Biosflow®

High-precision Coriolis mass flow controller/flow meter for gas and liquid

Biosflow 6100 series

series product information

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Biosflow 6100 series

Mass flow meters based on the Coriolis principle are highly appreciated for their accuracy and independence from the properties of the fluid.

The Biosflow 6100 series is a precise mass flow meter/controller for measuring gas and liquid flows up to 207 bar(a) and is virtually insensitive to pressure and temperature variations.

The Biosflow 6100 series Coriolis mass flow meter/controller can measure flow rates ranging from 40g/h to 300kg/h. It contains a uniquely shaped single-loop sensor tube that forms part of an oscillating system. As the fluid flows through the tube, the Coriolis force causes a variable phase shift that is detected by the sensor and fed back to a high-speed microprocessor PC board for processing, which produces an output signal that is strictly proportional to the mass flow rate.

The Biosflow 6100 series is a true mass flow meter/controller that measures mass flow, regardless of the nature of the gas or liquid. A high accuracy proportional control valve and a flexible readout are used within the system to measure and control gas and liquid flows.

All instruments in the Biosflow 6100 series offer unmatched accuracy and zero stability in demanding low-flow applications. They can simultaneously measure multi-parameters such as mass or volume flow rate as well as density and temperature of the output fluid.

1. Higher-precision measurement and control

0.2% reading for liquids
0.5% reading for gases

Turndown ratio better than 75 : 1
(optional:100:1/200:1)

2. Wider flow range

Min:40 g/h for liquids
Max:300 kg/h for liquids

Min:0.53 SLM for gases (N2) *
Max:4000 SLM for gases (N2) *

3. Multiple communication options

Traditional 0-5 Vdc and 4-20mA analog options as well as RS232/RS485 digital communications are available(Modbus RTU protocol).

4. Multi-parameter multi-function output

Direct mass flow measurement
Independent of fluid properties
Additional density and temperature outputs

5. Optional

1) High pressure rating - up to 3000 psi (g) / 207bar (g)
2) Water/dust-resistant: ip65

6. High-definition touch screen

Display of flow rate, total and measuring unit. Defining a set point.
6100/6101D series only)

7. Biosflow UCS Software

Efficient device management with the free ‹Biosflows-UCS› software:

- » **View flow rate & cumulative flow**
- » **Change set points**
- » **Change set communication address**
- » **Visualization of measured data**
- » **Adjusting control parameter**
- » **Datalogging**
- » **Change digital / analog communication mode**
- » **Multiple 6100 devices can be controlled at the same time**

8. Application

1) Semiconductor
2) Photovoltaic industry
3) Fuel cell
4) Vacuum industry
5) Analytical instruments
6) Heat treatment
7) Surface treatment
8) CHEMICAL, PLASTICS, METAL AND GLASS INDUSTRY
9) Experimental apparatus
10) Food, Beverage and Pharma
11) Automobile electronics
12) Bioprocessing & Bioreactors

Note:
All specifications are 'typical specifications'. For an exact configuration, please contact us for availability.

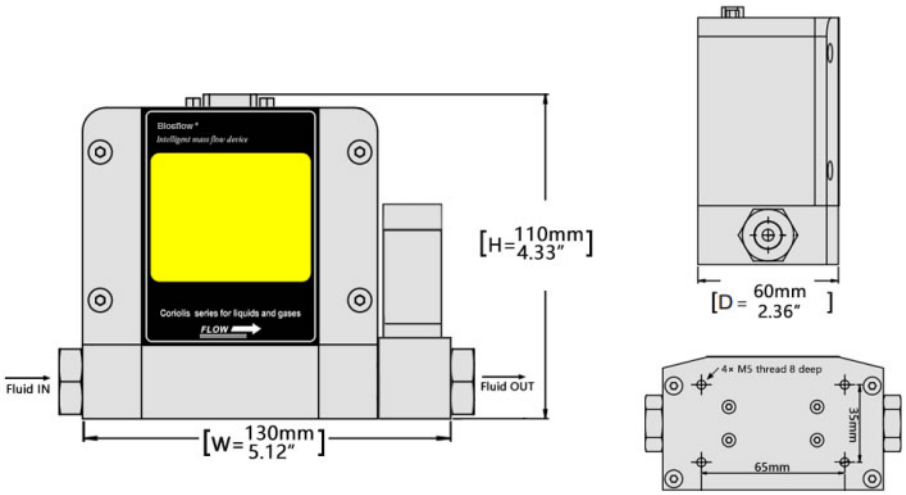
* Maximum capacities depend on the available pressure difference across the mass flow meter, especially when used on gases.

