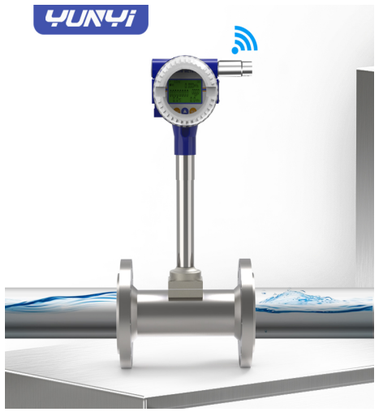
XI'AN YUNYI INSTRUMENT COMPANY LIMITED

1.Pressure Transmitter
2.Pressure Guage
3.Pressure Calibrator
4.Dead Weight Tester
5. Level Transmitter
6.Flow Transmitter
7.Temperature Transmitter
8.Density Meter

Certificates

YFV**W**300**D** wireless vortex flow meter



GENERALINFORMATION

This manual will assist you in installing, using and maintaining Vortex Flowmeter. lt is ourresponsibility to make sure that all operators have access to adequate instructions about safeoperating and maintenance procedure.

Warning

For your safety, review the major warnings and cautions below before operating your equipment.

1. Use only fluids that are compatible with thehousing materialand wetted componentsof your Vortex
2.When handling hazardous liquids.alwaysexercise-appropriate satety precautions.
3.When measuring flammable liquids,observepre-cautions against fire or explosion.
4.When working in hazardous environments,always exercise appropriate safety precautions
5.Handle the sensor carefully. Even smallscratches or nicks can affect accuracy.
6. For best results calibrate the meter atleast 1 time per year.
7. Do not purge the flow meter withcompressed air.
8. During Vortex removal, liquid may spill.Follow the manufacturer's safetyprecautions for clean up of minor spills

Applicationu

vortex flow meter is a speed flow meter, widely used in petroleum, chemical, power, lightindustry. power, heating and other industries.

Operation Principle

YFV series Vortex flow meters are designed for measuring the volume/mass flow of liquidsgases and steam based on Karman vortex principle.
Adopting advanced differential algorithm along with measurement of isolation, shielding andwave filtering, YFV series vortex flow meters have the advantages of immunity on vibrationand noise. Meanwhile, the liabilities of YFV series vortex flow meters are well quaranteed byunique sensor packaging technology.

Product Structure

The basic structure of the vortex flow meter is shown in Diagram 1. lt is mainly composed ofbody, probe, vortex generator, meter rod, condenser pipe and converter.

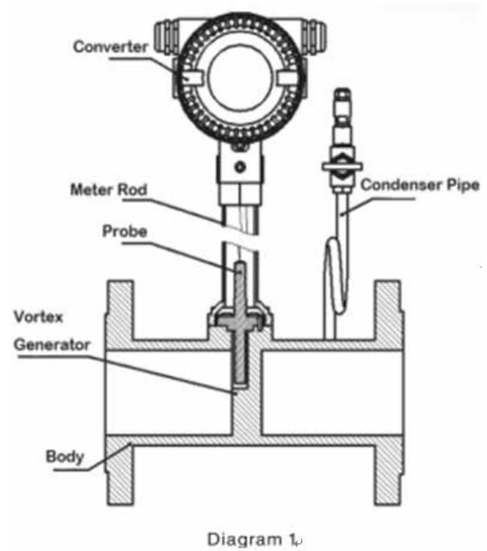


Diagram 1

TECHNICAL DATA

Measuring System

Application range	(1)Gas;(2) Liquid;(3) Steama
Measured value	
Primary Measured Valuer	Flow Rate
Secondary Measured Valuep	Volume flow;(Pressure and Temperature is available for modelwith compensation)

Reference Condition	Flow conditions similar to EN 29104
	Medium: Water/ Gas / Steam
	Electrical conductivity:≥ 300 µS/cm
	Temperature:+10...+30°C/+50...+86°F
	Inlet section:≥10 DN
	Operating pressure:1 bar / 14.5 psig
Accuracy	For Liquid: 1.0% of rate
	For gas and steam: 1.5% of rate

