

# MICROPROCESSOR CONTROLLER RE21 TYPE



## APPLICATION

The RE21 controller is destined to control temperature in furnaces, dryers, injection moulding machines and others.

It co-operates directly with temperature sensors of resistance thermometer or thermocouple types. For thermocouples, the temperature of cold ends is automatically compensated.

The controller has a relay output with a shorted-opened configuration enabling the direct control of not big power objects.

## TRCHNICAL DATA

**Input signals** acc. to the table 1

Input signals and measuring ranges for inputs Table 1

| Sensor/Input type                   | Marking | Range [°C] | Resolution [°C] | Basic error [°C] |
|-------------------------------------|---------|------------|-----------------|------------------|
| <b>Pt100</b><br>acc. EN 60751+A2    | Pt100   | -50...100  | 0.1             | 0.8              |
| <b>Pt100</b>                        | Pt100   | 0...250    | 0.1             | 1.3              |
| <b>Pt100</b>                        | Pt100   | 0...600    | 0.1             | 3.0              |
| <b>Fe-CuNi</b><br>acc. EN 60584-1   | J       | 0...250    | 0.1             | 3.0              |
| <b>Fe-CuNi</b>                      | J       | 0...600    | 0.1             | 4.0              |
| <b>Fe-CuNi</b>                      | J       | 0...900    | 0.1             | 5.0              |
| <b>NiCr-NiAl</b><br>acc. EN 60584-1 | K       | 0...600    | 0.1             | 4.0              |
| <b>NiCr-NiAl</b>                    | K       | 0...900    | 0.1             | 5.0              |
| <b>NiCr-NiAl</b>                    | K       | 0...1300   | 0.1             | 6.0              |
| <b>PtRh10-Pt</b><br>acc. EN 60584-1 | S       | 0...1600   | 0.1             | 7.0              |

|  |   |
|--|---|
| <b>Measurement time</b>  | 0.5 s   |
| <b>Error detection in the measuring circuit:</b><br>- thermocouple Pt100 | exceeding of the measuring range  |
| <b>Kind of output:</b><br>- relay  | switching contact<br>maximal load capacity:<br>voltage: 250 V a.c., 150 V d.c.<br>current: 5A, 250 V a.c., 5A, 30 V d.c.<br>resistance load: 1250 VA, 150 W |
| - logic voltage<br>(without insulation from the sensor side)             | voltage 6 V +0.3 V, resistance limiting the current: 100 Ω  |
| <b>Way of output action:</b><br>- reverse<br>- direct                    | for heating<br>for cooling  |
| <b>Signaling of:</b><br>- active output<br>- set value display           |   |
| <b>Rated service conditions:</b><br>- supply voltage                     | 230 V a.c. ±10%<br>110 V a.c. ±10%<br>24 V a.c. ±10%  |
| - supply voltage frequency   | 50/60 Hz  |
| - ambient temperature  | 0...23...50 °C  |
| - storage temperature  | -20...+70 °C  |
| - relative humidity  | < 85 % (inadmissible condensation)  |
| - external magnetic field  | < 400 A/m   |
| - preheating time  | 30 min  |
| - work position  | any   |
| <b>Power consumption</b>   | < 3 VA  |
| <b>Weight</b>  | < 0.25 kg   |
| <b>IP protection ensured through the housing acc. EN 60529</b>           |   |
| - from the frontal side  | IP40  |
| - from terminals   | IP20  |

### Additional errors in rated working conditions caused by:

- ambient temperature changes ≤ 100% of the basic error /10 K.

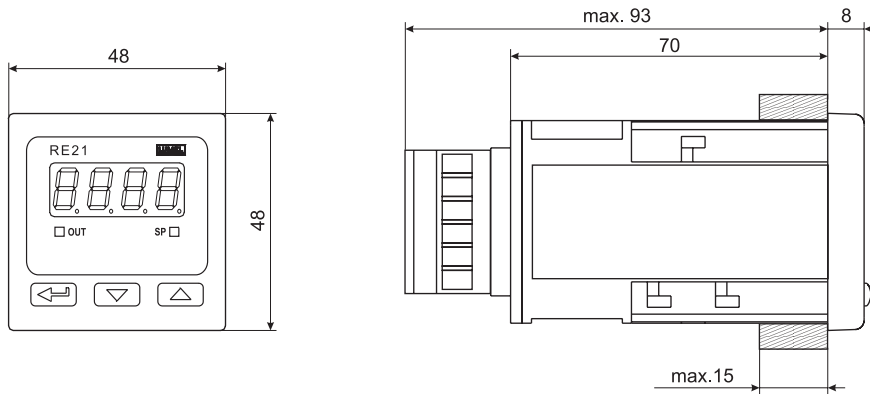
### Security requirements acc to EN 61010-1

