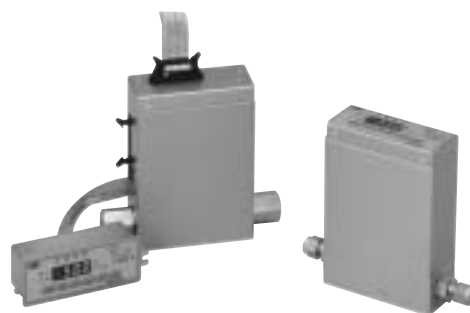


# CMQ-V

## Digital Mass Flow Controller (Low 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.	MQV9200B/C	MQV9500B/C	MQV0002B/C	MQV0005B/C	MQV0020B/C	MQV0050B/C
Valve type	Proportional solenoid valve					
Standard full-scale flow rate	200mL/min (standard)	0.500L/min (standard)	2.00L/min (standard)	5.00L/min (standard)	20.0L/min (standard)	50.0L/min (standard)
	*Standard refers to the flow rate adjusted for 20°C, 101.325kPa (1 atmosphere).					
Gas types	Air/nitrogen, oxygen (oxygen model only), argon, carbon dioxide (CO <sub>2</sub> ), city gas 13A (LNG base, 45/46MJ/m <sup>3</sup> ), 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.					
Accuracy (at standard temperature and differential pressure; Q is flow rate)	(1) Standard model: ±0.5% FS (0% FS ≤ Q ≤ 50% FS), ±1% FS (50% FS < Q ≤ 100% FS) (2) High accuracy model: ±0.2% FS (0% FS ≤ Q < 20% FS), ±1% SP (20% FS ≤ Q ≤ 100% FS) · Accuracy data applies to air/nitrogen or oxygen (oxygen gas models only). 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	300kPa max.					
Operating temperature	-10 to +60°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 4-20mA (selectable)					
Output type	Instantaneous flow rate (PV) or flow rate set point (SP) (selectable)					
Output range	0-5Vdc, 1-5Vdc, 0-20mA, or 4-20mA (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	24Vdc					
Current consumption	300mA max.					
Mass	Approx. 1.2kg					

### Selection Guide

Segment	Model No. selection	Description
I Basic No.	MQV	Digital mass flow controller
II Flow rate range	9200 ○ ○ ○ ○	2 to 200mL/min (standard)
	9500 ○ ○ ○ ○	0.004 to 0.500L/min (standard)
	0002 ○ ○ ○ ○	0.02 to 2.00L/min (standard)
	0005 ○ ○ ○ ○	0.04 to 5.00L/min (standard)
	0020 ○ ○ ○ ○	0.2 to 20.0L/min (standard)
	0050 ○ ○ ○ ○	0.4 to 50.0L/min (standard)
	0050 ○ ○ ○ ○	0.4 to 50.0L/min (standard)
III Display	B ○ ○ ○ ○	Integrated display
	C ○ ○ ○ ○	Separate display (included)
IV Material	S ○ ○ ○ ○	SUS316, Teflon, Viton
V Connection	R ○ ○ ○ ○	Rc 1/4"
	S ○ ○ ○ ○	1/4" Swagelok
	V ○ ○ ○ ○	1/4" VCR
	U ○ ○ ○ ○	9/16-18 UNF
	U ○ ○ ○ ○	9/16-18 UNF
VI Gas type	N ○ ○ ○ ○	Air/nitrogen (changeable to standard gases)
	1 ○ ○ ○ ○	Air/nitrogen
	S ○ ○ ○ ○	Oxygen
	2 ○ ○ ○ ○	Oxygen
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	MQV9200B/C		MQV9500B/C		MQV0002B/C		MQV0005B/C		MQV0020B/C		MQV0050B/C	
	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution	Control flow rate range	Setting/display resolution
Gas type	mL/min		L/min		L/min		L/min		L/min		L/min	
Air, nitrogen	2 to 200	1	0.004 to 0.500	0.002	0.02 to 2.00	0.01	0.04 to 5.00	0.02	0.2 to 20.0	0.1	0.4 to 50.0	0.2
Oxygen	2 to 200	1	0.004 to 0.500	0.002	0.02 to 2.00	0.01	0.04 to 5.00	0.02	0.2 to 20.0	0.1	0.4 to 50.0	0.2
Argon	2 to 200	1	0.004 to 0.500	0.002	0.02 to 2.00	0.01	0.04 to 5.00	0.02	0.2 to 20.0	0.1	0.4 to 50.0	0.2
Carbon dioxide	1.0 to 120.0	0.5	0.003 to 0.300	0.001	0.010 to 1.200	0.005	0.03 to 3.00	0.01	0.10 to 12.00	0.05	0.3 to 30.0	0.1
City gas 13A (LNG: 45MJ/m³)	2 to 200	1	0.004 to 0.500	0.002	0.02 to 1.60	0.01	0.04 to 5.00	0.02	0.2 to 20.0	0.1	0.4 to 50.0	0.2
Methane 100%	2 to 200	1	0.004 to 0.500	0.002	0.02 to 2.00	0.01	0.04 to 5.00	0.02	0.2 to 20.0	0.1	0.4 to 50.0	0.2
Propane 100%	0.6 to 60.0	0.2	0.002 to 0.160	0.001	0.006 to 0.600	0.002	0.02 to 1.60	0.01	0.06 to 6.00	0.02	0.2 to 16.0	0.1
Butane 100%	0.4 to 50.0	0.2	1.0 to 120.0	0.5	0.04 to 0.400	0.002	0.010 to 1.200	0.005	0.04 to 4.00	0.02	0.10 to 10.00	0.05

