

FLEXIBLE | EASY TO USE | HIGH VALUE

**PRECISION FLOW & PRESSURE
INSTRUMENTS**



A HALMA COMPANY



THE FASTEST FLOW CONTROLLER COMPANY IN THE WORLD!

Flexible.

- ▶ Microflow to high flow mass flow controllers and meters
- ▶ Multivariate readings include mass flow, volumetric flow, pressures & temperature
- ▶ Over 100 field-selectable gases with mass flow instruments' Gas Select[™] feature
- ▶ Standard operating voltage is 12-24 Vdc — costly and inconvenient ± 15 Vdc not required.
- ▶ Numerous user-selectable engineering units and standard temperature and pressure settings
- ▶ Do more with fewer instruments through high turndown ratios and multivariate control

Easy to use.

- ▶ Instant on. No wasting gas for warm-up.
- ▶ Easy control with direct or electronic input. Your choice of industrial protocol options.
- ▶ Stand alone control, or control many with multi-drop RS-232 or RS-485.
- ▶ Simple, orientation-insensitive installation. No straight runs of pipe required!

High value.

- ▶ Custom ranges mean higher resolution. Custom PID tuning means optimal response
- ▶ On-board multi-parameter display makes readings and setup convenient
- ▶ Flow instrument's COMPOSER[™] lets you define and store up to 20 custom gas mixes.
- ▶ Support a wide range of options without extra software or components.
- ▶ The industry's only lifetime warranty and lifetime free technical support
- ▶ Quick delivery — typically shipped 5 days from receipt of order.
- ▶ Low cost recalibrations, with quick turnaround

Great performance.

- ▶ Accurate flow measurements: $\pm (0.8\% \text{ of reading} + 0.2\% \text{ of full scale})$ standard.
 $\pm (0.4\% \text{ of reading} + 0.2\% \text{ of full scale})$ available for most units.
- ▶ Low sensitivity to ambient pressure and temperature changes.
- ▶ Alicat products are supplied with NIST traceable certification and carry the CE mark.
- ▶ Stays accurate through full gas calibrations—no K-factors necessary.
- ▶ Fast: less than 50 millisecond for typical control response. 10 millisecond sensor response.

MASS FLOW METERS and MASS FLOW CONTROLLERS



Decrease cycle time, improve repeatability, and significantly enhance your process with instruments that sense changes and respond faster than any other mass flow instruments, through the patented technology in Alicat meters and controllers. They offer a powerful range of flows—from micro flow to high flow—in a fast responding, high turndown, highly accurate and integrated package.

Alicat flow instruments are individually manufactured and optimized for your application when you order, with custom-design available for new applications.

Mass Flow Meters

Alicat flow meters compensate for changes in process temperature and pressure—ensuring fast, stable and accurate readings, with data-rich reporting and communications capabilities.

M Series Meters: Flow ranges from 0-0.5 sccm through 0-5000 slpm full scale. Over 100 gases selectable on the device.

Mass Flow Controllers

Combining the unique features of our mass flow meters, with a proportional control valve, results in unparalleled versatility, precision and speed of control. Alicat MFCs provide stand-alone control, adjusting in milliseconds to changes and smoothing downstream flows. And they can control pressure while measuring mass flow, too.

MC Series: Controllers with a broad range of available flows, from microflow 0-0.5 sccm through high flow 0-5000 slpm full scale. Over 100 gases selectable.

LOW PRESSURE DROP APPLICATIONS



WHISPER™ Low Pressure Drop Mass Flow Meters and Controllers

The lowest pressure drop available for metering or controlling mass flow on the market today. Whisper meters and controllers range from 0-0.5 sccm to 0-1000 slpm full scale with a 200:1 turndown ratio and pressure drops ranging from just 0.06 psid to 0.7 psid.

AGGRESSIVE GASES



MS Meters and MCS Controllers for Aggressive Gases

Alicat MS meters and MCS controllers feature 316L Stainless Steel construction along with selectable elastomeric materials for compatibility by corrosive gas type. On-board gas selection: over 130 gases and custom mixes. Check for compatibility. MCS controllers also have a stainless steel control valve.

FLOW INTO VACUUM



MCV and MCE Controllers for the Vacuum Coating Industry

Alicat's mass flow controllers for vacuum are built for tight shut-off, suiting vacuum coating and sputtering processes. Tailored to SEMI standard dimensions means same form fit and function replacement of MKS equipment.

BIDIRECTIONAL FLOW



Bidirectional Mass Flow Controllers (MCD Series)

The world's most versatile flow controller determines mass flow and volumetric flow in both directions, plus absolute pressure and temperature. Control mass or volumetric flow from a pressurized source or from vacuum; pressure or backpressure in a flowing process; pressure in a closed volume with automatic venting.

OEM FLOW CONTROL



BASIS MFCs

Compact and affordable mass flow controllers for integration in volume applications. Fits into compact instrumentation, industrial mixing systems or large scale installations. Choose from 6 gases, and full-scale flow rates up to 100 sccm, 1 slpm or 20 slpm. Minimum orders apply—contact your representative. One year warranty.

HIGH PRESSURE APPLICATIONS



MQ Meters and MCQ Controllers for High Pressure

For high pressure applications, from 15 to 320 PSIA (1.03 to 22 bar) our Q series controllers and meters offer Alicat flexibility for these specialized conditions. Over 100 selectable gases. Check specifications for explicit compatibilities.



