Technical Data for BASIS 2 Mass Flow Meters and Controllers

100 SCCM full scale through **100 SLPM** full scale

Standard specifications. Consult Alicat for available options.

ALICAT SCIENTIFIC™
+1 (888) 290-6060
alicat.com/basis2

ACCURACY READINGS				
Fluids	Air, N_2, O_2, CH_4	He, H_2	Ar	CO_2, N_2O
Mass flow accuracy[1]	± 1.5% reading or ± 0.2% full scale[2]	± 1.8% full scale	± 1.5% reading or ± 0.5% full scale[2]	**100 SCCM – 2 SLPM:** 1.5% reading or 0.5% full scale[2] **5 – 20 SLPM:** 2.0% reading or 1.0% full scale[2] **50 – 100 SLPM:** 3.0% reading or 2.0% full scale[2]

1 Stated accuracy is after tare, under equilibrium conditions, includes repeatability and linearity.

2 Whichever is greater.

SENSOR AND CONTROL PERFORMANCE	
Flow repeatability (2σ)	± 0.25% reading or ± 0.05% of full scale
Control and measurement range	0.1% – 100% of full scale (1,000:1 turndown ratio)
Temperature sensitivity	**Mass flow zero and span shift:** ± 0.05% of reading per °C from calibration conditions
Temperature accuracy	± 1.5 °C
Operating temperature range	0 – 50°C (ambient and gas)
Operating pressure range[3]	**Meters:** 0 – 145 PSIG **Controllers:** **100 SCCM – 5 SLPM:** 0 – 145 PSIG **10 SLPM:** 0 – 100 PSIG **20 SLPM:** 0 – 60 PSIG **50 – 100 SLPM:** 0 – 145 PSIG
Valve function[4]	Normally closed
Totalizer volume uncertainty	± 0.6% of reading in additional uncertainty
Typical control response time[4]	As fast as 100 ms (T63), flow rate dependent, user-adjustable
Typical indication response time	< 6 ms, flow rate dependent
Typical warm-up time	1 minute (5 minutes optimal)

3 Custom valve options are available to increase operating pressure range on 10 SLPM and 20 SLPM models.

4 Applies to controllers only.

MECHANICAL	
Wetted materials	300-series stainless steel, brass, hard-anodized aluminum, FKM, NBR, FR4, SiO_2/ SiNx/Si, ABLEBOND®, 84-3J, PBT UL 94V-0, tin, copper
Maximum pressure	Damage possible above 175 PSIG
Relative humidity range	95%, non-condensing
Ingress protection	IP40
Mounting orientation sensitivity	Calibrated in horizontal mounting orientation

POWER AND COMMUNICATION	
Digital input and output options	RS-232 or RS-485
Digital data update rate	As fast as 176 Hz, baud rate and system dependent
Analog input and output	0-5Vdc or 4-20mA
Analog update rate	400 Hz
Analog signal accuracy	± 0.125% of full scale additional uncertainty Hz
Electrical connection	6-pin JST GH
Power requirements[5]	**Controller:** 12–24 Vdc, 210 mA **Meter:** 12–24 Vdc, 12 mA

5 Add 40 mA to power requirements if equipped with 4-20 mA analog output.

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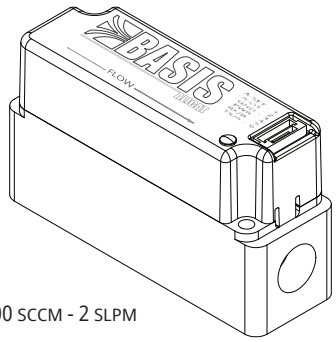
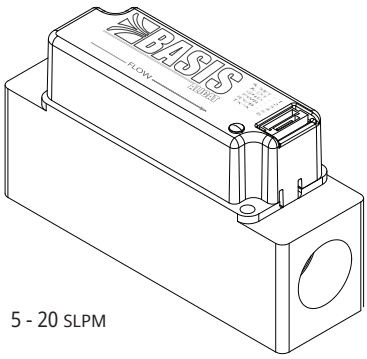
FEATURES	
STP reference conditions	0°C, 20°C, 25°C, 70°F and 1 atm available, user-configurable
Gas selection	9 user-selectable gases stored internally. **Compatibility:** air, N_2, O_2, CH_4, Ar, CO_2, N_2O, He, H_2
Valve overrides	Hold, exhaust
Status LED	Power, serial activity, error

