HUSKY®

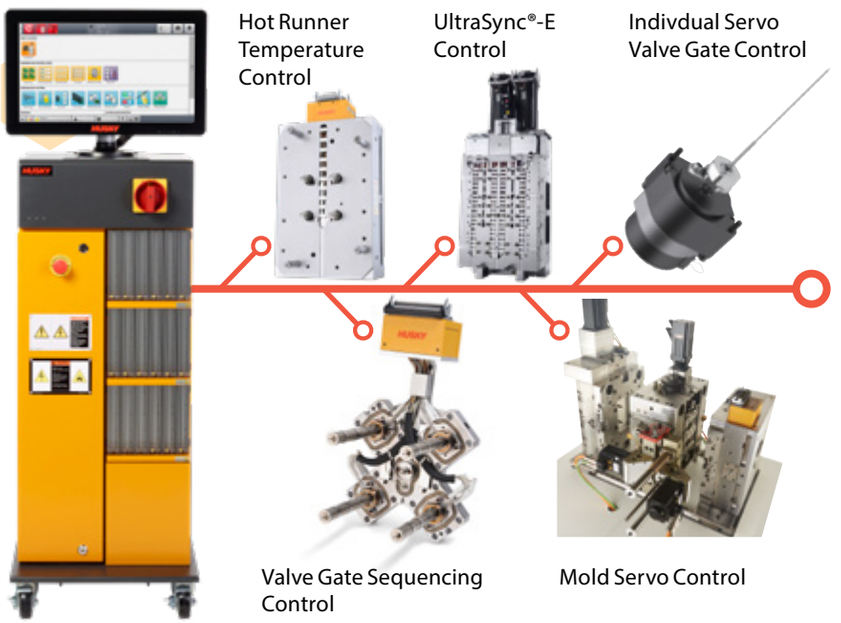
Altanium® Mold Controllers

Accurate and easy to use controllers for the injection molding industry

Husky is a leading global supplier of manufacturing solutions and services for plastics processors. We design, manufacture and integrate the industry's most comprehensive range of injection molding equipment, including machines, molds, hot runners, controllers, auxiliaries and integrated systems.

A highly integrated control platform for all your hot runner and mold control needs

Altanium® mold controllers offer the industry's most integrated platform for single-point access to the highly accurate and straightforward operation of temperature, servo, and valve gate control. They also feature best in class diagnostic and fault recovery solutions and are available in various configurations for implementation in any injection molding environment.



Altanium® Operator Interfaces

Altanium® Neo5™
- 10.1" high definition color touch monitor

Full-featured hot runner temperature control for 2-48 zones optimized for 2-16 cavity applications

Altanium® Delta5™
- 15.6" high definition color touch monitor

Full-featured hot runner temperature control for 2-128 zones optimized for 24-96 cavity applications and available with optional Valve Gate Sequencer and UltraSync®-E control

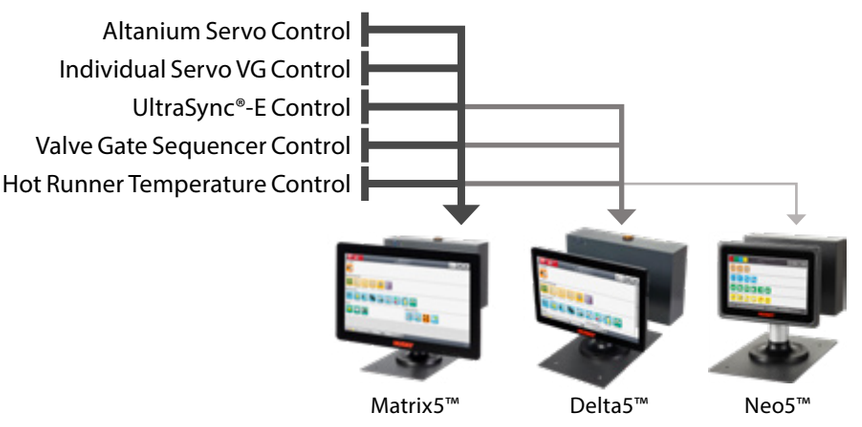
Altanium® Matrix5™
- 22" high definition color touch monitor

Full-featured hot runner temperature control for 2-255 zones optimized for >96 cavity applications and available with optional Valve Gate Sequencer, Individual Servo Valve Gate, UltraSync®-E and up to 6 axes of mold servo control

Most Comprehensive Warranty in the Industry

Husky offers an industry-leading 5-year warranty. Regardless of the configuration, this warranty includes comprehensive coverage of the mainframe, cards, and operator interface across the entire product line.

