

IMP Series Control Modules

Series IMP Temperature Control Module

Athena's Series IMP Modules use microprocessor-based circuitry to perform all required control functions. Units have built-in diagnostics and are fully self-tuning - setpoint temperatures are maintained without the need to manually preset or adjust the control temperature.

- Simultaneous digital setpoint and digital temperature indication.
- Available in 15- and 30-amp modules as well as single-zone 15- and 30-amp portable temperature controllers.
- Compatible with existing Athena "G+", D-M-E "G" Series, D-M-E "Smart" Series, and other standard mainframes.
- Compu-Step® feature removes moisture from the heater before full power is applied.
- Compu-Cycle® feature improves response time, reduces thermal fatigue and prolongs heater life by applying AC power smoothly and continuously.
- Manual control for non-thermocouple applications, provides standby or "weekend" heat or to manually control temperature if a thermocouple fails.
- Diagnostic and protection features include power "on", power to load, manual mode, and over/under temperature, plus indicators and system protection for reversed and open thermocouples.
- SafeChange™ "hot swap" feature allows safe removal and replacement of module.
- Available standby heat and alarm accessory module (SAM) automatically sets all zones for standby, or "weekend" heat, and provides visual and audible alarms for over/under temperature.



Model IMPD15




15 Amp 1-11..... \$210.00
 12+..... \$195.00

Model IMPD30

30 Amp \$480.00

Series IMP Technical Specifications

Performance Specifications

Control Mode	CompuCycle® system.
Temperature Range	Ambient to 999°F or ambient to 535°C.
Temperature Reset	Automatically corrects reset to within 2°F (1°C) at all settings.
Control Accuracy	±1.0°F (±0.5°C) dependent on total thermal system.
Temperature Stability	±0.5% of full scale over ambient range of 32 to 140°F (0 to 60°C)
Calibration Accuracy	Better than 0.2% of full scale.
Power Response Time	Better than 0.13 seconds.
Compensated Manual Mode	Maintains constant output power to within 1% of manually set power level with line voltage variation from 192 to 264 volts. Power control range is from 0 to 100%, using the CompuCycle system power drive.
Over Temperature Indicator	The upper segment of the leftmost display will be "on" and the whole display flashes at about 2 Hz when the temperature error exceeds +30°F (+17°C).
Under Temperature Indicator	The lower segment of the leftmost display will be "on" and the whole display flashes at about 2 Hz when the temperature error exceeds -30°F (-17°C).
TC Break Indication	Flashing "  " on the leftmost display (in closed-loop and CompuStep).
TC Reverse Indication	Flashing "  " on the leftmost display (in closed-loop and CompuStep).
No Heat/Open Heater Indication	Flashing "  " center segment only of the leftmost display (in closed loop).
CompuStep® System Control Mode	Variable stepping voltage, phase fired.
CompuStep® System Duration	Approximately 5 minutes.
CompuStep® System Output Voltage	Step approximately from 25V _{RMS} to 170V _{RMS} with 240 Vac line input.
CompuStep® System Holding Temperature	256°F (125°C).
CompuStep® System Override Temperature	200°F (93°C).

Input Specifications

Thermocouple (T/C) Sensor	Type "J" , grounded or ungrounded.
External (T/C) Resistance	Greater than 1000 ohms.
T/C Isolation	Isolated from ground and supply voltages.
Cold Junction Compensation	Automatic, better than 0.02°F/°F (0.01°C/°C).
Input Type	Potentiometric.
Input Impedance	22 megohms.
Input Protection	Diode clamp, RC filter.
Input Amplifier Stability	Better than 0.05°F/°F (0.03°C/°C)
Input Dynamic Range	Greater than 1000°F (535°C).
Common Mode Rejection Ratio	Greater than 100 dB.
Power Supply Rejection Ratio	Greater than 90 dB.

Output Specifications

Voltages	240Vac nominal, single phase 120 Vac available.
Power Capability	15 amperes, 3600 watts@240 Vac 30 amperes, 7200 watts@240 Vac.
Output Switch	Internal solid state triac, triggered by ac zero crossing pulses.
Overload Protection	Triac and load use high speed fuses. Both sides of ac line are fused.
Power Line Isolation	Optically and transformer isolated from ac lines. Isolation voltage is greater than 2500 volts.

Electrical Power Specifications

Input Voltage	240/120 Vac, +10% - 20%
Frequency	50 Hz ±3 Hz, 60Hz ±3 Hz.
DC Power Supplies	Internal generated, regulated and temperature compensated.
Module Power Usage	Less than 3 watts, excluding load.

