

# *fast* *heat*®

TEMPERATURE INTELLIGENCE



## PULSE

HOT RUNNER CONTROL SYSTEM







TEMPERATURE INTELLIGENCE



## The Fast Heat Approach

Injection molding companies are facing increased global competition and working harder to maintain high levels of productivity with less company resources. The energy and material resin prices seem to continually trend upwards while engineering and new innovative market applications require tighter tolerances, complex geometries, and advanced material resins. Fast Heat can help with these challenges.

The Fast Heat Approach is to fully understand and support our customer's efforts to save money, reduce downtime, and improve overall productivity. Working together, we will reduce hidden ownership costs that can be often overlooked when selecting the appropriate hot runner temperature controller. The result of our partnership is a product and service program that can be best described as – **Reliable, Precise, Efficient, and Flexible.**

With worldwide installations, Fast Heat is a global technology leader helping injection molding companies manufacture complex components and maintain their competitive advantage.

# Pulse

## Hot Runner Control System

## Temperature Intelligence

Fast Heat's core competence is precise temperature control. The Fast Heat control algorithm is unique in that it does not require physical tuning. From the moment the controller is turned on, it starts learning how to stabilize the temperature. We surround our innovative technologies with an easy-to-use control interface and modular cabinet design that includes cost saving features such as evensoak, waterfall, auto slaving, and active thermocouple protection.

# The Fast Heat Approach

Save money, Reduce downtime, and Improve overall productivity

## Reliable

Active Thermocouple Protection – Protect T/Cs from failing open due to improper grounding.

- T/C - \$12 each.
- Tooling downtime - \$100 to \$7,000/hour.

Robust Industrial Design, Modules, and Components.

- 75% reduction in module failures.

Secondary Output Shutoff – Protect heating element from a “runaway” temperature condition. Cut-off relays can open and trigger alarm.

- Heating element - \$500 to \$1,000 each.
- Install new heater - \$200 each.
- Tooling downtime - \$100 to \$7,000/hour.

## Precise

Fast Tune Technology – Constantly tuning. Will identify trends and process changes quickly.

- Maintain precise temperature control for high volume complex components.
- Sort defective parts - \$500 to \$25,000 per incident.

Temperature Control Accuracy:  $\pm 0.5^\circ\text{F}$ .

- Improve CpK values and reduce scrap.
- Use alternative material resins.

*fast*  *heat*

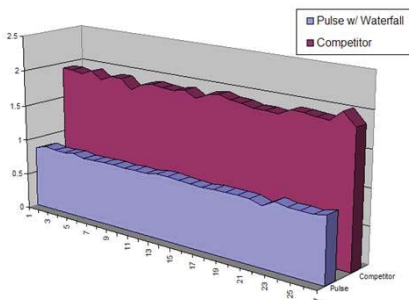
## Efficient

Auto Slaving – “Borrow” another zone’s T/C.

- No tooling downtime.
- Maintain production schedule.

Waterfall – All zones are managed as a system. This reduces peak demand electrical consumption.

- Energy Savings - \$100 to \$1,000 per year per controller. See Illustration below.



## Flexible

SoftSoak w/At Temp connection – Prevent operator from pushing cold slug and/or ignoring start-up procedure.

- Cold Slug - \$1,000 for heater replacement.
- Cracked screw replacement - \$5,000 per incident.
- Tooling Downtime - \$1,000 to \$10,000 per incident.

Excellent Service and Technical Support

- Save \$1,000s in repair costs over life of Fast Heat Hot Runner Temperature Controller.

Calibration – Can calibrate a 30 Zone controller in 5 minutes on shop floor. No technician needed.

- Service Call - \$1,000 per visit.

Customized I/O Connections

- Can be easily integrated into an automated system.



# Fast Heat Family of Controllers



Product	Pulse I P24	Pulse II P30	Pulse II P60	Pulse II P120	Pulse II P180
<b>Physical Specifications</b>					
Cable Length (FT.)	20 (standard) or 30	20 (standard) or 30	20 (standard) or 30	20 (standard) or 30	20 (standard) or 30
Outside Dimensions-Overall (W" x D" x H")	20x24x62	22x26x67	22x26x67	33x26x67	44x26x67
Approximate Weight (lbs.)	70	100	225	230-355	365-490
<b>Mainframe or Chassis</b>					
Maximum Number of Zones	24	30	60	120	180
Card Slots	12	15	30	60	90
Display Screen-Type	Mono	Color	Color	Color	Color
Recipe Storage	10	50	50	50	50
Optional Transformers	15 kVA	30 or 45 kVA	30 or 45 kVA	30 or 45 kVA	30 or 45 kVA

## Performance Specifications

- Thermocouple Calibration Accuracy: 0.15 F (0.1 C)
- Control Accuracy (Steady State): +0.1 F (+0.05 C)
- Power Response Time: 8.3 msec. OR 1/2 line cycle at 60 Hz
- Process Sampling: 50msec
- Control Algorithm: Proprietary PID with model based autotuning
- Degrees F or C: Field selectable
- Operating Range: 0-999 F (0-500 C)
- Output Voltage: 0-240 VAC, time based
- Standby Temperature: User Selectable (0-999 F, 0-500 C)

