

Technical Data for Whisper Low Pressure Drop Mass Flow Controllers 0 to 0.5 sccm Full Scale through 0 to 500 slpm Full Scale

Standard Operating Specifications (Contact Alicat for available options.)

Specification	Whisper MCW & MCRW Series Mass Flow Controller	Description
Accuracy	± (0.8% of Reading + 0.2% of Full scale)	At calibration conditions after tare
High Accuracy Option ¹	± (0.4% of Reading + 0.2% of Full scale)	At calibration conditions after tare
Repeatability	± 0.2%	Full scale
Operating Range	1/2% to 100% Full scale	Measure and Control
Turndown Ratio	200 : 1	
Typical Response Time	100	Milliseconds (Adjustable)
Standard Conditions (STP)	25° C & 14.696 psia	Mass Reference Conditions
Operating Temperature	-10 to +50	°Celsius
Zero Shift	0.02%	Full Scale / °Celsius / Atm
Span Shift	0.02%	Full Scale / °Celsius / Atm
Humidity Range	0 to 100%	Non-Condensing
Controllable Flow Rate	102.4%	Full Scale
Maximum Pressure	145	psig
Input /Output Signal Digital	Mass Flow, Volumetric Flow, Pressure & Temperature	RS-232 Serial, RS-485 Serial or PROFIBUS ²
Input / Output Signal Analog	Mass Flow	0-5Vdc , 1-5Vdc, 0-10Vdc or 4-20mA
Optional Input / Output Signal Secondary Analog	Mass Flow, Volumetric Flow, Pressure or Temperature	0-5Vdc, 1-5Vdc, 0-10Vdc or 4-20mA
Electrical Connections	8 Pin Mini-DIN, DB9 or DB15	
Supply Voltage	MCW: 12 to 30 Vdc (15-30Vdc for 4-20mA outputs) MCRW: 24 to 30 Vdc	
Supply Current	MCW: 0.250Amp MCRW: 0.750Amp	
Mounting Attitude Sensitivity	MCW: None MCRW: Mount with valve cylinder vertical & upright	
Warm-up Time	< 1	Second
Valve Type	Normally Closed	
Wetted Materials ³	MCW: 303 & 302 Stainless Steel, Viton®, Silicone RTV (Rubber), Glass Reinforced Nylon, Aluminum, Brass, 430FR Stainless Steel, Silicon, Glass. MCRW: 303 & 302 Stainless Steel, Viton®, Silicone RTV (Rubber), Glass Reinforced Nylon, Aluminum, 416 Stainless Steel, Nickel, Silicon, Glass.	

- High Accuracy option not available for units ranged under 5 sccm or over 500 slpm.
- If selecting PROFIBUS, no analog signal is available. PROFIBUS units do not have the display. See PROFIBUS specifications for PROFIBUS supply voltages and currents.
- If your application demands a different material, please contact info@alicat.com or 888-290-6060 for available options.

Mechanical Specifications

Full Scale Flow Mass Controller	Pressure Drop at FS Flow ¹ (psid)	Mechanical Dimensions	Process Connections ²
MCW 0.5 sccm to 2 sccm	0.06	3.9"H x 3.4"W x 1.1"D	M-5 (10-32) Female Thread*
MCW 5 sccm to 10 sccm	0.08		
MCW 20 sccm	0.07		
MCW 50 sccm to 200 sccm	0.07	4.1"H x 3.6"W x 1.1"D	1/8" NPT Female
MCW 500 sccm	0.08		
MCW 1 slpm	0.10		
MCW 2 slpm	0.18	5.5"H x 7.7"W x 2.3"D	1/4" NPT Female
MCRW 5 slpm	0.10		
MCRW 10 slpm	0.12		
MCRW 20 slpm	0.26	5.5"H x 7.7"W x 2.3"D	1/2" NPT Female
MCRW 40 slpm	TBD		
MCRW 50 slpm	0.17		
MCRW 100 slpm	0.30	5.5"H x 7.3"W x 2.3"D	3/4" NPT Female
MCRW 250 slpm	0.69		
MCRW 500 slpm	0.69		

