

Technical Data for IMX Gas Mixers

Standard specifications. Consult Alicat for available options.



TECHNICAL	
Mixing type	Dynamic mass flow using high-speed ΔP -based Alicat MFCs, controlled by a proprietary MixModule™ pressure-sensing device
Compatible gases ¹	49 selectable gas types including user-configurable pre-mixes [see compatible gas table]
Mix accuracy	As accurate as $\pm 0.6\%$ of the targeted mix percentage ²
Available MFCs & full scale flow ranges (per channel) ³	Ch. 1 and/or Ch. 2: NONE, 250, 500, 1000, or 1500 SLPM models Ch. 3 and/or Ch. 4: NONE, 10, 20, 50, or 100 SLPM models
Minimum recommended flow rates (by MFC full scale range)	10 SLPM to 100 SLPM models: 1% of full scale 250 to 1500 SLPM models: 2% of full scale
Accuracy at calibration conditions for individual channels	10 and 20 SLPM full scale MFCs: $\pm 0.6\%$ of reading or $\pm 0.1\%$ of full scale, whichever is greater 50, 100, 250, 500, and 1000 SLPM full scale MFCs: $\pm 0.8\%$ of reading and $\pm 0.2\%$ of full scale 1500 SLPM full scale MFCs: $\pm 2\%$ of full scale
Repeatability (2σ) for individual channels	10 and 20 SLPM full scale MFCs: $\pm (0.1\% \text{ of reading} + 0.02\% \text{ of full scale})$ 50, 100, 250, 500, 1000, and 1500 SLPM full scale MFCs: $\pm (0.2\% \text{ of reading} + 0.02\% \text{ of full scale})$
Typical control response time for individual channels ⁴	As fast as 25 ms; dependent on MFC model, flow rate, gas species, user plumbing, and back-pressure

¹ Although the IMX is only a 4-ch. device, it can track up to 10 total gas types, allowing for premixed blends

² In ideal configuration and flow conditions

³ Custom ranges in-between standard ranges are possible, please consult Alicat

⁴ Proprietary match-tuning procedure performed on all MFCs according to application parameters

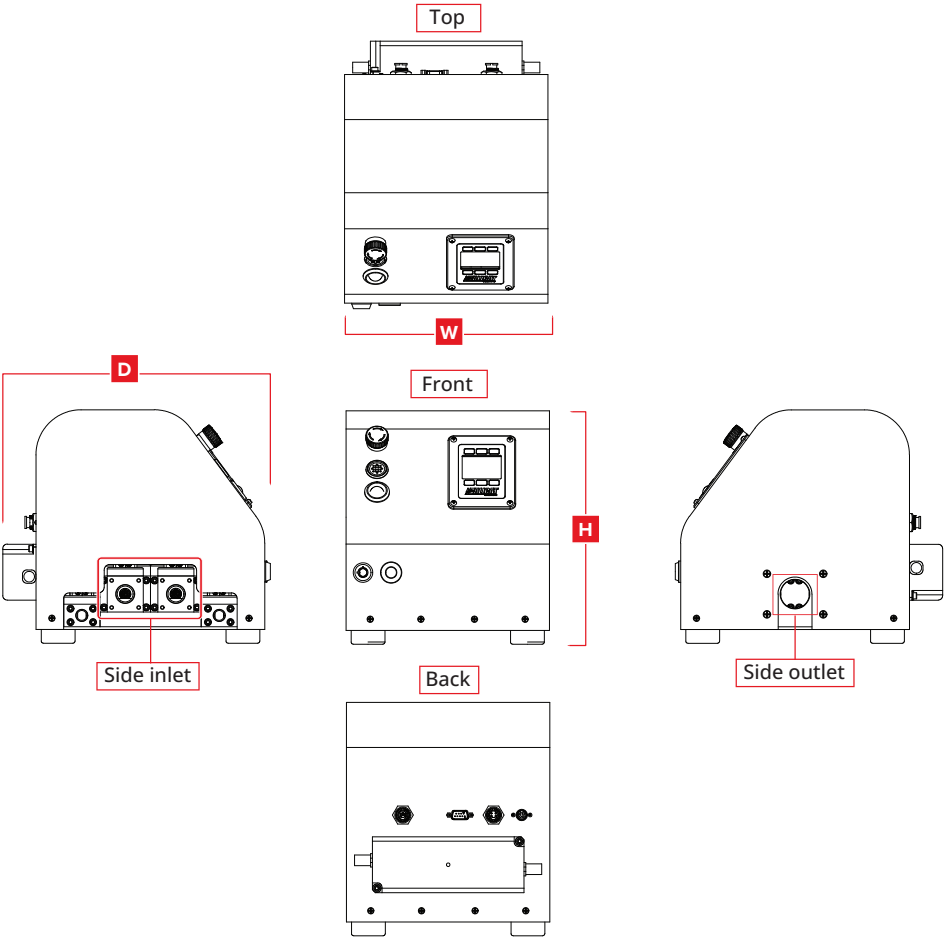
MECHANICAL	
Maximum inlet pressure	145 PSIG (10 barG) for standard systems (consult Alicat for applications requiring higher pressures)
Temperature operating range	-10 to +60 °C (+14 to +140 °F) for gas and ambient conditions
Gas connections	10–100 SLPM: ¼" NPT female 250 SLPM: ½" NPT female 500–1500 SLPM: ¾" NPT female Outlet: 1" NPT female
Housing construction	Powder coated cold-rolled steel upper shell, 304 stainless steel base

