

Gas Flow Monitor | CMG Series



(24 Vdc model only)

The CMG series of gas flow monitors employs our proprietary μF (Micro Flow) thermal flow rate sensor as the sensing element, and measures the fuel flow rate for gas burners.

The CMG flow monitor measures the volumetric flow rate in a normal standard state and displays the instantaneous flow rate and integrated flow total without the need for temperature and pressure conversion. Other functions include alarm contact output, analog output of instantaneous flow rate, and open collector output of integrated pulse or event output.

These functions enable fine-grained air-fuel ratio management of individual burners and flow rate management of combustion equipment.



<City gas (13 A)/air model>

Specifications

Model No.	CMG150	CMG250	CMG400/401	CMG500/501
Pipe size	Rc1/2	Rc1	Rc1 1/2	Rc2
Connection	Screw connection Flange connection	Rc1/2 -	Rc1 1/2 -	Rc2 -
Applicable gas	City gas 13 A (LNG base, 45/46 MJ/m ³), air (depending on the model No.)			
Measurement range	0.5-4.0 m ³ /h (normal)	1.0-10.0 m ³ /h (normal)	3.0-30.0 m ³ /h (normal)	8.0-80.0 m ³ /h (normal)
Display range	0.0-7.0 m ³ /h (normal)	0.0-16.0 m ³ /h (normal)	0.0-35.0 m ³ /h (normal)	0.0-100.0 m ³ /h (normal)
Rated power supply voltage	100/200 Vac 50/60 Hz or 24 Vdc			
Power consumption	AC model: 2 W or less, DC model: 5.5 W or less			
Display accuracy	Instantaneous flow rate display accuracy: $\pm 4\%$ rdg ± 1 digit (10 to 40 °C) $\pm 6\%$ rdg ± 1 digit (-10 to +60 °C)		Instantaneous flow rate display accuracy: $\pm 4\%$ rdg ± 1 digit (10 to 40 °C) $\pm 6\%$ rdg ± 1 digit (0 to 50 °C)	
Instantaneous flow rate output	1 to 5 Vdc output		4 to 20 mA output	
Event output 1	1a contacts (close when alarm occurs)			
Event output 2	NPN open collector output			
Operating pressure range	100 kPa or less		100 kPa or less (Rc thread), 990 kPa or less (JIS 10K flange)	
Protective structure	IP54 (JIS C 0920)			
Mask color	For city gas (13 A): yellow. For air: light blue			
Weight	Screw connection Flange connection	Approx. 850 g -	Approx. 800 g -	Approx. 2100 g Approx. 9 kg

[Explanation of terms] % rdg: percentage of the reading. m³/h (normal): indicates a value converted to volumetric flow per hour at 0 °C and 101.325 kPa (1 atmosphere).

Model No. configuration

Ex.: CMG150A004000000

City gas (13 A) model

Basic model No.	Pipe size	Pipe shape	Gas type	Flow rate range	Output	Pressure	Communications	Power supply	Additional treatment	Description
CMG	15									Gas flow rate monitor
	25									15 A (1/2B)
	40									25 A (1B)
	50									40 A (1 1/2B)
		0								50 A (2B)
		1								Rc thread
			N							JIS 10K flange (40 A and 50 A only)*1
			G							City gas (13 A) (LNG base, 46 MJ/m ³)
				004						City gas (13 A) (LNG base, 45 MJ/m ³)
				010						4 m ³ /h (CMG15)
				030						10 m ³ /h (CMG25)
				080						30 m ³ /h (CMG25)
				150						80 m ³ /h (CMG40, 50)
					0					150 m ³ /h (CMG40, 50)
					1					1 to 5 Vdc output (4, 10, 30 m ³ /h only)*3
						0				4 to 20 mA
						1				+ event output 2*3
										4, 10, 30 m ³ /h
										80, 150 m ³ /h
										Low pressure (Rc thread)
										Medium pressure (JIS 10K flange)
							0			No communication interface
								0		24 Vdc
								1		100 Vac (50/60 Hz)
								2		200 Vac (50/60 Hz)
									00	None
									DO	Inspection results
									YO	Traceability certificate

*1. Flange models are available for medium pressure only. If "1" (JIS 10K flange) is selected for Pipe shape, it is not possible to select "0" (Low pressure) for Pressure.

