

# 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.

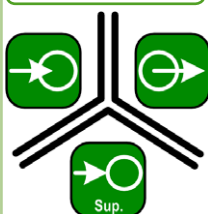
## INPUTS:



## OUTPUTS:

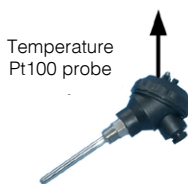
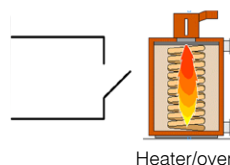


## GALVANIC ISOLATION:

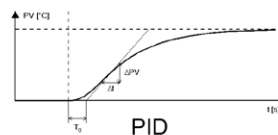


## EXAMPLE OF APPLICATION

RE71 - temperature/process controller



Temperature Pt100 probe



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

## 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><br>• compensation of reference junction temperature changes ≤2°C<br>• change of the ambient temperature ≤100% of the basic error/10K |  |
|   | 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 |                             |

Sifam Tinsley Instrumentation Ltd  
Unit 1 Warner Drive,  
Springwood Industrial Estate  
Braintree, Essex, UK, CM72YW  
E-mail: sales@sifamtinsley.com  
Web: www.sifamtinsley.com/uk  
Contact: +44(0)1803615139



Sifam Tinsley Instrumentation Inc.  
3105, Creekside Village Drive,  
Suite No. 801, Kennesaw,  
Georgia 30144 (USA)  
E-mail: psk@sifamtinsley.com  
Web: www.sifamtinsley.com  
Contact No.: +1 404 736 4903

## 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

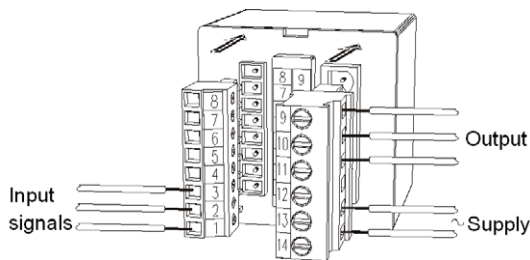
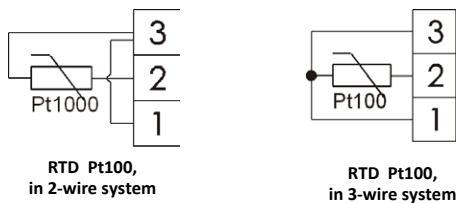


Fig. 1 View of the controller connection strips



RTD Pt100, in 2-wire system      RTD Pt100, in 3-wire system

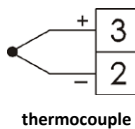
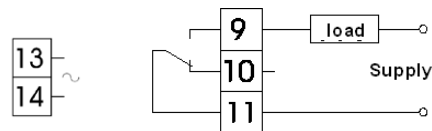
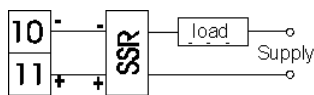


Fig. 2. Connections of input signals



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

Sifam Tinsley Instrumentation Ltd  
Unit 1 Warner Drive,  
Springwood Industrial Estate  
Braintree, Essex, UK, CM72YW  
E-mail: sales@sifamtinsley.com  
Web: www.sifamtinsley.com/uk  
Contact: +44(0)1803615139



Sifam Tinsley Instrumentation Inc.  
3105, Creekside Village Drive,  
Suite No. 801, Kennesaw,  
Georgia 30144 (USA)  
E-mail Id : psk@sifamtinsley.com  
Web: www.sifamtinsley.com  
Contact No.: +1 404 736 4903