West MLC 9000 Loop Controller Module

Each Four Loop Controller Module (LCM), is an independent PID controller. Up to a max of eight LCMs can be configured for each Bus Communications Module (BCM). Each LCM contains its own PID processor as well as all input and output connections. Mixed installations of Single Loop and Four Loop LCMs are possible. Each LCM can be removed and replaced (Hot Swapped) whilst the process is running.

- **One Independent PID control loop per module**
- **RaPID fuzzy logic control**
- **100ms Scan Time**
- **Fully user configurable via Software**
- **Hot Swap with auto loop configuration**
- **Dual and Triple outputs available**

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 to + 1759°C (-400 to +3198°F) dependant on T/C type
RTD	3-wire PT100 -199.9˚C to +800.3˚C (-327.3˚F-1472.5.3˚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 O/Ps turn off (0% power). All alarms activate (except Heater Break Alarm). Redundant T/C version switches to 2nd input within 2 seconds
Redundant Thermocouple	C231 variant only. Automatically switches to backup Thermocouple when primary probe fails
Heater Break Alarm	
Function	Optional. Compares heater current to nominal. Alarms for High/Low current or S/C 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 double throw (SPDT). Rating: 2A resistive @120/240VAC Lifetime: >500,000 operations at rated voltage/current
SSR Drive Outputs	Drive Capability: 12VDC nominal (10VDC 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 drive capability (500 ohm).
Environmental Specifications	
Supply voltage	Powered by BCM within its operating condition
Ambient Temperature	0˚C to 55°C (32˚F to 131˚F)
Storage	-20˚C to 80˚C (-4˚F to 176˚F)
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
Approvals & Certification	EMC: Certified to EN61326. Safety: Complies with EN61010 and UL 3121-1

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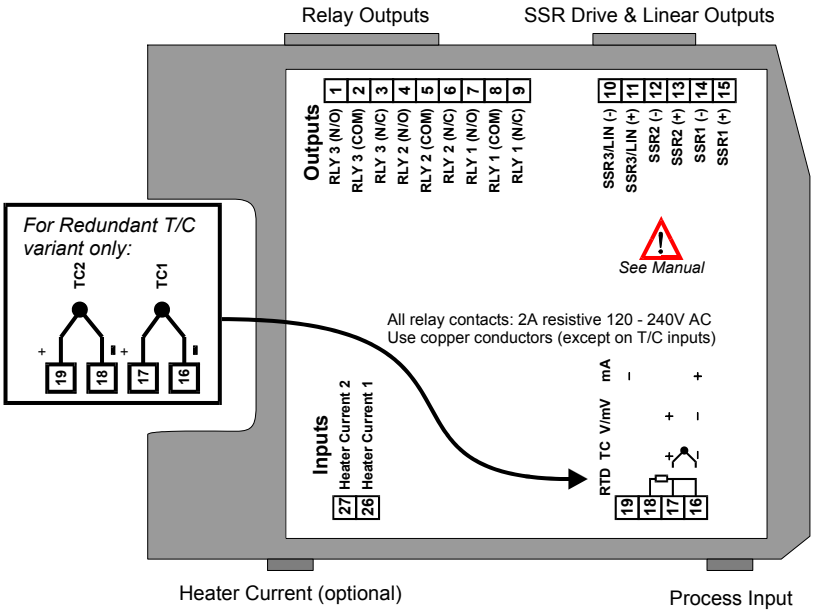
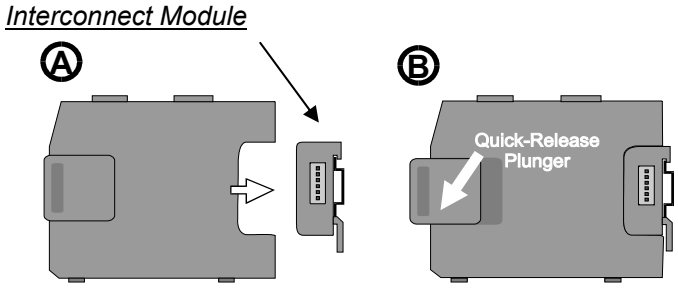
Connecting to the LCM



LCM Mounting Details



Order Codes

MLC 9000-C120	1 Process input with 2 Outputs Input type selectable as RTD, Thermocouple or DC (mV, Volts or mA) Both outputs independently selectable as Relay or SSR
MLC 9000-C130	1 Process input with 3 outputs Process input type selectable as RTD, Thermocouple or DC (mV, Volts or mA) Outputs 1 & 2 independently selectable as either Relay or SSR Output 3 selectable as Relay, DC pulse for SSR or DC linear (Volts or mA)
MLC 9000-C230	1 Process input, 1 heater current input with 3 outputs Process input type selectable as RTD, Thermocouple or DC (mV, Volts or mA) Outputs 1 & 2 independently selectable as either Relay or SSR Output 3 selectable as Relay, DC pulse for SSR or DC linear (Volts or mA)
MLC 9000-C231	2 Thermocouple inputs (1 plus 1 redundant), 1 heater current input with 3 outputs Input type Thermocouple with redundant Thermocouple input Outputs 1 & 2 independently selectable as either Relay or SSR Output 3 selectable as Relay, DC pulse for SSR or DC linear (Volts or mA)

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