



IE250A

IP66 RATED, ELASTOMER SEALED, DIGITAL MASS FLOW CONTROLLER, FLOW RATES UP TO 250 SLM

The IE250A is a general purpose, elastomer sealed MFC well suited for use in harsh environments where resistance to liquid or dust ingress are critical. The IE250A meets these requirements with its IP66 rated enclosure design. The IE250A incorporates the latest in digital flow control electronics along with a well proven, patented thermal sensor and mechanical design for Full Scale flow rates from 100 to 250 slm, N₂ equivalent. This MFC is available with either analog or digital I/O. The digital control electronics utilize the latest in MKS control algorithms provide fast and repeatable response to set point.

Settling times of 1 to 2 seconds and set point accuracies below 1% of set point outperform those of other typical high flow MFCs. Precise control is maintained down to 2% of the IE250A configured Full Scale flow range. The multi-gas/multi-range capability, along with tight performance specifications for accuracy, control range, and transient response allow users to minimize inventory of high flow MFC part numbers.

The multi-gas/multi-range feature (along with other custom controls) is accessed through the MFCs embedded diagnostic interface, which requires no special software or hardware to operate. A standard Ethernet cable and JAVA-enabled HTML browser, widely available, are all the tools needed. The critical gas parameters for typical high flow rate gases are already stored on the device. Configuring the device is simply a matter of selecting the gas from a drop down menu and specifying the desired Full Scale flow range. The diagnostic interface also allows the user to perform routine device health checks, plot flow response, and store operating data for offline analysis.

Features & Benefits

Improved Performance

- Fast response to set point change reduces flow stabilization time for short process steps, enhancing process throughput
- Tightly controlled flow accuracy of process gas enables improved process matching
- Reduced inlet pressure (pressure drop) requirement simplifies gas supply regulation from a single source

Reduces Overall Costs

- Reduces MFC inventory through its multi-gas/multi-range capability

- Accurate flow control over a wide dynamic range, even when down ranged, reduces need for an additional low range MFC

Easy to Integrate and Operate

- Device configuration and diagnostics made simple through standard Ethernet interface
- Uses a standard web browser with no special software required



Performance

Full Scale Flow Ranges (<i>N₂ equivalent</i>)	100 to 250 slm
Maximum Inlet Pressure	150 psig (cannot exceed pressure differential requirement across MFC)
Normal Operating Pressure Differential (<i>with atmospheric pressure at the MFC outlet</i>)	30 to 55 psid (dependent on fitting type)
Burst Pressure	1500 psig
Control Range	2% to 100% of F.S. (range on mech.)
Typical Accuracy	± 1% of set point for > 20% to 100% F.S. ± 0.25% of F.S. for 5% to 20% F.S.
Repeatability	± 0.5% of Reading
Resolution	0.1% of Reading
Temperature Coefficients	
Zero	< 0.05% of F.S./°C
Span	< 0.08% of Rdg./°C
Inlet Pressure Coefficient	< 0.03% of Rdg./psi or less
Typical Controller Settling Time	1 to 2 seconds typical above 10% F.S. @ 50 psi
Warm-up Time	one (1) hour
Operating Temperature Range (<i>Ambient</i>)	10°C to 50°C
Storage Humidity	0 to 95% relative humidity, non-condensing
Storage Temperature	-20° to 65°C (-4° to 149° F)

