

RES-5008

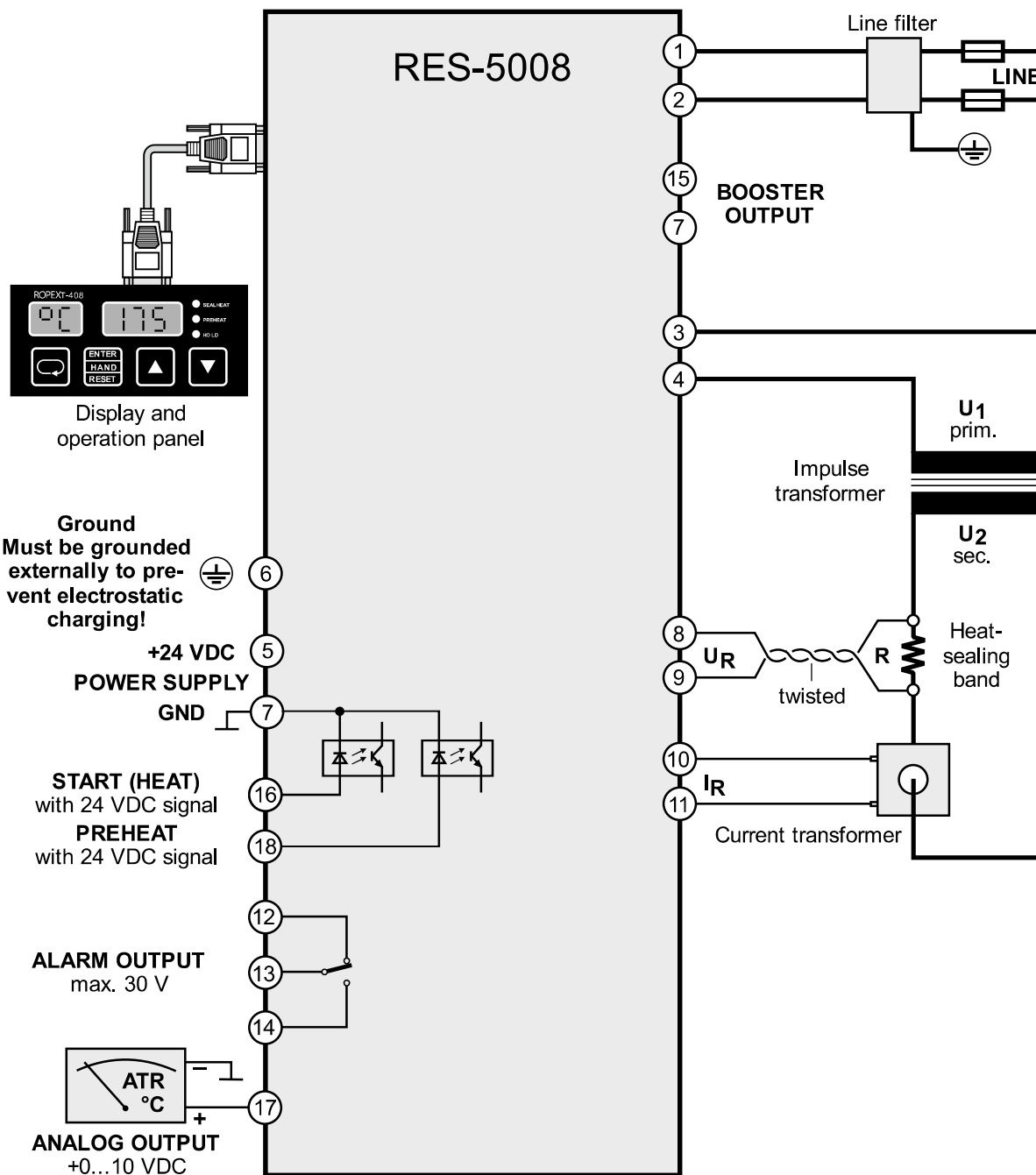
User Guide



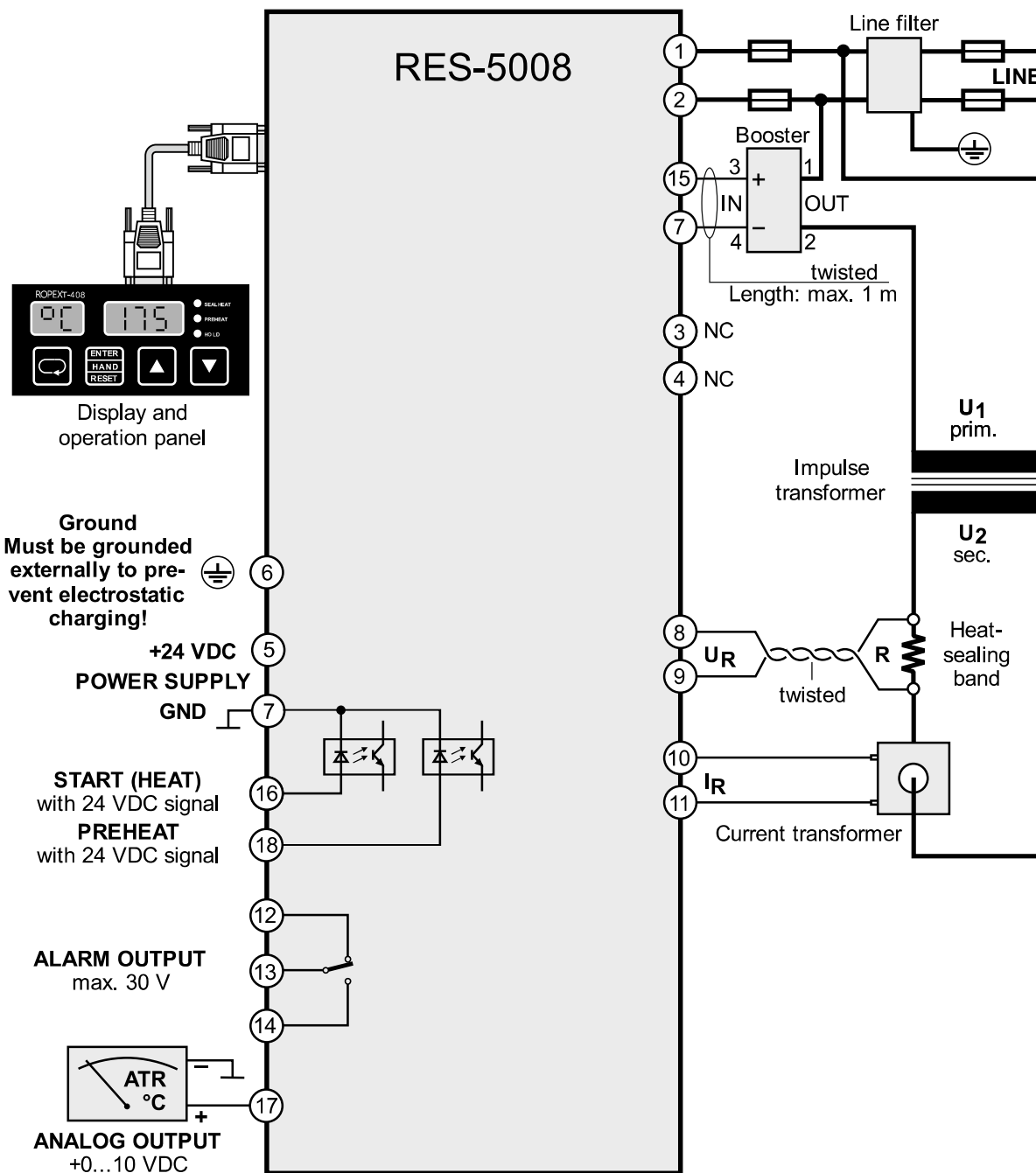
Important features

- Separate terminal for operation and display
- Automatic zeroing (AUTOCAL)
- Automatic optimisation (AUTOTUNE)
- Automatic configuration of the secondary voltage and current range (AUTORANGE)
- Automatic phase correction (AUTOCOMP)
- Automatic frequency adaptation
- Booster output standard
- Analogue output 0...10 VDC for ACTUAL temperature
- 24 VDC control signals for START and PREHEAT with electrical isolation
- Alarm function with error diagnosis
- Heating element alloy and temperature range can be selected
- Wide voltage range for the use of 110...480 V
- Micro-USB interface for ROPEXvisual®

7.6 Circuit diagram (standard)



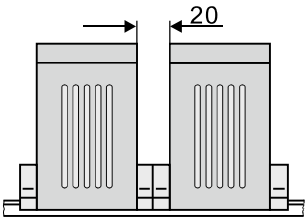
7.7 Circuit diagram with booster connection



