CML
High-Flow Mass Flowmeter

The CML is a high-flow gas mass flowmeter that uses the Yamatake µF (Micro Flow) sensor as its sensing element.

The combination of an ultra-miniature precision sensor and advanced circuit design technology has enabled high accuracy and impressive 160:1 rangeability.

Specifications

Model No.	CML050	CML080	CML100	CML150
Compatible gases	Air/nitrogen, argon, city gas 13A (LNG-base, 45/46MJ/m^3), propane, butane, carbon dioxide, oxygen. Gas must be dry and without corrosive components (chlorine, sulfur, acid, etc.). It must also be clean, without dust or oil mist.			
Flow rate range	0 to 160m^3/h (normal)	0 to 400m^3/h (normal)	0 to 650m^3/h (normal)	0 to 1600m^3/h (normal)
	"Normal" refers to the volumetric flow rate (m^3/h) adjusted for 0°C, 101.325kPa.			
Accuracy	1/20 to 1/1 of flow rate range: ±2% rdg.			
	1/160 to 1/20 of flow rate range: ±3% rdg.			
	% rdg.: percentage of indicated reading			
Operating pressure range	0 to 1.0MPa			
Sampling cycle	160ms ±10%			
Output signal	Instantaneous flow rate output: 4–20mAdc (allowable load resistance 600Ω max.). 24mA max.			
Contact output	3 SPST relay contacts (common)			
Totalizer pulse output	2 open collector outputs			
External contact input functions — No. of inputs	1			
External contact input functions — Description	Dedicated use for reset of cumulative flow			
Communications	RS-485 interface, 5-wire type			
Power	85 to 264Vac 50/60Hz			
Current consumption	10VA max.			
Pipe size	50A (2B)	80A (3B)	100A (4B)	150A (6B)
Mass	21kg	24kg	29kg	45kg

● Gas Type and Control Flow Rate Ranges Unit: m^3/h (normal)

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

Model No. / Gas type	CML050	CML080	CML100	CML150
Air/nitrogen	0.0 to 160.0	0.0 to 400.0	0.0 to 650.0	0.0 to 1600.0
City gas 13A (45/46MJ/m^3)	0.0 to 160.0	0.0 to 400.0	0.0 to 650.0	0.0 to 1600.0
Propane	0.0 to 60.0	0.0 to 140.0	0.0 to 220.0	0.0 to 500.0
Carbon dioxide (CO$_2$)	0.0 to 120.0	0.0 to 300.0	0.0 to 480.0	0.0 to 1200.0
Oxygen	0.0 to 160.0	0.0 to 400.0	0.0 to 650.0	0.0 to 1600.0

Selection Guide I II III IV V VI VII VIII IX X XI XII XIII Example: **CML0800SJN0F110D0**

Segment		Model No. selection			Description
I	Basic No.	CML	↓	↓	High-flow mass flowmeter
II	Pipe size	050	○	○	50A (2B)
		080	○	○	80A (3B)
		100	○	○	100A (4B)
		150	○	○	150A (6B)
III	Type	0	○	○	Applicable pressure range: 0 to 1MPa
IV	Material	S	○	○	Body: SUS304/SCS13A
V	Connection	J	○	○	JIS 10K RF flange
VI	Type of gas	N	○	−	Air/nitrogen (setting changeable to argon, city gas 13A, propane, butane, CO$_2$)*1
		S	−	○	Oxygen*1
VII	Output	0	○	○	4–20mAdc and pulse output
VIII	Power	F	○	○	85 to 264Vac 50/60Hz
IX	Communications	1	○	○	RS-485
X	Flow direction	0	○	○	Horizontal (flow: left → right)*2
		1	○	○	Horizontal (flow: right → left)*2
		2	○	○	Vertical (flow: down to up)*2
		3	○	○	Vertical (flow: up to down)*2
XI	Option 1	0	○	−	None
		1	○	○	Oil-inhibiting treatment for gas-contacting parts
XII	Option 2	D	○	○	With inspection data
		Y	○	○	With inspection data + traceability certification
		K	○	○	With inspection data + traceability certification + flow rate calibration certification
XIII	Design code	0	○	○	Product version

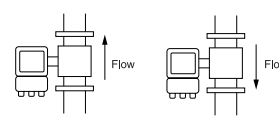• A circle (○) denotes availability.

Notes *1: The controllable flow rate range varies according to the gas type. See table.

*2. Flow direction can be selected from the 4 types shown below. LCD display is parallel to the piping when mounted vertically.
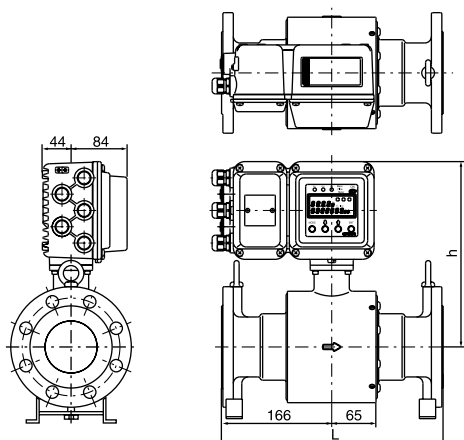
• Horizontal

Flow   Flow

• Vertical

Flow   Flow
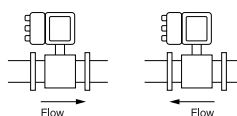
Dimensions (Unit: mm)

44 84

166 65

Model No.	L	h
CML050	255	285
CML080	340	285
CML100	400	295
CML150	400	330