RANGE-SPECIFIC TECHNICAL DATA			
Full scale flow	Pressure drop at full scale when venting air to atmosphere		Process connections
	Controller	Meter	
100 SCCM	15.0 mbar	0.2 mbar	⅛" NPT female or SAE 4
200 SCCM	45.0 mbar	0.5 mbar	⅛" NPT female or SAE 4
500 SCCM	6.0 mbar	1.5 mbar	⅛" NPT female or SAE 4
1 SLPM	26.0 mbar	3.0 mbar	⅛" NPT female or SAE 4
2 SLPM	80.0 mbar	10.0 mbar	⅛" NPT female or SAE 4
5 SLPM	140.0 mbar	14.0 mbar	⅜" NPT female or SAE 6
10 SLPM	450.0 mbar	35.0 mbar	⅜" NPT female or SAE 6
20 SLPM	850.0 mbar	85.0 mbar	⅜" NPT female or SAE 6
50 SLPM	290.0 mbar	12.0 mbar	⅜" NPT female or SAE 6
100 SLPM	750.0 mbar	30.0 mbar	⅜" NPT female or SAE 6

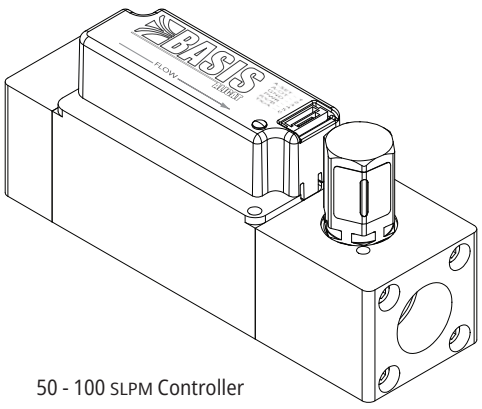
Representative Examples



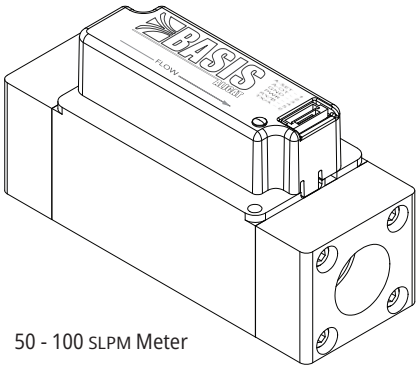
100 SCCM - 2 SLPM



5 - 20 SLPM



50 - 100 SLPM Controller



50 - 100 SLPM Meter

