Technical Data for BASIS 2.0 Mass Flow Meters and Controllers

100 SCCM full scale through **20 SLPM** full scale models

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 - 1 SLPM:** ± 1.5% reading or ± 0.5% full scale[2] **2 SLPM- 20 SLPM:** ± 2.0% reading or ± 1.0% full scale[2] **50SLPM – 100 SLPM:** ± 3.0% reading or ± 2.0% full scale[2]

1 Stated accuracy is at calibration conditions, 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: Valve dependent LV08 valve: 0 – 60 PSIG LV05; valve: 0 – 100 PSIG ; All other valves:** 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 LV08 is default for 20 SLPM and LV05 is default for 5-10 SLPM. Custom valve sizing available to increase pressure rating.
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
Allowable pressure range	0 - 175 PSIG (damage possible outside this range)
Relative humidity range	95% non-condensing
Ingress protection	IP40
Mounting orientation sensitivity	Calibrated in horizontal mounting orientation
Mounting holes	2× M3×0.5 threaded, ↧ 0.236″ [6 mm]

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[5]	0 – 5Vdc or 4 – 20 mA
Analog update rate	400 Hz
Analog signal accuracy	±0.125% of full scale additional uncertainty
Electrical connection	6-pin JST GH

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

Technical Data for BASIS 2.0 Mass Flow Meters and Controllers

100 SCCM full scale through **20 SLPM** full scale models

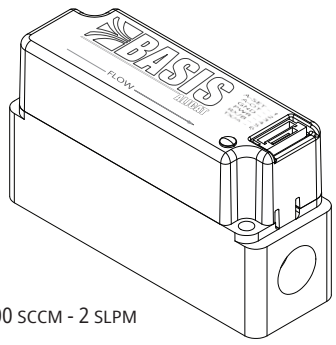
Standard specifications. Consult Alicat for available options.

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

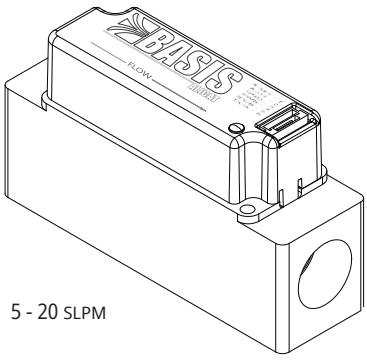
FEATURES	
STP reference conditions	20°C, 21°C, 25°C, 70°F and 1 atm available, user-configurable
Gas Select™	9 user-selectable gases stored internally. **Compatibility:** Air, N_2, O_2, CH_4, Ar, CO_2, N_2O, He, H_2
Valve Overrides	Hold, exhaust
Status LED	Power, serial activity, error

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	12.0.0 mbar	⅜″ NPT female or SAE 6
100 SLPM	750.0 mbar	30.0 mbar	⅜″ NPT female or SAE 6