Controls And Indicators

Setpoint Control	Precision 3 digit pushbutton switch, direct reading; Range: 0 to 999°F (535°C); Resolution: 1°F (1°C); Accuracy: Better than 0.5°F(0.3°C)
Manual Power Control	Single turn potentiometer, calibrated scale; Range: 0-100%; Linearity: 10%
Mode Control	3-position sliding switch selects mode of operation: 1. top position - manual mode, 2. middle position - auto mode, 3. bottom position - auto mode with CompuStep system.
Power ON/OFF	Rocker switch, UL,CSA,VDE approved.

RMA Series Control Modules

Series RMA Temperature Control Module

The Athena Series RMA is a microprocessor-based, single-zone temperature controller specifically designed for runnerless molding applications. It features an easy-to-use operator keypad, two LED displays, and discrete indicators for heat output, alarm, F/C indication, manual and closed loop mode.

- Compatible with industry standard control modules and mainframes.
- Accepts Type J thermocouple.
- Bumpless auto/manual transfer.
- Compu-Step® bakeout feature prevents moisture at startup.
- Built-in loop break for open heater, shorted triac, reversed or shorted thermocouple.
- Open thermocouple break protection with jumper-selectable shutdown or average power output based on operation.
- Preset alarms at 30°F (17°C).
- SafeChange™ "hot swap" feature allows safe removal and replacement of module.
- CE-compliant.



Model RMAD15

15 Amp	1-11.....	\$165.00
	12+.....	\$160.00

**Lowest Price
for an Advanced
Microprocessor-Based
Mold Temperature
Control!**

Series RMA Technical Specifications

Performance Specifications

Auto Control Mode	CompuCycle® system.
Control Accuracy	±0.1°F (±0.1°C) dependent on the total thermal system.
Temperature Range	100 to 650°F (37 to 343°C).
Temperature Stability	±0.5% of full scale over the ambient range of 32 to 131°F (0 to 55°C).
Calibration Accuracy	Better than 0.2% of full scale.
Power Response Time	Better than 300 milliseconds.
Process Sampling °F/°C	100 milliseconds (nominal). Jumper-selectable.
CompuStep® System Control Mode	Variable stepping voltage, phase fired.
CompuStep® System Duration	Approximately 5 minutes.
CompuStep® System Output Voltage	Steps approximately from 25 V _{RMS} with 240 Vac line output, phase fired.
CompuStep® System Override Temperature	200°F (93°C).
Operational Mode Priority	a. TC open, TC reverse, Shutdown, and Open heater override CompuStep® system. b. Manual mode overrides TC open TC reverse.

Input Specifications

Thermocouple (T/C) Sensor	Type "J", grounded or ungrounded
External T/C Resistance	Maximum 100 ohms for rated accuracy.
T/C Isolation	Isolated from ground and supply voltages.
Cold Junction Compensation	Automatic, better than 0.02°F/°F (0.01°C/°C).
Input Type	Potentiometric.
Input Impedance	10 megohm.
Input Protection	Diode clamp, RC filter.
Input Amplifier Stability	Better than 0.05°F/°F (0.03°C/°C).
Input Dynamic Range	Greater than 999°F (537°C).
Common Mode Rejection Ratio	Greater than 100 dB.
Power Supply Rejection Ratio	Greater than 70 dB.

Output Specifications

Voltages	240 Vac nominal, single phase 120 Vac available.
Power Capability	15 amperes, 3600 watts @240 Vac.
Overload Protection	Triac and load use high speed fuses. Both sides are fused.
Power Line Isolation	Optically and transformer isolated from ac lines. Isolation voltage is greater than 2500 volts.
Output Drive	Internal solid state triac, triggered by ac zero crossing pulses.

Controls And Indicators

Setpoint Control	Two button up or down. Resolution: 1°F (1°C).
% Power Control	Two buttons up or down.
Mode Control	Push button switch with LED indicator for manual mode.
Display	Top: 3-digit filtered LED Bottom: 3-digit filtered LED.
Status Indicators	Heat output alarm, F/C, % output, CompuStep, Manual, Closed Loop
Power On-Off	Rocker switch, UL, CSA, and VDE approved.

Electrical Power Specifications

Input Voltage	240/120 Vac, +10% -20%.
Frequency	50 Hz ±3 Hz, 60 Hz ±3 Hz.
DC Power Supplies	Internal generated, regulated and temperature compensated.
Module Power Usage	Less than 3 watts, excluding load.