Air model

Basic model No.	Pipe size	Pipe shape	Gas type	Flow rate range	Output	Pressure	Communications	Power supply	Additional treatment	Description
CMG	15									Gas flow rate monitor
	25									15 A (1/2B)
	40									25 A (1B)
	50									40 A (1 1/2B)
		0								50 A (2B)
		1								Rc thread
			A							JIS 10K flange (40 A and 50 A only)*2
				004						Air
				010						4 m ³ /h (CMG15)
				030						10 m ³ /h (CMG25)
				080						30 m ³ /h (CMG25)
				150						80 m ³ /h (CMG40, 50)
					0					150 m ³ /h (CMG40, 50)
					1					1 to 5 Vdc output (4, 10, 30 m ³ /h only)*3
						0				4 to 20 mA
						1				+ event output 2*3
										4, 10, 30 m ³ /h
										80, 150 m ³ /h
										Low pressure (Rc thread)
										Medium pressure (JIS 10K flange)
							0			No communication interface
								0		24 Vdc
								1		100 Vac (50/60 Hz)
								2		200 Vac (50/60 Hz)
									00	None
									DO	Inspection results
									YO	Traceability certificate

*2. The flange type is available for medium pressure only. If "1" (JIS 10K flange) is selected for Pipe shape, it is not possible to select "0" (Low pressure) for Pressure.

*3. 1 to 5 Vdc output models are not equipped with an event output function. To use an integration pulse, integration event or upper/lower limit alarm, select a model having "4 to 20 mA + event output 2."

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GAS FLOW MEASUREMENT AND CONTROL PRODUCTS

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(24 Vdc model only)

<Butane/propane model>

Specifications

Model No.	CMG150	CMG250	CMG400	CMG500
Pipe size	Rc1/2	Rc1	Rc1 1/2	Rc2
Applicable gas	Butane,*1 propane*2 (depending on the model No.)*3			
Measurement range	Propane 0.20-2.00 m³/h (normal)	0.40-4.00 m³/h (normal)	1.00-10.00 m³/h (normal)	2.5-25.0 m³/h (normal)
Display range	Butane	0.10-1.00 m³/h (normal)	0.30-3.00 m³/h (normal)	0.80-8.00 m³/h (normal)
	Propane	0.00-3.00 m³/h (normal)	0.00-6.00 m³/h (normal)	0.00-12.00 m³/h (normal)
Rated power supply voltage	Butane	0.00-1.50 m³/h (normal)	0.00-4.50 m³/h (normal)	0.00-10.00 m³/h (normal)
	Propane	0.00-1.50 m³/h (normal)	0.00-4.50 m³/h (normal)	0.00-10.00 m³/h (normal)
Power consumption	100/200 Vac 50/60 Hz or 24 Vdc			
Display accuracy	Instantaneous flow rate display accuracy: ±6% rdg ±1 digit (10 to 40 °C)			
Instantaneous flow rate output	1 to 5 Vdc output		4 to 20 mA output	
Event output 1	1a contacts (close when alarm occurs)			
Event output 2	NPN open collector output			
Operating pressure range	100 kPa or less			
Straight pipe connection length	Not needed	Not needed	15 cm or more	10 cm or more
Protective structure	IP54 (JIS C 0920)			
Mask color	Yellow			
Weight	Approx. 850 g	Approx. 800 g	Approx. 2100 g	Approx. 2000 g

[Explanation of terms] % rdg: percentage of the reading. m³/h (normal): indicates a value converted to volumetric flow per hour at 0 °C and 101.325 kPa (1 atmosphere).

*1. Butane gas composition: butane 75%, propane 25%

*2. Propane gas composition: propane 98%, butane 2% (class B)

*3. Oil mist is often mixed in with butane/propane gas. If this is the case, install a mist filter.

Model No. configuration

Ex.: CMG150P002000100

Butane model

Basic model No.	Pipe size	Pipe shape	Gas type	Flow rate range	Output	Pressure	Communication	Power supply	Additional treatment	Description
CMG										Gas flow rate monitor
	15									15 A (1/2B)
	25									25 A (1B)
	40									40 A (1 1/2B)
	50									50 A (2B)
		0								Rc thread
			B							Butane (butane 75%, propane 25%)
				001						1 m³/h (normal) (CMG15)
				003						3 m³/h (normal) (CMG25)
				008						8 m³/h (normal) (CMG25)
				020						20 m³/h (normal) (CMG40, 50)
				040						40 m³/h (normal) (CMG40, 50)
					0					1 to 5 Vdc output (1, 3, 8 m³/h only)*1
					1					4 to 20 mA
						0				1, 3, 8 m³/h
										+ event output 2*1
										20, 40 m³/h
										Low pressure
							0			No communication interface
								0		24 Vdc
								1		100 Vac (50/60 Hz)
								2		200 Vac (50/60 Hz)
									00	None
									D0	Inspection results
									Y0	Traceability certificate

Propane model

Basic model No.	Pipe size	Pipe shape	Gas type	Flow rate range	Output	Pressure	Communication	Power supply	Additional treatment	Description
CMG										Gas flow rate monitor
	15									15 A (1/2B)
	25									25 A (1B)
	40									40 A (1 1/2B)
	50									50 A (2B)
		0								Rc thread
			P							Propane (propane 98%, butane 2%)
				002						2 m³/h (normal) (CMG15)
				004						4 m³/h (normal) (CMG25)
				010						10 m³/h (normal) (CMG25)
				025						25 m³/h (normal) (CMG40, 50)
				050						50 m³/h (normal) (CMG40, 50)
					0					1 to 5 Vdc output (2, 4, 10 m³/h only)*1
					1					4 to 20 mA
						0				2, 4, 10 m³/h
										+ event output 2*1
										25, 50 m³/h
										Low pressure
							0			No communication interface
								0		24 Vdc
								1		100 Vac (50/60 Hz)
								2		200 Vac (50/60 Hz)
									00	None
									D0	Inspection results
									Y0	Traceability certificate

*1. 1 to 5 Vdc output models are not equipped with an event output 2 function.

