



VISIONS 3000 CONTROL SYSTEM

A Serious Intelligent Hot Runner Temperature Control System

The **VISIONS 3000 CONTROL SYSTEM** is an advanced and affordable Hot Runner Temperature Controller designed for ease of use, reliability and precise temperature control. All **VISIONS CONTROL SYSTEMS** have the necessary flexibility to efficiently and economically operate in smaller single unit environments as well as centralized manufacturing facilities with sophisticated high cavitation processes. In today's demanding environment, molders require the capabilities of our ATC (Adaptive Thermal Control) self-tuning algorithm and powerful diagnostic (Power Temperature Comparator) features, which provides an invaluable insight into the operation of the mold.



AFFORDABILITY

EASE OF USE

DURABILITY

FEATURES

WARRANTY

SELF DIAGNOSTICS

COMMUNICATIONS

MULTI-LINGUAL

The **VISIONS** series of temperature control systems set an Industry standard with its well proven robust design, precise temperature control, sophisticated features, ease of operation, dependability, modular design flexibility and scalability of size.

VISIONS 3000 software incorporates many exclusive and intuitive features which afford superior operation and control over a wide range of molding applications. The **VISION 3000** software also provides ease of access to a variety of informational and diagnostic functions, start-up functions, adjustable alarm limits, boost, standby, zone slaving, password protection, wiring diagnostics one-way and two-way communications, to mention just a few.



FEATURES AND HIGHLIGHTS

Affordability – What good are all the features in the world if the cost is prohibitive? **VISIONS** systems have the modularity to make them a reality for everyone.

ATC Control Technology – Adaptive Thermal Control technology provides an advanced algorithm which is adaptable to different molding environments for precise temperature control.

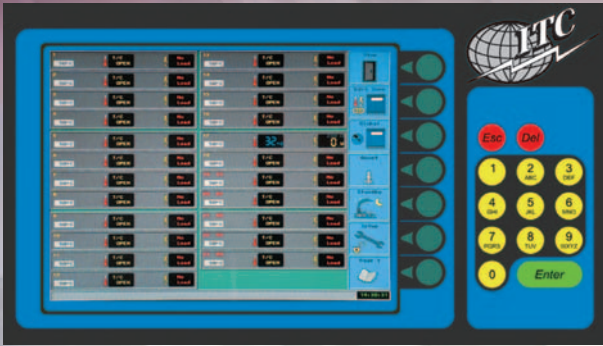
Boost – The boost function is user selectable from the controllers display or it can be automatic via peripheral interface.

Communications – **VISIONS 3000** powerful software provides sophisticated two-way communications capabilities. By means of Ethernet or Discrete protocol, remote devices can receive input from or give output commands to the **VISIONS 3000** controller. Remote devices can operate in either a supervisory function or as a command center. The **VISIONS 3000** also acts as a control device to start or cease operations.

Some of the commands which can be input to or output from the temperature controller are:

Output: Machine cycle, Toolguard, Tool temperature-safe to run, Tool diagnosis-safe to run, Alarm functions including Over/under temperature, Etc.

Input: Control start operation, Tool standby, Tool boost, Toolset data base selection, Temperature set points, Etc.



Ease of Use – VISIONS 3000 systems have been designed to be intuitive and simple to operate. Just turn the system on and enter the set points. The Intelligent Start-up function does the rest, taking the mold from warm-up to steady state in a manner which eliminates uneven thermal expansion. If during start-up, any zone fails to reach set point in a given time frame, the system will alarm indicating the deficient zone.

Graphics – VISIONS 3000 comes with a full set of functional graphics which offer the utmost in usefulness.

Large Color Screen – Graphics style LCD screen and ergonomic membrane arrangement is rugged and particularly well suited for clean room environments as well as the harsh realities of industrial life.



Multi-Lingual – English, Spanish, Danish, Deutsche, Italian, (Other languages can be easily incorporated).

Reliability – Rugged industrial hardened design & construction equates to a unit that will stand up to serious industrial environments.

Power Temperature Comparator – A diagnostic feature in which a graphic comparative view of actual power and temperature against time is displayed.

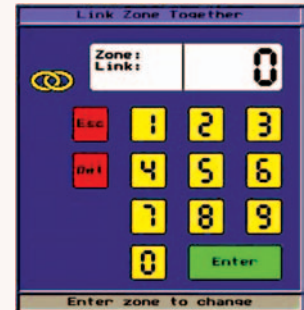
Safe Mode – Lowers the temperature of a zone or group of zones while the molding process is at idle for a short period of time. This function is either user selectable or automatic via peripheral interface.

Security – Three levels of security, plus the ability to define new passwords and access levels.

Self Diagnostics – An intuitive suite of functions which technicians love. These functions are always at hand from start up through operations.

Serviceability – The VISIONS 3000 is a truly modular system. Cards can be swapped in a matter of seconds with little or no interruption.

Slaving – When one or more zones do not have thermocouple feedback, they can be linked to zones with similar characteristics. This function can be selected at the controller or via peripheral interface.



