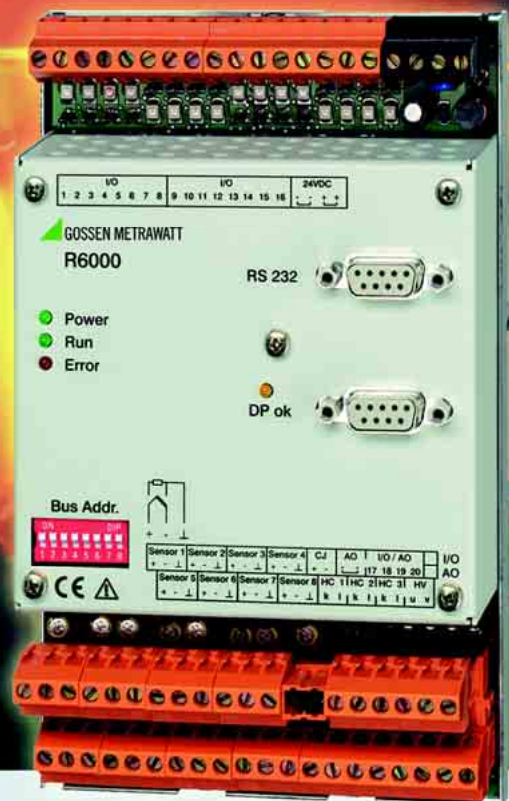


R6000 High Speed Hot-Runner Controller for Demanding Applications

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SPECIAL PUBLICATION



Controller Enhances Quality of Molded Parts

The compact R6000 4/8-channel temperature controller provides concentrated control technology know-how in a rail mount housing, generates new control variables for all 4/8 channels within a period of 100 ms, and monitors heating current without interrupting the regulating cycle. The autonomous controller can be quickly configured, and adapts itself to the utilized control system by means of self-tuning. Outstanding control performance is achieved by means of GOSSEN METRAWATT's own dead-beat PDPI algorithm, which even assures good results for critical applications in the field of plastics processing.

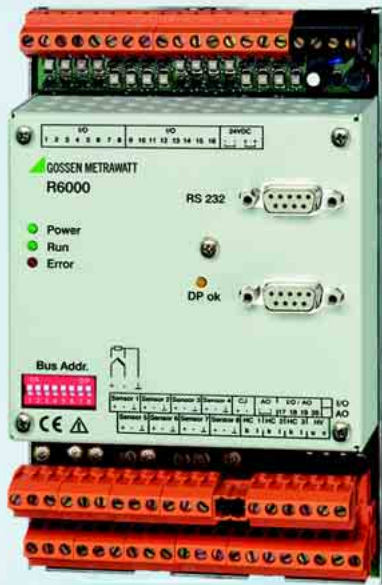


Figure 1: R6000 4/8-Channel Temperature Controller

Precision control and the quality of temperature regulation for hot runner systems have a direct effect on quality, process reliability and unit costs in the production of plastic parts. Custom tailored solutions can be implemented with the R6000 thanks to unsurpassed reliability and dead-beat control performance combined with intelligent functions for operation and error recognition, as well as extreme ease of use, and a user-friendly design.