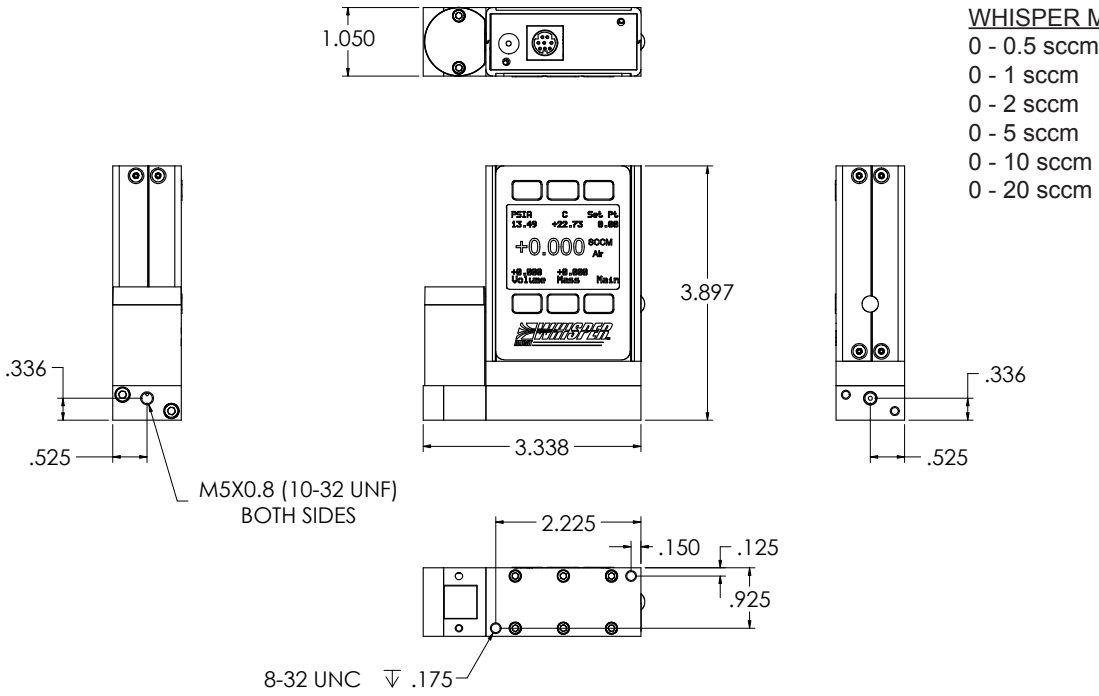
* Units ≤20 sccm F.S. are shipped with M-5 (10-32) Male Buna-N O-ring face seal to 1/8" Female NPT fittings.

These adaptor fittings were selected for customer convenience in process connection. It should be noted that the 1/8" Female NPT introduces additional dead volume. To minimize dead volume, please see [Accessories](#) for the M-5 (10-32) Male to 1/8"OD compression fitting.

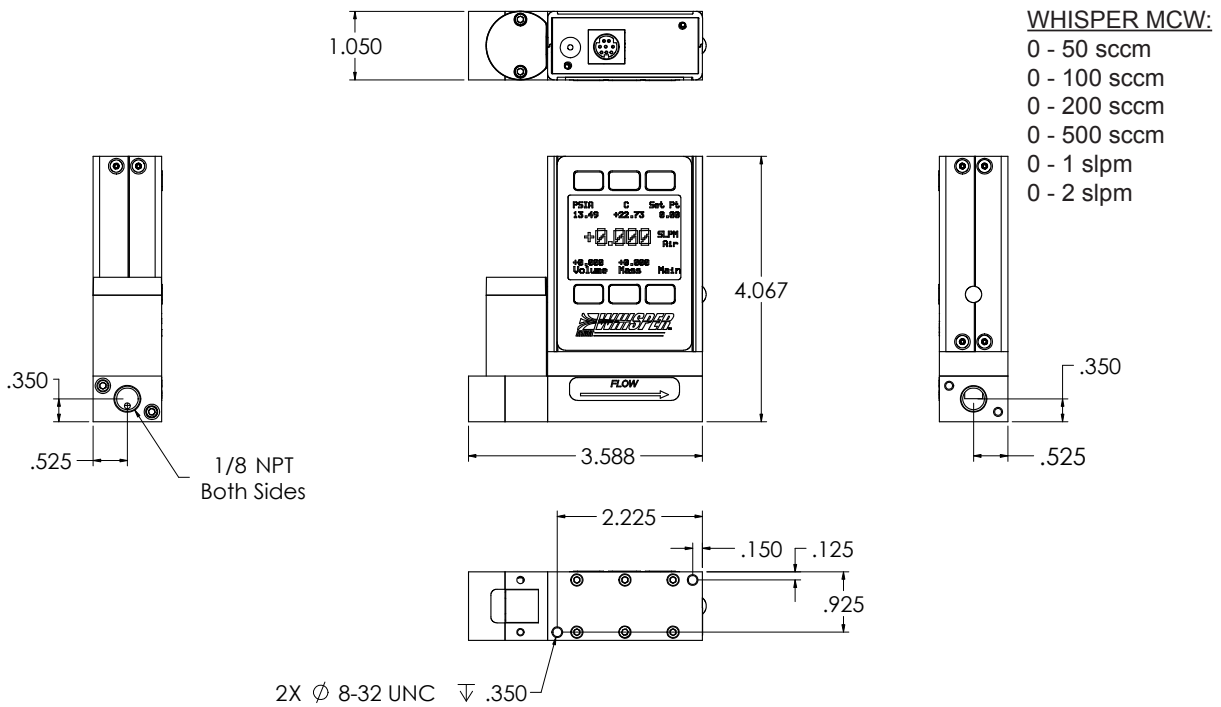
- Venting to atmosphere.
- Compatible with Beswick®, Swagelok® tube, Parker®, face seal, push connect and compression adapter fittings.

