



MR51D

programmable two and three-state controller

MR51D is an programmable two-state and three-state controller intended for regulation of magnitude measured by resistive thermometers, thermocouples, or sensors with current outputs. 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 230V / 2A, one with N.O. contacts 230V / 2A) and one 15 V / 10 mA output for the solid state relay (SSR) actuation, or one floating output 20 V / 20 mA for supplying one sensor with current output. It is also possible to add a voltage or current output for proportional elements actuation.

Through its software tools MR51D offers wide range of options for high-quality regulation, which is achievable by selection of a suitable regulation type and constants.

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 without need of browsing in user's manual.

In case the controller is equipped with communication module RS485, entire settings can be performed through PC or from outlying central.

Immediate information about state of the regulated system is displayed in the left part of display via LEDs indicating states of relays and SSR outputs, and via simple LED bracket indicating current progress of regulation.

Five-keys foil keypad with tactual response allows quick setting of any parameter, as well as showing information about current state of the regulated system or performing controllers's diagnostics.

Modular division of control software allows eventual changes of program according to user's requests.

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

Inputs

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

Outputs

- 1× relay N.O. contact 230 V / 2 A
- 2× relay with N.O. / N.C. contact 230 V / 2 A
- voltage output 15 V/10 mA for solid state relay (SSR) actuation or floating output 20 V / 20 mA for supplying one sensor with current output

Outputs per request

- serial communication RS 232 or RS485
- current output 0–20 mA (includes range 4–20 mA), or voltage output 0–10 V

Accuracy

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

Errors signalization

- termination or disconnection of input sensor
- errors in goal value settings
- errors in allowed deviations of goal value settings
- errors in input calibration
- errors in input sensor type selection
- signalization of leaving range of measured magnitude

Features

- measured magnitude settings by five-keys foil keypad with tactual response in easy dialog mode
- selectable type of output magnitude regulation (1 of 3 possibilities)
- symmetric or asymmetric settings of limits
- regulation parameters settings

Protections

- system autoreset and malfunction indication by LED and textual acronyms on display
- all data preservation during power supply failure
- access to important parameters is secured by password

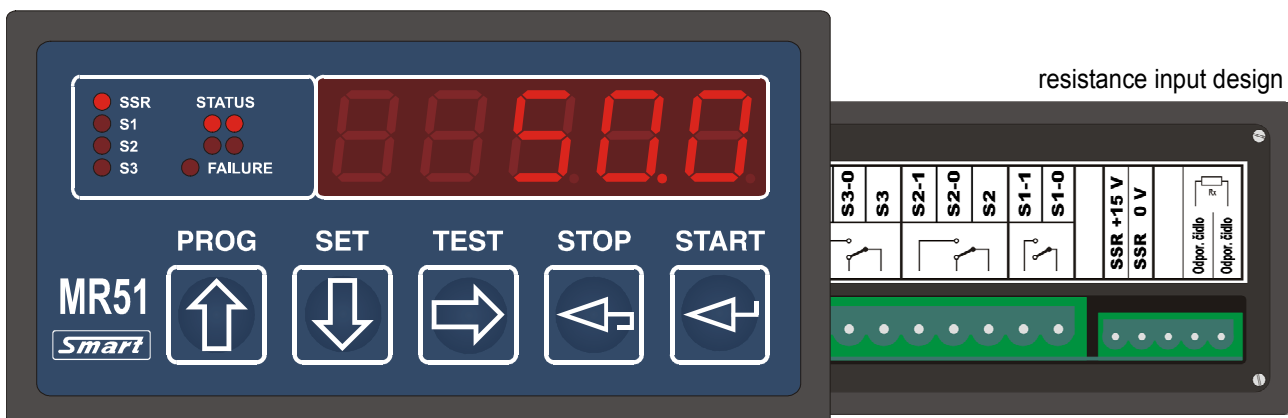
Terminals

- all connections (power supply, outputs, sensor) are presented by removable terminals at in-built version, or by screw terminals at wall fixed box version

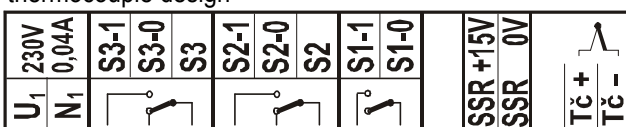
Other

- power supply 230 V/50 Hz, 0,04 A
- size 96×48×130 mm (in-built version, mounting aperture size 92×43 mm)
135×265×84 mm (wall fixed box version)
- coverage IP50, IP54 if requested (in-built version)
IP65 (wall fixed box version)
- weight 450 g (in-built version)
970 g (wall fixed box version)

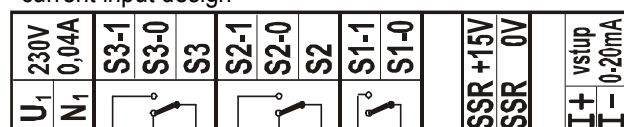
Front panel and terminals connection



thermocouple design



current input design



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 SMART, spol. s r. o.
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