

Universal Programmable Controller RT1900-R



- ◆ DIN-rail or wall mounting
- ◆ 4-digit display
- ◆ Triple isolation
- ◆ Universal programmable input
- ◆ PID-fuzzy auto-tuning
- ◆ Up to 3 relay and 1 analog outputs
- ◆ RAMP/SOAK pattern control
- ◆ RS485 MODEBUS serial interface
- ◆ USB port for parameter storage

RT1900-R is a microprocessor-based controller for DIN-rail mounting, with universal input accepting Pt100, 10 thermocouple types and various linear signals. It can have up to 3 relays (control or alarm) and analog output that may be controlled through ON/OFF and self-tuning PID-fuzzy algorithms as well as optional RAMP/SOAK pattern control. A bumpless auto-manual change-over is also built in the PID algorithm. RT1900-R is equipped with a 4-digit LED display and a 4-button keyboard for programming. A triple input/output/supply isolation protects the controller from electromagnetic disturbances. Communication features include RS485 MODEBUS interface and USB port for program parameter storage. RT1900-R is well equipped for trouble-free operation in harsh industrial conditions.



Technical specifications

Input (programmable)

Pt100 (w=1.385, 1.391); 3-wire	-199.9...600.0 °C, 6 ranges
Thermocouple "B"	0...1820 °C, 1 range
Thermocouple "E"	0...900 °C, 2 ranges
Thermocouple "J"	0...1200 °C, 6 ranges
Thermocouple "K"	0...1200 °C, 6 ranges
Thermocouple "L"	0...800 °C, 2 ranges
Thermocouple "N"	0...1300 °C, 2 ranges
Thermocouple "R"	0...1769 °C, 2 ranges
Thermocouple "S"	0...1769 °C, 2 ranges
Thermocouple "T"	-199.9...400.0 °C, 3 ranges
Thermocouple "U"	-199.9...600.0 °C, 3 ranges
Linear DC (mV)	min. -10 mV...max. 50 mV, 4 ranges
Linear DC (V)	min. -2 V...max.10 V, 9 ranges
Linear DC (mA)	0...20 mA, 4...20 mA
Linear resistive	0...5 kΩ
Linear display	-1999...9999, programmable DP
Input type/range selection	programmable ⁽¹⁾
Input isolation	optical, 1500 VAC

Outputs (up to 3 outputs)

Control outputs	max. 2 outputs ⁽²⁾
- relay electromechanical	5A/250V w/ NO contact
- solid state relay ⁽³⁾	1A/250VAC
- MOS gate ⁽³⁾	0.1A/60V, optically isolated
- output for external SSR	24 V, 20 mA
- analog output (load) ⁽³⁾	0(4)...20 mA (≤ 560 Ω), 0...5(10) V (≤ 20mA)
- isolation	optical, 1500 VAC
- control algorithms	ON/OFF and PID-fuzzy, programmable
- auto-tuning	programmable
- RAMP/SOAK pattern	1(2) programs w/ 16(8) points
Alarm outputs	max. 3 outputs ⁽²⁾
- relay electromechanical	5A/250V w/ NO contact

⁽¹⁾ Some linear ranges may require hardware adjustments. Contact COMECO!

⁽²⁾ Maximum total outputs: 2 control + 1 alarm, or 1 control + 2 alarm, or 3 alarm

⁽³⁾ Ask for availability!

Communication

Serial interface ⁽³⁾	isolated RS485, MODEBUS configuration and networking
- function	max. 32 devices, max. 1200 m
- network	mini-A USB side connector
USB interface	parameter storage
- function	

Accuracy

Measurement error	0.3% from span
Temperature drift	0.01% from span for 1 °C
Sample time	250 ms
Cold junction compensation	automatic software
RTD line compensation	automatic software

Power supply

Supply voltage	85...265 VAC
Consumption	max. 4 VA

Indication and controls

Digital display	4 LED indicators, 7 mm
LEDs	3 LEDs for output state, LED for programming
Keyboard	4 tactile keys

Operating conditions

Ambient temperature	0...50 °C
Ambient humidity	20...85 %RH
Storage temperature	-25...65 °C
Storage humidity	0...95 %RH, non-condensing

Design and materials

Case material	plastic
Mounting	on 35 mm DIN rail or on wall
Wiring	screw terminals
Dimensions	40x107x43 mm
Weight	max. 120 g
Protection class	IP10

Ordering code RT1900 - R.G5'G5'.G5"G5"G5".G8.G9.G11

Code	Feature or option	Code values
G5'	Relay control output ⁽²⁾	X - none, A - relay NO, D - SSR ⁽³⁾ , J - for external SSR, M - isolated MOS gate ⁽³⁾
G5"	Relay alarm output ⁽²⁾	X - none, A - relay NO
G8	Control algorithm	F - PID-fuzzy (ON/OFF), H - PID-fuzzy plus pattern control
G9	Serial interface	X - none, B - RS485 (MODEBUS) ⁽³⁾
G11	Analog control output	X - none, E - 0...20 mA ⁽³⁾ , F - 4...20 mA ⁽³⁾ , I - 0...5 V ⁽³⁾ , K - 0...10 V ⁽³⁾