Technical Data for MWB-Series Portable Mass Flow Meters

0.5 SCCM full scale through **5 SCCM** full scale

Standard specifications. Consult Alicat for available options.

ALICAT SCIENTIFIC
+1 (888) 290-6060
www.alicat.com/mwb

SENSOR PERFORMANCE	
Mass Flow Accuracy at calibration conditions[1]	±0.8% of reading and ±0.2% of full scale
High Accuracy Option[1]	±0.4% of reading and ±0.2% of full scale Available for ≥5 SCCM models
Bidirectional Option[1]	±0.2% of full scale in addition to base accuracy (above)
Repeatability (2σ)	±(0.2% of reading + 0.02% of full scale)
Flow Measurement Range	0.01–100% of full scale
Temperature Sensitivity	Mass flow zero shift and span shift: 0.03% of full scale per °C from 25°C
Pressure Sensitivity	Mass flow zero shift and span shift: ±(0.08% of reading + 0.02% of full scale) per atmosphere from calibration conditions
Operating Temperature Range	–10–60°C (expanded range available)
Temperature Accuracy	±0.75°C
Operating Pressure Full Scale	60 PSIA (additional options available)
Pressure Accuracy above 1 atm	±0.75% of reading
Pressure Accuracy below 1 atm	±0.1 PSIA
Totalizer Volume Uncertainty	±0.5% of reading additional uncertainty
Sensor Response Time	<1 ms
Typical Indication Response Time[2]	127 ms (user adjustable)
Typical Warm-Up Time	<1 s

1 Stated accuracy is after tare under equilibrium conditions.
Extreme gas behavior (especially near state boundaries) can introduce additional flow uncertainties.

2 Indication response time includes user adjustable averaging up to 255 ms.

MECHANICAL	
Minimum Operating Pressure	11.5 PSIA common mode pressure (lower operating pressures available) Differential pressure must exceed model pressure drop, see below for details
Maximum Operating Pressure	Damage possible above 76.8 PSIA common mode pressure Damage possible above 10 PSID differential pressure
Ingress Protection	IP40 (consult Alicat for weatherproofing options)
Humidity Range	0–95%, non-condensing
Wetted Materials	302 / 303 stainless steel, Viton®, glass-reinforced polyphenylene sulfide, alumina, glass, gold, silicon, heat-cured epoxy, heat-cured silicone rubber

COMMUNICATIONS	
Digital I/O Options	Serial over Micro-USB B
Digital Data Update Rate	40 Hz at 19200 baud
Display Update Rate	10 Hz
Battery Life (contrast dependent)	Monochrome screen: 18 hours, 14 hours backlit Color TFT: 8 hours

FEATURES	
STP Reference Conditions	25°C and 1 atm (default), user configurable
NTP Reference Conditions	0°C and 1 atm (default), user configurable
Monochrome LCD or Color TFT Display with integrated touchpad	Simultaneously displays mass flow, volumetric flow, temperature, and pressure
Gas Select™	98 user selectable gases stored internally. Each gas optimized to match NIST's REFPROP 10 gas property calculations across the operating temperature and pressure ranges for highest accuracy.
COMPOSER™	Allows 20 user definable gas mixes. Up to 5 constituent gases per mix, down to percentages of 0.01%.

