

## 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 4 linear types
- ◆ RS485 serial interface available

RT28U-R is a modification 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, voltage, and resistive 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...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) <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 or NO <sup>(3)</sup> contact
Solid state relay <sup>(7)</sup>	1A/250VAC
MOS gate <sup>(7)</sup>	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 V or 24 VAC	
Non-isolated low voltage	12...24 V	
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		
Ambient temperature	-10...65 °C	
Ambient 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/NC for case 'R1'; 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')  
<sup>(7)</sup> Ask for availability!

### 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, P - 12...24 V, non-isolated, Q - 12...24 V, isolated, R - 24 VAC
G5	Relay output	X - none, A - relay NO <sup>(3)</sup> , C - relay NO/NC <sup>(3)</sup> , D - SSR <sup>(7)</sup> , J - for external SSR, M - isolated MOS gate <sup>(7)</sup>
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>