

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
Pipe size	50A (2B)	80A (3B)	100A (4B)	150A (6B)
Compatible gases	Air, nitrogen, argon, oxygen, carbon dioxide (CO ₂), city gas (13A), methane, propane, butane, and other inert gases and mixed gases outside their explosion limits.			
Flow rate measurement range (at 0.5MPa)	14 to 1280m ³ /h (normal)	29 to 2826m ³ /h (normal)	47 to 4352m ³ /h (normal)	94 to 9364m ³ /h (normal)
	"Normal" refers to the volumetric flow rate (m ³ /h) adjusted for 0°C, 101.325kPa (1 atmosphere).			
Accuracy after temperature and pressure compensation	±3.5% rdg. at 0.5MPa and 71 m ³ /h (normal) or more	±3.5% rdg. at 0.5MPa and 106m ³ /h (normal) or more	±3.5% rdg. at 0.5MPa and 150m ³ /h (normal) or more	±3.5% rdg. at 0.5MPa and 276m ³ /h (normal) or more
	% 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			
Applicable pressure	0 to 1.0MPa			
Power	24Vdc			
Current consumption	100mA max.			
Output signal	One instantaneous flow rate output: 4–20mA dc (allowable load resistance 600Ω max.). Maximum current: 23.2mA. Output at burnout: approx. 3.5mA downscale.			
Totalizer pulse output	One open collector output. Contact current: 10 to 30Vac, 20mA max. Pulse weight: Customer can specify 0.1, 1, or 10m ³ /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).			
Material of gas-contacting parts	Flow passage: SUS303, SUS304. Micro Flow sensor: silicon, gold and others.			
Connection	JIS 10K wafer			
Protective structure	Waterproof to IP67 (based on JIS 0920 and IEC 529), on assumption of outdoor installation.			
Mass	7kg	8kg	10kg	23kg

Selection Guide

Example: MVF0800SUN0112000

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 L ○ ○ With temperature compensation but without pressure compensation
IV	Body material	S ○ ○ SUS304
V	Connection	U ○ ○ JIS/ANSI wafer
VI	Gas type	N ○ – Air, nitrogen, argon S – ○ Oxygen C ○ – Carbon dioxide (CO ₂) G ○ – City gas 13A (LNG base), methane P ○ – Propane B ○ – Butane
VII	Output	0 ○ ○ 4–20mA 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

* A circle (○) denotes availability.

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 500m³/h (normal), pulse weight 1 m³/pulse.

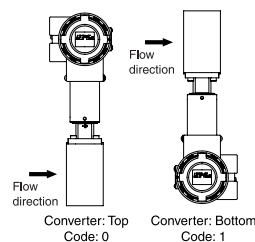
(1) Flow rate range
Applicable maximum range m³/h (normal)

Port Size	Max. Range
50A	0 to 2302m ³ /h (normal)
80A	0 to 5081m ³ /h (normal)
100A	0 to 7825m ³ /h (normal)
150A	0 to 16839m ³ /h (normal)

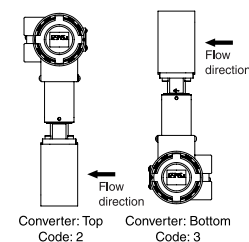
(2) Pulse weight
Select 0.1, 1, or 10m³/pulse.

*2. Flow and mounting directions

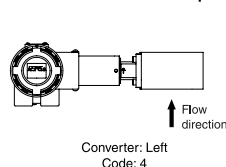
• Flow direction: Left → Right



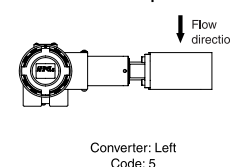
• Flow direction: Right → Left



• Flow direction: Down → Up



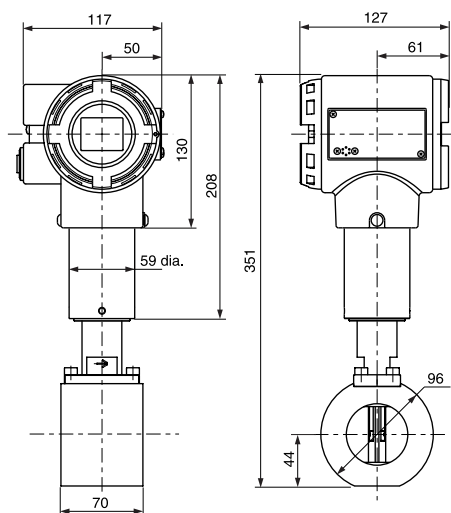
• Flow direction: Up → Down



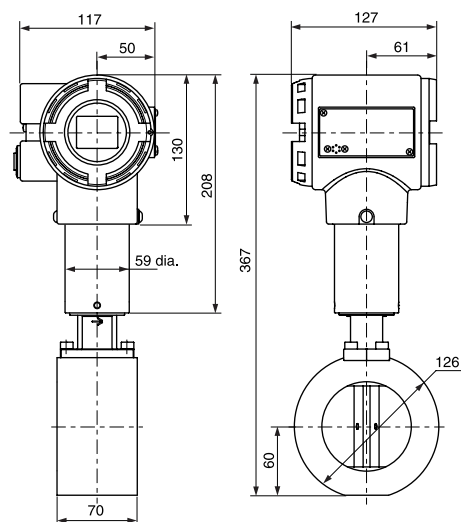
Dimensions

(Unit: mm)

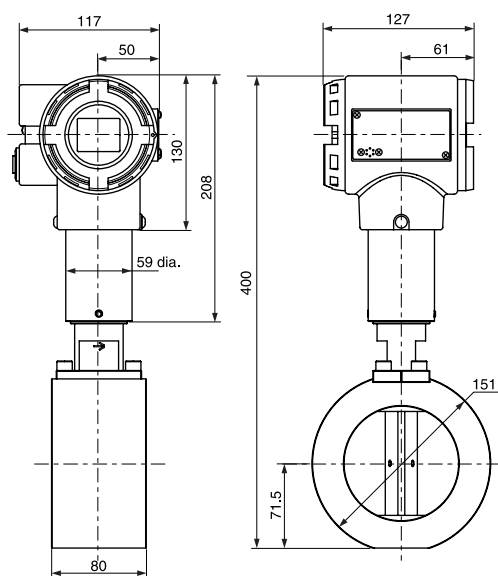
• MVF050



• MVF080



• MVF100



• MVF150

