

Temperature controller

RESISTRON® RES-5010

Installation and operating instructions for qualified professionals



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 [► 23] as well as to the application report.

The following illustrations show examples of standard applications.

Connection diagram for system without booster

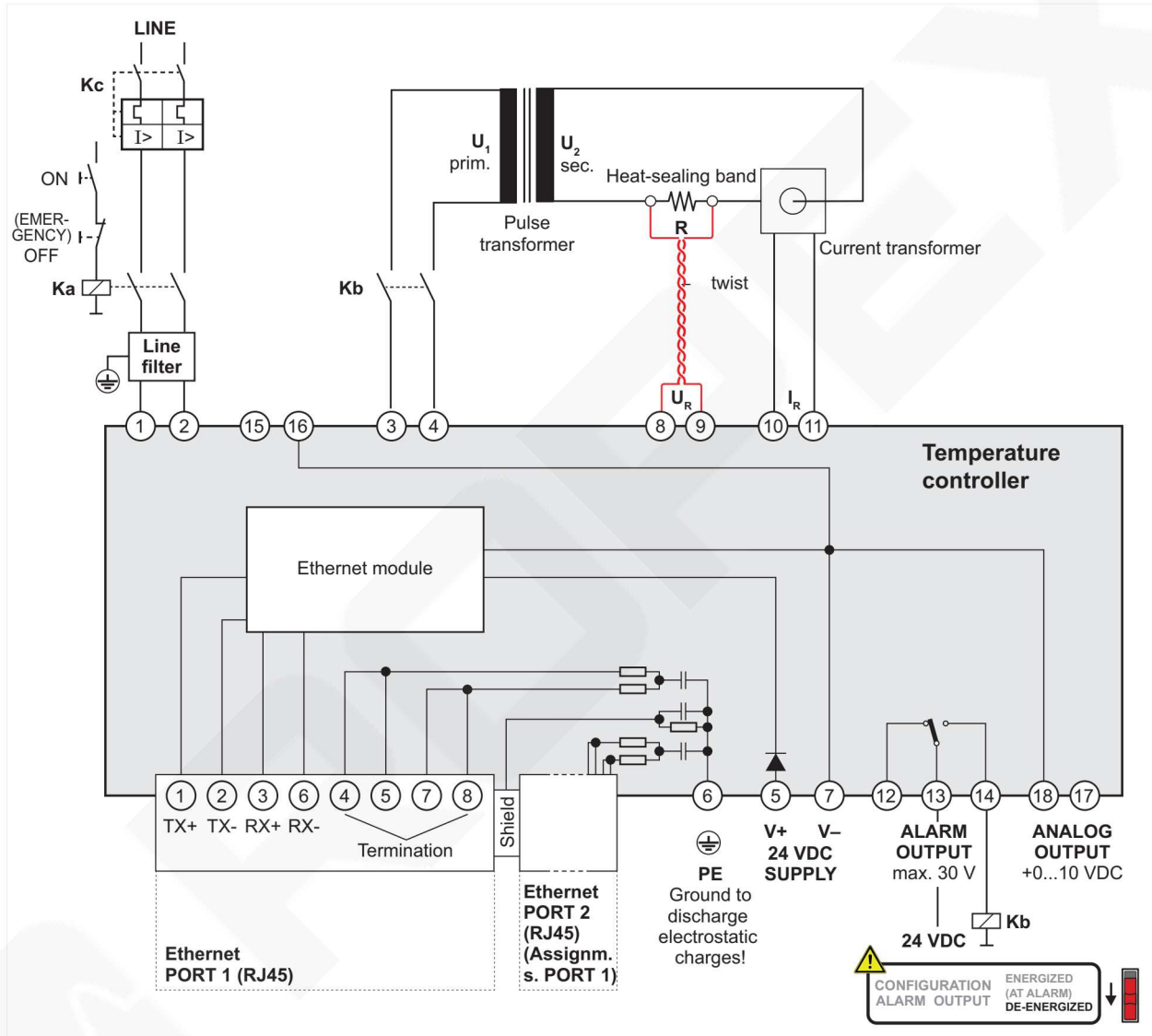


Illustration 5: Connection diagram, example of system without booster

Connection diagram for system with booster

**NOTICE**

Electromagnetic compatibility disruption as a result of cables that are too long

If the lines to the external booster are too long or the wires are not twisted, errors can occur when triggering the pulse transformer.

- ▶ The connecting line should be no longer than 1 m.
- ▶ Twist the wires.

