

RES-5027

Operating Instructions



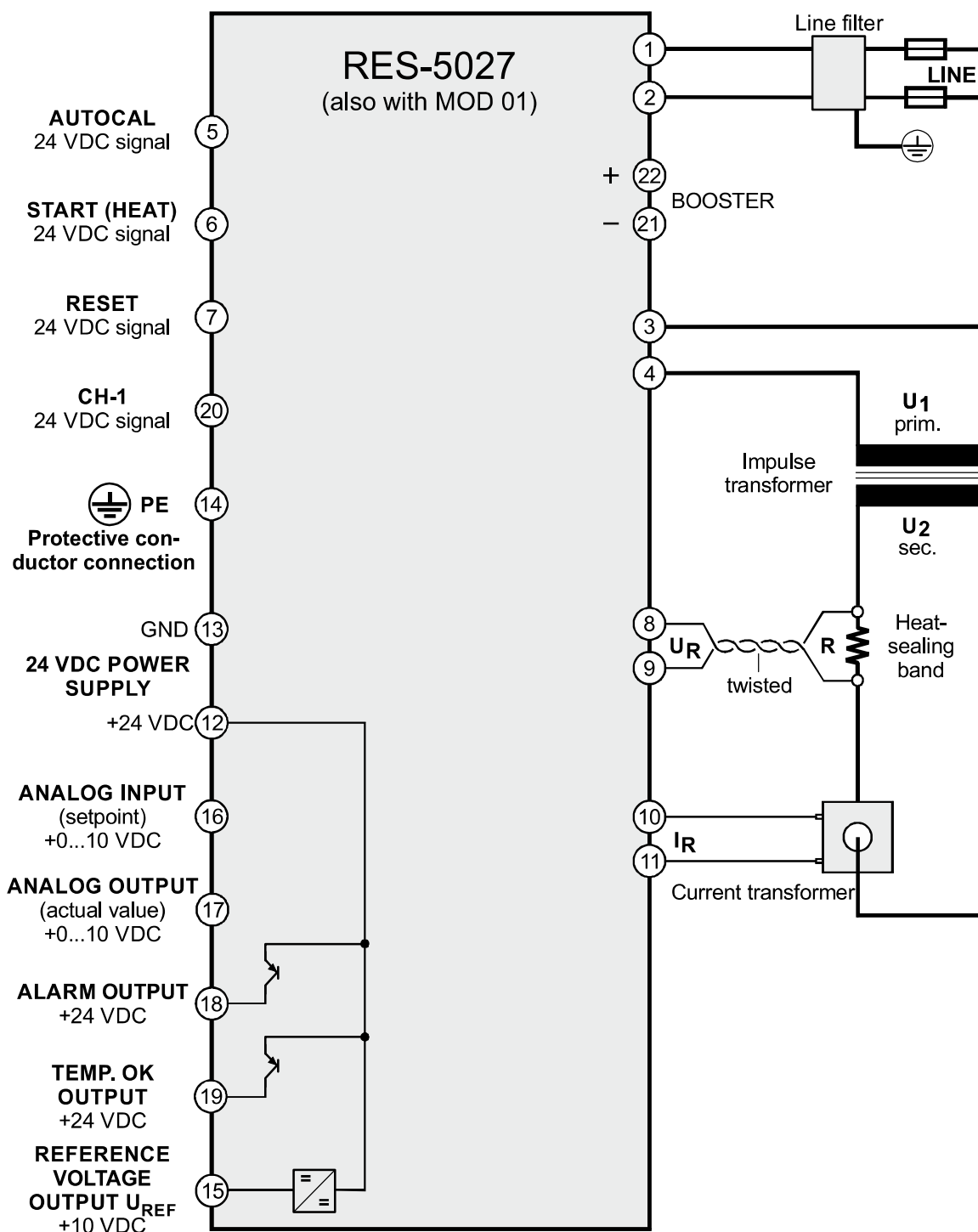
Important features

- 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
- Temperature OK output
- Analogue input for setpoint specification with potentiometer or 0...10 VDC
- Analogue output 0...10 VDC for ACTUAL temperature
- 24 VDC control signals for START, AUTOCAL, RESET and CH-1, e.g. constant setting degree
- 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®
- cULus approval