13 Technical data

	NOTE Operation of the RESISTRON® Temperature Controller RES-5008 outside of these technical specifications can lead to loss of warranty and can cause defects.
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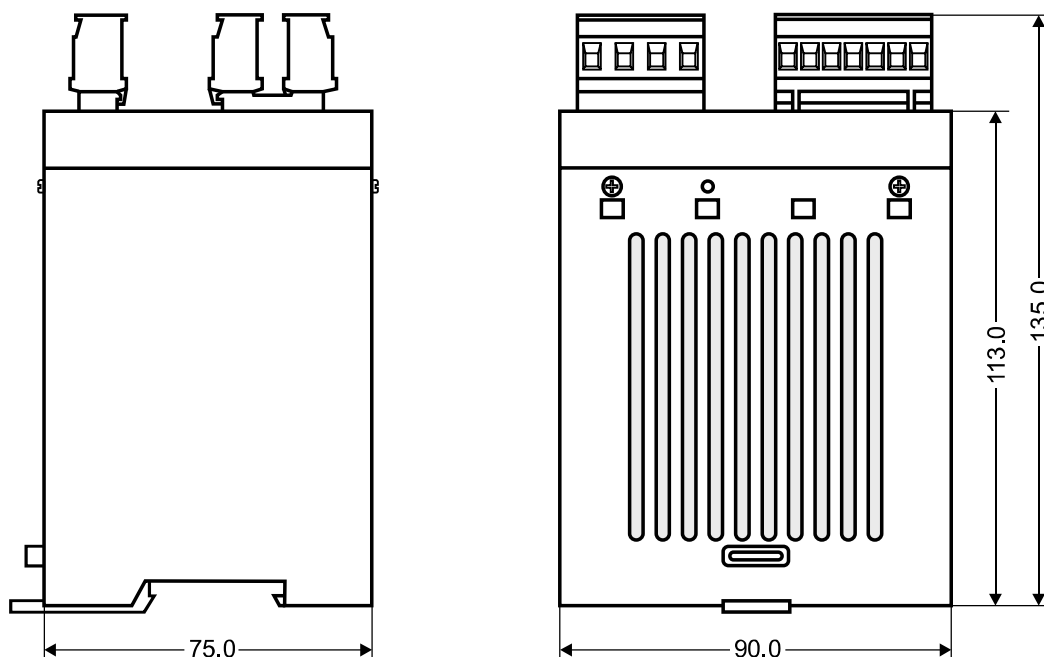
Design	Regulator: Housing for electrical cabinet mounting Can be snapped on to TS35 top hat rail (35 mm) in accordance with EN 60715 Basic surface: 90x75 mm; depth: 135 mm (incl. connection terminals) Terminal: Housing for panel mounting Dimensions (W x H): 96 x 48 mm, depth: 55 mm (without plug)
Line voltage	Connected between neutral conductor and an outside conductor: 110 VAC -15%...300 VAC +10% or Connected between two outside conductors: 110 VAC -15%...480 VAC +10%  CAUTION The voltage between outside conductor and earth must not exceed 300 VAC.
Power supply	Symmetrical TN or TT system Overvoltage category III  CAUTION Operation in voltage-free system (e.g. IT system) only after checking with ROPEX.
Line frequency	47...63 Hz, automatic frequency adjustment in this range
Current consumption (Primary current of the impulse transformer)	$I_{\max} = 5 \text{ A}$ (ED = 100%) $I_{\max} = 25 \text{ A}$ (ED = 20%, cycle duration 1 min) A booster must be used for higher current power requirements (↪ Chapter 16)
24 VDC power supply Terminals 5+7	24 VDC, $I_{\max} = 200 \text{ mA}$ (control mode), 1 A (switch-on current) Tolerance: $\pm 10\%$ SELV or PELV supplied from maximum 300VAC, Cat II
Measurement range	Secondary voltage U_R : 0.4 ...120 VAC (lower voltages with MOD 01, higher voltages with a ROPEX series resistor) Secondary current I_R : 30...500 A with current transformer PEX-W4/W5 (lower currents: Secondary cables lead through the current transformer several times, higher currents with a load resistor) The dimensioning is made in the ROPEX application report.

