hotset®

Temperature Controllers

Temperature Controllers

hotset-Temperature controllers: recognized precision devices since many years, which are used for all industrial applications where fully automatic temperature control, according to given set points, is essential.

And now: upvalued once more as „temperature controllers of the new generation". Clearly separated product groups make it easier for the user to decide which controller is the best for his heating task — considering economical and functional aspects.

But also upvalued due to the decisive improved handling, that makes the usage of the CE-certificated hotset-temperature controllers once more easier and more user-friendly.

And last but not least, upvalued through several technical details, which have been developed in narrow cooperation with the user of the temperature controllers due to the long-therm experience of hotset. Possibilities, which make the new generation of the hotset-temperature controllers so attractive for using them in numerous different branches.

hotset – a good feeling !

Built-in Devices RR 211, RR 221, RR 231

Technical Data

○ mains voltage: 230 V AC

○ output voltage: 5 V DC, max. 10 mA for semi-conductor relay control resp. mechanical relay 3 A / 230 V

○ output load with mechanical relay 600 W / 230 V

○ control action: On/Off, P, PI, PD, PID with self-optimation

○ control range:
Fe-CuNi type L, J   0 °C to +800 °C
NiCr-Ni type K   0 °C to +999 °C
PT 100 (2cond.)   -100 °C to +800 °C

○ control accuracy: ± 0.5% in the range of -99 up to +999

○ nominal conditions: -15 °C to +50°C

○ housing dimensions
(without terminal strip)
type   w x h x d
RR 211   48 x 48 x 118 mm
RR 221   48 x 96 x   86 mm
RR 231   96 x 96 x   86 mm

Standard Features

● PID-control action with self-optimation (auto tune)

● thermocouple Fe-CuNi, NiCr-Ni and PT 100 switchable by user

● reverse thermocouple indicator

● thermocouple break alarm with programmable action (power controller when break)

● alarm can be programmed by user

● real value correction

● limitation of set value

● digital display for real value and process value

● output:
1 x semi-conductor relay 5 V DC, max. 10 mA; 2 x mech. relay 3 A / 230 V alarm and output can be chosen by user

● foil covered keyboard (can be locked)

● °C / °F can be switched

● start with programmable start time and -temperature

● power controller function can be switched

● can be used as heating or cooling action controller (or both combined) or as limitation signal

Options

● set value change to 2. set value (temperature decrease); alternatively to serial interface

● input voltage 115 V AC

● input voltage 24 V DC

● front IP 54

● interface RS 232 or RS 485 alternatively to set value change

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Table Devices RR 411, RR 421

Temperature controller type RR 211 built-in housing with power part(s)

Technical Data

○ mains voltage 230 V AC / 50 Hz

○ output voltage 230 V

○ output power
RR 411 max. 3300 W / 16 A
RR 421 max. 2 x 1650 W / 2 x 8 A

○ control action P, PI, PD, PID with self-optimation

○ control range:
Fe-CuNi type L, J   0 °C to +800 °C
NiCr-Ni type K   0 °C to +999 °C
PT 100   -100 °C to +800 °C

○ control accuracy
± 0.5% range of -99 up to +999

○ nominal conditions 0 °C - 50 °C, 35 - 85% relative humidity

Standard Features

● see controller type RR 211

Options

● see controller type RR 211

Built-in Devices RR 212, RR 222, RR 232

Technical Data

○ mains voltage: 230 V AV

○ output voltage: 5 V DC, max. 10 mA for semi-conductor relay control resp. mechanical relay 3 A / 230 V

○ output load with mechanical relay 600 W / 230 V

○ control action: On/Off, P, PI, PD, PID with self-optimation

○ control range:
Fe-CuNi type L   -200 °C to +800 °C
Fe-CuNi type J   -200 °C to +1200 °C
NiCr-Ni type K   -200 °C to +1300 °C
PtRh-Pt type S   0 °C to +1760 °C
PtRh-Pt type R   0 °C to +1750 °C
PtRh-Pt type B   0 °C to +1820 °C
Cu-CuNi type T   -200 °C to +400 °C
Cu-CuNi type U   -200 °C to +600 °C
PT 100   -200 °C to +800 °C
Ni 100   -60 °C to +180 °C

○ control accuracy: ± 0.25% in the range of -1999 up to +9999

○ nominal conditions: -15 °C to +50 °C

○ housing dimensions
(without terminal strip)
type   B x H   x T
RR 212   48 x 48 x 118 mm
RR 222   48 x 96 x 108 mm
RR 232   96 x 96 x   88 mm

Standard Features

● PID-control action with self-optimization (auto tune)

● 9 different thermocouples, PT 100, Ni 100, 0(4) mA - 20 mA, 10 V can be switched by user

● reverse thermocouple indicator

● thermocouple break alarm with programmable action

● RR 212: 2 alarms (RR 222 and RR 232: 3 alarms) can be programmed by user

● real value correction

● limitation of set value

● RR 222 and RR 232: digital display for set and real value (four-digit each); RR 212: four-digit, digital display for set and real value (can be switched)

● foil covered keyboard (can be locked)

● outputs:
1 x semi-conductor relay 5 V DC, max. 10 mA; 2 x (at RR 212) resp. 3 x (at RR 222 and RR 232) mechanical relay 3 A / 230 V alarm, output can be chosen by user

● °C / °F can be switched

● start with programmable start time and -temperature

● power controller function can be switched

● integrated interface RS 232 or alternatively RS 485

● timing function

● temperature decrease (2. set value)

● external allowed rated value (0-5) V at RR 212, (0-10) at RR 222/232

● hours counter

● current output 0(4) mA - 20 mA at RR 222/232

● can be used as heating or cooling action controller (or both combined), heating or cooling action step controller, program controller or limitation signal

Options

● input voltage 115 V AC

● input voltage 24 V DC

● front IP 54

● heating current display resp. power control

● leakage current alarm

● program controller through set value range with 6 program segments

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Multiple Temperature Controllers
(with 3 or 6 control circles)

The **hotset**-multiple temperature controllers are an economical as well as a practical solution for extensive control tasks.

These multiple temperature controllers are based on the controller type RR 222, so the technical data, standard features and options are also valid.

The following differences resp. additions have to be considered:

○ input voltage:
3 x 400 V + N + PE via CEE-norm plug, 16 A at controller 3fold, 32 A at controller 6fold

○ output voltage: 230 V per control circle

○ output power: 3,3 kW per control circle at controllers 3- and 6fold

○ plug connections for thermocouples and heating elements:
controller 3fold:
each 1 x 6 pin plug
controller 6fold:
each 1 x 16 pin plug

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hotset — in Germany and 30 other countries all over the world:

- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Czech Republic
- Denmark
- Finland
- France
- Great Britain
- Greece
- Hongkong
- India
- Israel
- Italy
- Japan
- Korea
- Netherlands
- New Zealand
- Poland
- Philippines
- Portugal
- Singapore
- South Africa
- Spain
- Sweden
- Switzerland
- Taiwan
- Turkey
- USA