MODEL NAME	6110/11	6120/21	6130/31
FEATURE			
Full Scale Flow Range	liquids:40g/h-5kg/h gases:0.53slm-66.6slm (N2)	liquids:3kg/h-100kg/h gases:40slm-1333slm (N2)	liquids:10kg/h-300kg/h gases:133slm-4000slm (N2)
Mass Flow Accuracy	Liquids:±0.2%/±0.25%/±0.6% of reading Gases:±0.5%/±0.6%/±1% of reading		
Turndown Ratio	6100 Series better than75:1/ (optional:100:1)\6101 Series better than 100:1/ (optional:200:1)		
Repeatability	±0.05% of reading or ±0.025% of full scale, whichever is greater		
Response Time	40g/h-5kg/h<100 ms	3kg/h-100kg/h<150 ms	10kg/h-300kg/h<200 ms
Control Response Time	40g/h-5kg/h<200 ms	3kg/h-100kg/h<250 ms	10kg/h-300kg/h<300 ms
Temperature Sensitivity	Mass flow zero shift: ±0.01% of full scale per °C from tare temperature Mass flow span shift: ±0.005% of reading per °C from 25°C		
Zero Stability	±0.05% of full scale (included in mass flow accuracy)		
Density Range	0 – 500 cP (Consult Grylls for higher viscosity options)		
Density Accuracy	<±5 kg/m3		
Temperature Accuracy	±0.5℃		
OPERATING CONDITIONS			
Working Temperature Range	0-70℃		
Minimum Pressure Difference (controller, fluid water)	14.5psi(d)/1bar(d)	Min.: 14.5 psi(d)/1bar(d)	Min.:60psi(d)/4bar(d)
Maximum Pressure Difference (Controller)	72.5 psi(d)/5 bar(d)		
Maximum Working Pressure	435 psi(g)/30bar(g)\Option:1450psi(g)/100bar(g)\Max:3000psi(g)/207bar(g)		
Leak Rate	Outboard 1 x 10-9 atm. cc/sec., helium		
MECHANICAL			
Valve Type	6100 Series Normally Closed/Optional:Normally Open \ 6111 Series NO Valve		
Wetted Material	316L Stainless Steel\Viton seals\EPDM seals\Silicone seals\FFKM seals		
Installation Direction	May be mounted in any position		
Weight	About 6100:1.0kg / 6111:0.75kg	About 6120:1.2kg / 6121:0.85kg	About 6130:2.0kg / 6131:1.5kg
ELECTRICAL SPECIFICATIONS AND INTERFACE			
Electrical Interface	9-Pin Male Sub D-Type /15-Pin Male Sub D-Type (optional)/RJ11/USB -C		
Analog Input Signal	0-5 Vdc / 1-5 Vdc / 0-10 Vdc / 4-20 mA		
Analog Output Signal	0-5 Vdc / 1-5 Vdc / 0-10 Vdc / 4-20 mA		
Digital communication	RS-232 Serial / RS-485 Serial / Modbus RTU Option: PROFIBUS / EtherNet/IP / DeviceNet /Modbus TCP/IP / EtherCAT / PROFIBUS-DP		
Power Consumption	About 12.0w 24Vdc @500 mA	About 18.0w 24Vdc @750 mA	About 24.0w 24Vdc @1000 mA
Touch Screen Display	Display Mass Flow, Density, Temperature, Cumulative flow and Flow set point		

OPERATIONAL	6100/11 Series	6120/21 Series	6130/31 Series
Full Scale Range	0-40g/h	3kg/h-30kg/h	10 kg/h-100kg/h
	40g/h-500g/h	10kg/h-50kg/h	30 kg/h-300kg/h
	100g/h-1000g/h	20kg/h-100kg/h	For a larger flow range, consult Biosflows
	500g/h-2000g/h	/	/
	1000g/h-5000g/h	/	/
	/	/	/
	/	/	/