RMB Series Control Modules

Series RMB Temperature Control Module

The Athena Series RMB is a microprocessor-based, single-zone temperature controller specifically designed for runnerless molding applications.

It features an easy-to-use operator keypad, two LED displays, and three discrete indicators for heat-current, alarm and manual mode.

- Compatible with existing Athena "G+", D-M-E "G" Series, D-M-E "Smart" Series, and other standard mainframes.
- Accepts Type J or Type K thermocouple input (jumper selectable).
- Auto-tuning, with adjustable proportional band and rate.
- Bumpless auto/manual transfer.
- Compu-Step® bakeout feature prevents moisture at startup.
- Built-in loop break, short, open, and reverse thermocouple protection.
- Built-in triac safety protection.
- Ground-fault protection.
- Preset alarms at 30°F (17°C).
- Jumper-selectable soft-start mode.
- Current monitor feature displays average current to load.
- SafeChange™ "hot swap" feature allows safe removal and replacement of module.
- CE-compliant.



Model RMBD15

15 Amp 1-11..... \$190.00
12+..... \$185.00

Model RMBD30

30 Amp \$540.00

Series RMB Technical Specifications

Performance Specifications

Auto Control Mode	CompuCycle® system.
Control Accuracy	±0.1°F (±0.1°C) dependent on the total thermal system.
Temperature Range	32 to 999°F (0 to 537°C).
Temperature Stability	±0.5% of full scale over the ambient range of 32 to 131°F (0 to 55°C).
Calibration Accuracy	Better than 0.2% of full scale.
Power Response Time	Better than 300 milliseconds.
Process Sampling °F/°C	100 milliseconds (nominal). Jumper-selectable.
CompuStep® System Control Mode	Variable stepping voltage, phase fired.
CompuStep® System Duration	Approximately 5 minutes.
CompuStep® System Output Voltage	Steps approximately from 25 V _{RMS} with 240 Vac line output, phase fired.
CompuStep® System Override Temperature	200°F (93°C).
Operational Mode Priority	a. TC open, TC reverse, Shutdown, and Open heater override CompuStep® system. b. Manual mode overrides TC open TC reverse.

Input Specifications

Thermocouple (T/C) Sensor	Type "J" or Type "K", grounded or ungrounded (switch-selectable).
External T/C Resistance	Maximum 100 ohms for rated accuracy.
T/C Isolation	Isolated from ground and supply voltages.
Cold Junction Compensation	Automatic, better than 0.02°F/°F (0.01°C/°C).
Input Type	Potentiometric.
Input Impedance	10 megohm.
Input Protection	Diode clamp, RC filter.
Input Amplifier Stability	Better than 0.05°F/°F (0.03°C/°C).
Input Dynamic Range	Greater than 999°F (537°C).
Common Mode Rejection Ratio	Greater than 100 dB.
Power Supply Rejection Ratio	Greater than 70 dB.

Output Specifications

Voltages	240 Vac nominal, single phase 120 Vac available.
Power Capability	15 amperes, 3600 watts @240 Vac; 30 amperes, 7200 watts @240 Vac.
Overload Protection	Triac and load use high speed fuses Both sides are fused.
Power Line Isolation	Optically and transformer isolated from ac lines. Isolation voltage is greater than 2500 volts.
Output Drive	Internal solid state triac, triggered by ac zero crossing pulses.

Controls And Indicators

Setpoint Control	Two button up or down. Resolution: 1°F (1°C).
% Power Control Mode Control	Two buttons up or down. Push button switch with LED indicator for manual mode.
Display	Top: 3-digit filtered LED Bottom: 4-digit filtered LED.
Status Indicators	Heat-current output alarm.
Power On-Off	Rocker switch, UL, CSA, and VDE approved.

Electrical Power Specifications

Input Voltage	240/120 Vac, +10% -20%.
Frequency	50 Hz ±3 Hz, 60 Hz ±3 Hz.
DC Power Supplies	Internal generated, regulated and temperature compensated.
Module Power Usage	Less than 3 watts, excluding load.

RMC Series Control Modules

Series RMC Temperature Control Module

The Athena Series RMC brings new and highly productive benefits to injection molders looking for a modular hot runner controller that's flexible, easy to set up, and simple to operate. Using the popular Modbus® communications protocol, the next generation RMC gives users the ability to set or change all zones, either remotely from a desktop computer, from a Palm® handheld device, or (with the All command) from any other individual RMC module in the communication equipped mainframe.