- installation category - III,
- pollution degree - 2,
- maximal phase-to-earth work voltage:
  - for the supply circuit, outputs - 300 V
  - for input circuits - 50 V

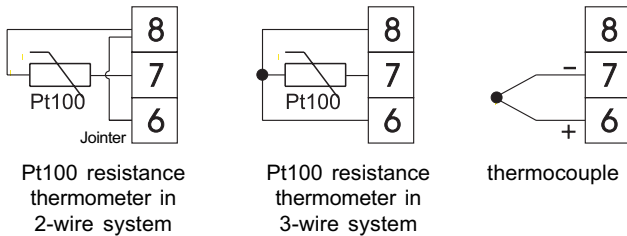
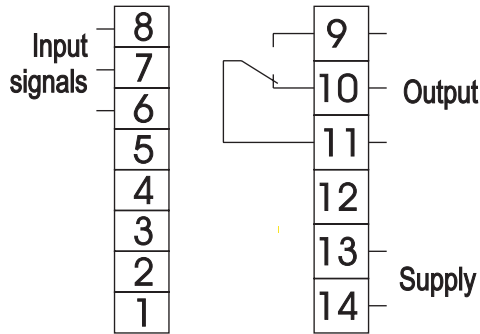
### Electromagnetic compatibility:

- immunity EN 61000-6-2
- emission EN 61000-6-4

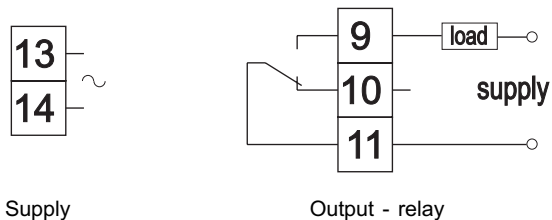
## OVERALL AND FIXING DIMENSIONS



## ELECTRICAL CONNECTIONS



## CONNECTION OF THE LOAD CIRCUIT



Output - binary voltage for SSR control

## ORDERING CODES

Table 2

| Temperature controller RE21 -                      | XX | X | XX | X |
|--|----|---|----|---|
| <b>Input</b>                                       |    |   |    |   |
| resist. thermometer Pt100 (-50...100°C) .....      | 01 |   |    |   |
| resist. thermometer Pt100 (0...250°C) .....        | 02 |   |    |   |
| resist. thermometer Pt100 (0...600°C) .....        | 03 |   |    |   |
| thermocouple Fe-CuNi (0...250°C) .....             | 04 |   |    |   |
| thermocouple Fe-CuNi (0...600°C) .....             | 05 |   |    |   |
| thermocouple Fe-CuNi (0...900°C) .....             | 06 |   |    |   |
| thermocouple NiCr-NiAl (0...600°C) .....           | 07 |   |    |   |
| thermocouple NiCr-NiAl (0...900°C) .....           | 08 |   |    |   |
| thermocouple NiCr-NiAl (0...1300°C) .....          | 09 |   |    |   |
| thermocouple PtRh10-Pt (0...1600°C) .....          | 10 |   |    |   |
| as ordered* .....                                  | X  |   |    |   |
| <b>Supply voltage:</b>                             |    |   |    |   |
| 230 V 50/60 Hz .....                               | 1  |   |    |   |
| 110 V 50/60 Hz .....                               | 2  |   |    |   |
| 24 V 50/60 Hz .....                                | 3  |   |    |   |
| as ordered* .....                                  | X  |   |    |   |
| <b>Output:</b>                                     |    |   |    |   |
| relay .....  | 00 |   |    |   |
| logic 0/6 V for SSR control .....                  | 01 |   |    |   |
| without output .....                               | 09 |   |    |   |
| as ordered* .....                                  | XX |   |    |   |
| <b>Extra acceptance tests:</b>                     |    |   |    |   |
| without extra quality requirements .....           | 0  |   |    |   |
| with an extra quality inspection certificate ..... | 1  |   |    |   |
| acc. agreement with the manufacturer** .....       | X  |   |    |   |

\* The code numbering is defined by the manufacturer

\*\* After agreement with the manufacturer

Example of ordering:

Code **RE21 - 03 - 2 - 00 - 0** means:

**03** - a Pt100 resistance thermometer as the input

**2** - supply = 110 V, 50/60 Hz

**00** - relay output

**0** - without extra quality requirements