ROPEX

Temperature controller

RESISTRON® RES-5002

Installation and operating instructions for qualified professionals

W500200

Version 1

6/6/2024

5.5.2 Connection diagram

Additional protective equipment as well as the controller for the equipment should be provided on site.

When making electrical connections, also refer to the section Power supply as well as to the application report.

The following illustration shows an example of a standard application.

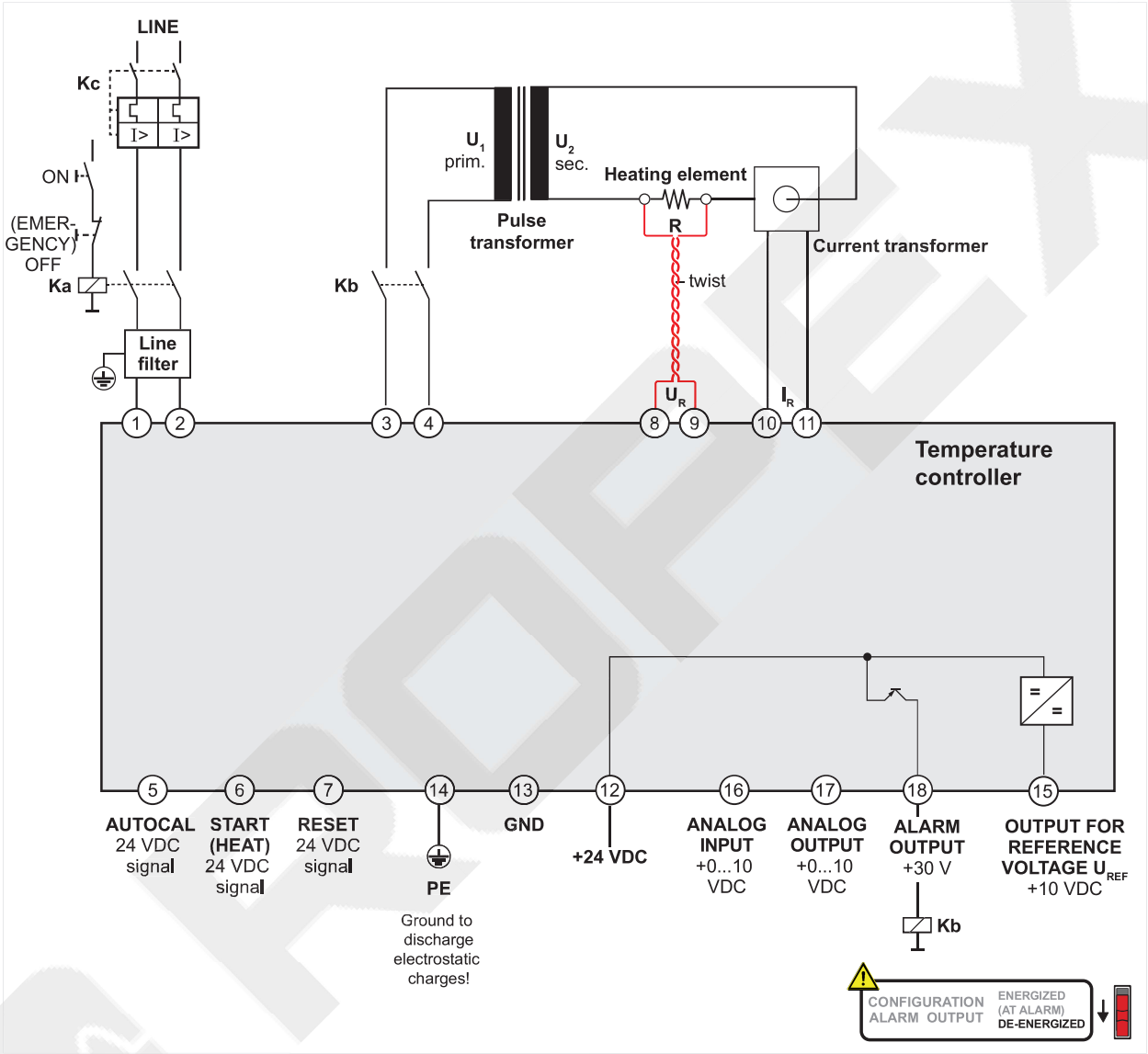

Illustration 4: Connection diagram, example

Wiring in electrical cabinet

An example of the layout and wiring of system components in the electrical cabinet can be found in the appendix under Example of electrical cabinet wiring [▶ 52].

