

## Hot Runner Controller

### Series HRS

Based on  
 Temperature control system ETR132II  
 8, 16, 24 and 32 zones  
 Complete function scope  
 Precise temperature management  
 User friendly  
 Tight dimensions  
 Complete equipment  
 Easy maintenance



#### Features

- Hot runner controller series in compact construction
- For up to 32 control zones in 8 zone steps
- Excellent readable LED displays
- Easily understandable operation concept: quick and direct access to the main operation functions
- Precise control algorithm with automatic adaptation
- Heating Current Monitoring
- Load shedding
- Monitoring of limits
- Complete function scope
- Recipe storage for 4 setpoint value set
- Serial data interface (option)
- Potential-free accumulative alarm contact
- Customer specific plug configuration by request

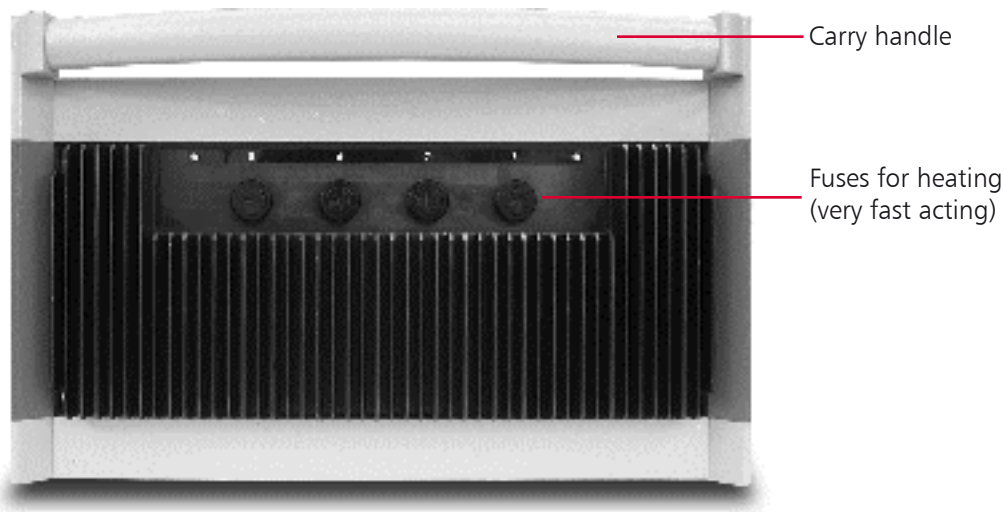
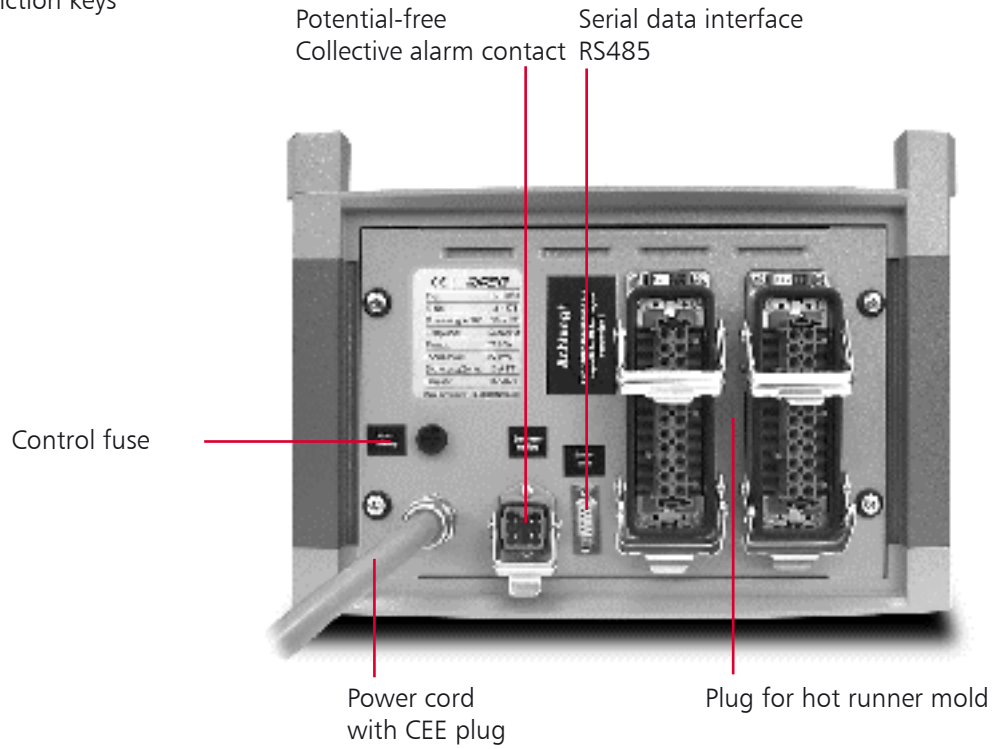
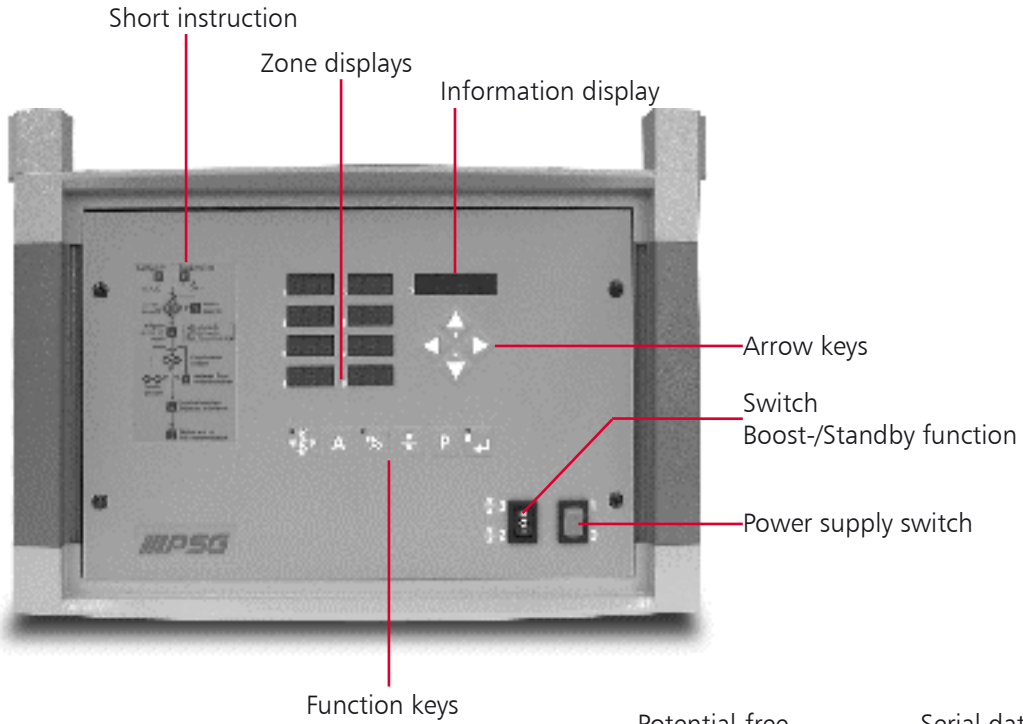
#### Function