Standard Compatible Gas List for Whisper Series Controllers

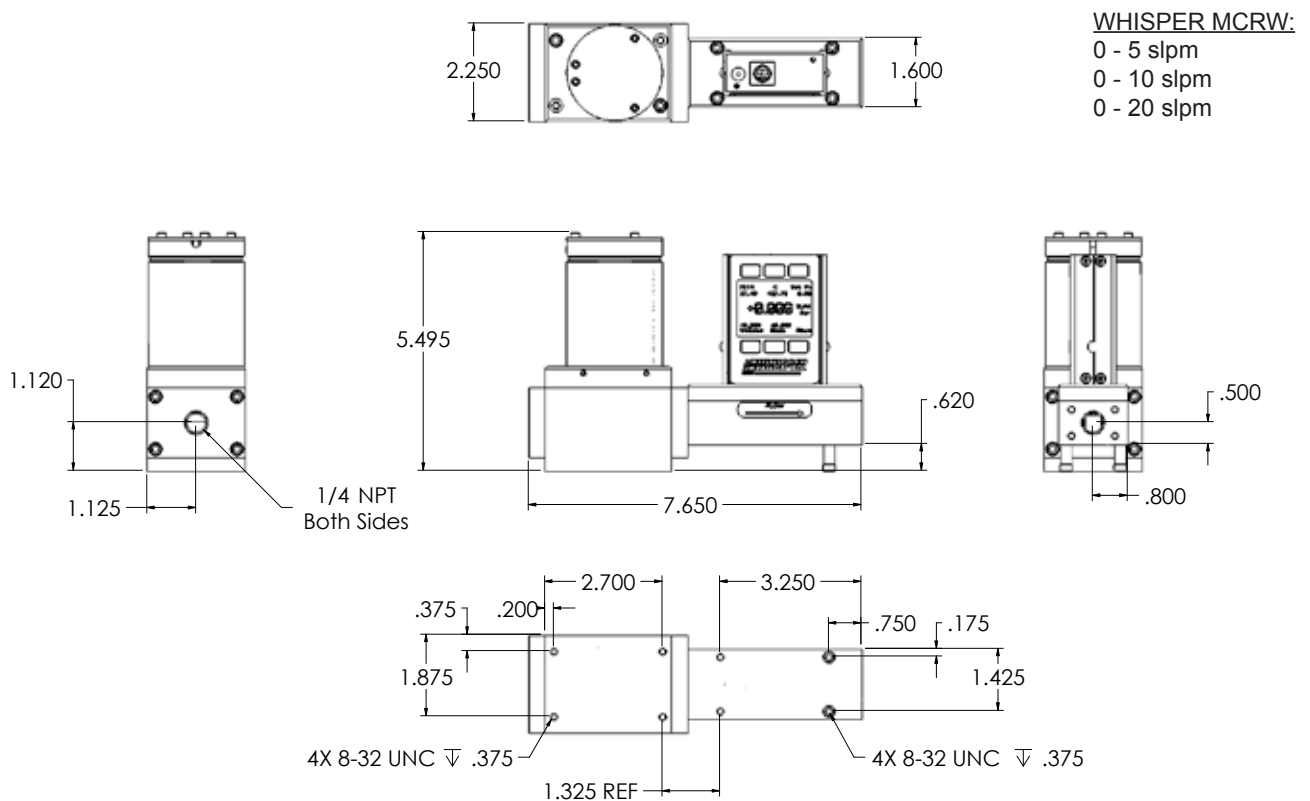
0	Air	Air	12	Propane	C3H8	24	75% CO2 / 25% Ar	C-75
1	Argon	Ar	13	normal-Butane	n-C4H10	25	75% Ar / 25% He	A-75
2	Methane	CH4	14	Acetylene	C2H2	26	75% He / 25% Ar	A-25
3	Carbon Monoxide	CO	15	Ethylene	C2H4	27	90% He / 7.5% Ar / 2.5% CO2 Helistar® A1025	A1025
4	Carbon Dioxide	CO2	16	iso-Butane	i-C4H10	28	90% Ar / 8% CO2 / 2% O2 Stargon® CS	Star29
5	Ethane	C2H6	17	Krypton	Kr	29	95% Ar / 5% CH4	P-5
6	Hydrogen	H2	18	Xenon	Xe	Contact Alicat for other available gases and gas blends. For aggressive gases see our MCS and MCRS Series controllers.		
7	Helium	He	19	Sulfur Hexafluoride	SF6			
8	Nitrogen	N2	20	75%Ar / 25% CO2	C-25			
9	Nitrous Oxide	N2O	21	90%Ar / 10% CO2	C-10			
10	Neon	Ne	22	92% Ar / 8% CO2	C-8			
11	Oxygen	O2	23	98% Ar / 2% CO2	C-2			



