

## Programmable Controller RT28U-R

- ◆ Low cost
- ◆ DIN-rail case and 11-pin box for rail mounting
- ◆ 3-digit bright LED display
- ◆ Universal input for 4 RTDs, 6 T/Cs, and 3 linear types
- ◆ RS485 serial interface available

RT28U-R is a version of RT28U for rail mounting. 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 and voltage signals from external transmitters and can have up to 2 programmable relay control/alarm outputs. The device has 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, serial interface, and excellent price-to-performance ratio, RT28U-R is a 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...1000 °C
Thermocouple "S"	0...1000 °C
Thermocouple "R"	0...1000 °C
Thermocouple "B"	100...1000 °C
Linear voltage 0...10 V	-199...999, programmable
Linear current 0(4)...20 mA	-199...999, programmable
Custom linear (option) <sup>(1)</sup>	-199...999, programmable
Two-wire external transmitter	4...20 mA <sup>(2)</sup>
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 <sup>(3)</sup> contact
Solid state relay	1A/250VAC
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 <sup>(4)</sup>	RS485, isolated

Accuracy	
Measurement error	0.3% <sup>(5)</sup> 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	230 VAC or 115 VAC
Isolated low voltage	12...24 VAC/DC or 24 VAC
Non-isolated low voltage	12...24 VAC/DC
External mains transformer <sup>(6)</sup>	9(12) VAC
Consumption	max. 1.5 VA
Indication and controls	
Digital display	3 LED indicators
LEDs	2 LEDs for output state
Keyboard	3 membrane keys
Operating conditions	
Operating temperature	-10...65 °C
Operating humidity	0...85 %RH
Design and materials	'R1' 'R2'
Dimensions [mm]	70x110x58 35x78x91
Mounting	on rail in socket or on rail
Display digit height [mm]	14 10
Maximum weight [g]	300 200
Protection, front/terminals	IP20 IP44 / IP20
Case material	plastic plastic
Wiring	screw terminals socket UNDECAL <sup>(6)</sup>

<sup>(1)</sup> Instead of linear current

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

<sup>(3)</sup> NO for case 'R2'

<sup>(4)</sup> Not available for case 'R2'

<sup>(5)</sup> 0.5% for T/Cs "S", "R", and "B"

<sup>(6)</sup> Ordered separately (see 'Accessories')

### Ordering code RT28U - G0.G1.G5G5.G9'9" - #1

Code	Feature or option	Code values
G0	Case	R1 - for rail mounting, R2 - 11-pin box
G1	Power supply	A - 230 VAC, B - 115 VAC, E - 9(12) VAC w/ external transformer <sup>(6)</sup> , P - 12...24 V, non-isolated, Q - 12...24 V, isolated, R - 24 VAC
G5	Relay output	X - none, C - relay NO/NC <sup>(3)</sup> , D - SSR, J - for external SSR, M - isolated MOS gate
G9'	Serial interface <sup>(4)</sup>	X - none, B - RS485
G9"	Protocol	A - ASCII, C - ASCII for "PolyMonitor"
#1	Customer specified input signal	X - none, Z - custom linear signal (specify!) <sup>(1)</sup>