Programmable Controller RT384-R

- **DIN-rail mounting**
- **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-R is a multifunctional programmable controller with universal input for the most common thermoresistances, thermocouples, and linear signals, especially designed for rail mounting. 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-R 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-R 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	1A/250VAC
MOS gate	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 [4]	4(0)...20 mA or 0...10 V, isolated
Serial interface	RS485, isolated

Accuracy	
Measurement error	0.3% [5] 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	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. 5 VA
Indication and controls	
Digital display	4 LED indicators, 10 mm
LEDs	2 LEDs for output state
Keyboard	3 membrane keys
Operating conditions	
Operating temperature	-10...55 °C
Operating humidity	0...85 %RH
Design and materials	
Case material	plastic
Mounting	on 35 mm DIN rail
Wiring	screw terminals
Dimensions	45x78x124 mm
Weight	max. 400 g
Protection, front/terminals	IP40 / IP20

[1] Other voltage ranges can be obtained by the means of two external resistors.
[2] Provides loop supply voltage - 24 VDC (only w/ isolated power supply)
[3] NO for 2nd relay; NO for 1st relay in case of SMPS
[4] Instead of 1st relay! If mounted, it can be programmed as control or retransmission!
[5] 0.5% for noble thermocouples

Ordering code RT384 - R.G1.G5G5.G9'9".G11

Code	Feature or option	Code values
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
G5	Relay output	**X** - none, **C** - relay NO/NC [3], **D** - SSR, **J** - for external SSR, **M** - isolated MOS gate
G9'	Serial interface	**X** - none, **B** - RS485
G9"	Protocol	**A** - ASCII, **C** - ASCII for "PolyMonitor"
G11	Analog output [4]	**X** - none, **E** - 0…20 mA, **F** - 4…20 mA, **K** - 0…10 V