**RE81 TEMPERATURE CONTROLLER**

- 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**

**FEATURES:**
- IP65
- Auto tuning
- PD14 compatible
- eCon
- SMART PID
- ON/OFF control
- Password protection

**INPUTS:**

**Outputs**

- Resistance thermometer (acc. to EN 60751), measuring current 0.25mA
  - Pt100*)
    - Range [°C]: -50..100 ±0.8
    - Range [°C]: 0..250 ±1.3
    - Range [°C]: 0..600 ±3.0
  - Additional errors in rated operating conditions caused by:
    - Compensation of reference junction temperature changes ≤ 2°C
    - Line resistance change of the RTD sensor ≤ 50% of the basic error value/10K
    - Change of the ambient temperature ≤ 100% of the basic error/10K

- Thermocouple of J type (acc. to PN-EN 60584-1)
  - Fe-CuNi
    - Range [°C]: 0..250 ±2.0
    - Range [°C]: 0..600 ±3.0
    - Range [°C]: 0..900 ±4.0

- Thermocouple of K type (acc. to PN-EN 60584-1)
  - NiCr-NiAl
    - Range [°C]: 0..600 ±3.0
    - Range [°C]: 0..900 ±4.0
    - Range [°C]: 0..1300 ±6.0

- Thermocouple of S type (acc. to PN-EN 60584-1)
  - PtRh10-Pt
    - Range [°C]: 0..1600 ±8.0

**Outputs**

- 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

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**RE81 TEMPERATURE CONTROLLER**

### 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
- **Preheating time**: 30 min
- **Averaging time**: ≥ 0.33 s

### Connection Diagrams
- **Fig. 1**: View of the controller connection strips
- **Fig. 2**: Connections of input signals
- **Fig. 3**: Supply and load circuit connections

### 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
- **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

### Ordering Codes:
- **RE81 - XX X X X X**
  - **Input signal**:
    - 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
  - **Output**:
    - relay 1
    - binary 0/6 V for SSR control 2
  - **Version**:
    - standard 00
    - custom-made** XX
  - **Language**:
    - Polish P
    - English E
    - other** X
  - **Acceptance tests**:
    - without extra requirements 0
    - with a extra quality inspection certificate 1
    - acc. to customer’s request** X

**Order example**:
The code **RE81 - 06 2 00 E 0 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

### See Also:
- **Order example**:
  - RE81-19A