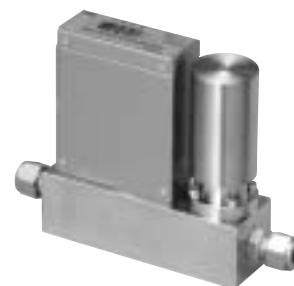


CMQ-V

Digital Mass Flow Controller (Medium Flow Rate)

The CMQ-V is a digital mass flow controller that combines Yamatake's Micro Flow thermal mass-flow rate sensor and a proportioning solenoid valve with advanced actuator technology. The result is a high-performance and low-cost next-generation controller. Developed for general industrial use, the CMQ-V was designed with high-speed, wide-rangeability flow control needs in mind.



Specifications

Model No.	MQV0050J/K	MQV0200J/K	MQV0500J/K
Valve type	Proportional solenoid valve		
Standard full-scale flow rate	50L/min (standard)	200L/min (standard)	500L/min (standard)
Gas types	*Standard* refers to the flow rate adjusted for 20°C, 101.325kPa (1 atmosphere).		
	Air/nitrogen, oxygen (oxygen model only), argon, carbon dioxide (CO ₂), city gas 13A (LNG base, 45/46MJ/m ³), methane 100%, propane 100%, butane 100%. Gas must be dry and without corrosive components (chlorine, sulfur, acid, etc.). It must also be clean, without dust or oil mist.		
	(1) Standard model: ±0.5% FS (0% FS ≤ Q ≤ 40% FS), ±1% FS (40% FS < Q ≤ 80% FS), ±1.5% FS (80% FS < Q ≤ 100% FS)		
Accuracy (at standard temperature and differential pressure; Q is flow rate)	None	(2) High accuracy model: ±0.3% FS (0% FS ≤ Q < 25% FS), ±1.2% SP (25% FS ≤ Q < 80% FS), ±1.5% SP (85% FS ≤ Q ≤ 100% FS)	
	• Accuracy data applies to air/nitrogen or oxygen (oxygen gas models). For accuracy with other gases, contact Yamatake Corporation.		
	• ±xx% SP indicates how accurately the controlled flow rate matches the flow rate set point.		
Operating differential pressure range (T is operating temperature)	100kPa max.	(1) 300kPa max. (-10°C ≤ T ≤ 40°C) (2) 180kPa max. (40°C < T ≤ 60°C)	(1) 300kPa max. (-10°C ≤ T ≤ 35°C) (2) 240kPa max. (35°C < T ≤ 50°C)
		Condition: power supply voltage = 24.0Vdc	
Operating temperature	-10 to +60°C		-10 to +50°C
Operating humidity	10 to 90% RH (no condensation allowed)		
Flow rate setting methods	(1) Key input, (2) external analog input, (3) PC, using dedicated connector, (4) RS-485 communications (3-wire type)		
External analog input	0–5Vdc, 1–5Vdc, 0–20mA, or 4–20mAdc (selectable)		
Output type	Instantaneous flow rate (PV) or flow rate set point (SP) (selectable)		
Output range	0–5Vdc, 1–5Vdc, 0–20mA, or 4–20mAdc (selectable)		
No. of alarm/event outputs	Alarm: 1. Event: 2		
No. of external switching inputs	3-way switching: 1 External contact inputs (2-way switching): 3		
Power (T is operating temperature)	24Vdc		
Current consumption	400mA max.		
Mass	Approx. 1.2kg		

Selection Guide

□ Example: MQV0050JSUN000000

Segment	Model No. selection	Description
I Basic No.	MQV	Digital mass flow controller
II Flow rate range	0050 ○ ○ – –	0.4 to 50.0L/min (standard)
	0200 ○ ○ ○ ○	2 to 200L/min (standard)
	0500 ○ ○ ○ ○	4 to 500L/min (standard)
III Display	J ○ ○ ○ ○	Integrated display (side-to-side dimension 150mm)
	K ○ ○ ○ ○	Separate display (included) (side-to-side dimension 150mm)
IV Material	S ○ ○ ○ ○	SUS316, Teflon, Viton
V Connection	R ○ ○ ○ ○	Rc 1/2"
	S ○ ○ ○ ○	1/2" Swagelok
	V ○ ○ ○ ○	3/8" VCR
	U ○ ○ ○ ○	3/4-16 UNF
VI Gas type	N ○ – – –	Air/nitrogen (changeable to standard gases)
	1 – – – ○	Air/nitrogen
	S – ○ – –	Oxygen
	2 – – – ○	
VII Option 1	0 ○ ○ ○ ○	Standard model
	S – – ○ ○	High accuracy model
VIII Option 2	0 ○ ○ ○ ○	None
	1 ○ ○ ○ ○	RS-485 (CPL) communications
IX Option 3	0 ○ ○ ○ ○	None
X Option 4	0 ○ ○ ○ ○	None
	1 ○ ○ ○ ○	Oil-inhibiting treatment for gas-contacting parts
XI Option 5	0 ○ ○ ○ ○	None
	D ○ ○ ○ ○	With inspection data
	Y ○ ○ ○ ○	With traceability certification
XII Design code	0 ○ ○ ○ ○	Product version

• A circle (○) denotes availability.

Note: The controllable flow rate range varies according to the gas type. See table.

