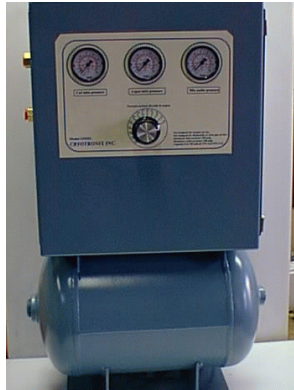


Gas Mixers

Series : 151GM

Precise gas mixtures can be achieved effectively and economically with the GM gas blending system. As a fully automatic two or three gas mixer, the *Cryotronic* GM A system continuously monitors the output blend to provide an accurate analysis and alarms for deviations from set points. GM controls will ensure precise and homogeneous mixing of the input gases, at ratios which can vary from 0 to 100% independent of flow rate variations. Built in indicators and alarms make the GM gas blending system easy to use and highly reliable.





Features :


Large capacity surge tank, Pressure and flow controls, Gas analyser (on GMA models), Electronic controls, Inlet and output pressure gauges, Digital read-out (on GMA models)

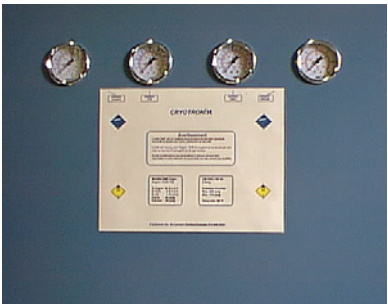
Model	Range (scfh)	Primary Gas	Secondary Gas	Third Gas	- Options
GMA (Auto)	1 = 5 to 750 2 = 20 to 2500 3 = 50 to 5000	A= Air R= Argon C= CO ₂	A = Air R = Argon C = CO ₂	Z = None A = Air R = Argon C = CO ₂	see below for full list of options
GMM (Manual)	4 = 100 to 10000	N= Nitrogen O= Oxygen	N = Nitrogen O = Oxygen H = Hydrogen	N = Nitrogen O = Oxygen H = Hydrogen	
GMF (Fixed)	other flow available		S = SO ₂ F = SF ₆		


- 1= Low pressure alarm for source gases
- 2= Low pressure alarm for mixed output gas
- 3= Auto-gas-shut-off or backup switch-over (requires options 1 or 2)
- 4= Integral gas analyser
- 5= 4 to 20 mA output (requires option 4)
- 6= Oversized surge tank
- 7= 220 VAC/60 or 50 Hz.
- 8= Class I, Div.2, Group B
- 9= Outdoor (weatherproof)
- 0= Inlet gas filters


Variable two-gas mixer with secondary gas analyser	
<p style="text-align: center;">Standard Equipment</p> <p>Flow capacity 5 to 750 scfh (1 to 21 m³/h) Inlet pressure 110 to 150 psig (750 to 1030 kPa) Outlet pressure 10 to 80 psig (69 - 550 kPa) Precision ± 0.5% Stability ± 1.5 % of mix Temperature 0 to 115 °F (-17 to 46 °C) Surge tank 5 gallons Power 120 VAC / 60 Hz. Integral gas analyser with 4 to 20 mA and alarm output</p>	
<p style="text-align: center;">Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 % CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 % O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25% Argon in helium 0 to 25 % H₂ in argon or in nitrogen 0 to 10% SF₆ in argon or in air 0 to 1% ; 0 to 5 % SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p style="text-align: center;">Control & Instrumentation</p> <p>Regulating multi-turn mix valve Adjustable pressure regulator Indication of pressure - primary gas Indication of pressure - secondary gas Indication of pressure - gas mix outlet Safety relief valve ASME Calibration valve and connection</p>
<p style="text-align: center;">Materials , Dimensions & Weight</p> <p>Piping & valves Brass and copper Surge tank Steel Finish Painted epoxy 2-coat 23" wide x 12" deep x 26" high 58cm x 30 cm x 66 cm Weight 68 lbs. net (31 kg)</p> <p>Gas connections 1/2" source gases 1/2" Mixture outlet</p>	<p style="text-align: center;">Options</p> <p>Low pressure alarm - source gases Low pressure alarm - mixed output gas Peak flow oversize surge tank - 10 or 30 USG Automatic gas shut-off or backup switchover Power 220 VAC/ 60 Hz. or 50 Hz. Class I , Division 2, Group B Outdoor installation (weatherproof) Inlet gas filters</p>


