



IMP SERIES - SINGLE ZONE MODULAR TEMPERATURE CONTROLLER

Athena's Series IMP Modular Hot Runner controller is a microprocessor-based, single-zone temperature controller specifically designed for runnerless molding applications. The controller is fully self-tuning, with built-in diagnostics, and features an easy-to-use operator keypad with simultaneous process and set point displays and discrete indicators for heat output, alarm, °F / °C, manual/closed loop mode, and CompuStep™.

Athena's Series IMP feature fixed PI control, with a 30° deviation, making them suitable for precise temperature control of mold tips.

KEY FEATURES

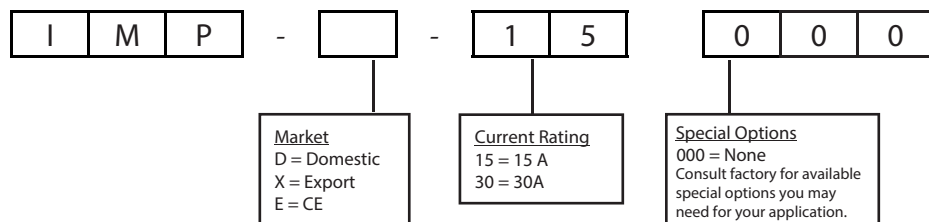
- CompuStep™ bake out feature removes moisture from the heater before full power is applied
- CompuCycle™ feature improves response time, reduces thermal fatigue, and prolongs heater life by applying AC power smoothly and continuously
- SafeChange™ "hot swap" feature allows safe removal and replacement of modules
- Compatible with all D-M-E Company's G Series™ and Smart Series™, Yudo™, and Incoe™ brand mainframes
- Accepts Type "J" or "K" thermocouple input (dip switch selectable)
- Current monitoring feature displays average output current to load
- Bumpless auto/manual transfer (dip switch selectable)
- Built-in loop break, open, and reverse thermocouple protection
- Preset alarms at 30°F (17°C)
- CE Compliant
- Available in 30 amp modules
- Available 10 and 15 amp single zone portable units



Fig 1. IMP Modular Controller showing single zone temperature control and 'thumbwheel' setpoint adjustment.



ORDERING INFORMATION



Technical Specifications For IMP Controller

PERFORMANCE SPECIFICATIONS

Auto Control Mode	CompuCycle® System
Control Accuracy	± 0.1°F (± 0.1°C) dependent on total thermal system
Ambient Temperature	32°F to 130°F (0°C to 55°C)
Temperature Stability	± 0.5% of full scale over the ambient range of 32°F to 130°F (0°C to 55°C)
Calibration Accuracy	Better than 0.2% of full scale
Power Response Time	Better than 200 ms
Process Sampling	100 ms (nominal)
CompuStep® System Control Mode	Variable stepping voltage, phase angle fired
CompuStep® System Duration	Approximately 5 min.
CompuStep® System Output Percent	Steps approximately 4% of input voltage
CompuStep® System Override Temperature	200°F (93°C)
Error Mode Response	a. T/C Open, TC reverse, TC shorted and Loop Break overrides Auto mode/CompuStep® b. Manual Mode overrides T/C Open and T/C Reverse

INPUT SPECIFICATIONS

Thermocouple (T/C Sensor)	Type "J" or "K" grounded or ungrounded (Dip Switch Selectable)
External T/C Resistance	Maximum 100 ohms for 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

OUTPUT SPECIFICATIONS

Voltages	240 Vac nominal, single phase 120 Vac available
Power Capability	15 amps, 3600 watts @ 240 Vac
Overload Protection	Triac and load use fast blow fuses Both control legs are fused (ABC) Optional: High Speed Fuses (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

Set Point 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)
Display Top	3-digit filtered LED
Status Indicators	Heat Output Alarm Degrees F/C Soft Start CompuStep® Mode Indication
Power On/Off	Rocker Switch, UL, CSA, and VDE approved

ELECTRICAL POWER SPECIFICATIONS

Input Voltage	240 Vac +10%/-15% (204 - 265 Vac)
Frequency	50 Hz + 3 Hz, 60 Hz + 3 Hz
DC Power Supplies	Internally generated, regulated, and temperature compensated
Module Power Usage	Less than 3 watts, excluding load

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