Mechanical

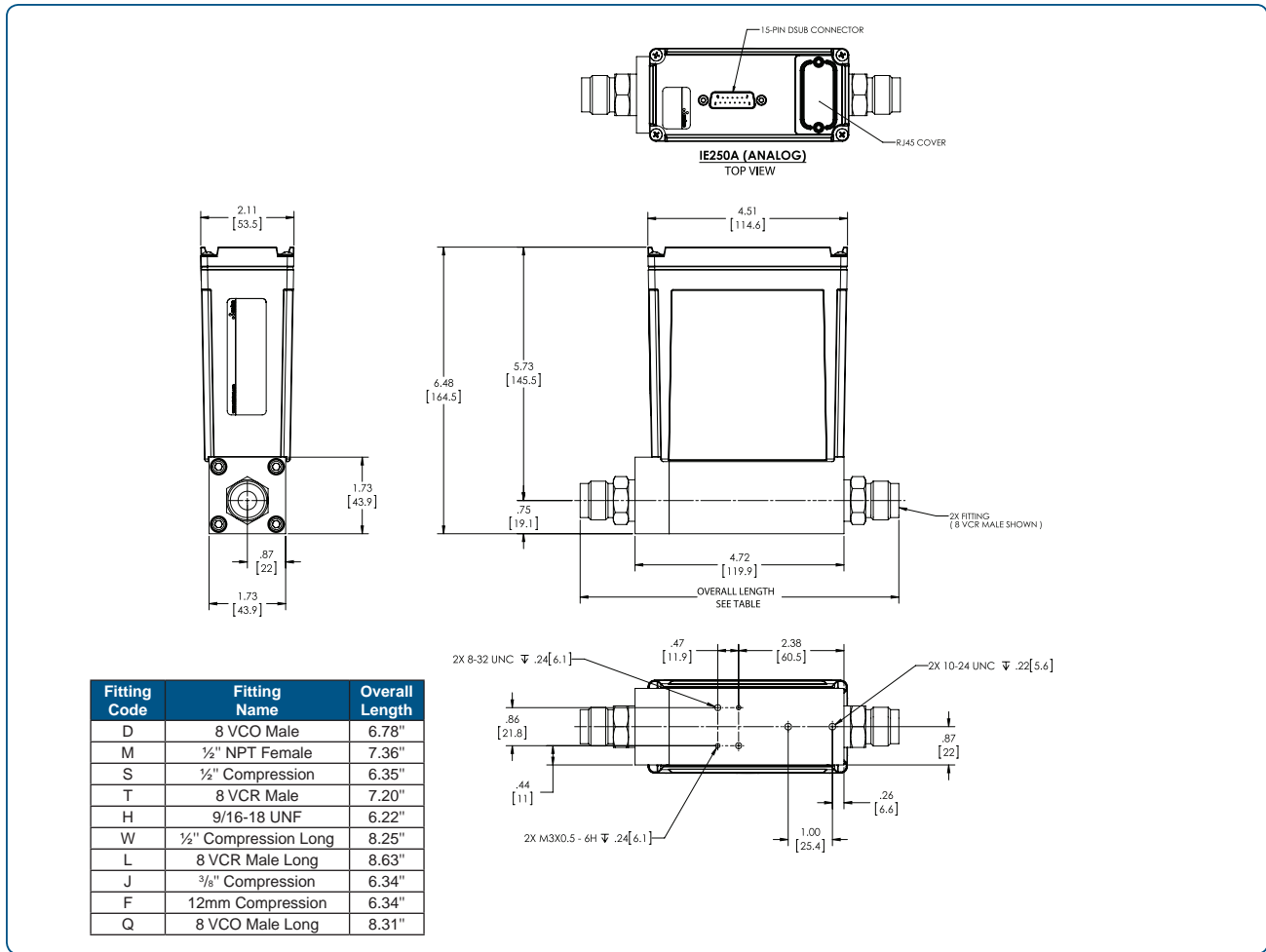
Fittings (<i>compatible with</i>)	8 VCO® male, ½" NPT female, ½" Compression, 8 VCR® male, 12 mm Swagelok, ¾" Swagelok, W-seal, ½" Compression Long, 8 VCR Male Long, 8 VCO Male Long
Leak Integrity	
External (scc/sec He)	< 1 x 10 ⁻⁹
Through closed valve	< 1.0% F.S. at 40 psia to vac (<500 mTorr) (To assure no flow-through, a separate positive shut-off valve is required.)
Wetted Materials	
Standard	316 S.S., 17-7 S.S., Elgiloy®, 430FR
Seal Options	Viton® (Class VI), EPDM (Class VI)
Surface Finish	16 µinch average Ra
Weight	less than 4.5 lbs. (2.05 kg)
Enclosure Rating	IP66

Electrical Analog I/O

Input Power Required	+15 to +24 VDC @ (< 4 watts)
Flow Input/Output Signal	
Voltage (0 to 5 VDC)	15-pin Type "D" male
Current (4 to 20 mA)	15-pin Type "D" male
Compliance	CE



Dimensional Drawing



Dimensional Drawing

Note: Unless specified, dimensions are nominal values in inches (mm referenced).

*(See manual for additional I/O and fitting types)