Features:
- 2 to 255 zones of temperature control
- Interchangeable cards and interfaces across the entire product line
- Industry leading Active Reasoning Technology (ART)
- Automated mold diagnostics and fault recovery
- Password and user name enabled security
- Expandable platform that supports mold servo and valve gate control
- Multi-language support
- Multiple networking and data exchange options (Industry 4.0 ready)

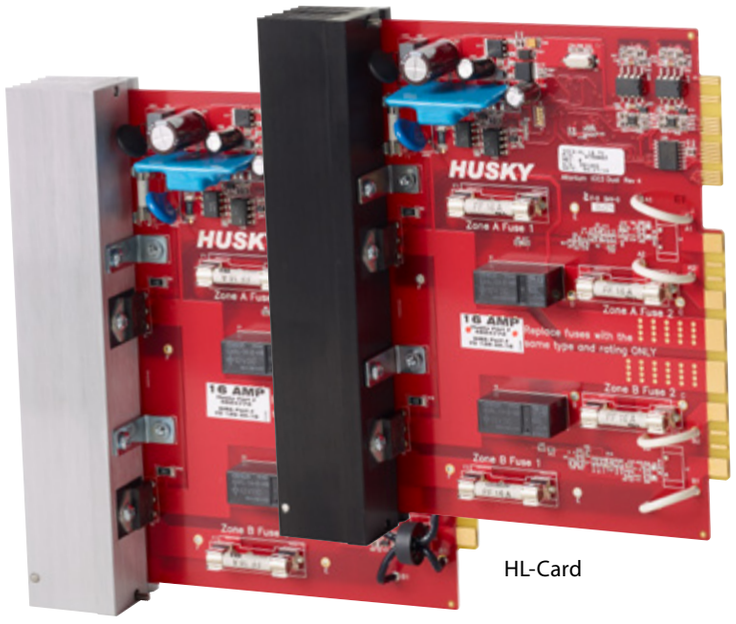


The ART Advantage

All Altanium® mold controllers use Active Reasoning Technology (ART), providing optimized control for greater shot-to-shot and cavity-to-cavity consistency and repeatability. ART delivers tighter control and minimized variability through rapid, smooth power output delivery, fully isolated thermocouple inputs, and industry-leading thermocouple sample rates that ensure the integrity of temperature readings from the mold. The benefits of ART are shorter cycles, lower energy consumption, and improved balance resulting in better melt stream management and a more capable molding cell producing higher quality parts.

H-Series Intelligent Control Cards

H-Series Intelligent Control Cards are the foundation of Altanium® hot runner temperature control and diagnostic capabilities. These cards are interchangeable across the entire product line and are available in a variety of configurations to fit your specific temperature control application and budget.



HL-Card

H-Card

H and HL 4 Zone Card (5A per zone)

- Higher zone density reduces the overall footprint of the controller by as much as 25%, saving valuable floor space

H and HL 2 Zone Card (16A per zone)

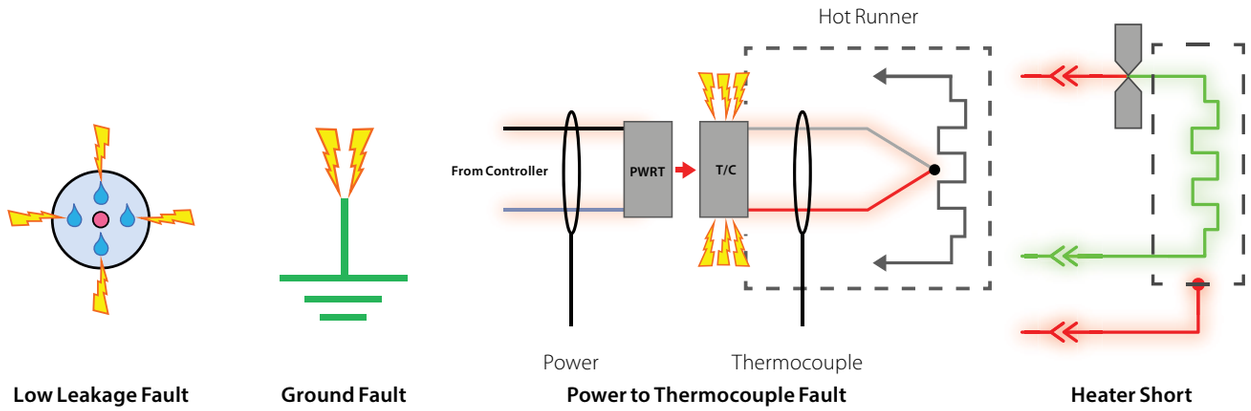
- Maximizes flexibility to run different molds regardless of the tip/manifold wiring scheme

H and HL 1 Zone Card (30A zone)

- Ideal for high current manifold zones commonly used in automotive and other large part applications

Diagnostic and Fault Recovery Capabilities

The H-Series cards integrated current and voltage measurement capabilities provide a window into your mold. On start-up, the cards perform a circuit test, before full power is applied, to reduce the risk of damage to the controller or hot runner system. This test is critical for detecting common heater faults that can result in unnecessary production delays.



