

Liquid Flow Meters & Controllers

SOLID STATE LIQUID TRANSMITTER AND FLOW CONTROLLERS

The Alicat Scientific L and LC series flow meters and controllers use two of the best-studied physical properties of liquids to measure flow: Pressure and Viscosity. Differential pressure measurement, across a laminar flow element, results in a flow meter that is inherently linear. Alicat flow meters measure differential pressure within that laminar region to achieve a turndown of 50:1 typical.

- Response time of 20 milliseconds typical (metre)
- Low Pressure Drop of 10" Water Column or better (metre)
- Turndown Ratio of 100:1
- Push Button Tare (with display)
- Accuracy of +/- 1% full scale

L SERIES

The L series is a Volumetric Water Flow meter. The unique method of flow detection allows Alicat to measure extremely low flow rates at an affordable price. The L Series was designed with de-ionized water in mind. These flow meters are available in ranges of 500 micro-litres per minute full scale to 10 litres per minute full scale



LC SERIES

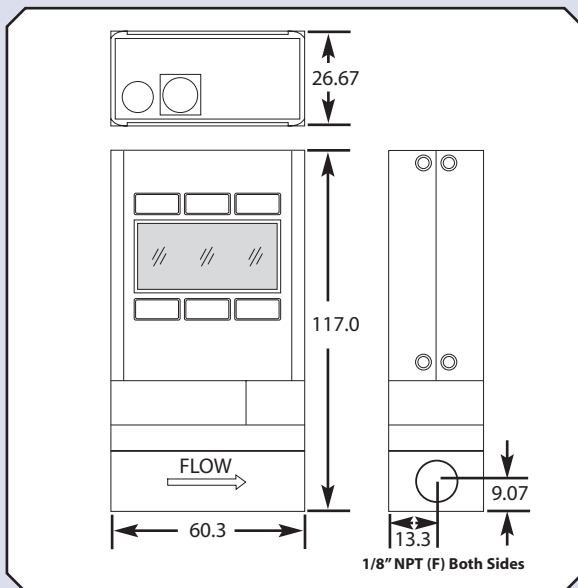


The LC Series Flow Controller utilizes proportional valve coupled to a flow meter body creating a unique in-situ closed loop flow controller system. Measurements are taken within the laminar region of the flow meter and the integral PID controller positions the valve according to the flow set points. These robust,

closed-loop devices accept a selectable analogue or digital control set point from either external devices or one of Alicat's Local Set Point Modules (LSPM). The controllers can also accept a RS-232, 0.10Vdc or 4-20mA control input signal depending on what is preferred by the customer. Independent of the set point voltages, the controllers can be configured for single or dual output of the same or different voltages and/or different parameters such as temperature and flow. This is possible because of our laminar flow meter design that incorporates solid-state Differential, Absolute Pressure, and Temperature sensors to determine flow in an inherently linear system. The result is a fast responding linear flow meter with multiple outputs. All these parameters are simultaneously visible with our dynamic display that includes a push button operator interface. Liquid controllers are available from 50 millimetres per minute full scale to 500 millilitres per minute full scale. Please see out turbine controllers (TC) for higher liquid ranges.

| Specifications | L | LC | Units of Measure | Sample FS Ranges |
|--------------------------|--|-------------------|-------------------|------------------|
| Accuracy | +/- 1% | +/- 1% | Full Scale | 0.5 cc/m L |
| Repeatability | +/- 1% | +/- 1% | Full Scale | 1 cc/m L |
| Turndown Ration | 50:1 | 50:1 | | 2 cc/m L |
| Response Time | 20 | 100 | Milliseconds | 5 cc/m L |
| Full Scale Pressure Drop | 0.8 | varies with range | PSI | 10 cc/m L |
| Operating Temperature | +1 to +50 | +1 to +50 | °C | 20 cc/m L |
| Compensated Temperature | +10 to +50 | +10 to +50 | °C | 30 cc/m L |
| Zero Shift | 0.02% / ATM | 0.02% / ATM | Full Scale / °C | 50 cc/m L & LC |
| Span Shift | 0.02% / ATM | 0.02% / ATM | Full Scale / °C | 200 cc/m L & LC |
| Humidity Range | 0 - 100% | 0 - 100% | Non-Condensing | 500 cc/m L & LC |
| Excess Flow Rate | 2.4% | 2.4% | Full Scale | 1 LPM L |
| Common Mode Pressure | 100 | 100 | PSIG | 2 LPM L |
| Supply Current (Typical) | 30 | 250 | Milliamp | 3 LPM L |
| Supply Voltage | 7 - 30 | 12 - 25 | Volts dc | 5 LPM L |
| Output and/or Input | 0 - 5Vdc, 0 - 10 Vdc, 4 - 20mA, Rs - 232 | | Volts dc | 10 LPM L |
| Electrical Connections | 8 pin | 8 pin | Circular Mini DIN | |
| Mechanical Connections | 1/8" - 1/4" | 1/8" | NPTF | |
| Wetted Materials | 303 Stainless Steel, Viton®, Silicone RTV, Polyetherimide Valves Only: Anodized AL, 410 & 304 Stainless Steel, Nickel, Brass, Viton®, delrin, Loctite adhesives 326, 401, 609 | | | |

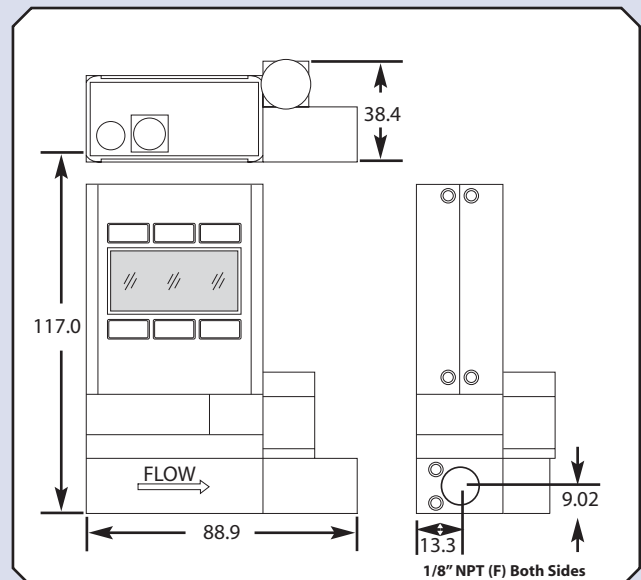
L SERIES WATER FLOW METERS 0-500 cc/m TYPICAL



Liquid Meter Dimension Table

| Flow Range | Height | Length | Depth | Port Size |
|-------------|---------|--------|--------|--------------|
| 0.500 cc/m | 117.0mm | 60.3mm | 26.7mm | 1/8" NPT (F) |
| 1 to 10 LPM | 120.2mm | 66.7mm | 26.7mm | 1/4" NPT (F) |

LC SERIES WATER FLOW CONTROLLERS 0-500 cc/m TYPICAL



Every effort has been made during the preparation of this document to ensure the accuracy of statements and specifications. However, we do not accept liability for damage, injury, loss or expense caused by errors or omissions made. We reserve the right to withdraw or amend products or documentation without notice.

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