To use an integration pulse, integration event, or upper/lower limit alarm, select a model having "4 to 20 mA + event output 2."

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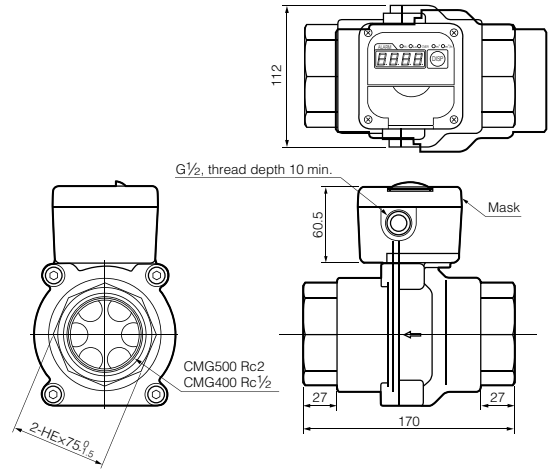
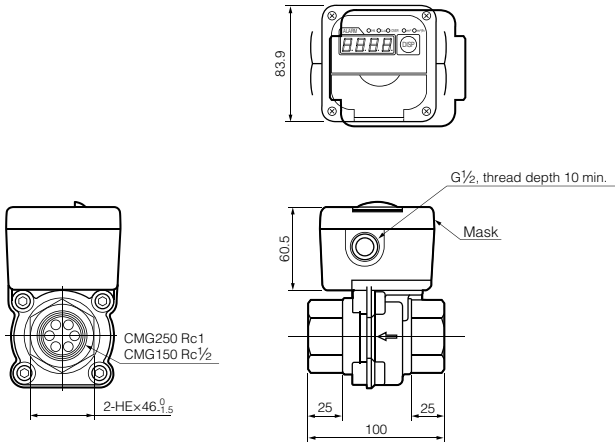
(24 Vdc model only)

External dimensions

CMG150/250

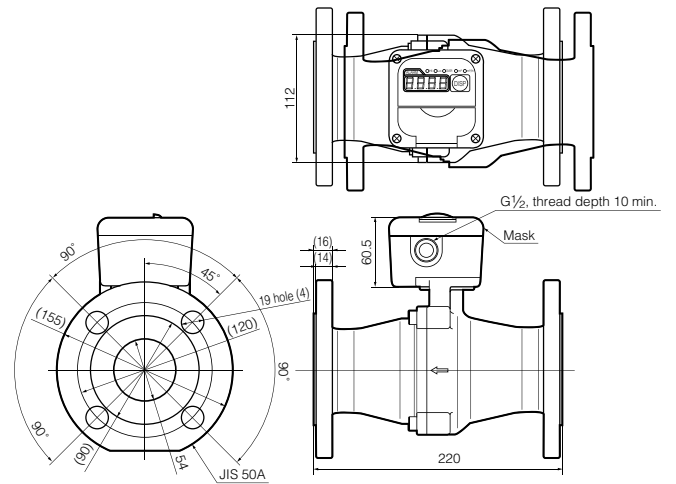
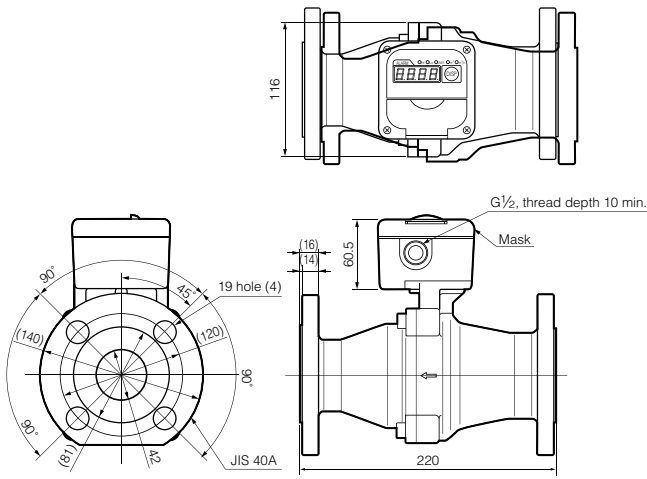
CMG400/500

(Unit: mm)



CMG401

CMG501



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