Vision Turbine Meter

Models BV1000 and BV2000 for Low Viscosity and Non-Aggressive Liquids

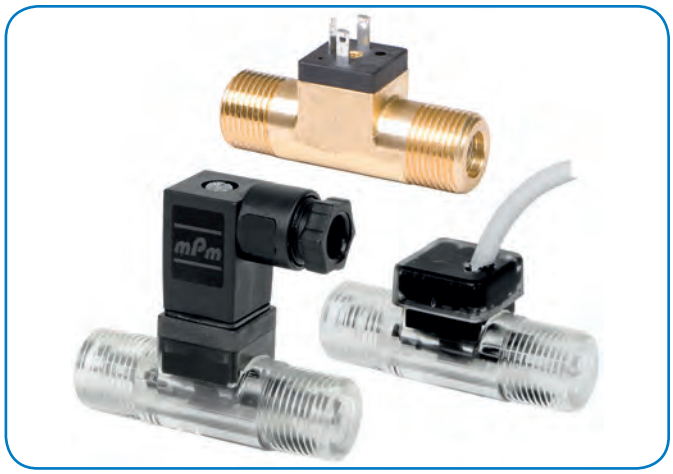
NSF/ANSI Standards 61 and 372 Certified

DESCRIPTION

The Vision Turbine Meters are Bisphenol A (BPA)-free meters that comply with the lead-free provisions of the Safe Drinking Water Act and are certified to NSF/ANSI Standards 61 and 372. The meters are designed for flow measurement of low-viscosity and non-aggressive liquids, including demineralized water, alkaline solutions, oils, salad oil, fuel/fuel consumption, beverages, water solutions and coolants.

- The BV1000 flow range is 0.026….0.65 gpm (0.1…2.5 lpm)
- The BV2000 flow range 0.13…9.2 gpm (0.5…35 lpm)

The meter is especially suitable for washing machines, dishwashers, coffee machines, laser cooling plants, solar solutions, bakery machines, steam cooking machines in large kitchen plants, and CD or DVD cleaning.



APPLICATIONS

- **Food Industry**: Coffee machines, vending machines, dispensing systems, bakery machines, and steamers
- **Medical Applications**: Sterilizers, slide staining, dental water jets, and dialysis machines
- **Chemical and Pharma Industry**: Dosing systems and bottling plants
- I**ndustrial applications**: Cooling systems, washing machines and plants, dosing systems, water treatment units, filter monitoring systems, and solar plants
- **Automotive**: Fuel consumption measurement and fuel injection systems

FEATURES

- Compact size
- Measurement in any meter orientation
- Operating pressure up to 362.50 psi (25 bar)
- Temperature range of – 4…212° F (–20…100° C)
- Accuracy of ± 3%
- Resolution up to 70,000 ppg (18,500 ppl), depending on model

MEASURING PRINCIPLE

The rotor is turned by the liquid force proportional to flow. A Hall effect sensor supplies pulses that can be used for digital or analog signal processing. The generated pulses are specified as a k-factor.

OPERATING PRINCIPLE

Liquid flow causes a bladed turbine inside the meter housing to turn at an angular velocity directly proportional to the velocity of the liquid measured. As the blades pass beneath a magnetic pickup coil, a frequency signal is generated.

Each pulse is equivalent to a discrete volume of liquid. The frequency pulse is directly proportional to the turbine angular velocity and the flow rate.

The large number of pulses provides high resolution. As the mass of the turbine is small, the response time is fast. It is not necessary to install a straight length of pipeline upstream of the meter.

The simple mechanical construction of the Vision meter guarantees a long lifespan without any loss of accuracy. Pressure spikes less than burst pressure rating do not affect the measurements.

For pricing or any further information, please contact Omni Instruments Ltd.