13 Technical data

13.1 Technical data

NOTICE

Risk of defects and loss of warranty when operation of the device does not comply with technical specifications

Operating the device in noncompliance with the technical specifications can cause defects and result in loss of warranty.

▶ Comply with the technical specifications.

Element	Technical data
Type of construction	• Installation in an electrical cabinet • Snaps onto a standard top hat rail TS35 (35 mm) pursuant to EN 50022
Dimensions	Base area 90 × 75 mm Housing depth: 113 mm Depth including terminals: 135 mm
Line voltage	If connected between neutral conductor and an outer conductor: • 110 VAC -15 %…300 VAC +10 % If connected between two outer connectors: • 110 VAC -15 %…480 VAC +10 % Note: The voltage between the line conductor and ground shall not be more than 300 VAC.
Power supply system	• Balanced TN or TT system • Installation category III Note: Operation in an IT system is permitted only in agreement with ROPEX. Consult ROPEX, e-mail info@ropex.de.
Line frequency	47…63 Hz automatic adjustment to frequencies in this range
Current consumption max. (primary current of pulse transformer)	• I_{max} = 5 A (duty cycle = 100 %) • I_{max} = 25 A (duty cycle = 20 %, cycle duration 1 min)
Supply voltage Terminals 5+7	• 24 VDC, I_{max} = 200 mA (control mode), 1 A (switch-on current) Tolerance: ±10 % • SELV or PELV supplied from max. 300 VAC, Cat II
Measuring range	• Secondary voltage U_R: 0.4…120 VAC • Secondary current I_R: 30…500 A (with current transformer PEX-W5) Refer to the application report for more information.
Temperature measurement and control range	300 °C
Temperature coefficient	1100 ppm/K

Element	Technical data
Analog/setpoint input Terminals 13, 14, 15, 16	• Terminals 13+16: Voltage 0…10 VDC, I_{max} = 5 mA 0…10 VDC corresponds to 0…300 °C • Terminals 13+14+15+16: linear potentiometer *PD-3* (R = 2 kΩ) 0…2 kΩ corresponds to 0…300 °C
Output for reference voltage U_{REF} Terminal 15	U_{REF} = +10 VDC/± 5%, I_{max} = 5 mA
Digital logic level Terminals 5, 6, 7	LOW (0 V): 0…2 VDC HIGH (24 VDC): 8…30 VDC (power consumption max. 6 mA) Protected from polarity reversal
Analog/actual output Terminals 17+13	0…10 VDC, I_{max} = 5 mA 0…10 VDC corresponds to 0…300 °C Precision: ±1 % plus 50 mV
Alarm output Terminal 18	U_{max} < 3 V (saturation voltage), short-circuit-proof I_{max} = 0.2 A Configurable with the aid of the jumper.
Power loss	max. 20 W
Ambient conditions	• Max. altitude: 2000 m • Ambient temperature: +5…+45 °C • Maximum relative humidity: 80% at temperatures up to +31 °C, decreasing linearly to 50% relative humidity at +45 °C.
Degree of protection	IP20
Protection class	Protection class I
Weight	Approx. 0.5 kg (incl. Terminal strip)
Housing material	Thermosplastic layer: Polycarbonate (PC)
Connecting cable (type / cross sections)	• Rigid or flexible; 0.2…2.5 mm² (AWG 24…12) plug-in terminals • Plug-in terminals: Torque: 0.5…0.6 Nm (screwdriver: SZS 0.6 × 3.5 mm) Note: If ferrules are used, they must be crimped in accordance with DIN 46228 and IEC / EN 60947-1. This is essential to ensure proper electrical contact in the terminals.

13.2 How to order

NOTICE

Malfunctioning due to use of devices from other manufacturers

Devices from other manufacturers can lead to malfunctions in the control loop.

- ▶ Use only original ROPEX accessories.
- ▶ Use only system components manufactured by ROPEX or that are approved for use with ROPEX equipment.

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Further information and downloads related to the product can be found here.