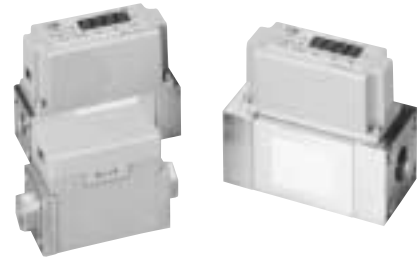


CMS0020/0050

Gas Mass Flow Meters

The CMS0020/0050 are high-reliability gas mass flow meters using a newly developed Yamatake micro-flow sensor, which is a thermal-type speed sensor unit.

The combination of an ultra-miniature, precision sensor and high-flow circuit design technology has enabled high-accuracy and wide rangeability, at a low cost.



Specifications

Item	Contents	
	CMS0020	CMS0050
Applicable gas	Resin model	Air, Nitrogen, Oxygen, Argon, and CO ₂ . (When oxygen is selected, a SUS body and the oil elimination process should be applied.)
	SUS model	Air/Nitrogen, Argon, CO ₂ , Oxygen, City gas 13A (LNG), Methane 100%, Propane 100%, and Butane 100%
Flow range	20L/min (standard) / 50L/min (standard)	
	standard indicates the standard calibration conditions (20°C, 1 atmospheric pressure)	
Measurement accuracy (RD: Read value)	±5%RD±1 digit 4 to 20L/min (standard), 25°C	±5%RD±1 digit 5 to 50L/min (standard), 25°C
	±0.2L/min (standard) ±1 digit 0 to 4L/min (standard), 25°C	±0.5L/min (standard) ±1 digit 0.5 to 5L/min (standard), 25°C (25°C indicates ambient temperature at calibration)
Pressure range	0 to 0.5MPa	
Pressure resistance	Resin body: 0.75MPa SUS body: 1.0MPa	
Sampling cycle	100ms ± 10%	
Output signal	Instantaneous flow rate output: 0 to 5Vdc (allowable load resistance -1kΩ min.) Event output: Open collector x 2 points (rating: 50mA) (indicator model only)	
Indicator	7-segment LED, 4-digits / Instantaneous flow and integrated flow are selectable	
Rated voltage	12 to 24Vdc	
Power supply range	10.8 to 26.4Vdc	
Current consumption	100mA max.	
Ambient temperature	0 to 50°C (Guaranteed accuracy range is from 10 to 35°C)	
Ambient humidity	10 to 90%RH (no condensation allowed)	
Connection	Rc 1/4 thread (female)	
Weight	Without indicator	Resin body: Approx. 260g SUS body: Approx. 780g
	With indicator	Resin body: Approx. 280g SUS body: Approx. 800g

standard indicates the volume flow per minute converted to the conditions of 20°C and 1 atmospheric pressure.

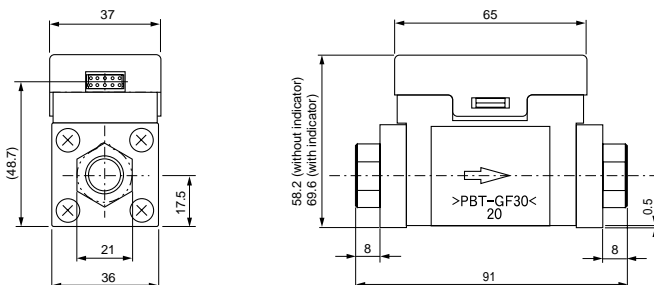
Optional Parts

Part No.	Description
81446594-001	Harness length 2m for a model without indicator
81446594-002	Harness length 5m for a model without indicator
81446594-005	Harness length 2m for a model with indicator
81446594-006	Harness length 5m for a model with indicator

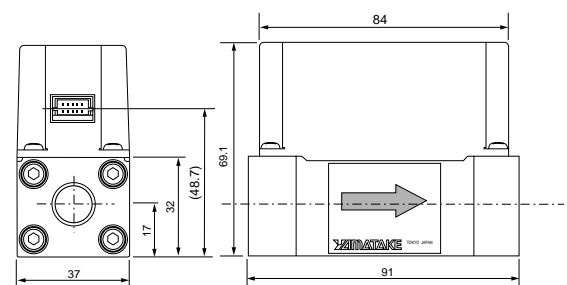
Dimensions

(unit:mm)

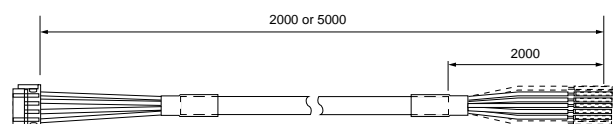
• Resin model



• SUS model (with/without indicator)



• Harness



Selection Guide

Example: CMS0020APRN000000

Table	Basic Model No.	Selection												Description		
		CMS	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓			
I	0020	○	○	○	○	○	○	○	○	○	○	○	○	○	Gas mass flow meter	
	0050	○	○	○	○	○	○	○	○	○	○	○	○	0 to 20L/min (standard)		
II	Flow range	0020	○	○	○	○	○	○	○	○	○	○	○	○	0 to 20L/min (standard)	
		0050	○	○	○	○	○	○	○	○	○	○	○	○	0 to 50L/min (standard)	
		A	○	○	○	○	-	-	-	-	-	-	-	-	Without indicator / instantaneous flow output	
III	Indication	B	-	-	-	-	○	○	○	-	-	-	-	-	With indicator / instantaneous flow output / integration function + event output, integration pulse output + integration reset input	
		F	-	-	-	-	-	-	-	-	-	○	○	-	(ditto) + gas type user setting function	
		P	○	-	-	-	○	-	-	-	-	-	-	-	Resin	
IV	Material	S	-	○	○	○	○	○	○	○	○	○	○	○	SUS303	
		R	○	○	○	○	○	○	○	○	○	○	○	○	Rc 1/4	
V	Gas type	N	○	○	-	-	-	-	-	-	-	-	-	-	Air, nitrogen	
		C	○	○	-	-	-	-	-	-	-	-	-	-	CO ₂	
		S	-	-	○	-	-	-	-	-	-	-	-	-	Oxygen	
		G	-	-	-	○	-	-	-	-	-	-	-	-	City gas 13A (LNG)	
		L	-	-	-	○	-	-	-	-	-	-	-	-	Propane 100%	
		F	-	-	-	-	-	-	-	-	-	○	-	-	Gas type user setting function	
		0	-	-	-	-	-	-	-	-	-	-	○	-	(ditto) for oxygen or oxygen-mixed gas used	
		0	○	○	○	○	○	○	○	○	○	○	○	○	○	0 to 5Vdc
		0	○	○	○	○	○	○	○	○	○	○	○	○	○	None
		0	○	○	○	○	○	○	○	○	○	○	○	○	○	None
X	Option (3)	0	○	○	-	○	○	○	-	○	-	○	-	-	None	
		1	○	○	○	○	○	○	○	○	○	○	○	○	Oil elimination process used on gas passage material	
XI	Option (4)	0	○	○	○	○	○	○	○	○	○	○	○	○	None	
		D	○	○	○	○	○	○	○	○	○	○	○	○	With test data	
XII	Design code	0	○	○	○	○	○	○	○	○	○	○	○	○	Product design	