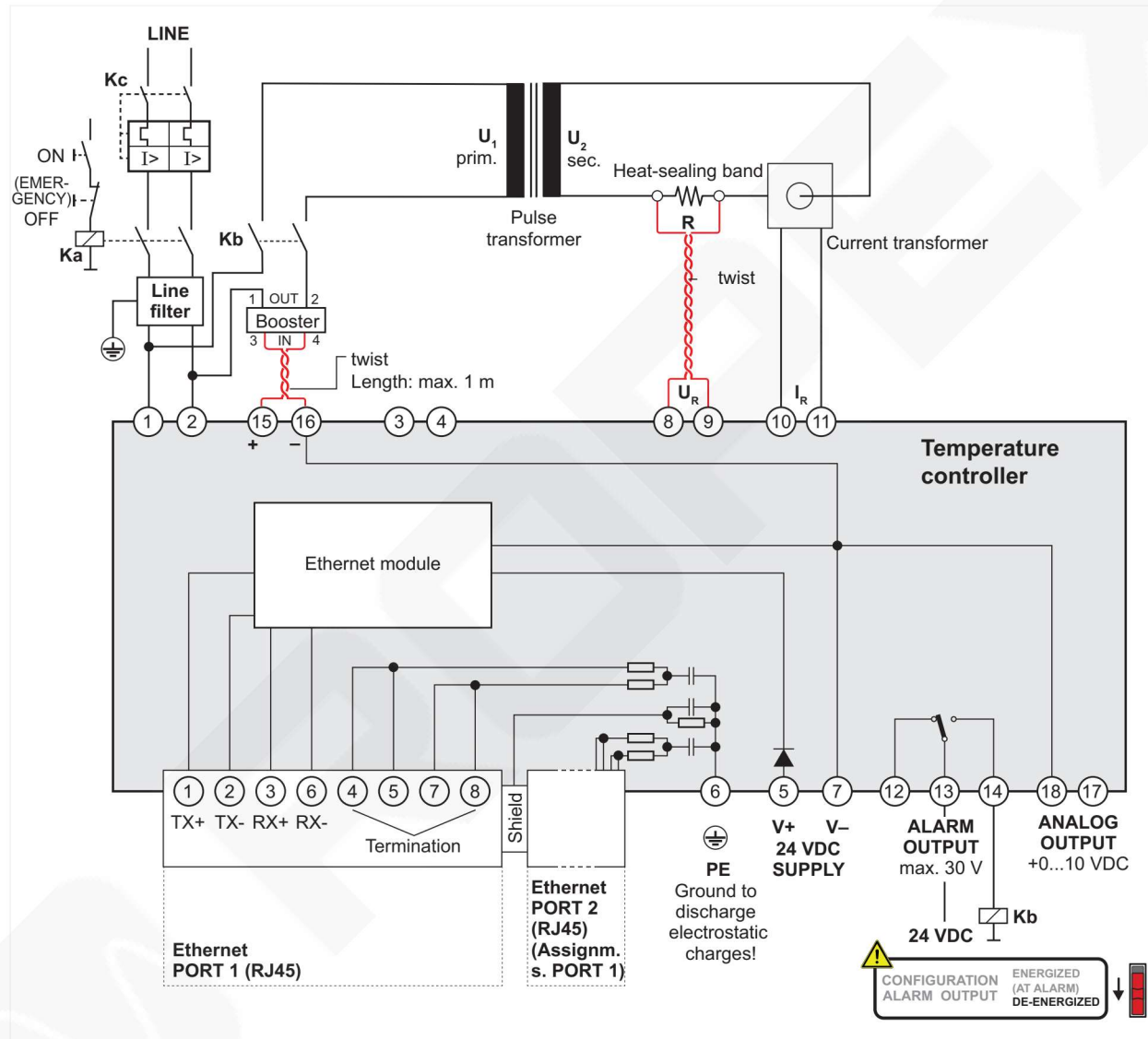


Illustration 6: Connection diagram, example of system with booster

Observe booster polarity

- ▶ Connect the booster to terminals 15 and 16.
 - Connect the booster terminal 3 to the temperature controller terminal 15
 - Connect booster terminal 4 to the temperature controller terminal 16

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 [► 90].

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.

Device	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	- Connected between neutral conductor and an outer conductor: 110 VAC -15 %...300 VAC +10 % - or - Connected between two outer conductors: - Until 01/2021: 110 VAC -15 %...415 VAC +10 % - Beginning 02/2021: 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)	$I_{\max} = 5 \text{ A}$ (duty cycle = 100 %) $I_{\max} = 25 \text{ A}$ (duty cycle = 20 %, cycle duration 1 min)
Supply voltage 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 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.

Device	Technical data
PROFINET® interface	• "Conformance Class C," IO / RT and IRT pursuant to IEC 61784-2 • 2 Ethernet switch ports RJ45 • Wiring: IEC 61784-5-3 • Data transfer rate: 100 Mbit/s • Data transport layer: Ethernet II, IEEE 802.3 • Topology detection: LLDP, SNMP V1, MIB2, physical device • Addressing: DCP or selectable with coding dial • FSU (Fast Startup) support: yes, but startup time approx. 2.5 s.
Heat-sealing band type and temperature range	Temperature range and temperature coefficient can be set via: • The coding dial or the PROFINET® interface; refer to section and Temperature range and alloy [► 54] • Visualization software; refer to section USB interface [► 70] The following parameters can be set: • Temperature range: 200 °C, 300 °C, 400 °C or 500 °C • Temperature coefficient: 400...4000 ppm/K (variable setting range) Refer to the application report for the proper setting.
Analog output (actual value) Terminals 17+18	0...10 VDC, $I_{\max} = 5 \text{ mA}$ Equivalent 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 (for UL certification: $I_{\max} = 0.2 \text{ A}$)
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
Certification	UL, E464680
Weight	Approx. 0.5 kg (incl. Terminal strip)
Housing material	Plastic, polycarbonate, UL-94-V0
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 0.6x3.5 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 Modification

Owing to its universal design, the temperature controller is suitable for a wide range of heat-sealing applications.

There are device modifications available for special applications (MOD).

The modifications must be ordered separately.

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