

# RE81 TEMPERATURE CONTROLLER

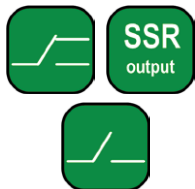
## FEATURES:



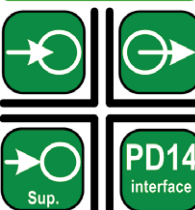
## INPUTS:



## OUTPUTS:



## GALVANIC ISOLATION:



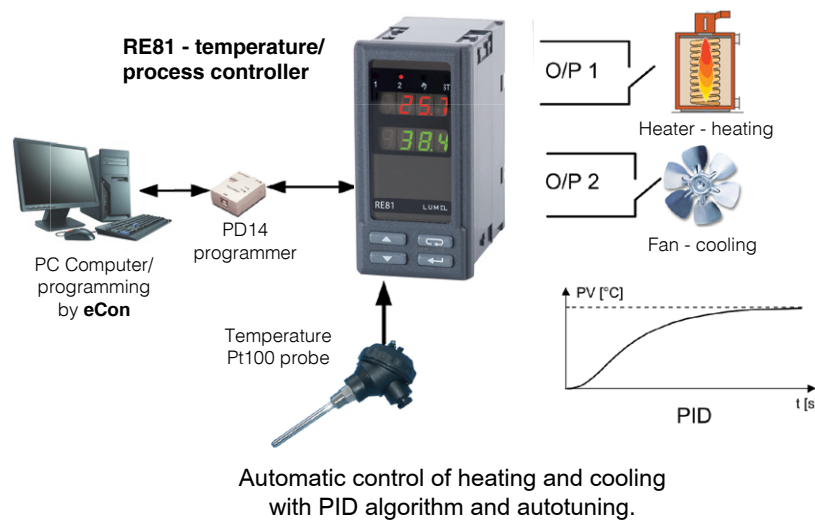
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- Control acc. to the PID, ON-OFF, heating/cooling algorithms or step-by-step control.
- Co-operates directly with resistance thermometers (RTD) or thermocouple sensors (TC).
- Automatic selection of PID parameters.
- 2 configurable outputs.
- Controller configuration by means of the free delivered eCon software.
- Error signaling by means of messages.
- Manual control mode.
- Frontal protection grade ensured by the casing: IP65.

## EXAMPLE OF APPLICATION



## INPUTS

Sensor type	Range [°C]	Basic error [°C]	Remarks	Additional error	
Resistance thermometer (acc. to EN 60751), measuring current 0.25mA					
Pt100*)	-50..100	±0.8	Resistance of the sensor line < 10 Ω; one must connect with wires of the same section and length	<b>Additional errors in rated operating conditions caused by:</b> <ul style="list-style-type: none"> <li>• compensation of reference junction temperature changes ≤ 2°C</li> <li>• line resistance change of the RTD sensor ≤ 50% of the basic error value/10K</li> <li>• change of the ambient temperature ≤ 100% of the basic error/10K</li> </ul>	
	0..250	±1.3			
	0..600	±3.0			
Thermocouple of J type (acc. to PN-EN 60584-1)					
Fe-CuNi	0..250	±2.0			
	0..600	±3.0			
	0..900	±4.0			
Thermocouple of K type (acc. to PN-EN 60584-1)					
NiCr-NiAl	0..600	±3.0			
	0..900	±4.0			
	0..1300	±6.0			
Thermocouple of S type (acc. to PN-EN 60584-1)					
PtRh10-Pt	0..1600	±8.0			

## OUTPUTS

Output kind	Properties
voltageless relay	switching contact, overload capacity: 5A/230V
binary voltage	voltage 6V, without isolation from the sensor side

## PARAMETERS OF WORK

Detection of error in the measurement circuit:	thermocouple, Pt100	overflow of measuring range
Way of output operation	reverse: for heating	direct: for cooling
Signalling:	active output, auto-tuning, manual control	

**SEE ALSO:**

### EXTERNAL FEATURES

Weight	< 0.25 kg	
Dimensions	48 x 96 x 93 mm	
Protection grade (acc. to EN 60529)	ensured by the housing: IP65	from the terminal side: IP20

