

## 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
- Process & Heater alarms
- 100ms Scan Time
- Soft Start
- Heater Current Monitoring
- Hot Swapping with auto loop Configuration



### Technical Data

#### Process Input

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

#### 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

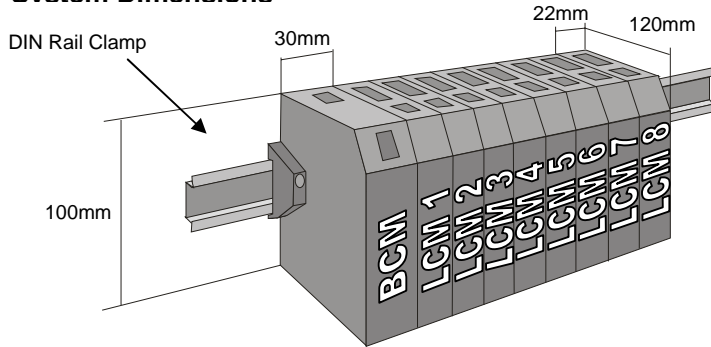
#### Outputs

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)

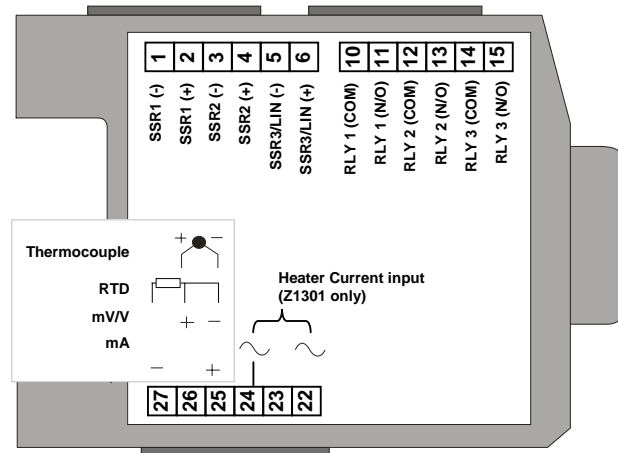
#### Operating & Environmental

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 (EN50022, DIN46277-3)
Approvals & Certifications	EMC: Certified to EN61326. Safety: Complies with EN61010 and UL 3121-1

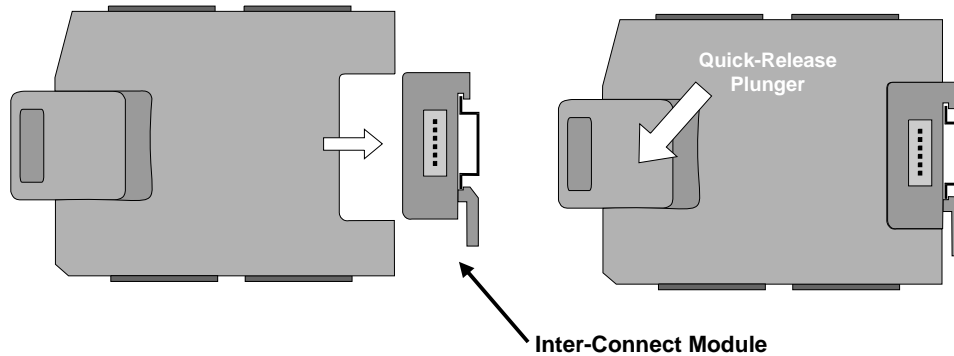
### System Dimensions



### Connection Details



### LCM Mounting Details



### Order Code

**MLC 9000-Z1200**  
**MLC 9000-Z1300**

**MLC 9000-Z1301**

One Universal input, two SSR/relay outputs  
One Universal input, two SSR/relay outputs and one Linear output or three SSR/relay outputs  
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.

## MLC 9000+ Three Loop + Heater Break Module



Each Three Loop + Heater Break Module is an independent PID controller with 3 loops of control and heater break detection input. Up to a maximum of eight Loop Modules can be configured for each Bus Module meaning it's possible to have 24 loops of control all with Heater Break detection. Mixed installations of Single, Three and Four Loop Modules are possible. Each Loop Module can be removed and replaced (Hot Swapped) whilst the process is running.

- Heat/Cool operation
- Process & Heater alarms
- Three Heater Currents Monitored with a single input
- Soft Start
- 100ms input sample rate
- Hot Swapping with auto loop Configuration



### Technical Data

#### Process Input

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

#### Heater Break Alarm

Function	Compares heater current to nominal. Alarms for High/Low current or Short Circuit output
Heater Current Input	0 to 50mA Sinusoidal rms, from Current Transformer. Scaleable 0.1 to 100A AC

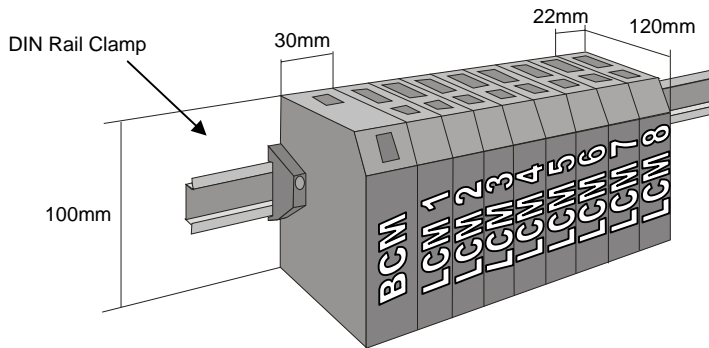
#### Outputs

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.

