CMG

Gas Flow Monitor (Natural Gas and Air)

The CMG is a flowmeter designed to measure the fuel flow to a gas burner. Its sensing element is the Micro Flow sensor chip, a MEMS thermal mass-flow sensor.

The monitor displays instantaneous or totalized flow. Available outputs include alarm, instantaneous flow (analog output), totalizer pulse (NPN open collector) and event, for managing complex air/fuel ratio control and flow control.

Specifications

Model No.		CMG150	CMG250	CMG400/401	CMG500/501
Pipe size	Thread type	Rc 1/2"	Rc 1"	Rc 1 1/2"	Rc 2"
	Flange type	–	–	JIS 10K	JIS 10K
Compatible gases		City gas (13A) or air (depending on the model No.). Gas must be dry and without corrosive components (chlorine, sulfur, acid, etc.). It must also be clean, without dust or oil mist.			
Measurement range*1 (m^3/h (normal))		0.5 to 4.0	1.0 to 10.0	3.0 to 30.0	8.0 to 80.0 / 15.0 to 150.0 / 8.0 to 80.0 / 15.0 to 150.0
Display range (m^3/h(normal))		0.0 to 7.0	0.0 to 16.0	0.0 to 35.0	0.0 to 100.0 / 0.0 to 170.0 / 0.0 to 100.0 / 0.0 to 170.0
Power		100/200Vac or 24Vdc			
Power consumption		AC model: 2W or less. DC model: 5.5W or less.			
Instantaneous flow rate display accuracy *1		±4% rdg. ±1 digit (10 to 40°C) ±6% rdg. ±1 digit (-10 to 60°C)		±4% rdg. ±1 digit (10 to 40°C) ±6% rdg. ±1 digit (0 to 50°C)	
Instantaneous flow rate output		1–5Vdc		–	
		4–20mA			
Event output 1		1a contact (closes when alarm occurs)			
Event output 2		NPN open collector output			
Operating pressure		100kPa max.		100kPa max. (low-pressure model) 990kPa max. (medium-pressure model)	
Straight pipe length*2		Not required		15cm min. / 10cm min. / 40cm min. / 10cm min. / 40cm min.	
Protective structure		IP54 (JIS C 0920)			
Mask color		City gas (13A): yellow. Air: blue.			
Mass	Thread type	Approx. 850g	Approx. 800g	Approx. 2.1kg	Approx. 2kg
	Flange type	–	–	Approx. 9kg	Approx. 10kg

Notes *1: % rdg.: percentage of indicated reading. The unit m^3/h (normal) refers to volumetric flow rate adjusted for 0°C, 101.325kPa (1 atmosphere).

*2: Straight pipe length needed for pipe with 90° bend. For the straight pipe length to enlarging/reducing pipes or valves other than the above, contact Yamatake.

Selection Guide

I II III IV V VI VII VIII IX X Example: **CMG150A004000100**

Segment	Model No. selection									Description
I	Basic No.	**CMG**	↓	↓	↓	↓	↓	↓	↓	Gas flow monitor
II	Pipe size	**15**	○	–	–	–	–	–		15A (1/2B)
		25	–	○	–	–	○	–		25A (1B)
		40	–	–	○	○	–	○		40A (1-1/2B)
		50	–	–	○	○	–	○		50A (2B)
III	Piping type	**0**	○	○	○	–	○	○		Rc thread
		1	–	–	–	○	–	–		JIS 10K flange
IV	Gas type	**A**	○	○	○	○	○	○		Air
		N	○	○	○	○	–	–		City gas 13A (LNG base, methane 88%, 46MJ/m^3)
V	Flow rate range	**004**	○	–	–	–	–	–		4m^3/h (normal)
		010	–	○	–	–	–	–		10m^3/h (normal)
		030	–	○	–	–	○	–		30m^3/h (normal)
		080	–	–	○	○	–	○		80m^3/h (normal)
		150	–	–	○	○	–	○		150m^3/h (normal)
VI	Output	**0**	○	○	–	–	–	–		1–5Vdc
		1	○	○	○	○	○	○		4–20mA + event
VII	Pressure	**0**	○	○	○	–	–	–		Low (0 to 100kPa)
		1	–	–	–	○	○	○		Medium (0 to 1MPa)
VIII	Communications	**0**	○	○	○	○	○	○		None
IX	Power	**0**	○	○	○	○	–	–		24Vdc
		1	○	○	○	○	○	○		100Vac 50/60Hz
		2	○	○	○	○	○	○		200Vac 50/60Hz
X	Options	**00**	○	○	○	○	○	○		None
		D0	○	○	○	○	○	○		With inspection data
		Y0	○	○	○	○	○	○		With traceability certification

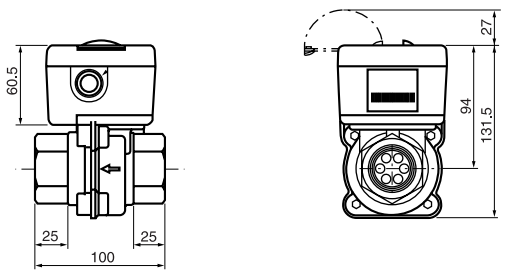
• A circle (○) denotes availability.

* The 1–5Vdc output model does not have an optional event output. To use totalizer pulse output, cumulative flow event output, or upper/lower limit alarm, select a 4–20mA model.

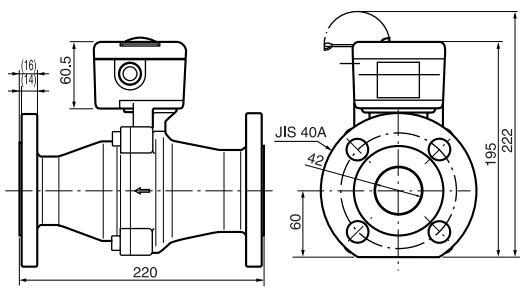
Dimensions

(Unit: mm)

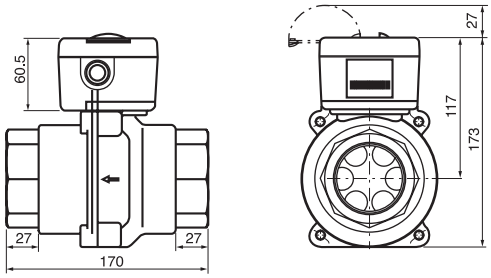
• CMG150/250



• CMG401



• CMG400/500



• CMG501