MVF

Micro Flow Vortex Gas Flowmeter

By using the high-sensitivity and high-speed response Micro Flow sensor for the detection of vortex frequency, the MVF is able to offer a wide rangeability of 100:1.

Temperature and pressure compensation functions are built in, so there is no need for costly external devices.

Specifications

Model No.		MVF050	MVF080	MVF100	MVF150
Flow rate measurement range in m^3/h (normal)	at 0.1 MPa	8 to 428	11 to 946	15 to 1457	32 to 3135
	at 0.3 MPa	9 to 855	19 to 1886	30 to 2904	63 to 6250
	at 0.5 MPa	13 to 1280	29 to 2826	44 to 4352	94 to 9364
	at 0.7 MPa	18 to 1706	38 to 3765	58 to 5799	125 to 12479
	at 0.9 MPa	22 to 2132	48 to 4705	73 to 7246	156 to 15593
		"Normal" refers to the volumetric flow rate (m^3/h) adjusted for 0°C, 101.325kPa (1 atmosphere).			
Compatible gases		Air, nitrogen, argon, oxygen, carbon dioxide (CO_2), city gas (13A), methane, propane, butane, and other inert gases and mixed gases not within explosion limits.			
Volumetric flow rate accuracy		±2% rdg. at or above 13m^3/h	±2% rdg. at or above 20m^3/h	±2% rdg. at or above 28m^3/h	±2% rdg. at or above 51m^3/h
		The volumetric flow rate accuracy differs with the operating pressure and flow rate range.			
Accuracy after temperature and pressure compensation (at a pressure of 0.5MPa)		±3.5% rdg. at or above 71m^3/h	±3.5% rdg. at or above 106m^3/h	±3.5% rdg. at or above 150m^3/h	±3.5% rdg. at or above 276m^3/h
		The volumetric flow rate accuracy differs with the operating pressure and flow rate range. % rdg.: percentage of indicated reading.			
Minimum measurable flow rate (at 0.1MPa)		8m^3/h (normal)	11m^3/h (normal)	15m^3/h (normal)	32m^3/h (normal)
Operating temperature		-15 to +60°C			
Operating pressure		MVF_ _ _0, MVF _ _ _L: 0 to 1.0MPa MVF_ _ _1: 0 to 0.1MPa MVF_ _ _3: 0 to 0.3MPa			
Operating humidity		10 to 90% RH (without condensation)			
Flow rate calculation, output updating cycle		100 ms			
Power		24Vdc			
Current consumption		100mA max.			
Output signal		Instantaneous flow rate output: 4 to 20 mAdc (allowable load resistance 600Ω max.), max. current 23.2 mA. Output at burnout is approx. 3.5mA downscale.			
Integrated pulse output		Open collector output with contact current of 10-32 Vac, 20mA max. User can specify pulse weight of 0.1, 1, or 10m^3 per pulse.			
Communications 1		RS-485 interface, 3-wire system			
Communications 2		Mini-plug for PC Smart Loader connection, used for services by manufacturer. O-ring: type 4D (Viton).			
Display	Flow rate	Instantaneous: 6-digit LCD. Integrated: 8-digit LCD.			
	Instantaneous flow rate	＊＊＊＊＊.＊m^3/h (first decimal place shown)			＊＊＊＊＊＊m^3/h
	Integrated flow rate	＊＊＊＊＊＊＊m^3	＊＊＊＊＊＊＊m^3 (without decimal point)		
Material of gas-contacting parts		Flow passage: SUS303, SUS304. Micro Flow sensor: silicon, gold and others. O-ring: type 4D (Viton).			
Case material		Aluminum alloy (ADC12)			
Mounting direction		Horizontal/vertical mounting			
Connection type		Wafer connection			
Wiring connection port		2 locations. Connection standard: G1/2 female thread. Accessories: 2 waterproof glands included			
Protective structure		IP67 (JIS C 0920 and IEC 60529). Waterproof and dustproof, outdoor installation possible)			
Mass		7kg	8kg	10kg	23kg

