### MLC 9000+ Single Loop Controller Module

Each Single Loop Module is an independent PID controller. Up to a max of eight Loop Modules can be connected to a single Bus Module. Each Loop Module contains its own PID processor as well as all input and output connections. Mixed installations of Single and Multiple Loop Modules are possible. Each Loop Module can be removed and replaced (Hot Swapped) whilst the process is running.

- Heat/Cool operation
- Soft Start
- Process & Heater alarms
- 100ms Scan Time
- Heater Current Monitoring
- Hot Swapping with auto loop Configuration

### Technical Data

<table>
<thead>
<tr>
<th>Process Input</th>
<th>Function</th>
<th>One loop temperature or DC process input. Type and scale user selectable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermocouple</td>
<td>B, N, J, R, K, S, L, T</td>
<td>Spans from -240°C to +1759°C (-400°F to +3198°F) dependent on T/C type</td>
</tr>
<tr>
<td>RTD</td>
<td>3-Wire PT100, NI120</td>
<td>Spans from -199.9°C to +800.3°C (-327.3°F to 1472.5°F)</td>
</tr>
<tr>
<td>DC Linear</td>
<td>0-20mA, 4-20mA, 0-50mV, 10-50mV, 0-5V, 1-5V, 0-10V, 2-10V</td>
<td>Scaleable –32000 to +32000</td>
</tr>
<tr>
<td>Measuring Accuracy</td>
<td>DC = ±0.1% of span ±1 LSD, RTD = ±0.1% of span, ±0.3°C. Thermocouple = ±0.1% of span, ±1°C for CJC, ±0.3°C for 0.1°C resolution ranges, or 1°C for 1° resolution ranges 10Hz (100msec)</td>
<td></td>
</tr>
<tr>
<td>Input sample rate</td>
<td>10Hz (100msec)</td>
<td></td>
</tr>
<tr>
<td>Sensor Break Detection</td>
<td>Break detected within two seconds. Control outputs turn to off (0% power). Alarms activate (except heater break alarms)</td>
<td></td>
</tr>
</tbody>
</table>

### Heater Break Alarm

- Function: Optional. Compares heater current to nominal. Alarms for High/Low current or Short Circuit output
- Heater Current Input: 0 to 50mA, 0 to 60mA Sinusoidal rms, from Current Transformer. Scaleable 0.1 to 1000AAC

### Outputs

- Relay Outputs: Contact type: Single Pole Single Throw (SPST) Rating: 2A resistive @ 120/240VAC Lifetime: >500000 operations at rated voltage/current
- SSR Driver Outputs: Drive Capability: 12VDC nominal (10V minimum), at up to 20mA Isolation: Isolated from process input and relay outputs. Not isolated from each other, other similar outputs or linear outputs in the same system.
- Linear Output: Only available on 3 O/P models. Resolution: 8 bits in 250msec, (10 bits in 1 second typical) Accuracy ±0.25% (mA into 250 ohm load, V into 2kohm load) Degrading linearly to ±0.5% for increasing burden to maximum derive capability (500 ohm)

### Operating & Environmental

- Supply Voltage: Powered by BCM within its operating condition
- Ambient Temperature: 0C to 55C (32F to 131F)
- Storage: -20C to 80C (-4F to 176F)
- Relative Humidity: 30% to 90% non condensing (operation and storage)
- Dimensions: Width: 22mm, Height: 100mm, Depth: 120mm. Weight: 0.15kg
- Mounting: DIN rail mounting via supplied interconnect module (ENS0022, DIN46277-3)
- Approvals & Certifications: EMC: Certified to EN61326. Safety: Complies with EN61010 and UL 3121-1
System Dimensions

Connection Details

LCM Mounting Details

Order Code

MLC 9000-Z1200  One Universal input, two SSR/relay outputs
MLC 9000-Z1300  One Universal input, two SSR/relay outputs and one Linear output or three SSR/relay outputs
MLC 9000-Z1301  One Universal input, one Heater Break input, two SSR/relay outputs and one Linear output or three SSR/SP relay outputs

In accordance with our policy of continuous improvement, we reserve the right to change specifications from those shown in this document.