

# GAS CONVERSION FACTORS

## For FMA-5600, FMA-5700 and FMA-8500 Flow Sensors



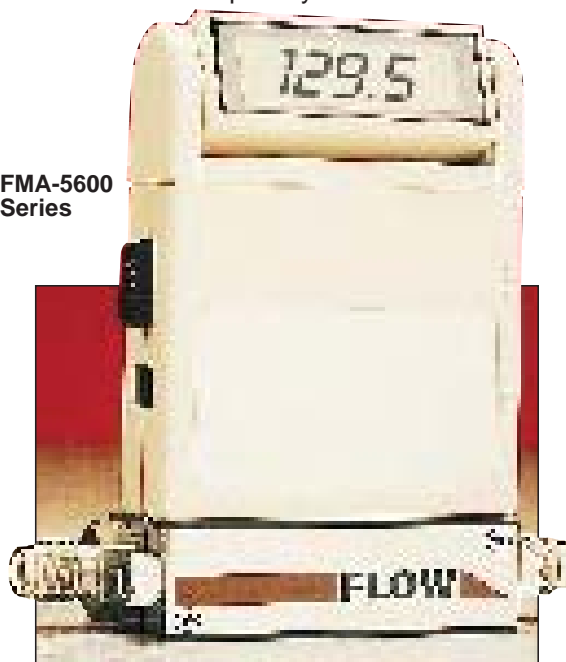
FMA-8500 Series

$$\text{Actual Flow Rate of Gas} = \text{Flow Rate of Nitrogen} \times \text{Correction Factor}$$

**Example:**  
FMA-8506 used with Helium gas, (He).  
**Calculations:**  
Range of FMA-8506 for Nitrogen, N<sub>2</sub>: 0 to 1000 SCCM  
**Conversion Factor for Helium for FMA-8500 Models:** 1.389

The FMA-5600, FMA-700/800, and FMA-8500 Electronic Mass Flowmeters and Controllers are factory calibrated for nitrogen, (N<sub>2</sub>). However, these units can be used for many gases, with the flowrate compensated by an appropriate correction factor. The actual flow rate for any gas is equal to the flow rate of nitrogen for the unit multiplied by the correction factor.

FMA-5600 Series



**Flow Rate of Helium:** (0 to 1000 SCCM) x 1.389 = 0 to 1389 SCCM

**Description:** The FMA-8506 Mass Flow Sensor has a linear 0 to 5 Vdc output. When used with Helium gas, the output will be proportional to a flowrate of 0 to 1389 SCCM.

Compound (Formula)	Correction Factor for		Compound (Formula)	Correction Factor for	
	FMA-5600, -5700	FMA-8500		FMA-5600, -5700	FMA-8500
Ammonia (NH <sub>3</sub> )	0.73	0.788	Hydrogen Iodide (HI)	1.00	0.955
Argon (Ar)	1.45	1.398	Krypton (Kr)	1.453	1.385
Butane (C <sub>4</sub> H <sub>10</sub> )	0.26	0.290	Methane (CH <sub>4</sub> )	0.72	0.810
Carbon Dioxide (CO <sub>2</sub> )	0.74	0.775	Neon (Ne)	1.46	1.401
Carbon Tetrafluoride (Freon 14) (CF <sub>4</sub> )	0.42	0.475	Nitrogen (N <sub>2</sub> )	1.00	1.005
Chlorine (Cl <sub>2</sub> )	0.86	0.825	Nitrogen Dioxide (NO <sub>2</sub> )	0.74	0.760
Ethane (C <sub>2</sub> H <sub>6</sub> )	0.50	0.546	Nitrous Oxide (N <sub>2</sub> O)	0.71	0.754
Fluorine (F <sub>2</sub> )	0.98	0.926	Oxygen (O <sub>2</sub> )	1.00	0.990
Helium (He)	1.454	1.389	Propane (C <sub>3</sub> H <sub>8</sub> )	0.36	0.394
Hydrogen (H <sub>2</sub> )	1.01	1.010	Silane (SiH <sub>4</sub> )	0.60	0.680
Hydrogen Bromide (HBr)	1.00	0.978	Sulfur Dioxide (SO <sub>2</sub> )	0.69	0.730
Hydrogen Chloride (HCl)	1.00	0.985	Xenon (Xe)	1.44	1.386

Conversion factors for other gases available. Consult Engineering Department for details.  
**Note:** Not all gases listed are compatible with each model. To determine exact compatibility, consult Engineering Department. Conversion factors reduce accuracy by 2%.



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