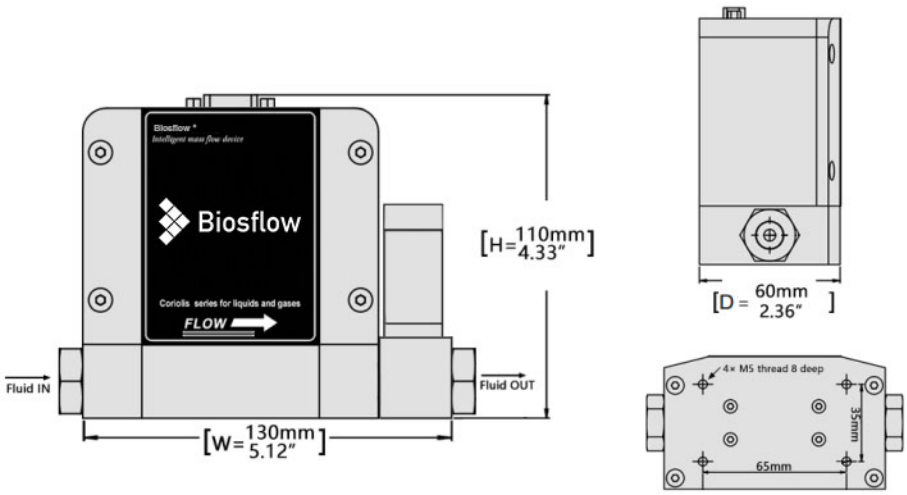
* The above parameter samples are standard product parameters.For more flow ranges, low pressure, high pressure applications, please contact Biosflows.

6110D Series Coriolis Mass Flow Controllers



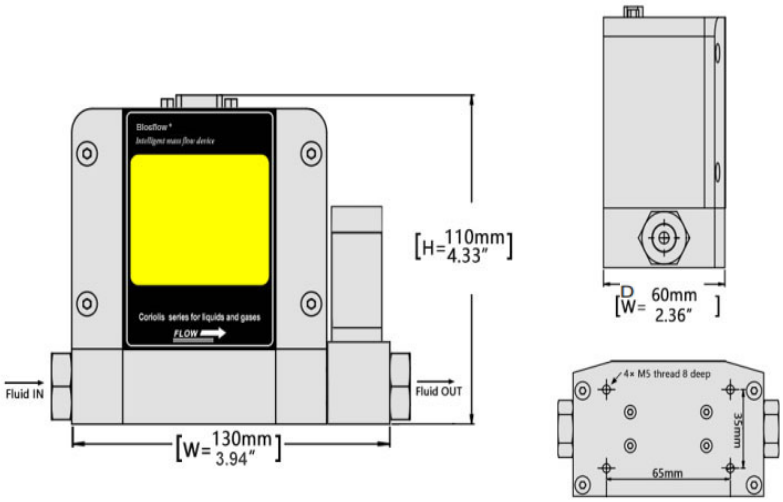
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male connector	4.33"H x 5.12"W x 2.36"D	G3/8 Female Thread

6110 Series Coriolis Mass Flow Controllers



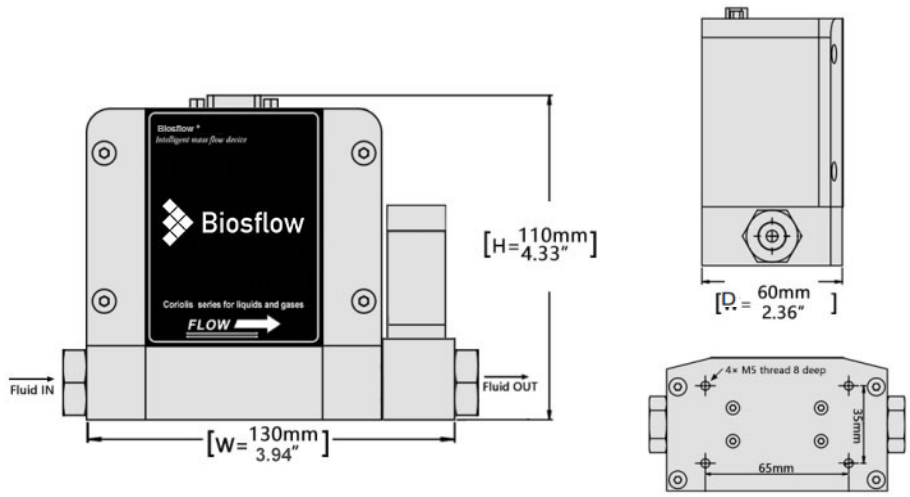
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male female	4.33"H x 5.12"W x 2.36"D	G3/8 Female Thread

