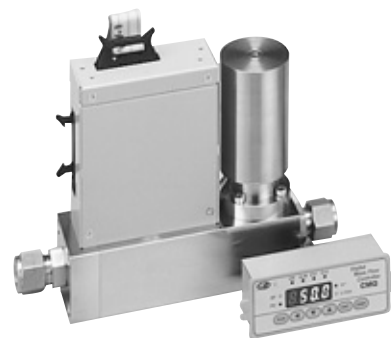




CMQ-V

Digital Mass Flow Controller Standard Gas Model (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 *1	50L/min (standard)	200L/min (standard)	500L/min (standard)
Gas types *2	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.		
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) Condition: power supply voltage = 24.0Vdc	(1) 300kPa max. (-10°C ≤ T ≤ 35°C) (2) 240kPa max. (35°C < T ≤ 50°C)
Max. inlet pressure	0.5MPa (gauge) *3		
Pressure resistance	1MPa (gauge)		
No. of alarm/event outputs	Alarm: 1. Event: 2		
Flow rate setting methods	(1) Key input, (2) external analog input, (3) RS-485 communications (3-wire type), (4) PC loader communications (using a dedicated PC loader software)		
External analog input	0 to 5Vdc, 1 to 5Vdc, 0 to 20mA, or 4 to 20mAdc (selectable)		
No. of external switching inputs	3-way switching(OPEN/GND/5V): 1 External contact inputs (2-way switching): 3		
Power	24Vdc		
Current consumption	400mA max.		
Mass	Approx. 3.5kg		

Notes: *1. "Standard" refers to the flow rate adjusted for 20°C, 101.325kPa (1 atmosphere). The controllable flow rate range varies according to the gas type.

*2. For details on use in gases other than standard gas types, mixed gases or gases containing hydrogen or helium, contact Yamatake Corporation.

*3. When used at an inlet pressure higher than 0.5MPa (gauge), contact Yamatake Corporation.

Selection Guide

□ Example: MQV0050JSUN000000

Segment	Model No. selection	Description
I	Basic No.	MQV Digital mass flow controller
II	Flow rate range	0050 50L/min (standard) *1
		0200 200L/min (standard) *1
		0500 500 L/min (standard) *1
III	Display	J Integrated display (150mm side-to-side)
		K Separate display (included) (150mm side-to-side)
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) *2
		S Oxygen *3
VII	Option 1	0 Standard 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

Notes: *1. "Standard" refers to the flow rate adjusted for 20°C, 101.325 kPa (1 atmosphere).

The reference temperature can be changed to 0°C.

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

*2. Although gas type is set to air/nitrogen at the factory, it can be changed to other standard compatible gas types. Oxygen cannot be set to any model other than its dedicated model (gas type: selection of "S").

*3. When oxygen is selected, make sure to specify "1": Oil-inhibiting treatment for gas-contacting parts" of the optional function.

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
MLP100A100	PC loader software	Dedicated software with cable

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(standard)		L/min(standard)		L/min(standard)	
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 200	1	4 to 500	2
City gas 13A (LNG: 46MJ/m ³)	0.4 to 50.0	0.2	2 to 200	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

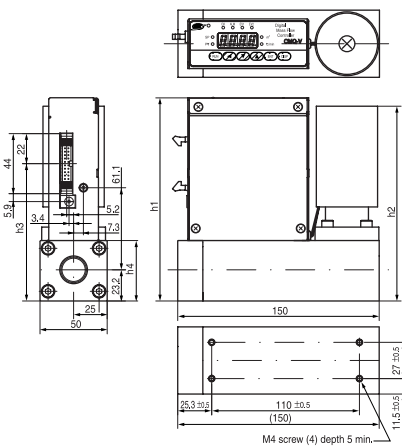
Dimensions

(Unit: mm)

• Models with integrated display

Ex.: 3/4-16UNF type

Body

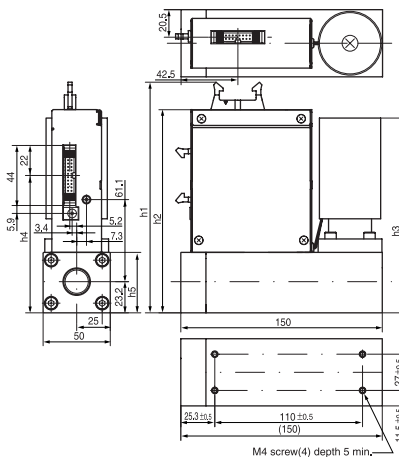


Model	h1	h2	h3	h4
MQV0050J/K	151	145	102	45
MQV0200J/K	152	146	103	46

• Model with separate display

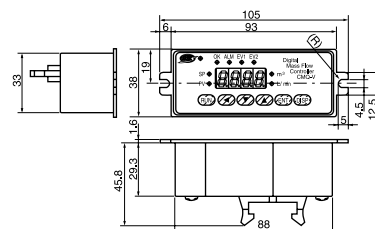
Ex.: 3/4-16UNF type

Body



Model	h1	h2	h3	h4	h5
MQV0050J/K	172	151	145	102	45
MQV0200J/K	173	152	146	103	46

Separate display unit



Mounting panel cutout dimensions (recommended)

