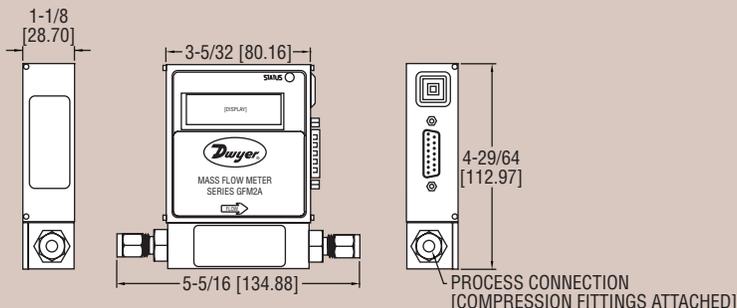




Series GFM2 Gas Mass Flow Meter

±1% FS, Programmable Relays



The Series GFM2 Gas Mass Flow Meter is an ideal choice for the measurement of flow rates of a wide variety of gases. GFM2 utilizes a straight tube sensor with a restrictor flow element to provide a high ±1% FS accuracy and ±0.25% FS repeatability.

Gas flow can be displayed in 23 different engineering units on an optional 2x16 character LCD display. Digital RS-232 or RS-485 interfaces allow for easy communication and for multi-drop capability of up to 256 units (RS-485 only). Additionally, this user-friendly interface allows for the programming of high and low gas flow alarms, along with two electromechanical SPDT relays with latch options. Stores calibration information for up to 10 different gases, internal or user-specific K-factors. Comes standard with support software for programming the various parameters of the GFM2. With self diagnostics run at start up and a pressure limit of up to 500 psi (34.5 bar), the GFM2 is the optimal choice for many flow measurement application. The GFM2 includes a NIST traceable certificate.

SPECIFICATIONS

- Service:** Clean gases compatible with wetted parts.
- Wetted Materials:** GFM2-X-X-A: Anodized aluminum, brass, 316 SS fluoroelastomer O-rings; GFM2-X-X-S: 316 SS, and fluoroelastomer O-rings; Buna-N, EPR and PTFE O-rings optional.
- Accuracy:** ±1% FS.
- Repeatability:** ±0.25% FS.
- Response Time:** 2 seconds to within ±2% of actual flow.
- Output Signal:** Linear 0 to 5 VDC (3000 Ω min. load impedance) and 4 to 20 mA (500 Ω max. loop resistance).
- Relay Rating:** 1 amp @ 24 VDC.
- Max. Particulate Size:** 5 microns.
- Temperature Limits:** 32 to 122°F (0 to 50°C).
- Power Supply:** 11 to 26 VDC.
- Process Connections:** 1/8" compression fitting for flow rates ≤ 10 L/min; 1/4" for ≤ 50 L/min; 3/8" for ≤ 100 L/min.
- Display:** 2 x 16 character LCD (optional).
- Pressure Limits:** 500 psig (34.5 bar).
- Leak Integrity:** 1 x 10⁻⁹ smL/sec of helium.
- Weight:** 1.05 lb (0.48 kg).

FEATURES

- Programmable totalizer indicates total gas quantity.
- High and low gas flow alarm limits with preset delay interval.
- Two sets of user-programmable electromechanical SPDT relays with latch option.
- User-selectable analog 0 to 5 VDC or 4 to 20 mA outputs.
- Internal conversion factors for up to 32 gases.
- Digital interface (RS-232 / RS-485, Profibus DP available).
- Automatic sensor zero offset adjustment (via digital interface or local push button).
- Self-diagnostic tests.

ACCESSORY

A-110NA12, 110 VAC Power Supply, 12 VDC with Communication Interface Branch

| Example Series | GFM2 | AIR | 010 | A | V | A | N | A | 2 | GFM2-AIR-010-A-V-A-N-A-2 |
|-------------------------------------|------|---|-------------------|--------|------------------|-------------|--------|--------|-------------|---|
| | GFM2 | | | | | | | | | Gas Mass Flow Meter |
| Specialty Gas & K-Factor | | AIR AR C ₂ H ₂ C ₃ H ₈ C ₄ H ₁₀ CH ₄ CO CO ₂ HF HE H ₂ N ₂ NH ₃ O ₂ SO ₂ | | | | | | | | Air 1.0000 Argon 1.4573 Acetylene 0.5829 Propane 0.3500 Butane 0.2631 Methane 0.7175 Carbon Monoxide 1.0000 Carbon Dioxide 0.7382 Hydrogen Fluoride 0.9998 Helium 1.4540 Hydrogen 1.0106 Nitrogen 1.0000 Ammonia 0.7310 Oxygen 0.9926 Sulfur Dioxide 0.6900 |
| Body Size | | | 010 050 100 | | | | | | | Low Flow Medium Flow High Flow |
| Body Material | | | | A S | | | | | | Aluminum Stainless Steel: Body Size = 010 Body Size = 050 Body Size = 100 |
| Seal Material | | | | | V B E T | | | | | Fluoroelastomer Buna-N EPR PTFE |
| Fittings | | | | | | A B D | | | | 1/8" Compression (Low) 1/4" Compression (Medium) 3/8" Compression (High) |
| Display | | | | | | | N L | | | No Display LED Display |
| Output Signal | | | | | | | | A B | | 0 to 5 VDC 4 to 20 mA |
| Digital Interface | | | | | | | | | 2 5 9 | RS232 RS485 PROFIBUS |

Specify flow range at time of order:

| Flow Ranges | |
|-------------|-------|
| ml/min | l/min |
| 10 | 2 |
| 20 | 5 |
| 50 | 10 |
| 100 | 20 |
| 200 | 30 |
| 500 | 40 |
| 1000 | 50 |
| | 60 |
| | 80 |
| | 100 |

Maximum flow range per body size for the given gases:

| Body Size | Max Flow Range (l/min) | | | | | | |
|-----------|------------------------|-----|-------------------------------|-------------------------------|--------------------------------|-----------------|-----|
| | AIR | AR | C ₂ H ₂ | C ₃ H ₈ | C ₄ H ₁₀ | CH ₄ | CO |
| 010 | 10 | 10 | 5 | 2 | 2 | 5 | 10 |
| 050 | 50 | 50 | 20 | 10 | 5 | 30 | 50 |
| 100 | 100 | 100 | 50 | 30 | 20 | 60 | 100 |

| Body Size | Max Flow Range (l/min) | | | | | | |
|-----------|------------------------|-----|----------------|----------------|-----------------|----------------|-----------------|
| | CO ₂ | HE | H ₂ | N ₂ | NH ₃ | O ₂ | SO ₂ |
| 010 | 5 | 10 | 10 | 10 | 5 | 10 | 5 |
| 050 | 30 | 50 | 50 | 50 | 30 | 50 | 30 |
| 100 | 60 | 100 | 100 | 100 | 60 | 80 | 60 |