6111D Series Coriolis Mass Flow Meter



Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male connector	4.33"H x 3.94"W x 2.36"D	G3/8 Female Thread

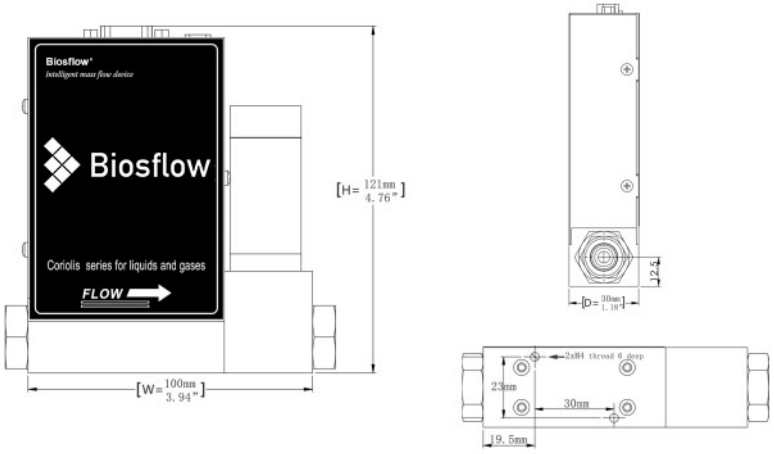
6111 Series Coriolis Mass Flow Meters



Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male female	4.33"H x 3.94"W x 2.36"D	G3/8 Female Thread

6100-SA Series Coriolis Mass Flow Controllers

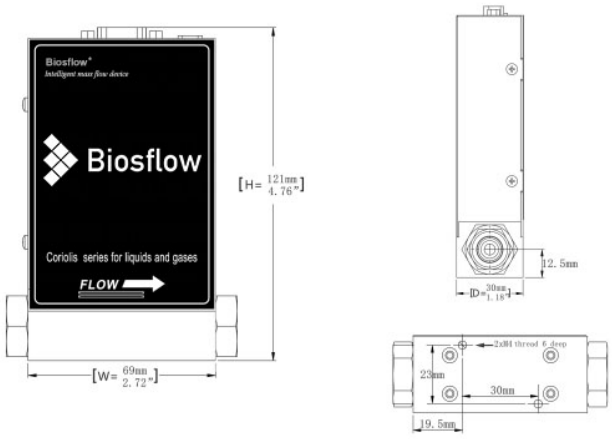
40g/h-100kg/h



Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male connector	4.76"H x 3.94"W x 1.18"D	G3/8 Female Thread

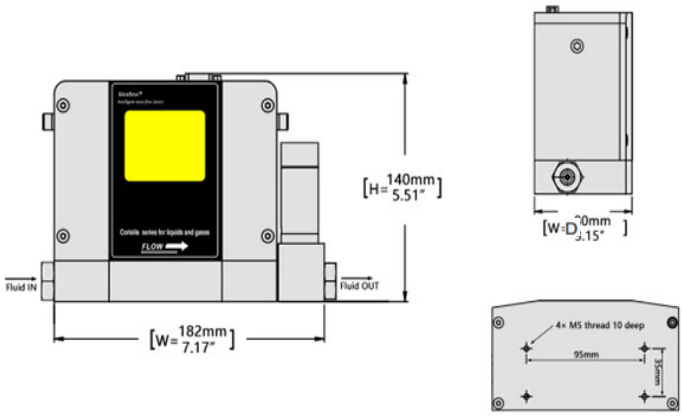
6100-SA Series Coriolis Mass Flow Meters