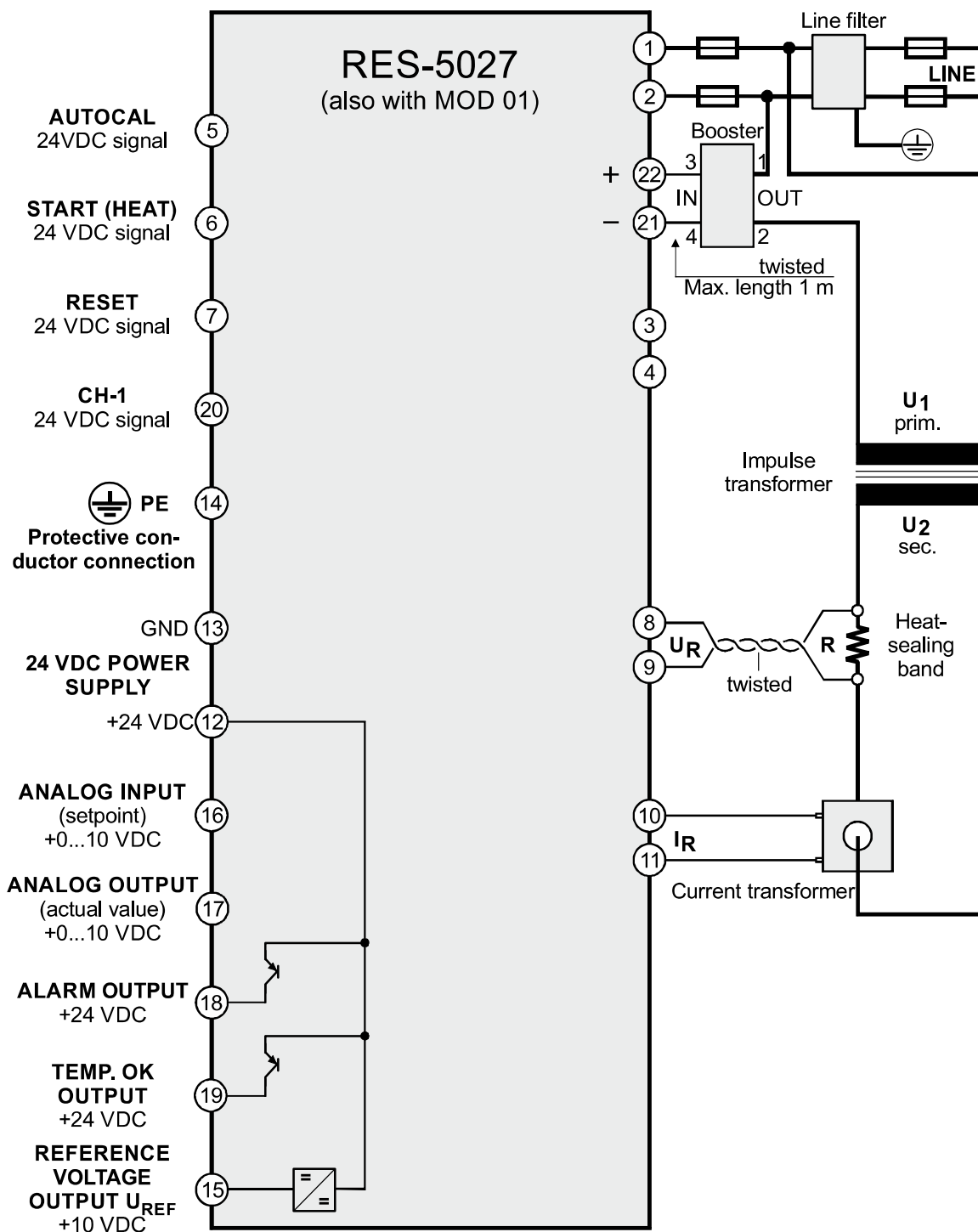
6.6 Supply voltage

To provide power to the RES-5027, voltage of 24 VDC must be applied to the terminals 12+13. The maximum current draw is 1.0 A. The supply voltage input is protected against faulty polarisation.

