



VISIONS 3000 CONTROL SYSTEMS

A Serious Intelligent Hot Runner
Temperature Control System



The **VISIONS 3000** has been designed for those whose production and quality systems require:

- Full record keeping of all operational events for a 12 month period of time
- The ability to save and recall over 100 different tool sets
- Full tool protection with comprehensive suite of alarms
- Exceptional accuracy
- Downloadable diagnostic reports and graphs
- Remote system monitoring
- Real time Mold Water System Monitoring (optional)
- Molding System stoppage/stand-by capabilities

VISIONS 3000 FEATURES & CONTROL SYSTEMS HIGHLIGHTS

EASE OF USE – VISIONS 3000 common sense engineering approach provide a fully featured system which is intuitively simple to operate, just turn power on and enter set-points. The intelligent start-up function takes the mold from warm up to steady state in a manner which eliminates uneven thermal expansion.

RELIABILITY:

- Industrial Grade Cabinet
- All fuses and cards easily accessible through front door
- Normal maintenance items can be swapped in a matter of seconds with little or no interruption
- Buss Bar circuitry minimizes wiring connections
- Rugged modular construction
- Display – Impact resistant Touchscreen

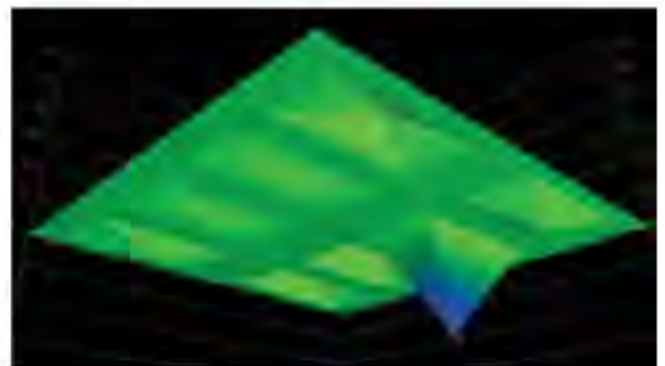
AFFORDABILITY/VIABILITY:

The VISIONS 3000 is the cost effective Hot Runner Temperature Control System.

- Low Cost of Ownership – Reasonable Cost, Longevity, Reliability, Usability, Advanced Features, Upgradable
- Reliability – Visions 3000 are manufactured for Industrial Environments
- Usable Features – Visions 3000 suite of operational and diagnostic features are second to none and intuitively easy to use and understand
- Accurate Control – Adaptive Thermal Control provides superior accuracy, energy savings, precise monitoring and protection
- Maintainability – VISIONS 3000 is designed so everything is easily viewable and accessible
- History – All production data stored and viewable for the past year
- Water Flow – Manifold operating data is displayed with hot runner zones
- Technology – As updates become available they are backward compatible for a 10 year period

ADAPTIVE THERMAL CONTROL:

- Balanced Power Output saves energy and improves heater life reducing down-time
- Auto Tuning, which is adjustable for problematic situations
- Individual Heater P.I.D. Tuning
- Individual Heater Alarm Tolerance Settings
- Individual Heater Power Consumption Monitoring
- Separate Manifold and Cavity Control
- Programmable Manifold Pre-heat Start Up Groups
- Manifold Pre-heat



ALARMS:

There are various alarm triggering events within the VISIONS 3000 System, allowing management to make intelligent operational decisions, such as allowing the system to continue operation, placing the tool in standby, audible or visual alarms and/or to shut down the tool. This allows management the ability to determine a strategy for the molding operation. Alarm initiations are saved for 12 months.

DATABASE:

The VISIONS 3000 has the ability to store and retrieve all Hot Runner and WaterFlo operational set-up and alarm parameters of over 100 mold tool sets. Downloadable and transferable to other VISIONS 3000 control systems.

SECURITY:

There are three levels of security with the ability to define new passwords.

TOOL VALIDATION:

When initiated on a new or reconditioned tool, a full suite of diagnostic tests automatically perform functional analysis on all aspects of the tool and controller, on a zone by zone basis, providing information on any errors which may exist. The results can be stored and downloaded, providing a historical baseline for comparison checks and providing a record of the tools history.

PRO-ACTIVE DIAGNOSTICS:

During normal operation, the VISIONS 3000 constantly monitors all elements to determine functionality of the tool. When the VISIONS 3000 senses a wiring or heating problem an alarm will activate with a description of the error, which is saved to the Alarm History Log.