Measurement and data acquisition solutions

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Vision Turbine Meter

SPECIFICATIONS

Model			BV1000		BV2000											
			025		050		075		100		150		250		350	
Flow Range			0.026….0.65 gpm		0.13…1.3 gpm		0.13…2.0 gpm		0.26…2.7 gpm		0.26…4.0 gpm		0.26…6.6 gpm		0.53…9.2 gpm	
			0.1…2.5 lpm		0.5…5 lpm		0.5…7.5 lpm		1…10 lpm		1…15 lpm		1…25 lpm		2…35 lpm	
K-factor			70,000 ppg		26100 ppg		17800 ppg		12500 ppg		8300 ppg		3785 ppg		2840 ppg	
			18,500 ppl		6900 ppl		4700 ppl		3300 ppl		2200 ppl		1000 ppl		750 ppl	
Frequency Output (Hz)			30…770 Hz		58…575 Hz		38…575 Hz		55…550 Hz		37…550 Hz		17…416 Hz		25…437 Hz	
DN mm			5 mm		6 mm		8 mm		6 mm		8 mm		8 mm		8 mm	
Operating Pressure			362.50 psi (25 bar)													
Burst Pressure			2900 psi (200 bar)													
Inlet / Outlet ports			1/4" NPT or G 1/4" (BSPP)		3/8" NPT or G 3/8" (BSPP)											
Operating Temperature			– 4…212° F (– 20…100° C)													
Accuracy			± 3% of reading													
Repeatability			< 0.50 % under the same operating conditions													
Viscosity			up to 16 cSt													
Electrical Connection			3-pin (2.8 × 0.5) mini DIN connector, EN 60529		Round cable 3 x AWG 24 with free cable ends or *3-pin (2.8 × 0.5) mini DIN connector, EN 60529 * Mating connector is included.											
Filter			20…40 microns recommended													
Input Power			5…24V DC													
Power Consumption			~ 8 mA													
Output (Hz)			NPN sinking open collector													
Output Current			Max. 20 mA (Pull-up resistor required. See wiring diagram in Users Manual.)													
Materials	Housing		PA12 Trogamid		PA12 Grilamid TR55 or Brass CuZn38Al-C (complies with lead-free provisions of the Safe Drinking Water Act)											
	Turbine		PA12 Ferrite													
	Bearings		PTFE													
Weight			~0.35 oz (10 g)		~ 0.53 oz (15 g)											
Approvals			KTW and W270 approval for drinking water. FDA approved materials. Meets 21 CFR 175.300.													
Pressure Drop Δp with Water Flow at 68° F (20°)	gpm	lpm	025		050		075		100		150		250		350	
			psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
	0.13	0.5	0.29	0.02	—	—	—	—	—	—	—	—	—	—	—	—
	0.26	1	0.73	0.05	<0	<0	<0	<0	<0	<0	<0	<0	<0	<0	<0	<0
	0.40	1.5	2.18	0.15	—	—	—	—	—	—	—	—	—	—	—	—
	0.53	2	3.63	0.25	<0	<0	<0	<0	0.87	0.06	0.73	0.05	<0	<0	<0	<0
	1.32	5	—	—	1.74	0.12	0.73	0.05	2.90	0.20	2.90	0.20	0.73	0.05	<0	<0
	2.64	10	—	—	5.80	0.40	2.90	0.20	10.15	0.70	5.80	0.40	2.47	0.17	1.74	0.12
	3.96	15	—	—	13.05	0.90	5.80	0.40	—	—	—	—	3.92	0.27	3.63	0.25
	5.28	20	—	—	18.85	1.30	10.15	0.70	—	—	—	—	6.96	0.48	6.53	0.45
	6.60	25	—	—	—	—	—	—	—	—	—	—	9.43	0.65	8.70	0.60
	7.93	30	—	—	—	—	—	—	—	—	—	—	14	0.97	13.34	0.92

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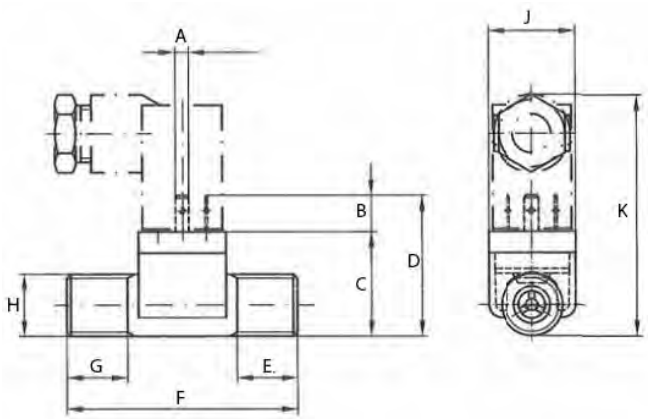
PHYSICAL DIMENSIONS

