

Technical Data for **Whisper MW/MWB-Series** Mass Flow Meters

0.5 sccm full scale through 5 sccm full scale

Standard specifications. Consult Alicat for available options.



+1 (888) 290-6060
alicat.com/mw

SENSOR PERFORMANCE	
Mass flow accuracy ¹	± 0.8% of reading and ± 0.2% of full scale
Flow repeatability (2σ)	± (0.2% of reading ± 0.02% of full scale)
Pressure accuracy ¹	Available for ≥ 5 sccm models
Flow measurement range	0.01 – 100% of full scale
Operating pressure range	11.5 – 60 PSIA
Pressure sensitivity	Mass flow zero shift and span shift: ± (0.08% of reading + 0.02% of full scale) per atmosphere from tare pressure
Temperature sensitivity	Mass flow zero shift and span shift: 0.03% of full scale per °C from 25° C
Temperature accuracy	± 0.75 °C
Operating temperature range	–10 – 60 °C
Totalizer volume uncertainty	± 0.5% of reading additional uncertainty
Sensor response time	< 1 ms
Typical indication response time	127 ms (user-adjustable)
Typical warm-up time	< 1 s

¹ Stated accuracy is after tare (for mass flow), under equilibrium conditions, includes repeatability and linearity.

MECHANICAL	
Wetted materials	302, 303 stainless steel; Viton®, glass-reinforced polyphenylene sulfide, alumina, glass, gold, silicon, heat-cured epoxy, heat-cured silicone rubber
Maximum pressure	Damage possible above 80 PSIA common mode pressure Damage possible above 10 PSID differential pressure
Relative humidity range	0 – 95%, non-condensing
Ingress protection	IP40 (consult Alicat for weatherproofing options)
Mounting orientation sensitivity	None
Mounting holes	2× 8-32 UNC threaded ⌀ 0.175" [4.45 mm]
Default process connection ²	M5 female thread (10-32 compatible) ⁵

² Consult Alicat for available process connection options, such as: Compression, face seal, push-to-connect, BSPP, SAE, or Swagelok® (including tube, VCO®, and VCR®).

³ Shipped with Buna-N O-ring face seal to 1/8" female NPT fittings.

POWER AND COMMUNICATIONS	
Digital output options ⁴	RS-232 Serial and Modbus RTU (default), RS-485 Serial and Modbus RTU, Modbus TCP/IP, DeviceNet, EtherCAT, Ethernet/IP, PROFINET, PROFIBUS, IO-Link
Digital data update rate ⁵	40 Hz at 19200 baud
Analog output options	4 – 20 mA, 0 – 5 Vdc, 1 – 5 Vdc, 0 – 10 Vdc
Analog data update rate	1 kHz
Analog signal accuracy	± 0.1% of full scale additional uncertainty
Interactive display	Monochrome LCD or color TFT display with integrated touchpad; simultaneously displays mass flow, volumetric flow, temperature, and pressure.
Display update rate	10 Hz
Electrical connection options ⁴	6-pin locking, 8-pin mini-DIN, 8-pin M12, DB-9, DB-15
Power requirements ^{4,5}	0 – 5 Vdc output: 9 – 24 Vdc, 40 mA 0 – 10 Vdc output: 12 – 28 Vdc, 40 mA 4 – 20 mA output: 12 – 28 Vdc, 80 mA

⁴ Consult the individual operating bulletins for specific industrial protocol power requirements and data transmission specifications.

⁵ See Portable Devices table for MWB-Series specifications and options.