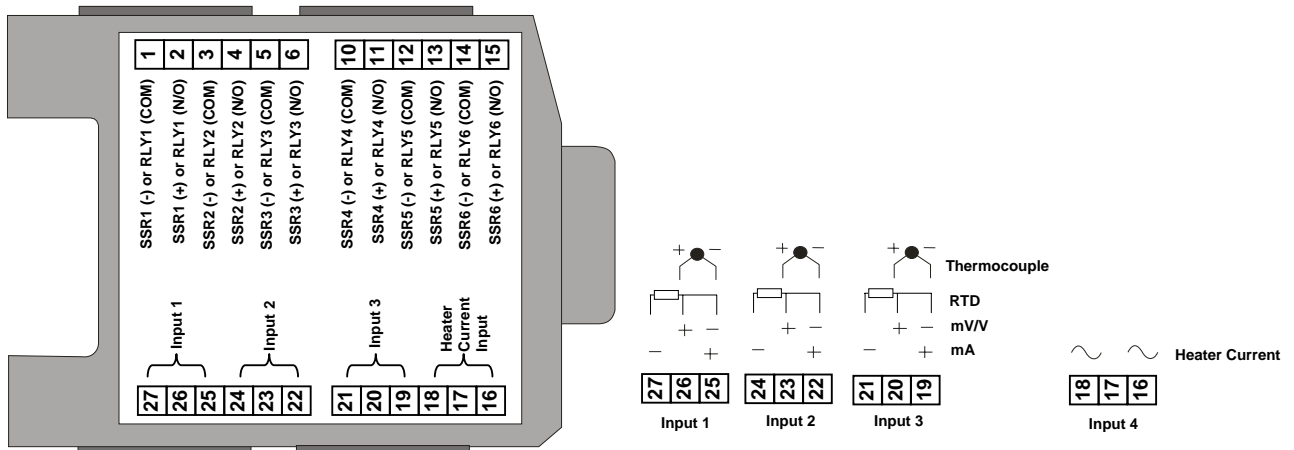
#### Environmental Specifications

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 (EN50022, DIN46277-3)
Approvals & Certifications	EMC: Certified to EN61326. Safety: Complies with EN61010 and UL 3121-1

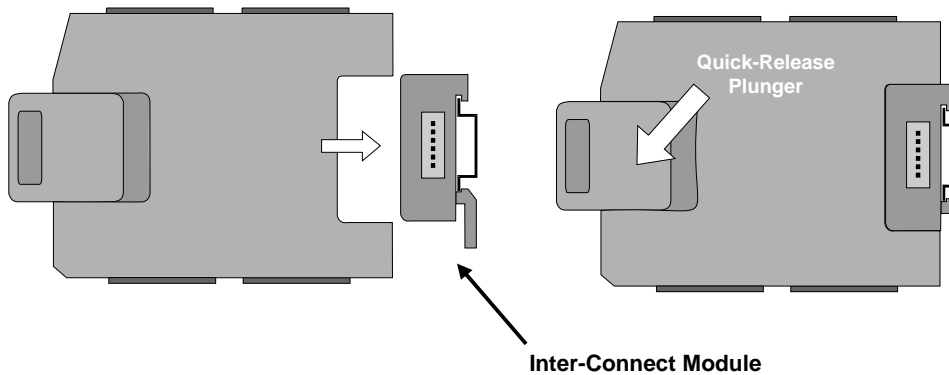
### System Dimensions



### Connection Details



### LCM Mounting Details



### Order Code

MLC 9000-Z3611  
MLC 9000-Z3621  
MLC 9000-Z3651

Three Universal inputs, one Multiplexed Heater Break input, six SSR outputs  
 Three Universal inputs, one Multiplexed Heater Break input, six relay outputs  
 Three Universal inputs, one Multiplexed Heater Break input, three SSR and three relay outputs

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## MLC 9000+ Four Loop Controller Module



Each four Loop Module is an independent PID controller with 4 input and 6 outputs. Up to a max of eight Loop Modules can be connected to a single Bus Module making it possible to have up to 32 loops of independent control. Mixed installations of Single, Three and Four Loop Modules are possible. Each Loop Module can be removed and replaced (Hot Swapped) whilst the process is running.

