



R101

programmable temperature controller

R101 is an in-built programmable controller intended for temperature regulation of small electric or gas ovens and warming systems using contractors and solid state relays (SSR). The controller allows programming of delayed start, controlled increase to requested temperature, persistence on this temperature through requested time, and process finalization. Moreover it allows switching of auxiliary servo-mechanism on requested temperature like flap, alarm, or fan for example.

Temperature can be measured by resistive sensors (Pt100, Pt500, Pt1000, Ni1000) or by thermocouples (J, K, N, S, C). The input sensor can use current output 0-20 mA or 4-40 mA as well. It is necessary to state the requested sensor type (voltage, resistive, current) in your order, the type of thermocouple or range of input current can be adjusted from controller keypad, after entering a service password.

The output part of the controller consists of three relays (two of them with N.O./N.C. contacts 230 V/2 A, one with N.O. contacts 230 V/2 A) and one 15 V/10 mA output for the solid state relay (SSR) actuation. It is also possible to

add a voltage or current output for proportional elements actuation.

Operating the controller, adjusting of parameters and diagnostic functions are presented by system of well-arranged menu views, showing textual acronyms on red 7-segment LED display, guiding the user through all options and settings of the controller.

The cycle progress is displayed by four LEDs located on temperature curve chart, another LEDs indicate the outputs state and eventual error in the heating system.

Five-keys foil keypad with tactual response allows quick setting of any parameter, as well as showing information about the state of the regulated system.

In case of using solid state relay (SSR), it is possible to utilize an additional protective contractor, which would disconnect the SSR in case of uncontrolled temperature growth caused by the SSR malfunction.

During a power supply failure (blackout) all parameters remain preserved and after power recovery the controller continues in the process.

Inputs

- voltage: thermocouple J, K, N, S, C, voltage 0–25 mV or 0–50 mV
- resistive: Pt100, Pt500, Pt1000, Ni1000, resistance 0–300 Ω, 0–1500 Ω or 0–3000 Ω
- current: 0–20 mA or 4–20 mA

Outputs

- 1× relay with N.O. contact 230 V / 2 A
- 2× relay with N.O. / N.C. contacts 230 V / 2 A
- voltage output 15 V / 10 mA for solid state relay (SSR) actuation

Accuracy

- for resistive and voltage sensors 0,5 %, resolution 1 °C
- for current input 0,5 %, resolution 0,01 mA

Other

- power supply 230 V/50 Hz, 0,04 A
- size 96×48×130 mm
mounting aperture size: 92×43 mm
- coverage IP50, IP54 if requested
- working temp. 0 to +45 °C
- humidity max. 80 % at 20 °C
- weight 450 g

Features

- one of six preset working modes can be chosen using the controller's keypad
- one of three regulation method selection
- up to 15 programs can be stored in controller memory
- existing programs can be viewed, adjusted and overwritten
- operations with programs and/or controller settings can be performed during program runtime
- possibility of choosing thermocouple type or resistive sensor using controller's keypad
- delayed program start (up to 99 hours 59 minutes)
- watching the maximum length of regulation cycle

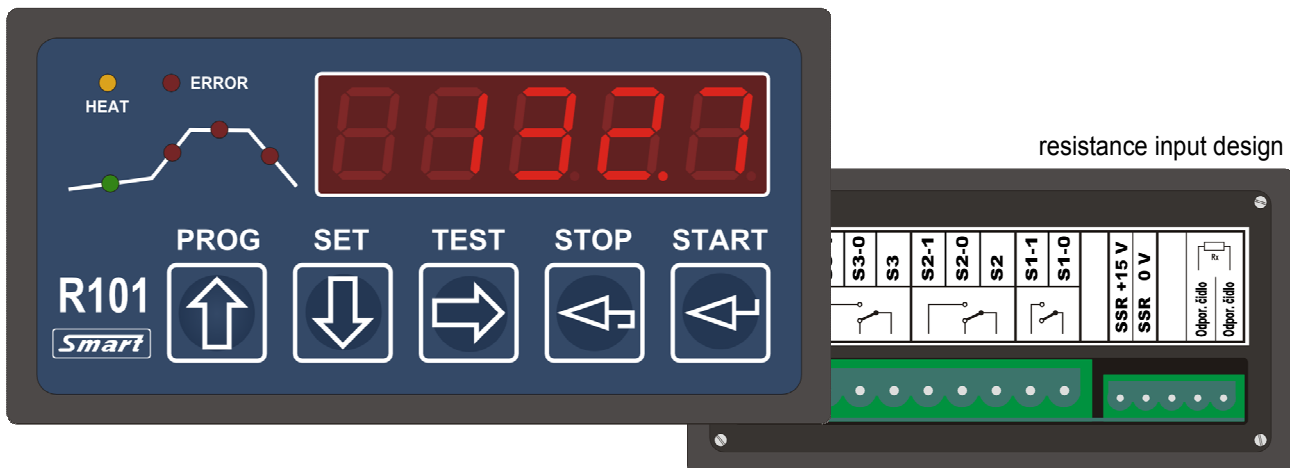
Protections

- system autoreset and malfunction indication by LED and textual acronyms on display
- all data preservation during power supply failure
- operation break in case of malfunction
- access to important parameters is secured by system of passwords

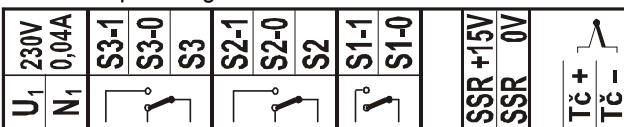
Signalization

- termination or disconnection of input sensor
- maximum selected temperature overrun
- allowed deviation overrun

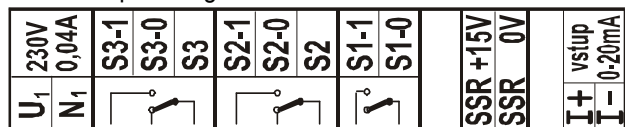
Front panel and terminals connection



thermocouple design



current input design



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