Design

Features	
M■dular Construction	The measurement system consists of a flow sensor and a signalconverter, It is available as compact and as separate version.
Converter Function	4G, LORA
Connection	Flange:DN15-DN300
	Wafer: DN15-DN300
Measurement Ratio	Standard - 10:1

Operating Condition

Temperature	
Process Temperature	T1 Level:-20...+70℃
	T2 Level:-20...+250℃
	T3 Level: -20...+350°C
Ambient Temperature (all versions)	Standard (with aluminum converter housing)
	-10...+55°C
Storage Temperature	-20...+70°C
Pressure	
EN 1092-1	DN200...DN300:PN10
	DN100...DN200:PN 16
	DN15...DN80: PN 25
	Other pressures on request
Measurement Ratio	1/2"..8": 150 lb RF
	Other pressures on request
JIS	1/2"..8": 10 K;20 K;etc
	Other pressures on request

Installation Condition

Installation	Make sure that flow sensor is always fully filled
	For detailed information see chapter"Cautions 4for Installation"
Flow Direction	Forward
	Arrow on flow sensor indicates flow direction
Inlet Run	≥10DN
Outlet Run	≥5 DN

Materials

Sensor Housing	SS304
	Other materials on request
	Flange Connection:SS304
	Wafer Connection Mating(Flange: Carbon Steel)
Converter Housing	Standard: polyurethane coated die-cast aluminum

Process Connection

Flangep	
EN 1092-1	DN15...300in PN 6...25
ASME	1/2”...12"in 150 lb RF
JIS	1/2"...12”in 10...20K
Design of gasket surface	RF
	Other sizes or pressure ratings on request
Wafer	DN15...DN300

Measurable Flow Range

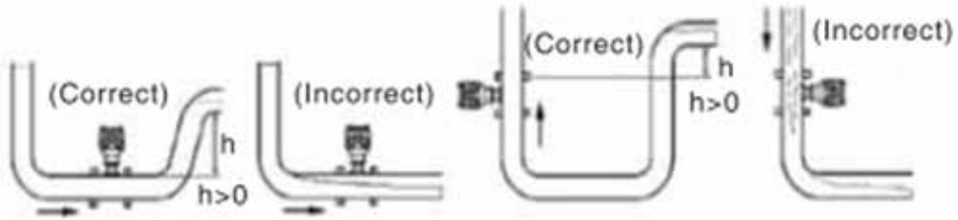
Flangep		Flangep
15	1/2”	5~30
20	3/4”	5 ~50
25	1”	7.5.75
40	1-1/2”	12~180
50	2”	17~260
65	2-1/2”	25~380
80	3”	40~600
100	4”	60~900
125	5”	100~1500
150	6”	220~3300
200	8”	450~6750
250	10”	970~8000
300	12”	1380.11000

Note:The flow range above is for reference only. Consult the factory if you have specialrequirement. Refer to the nameplate or certificate for actual flow range.

CAUTIONS FORINSTALLATION

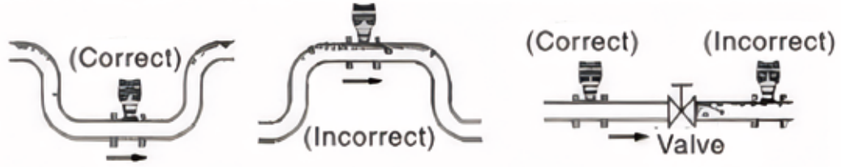
Mounting Position

☆ Pipes must be fully filled with liquids. It is essential that pipes remain fully filled at all times. otherwise flow rate indications may be affected and measurement errors may be caused.



Mounting Positions

★ Avoid Air Bubbles. If air bubbles enter a measurement pipe, flow rate indications may be affected and measurement errors maybe caused.



Avoiding Air Bubbles

★ Avoid all pipe locations where the flow is pulsating, such as in the outlet side of piston or diaphragm pumps

★ Avoid locations near equipment producing electrical interference such as electric motors, transformers, variable frequency, etc.

★ Install the meter with enough room for future access for maintenance purposes

Warning: Precaution for direct sunshine and rain when the meter is installed outside.