## Electrical Specifications

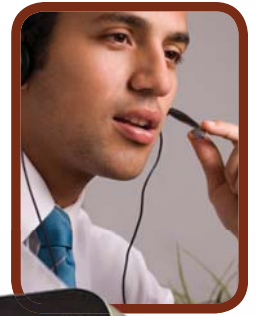
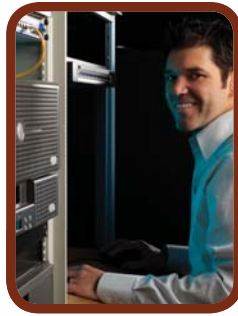
- Input Voltage: 160-265 VAC Delta or VAC Wye
- Frequency: 47-53 Hz, 57-63 Hz
- Ambient Temperature Range: 32-120 F
- Humidity Range: 10-94% non-condensing
- Output Module Rating: 240 VAC with two models
- Dual Zone Module (2 zones): 20 Amps/zone, 3600 W/zone
- Single Zone Module (1 zone): 30 Amps/zone, 7200 W/zone
- Communication Electrical Standard: RS-485, networkable SPI Standard

## Input Specifications

- Thermocouple: Type J Standard, Type K Selectable (grounded T/Cs)
- Input Isolation: Up to 1,000 VAC
- Cold Junction Compensation: Internal to enclosure
- External Resistance: 12 MOhms
- Temp. Variation due to T/C Length: None fully compensated

## Agency Approvals

- U.S., Canadian, and International: CE Mark
- I.E.C.: 801-1, 801-2, 801-3, 801-4
- Safety: UL-508, UL-873, and CSA



## Customer Service Sets Fast Heat Apart

We appreciate that our customers trust Fast Heat with their precise temperature control needs. Fast Heat service and maintenance programs are designed to meet and exceed our customer's expectations and to provide a long usable life for the Fast Heat Hot Runner Temperature Controller. The Fast Heat Approach will give you precise temperature control for years to come with minimal investment.

Here is a brief list of the services offered by our trained Service Technicians –

- Engineering Support – New Programs and/or Manufacturing Issues
- Preventative Maintenance – Hot Runner Temperature Controllers
- Calibration & Controller Diagnostics
- Technical Seminars
- Demo Unit
- Cable Assemblies
- Module Repair and/or Replacement
- Connectors and Components

Please call Fast Heat today and we can customize a service plan to compliment your Manufacturing operations.



# Testimonials

## Reliable

"We knew we needed an integrated controller but were concerned about the higher purchase price over our modular box units. The Pulse controller fit our needs because it was affordable and offered advanced technical features that save us time and money. Our personnel have all commented on how easy they are to use and that they are reliable."

Corporate Process Engineer

"I prepared a very detailed product comparison between the Pulse and another leading integrated controller. We decided to buy the Pulse because it met our technical requirements and was easier to use. Fast Heat also supplied a trial unit in much less time."

Marathon Special Products – Bowling Green, OH

## Precise

"We need Pulse to achieve the critical gate temperature control required to mold thin wall parts with challenging part geometries."

Advanced Drainage Systems – Hamilton, OH

"We bought our first Pulse controller because of the improvements we would see in mold and controller maintenance. We continue to realize those savings as well as savings in production set-up and ease of use. Our other Plant Managers are taking notice."

Rehrig Pacific Company – Pleasant Prairie, WI

"We had a problem molding Santoprene onto a pre-molded polypropylene part. We were experiencing inconsistency in part quality, ranging from short-shots to flashing. Fast Heat supplied a 12 Zone Controller. We immediately began producing quality finished parts."

Process Engineer

The logo for Fast Heat, featuring the word "fast" in a lowercase, italicized sans-serif font, followed by a red lightning bolt icon, and then the word "heat" in a lowercase, italicized sans-serif font.

## Efficient

Feedback from Waterfall / Energy Study - "Great news. The CPK data shows that parts molded using the pulse were 12% closer to the mean on average. All parts were in tolerance (both controllers) but the ID in the critical dimension area varied 12% above and below the reference point with the MSI controller. Doesn't sound like much but that number is huge when you look at the mating part and how it must fit."

Cavaform International, Florida Power & Light Energy Study –  
St. Petersburg, FL

"The most important factor for us is how simple it is to use. Everything is easy to get to and modify. We don't have to spend a lot of time setting it up or using it. The Pulse is also more efficient than other controllers by the way it provides power."

Becton Dickenson Biosciences – Durham, NC

## Flexible

"When our local government mandated that all equipment be certified to special electrical requirements, Fast Heat is the only company who responded and carried through on their commitment. We are buying our next controller from Fast Heat."

Plant Electrician

"The controller is great!!! We have not had any of the issues with this tool like we were seeing before."

Revere Plastics – Clyde, OH

## Commitment to Quality

Fast Heat's commitment to quality doesn't just live on paper. It's evident in everything we do. We insure that every single one of our products meets rigorous standards so our customers can focus on other things, knowing that they have the best quality components available. All Fast Heat products conform to UL, CE, CSA, NIST and ROHS standards, and are 100% load-tested prior to shipment. From order entry to product shipment, each step of the Fast Heat process has specific quality assurance practices in place.



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