40g/h-100kg/h



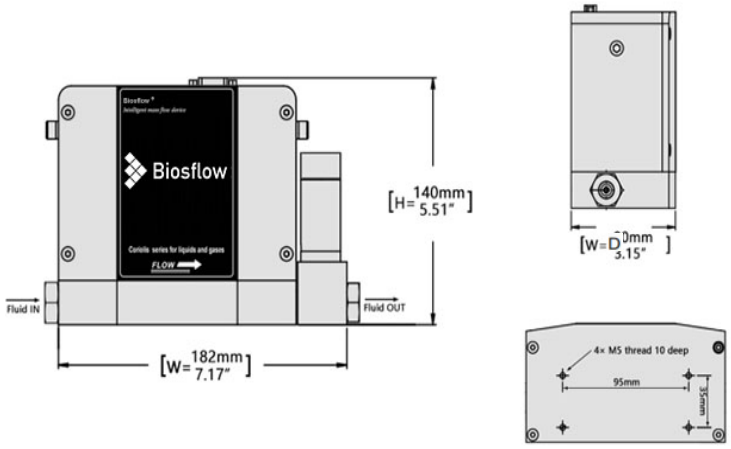
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male female	4.76"H x 2.72"W x 1.18"D	G3/8 Female Thread

6120D & 6130D Series Coriolis Mass Flow Controllers



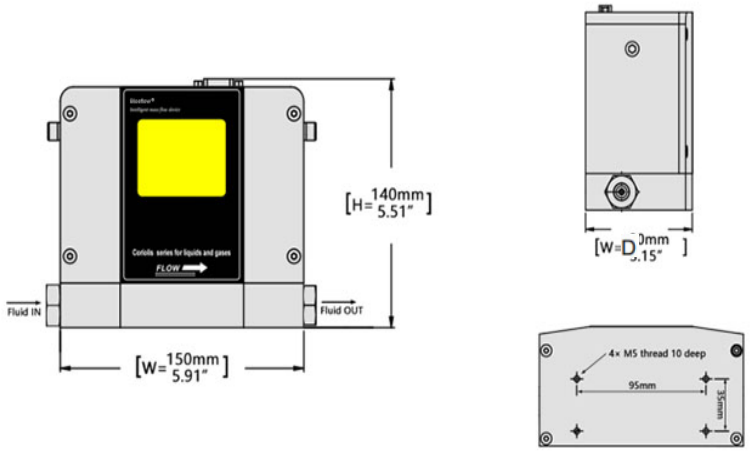
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male connector	5.51"H x 7.17"W x 3.15"D	G3/8 Female Thread

6120 & 6130 Series Coriolis Mass Flow Controllers



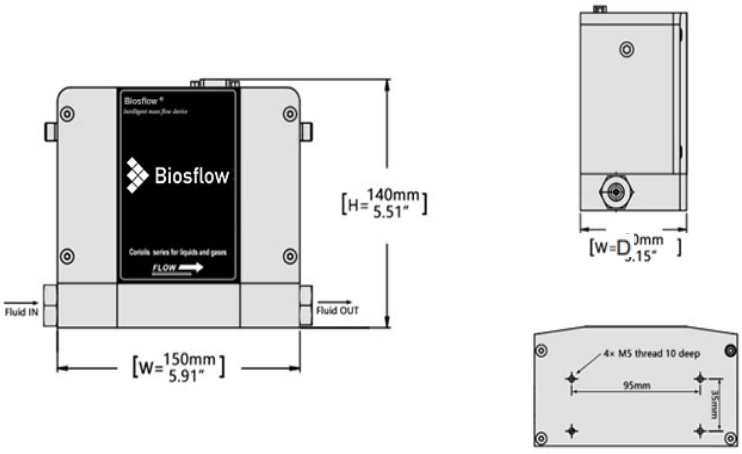
Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male female	5.51"H x 7.17"W x 3.15"D	G3/8 Female Thread

6121D & 6131D Series Coriolis Mass Flow Meters



Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male connector	5.51"H x 5.91"W x 3.15"D	G3/8 Female Thread

6121 & 6131 Series Coriolis Mass Flow Meters



Electrical Connection	Mechanical Dimensions	Process Connections
DB9 male female	5.51"H x 5.91"W x 3.15"D	G3/8 Female Thread