Heating element type and temperature range	In addition to the setting through the rotary encoder switch, the setting for the temperature range and temperature coefficient can be made via the ROPEX visualisation software (↪ section 9.22 "USB-interface for visualisation software ROPEXvisual[®]" on page 47): Temperature range: 200 °C, 300 °C, 400 °C or 500 °C Temperature coefficient: 400...4000 ppm/K (variable setting range) Five ranges can be set using the rotary encoder switches: Temperature coefficient 1100 ppm/K, 0...300 °C (e.g. alloy A20) Temperature coefficient 780 ppm/K, 0...300 °C (e.g. alloy L) Temperature coefficient 1100 ppm/K, 0...500 °C (e.g. alloy A20) Temperature coefficient 780 ppm/K, 0...500 °C (e.g. alloy L) Temperature coefficient 3500 ppm/K, 0...300 °C Please take the necessary setting from the ROPEX application report
Analogue output (Actual value) Terminals 17+7	0...10 VDC, $I_{\max} = 5 \text{ mA}$ Corresponding to 0...300 °C or 0...500 °C Accuracy: $\pm 1\%$ plus 50 mV
Alarm relay Terminals 12, 13, 14	$U_{\max} = 30 \text{ V (DC/AC)}$, $I_{\max} = 1 \text{ A}$, changeover contact, potential-free
Power loss	Max. 20 W
MTTF as per ISO 13849-1	1522 years (see EN ISO 13849-1, table C.3, Triacs)
Ambient conditions	Maximum 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	IP 20  CAUTION When the terminals are open, the screw must be screwed in to ensure contact protection.
Mounting	If several devices are mounted on a top-hat rail, a minimum distance of 20 mm must be maintained. In order to ensure sufficient cooling, the ventilation slots in the housing must remain free. When mounting on a horizontal top hat rail, the movable latch, which is necessary for fastening, must face downward. When mounting on a vertical top hat rail, end holders must be installed on both sides to fasten the regulator mechanically. 
Weight	Controller: approx. 0.7 kg (incl. plug-in connector parts) Terminal: approx. 0.15 kg
Housing material	Controller: plastic, polycarbonate, UL-94-V0 Terminal: black plastic, type Noryl SE1 GFN2

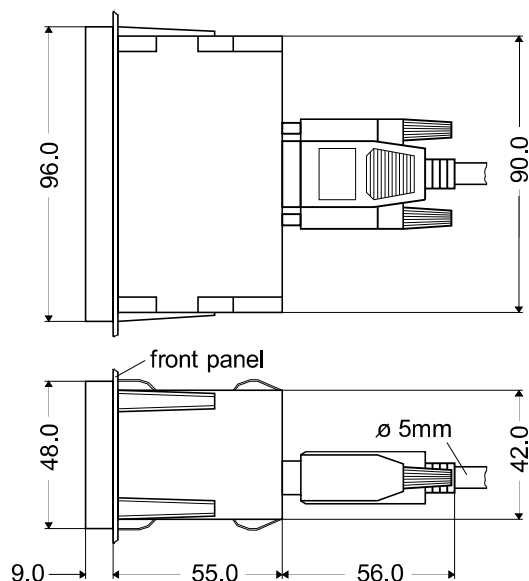
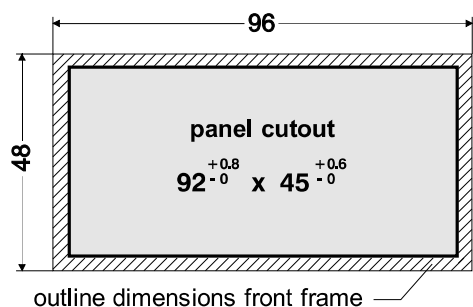
Connecting cable
Type/cross-sectionsRigid or flexible; 0.2...2.5 mm² (AWG 24...12) Through pluggable terminalsPluggable terminals: Tightening torque: 0.5...0.6 Nm
(Screwdriver: SZS 0.6x3.5 mm)**CAUTION**

If ferrules are used, they must be crimped in accordance with DIN 46228 and IEC/EN 60947-1. Otherwise, correct electrical contact in the terminals is not guaranteed.

14 Dimensions

RESISTRON[®] Temperature Controller RES-5008:

Terminal T-408-1:



15 Modifications (MODs)

The RESISTRON[®] Temperature Controller RES-5008 is suitable for very many sealing applications due to its universal design.

A device modification (MOD) is available for the RESISTRON[®] Temperature Controller RES-5008 to implement special applications.

The modifications must be ordered separately. The modification installed or configured in the controller is printed on the nameplate.

MOD 01

Supplemental booster for small secondary voltages ($U_R = 0.2 \dots 60 \text{ VAC}$). This modification is e.g. necessary for very short or for low-resistance heating elements.

MOD 44

Measuring impulse extension is set to 2.3 ms in the factory.