POWER AND COMMUNICATION	
Rear-mounted chassis power supply	Input: 110–230 VAC 50–60 Hz Output: 24 VDC, 3.75A
Optional world-wide power supply ⁵	Input: 110–230 VAC 50–60 Hz Output: 24 VDC, 6.67A
Maximum possible power consumption	2.75A @24VDC, with all 4 channels driven 100%
Display/Interface	6 button membrane switch with multi-color TFT screen
Electrical connections	1× DB9 male (RS-232, standard PC) 1× 4 pin DIN (power input) 1x 4 pin locking industrial connector (extra functions port; remote EMO, 24V alarm output, 3rd party analyzer analog input, and ground) 1x 6 pin locking industrial connector (additional outboard MFC control port)
Safety Features	Integrated EMO stop button Yellow warning light (low feed pressure and other warnings) Red alarm light and beeping module (critical stoppages) Green power light (with lockout key) User-configurable gas mix percentage alarms (vs. self calculated analysis) Unexpected flow value warning (deficient flow vs. commanded) Gross mixture out of tolerance stoppage (self calculated analysis vs. target ratios)
Included accessories	4 conductor extra functions cable (EMO, 24 VDC alarm output, analog alarm input) DB9 Female-Female cable, for direct connection to standard RS232 COM ports
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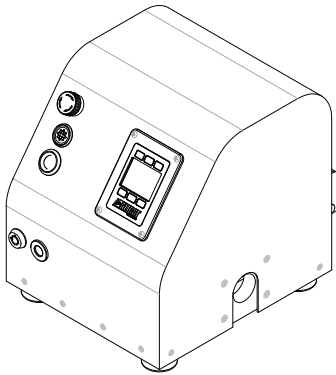
⁵ A special power brick and regional AC power cables are available to accommodate most world markets

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Representative Example



DIMENSIONS			WEIGHT ⁶
Height	Width	Depth	
10.37"	9.03"	10.15"	25.75 lbs to 43.75 lbs
263.3 mm	229.3 mm	257.8 mm	11.68 kg to 19.85 kg

⁶ Total weight for each system will vary depending on MFC configuration

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COMPATIBLE GASES		
STANDARD	CORROSIVE/SPECIALTY	
Acetylene (C ₂ H ₂)	Ammonia (NH ₃)	R-124 Chlorotetrafluoroethane (C ₂ HClF ₄)
Air	Butylene (1-Butene)	R-125 Pentafluoroethane (C ₂ HF ₅)
Argon (Ar)	Cis-Butene (cis-2-Butene)	R-134A Tetrafluoroethane (CH ₂ FCF ₃)
i-Butane (i-C ₄ H ₁₀)	Iso-Butene	R-142B Chlorodifluoroethane (CH ₃ CClF ₂)
n-Butane (n-C ₄ H ₁₀)	Trans-Butene	R-143A Trifluoroethane (C ₂ H ₃ F ₃)
Carbon dioxide (CO ₂)	Carbonyl sulfide (COS)	R-152A Difluoroethane (C ₂ H ₄ F ₂)
Carbon monoxide (CO)	Chlorine (Cl ₂)	RC-318 Octafluorocyclobutane (C ₄ F ₈)
Deuterium (D ₂)	Dimethylether (CH ₃ OCH ₃)	
Ethane (C ₂ H ₆)	Hydrogen sulfide (H ₂ S)	
Ethylene/Ethene (C ₂ H ₄)	Nitrogen trifluoride (NF ₃)	
Helium (He)	Nitric oxide (NO)	
Hydrogen (H ₂)	Propylene (C ₃ H ₆)	
Krypton (Kr)	Silane (SiH ₄)	
Methane (CH ₄)	Sulfur dioxide (SO ₂)	
Neon (Ne)	R-11 Trichlorofluoromethane (CCl ₃ F)	
Nitrogen (N ₂)	R-14 Tetrafluoromethane (CF ₄)	
Nitrous oxide (N ₂ O)	R-22 Difluoromono-chloromethane (CHClF ₂)	
Oxygen (O ₂)	R-23 Trifluoromethane (CHF ₃)	
Propane (C ₃ H ₈)	R-32 Difluoromethane (CH ₂ F ₂)	
Sulfur hexafluoride (SF ₆)	R-115 Chloropentafluoroethane (C ₂ ClF ₅)	
Xenon (Xe)	R-116 Hexafluoroethane (C ₂ F ₆)	