- Choice of three default modes for open thermocouple condition.
- Built-in triac safety protection.
- Accepts J or K thermocouple input (jumper selectable).
- SafeChange™ "hot swap" feature allows safe removal and replacement of module.
- Compu-Step® bakeout feature prevents moisture in heaters at startup.
- Built-in loop break, short, open, and reverse thermocouple protection.
- "Boost" mode for temporary % of power output increase.
- Ground-fault protection.
- Adjustable setpoint limits.
- Stores highest temperature detected.
- Current monitor feature displays average current to load.
- CE-compliant.



	Model RMCD15	
15 Amp	1-11.....	\$295.00
	12+.....	\$280.00

Series RMC Technical Specifications

Performance Specifications

Auto Control Mode	CompuCycle® system.
Control Accuracy	±0.1°F (±0.1°C) dependent on total thermal system.
Temperature Range	32 to 999°F (0 to 537°C).
Temperature Stability	±0.5% of full scale over the ambient range of 32 to 131°F (0 to 55°C).
Calibration Accuracy	Better than 0.2% of full scale.
Power Response Time	Better than 300 milliseconds.
Process Sampling °F/°C	100 milliseconds (nominal). Jumper-selectable.
CompuStep® System Control Mode	Variable stepping voltage, phase fired.
CompuStep® System Duration	Approximately 5 minutes.
CompuStep® System Output Voltage	Steps approximately from 25 V _{RMS} with 240 Vac line output, phase-fired.
CompuStep® System Override Temperature Operational Mode Priority	200°F (93°C). a. TC open, TC reverse, Shutdown and Open heater override CompuStep system. b. Manual mode overrides TC open, TC reverse.

Input Specifications

Thermocouple (T/C) Sensor	Type "J" or Type "K", grounded or ungrounded (switch-selectable).
External T/C Resistance	Maximum 100 ohms for rated accuracy.
T/C Isolation	Isolated from ground and supply voltages.
Cold Junction Compensation	Automatic, better than 0.02°F/°F (0.01°C/°C).
Input Type	Potentiometric.
Input Impedance	10 megohms.
Input Protection	Diode clamp, RC filter.
Input Amplifier Stability	Better than 0.05°F/°F (0.03°C/°C).
Input Dynamic Range	Greater than 999°F (537°C).
Common Mode Rejection Ratio	Greater than 100 dB.

Power Supply Rejection Ratio	Greater than 70 dB.
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Output Specifications

Voltages	240 Vac nominal, single phase 120 Vac available.
Power Capability	15 amperes, 3600 watts @240 Vac.
Overload Protection	Triac and load use high speed fuses. Both sides are fused (GBB).
Power Line Isolation	Optically and transformer isolated from ac lines. Isolation voltage is greater than 2500 volts.
Output Drive	Internal solid state triac, triggered by ac zero crossing pulses.

Controls And Indicators

Setpoint Control	Two button up or down. Resolution: 1°F (1°C).
% Power Control	Two buttons up or down.
Mode Control	Push button switch with LED indicator for manual mode. Top: 3-digit filtered LED. Bottom: 4-digit filtered LED.
Display	Heat-current output alarm. Rocker switch, UL, CSA, and VDE approved.
Status Indicators	
Power On-Off	

Electrical Power Specifications

Input Voltage	115 to 230 Vac, ± 10%.
Frequency	50-60 Hz.
DC Power Supplies	Internally generated, regulated and temperature compensated.
Module Power Usage	Less than 6 watts, excluding load.

RMT Series Control Modules

Series RMT (2 Zones per Slot) Temperature Control Module

The Athena Series RMT is a microprocessor-based, dual-zone temperature controller specifically designed for runnerless molding applications, effectively doubling the zone count per module without doubling the price. It features two easy-to-use operator keypads, and discrete indicators for heat output, alarm, F/C indication, manual and closed loop mode.

- Accepts Type J thermocouple.
- Bumpless auto/manual transfer.
- Compustep[®] bake out feature prevents moisture at startup.
- Built-in loop break for open heater, shorted triac, reverse or shorted thermocouple.
- Preset alarms at 30°F (17°C).
- SafeChange™ "hot swap" feature allows safe removal and replacement of module.
- CE-compliant.
- 15 Amps per zone.



Model RMTD15

15 Amp	1-11.....	\$275.00
	12+.....	\$260.00



An advanced mold temperature control system that uses less space, is easy to operate and costs much less per hot runner zone than single zone per module systems!