

# RE71 TEMPERATURE CONTROLLER

## FEATURES:

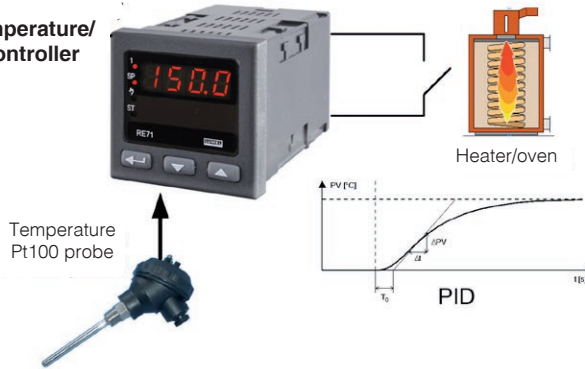
- IP65
- Auto tuning
- SMART PID
- ON/OFF control
- Password protection



- Control acc. to the PID or ON/OFF algorithm.
- Direct co-operation with resistance thermometer or thermocouple sensors.
- Automatic selection of PID parameters.
- One control output, relay output or voltage output for SSR relay control.
- Manual control mode.

## EXAMPLE OF APPLICATION

RE71 - temperature/process controller



Automatic control of the heater using the PID algorithm with autotuning function

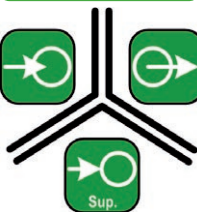
## INPUTS:

- Temperature probe
- Heater/oven

## OUTPUTS:

- SSR output

## GALVANIC ISOLATION:



### 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>• 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 EN 60584-1)					
Fe-CuNi	0..250	±2.0			
	0..600	±3.0			
	0..900	±4.0			
Thermocouple of K type (acc. to EN 60584-1)					
NiCr-NiAl	0..600	±3.0			
	0..900	±4.0			
	0..1300	±6.0			
Thermocouple of S type (acc. to 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, set point value display, auto-tuning, manual control	

Export department:  
+48 68 45 75 139/ 305/  
321/ 368  
Fax: +48 68 32 54 091  
e-mail: export@lumel.com.pl

„LUMEL” S.A.  
ul. Słubicka 1  
65-127 Zielona Góra  
POLAND  
WWW.LUMEL.COM.PL

### EXTERNAL FEATURES

Weight	< 0.25 kg	
Dimensions	48 x 48 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. $\pm$ 10%, 50/60Hz	power consumption: < 4 VA
Temperature	ambient: 0...23...50°C	storage: -20...70°C
Relative humidity	$\leq$ 85%	condensation inadmissible
Operating position	any	
Preheating time	30 min	
Averaging time	$\geq$ 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 circuit: 50 V	
Altitude above sea level	< 2000 m	

### CONNECTION DIAGRAMS

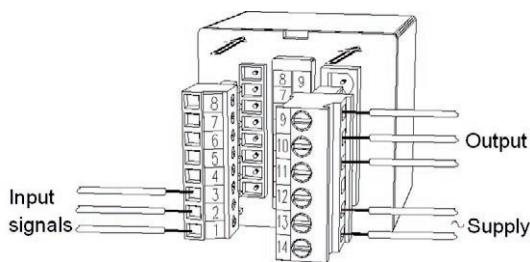
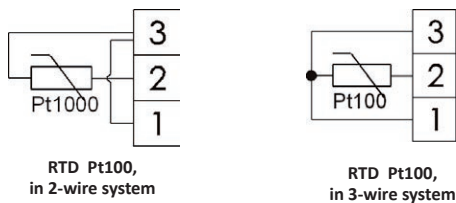
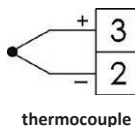


Fig. 1 View of the controller connection strips



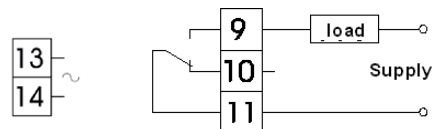
RTD Pt100, in 2-wire system

RTD Pt100, in 3-wire system



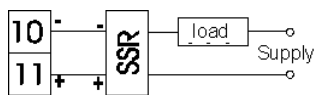
thermocouple

Fig. 2. Connections of input signals



Supply

Output - Relay



Output - binary voltage for SSR control

Fig. 3. Connections of the supply and load circuit

### ORDERING

#### ORDERING CODES:

RE71 -	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

\* - after agreeing with the manufacturer

#### Order example:

The code **RE71 - 06 2 00 E 0** means:

- RE71** - temperature controller of RE71 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

### SEE ALSO:



N25T meter for measurement of temperature from resistance thermometers and thermocouples sensors.



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#### Export department:

+48 68 45 75 139/ 305/  
321/ 368

Fax: +48 68 32 54 091

e-mail: [export@lumel.com.pl](mailto:export@lumel.com.pl)

„LUMEL” S.A.  
ul. Słubicka 1  
65-127 Zielona Góra  
POLAND

[WWW.LUMEL.COM.PL](http://WWW.LUMEL.COM.PL)