- Calculation of zone specific control parameters at heating up
- Uniformly heating up of all zones by automatic ramp (configurable)
- Continuation of operation in case of defective sensor by reference zone (control operation)
- Manual Mode
- Excess-/subnormal temperature
- Monitoring of heating current (tolerance, short circuit of power controller)
- Alarm function for defective fuses
- Reduction function: Standby operation
- Setpoint increasing: Boost operation
- Automatic check function for allocation of ‚Heating/Sensor‘
- Connection by data interface to SGM control or PC

#### Benefit

- Quick and direct access to all operation functions
- Ease of use / short familiarization phase
- Highest quality of control
- Homogenous product quality
- Error detection before production start
- Quick error detection for sensors and in heating circuits during production
- Reduction of downtime and defective production
- Secure production start
- High process reliability
- Support in sampling
- Reduction of setting-up time
- Visualization by PC: documentation, quality assurance
- All-purpose versatility

## Configuration and Operating Elements



## Technical Data

<b>Measurement inputs</b>		
Thermocouple TC		Fe-CuNi (Type J) based on DIN IEC 548, switchable to Fe-CuNi (Type L) Temperature range 0...500 °C, 32...932 °F Display in °C and/or °F Temperature compensation integrated: lead sensor- and/or compensation line directly to control cabinet! Measurement error < 1 K ± 1 digit Monitoring of sensor break/sensor incorrect polarity
<b>Power outputs</b>		Zero-crossing switching
Switching capacity per control loop		Max. 16 A, 230 VAC, 3680 W
Fuse protection		Very fast acting microfuse FF16A, 6.3 x 32 mm
Heating circuits		The heating circuits are uniformly distributed on L1, L2, L3
Plug connectors		The power control outputs are on massive multipolar connectors (table Standard Series). Type of plug/brand and/or plug assignment in customer specific design.
<b>Output of collective alarm</b>		Function configurable
Standard activation by		Temperature limit value, sensor break, sensor reversed polarity, heating current tolerance alarm Short circuit of power controller, excess of maximum temperature
Switching capacity		Max. 250 VAC, 4 A, ohmic load
Type		Potential-free closer
<b>Heating Current Monitoring</b>		Inductive heating current measurement by current transformer Automatic transfer of heating current as current setpoint for tolerance monitoring Monitoring of short circuit of actuator: disconnection of load for faulty zones
Measurement range		0.3...16 A
Accuracy		5 %
<b>Control characteristic</b>		Micro processor multi loop controller ETR132II with adaptive control algorithm (Identification) and status dependent control of control parameters (Online control)
<b>Data interfaces</b>		RS485/RS232; RS485 (2-/4-wire)
Protocol configurable		PSGII (ASCII protocol) / Modbus rtu
<b>Power Supply</b>		400 VAC (-10 %...+10 %), 50 Hz, 3P / N / PE
Control fuse		5 x 20 mm, 2 A
Power cable		Length 3m with CEE plug
<b>Ambient temperature limit</b>		Operation: 0...50 °C, transport, storage: -20...60 °C, operation limit: 0...60 °C
<b>Atmospheric humidity limit</b>		Average relative atmospheric humidity < 75 % per year, no condensation
<b>Climatic applicability class</b>		Based on DIN 40 040
<b>Dimensions (H x W x D in mm)</b>		See Standard Series
<b>Weight</b>		See Standard Series
<b>Device construction</b>		Closed cabinet; metal-half shell housing; color RAL3002 (carmine), RAL7001 (silver-gray)
<b>Electrical security</b>		Protection class I (safety measure with protective conductor)
<b>Protection type</b>		IP20
<b>Electro-Magnetic Compatibility EMC</b>		According to 89/336/EEC; complies with EN50081-1, emitted interference in living quarters; complies with EN50082-2 interference resistance in industrial environment;
<b>EC-Standards according to</b>		Machine Directive 89/392/EEC; Low Voltage Directive 73/23/EEC
<b>Standards</b>		EN 61326-1:2006, EN 60204-1:2006/A1:2009, EN 61010-1:2002
<b>CE marking</b>		The device complies with the European Directives for electromagnetic compatibility and low voltages.

<b>Standard Series</b>	<b>HRS08/4</b>	<b>HRS08</b>	<b>HRS16</b>	<b>HRS24</b>	<b>HRS32</b>
Order number	043 000	043 010	043 020	043 030	043 040
Number of zones	4	8	16	24	32
Plug for hot runner mold	1 x 16 pole	2 x 24 pole	3 x 24 pole	4 x 24 pole	6 x 24 pole
Assignment of plug for hot runner mold	PSG standard assignment				
Plug for collective alarm	1 x 4 pole				
Plug for data interface	1 x 9 pole D-Sub				
Power supply	CEE 16A	CEE 32A	CEE 32A	CEE 63A	CEE 63A
Weight [kg]	16	18	27	38	45
Dimensions H x W x D [mm]	215x340x415	215x340x415	215x550x525	304x550x525	304x550x525

## Pin Assignment

### Serial data interface

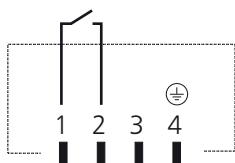
#### RS485/RS232 (option)

D-SUB, socket

Pin	
1	TxD-P
2	TxD-N
3	TxD-V24
4	N.C.
5	RxD-N
6	RxD-P
7	N.C.
8	RxD-V24
9	GND-V24

### Collective alarm message

4 pole



Protocol: PSGII / Modbus RTU

Switching capacity max. 250 VAC, 4A

Other interface protocols on request.

Collective alarm message: temperature limit values, current alarms (tolerance and short circuit of power controller) and sensor fault (break, reversed polarity)

Counter plug standard.

### Connection heating and sensor

The pin assignment of the hot runner controller please see technical documentation enclosed for the device.

## Accessories

	Order number
Connection cable VK24/3 (3m) Multipolar connection cable with power and sensor lines (shielded) based on DIN EN 60204 part 1 / VDE0116T1-15.1.3	040 024 000 030
Connection cable VK24/6 (6m) Multipolar connection cable with power and sensor lines (shielded) based on DIN EN 60204 part 1 / VDE0116T1-15.1.3	040 024 000 060
Hot runner mold counter plug pin insert/spring pressure 24 pole	164 420
Housing top 24 pole, with M32, central	164 440
Safety fuse for heating 16A FF, 6.3 x 32 mm	030 612
Control fuse SI 2A, MT 5 x 20 mm	162 650
Engineering tool WinKonVis	039 020
Data interface converter SK-232485	039 060
Data interface converter SK-USB422	039 065
Connection cable VK/VTM/1800 (4 wire)	052 160