Selection Guide

Ⅰ Ⅱ Ⅲ Ⅳ Ⅴ Ⅵ Ⅶ Ⅷ Ⅸ Ⅹ Ⅺ Ⅻ ⅩⅢ Example: **MVF0800SUN011 2000**

Segment	Model No. selection *1		Description
Ⅰ	Basic No.	**MVF**	Micro Flow Vortex Gas Flowmeter
Ⅱ	Pipe size	**050**	50A (1B)
		080	80A (3B)
		100	100A (4B)
		150	150A (6B)
Ⅲ	Type	**0**	With temperature and pressure compensation, operating pressure range 0 to 1.0 MPa
		1	With temperature and pressure compensation, operating pressure range 0 to 0.1 MPa (low and medium pressure model)
		3	With temperature and pressure compensation, operating pressure range 0 to 0.3 MPa (low and medium pressure model)
		L	With temperature compensation but no pressure compensation, operating pressure range 0 to 1.0 MPa
Ⅳ	Body material	**S**	SUS304
Ⅴ	Connection	**U**	JIS/ANSI wafer
Ⅵ	Gas type	**N**	Air, nitrogen, argon
		S	Oxygen (be sure to specify code "1" for option 1, oil-inhibiting treatment for gas-contacting parts)
		C	Carbon dioxide (CO_2)
		G	City gas 13A (LNG base), methane
		P	Propane
		B	Butane
Ⅶ	Output	**0**	4 to 20mA dc output + pulse output
Ⅷ	Power	**1**	24Vdc
Ⅸ	Communications	**1**	RS-485 (for use with EST and CMC10G)
Ⅹ	Flow and mounting directions*2	**0**	Horizontal (flow: left→right): converter on top
		1	Horizontal (flow: L→R): converter on bottom
		2	Horizontal (flow: R→L): converter on top
		3	Horizontal (flow: R→L): converter on bottom
		4	Vertical (flow: down→up) converter on left
		5	Vertical (flow: up→down) converter on left
Ⅺ	Option 1	**0**	None
		1	Oil-inhibiting treatment for gas-contacting parts
Ⅻ	Option 2	**0**	None
ⅩⅢ	Design code	**0**	Product version

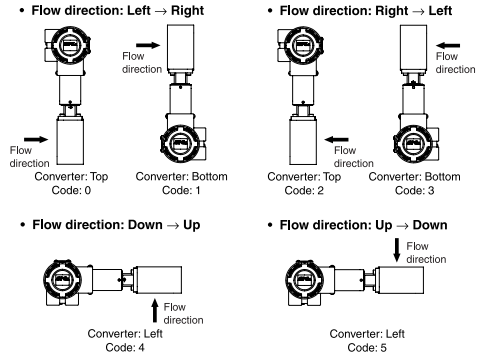
Notes: *1. Be sure to specify the flow rate range and pulse weight in addition to the model number.
Example: Model No. MVF0800SUN0112000, range 0 to 500m^3/h (normal), pulse weight 1 m^3/pulse.

(1) Flow rate range
Applicable maximum range m^3/h (normal)

Port Size	Max. Range
50A	8000
80A	16000
100A	24000
150A	48000

(2) Pulse weight
Select 0.1, 1, or 10m^3/pulse.

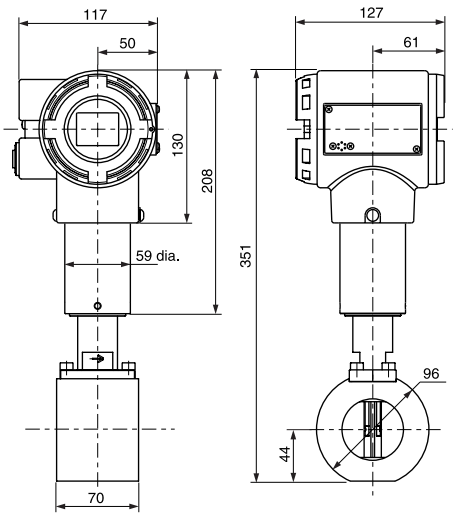
*2. Flow and mounting directions



Dimensions

(Unit: mm)

• MVF050



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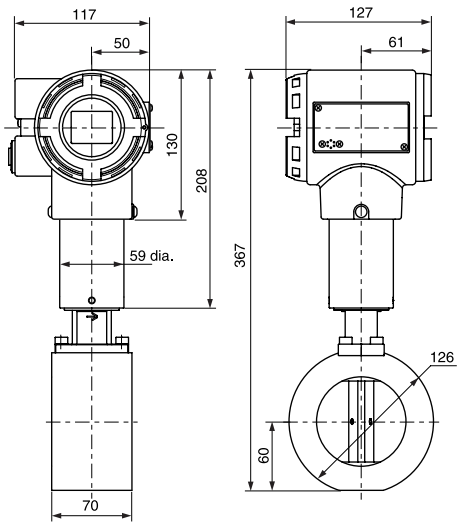
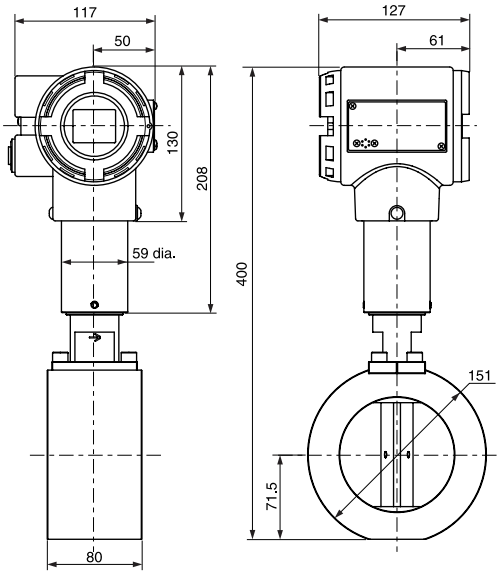


• MVF100



• MVF150