Accessories (sold separately)

Model No.	Name	Description
81446681-001	Cable with dedicated connector	2m 20-core flat cable
81446951-001	Cable with dedicated connector	5m 20-core shielded cable
81446957-001	AC adapter	Rating: 24Vdc, 650mA
81446683-002	Potentiometer for setting flow rate	Digital dial, 5kΩ, 10 turns
81446858-001	Front cover for separate display	Resin

Control Flow Rate Range and Resolutions

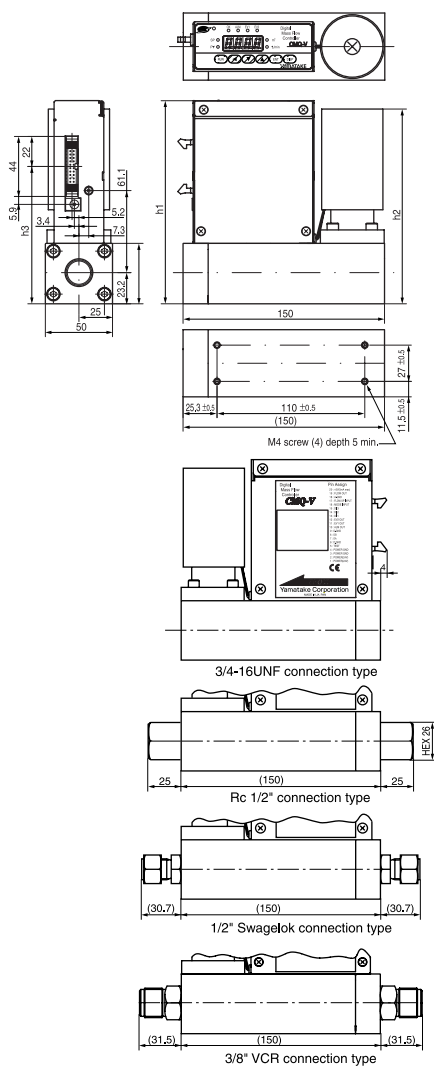
The controllable flow rate range varies according to the gas type.

Specifications	MQV0050J/K		MQV0200J/K		MQV0500J/K	
	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution
Gas type	L/min		L/min		L/min	
Air, nitrogen	0.4 to 50.0	0.2	2 to 200	1	4 to 500	2
Oxygen	0.4 to 50.0	0.2	2 to 200	1	4 to 500	2
Argon	0.4 to 50.0	0.2	2 to 200	1	4 to 500	2
Carbon dioxide	0.3 to 30.0	0.1	1 to 120	0.5	4 to 400	2
City gas 13A (LNG: 45MJ/m ³)	0.4 to 50.0	0.2	2 to 180	1	4 to 400	2
City gas 13A (LNG: 46MJ/m ³)	0.4 to 50.0	0.2	2 to 180	1	4 to 400	2
Methane 100%	0.4 to 50.0	0.2	2 to 200	1	4 to 500	2
Propane 100%	0.2 to 16.0	0.1	0.6 to 60.0	0.2	2 to 200	1
Butane 100%	0.1 to 12.00	0.005	0.4 to 40.0	0.2	2 to 160	1

Dimensions

(Unit: mm)

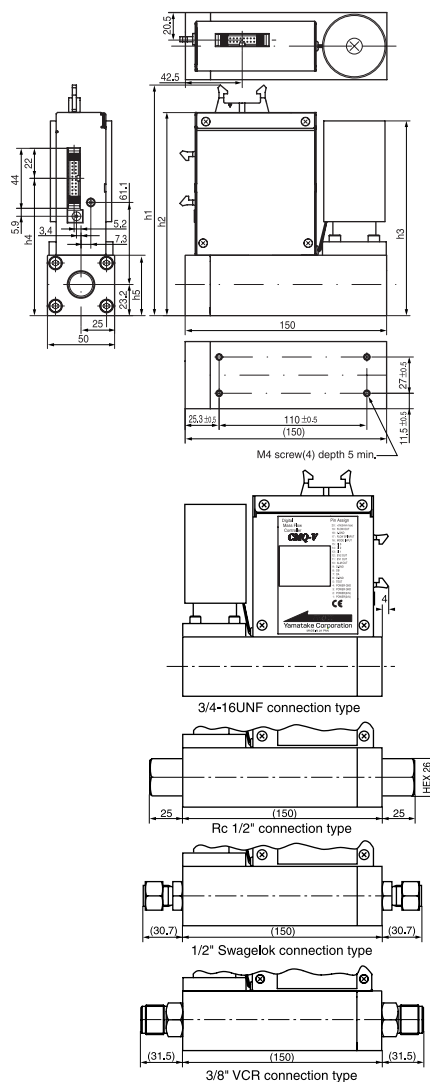
• Models with integrated display MQV0050J/0200J/0500J



Model	h1	h2	h3	h4
MQV0050J/MQV0200J	151	145	102	45
MQV0500J	152	146	103	46

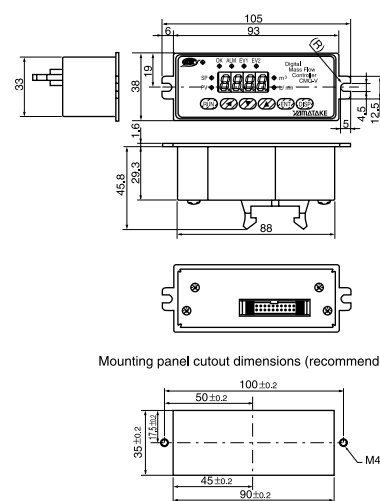
• Model with separate display MQV0050K/0200K/0500K

Body



Model	h1	h2	h3	h4	h5
MQV0050K/MQV0200K	172	151	145	102	45
MQV0500K	173	152	146	103	46

Separate display unit



Mounting panel cutout dimensions (recommended)