Variable two-gas mixer with secondary gas analyser	
<p style="text-align: center;">Standard Equipment</p> <p>Flow capacity 20 to 2500 scfh (1 to 70 m³/h)</p> <p>Inlet pressure 110 to 150 psig (750 to 1030 kPa)</p> <p>Outlet pressure 10 to 80 psig (69 - 550 kPa)</p> <p>Precision ± 0.5%</p> <p>Stability ± 1.5 % of mix</p> <p>Temperature 0 to 115 °F (-17 to 46 °C)</p> <p>Surge tank 30 gallons, ASME</p> <p>Power 120 VAC / 60 Hz.</p> <p>Integral gas analyser with 4 to 20 mA and alarm output</p>	
<p style="text-align: center;">Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25%</p> <p>Argon in helium 0 to 25 %</p> <p>H₂ in argon or in nitrogen 0 to 10%</p> <p>SF₆ in argon or in air 0 to 1% ; 0 to 5 %</p> <p>SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p style="text-align: center;">Control & Instrumentation</p> <p>Regulating multi turn mix valve</p> <p>Adjustable pressure regulator</p> <p>Indication of pressure - primary gas</p> <p>Indication of pressure - secondary gas</p> <p>Indication of pressure - gas mix outlet</p> <p>Safety relief valve ASME</p> <p>Calibration valve and connection</p>
<p style="text-align: center;">Materials , Dimensions & Weight</p> <p>Piping & valves Copper and brass</p> <p>Surge tank Steel</p> <p>Finish Painted epoxy 2-coat</p> <p>39" wide x 19" deep x 57" high</p> <p>99 cm x 49 cm x 145 cm</p> <p>Weight 230 lbs. net (104 kg)</p> <p>Gas connections 3/4" source gases</p> <p style="padding-left: 100px;">1" Mixture outlet</p>	<p style="text-align: center;">Options</p> <p>Low pressure alarm - source gases</p> <p>Low pressure alarm - mixed output gas)</p> <p>Peak flow oversize surge tank - 60 USG</p> <p>Automatic gas shut-off or backup switchover</p> <p>Power 220 VAC/ 60 Hz. or 50 Hz.</p> <p>Class I , Division 2, Group B</p> <p>Outdoor installation (weatherproof)</p> <p>Inlet gas filters</p>


