

Programmable Controller RT28U

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

RT28U is designed for wide range of applications. It is equipped with a 3-digit LED display, a universal input for Pt100, Pt1000, PTC, 6 thermocouple types as well as for linear current, voltage, and resistive signals from external transmitters and can have up to 2 programmable relay control/alarm outputs. RT28U can be ordered with either keyboard, or unique rotating encoder for set-point adjustment and programming. All modifications 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, serial interface, and excellent price-to-performance ratio, RT28U 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...999 °C
Thermocouple "K"		-20...999 °C
Thermocouple "S"		0...999 °C
Thermocouple "R"		0...999 °C
Thermocouple "B"		100...999 °C
Linear voltage 0...10 V		-199...999, programmable
Linear current 0(4)...20 mA		-199...999, programmable
Linear resistive 0...1 kΩ		-199...999, programmable
Custom linear (option) ⁽¹⁾		-199...999, 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 or NO ⁽³⁾ contact	
Solid state relay ⁽⁹⁾	1A/250VAC ⁽⁴⁾	
MOS gate ⁽⁹⁾	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	

⁽¹⁾ Instead of linear current

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

⁽³⁾ For case 'S' w/ SMPS, 1st relay is NO;

for case 'L' and case 'S' w/ serial interface, 2nd relay is NO.

⁽⁴⁾ 0.2A/250VAC for case 'L'

⁽⁵⁾ 0.5% for T/Cs "S", "R", and "B"

Accuracy

Measurement error	0.3% ⁽⁶⁾ 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 V
Isolated low voltage	12...24 V or 24 VAC
Non-isolated low voltage	12...24 V
External mains transformer ⁽⁷⁾	9(12) VAC
Consumption	max. 1.5 VA

Indication and controls

Digital display	3 LED indicators
LEDs	2 LEDs for output state
Controls	keyboard w/ 3 keys or rotary encoder ⁽⁸⁾

Operating conditions

Ambient temperature	-10...65 °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	14
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⁾ Not available for case 'L'.

⁽⁷⁾ Available only for case 'L'. Transformer is ordered separately.

⁽⁸⁾ Available ONLY for case 'H'.

⁽⁹⁾ Ask for availability!

⁽¹⁰⁾ Not available for case 'S'.

Ordering code RT28U - 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, 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 ⁽⁷⁾ , P - 12...24 V, non-isolated, Q - 12...24 V, isolated, R - 24 VAC
G4	Adjustment controls	A - keyboard, H - rotary encoder ⁽⁸⁾
G5	Relay output	X - none, A - relay NO ⁽³⁾ , C - relay NO/NC ⁽³⁾ , D - SSR ⁽⁹⁾ , J - for external SSR, M - isolated MOS gate ⁽⁹⁾
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 ⁽¹⁰⁾
#2	Customer specified input signal	X - none, Z - custom linear signal (specify!) ⁽¹⁾