VISUAL DIAGNOSTICS:

LED's indicators are visible through the front door providing evidence of Output Activity, CPU Communications and Fuse Conditions.

TOOL MOTION DETECTION:

When a signal is provided from the molding machine indicating activity, the VISIONS 3000 activates a count down clock. If another signal is not received in the selected time frame, the VISIONS 3000 is automatically placed in stand-by mode.

SELF DIAGNOSTIC CAPABILITIES:

The VISIONS 3000 Tool Diagnostic Suite performs a full set of functional tests to determine the condition of the mold, controller and machine operation and provide full protection of the tool:

- Swapped heater or thermocouple wires. If one is found, the controller indicates the affected zone
- Heater Power Monitoring and Alarm (Amperage and Wattage) - High/Low limits set to monitor heater operation and detect possible material leakage in the manifold or disruption in the cooling system
- Heater Resistance Monitoring and Alarm - helps predict in advance when a heater is about to fail
- Thermocouple Open, Reversed Thermocouple, Cold Thermocouple, Open Fuse, Open Heater, Shorted Heater, Etc.



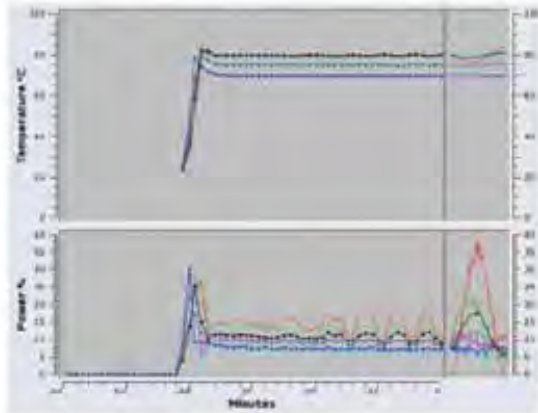
SYSTEM SHUT DOWN:

Selectable failures in the hot runner or WaterFlo operations can trigger an alarm, which will shut down the molding operation, preventing damage.



POWER TEMPERATURE COMPARATOR GRAPHS:

A scalable display of the actual measured value of temperature and power against time for each zone. The Power Temperature Comparator Graph used in conjunction with the Surface Graph feature, allows for expeditious troubleshooting.



Alarm Event Log 2013-05-01

Wed May 1 2013 13:40:33 : User Cleared Alarms.
 Wed May 1 2013 13:40:41 : *** ALARM *** Zones 1,4,7,8 are out of temperature-tolerance. Action: Alarm
 Wed May 1 2013 13:40:49 : *** ALARM *** Zones 1-8 are out of temperature-tolerance. Action: Alarm
 Wed May 1 2013 13:40:57 : *** ALARM *** Zones 3-6 are out of temperature-tolerance. Action: Alarm
 Wed May 1 2013 13:41:13 : *** ALARM *** Zones 1-8 are out of temperature-tolerance. Action: Alarm
 Wed May 1 2013 13:41:31 : *** ALARM *** Zone 2 is out of power-tolerance. Action: Alarm
 Wed May 1 2013 13:41:33 : *** ALARM *** Zones 1,3,7 are out of temperature-tolerance. Action: Alarm

Event Log (all events) 2013-05-01

Wed May 1 2013 08:28:51 : Supervisor
 Wed May 1 2013 08:28:51 : Operator
 Wed May 1 2013 08:28:51 : Layer Operator
 Wed May 1 2013 08:28:51 : Communications are up
 Wed May 1 2013 10:08:31 : User/Supervisor
 Wed May 1 2013 10:08:31 : Controller
 Wed May 1 2013 10:08:31 : Starting c
 Wed May 1 2013 10:08:31 : Starting c

HISTORY LOG:

All Hot Runner and WaterFlo production and alarm data is automatically stored for a period of 12 months, becoming an invaluable resource for today's quality systems and production management. Data includes:

- Individual heater power usage and temperature during the production cycle on a second by second basis
- Individual water channel flow rate and temperature during the production cycle
- All initial set-up settings
- All user and set-point changes made during production
- Alarm activations
- Tool diagnostic reports and set-up files
- All data is time and date stamped, allowing for searches by time and date
- All History Event logs are viewable from the VISIONS 3000 controller and are downloadable