Required Length of Straight Runs

Flow altering device such as elbows, valves and reducers can affect accuracy. check diagram 2 for typical flow meter system installation

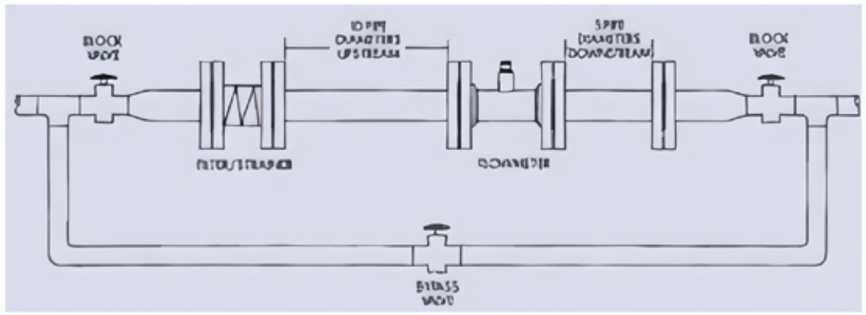
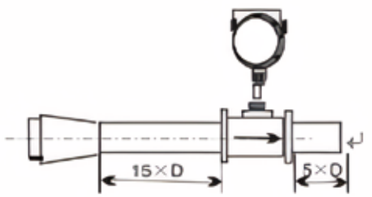
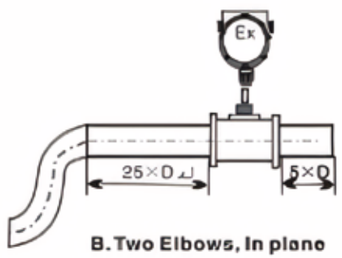


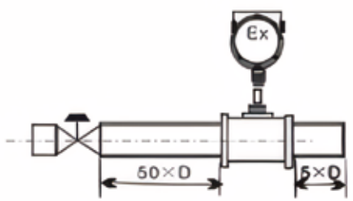
Diagram 2 General Flow Meter System Installation



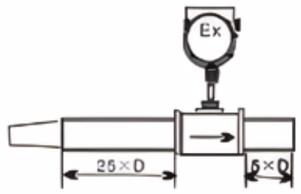
A. Reduced Pipe



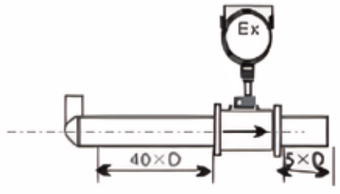
B. Two Elbows, In plane



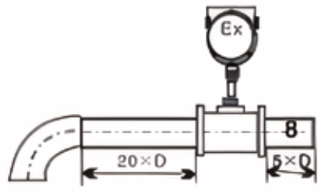
C. Regulating Valve



D. Expanded Pipe



E. Two Elbows, Out of plane



F. One Elbow

The recommended quidelines are given to enhance accuracy and maximize performance.
Distance given here are minimum requirements; Double them for desired straight pipe lengths.
☆ Upstream: allow a minimum straight pipe length at least 10 D the internal diameter of thepipe. For example, with the 50mm pipe, there should be 500mm of straight pipe immediately+upstream.Desired upstream straight pipe length is 1000mm.
☆ Downstream: allow a minimum straight pipe length at least 5 D the internal diameter of the+pipe, For example, with the 50mm pipe, there should be 250mm of straight pipe immediately +upstream.Desired upstream straight pipe length is 500mm.

Anti-Cavitationu

Cavitation can be caused by entrained air, An amount higher than about 100 mg/l of entrainedair or gas can produce error. In addition, cavitation can be caused by too little backpressure on the flow meter.For our Vortex flow meters, you should provide a backpressure (downstreampressure) of at least 1.25 times the vapor pressure, plus 2 times the pressure drop through theflow meterSee formula 14

Formula 1: Pb ≥1.25xPv + 2x (Pin - Pout)

in formula 1:(Pb: Back pressure: Pv: Vapor Pressure; Pin: Inlet Pressure; Pout: Outlet Pressure)Create backpressure by installing a control valve on the downstream side of the meter at theproper distance detailed above.

