

# PRODUCT INFORMATION

# MASS FLOW GAUGE

DF-230BA equips highly responsive (99% response 300 ms) mass flow sensor  
 Various flow ranges from 500mL/min to 500L/min are available



## Features

- With mass flow sensor, no need to correct temperature or pressure.
- Highly responsive sensor allows instant flow measurement.
- Multi-function display is ideal for various measurements.

## Application Examples

- Flow test under various test pressures
- Pass/Fail judgment by flow rate
- Flow measurement of various kinds of products
- Flow rate data collection, PC data collection

## Specification

Flow range	500 mL/min 2, 5, 20, 50, 200, 500 L/min
Pressure media	Air (*1) and specified gases (*2)
Accuracy	F.S. to 20% ±3% of rdg ± 1digit 200 and 500L/min: ±5% of rdg ± 1digit
	Less than 20% ±1% of F.S. ±1digit
Operating temperature	0 to 50°C (Accuracy is guaranteed only for +10 to 35°C)
Pressure range	-70kPa to 1MPa 200 and 500L/min: -35kPa to 1MPa
Pressure proof	1.5MPa
Response speed	Step response Approx. 300 ms/99%
Pressure loss	Max. 2kPa
Conenction port size	≤ 50L/min: Rc(PT)1/4 ≥ 200L/min: Rc(PT)1/2
Power supply	AC100V±10% 50/60Hz

CH number	10 channels
Upper/Lower limits	4 settings HH, HI, LO, LL
Sensor zero	One-push zero method
Auto zero	Auto zero button
Display hold	Hold button
Display response	Digital filter Large, Medium, Small
RS-232C	Selection from 1200, 9600, 19200bps
BCD output	Open collector
Displaying digit	3.5 digits (1999) or 4.5 digits (19999)
Sampling time	250 ms or 50 ms
User span	0.001 to 9.999 (1.000 at delivery time)
External dimension	Display: W140×H66×D172 (mm) Sensor: Refer to the next page
Panel cut	Cutting size W133×H61 (mm)

(\*1) Provide a filter for the pressure incoming side in order to prevent the entry of mist or contaminants.

(\*2) Specified gases are argon, carbon dioxide, town gas 13A, methane gas, propane gas, and butane gas. Only the setting of gas coefficient is specified and the accuracy is not guaranteed.

## Codes

### DF-230BA-(1)(2)-(3)

(1) Flow range			(2) Power supply voltage		(3) Option	
Code	Flow range	Display	Code	Description	Code	Description
500ML	0 to 500mL/min	000 to 500	VA	AC100V	F1	Analog output 5V
2L	0 to 2L/min	.000 to 1.999	VC	AC110V	F2	Analog output 10V
5L	0 to 5L/min	0.00 to 5.00	VE	AC220V	F3	Analog output depending on the display
20L	0 to 20L/min	0.00 to 19.99				
50L	0 to 50L/min	00.0 to 50.0				
200L	0 to 200L/min	00.0 to 199.9				
500L	0 to 500L/min	000 to 500				

■ Related Products

**Mass Flow Sensors MF-130**



Highly responsive mass flow sensors equipped in DF-230BA are also available as single products.

< Features >

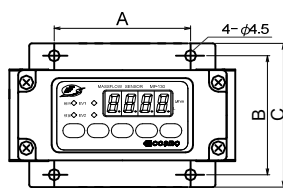
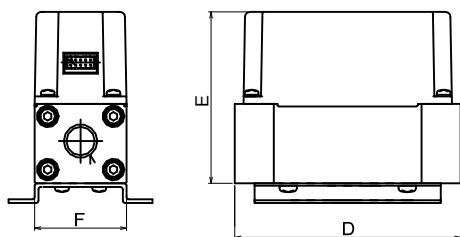
- Highly responsive sensor: 99% response 300 ms
- Small and robust chassis with full 4 digits flow display
- In addition to air, argon, carbon dioxide, methane gas, propane gas, and butane gas can be measured.
- Accumulative function and others are also available.

**Model MF-130 -- Flow Range**

Code	Flow range
500ML	0 to 500mL/min
2L	0 to 2L/min
5L	0 to 5L/min
20L	0 to 20L/min
50L	0 to 50L/min
200L	0 to 200L/min
500L	0 to 500L/min

Major specification	
Connection port size	500ML to 50L(PT1/4) 200L to 500L(PT1/2)
Accuracy	500ML to 50L : ±3% of rdg 200L to 500L : ±5% of rdg Less than F.S 20% : ±1% of F.S.
Drive power supply	DC12 to 24V
Output voltage	0 to 5VDC
Pressure media	Air and specified gases
Cable	Standard 3 m cable

**External Dimension**



	500ML to 50L	200L	500L
A	55	72	72
B	48	75	75
C	58	87	87
D	91	98.6	98.6
E	69.1	82.1	96.1
F	37	50	59

Mounting hole size 4.5φ

Unit: mm

**Quick Flange Couplers QF-C10A**



The couplers were developed for attaching/removing the sensor. Just by tightening/loosening the threads, the sensor can be easily attached/removed. It provides secure connection as well as better sealing ability.

< Features >

- Easy attachment/removal of the sensor
- With O-ring, the couplers can be used for positive and negative pressures.
- Pressure proof: From vacuum pressure to 1MPa
- Connection port size: 1/2 and 1/4 are available.
- Can be used for other tubing or as clamp unions.

Diameter	Model	Specification	MF-130 corresponding range
1/4	QF-C10A-FF02	Rc1/4- Rc1/4 (Female)	--
	QF-C10A-MM02	R1/4- R1/4 (Male)	500ML to 50L
	QF-C10A-MF02	R1/4- Rc1/4 (Male-Female)	500ML to 50L
1/2	QF-C10A-FF04	Rc1/2- Rc1/2 (Female)	--
	QF-C10A-MM04	R1/2- R1/2 (Male)	200L to 500L
	QF-C10A-MF04	R1/2- Rc1/2 (Male-Female)	200L to 500L

\* The contents in this Product Information are as of September 2014. The information is subject to change without prior notice.