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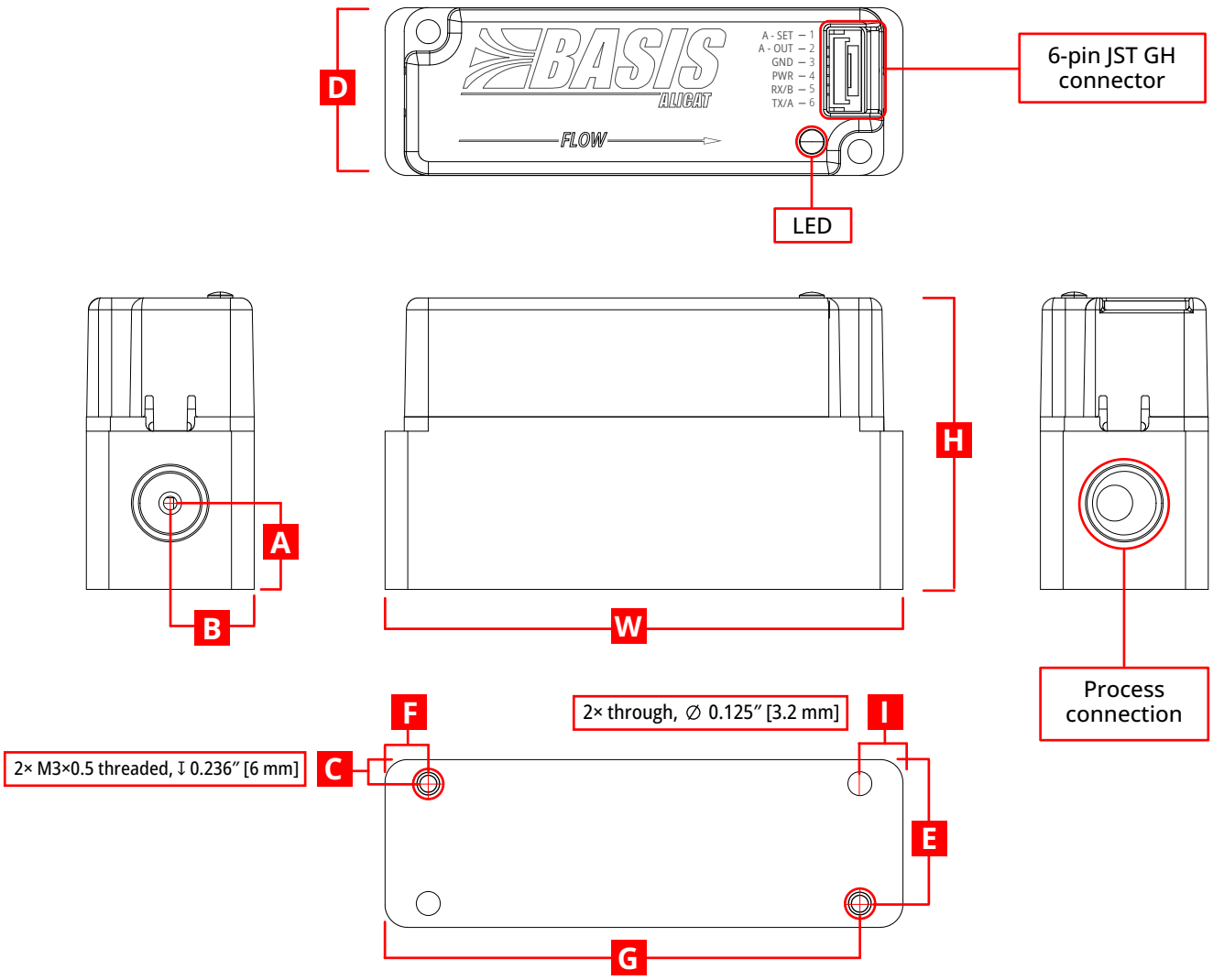

DIMENSIONS											WEIGHT
Full-scale flow	Width	Depth	Height	A	B	C	E	F	G	I	
100 SCCM – 2 SLPM	2.70″	0.88″	1.55″	0.45″	0.44″	0.27″	0.73″	0.27″	2.43″	0.23″	≈ 4.0 oz
	68.6 mm	22.23mm	39.4 mm	11.4 mm	11.1 mm	6.8 mm	18.6 mm	6.8 mm	61.8 mm	5.7 mm	≈ 116 g
5 – 20 SLPM	3.31″	1.00″	1.83″	0.58″	0.50″	0.47″	0.85″	0.47″	2.85″	0.52″	≈ 6.0 oz
	84.0 mm	25.4 mm	46.5 mm	14.8 mm	12.7 mm	12.0 mm	21.7 mm	12.0 mm	72.4 mm	13.1 mm	≈ 171 g
50 – 100 SLPM Meter	3.75″	1.38″	1.91″	0.58″	0.69″	0.11″	1.27″	0.74″	3.01″	0.74″	≈ 9.5 oz
	114.8 mm	35.0 mm	48.4 mm	14.7 mm	17.5 mm	2.7 mm	32.3 mm	18.8 mm	76.5 mm	0.0 mm	≈ 270 g
50 – 100 SLPM Controller	4.52″	1.38″	2.06″	5.77″	0.69″	0.11″	1.27″	0.74″	3.01″	0.74″	≈ 12.3 oz
	114.8 mm	35.0 mm	52.3 mm	146.6 mm	17.5 mm	2.7 mm	32.3 mm	18.7 mm	76.5 mm	0.0 mm	≈ 350 g