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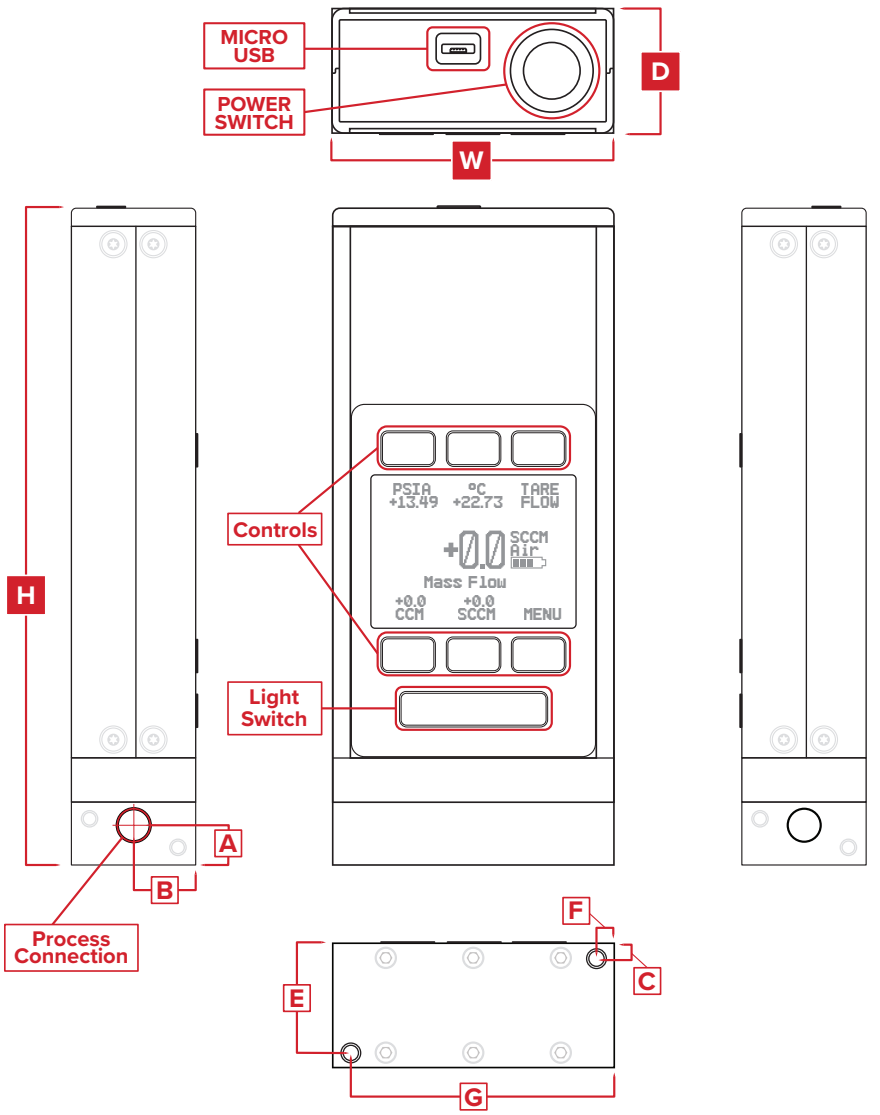
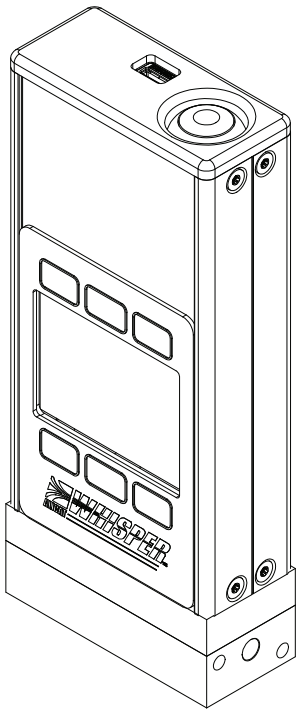
RANGE SPECIFIC SPECIFICATIONS			
Full scale flow	Pressure drop at full scale flow venting to atmosphere	Process connections[3]	Mount tap size
0.5 SCCM to 5 SCCM	0.07 PSID	M5 female thread (10-32 compatible)[4]	2× 8-32 UNC 0.175 in [4.45 mm]

3 Consult Alicat for available process connection options, such as:
Compression, face seal, push-to-connect, BSPP, SAE, or Swagelok® (including tube, VCO, and VCR).

4 Shipped with Buna-N O-Ring face seal to ⅛" female NPT fittings.



Representative Example



5 SCCM

DIMENSIONS										
Full scale flow	Weight	Height	Width	Depth	A	B	C	E	F	G
0.5–5 SCCM	≈ 1.0 lb	5.543 in	2.375 in	1.050 in	0.336 in	0.525 in	0.125 in	0.925 in	0.150 in	2.225 in
	≈ 0.5 kg	140.79 mm	60.33 mm	26.67 mm	8.53 mm	13.34 mm	3.18 mm	23.50 mm	3.81 mm	56.52 mm