Technical Data for Alicat LC & LCR Liquid Flow Controllers
0 – 0.5 ccm Full Scale through 0 – 10 lpm Full Scale

Alicat LC and LCR-Series water flow controllers display liquid flow, liquid temperature and pressure.

### Standard Specifications (Contact Alicat for available options.)

<table>
<thead>
<tr>
<th>Performance</th>
<th>LC Controllers</th>
<th>LCR Controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Ranges</td>
<td>0.5 ccm to 500 ccm</td>
<td>1 lpm to 5 lpm</td>
</tr>
<tr>
<td>Accuracy at calibration conditions after tare</td>
<td>± 2% Full Scale</td>
<td>± 2% Full Scale</td>
</tr>
<tr>
<td>Repeatability</td>
<td>± 2% Full Scale</td>
<td>± 2% Full Scale</td>
</tr>
<tr>
<td>Zero Shift and Span Shift</td>
<td>0.02% Full Scale / °Celsius / Atm</td>
<td>0.02% Full Scale / °Celsius / Atm</td>
</tr>
<tr>
<td>Operating Range / Turndown Ratio</td>
<td>2% to 100% Full Scale / 50:1 Turndown</td>
<td>2% to 100% Full Scale / 50:1 Turndown</td>
</tr>
<tr>
<td>Maximum Flow Rate</td>
<td>102.4% FS Controllable</td>
<td>102.4% FS Controllable</td>
</tr>
<tr>
<td>Typical Response Time</td>
<td>100 ms (Adjustable)</td>
<td>100 ms (Adjustable)</td>
</tr>
<tr>
<td>Warm-up Time</td>
<td>&lt; 1 Second</td>
<td>&lt; 1 Second</td>
</tr>
</tbody>
</table>

### Operating Conditions

#### LC Controllers
- Operating Temperature: Non-Freezing -10º to +60 ºCelsius
- Maximum Internal Pressure: 100 psig
- Proof Pressure: 200 psig
- Mounting Altitude Sensitivity: None
- Valve Type: Normally Closed
- Ingress Protection: IP40

#### LCR Controllers
- Mount with valve cylinder vertical & upright
- Valve Type: Normally Closed
- Ingress Protection: IP40

### Wetted Materials

LC, LCR: 430FR Stainless Steel, 302 & 303 Stainless Steel, 316L Stainless Steel, Viton®, FFKM.
LCR Controllers Add 416 Stainless Steel, Delrin®.
If your application demands a different material, please contact Alicat.

### Communication / Power

#### LC Controllers
- Monochrome LCD or Color TFT Display with integrated touchpad
- Digital Input / Output Signal
- Analog Input / Output Signal
- Electrical Connection Options
- Supply Voltage: 12-30 Vdc (15-30 Vdc for 4-20 mA outputs)
- Supply Current: 0.250 Amp

#### LCR Controllers
- Monochrome LCD or Color TFT Display with integrated touchpad
- Digital Input / Output Signal
- Analog Input / Output Signal
- Electrical Connection Options
- Supply Voltage: 0.750 Amp (LCRH: 2.0 Amp)

1. The Digital Output Signal communicates Flow and Temperature (optional Pressure sensor available)
2. The Analog Output Signal and Optional Secondary Analog Output Signal communicate your choice of Flow or Temperature
3. If selecting PROFIBUS, no analog signal is available. PROFIBUS units do not have the display. See PROFIBUS specifications for PROFIBUS supply voltages and currents. ([www.alicat.com/profibus](http://www.alicat.com/profibus))

### Range Specific Specifications

#### Full Scale Flow

<table>
<thead>
<tr>
<th>LC Controllers</th>
<th>Pressure Drop</th>
<th>Mechanical Dimensions</th>
<th>Process Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 ccm to 1 ccm</td>
<td>4.4&quot;H x 3.4&quot;W x 1.1&quot;D MS (10-32) Female Thread</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 ccm</td>
<td>5.0</td>
<td>1/8&quot; NPT Female</td>
<td></td>
</tr>
<tr>
<td>5 ccm to 50 ccm</td>
<td>5.0</td>
<td>1/8&quot; NPT Female</td>
<td></td>
</tr>
<tr>
<td>100 ccm</td>
<td>5.0</td>
<td>1/8&quot; NPT Female</td>
<td></td>
</tr>
<tr>
<td>200 ccm to 500 ccm</td>
<td>7.5</td>
<td>1/8&quot; NPT Female</td>
<td></td>
</tr>
<tr>
<td>LCR Controllers</td>
<td>1 lpm</td>
<td>4.0</td>
<td>1/4&quot;NPT Female</td>
</tr>
<tr>
<td>2 lpm</td>
<td>4.0</td>
<td>1/4&quot;NPT Female</td>
<td></td>
</tr>
<tr>
<td>5 lpm</td>
<td>10.0</td>
<td>1/2&quot;NPT Female</td>
<td></td>
</tr>
<tr>
<td>LCRH 10 lpm</td>
<td>6.5&quot;H x 9.4&quot;W x 4.5&quot;D</td>
<td>1/2&quot;NPT Female</td>
<td></td>
</tr>
</tbody>
</table>

1. Lower Pressure Drops Available, please contact Alicat.
2. See drawings for metric equivalents.
3. Compatible with Swagelok® tube, Parker®, face seal, push connect and compression adapter fittings. VCR and SAE connections upon request.
LC-Series
0 - 0.5 ccm
0 - 1 ccm

LCR-Series
0 - 0.5 ccm to 1 ccm approximate shipping weight: 1.1 lb.

LC-Series
0 - 2 ccm
0 - 5 ccm
0 - 10 ccm
0 - 20 ccm
0 - 50 ccm
0 - 100 ccm
0 - 200 ccm
0 - 500 ccm

LC-Series
0 - 0.5 ccm to 1 ccm approximate shipping weight: 1.1 lb.

LCR-Series
0 - 1 lpm
0 - 2 lpm
0 - 5 lpm

LCR-Series
5 ccm to 500 ccm approximate shipping weight: 1.1 lb.

1 lpm to 5 lpm approximate weight: 9.0 lb.
LCRH-Series

0 - 10 lpm

10 lpm approximate weight: 26.0 lb.