### RATED OPERATING CONDITIONS

Supply voltage	230 V a.c. ± 10%, 50/60Hz	power consumption: < 4 VA
Temperature	ambient: 0...23...50°C	storage: -20...70°C
Relative humidity	≤ 85%	condensation inadmissible
Operating position	any	
Preheating time	30 min	
Averaging time	≥ 0.33 s	

### SAFETY AND COMPATIBILITY REQUIREMENTS

Electromagnetic compatibility	Noise immunity	acc. to EN 61000-6-2
	Noise emissions	acc. to EN 61000-6-4
Isolation between circuits	basic	acc. to EN 61010-1
Pollution grade	2	
Installation category	III	
Maximal phase-to-earth operating voltage	for the supply circuit, outputs: 300 V	
	for input circuits: 50 V	
Altitude above sea level	< 2000 m	

### CONNECTION DIAGRAMS

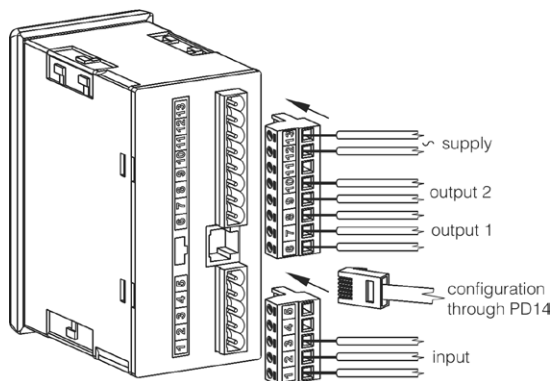


Fig. 1 View of the controller connection strips

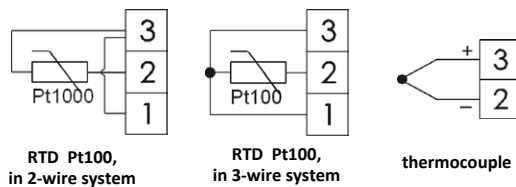


Fig. 2. Connections of input signals

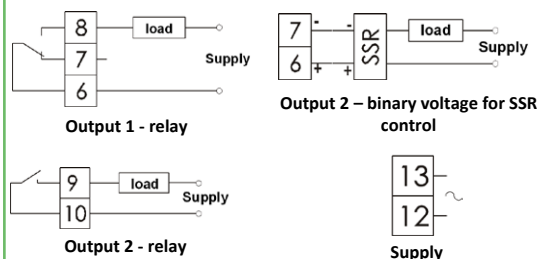


Fig. 3. Supply and load circuit connections

### ORDERING

#### ORDERING CODES:

RE81 -	XX	X	X	X	X
<b>Input signal:</b>					
RTD Pt100 (-50...100°C)	01				
RTD Pt100 (0...250°C)	02				
RTD Pt100 (0...600°C)	03				
Thermocouple J (Fe-CuNi)(0...250°C)	04				
Thermocouple J (Fe-CuNi)(0...600°C)	05				
Thermocouple J (Fe-CuNi)(0...900°C)	06				
Thermocouple K (NiCr-NiAl)(0...600°C)	07				
Thermocouple K (NiCr-NiAl)(0...900°C)	08				
Thermocouple K (NiCr-NiAl)(0...1300°C)	09				
Thermocouple S (PtRh10-Pt)(0...1600°C)	10				
<b>Output*:</b>					
relay		1			
binary 0/6 V for SSR control		2			
<b>Version:</b>					
standard			00		
custom-made**			XX		
<b>Language:</b>					
Polish				P	
English				E	
other**				X	
<b>Acceptance tests:</b>					
without extra requirements					0
with a extra quality inspection certificate					1
acc. to customer's request**					X

\* - second output - relay  
\*\* - after agreeing with the manufacturer

#### Order example:

The code **RE81 - 06 2 00 E 0** means:  
**RE81** - temperature controller of RE81 type  
**06** - input: TC J, (0...900°C)  
**2** - output: binary 0/6 V for SSR control  
**00** - standard version  
**E** - English language  
**0** - without extra requirements

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