

Programmable Controller RT18

- ◆ Self-tuning ON/OFF or PI control algorithm
- ◆ 4 DIN cases - up to 1/16 DIN
- ◆ Fixed input
- ◆ Various power supplies
- ◆ Easy programming

The simple-design low-cost microprocessor-based controller RT18 is designed to replace analog temperature controllers in cases, in which the cost and ease-of-use are important. For easy mounting in existing cutouts, RT18 is available with 48x48, 96x48, 48x96, and 96x96 mm DIN-sized front panel. To control its output, the device may utilize either ON/OFF or PI auto-tune control algorithm, the latter being a convenient solution that saves installation time and costs and provides precise control eliminating temperature cycling and excessive start-up overshoot. The reliable operation even in the presence of electromagnetic disturbances and the attractive price also account for the success of the RT18 controller.



Technical specifications

Input (total number of points for any range: 999)

Pt50 (w=1.385); 3-wire	-9.9(-50)...90.0(500) °C
Pt100 (w=1.385); 3-wire	-9.9(-50)...90.0(500) °C
Pt500 (w=1.385); 3-wire	-9.9(-50)...90.0(500) °C
Pt1000 (w=1.385); 3-wire	-9.9(-50)...90.0(500) °C
Cu100; 3-wire	-9.9(-50)...90.0(200) °C
Cu50; 3-wire	-9.9(-50)...90.0(200) °C
Other RTD ⁽¹⁾	min. -99...max. 500 °C
Thermocouple "J"	0...999(600) °C ⁽²⁾
Thermocouple "K"	0...999(850) °C ⁽²⁾
Thermocouple "L"	0...900(600) °C ⁽²⁾
Thermocouple "L-GOST"	0...650(550) °C ⁽²⁾
Other thermocouple ⁽¹⁾	min. -99(0)...max. 900(999) °C ⁽²⁾
Linear voltage 0...10 V	-99...900 (0...999) ^(2,3,4)
Linear current 0(4)...20 mA	-99...900 (0...999) ^(2,3,4)
Custom linear voltage; max. 40 V	min. -99...max. 999 ^(2,3,4)
Custom linear current; max. 80 mA	min. -99...max. 999 ^(2,3,4)

Output

Relay electromechanical	5A/250V w/ NO/NC contact
Solid state relay	1A/250VAC
MOS gate	0.1A/60V, optically isolated
Output for external SSR	5...24 V, 30 mA
Control algorithm	ON/OFF, self-tuning PI
Set point	within input range limits
Programmable parameters	according to control algorithm

⁽¹⁾ Custom; specify range within the limits stated.

⁽²⁾ For self-tuning PI algorithm, ONLY the alternative ranges are applicable.

⁽³⁾ Specify lower and upper display limits.

Accuracy

Measurement error	0.4% from span
Temperature drift	0.005% from span for 1 °C
Cold junction compensation	± 1 °C
RTD line compensation (option)	0.01% from span for 1 Ω

Power supply

Mains supply voltage	230 VAC or 115 VAC
SMPS voltage	90...250 VAC/DC
Isolated low voltage	12...24 VAC/DC or 24 VAC
Non-isolated low voltage	12...24 VAC/DC
Consumption	max. 3 VA

Indication and controls

Digital display	3 LED indicators
LEDs	LED for output state
Keyboard	3 membrane keys

Operating conditions

Operating temperature	-10...65 °C
Operating humidity	0...85 %RH

Design and materials

	'B'	'H'	'V'	'S'
Front dimensions [mm]	96x96	96x48	48x96	48x48
Mounting	panel	panel	panel	panel / rail
Panel cutout [mm]	90x90	90x42	42x90	45x45
Mounting depth [mm]	98	98	98	95
Display digit height [mm]	20	14	14	9
Maximum weight [g]	350	300	300	200
Protection, front/terminals	IP54/20	IP54/20	IP54/20	IP54/20
Increased front IP (option)	IP65 ⁽⁵⁾	IP65	IP65	-
Case material	plastic	plastic	plastic	plastic
Wiring (terminals)	plug-in	plug-in	plug-in	socket ⁽⁶⁾

⁽⁴⁾ Provides loop supply voltage - 24 VDC (only w/ isolated power supply)

⁽⁵⁾ Ask for availability!

⁽⁶⁾ Ordered separately (see 'Accessories')

Ordering code RT18 - G0.G1.G3.G5.G6'6".G8 - #1.#2

Code	Feature or option	Code values
G0	Case (front size)	B - 96x96 mm, H - 96x48 mm, V - 48x96 mm, S - 48x48 mm
G1	Power supply	A - 230 VAC, B - 115 VAC, C - 90...250 V, P - 12...24 V, non-isolated, Q - 12...24 V, isolated, R - 24 VAC
G3	Resolution	B - 1, C - 0.1 ⁽²⁾
G5	Relay output	X - none, C - relay NO/NC, D - SSR, J - for external SSR, M - isolated MOS gate
G6'	Input signal	B - thermoresistance, C - thermocouple, D - linear, Z - other on request
G6"	RTD	B - Pt50, D - Pt100, F - Pt500, G - Pt1000, H - Cu50, K - Cu100, Z - other ⁽¹⁾
	T/C	J - "J", K - "K", L - "L", M - "L-GOST", Z - other ⁽¹⁾
	linear	B - 0...20 mA ⁽³⁾ , C - 4...20 mA ⁽³⁾ , K - 0...10 V ⁽³⁾ , Z - other ⁽³⁾
G8	Control algorithm	A - ON/OFF, C - self-tuning PI ⁽⁷⁾
#1	Compensation for 3-wire RTD line	X - none, LC - built-in line resistance compensation
#2	Increased front protection	X - none, P - IP65 front protection ⁽⁸⁾

⁽⁷⁾ Specify the direction of control action (heating or cooling relay action).

⁽⁸⁾ Not available for case 'S'!