- Heat/Cool operation
- Process & Loop Alarms
- 100ms Scan Time
- Soft Start
- Universal Input
- Hot Swapping with auto loop Configuration



### Technical Data

#### Process Input

Function	One loop temperature or DC process input. Type and scale user selectable
Thermocouple	B, N, J, R, K, S, L, T Spans from -240°C to +1759°C (-400°F to +3198°F) dependent on T/C type
RTD	3-Wire PT100, NI120 Spans from -199.9°C to +800.3°C (-327.3°F to 1472.5°F)
DC Linear	0-20mA, 4-20mA, 0-50mV, 10-50mV, 0-5V, 1-5V, 0-10V, 2-10V. Scaleable -32000 to +32000
Measuring Accuracy	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
Input sample rate	10Hz (100msec)
Sensor Break Detection	Break detected within two seconds. Control outputs turn to off (0% power). Alarms activate

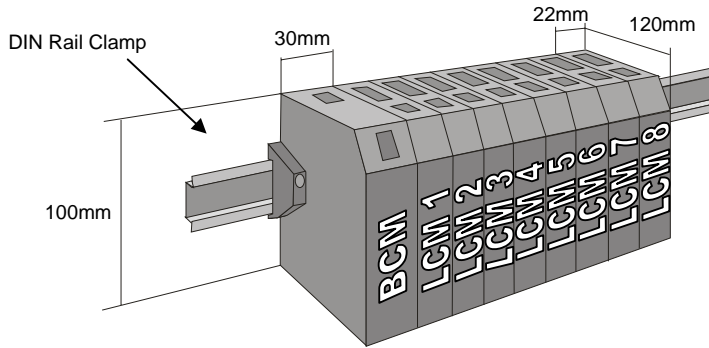
#### Outputs

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.

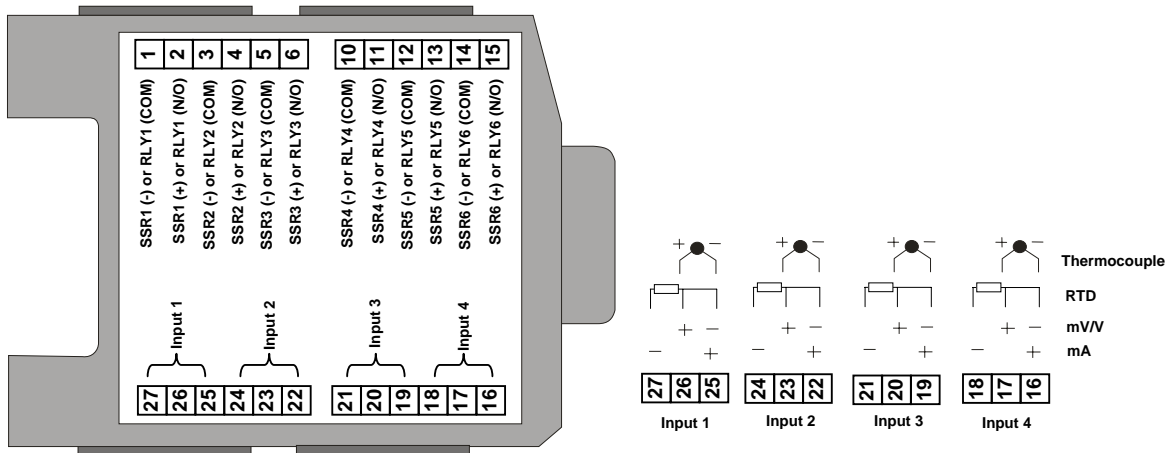
#### Environmental Specifications

Supply Voltage	Powered by Bus Module 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 (EN50022, DIN46277-3)
Approvals & Certifications	EMC: Certified to EN61326. Safety: Complies with EN61010 and UL 3121-1

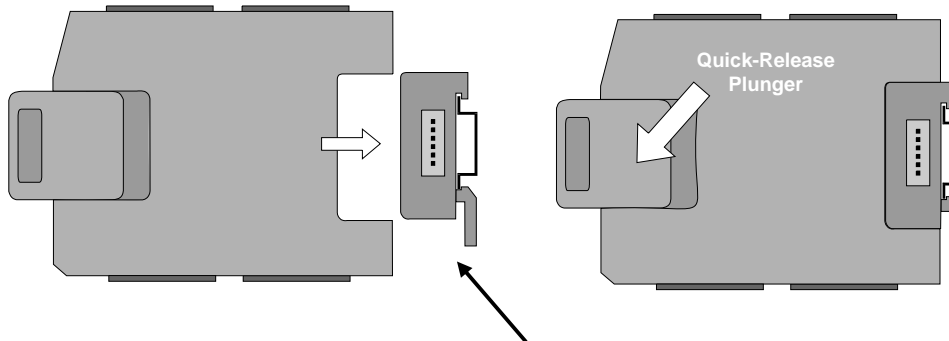
### System Dimensions



### Connection Details



### LCM Mounting Details



### Order Code

MLC 9000-Z4610  
MLC 9000-Z4620  
MLC 9000-Z4660

### Inter-Connect Module

Four Universal inputs, six relay outputs  
Four Universal inputs, six SSR outputs  
Four Universal inputs, four SSR and 2 relay outputs

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