

Programmable Controller RT284U



- ◆ Low cost
- ◆ 4-digit bright LED display
- ◆ 5 DIN cases
- ◆ Universal input for 4 RTDs, 6 T/Cs, and 3 linear types
- ◆ Keyboard or encoder adjustment controls
- ◆ RS485 serial interface available

RT284U is designed for wide range of applications. It is equipped with a 4-digit LED display, a universal input for Pt100, Pt1000, PTC, 6 thermocouple types as well as for linear current and voltage signals from external transmitters and can have up to 2 programmable relay control/alarm outputs. RT284U can be ordered with either keyboard or unique rotating encoder for set-point adjustment and programming. All versions have a built-in circuit for self-testing and self-calibration, manual measurement offset setting, and automatic software compensation of line resistance and cold junction temperature. The display-to-input correspondence (in case of linear input), decimal point position, temperature measurement unit, and offset value are also programmable. Thanks to its universal input, the available various enclosures and serial interface as well as excellent price-to-performance ratio, RT284U is an exceptionally widely applicable device.



Technical specifications

Input	(programmable)
Pt100 (w=1.385); 3-wire	-100...850 °C
Pt1000 (w=1.385); 3-wire	-100...600 °C
PTC (1k at 25 °C); 3-wire	-50...150 °C
PTC (2k at 25 °C); 3-wire	-50...150 °C
Thermocouple "T"	-40...400 °C
Thermocouple "J"	-20...1000 °C
Thermocouple "K"	-20...1300 °C
Thermocouple "S"	0...1700 °C
Thermocouple "R"	0...1700 °C
Thermocouple "B"	100...1800 °C
Linear voltage 0...10 V	-1999...9999, programmable
Linear current 0(4)...20 mA	-1999...9999, programmable
Custom linear (option) ⁽¹⁾	-1999...9999, programmable
Two-wire external transmitter	4...20 mA ⁽²⁾
Manual input offset	programmable
Input type selection	programmable
Decimal point selection	programmable
Temperature measurement unit	°C or °F, programmable

Outputs	(up to 2 relay outputs)
Relay electromechanical	5A/250V w/ NO/NC contact
Solid state relay	1A/250VAC ⁽³⁾
MOS gate	0.1A/60V, optically isolated
Output for external SSR	5...24 V, 30 mA
Control algorithm	ON/OFF
Set point	within input range limits
Alarms	programmable
Serial interface	RS485, isolated

Accuracy	
Measurement error	0.3% ⁽⁴⁾ from span
Temperature drift	0.02% from span for 1 °C
Cold junction compensation	automatic, -10...80 °C
RTD line compensation	automatic, up to 2 x 25 Ω
Power supply	
Mains supply voltage ⁽⁶⁾	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
External mains transformer ⁽⁶⁾	9(12) VAC
Consumption	max. 2 VA
Indication and controls	
Digital display	4 LED indicators
LEDs	2 LEDs for output state
Controls	keyboard w/ 3 keys or rotary encoder ⁽⁷⁾
Operating conditions	
Operating temperature	-10...65 °C
Operating humidity	0...85 %RH
Design and materials	'B' 'H' / 'V' 'Q' 'S' 'L'
Front dimensions [mm]	96x96 96x48 72x72 48x48 72x36
Mounting	panel panel panel panel panel
Panel cutout [mm]	90x90 90x42 67x67 45x45 71x29
Mounting depth [mm]	98 98 66 100 56
Display digit height [mm]	20 14 14 10 9
Maximum weight [g]	350 300 300 200 150
Protection, front/terminals	IP54/20 IP54/20 IP54/20 IP54/20 IP54/20
Increased front IP (option)	IP65 ⁽⁸⁾ IP65 - - IP65
Case material	plastic plastic plastic plastic plastic
Wiring (terminals)	plug-in plug-in screw screw screw

⁽¹⁾ Instead of linear current
⁽²⁾ Provides loop supply voltage - 24 VDC (only w/ isolated power supply)
⁽³⁾ 0.2A/250VAC for case 'L'
⁽⁴⁾ 0.5% for T/Cs "S", "R", and "B"
⁽⁵⁾ Not available for case 'L'

⁽⁶⁾ Ordered separately (see 'Accessories')
⁽⁷⁾ Available ONLY for cases 'H', 'V', and 'B'
⁽⁸⁾ Ask for availability!
⁽⁹⁾ Not available for cases 'Q' and 'S'

Ordering code RT284U - G0.G1.G4.G5G5.G9'9" - #1.#2

Code	Feature or option	Code values
G0	Case (front size)	B - 96x96 mm, H - 96x48 mm, V - 48x96 mm, Q - 72x72 mm, S - 48x48 mm, L - 72x36 mm
G1	Power supply	A - 230 VAC ⁽⁶⁾ , B - 115 VAC ⁽⁶⁾ , C - 90...250 V, E - 9(12) VAC w/ external transformer ⁽⁶⁾ , P - 12...24 V, non-isolated, Q - 12...24 V, isolated, R - 24 VAC
G4	Adjustment controls	A - keyboard, H - rotary encoder ⁽⁷⁾
G5	Relay output	X - none, C - relay NO/NC, 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"
#1	Increased front protection	X - none, P - IP65 front protection ⁽⁹⁾
#2	Customer specified input signal	X - none, Z - custom linear signal (specify!) ⁽¹⁾