COMMUNICATIONS:

Network capable for off site monitoring
USB, Smartphone, Network Compatible



INDUSTRIAL HARDENED IMPACT RESISTANT COLOR TOUCH SCREEN:

Large 12" Impact
Resistant Safety Glass
Color Touch Screen

Top Box/Touch Screen
can be easily removed for
machine mounting

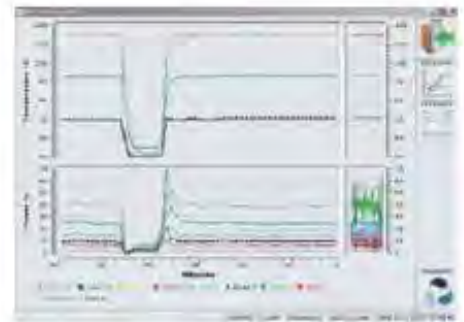
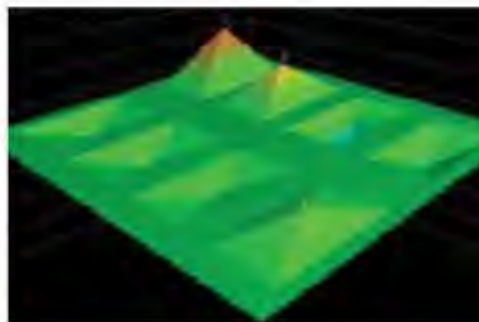
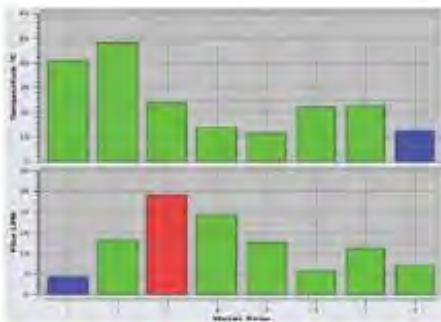
SLAVING:

When one or more zones do not have thermocouple feedback, they can be linked to zones with similar characteristics. This function can be included in the database setup and noted in the History Log.

GRAPHS:

A picture is worth a 1000 words. Graphic Visualization provides immediate insight into the operation of the tool. Scrolling through data from each zone is tedious and time consuming. Now at a single glance, output

power, temperature and water flow are shown in a three dimensional live graph, line graphs and bar graphs. Graphs are color coordinated for Power, Temperature and Water Flow.



BOOST:

User selectable for time and temperature.



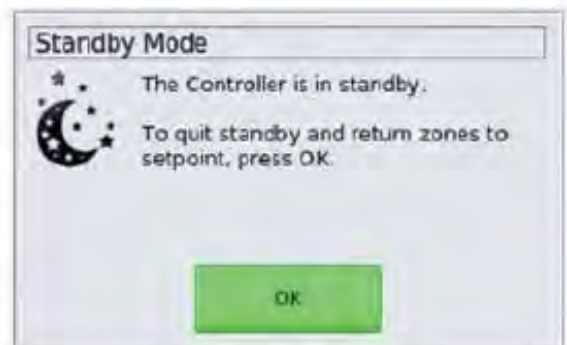
SOFT START:

An automatic feature within the Run Function which slowly brings the temperature of the mold up to 200° F (93° C), then ramps up power until the temperature is within the proportional range.

STAND-BY:

Lowers temperature of a zone or group of zones when the molding process is inactive for a short period of time.

This function is either user selectable of automatic via peripheral interface and can be set-up in the database.



MULTI-LINGUAL:

English, Spanish, Dutch, German, Italian



WATERFLO (OPTION):

WaterFlo is an extremely powerful Real Time Water Flow Rate and Temperature Monitoring tool for a molds water cooling system. By incorporating it with our Hot Runner Control you achieve maximum production, quality and cost benefits. The Optional ITC Smart Manifold and WaterFlo Interface is an extremely accurate (1.5% full range) system, with the ability to Monitor, Measure and Graph flow rate and temperature on a real time basis as well as log 12 months of historical data for each cooling channel. This integrated package of actual water cooling and hot runner data allows for molding efficiencies hereto unavailable. Additionally a warning signal can be generated to activate an external warning device or even disable connected equipment. WaterFlo functions are integrated to display along side hot runner zones.



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