MCW 0.5 sccm to 20 sccm approximate shipping weight: 1.1 lb.

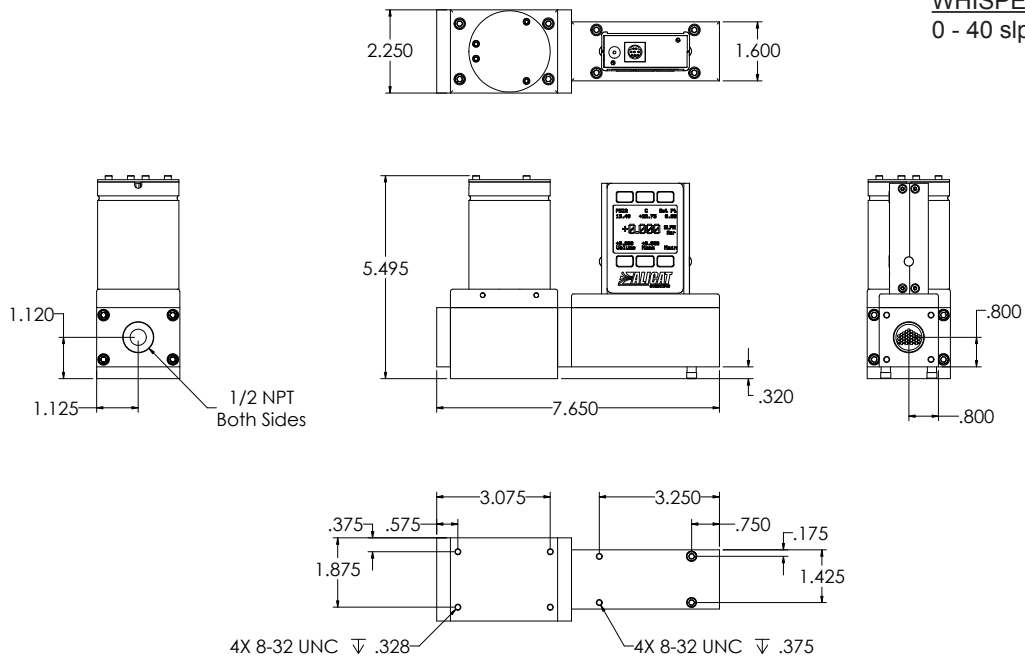


MCW 50 sccm to 2 slpm approximate weight: 1.2lb



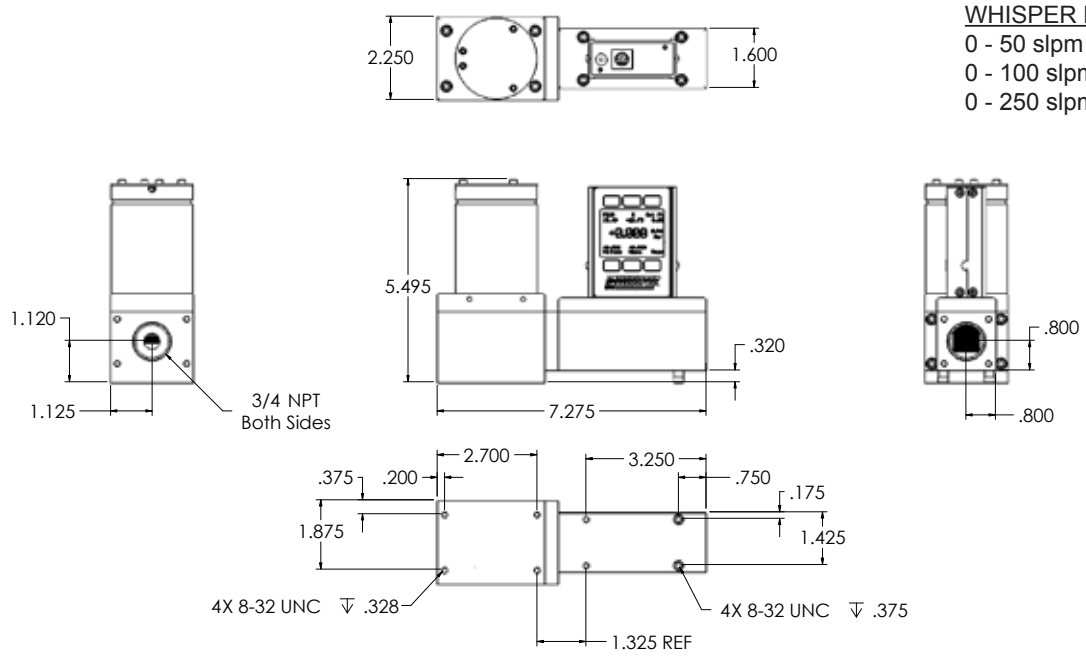
MCRW 50 slpm to 20 slpm approximate weight: 6.4 lb.

WHISPER MCRW:
0 - 40 slpm



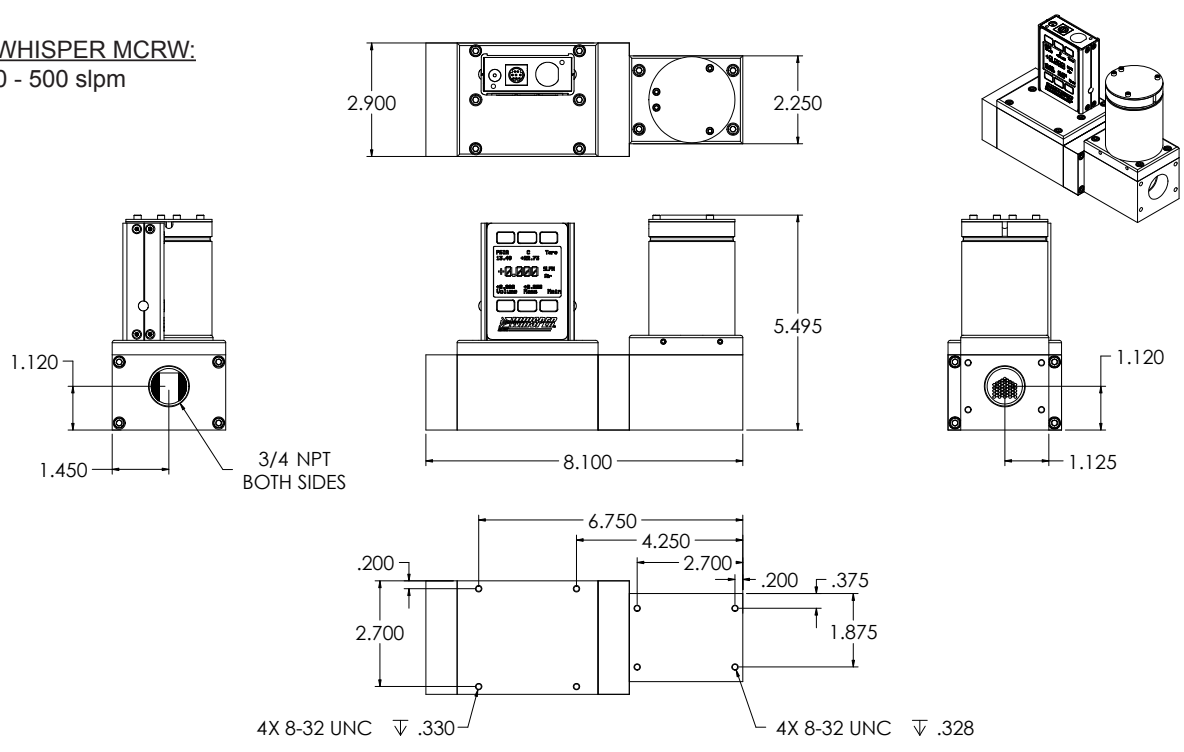
MCRW 40 slpm approximate weight: 9.0 lb.

WHISPER MCRW:
0 - 50 slpm
0 - 100 slpm
0 - 250 slpm



MCRW 50 slpm to 250 slpm approximate weight: 9.0 lb.

WHISPER MCRW:
0 - 500 slpm



MCRW 500 slpm approximate weight: 11.0 lb.