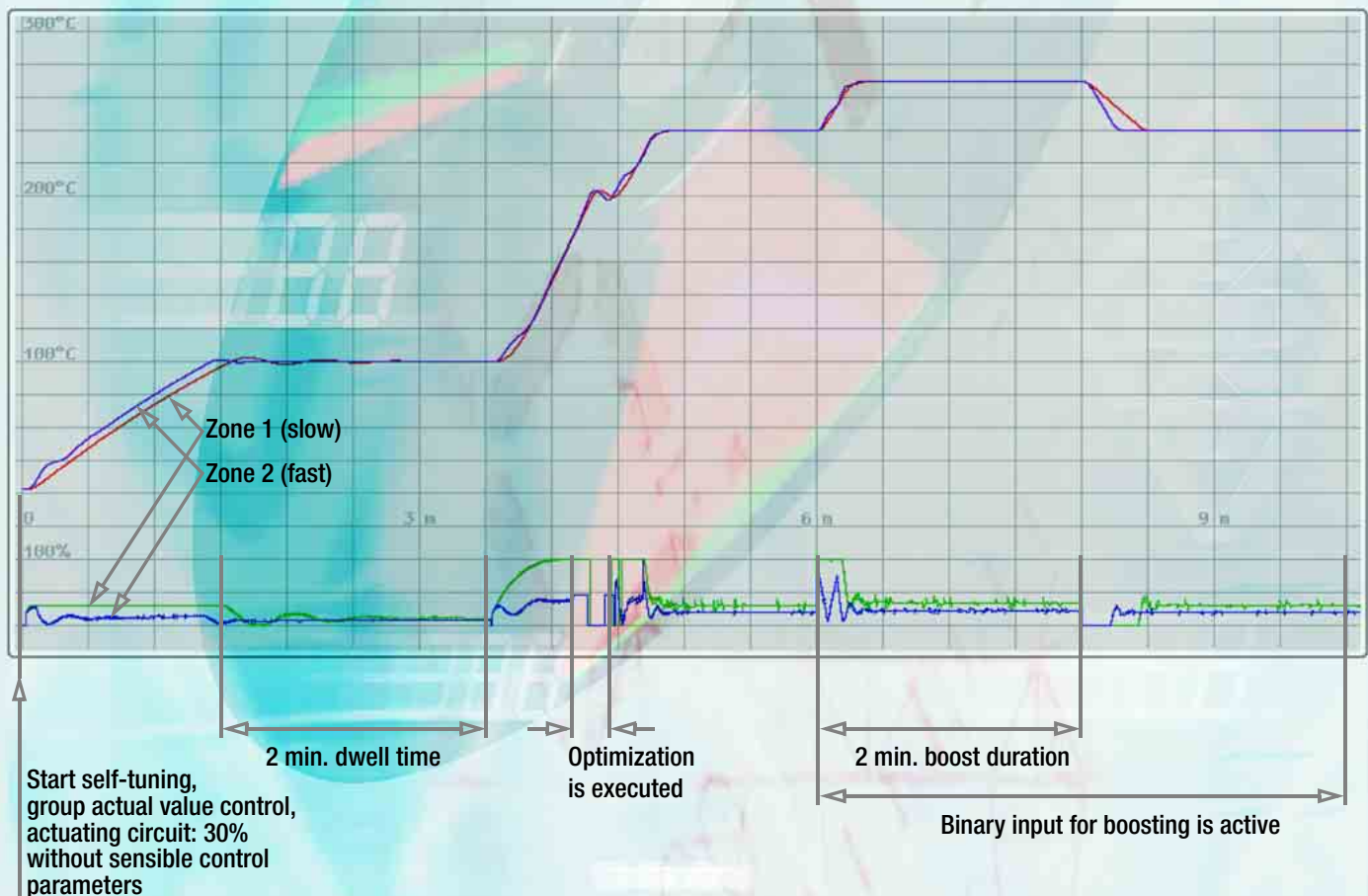


Figure 2: Typical Actuation of a Hot-Runner Tool

R6000 High Speed Hot-Runner Controller

❑ Heating Current Monitoring

All channels are monitored whose current is fed through the single or multi-phase summation current transformer.
Monitoring with a single summation current transformer is possible for up to 24 control channels.

❑ Actuating Circuit / Soft-Start

Actuation with a reduced manipulating factor and dwelling at a specific actuation setpoint serves to dry out hygroscopic heating elements.

❑ Synchronous Heating / Group Actual Value Control

Synchronous heat-up prevents thermal stress by minimizing actual value differences.

If self-optimization has been started, it takes actual value management into consideration, as well as the actuating circuit.
Synchronous heating can be implemented for all controller modules.

❑ Boosting – Temporarily Increased Setpoint

Temporarily increasing the setpoint frees clogged mould nozzles of “frozen” material remnants, and heats up the control zones.
Can be activated via bus or binary input.

❑ Ramp Function

Separate for rise and fall

❑ 2nd Setpoint / Reduction Function

Can be activated via binary input and bus.

❑ Monitoring for Sensor Failure, Cable Interruption, Polarity Reversal and Short-Circuiting

Use of a mean manipulating factor in the event of sensor failure in order to maintain constant temperature, actual value correction for periodic measured-value fluctuation

❑ Monitoring Functions

Limit value (alarm memory, actuation suppression), heating current, heating circuit

❑ Alarm Functions / Alarm History with Time Stamp

100 error status entries with respective time stamps.

Device-specific: hardware, parameter, mapping, cold junction, input and output errors, measurement input overload.

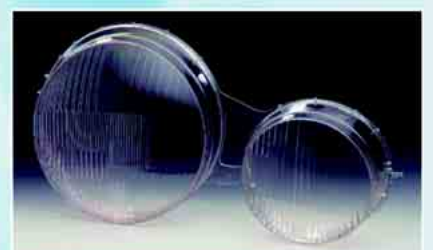
Channel-specific: sensor failure, reversed polarity, adaptation, heating current and heating circuit errors, 2 upper and 2 lower limit values each – relative and absolute.

❑ Data Logger

3600 sample value pairs including actual values and setpoints for all 8 channels

❑ Interfaces

RS 232 service interface, RS 232 / RS 485 interface,
Modbus protocol / EN 60870, CAN-bus / CANopen, Profibus-DP



□ Visualization with Control Terminals

- User-friendly operator interface
- Practical design
- Monitoring, diagnosis and visualization
- Multilingual editor
- Customer-specific adaptation of application software