Note: When the gas type of MQV9500 is set to butane 100%, the flow rate display unit.

## Dimensions

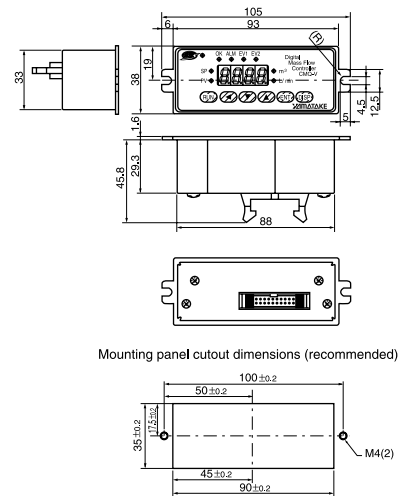
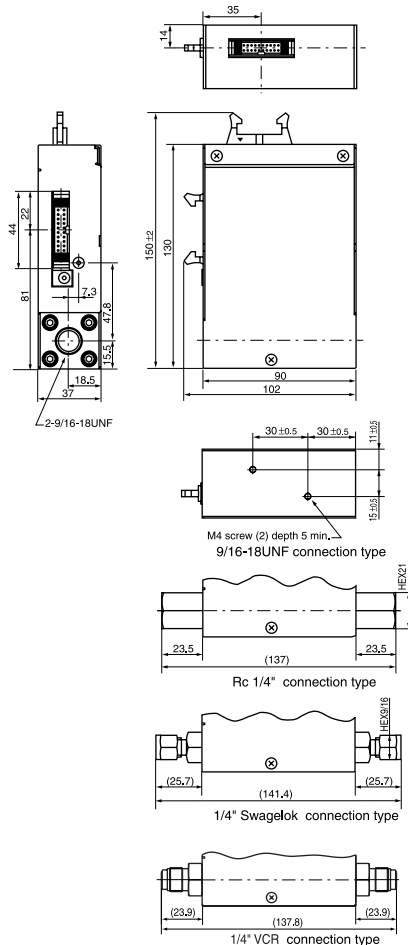
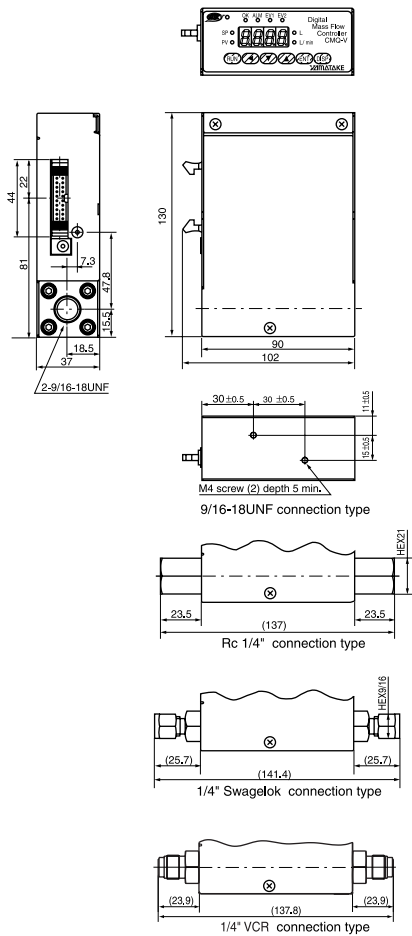
(Unit: mm)

### • Models with integrated display MQV9200B/9500B/0002B/0005B/0020B/0050B

### • Model with separate display MQV9200C/9500C/0002C/0005C/0020C/0050C

Body

Separate display unit



Mounting panel cutout dimensions (recommended)