

FLANGED TYPE VORTEX FLOW METER

Measuring Principle

When a liquid or gaseous medium flows around an object, the medium will be capable of following the contour of the object only to a limited extent and to a certain point at the object's surface. Thereafter the flow will stall and behind the object vortices will form which are entrained in the downstream flow about the object's axis whereby the vortices rotate in opposing directions. Thus vortex street is produced. This effect has for a long time now been known as "Karman vortex street". The frequency of the emerging vortices is proportional to the velocity of the flow.



In the vortex meter from the BFP series, a trapezoidal object is used to generate the vortices. This ensures in the instance of both fluid and gaseous media as well as vapours a precise and highly reliable generation of the vortices.

By suitably designing the bluff body with a well-defined edge at which the vortices form, excellent linearity can be ensured. The vortices forming at the bluff object and rotating downstream in opposing directions to each side of the axis give rise to local changes in velocity and pressure which may be detected by a piezoelectric sensor and which are then converted by the sensor electronics with autoadaptive microprocessor controlled filtering in to standardised signals.



Product Features

- Our Inline meters can measure Steam, Gases or Liquids.
- Heavy Duty & Maintenance Free Design
- No moving parts
- No holes to clog
- Slim Meter Body Profile
- Can handle process pressure over 70 barg
- Can handle process temperature up to 250 °C (standard) and 350 °C (high temp)
- Industry standard two wire 4-20 mA output or pulse signals

Application Guide

Model	Liquid	Gas	Steam	Temperature Range	Max. Pressure	Line Size	
				°C	Bar	Inch	DN
BVP	Yes	Yes	Yes	-40 to 350	40	1/2" to 12"	15 to 300

Performance Specification

Accuracy (linear ranges)

Liquid.....+/- 0.5% of flow rate

Test conditions: Water at 18.3 °C , 3.4 bar with 10 pipe diameters upstream and 5 pipe diameters downstream

Gas.....+/- 1.5% of flow rate

Test conditions: Air 18.3 °C , 1.7 bar with 10 pipe diameters upstream and 5 pipe diameters downstream

Steam.....+/- 1.5% of flow rate

Test conditions: Saturated Steam at 8.6 bar with 10 pipe diameters upstream and 5 pipe diameters downstream

Flow Rate

Adjustable from:
1 second
1 minute
1 hour
1 day

Analog Output

Calibrated to 0.001mA of reading

Repeatability.....+.25% of flow rate



Operating Specification and Technical Parameters

All Wetted Parts	1Cr18Ni 9Ti (Stainless Steel)
Environmental Conditions	Ambient Temperature -10 to 60°C , Humidity %5 to %90
Output	4...20 mA,pulse
Communication	RS-485 (optional)
Power Supply	24V DC,230V AC ops.
Transmission Distance	500 m >
Hazardous Area	Ex d II B T6
Protection	IP65
Display	LCD,rate and total indicator
Units	All engineering Units

Straight Run Piping Requirements

Straight Run Piping Requirements	Upstream	Downstream
One 90° elbow before the meter	10 D	5 D
Two 90° elbows before the meter	15 D	5 D
Two 90° elbows out of plane before the meter	30 D	5 D
Reduction before meter	10 D	5 D
Regulator or Valve partially closed before meter	30 D	5 D
Tee Connection Before meter	30 D	5 D



Flanged Type



Insertion Type



Remote Type



Flow Ranges

Liquids

Size	DN25	DN40	DN50	DN65	DN80	DN100	DN125	DN150
m ³ /h	1,6...16	2,5...25	3,5...35	6,5...70	10...100	15...150	27...275	40...400
Size	DN200	DN250	DN300					
m ³ /h	80...800	120...1200	180...1800					

Turndown ratio is 10:1 typically. Please consult for large turndown ratio.

Saturated Steam

Size Pressure	DN50	DN80	DN100	DN125	DN150	DN200	DN250	DN300
4 bar (g)	0,08...0,85	0,17...1,7	0,3...4	0,45...4,5	0,6...7	1,3...13,4	2,1...21,3	2,9...29,3
6 bar (g)	0,13...1,2	0,25...2,4	0,4...7	0,7...8	0,9...12	2...20	3,5...30	4...40
8 bar (g)	0,1...1,5	0,3...3	0,5...8	0,8...10	1,1...15	2,3...23	3,7...37	5,1...51

Ordering Information

BVP						Description	
Media	1						Pressure and Temperature Compensation
	2						Volumetric Flow Calculation
	3						Temperature Compensation
Line Size		015					DN15 (consult factory)
		020					DN20
		025					DN25
		040					DN40
		050					DN50
		065					DN65
		080					DN80
		100					DN100
		125					DN125
		150					DN150
		200					DN200
		250					DN250
	300					DN300	
Display Mounting			L				Local Mounting Display (compact)
			R				Remote Mounting Display (100 m max.)
Fluid Temperature			L				Tmax : 70°C
			M				Tmax : 250°C
			H				Tmax : 350°C
Converter Type				N			Pulse output, without display,24V DC
				A			4-20 mA output, without display ,24V DC
				B			Lithium battery powered,with display,without output
				C			4-20 mA output,with display,24V DC
				C1			RS-485 communication,with display,24V DC
				C2			4-20 mA+HART output,with display,24V DC 2 wire
				H			Heat Meter,4-20 mA,Blind converter,panel type display
Protection				N			IP65
				E			Flame proof ex d II B T6