Variable two-gas mixer with secondary gas analyser	
<p style="text-align: center;">Standard Equipment</p> <p>Flow capacity 100 to 15000 scfh (3 to 425 m³/h)</p> <p>Inlet pressure 110 to 150 psig (750 to 1030 kPa)</p> <p>Outlet pressure 5 to 80 psig (35 - 550 kPa)</p> <p>Precision ± 0.5%</p> <p>Stability ± 2 % of mix</p> <p>Temperature 0 to 115 °F (-17 to 46 °C)</p> <p>Surge tanks 240 gallons</p> <p>Power 120 VAC / 60 Hz.</p> <p>Integral gas analyser with 4 to 20 mA and alarm output</p>	
<p style="text-align: center;">Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25%</p> <p>Argon in helium 0 to 25 %</p> <p>H₂ in argon or in nitrogen 0 to 10%</p> <p>SF₆ in argon or in air 0 to 1% ; 0 to 5 %</p> <p>SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p style="text-align: center;">Control & Instrumentation</p> <p>Regulating multi turn mix valve</p> <p>Adjustable pressure regulator</p> <p>Indication of pressure - primary gas</p> <p>Indication of pressure - secondary gas</p> <p>Indication of pressure - gas mix outlet</p> <p>Safety relief valve ASME</p> <p>Calibration valve and connection</p>
<p style="text-align: center;">Materials , Dimensions & Weight</p> <p>Piping & valves Brass and copper</p> <p>Surge tank Steel</p> <p>Finish Painted epoxy 2-coat</p> <p>67" wide x 41" deep x 66" high</p> <p>170 cm x 104 cm x 167 cm</p> <p>Weight 930 lbs. net (422 kg)</p> <p>Gas connections 1.5" source gases</p> <p> 1.5" Mixture outlet</p>	<p style="text-align: center;">Options</p> <p>Low pressure alarm - source gases</p> <p>Low pressure alarm - mixed output gas</p> <p>Peak flow oversize surge tank - 80 or 120 USG</p> <p>Automatic gas shut-off or backup switchover</p> <p>Power 220 VAC/ 60 Hz. or 50 Hz.</p> <p>Class I , Division 2, Group B</p> <p>Outdoor installation (weatherproof)</p> <p>Inlet gas filters</p>

Fixed ratio two-gas mixer	
<p style="text-align: center;">Standard Equipment</p> <p>Flow capacity 5 to 750 scfh (1 to 21 m³/h) Inlet pressure 110 to 150 psig (750 to 1030 kPa) Outlet pressure 10 to 80 psig (69 - 550 kPa) Precision ± 1% Stability ± 1 % of mix Temperature 0 to 115 °F (-17 to 46 °C) Surge tank 5 gallons Power 120 VAC / 60 Hz.</p>	
<p style="text-align: center;">Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 % CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 % O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25% Argon in helium or nitrogen 0 to 25 % H₂ in argon or in nitrogen 0 to 10% SF₆ in argon or in air 0 to 1% ; 0 to 5 % SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p style="text-align: center;">Control & Instrumentation</p> <p>Fixed flow orifice (changeable) Adjustable pressure regulator Indication of pressure - primary gas Indication of pressure - secondary gas Indication of pressure - gas mix outlet Safety relief valve ASME Calibration valve and connection</p>
<p style="text-align: center;">Materials , Dimensions & Weight</p> <p>Piping & valves Brass and copper Surge tank Steel Finish Painted epoxy 2-coat 23" wide x 12" deep x 26" high 58cm x 30 cm x 66 cm Weight 65 lbs. net (30 kg)</p> <p>Gas connections 1/2" source gases 1/2" Mixture outlet</p>	<p style="text-align: center;">Options</p> <p>Integral gas analyser with alarm output Low pressure alarm - source gases Low pressure alarm - mixed output gas 4 to 20 mA output (available w/analyser option) Peak flow oversize surge tank - 10 or 30 USG Automatic gas shut-off or backup switchover Power 220 VAC/ 60 Hz. or 50 Hz. Class I , Division 2, Group B Outdoor installation (weatherproof) Inlet gas filters</p>

