

Programmable Controller RT384

- ◆ 5 DIN cases
- ◆ Universal programmable input
- ◆ Various control algorithms including auto-tuning
- ◆ PID-pulse and PID for motor valves
- ◆ Programmable digital filter
- ◆ Manual mode for bumpless switching
- ◆ Calibration and self-calibration
- ◆ RS485 serial interface available

RT384 is a multifunctional programmable controller with universal input for the most common thermoresistances, thermocouples, and linear signals. The input has a built-in automatic software compensation of line resistance and cold junction temperature as well as automatic software compensation of temperature drift, and can be calibrated manually. RT384 is also equipped with a programmable input filter and a 4-digit display with programmable refresh rate. Available are various options for access restriction. The device can have up to 2 outputs (2 relays or 1 relay and 1 analog output), which can control variety of actuators through different programmable control algorithms. RT384 can work in manual or automatic mode, and an RS485 serial interface enables networking.

Technical specifications

Input		(programmable)
Pt100 (w=1.385, 1.391); 3-wire		-100...600 °C
Cu100 (w=1.426, 1.428); 3-wire		-50...200 °C
Thermocouple "J"		0...1000 °C
Thermocouple "K"		0...1300 °C
Thermocouple "S"		0...1700 °C
Thermocouple "R"		0...1700 °C
Thermocouple "B"		100...1800 °C
Thermocouple "C"		0...2300 °C
Thermocouple "L - GOST"		0...600 °C
Linear voltage 0...50 mV ⁽¹⁾		-1999...9999, programmable
Linear current 0...20 mA		-1999...9999, programmable
Linear current 4...20 mA		-1999...9999, programmable ⁽²⁾
Input type selection		programmable
Decimal point selection		programmable
Digital filter		programmable
Input calibration		programmable
Outputs		(up to 2 outputs)
Relay electromechanical	5A/250V w/ NO/NC or NO ⁽³⁾ contact	
Solid state relay ⁽⁸⁾		1A/250VAC ⁽⁴⁾
MOS gate ⁽⁸⁾		0.1A/60V, optically isolated
Output for external SSR		5...24 V, 30 mA
Operation modes		manual and automatic
Control algorithms		ON/OFF, PID-pulse, and PID for motor valves, programmable
Auto-tuning		programmable
Alarms		programmable
Other control features		BUMPLESS and ANTI-WINDUP
Analog output ⁽⁵⁾		4(0)...20 mA or 0...10 V, isolated
Serial interface		RS485, isolated

⁽¹⁾ Other voltage ranges can be obtained by the means of 2 external resistors.

⁽²⁾ Provides loop supply voltage - 24 VDC (only w/ isolated power supply).

⁽³⁾ For case 'S' w/ serial interface, 1st relay is NO; for case 'S' w/ SMPS, 2nd relay is NO.

⁽⁴⁾ 0.2A/250VAC for case 'L'

⁽⁵⁾ Instead of 1st relay! If mounted, it can be programmed as control or retransmission!



Accuracy

Measurement error	0.3% ⁽⁶⁾ from span
Temperature drift	0.01% from span for 1 °C
Self-calibration	automatic software
Cold junction compensation	automatic software
RTD line compensation	automatic software

Power supply

Mains supply voltage ⁽⁷⁾	230 VAC or 115 VAC
SMPS voltage ⁽⁷⁾	90...250 V
Isolated low voltage	12...24 V or 24 VAC ⁽⁷⁾
Non-isolated low voltage	12...24 V
Consumption	max. 3 VA

Indication and controls

Digital display	4 LED indicators
LEDs	2 LEDs for output state
Keyboard	3 membrane keys

Operating conditions

Ambient temperature	-10...55 °C
Ambient humidity	0...85 %RH

Design and materials

	'B'	'H' / 'V'	'S'	'L'
Front dimensions [mm]	96x96	96x48	48x48	72x36
Mounting	panel	panel	panel	panel
Panel cutout [mm]	90x90	90x42	45x45	71x29
Mounting depth [mm]	98	98	100	56
Display digit height [mm]	20	14 / 10	10	9
Maximum weight [g]	350	300	200	150
Protection, front/terminals	IP54/20	IP54/20	IP54/20	IP54/20
Increased front IP (option)	IP65	IP65	-	IP65
Case material	plastic	plastic	plastic	plastic
Wiring (terminals)	plug-in	plug-in	screw	screw

⁽⁶⁾ 0.5% for noble thermocouples

⁽⁷⁾ Not available for case 'L'.

⁽⁸⁾ Ask for availability!

⁽⁹⁾ Not available for case 'S'.

Ordering code RT384 - G0.G1.G5G5.G9'9".G11 - #1

Code	Feature or option	Code values
G0	Case (front size)	B - 96x96 mm, H - 96x48 mm, V - 48x96 mm, S - 48x48 mm, L - 72x36 mm
G1	Power supply	A - 230 VAC ⁽⁷⁾ , B - 115 VAC ⁽⁷⁾ , C - 90...250 V ⁽⁷⁾ , P - 12...24 V, non-isolated, Q - 12...24 V, isolated, R - 24 VAC ⁽⁷⁾
G5	Relay output	X - none, A - relay NO ⁽³⁾ , C - relay NO/NC ⁽³⁾ , D - SSR ⁽⁸⁾ , J - for external SSR, M - isolated MOS gate ⁽⁸⁾
G9'	Serial interface	X - none, B - RS485
G9"	Protocol	A - ASCII, C - ASCII for "PolyMonitor"
G11	Analog output ^(5,8)	X - none, E - 0...20 mA, F - 4...20 mA, K - 0...10 V
#1	Increased front protection	X - none, P - IP65 front protection ⁽⁹⁾