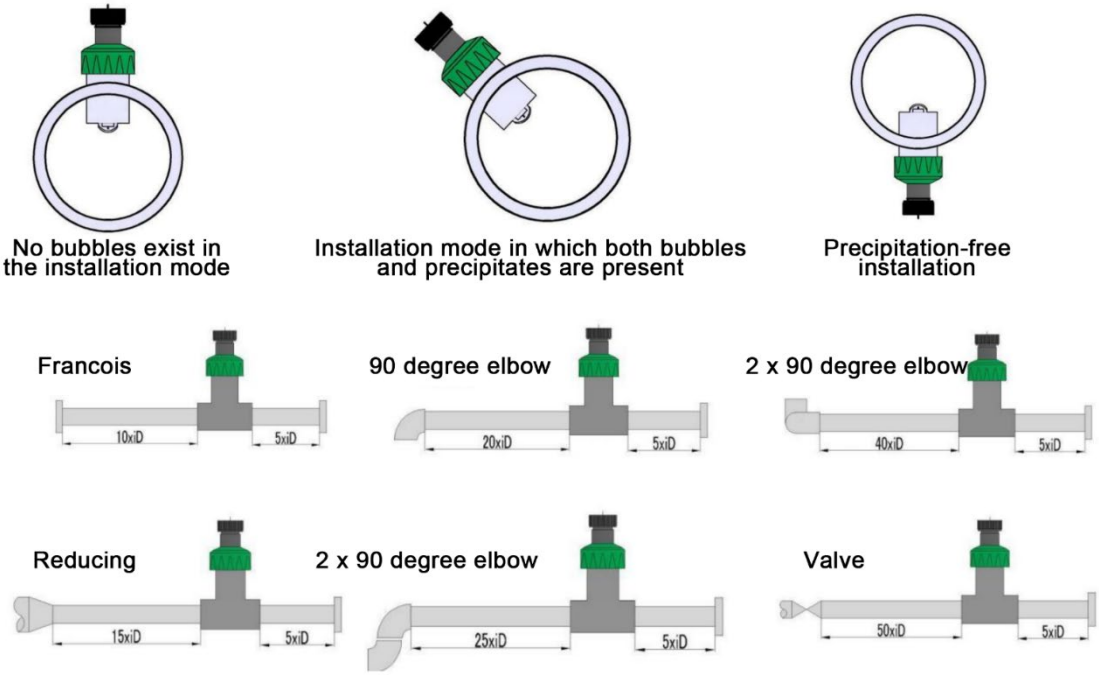


Control the wiring of the metering pump

- DC5-24V supply
- Positive power: +5V (red cable)
- PIN: PIN (white cable)
- Signal: PUT+ (white cable)
- Signal ground: PUT- (yellow cable)
- Metering pump receives a pulse signal (pulse equivalent is adjustable)

Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

3.2 Sensor installationds



Shanghai ChiMay Techology LTD
www.chimaytech.com / www.shchimay.com
chimay@chimaytech.com
WhatsApp/Cellphone:+86 131 1777 5471

For other question, feel free to contact us.

Thank you for choosing ChiMay!

VCard

WhatsApp