Fixed ratio two-gas mixer	
<p style="text-align: center;">Standard Equipment</p> <p>Flow capacity 20 to 2500 scfh (1 to 70 m³/h)</p> <p>Inlet pressure 110 to 150 psig (750 to 1030 kPa)</p> <p>Outlet pressure 10 to 80 psig (69 - 550 kPa)</p> <p>Precision ± 1%</p> <p>Stability ± 1 % of mix</p> <p>Temperature 0 to 115 °F (-17 to 46 °C)</p> <p>Surge tank 30 gallons, ASME</p> <p>Power 120 VAC / 60 Hz.</p>	
<p style="text-align: center;">Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25%</p> <p>Argon in helium 0 to 25 %</p> <p>H₂ in argon or in nitrogen 0 to 10%</p> <p>SF₆ in argon or in air 0 to 1% ; 0 to 5 %</p> <p>SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p style="text-align: center;">Control & Instrumentation</p> <p>Fixed orifice (changeable)</p> <p>Adjustable pressure regulator</p> <p>Indication of pressure - primary gas</p> <p>Indication of pressure - secondary gas</p> <p>Indication of pressure - gas mix outlet</p> <p>Safety relief valve ASME</p> <p>Calibration valve and connection</p>
<p style="text-align: center;">Materials , Dimensions & Weight</p> <p>Piping & valves Copper and brass</p> <p>Surge tank Steel</p> <p>Finish Painted epoxy 2-coat</p> <p>39" wide x 19" deep x 57" high</p> <p>99 cm x 49 cm x 145 cm</p> <p>Weight 225 lbs. net (115 kg)</p> <p>Gas connections 3/4" source gases</p> <p style="padding-left: 100px;">1" Mixture outlet</p>	<p style="text-align: center;">Options</p> <p>Integral gas analyser with alarm output</p> <p>Low pressure alarm - source gases</p> <p>Low pressure alarm - mixed output gas</p> <p>4 to 20 mA output (available w/analyser option)</p> <p>Peak flow oversize surge tank - 60 USG</p> <p>Automatic gas shut-off or backup switchover</p> <p>Power 220 VAC/ 60 Hz. or 50 Hz.</p> <p>Class I , Division 2, Group B</p> <p>Outdoor installation (weatherproof)</p> <p>Inlet gas filters</p>

Manual two-gas mixer	
<p>Standard Equipment</p> <p>Flow capacity 5 to 750 scfh (1 to 21 m³/h) Inlet pressure 110 to 150 psig (750 to 1030 kPa) Outlet pressure 10 to 80 psig (69 - 550 kPa) Precision ± 1% Stability ± 2 % of mix Temperature 0 to 115 °F (-17 to 46 °C) Surge tank 5 gallons Power 120 VAC / 60 Hz.</p>	
<p>Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 % CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 % O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25% Argon in helium 0 to 25 % H₂ in argon or in nitrogen 0 to 10% SF₆ in argon or in air 0 to 1% ; 0 to 5 % SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p>Control & Instrumentation</p> <p>Regulating mix valve Adjustable pressure regulator Indication of pressure - primary gas Indication of pressure - secondary gas Indication of pressure - gas mix outlet Safety relief valve ASME Calibration valve and connection</p>
<p>Materials , Dimensions & Weight</p> <p>Piping & valves Brass and copper Surge tank Steel Finish Painted epoxy 2-coat 23" wide x 12" deep x 26" high 58cm x 30 cm x 66 cm Weight 65 lbs. net (30 kg) Gas connections 1/2" source gases 1/2" Mixture outlet</p>	<p>Options</p> <p>Integral gas analyser with alarm output Low pressure alarm - source gases Low pressure alarm - mixed output gas 4 to 20 mA output (available w/analyser option) Peak flow oversize surge tank - 10 or 30 USG Automatic gas shut-off or backup switchover Power 220 VAC/ 60 Hz. or 50 Hz. Class I , Division 2, Group B Outdoor installation (weatherproof) Inlet gas filters</p>