Low Leakage Fault **Ground Fault** **Power to Thermocouple Fault** **Heater Short**

After identifying a problem, a step-by-step troubleshooting guide is available so an operator can quickly fix the issue. Once running, Altanium® continually monitors the thermocouple circuits in the mold, and if one fails during operation, the controller has several methods at its disposal to recover without stopping production. Recovery can be made by automatically "following" another zone's power output or applying a fixed power percentage based on a historical average. The result is a reduction in unplanned downtime and higher productivity through shorter production runs.

Features	Cards		Benefits
	HL	H	
Integrated design with external heat sink	✓	✓	Allows for a lower internal operating temperature which extends the working life of the cards
Active Reasoning Technology (ART)	✓	✓	Provides accurate and repeatable temperature control that minimizes deviations from setpoint allowing the opportunity to reduce cycle times and energy consumption
Integrated all-in-one design	✓	✓	Minimizes discrete connections and components which increases reliability and reduces maintenance costs
Safety relay on non-switched leg	✓	✓	Allows both heater legs to be isolated when zone is turned off and system is in run mode, preventing electrical shock or shorts to ground when servicing the mold
Run with grounded or ungrounded thermocouples	✓	✓	Isolated thermocouple inputs provide the flexibility to run any mold without risk of electrical noise interfering with the temperature measurement
Thermocouple following (auto and manual)	✓	✓	Allows automatic on-the-fly recovery of failed thermocouples based on following the power output of a similar zone, eliminating any downtime
Zero-Cross or Phase Angle power output control	✓	✓	Uniform flow of power, reducing time that no energy is being supplied to the heater and ability to limit applied voltage
Card interchangeability	✓	✓	Reduced number of components to stock and maintain contributes to lower maintenance costs
Automated mold diagnostics	✓	✓	Quickly and accurately diagnose issues in the mold without the need for additional tools, limiting downtime and associated costs
On screen board diagnostics (Delta5 and Matrix5 only)	✓	✓	Identifies the exact location of failed card or component, such as a fuse or switching device, reducing downtime and maintenance costs
Power deviation alarm for plastic leak detection	✓	✓	Real-time power deviation monitoring provides early warning detection of resin leaks in the gate area of the mold
Softstart for even thermal expansion on heat up	✓	✓	Contributes to longer mold component life, reduced material degradation due to excessive residency time and maximizes energy efficiency
Multi-cycle wet-heater bake-out	✓	✓	Provides optimal method for extending heater life by applying low voltage to evaporate moisture trapped in the heater's insulation material
Real-time voltage measurement	✗	✓	Helps in diagnosing heating issues in the mold and problems associated with the mains supply to the controller
Real-time amperage measurement	✗	✓	Helps in diagnosing problems in the mold, calculating power consumption and preemptive heater failure
Real-time wattage and ohm calculations	✗	✓	Helps in diagnosing problems in the mold, determining heater size for replacement and calculating power consumption
Real-time earth leakage measurement	✗	✓	Helps to detect earth leakage faults and other types of shorts in the mold that single leg current measurement is not capable of finding
Fast acting short circuit detection	✗	✓	Detects shorts in the mold and opens the circuit before the fuse clears, providing cost and time savings associated with replacing blown fuses
Power to thermocouple detection	✗	✓	Detects when power is mistakenly applied to a thermocouple circuit and shuts power off before the thermocouple wire or hot runner is damaged
Current deviation alarm for failed heater detection	✗	✓	Real-time current deviation monitoring provides early warning detection of a failed heater on a single zone running multiple heaters using a single thermocouple

Technical Specifications

Operating Ambient Temperature	0°C to 40°C (32°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	0 to 95% RH, non-condensing
Input Power	1-PH + Earth (3 wire) 200-240 VAC 3-PH + Earth (4 wire) 200-240 VAC 3-PH + N + Earth (5 wire) 380-415 VAC Other voltages require an input supply transformer (Supply requirements for functional integrity 190 to 254 VAC)
Frequency Range	47-63 Hz (Alternative energy ready)
Measurement Accuracy	±0.5°C (1.0°F) for range 0°C to 600°C (32°F to 1112°F)
Calibration	Standard (Using a NIST traceable thermocouple source)
Cold Junction Error	±0.5°C (1.0°F) @ 25°C (77°F) typically
Temperature Stability	±0.05°C (0.1°F) / °C (°F) from ambient
Control Stability	±1 digit – under steady state conditions
Tuning Method	Active Reasoning Technology (ART) or manually entered parameters
Thermocouple	Grounded or Ungrounded Type J (Type K optional); Sensor break and reverse detection; Upscale failure mode; High impedance input with zone to zone isolation
Heater Outputs	Nominally 240 VAC (Other voltages optional); 16 Amps per zone standard. (5 or 30 Amps optional); Short circuit protection for each zone (Both legs fused)
Alarms	Open Circuit Heater; Output Fuse State; High and Low Temperature; Shorted, Open or Reversed Thermocouple; Ground fault; Power Deviation; Current Deviation; Circuit Overload

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