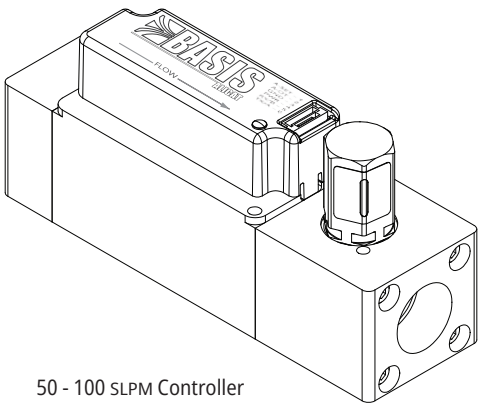
Representative Examples



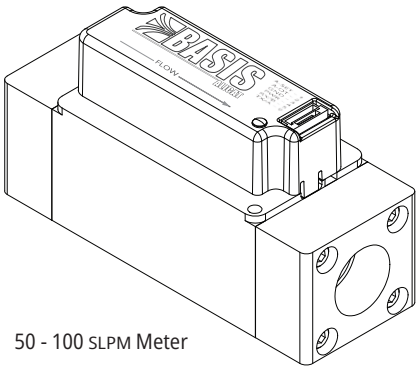
100 SCCM - 2 SLPM



5 - 20 SLPM



50 - 100 SLPM Controller



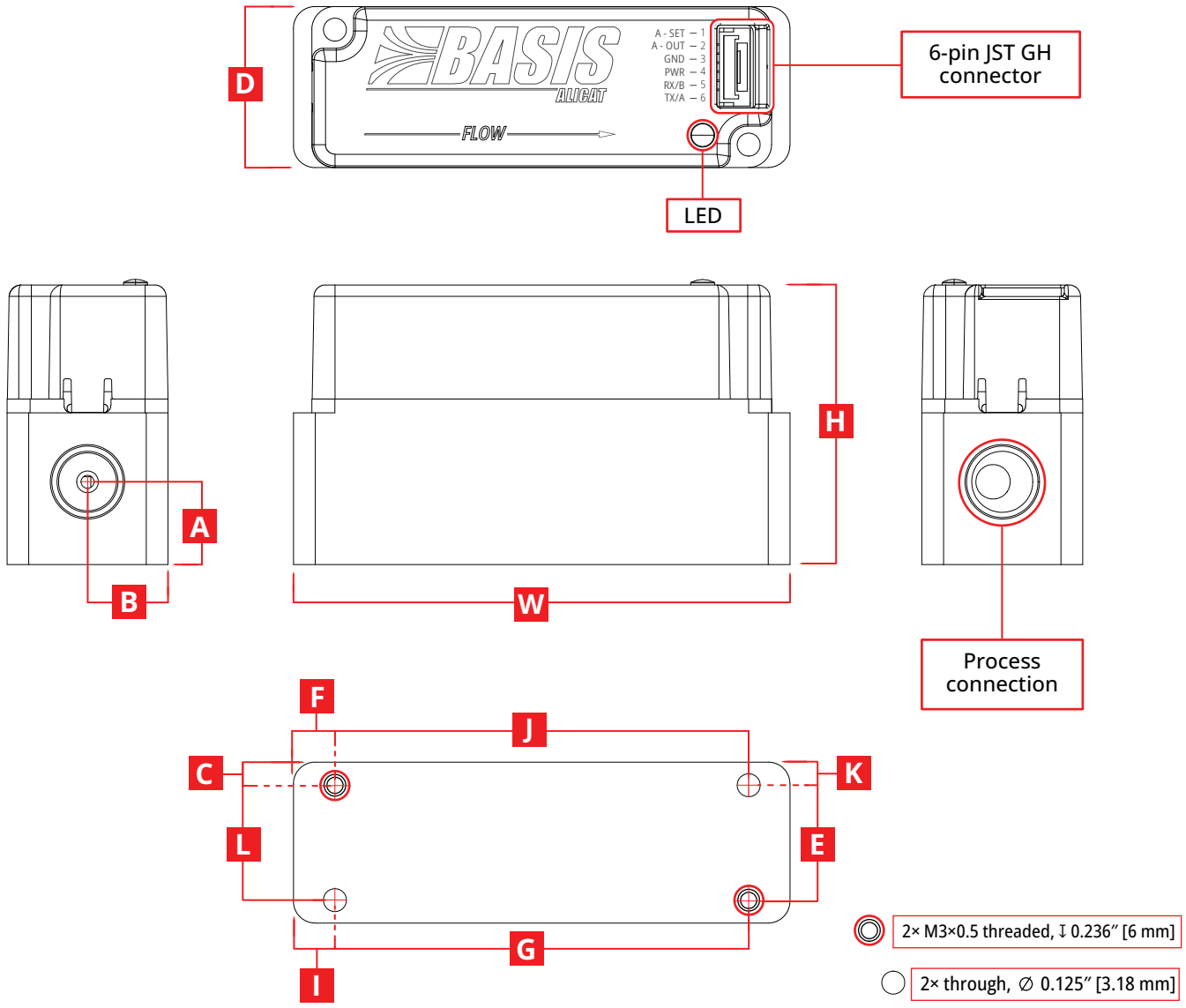
50 - 100 SLPM Meter

Technical Data for BASIS 2.0 Mass Flow Meters and Controllers

100 SCCM full scale through **20 SLPM** full scale models

Standard specifications. Consult Alicat for available options.

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



DIMENSIONS														WEIGHT
Full scale flow	Width	Depth	Height	A	B	C	E	F	G	I	J	K	L	
100 SCCM–2 SLPM	2.70"	0.88"	1.55"	0.45"	0.53"	0.14"	0.73"	0.27"	2.43"	0.23"	2.48"	0.13"	0.75"	4.0 oz
	68.6 mm	22.2 mm	39.4 mm	11.4 mm	11.1 mm	3.6 mm	18.6 mm	6.8 mm	61.8 mm	5.7 mm	62.9 mm	3.2 mm	19.1 mm	≈ 116 g
5 SLPM–20 SLPM	3.31"	1.00"	1.80"	0.58"	0.50"	0.15"	0.85"	0.47"	2.84"	0.52"	2.79"	0.11"	0.89"	≈6.0 oz
	84.0 mm	25.4 mm	45.7 mm	14.8 mm	12.7 mm	3.7 mm	21.7 mm	12.0 mm	72.0 mm	13.1 mm	70.9 mm	2.7 mm	22.7 mm	≈ 171 g
50 SLPM–100SLPM Meter	3.75"	1.38"	1.91"	0.58"	0.50"	0.11"	1.27"	0.74"	3.01"	0.74"	3.01"	0.11"	1.27"	≈ 9.5 oz
	95.3 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	18.8 mm	76.5 mm	2.7 mm	32.3 mm	≈ 270 g
50 SLPM–100SLPM Controller	4.52"	1.38"	2.06"	0.58"	0.69"	0.11"	1.27"	0.74"	3.01"	0.74"	3.01"	0.11"	1.27"	12.3 oz
	114.8 mm	35.0 mm	52.3 mm	14.7 mm	17.5 mm	2.7 mm	32.3 mm	18.8 mm	76.5 mm	18.8 mm	75.6 mm	2.7 mm	32.3 mm	350 g