Manual two-gas mixer	
Standard Equipment	
<p>Flow capacity 20 to 2500 scfh (1 to 70 m³/h)</p> <p>Inlet pressure 110 to 150 psig (750 to 1030 kPa)</p> <p>Outlet pressure 10 to 80 psig (69 - 550 kPa)</p> <p>Precision ± 1%</p> <p>Stability ± 2 % of mix</p> <p>Temperature 0 to 115 °F (-17 to 46 °C)</p> <p>Surge tank 30 gallons, ASME</p> <p>Power 120 VAC / 60 Hz.</p>	
Standard Ranges	Control & Instrumentation
<p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25%</p> <p>Argon in helium 0 to 25 %</p> <p>H₂ in argon or in nitrogen 0 to 10%</p> <p>SF₆ in argon or in air 0 to 1% ; 0 to 5 %</p> <p>SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p>Regulating mix valve</p> <p>Adjustable pressure regulator</p> <p>Indication of pressure - primary gas</p> <p>Indication of pressure - secondary gas</p> <p>Indication of pressure - gas mix outlet</p> <p>Safety relief valve ASME</p> <p>Calibration valve and connection</p>
Materials , Dimensions & Weight	Options
<p>Piping & valves Copper and brass</p> <p>Surge tank Steel</p> <p>Finish Painted epoxy 2-coat</p> <p>39" wide x 19" deep x 57" high</p> <p>99 cm x 49 cm x 145 cm</p> <p>Weight 225 lbs. net (115 kg)</p> <p>Gas connections 3/4" source gases</p> <p> 1" Mixture outlet</p>	<p>Integral gas analyser with alarm output</p> <p>Low pressure alarm - source gases</p> <p>Low pressure alarm - mixed output gas</p> <p>4 to 20 mA output (available w/analyser option)</p> <p>Peak flow oversize surge tank - 60 USG</p> <p>Automatic gas shut-off or backup switchover</p> <p>Power 220 VAC/ 60 Hz. or 50 Hz.</p> <p>Class I , Division 2, Group B</p> <p>Outdoor installation (weatherproof)</p> <p>Inlet gas filters</p>

Manual two-gas mixer	
<p>Standard Equipment</p> <p>Flow capacity 50 to 5000 scfh (1.5 to 141 m³/h)</p> <p>Inlet pressure 110 to 150 psig (750 to 1030 kPa)</p> <p>Outlet pressure 5 to 80 psig (35 - 550 kPa)</p> <p>Precision ± 1%</p> <p>Stability ± 2 % of mix</p> <p>Temperature 0 to 115 °F (-17 to 46 °C)</p> <p>Surge tank 60 gallons</p> <p>Power 120 VAC / 60 Hz.</p>	
<p>Standard Ranges</p> <p>CO₂ in argon 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>CO₂ in nitrogen 0 to 10 % ; 0 to 25% ; 0 to 50 %</p> <p>O₂ in argon 0 to 5 % ; 0 to 10 % ; 0 to 25%</p> <p>Argon in helium 0 to 25 %</p> <p>H₂ in argon or in nitrogen 0 to 10%</p> <p>SF₆ in argon or in air 0 to 1% ; 0 to 5 %</p> <p>SO₂ in argon or in air 0 to 1% ; 0 to 5 %</p>	<p>Control & Instrumentation</p> <p>Regulating mix valve</p> <p>Adjustable pressure regulator</p> <p>Indication of pressure - primary gas</p> <p>Indication of pressure - secondary gas</p> <p>Indication of pressure - gas mix outlet</p> <p>Safety relief valve ASME</p> <p>Calibration valve and connection</p>
<p>Materials , Dimensions & Weight</p> <p>Piping & valves Brass and copper</p> <p>Surge tank Steel</p> <p>Finish Painted epoxy 2-coat</p> <p>51" wide x 22" deep x 62" high</p> <p>130 cm x 56 cm x 158 cm</p> <p>Weight 390 lbs. net (177 kg)</p> <p>Gas connections 1" source gases</p> <p> 1" Mixture outlet</p>	<p>Options</p> <p>Integral gas analyser with alarm output</p> <p>Low pressure alarm - source gases</p> <p>Low pressure alarm - mixed output gas</p> <p>4 to 20 mA output (available w/analyser option)</p> <p>Peak flow oversize surge tank - 80 or 120 USG</p> <p>Automatic gas shut-off or backup switchover</p> <p>Power 220 VAC/ 60 Hz. or 50 Hz.</p> <p>Class I , Division 2, Group B</p> <p>Outdoor installation (weatherproof)</p> <p>Inlet gas filters</p>