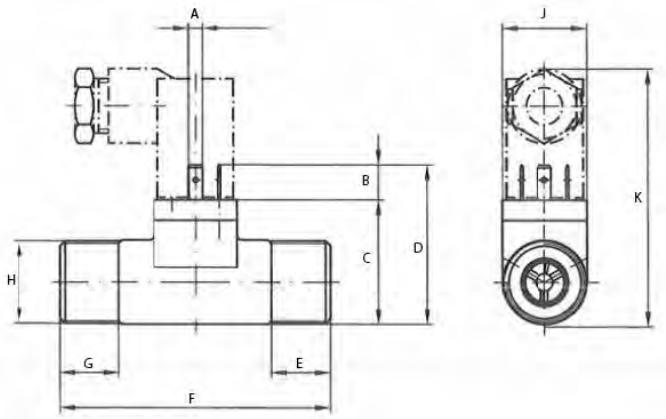
BV1000 (G 1/4" or 1/4" NPT)



A	B	C	D	E
0.11" (2.8 mm)	0.27" (7 mm)	0.79" (20 mm)	1.06" (27 mm)	0.43" (11 mm)

F	G	H	J	K
1.77" (45 mm)	0.43" (11 mm)	G 1/4" or 1/4" NPT	0.67" (17 mm)	1.85" (47 mm)

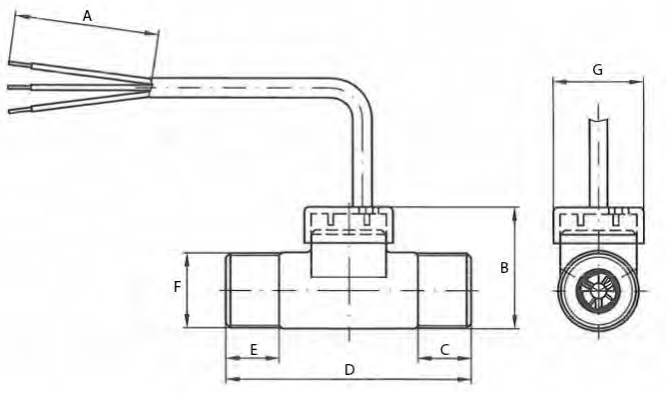
BV2000 (G 3/8" or 3/8" NPT)



A	B	C	D	E
0.11" (2.8 mm)	0.27" (7 mm)	0.98" (25 mm)	1.26" (32 mm)	0.47" (12 mm)

F	G	H	J	K
2.17" (55 mm)	0.47" (12 mm)	G 3/8" or 3/8" NPT	0.67" (17 mm)	2.05" (52 mm)

BV2000 G 3/8" or 3/8" NPT with Round Cable 3 x AWG 24 and Free Cable Ends



A	B	C	D
1.18" (30 mm)	1.06" (27 mm)	0.47" (12 mm)	2.17″ (55 mm)

E	F	G
0.47" (12 mm)	G 3/8" or 3/8" NPT	0.79" (20 mm)

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ORDERING MATRIX

BV1000

BV1000 - TR N - 025 - A

MODEL	
BV1000	BV1000
MATERIAL	
Trogamid	TR
END CONNECTION	
1/4" NPT	N
1/4" G	G
FLOW RANGE	
0.026 … 0.65 gpm (0.1 … 2.5 lpm)	025
ELECTRICAL CONNECTION	
3 Pin (2.8 x 0.5) Mini DIN Connector, EN 60529	A

BV2000

BV2000 - GR N - 050 - A

MODEL	
BV2000	BV2000
MATERIAL	
Grilamid	GR
END CONNECTION	
3/8" NPT	N
3/8" G	G
FLOW RANGE	
0.13 … 1.3 gpm (0.5 … 5 lpm)	050
0.13 … 2.0 gpm (0.5 … 7.5 lpm)	075
0.26 … 2.7 gpm (1 … 10 lpm)	100
0.26 … 4.0 gpm (1 … 15 lpm)	150
0.26 … 6.6 gpm (1 … 25 lpm)	250
0.53 … 9.2 gpm (2 … 35 lpm)	350
ELECTRICAL CONNECTION	
3 Pin (2.8 x 0.5) Mini DIN Connector, EN 60529	A
Cable (3 x AWG24) w/ Free Ends, 1 meter long	B

BV2000 Brass

BV2000 - BR N - 080 - A

MODEL	
BV2000	BV2000
MATERIAL	
Brass	BR
END CONNECTION	
3/8" NPT	N
3/8" G	G
FLOW RANGE	
0.5 … 2.11 gpm (2 … 8 lpm)	080
0.8 … 6.6 gpm (3 … 25 lpm)	250
ELECTRICAL CONNECTION	
3 Pin (2.8 x 0.5) Mini DIN Connector, EN 60529	A
Cable (3 x AWG24) w/ Free Ends, 1 meter long	B

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