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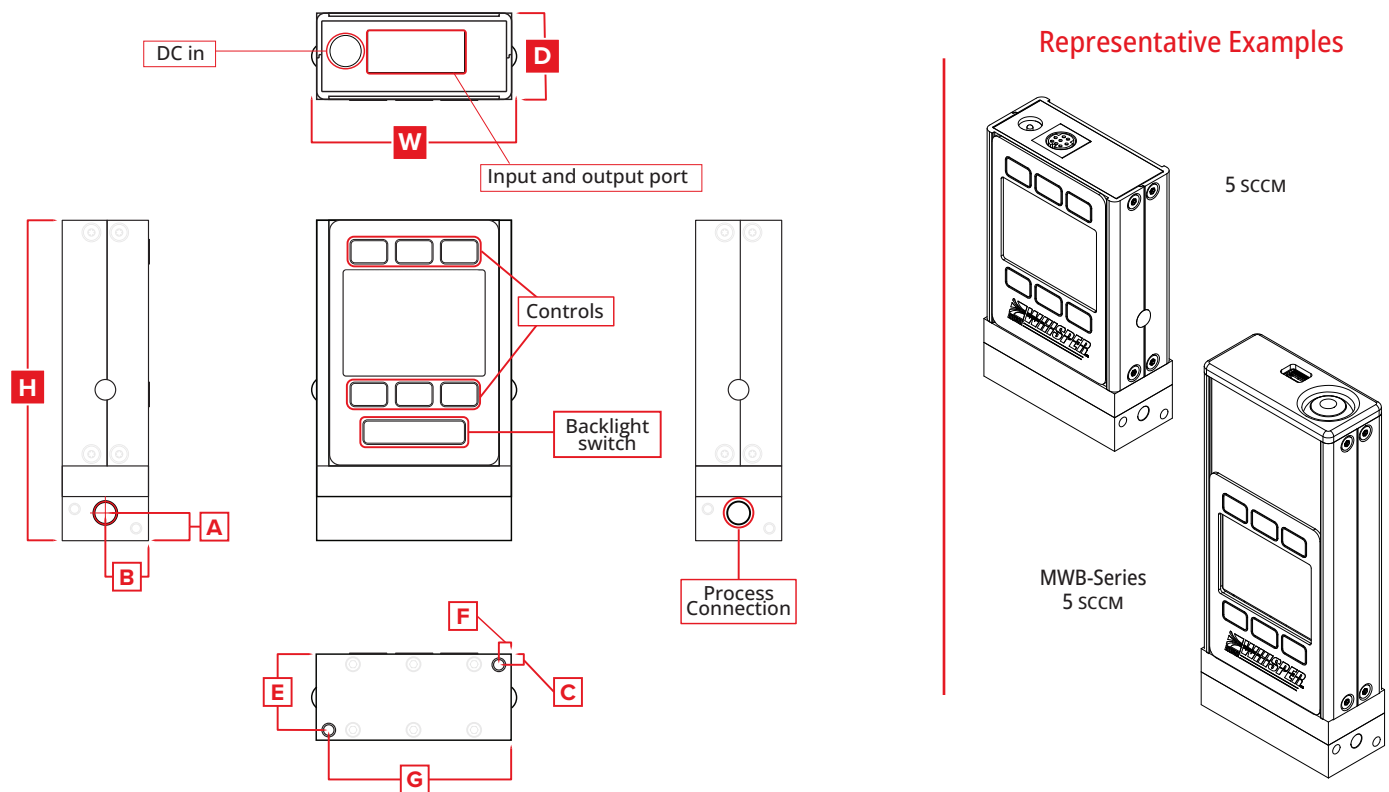
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FEATURES	
STP reference conditions	25 °C and 1 atm (default), user-configurable
NTP reference conditions	0 °C and 1 atm (default), user-configurable
Gas Select™	98 user selectable gases stored internally. Each gas optimized to match NIST's REFPROP 10 gas property calculations across the operating temperature and pressure ranges for highest accuracy.
COMPOSER™	20 user-definable gas mixes. Each mix may have up to 5 gases with 0.01% composition resolution.

FLOW AND PROCESS DATA	
Full scale flow	Pressure drop at full scale flow venting air to atmosphere
0.5 – 5 sccm	0.07 PSID

PORTABLE DEVICES (MWB-SERIES) ⁶	
Power requirements	5 Vdc, 1 A recommended via an outlet adapter to USB
Battery life	Monochrome screen: 18 hours, user-configurable, contrast dependent Color TFT screen: 8 hours, user-configurable, contrast dependent
Electrical connection and communication	Digital output: Serial over Micro-USB Power over Micro-USB Type B Bluetooth® Low Energy (requires the Alicat Connect app and a compatible Android or iOS mobile device)
Charging temperature	0 – 45 °C
Dimensions	Portable devices (MWB-Series) add 1.646" [41.81 mm] to height, and 0.2 lb. [90.72 g] to weight.

⁶ More information about our MWB-Series portable mass flow meters at alicat.com/mwb.



Full scale flow	DIMENSIONS									WEIGHT
	Width	Depth	Height	A	B	C	E	F	G	
0.5 – 5 sccm	2.38"	1.05"	3.90"	0.34"	0.53"	0.13"	0.93"	0.15"	2.23"	≈ 0.8 lb
	60.3 mm	26.7 mm	99.0 mm	8.5 mm	13.3 mm	3.2 mm	23.5 mm	3.8 mm	56.5 mm	≈ 0.4 kg