

2-channel Programmable Controller RT180

- ◆ 2 independent control channels in one device
- ◆ 2 DIN cases – horizontal and vertical
- ◆ Universal input for 4 RTDs, 4 T/Cs, and 3 linear types
- ◆ ON/OFF- pulse-mode control
- ◆ RH, pH, and Δt variants available
- ◆ RS485 serial interface available

RT180 offers an exceptionally convenient and inexpensive solution for 2 loop-control applications within 1 machine or 2 adjacent ones. The universal programmable inputs make sensor change easy and convenient, and allow on-site configuring of variety of inputs and controlled physical values. The controller may be used for measurement and control of temperature difference (variant 'D'), pH and temperature (variant 'P'), relative humidity through the "wet-and-dry-bulb thermometer" method (variant 'R'), and in other cases in which 1 device measures and controls 2 physical values. All of this make RT180 widely applicable for both industry and laboratory use.



Technical specifications

Inputs (1 per channel, programmable)

Pt100 (w=1.385); 3-wire	-19.9(99)...99.9(500) °C
Pt50 (w=1.385); 3-wire	-99...500 °C
Cu100; 3-wire	-9.9(50)...99.9(200) °C
Cu50; 3-wire	-99...200 °C
Other RTD ⁽¹⁾	min. -99...max. 500 °C
Thermocouple "J"	min. 0...max. 900 °C
Thermocouple "K"	min. 0...max. 999 °C
Thermocouple "L"	min. 0...max. 600 °C
Thermocouple "L- GOST"	min. 0...max. 600 °C
Other thermocouple ⁽¹⁾	min. 0...max. 999 °C
Linear voltage 0...50 mV	-99...999, programmable ⁽²⁾
Linear current 0(4)...20 mA	-99...999, programmable ⁽²⁾
Custom linear 0...50 mV/mA (option) ⁽¹⁾	-99...999, programmable ⁽²⁾
Input type selection	programmable
pH +2000...-2000 mV ⁽³⁾	0...14 pH
Manual input offset	through keyboard

Outputs (1 per channel)

Relay electromechanical	5A/250V w/ NO/NC contact
Solid state relay ⁽⁴⁾	1A/250VAC
MOS gate ⁽⁴⁾	0.1A/60V, optically isolated
Output for external SSR	5...24 V, 30 mA
Control algorithm	ON/OFF, pulse mode
Set point	programmable

Serial interface ⁽⁴⁾

Interface type	RS485, isolated
Protocol	free ASCII or ASCII for "PolyMonitor"

Accuracy

Measurement error	0.3% from span
Temperature drift	0.01% from span for 1 °C
Calibration	automatic software
Manual calibration	through keyboard
Cold junction compensation	automatic software
RTD line compensation	automatic software

Power supply

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

Indication and controls

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

Operating conditions

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

Design and materials

	'H'	'V'
Front dimensions [mm]	96x48	48x96
Mounting	panel	panel
Panel cutout [mm]	90x42	42x90
Mounting depth [mm]	98	98
Display digit height [mm]	9	10
Maximum weight [g]	300	300
Protection, front/terminals	IP54 / IP20	IP54 / IP20
Increased front IP (option)	IP65	IP65
Case material	plastic	plastic
Wiring	plug-in terminals	plug-in terminals

⁽¹⁾ Instead of a chosen standard input

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

⁽³⁾ pH input is available ONLY for the 1st channel. The 2nd channel must be for temperature correction and/or control (Pt100: -19.9...99.9 °C).

⁽⁴⁾ Ask for availability!

Ordering code RT180* - G0.G1.G5G5.G9'9" - #1.#2

Code	Feature or option	Code values
*	Variant	N - standard (w/ programmable inputs), D - for temperature difference control ^(5,6) , P - for pH control ^(3,5) , R - for relative humidity control ^(5,6) , Z - other on request ⁽⁴⁾
G0	Case (front size)	H - 96x48 mm, V - 48x96 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
G5	Relay output	X - none, C - relay NO/NC, D - SSR ⁽⁴⁾ , J - for external SSR, M - isolated MOS gate ⁽⁴⁾
G9'	Serial interface	X - none, B - RS485 ⁽⁴⁾
G9"	Protocol	A - ASCII, C - ASCII for "PolyMonitor"
#1	Increased front protection	X - none, P - IP65 front protection
#2	Customer specified input signal	X - none, Z - custom linear signal (specify!) ⁽¹⁾

⁽⁵⁾ Variants 'P', 'D', and 'R' have FIXED control algorithm that cannot be altered by the user. The default control algorithm is ON/OFF – the same as in the standard variant.

⁽⁶⁾ The input types of both channels are fixed to Pt100 with fixed input ranges.