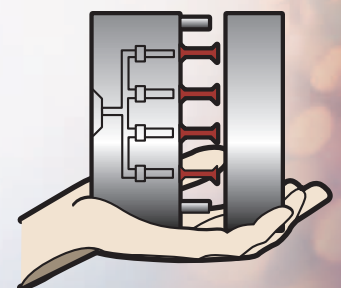
Soft Start – An automatic feature within the Run function. It bakes moisture out of the tool by slowly bringing up the temperature of the mold to 200° F (93° C), then ramps up power until the measured value is within the proportional band for each zone.

System Alarm – The various alarm triggering events within the VISIONS 3000 SYSTEM, allow management to make intelligent operational decisions, such as allowing the system to continue operation, placing the tool in standby, or to shut down the tool. This allows management the ability to determine a strategy for the molding operation.

Tool Database – VISIONS 3000 intelligent control system is able to store and retrieve over 100 mold toolsets. The database can be activated by the user or via peripheral interface.



Toolguard – An exclusive patented feature of the VISIONS 3000 suite of software. Toolguard monitors the performance and operations on the mold and can automatically put the system into safe mode if it detects a failure in the cooling system, or if the tool has stopped cycling. Toolguard prevents excessive heat buildup in the mold, which can degrade material or even damage the mold.



Self Diagnostics

Self Diagnostics Capability:

The **VISIONS 3000** Tool Diagnostics Suite performs a full set of functional tests to determine the condition of the mold, controller and machine operation.

Tool Diagnosis:

A function for troubleshooting new or existing tools, which checks for faults such as:

- Swapped heater or thermocouple wires. If one is found, the controller indicates the affected zone.
- Heater Power Monitoring (heater amperage and/or wattage) to detect leakage.
- Heater Resistance Monitoring to predict heater failure.
- Thermocouple Open, Short, Reversed, Etc.
- Measures resistance of each heater for failure analysis.



Toolguard:

This patented feature monitors the performance and operation of the mold cooling system. The controller will alarm putting the system into safe mode if a water cooling problem is detected.

Machine Interface:

VISIONS 3000 can take a cyclic or constant input from the machine and tool while in production and trigger a shut down if operations cease after a selectable period of time.

Visual Diagnostics:

LED's are visible through the front panel giving evidence of CPU communications, fuse condition and output activity for each zone.

Surface Graphs:

At a glance, Surface Graphs provide an immediate insight into the operation of all tool zones.

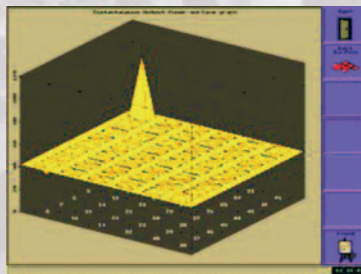
Trend Graphs:

Provides a scalable display of the historic values for a particular zone.

Graphic Visualization

Surface Graphs:

The Surface Graphs feature has been designed to offer an immediate insight into the operational characteristics of the tool. By using this patented feature, the operator no longer has to scroll each zone to determine tool operating conditions. Now anomalies can be seen with a single glance.



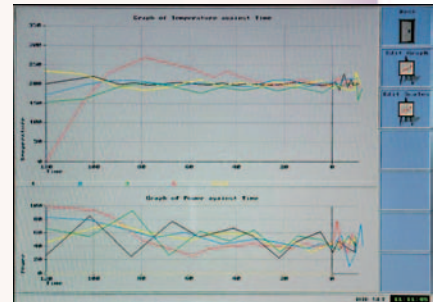
This feature displays temperature values, output power or output percentage information from the tool in a three dimensional graph. This diagnostics method provides a much

quicker and simpler approach than tabulated data or trend graphs.

If anomalies are detected within a zone or group of zones, the particular Power Temperature Comparator Graph for those zones can be called up for an in-depth investigation.

Power Temperature Comparator Graphs:

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



Viewing Modes:

Three viewing modes enable the operator to select the level of detail they wish to see (from 18 to 84 zones per screen).

Normal Display Mode:

Medium density. Displays up to 36 zones (Zone #, Set point, Temperature, Power & Errors).



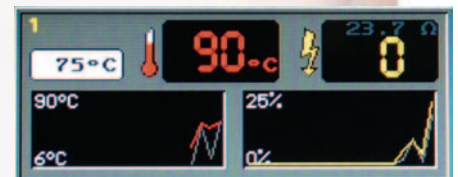
Display Mode 1:

High density. Displays up to 84 zones at one time (displays the same information as in the normal display mode, except condensed).



Display Mode 2:

Low Density. Displays up to 18 zones (an expanded view of data for each zone, including a time line graph of measured temperature and output power).



Options

- Low Voltage Hot Runner Control Systems
- Dual Voltage Hot Runner Control Systems
- High Amperage Zones
- Special / Custom Hot Runner Control Systems
- Special / Custom Cables & Connectors
- Valve Gate Sequencing Available

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