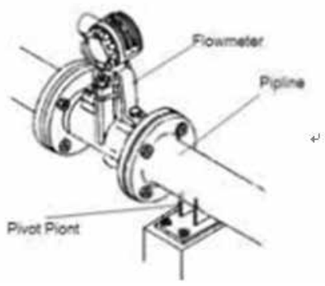
Special Notice

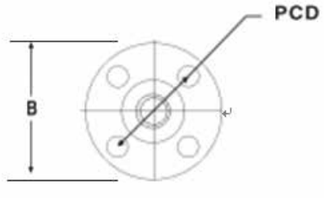
When the fluid is liquid, to ensure accurate measurement, drain all air from the system*before use
When the meter contains removable coverplates. Leave the coverplate installed unlessaccessory modules specify removal. Don't remove the coverplates when the meter ispowered,or electrical shock and explosion hazard can be caused.

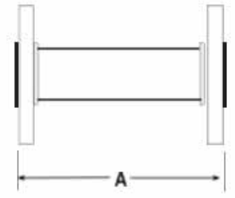
CONNECTIONS

Flange Connectionu

Installation	Make sure that flow sensor is always fully filled
	For detailed information see chapter "Cautions for Installation"
Flow direction	Forward
	Arrow on flow sensor indicates flow direction.
Inlet run	≥10DN
Outlet run	≥5DN





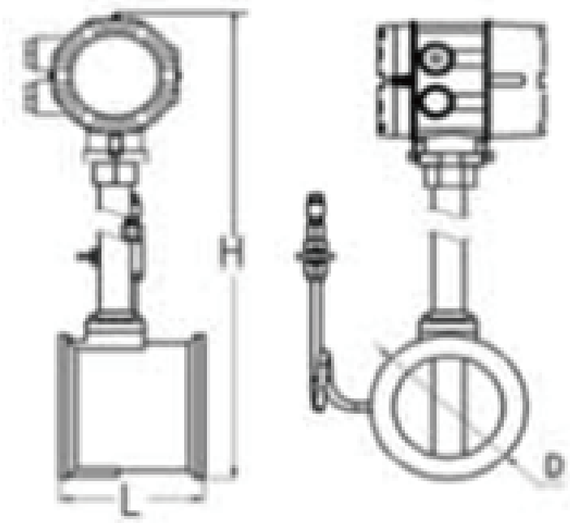


DIN PN16 Flange Meter Dimensions							
Size Code		A	DIN Flange Pressure Rating	Flange Diameter (B)	Bolt Hole Diameter	Bolt Circle Diameter (PCD)	Bolt Hole Quantity
(Inch)	(mm)	(mm)	Mpa	(mm)	(mm)	(mm)	
1/2"	15	180	1.6	95	14	65	4
3/4"	20	180	1.6	105	14	75	4
1"	25	180	1.6	115	14	85	4
1-1/4"	32	180	1.6	140	18	100	4
1-1/2"	40	180	1.6	150	18	110	4
2"	50	180	1.6	165	18	125	4
2-1/2"	65	200	1.6	185	18	145	4
3"	80	200	1.6	200	18	160	8
4"	100	200	1.6	220	18	180	8
5"	125	220	1.6	250	18	210	8
6"	150	220	1.6	285	22	240	8
8"	200	220	1.6	340	22	295	12
10"	250	250	1.6	405	26	355	12
12"	300	300	1.6	460	26	410	12

Note: For model with temperature and pressure compensation,the flowmeter lenath should beincreased 50mm compared to the value (A)in table above.

Wafer Connection

Installationp	Make sure that flow sensor is always fully filled
	For detailed information see chapter "Cautions for Installation"
Flow direction	Forward
	Arrow on flow sensor indicates flow directione
Inlet Run	≥10DN
Outlet Run	≥5 DN



Diameter mm	L mm	L0 mm	D mm	H mm	Pipe Specifcation
15	66	94	66	425	o18*1 .5
20	66	94	66	425	o25*2 .5
25	66	94	66	425	o32*3 .5
32	66	94	66	425	o39*3 .5
40	80	112	77	425	o49*4 .5
50	80	120	89	435	o59*4 .5
65	93	137	102	445	o74*4 .5
80	100	144	113	460	o89*4 .5
100	125	173	135	485	o109*4 .5
125	145	197	158	515	o134*4 .5
150	165	217	181	545	o159*4 .5
200	196	252	248	600	o219*11
250	120	166	300	650	o273*11
300	135	185	350	700	o325*12