CALIBRATION and FLOW VERIFICATION

Portable High Accuracy Mass Flow Meters

Calibrate instruments in the field, verify and maintain equipment operation and settings (including other manufacturer's devices), or search for leaks using pressure or flow readings.

Measure wherever you are, without limits of cables or a power source. A rechargeable battery runs our portable M-Series meters for up to 18 hours!

Portable Calibration Unit: Mobile Secondary Calibration Standard

A self-contained, portable secondary calibration standard that is as easy to transport as it is to use. With three meters of stepped sizes, you can calibrate through ranges as great as 1,000,000:1.

Three integrated M-Series flow meters in an industrial case. Program them with the built-in LCD displays, or through USB or serial communications. Uses common batteries, or a wall outlet adaptor.

LAMINAR LIQUID FLOW METERS and LIQUID FLOW CONTROLLERS



For demanding low-flow clean liquid applications, including where fast control is desirable.

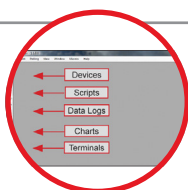
Alicat liquid meters and controllers display volumetric flow, liquid temperature and pressure. Check with Alicat for liquid types and compatibilities.

L Series: Meters available in ranges from 0.5 ccm to 10 lpm.

LC Series: Controllers available in ranges from 0.5 ccm to 10 lpm

COMMUNICATIONS and CONTROL SOFTWARE

CONTROL REMOTELY



Flow Vision™ SC

Affordable software that interfaces with the RS-232 or RS-485 communications standard on all Alicat flow and pressure products. Provides automatic configuration, session saving, data capturing and logging, charting, script building for automating set-point sequences and support for multiple devices.

BLENDING GASES

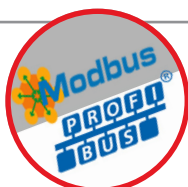


Alicat's Flow Vision™ MX for custom blending gases

Easy **gas blending** using Alicat Controllers and your own PC. Use our affordable BB9-USB and a single USB connection to a computer with Flow Vision MX to create gas blends, adjust flow rates and save your blend formulas.

Simply connect your unique gases to each controller, select the gas type either locally on the controller or through Flow Vision™ MX, and manifold the flow outputs to create your gas mix. Set your total flow rate and proportions in MX with simple mouse and keyboard entries.

COMMUNICATION PROTOCOLS



Languages and Interfaces

Control your devices remotely over digital communications with optional industry standard protocols such as Modbus or PROFIBUS.

DIGITAL PRESSURE CONTROLLERS and PRESSURE GAUGES

Stable pressure in your system is ensured by pressure controllers with fast-response sensors and valves. Available for controlling gauge pressures up to 3000 psi, or differential pressures up to 500 psid.

Pressure control devices are compatible with all non-corrosive gases, with optional stainless steel body configurations for many aggressive gases.

PC Pressure Controllers

Control system pressure: An internal pressure sensor controls gauge or absolute pressure through the instrument. A valve acts as a pressure inlet or exhaust, depending on location. Custom valve sizing for low or high flow rates manages speed and response curves.



CONTROL CLOSED-VOLUME PRESSURE



PCD Pressure Controllers

Control pressures in closed or dead-ended volumes without wasting costly gases through a continuous bleed valve with a dual valve controller. Anti-corrosive construction option available. Optional remote sense port receives a pressure signal from anywhere in the process, for up or downstream control.

EXTERNAL SENSING VACUUM/PRESSURE CONTROL



PC-EXTSEN External Sensor Series

Connects to an external pressure transducer via a dedicated connector and cable. The PC-EXTSEN does not have an internal pressure sensor, instead relying on the customer-supplied sensor to provide pressure readings. This series is especially useful for vacuum coating processes that employ vacuum gauges. Compatible to 1 mTorr range.

OEM SOLUTIONS



EPC Bespoke Electronic Pressure Control

A simplified smart pressure controller for use in production system integrations. Options include single or dual valve configurations, with custom port positioning and sizing. Minimum orders apply. Check with your regional representative for a solution suited your application. 1 year warranty included.

PRESSURE / VACUUM SENSING



Digital Pressure/Vacuum Gauges and Transducers

A pressure or vacuum gauge or transducer instrument with all the great Alicat features: versatile communications, sensitivity, lifetime warranty and easy-to-use interface. Also available as a pressure sensing portable device with long battery life.

OPTIONS and ACCESSORIES

HAZARDOUS ENVIRONMENTS



ATEX Class 1 Zone 2 and CSA Class 1 Division 2

ATEX and CSA approved configurations for use in CSA Class 1 Division 2 hazardous environments (for the United States and Canada), and ATEX Class 1 Zone 2 (for Europe). All Alicat ATEX/CSA approved devices have group ABCD approval.



CONTROLLING MULTIPLE DEVICES



BB9 Multi-Drop Box

Connect multiple flow and/or pressure devices to a single USB, RS-232 or RS-485 port for two-way communications. All of the flow and/or pressure devices may be powered by the BB9. If more than nine devices are required, BB9 boxes can be daisy chained together.

MANUAL RATE CONTROL



IPC (Integrated Potentiometer Control)

Dial a set-point by hand, without an external control input signal or clicking through menus. Simply plug in the power supply, attach your gas flow lines and you're ready to accurately adjust your flow with the turn of a knob.



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