6.7 Connection diagram (standard)

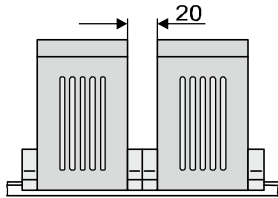


6.8 Connection diagram with booster connection



10 Technical data

Design	Housing for electrical cabinet mounting On TS35 top hat rail (35 mm) in accordance with DIN EN 50022 latchable Basic surface: 90 x 75 mm; depth: 135 mm (incl. connection terminals)
Network voltage	110 VAC -15%...300 VAC +10% Connected between neutral and an outside conductor or 110 VAC -15%...480 VAC +10% Connected between two outside conductors  The voltage between outside conductor and earth must not exceed 300 VAC.
Power supply network	Symmetrical TN- or TT-network Overvoltage category III  Operation in voltage-free network (eg IT network) only after checking with ROPEX.
Network 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%, duration of play 1 min)
24 VDC supply Terminals 12+13	24 VDC, $I_{\max} = 200 \text{ mA}$ (control mode), 1 A (switch-on current), protected against faulty polarisation Tolerance: $\pm 10\%$ SELV or PELV supplied from maximum 300 VAC, Cat II
Measurement range	Secondary voltage U_R : 0.4...120 VAC Secondary current I_R : 30...500 A (transformer PEX-W4/-W5) ↳ ROPEX application report
Heating element type and temperature range	Besides setting through the rotary encoder switch (see below), the setting for the temperature range and temperature coefficient can be performed through the ROPEX visualisation software (↳ section 8.17 "USB interface for visualisation software ROPEXvisual®" on page 35): Temperature range: 200 °C, 300 °C, 400 °C or 500 °C Temperature coefficient: 400...4000 ppm/K (variable setting range) Five areas can be set on the device through 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 (e.g. LEX3500) Standard value 300 °C, alloy A20
Analogue input (Setpoint) Terminal 16+13	0...10 VDC, $I_{\max} = 5 \text{ mA}$, electrically separated from the heating circuit corresponding to 0...300 °C or 0...500 °C or through an external precision potentiometer PD-3 or PD-5 ($R = 2 \text{ k}\Omega$) 0...2 k Ω corresponding to 0...300 °C or 0...500 °C

Analogue output (Actual value) Terminal 17+13	0...10 VDC, $I_{\max} = 5 \text{ mA}$, electrically separated from the heating circuit corresponding to 0...300 °C or 0...500 °C Precision: $\pm 1\%$ plus 50 mV
Reference voltage output	+10 VDC / $\pm 5\%$, $I_{\max} = 5 \text{ mA}$
Digital logic level Terminals 5, 6, 7,	LOW (0 V): 0...2 VDC HIGH (24 VDC): 8...30 VDC (Current consumption max. 6 mA) galvanically separated from the heating circuit, protected against faulty polarisation
Switch output for "Temperature reached" signal or "Temperature OK" signal	$U_{\max} = 30 \text{ VDC}$ $I_{\max} = 50 \text{ mA}$ $U_{\text{ON}} < 2 \text{ V}$ (saturation voltage) galvanically separated from the heating circuit, short-circuit-proof.
Alarm output Terminal 18	$U_{\max} = 30 \text{ VDC}$ $I_{\max} = 200 \text{ mA}$ $U_{\text{ON}} < 2 \text{ V}$ (saturation voltage) galvanically separated from the heating circuit, short-circuit-proof. Can be inverted through slide switch.
Power loss	Max. 20 W
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
UL file	E464680
Mounting	When mounting the device, a surrounding safety distance of 20 mm (e.g. To other devices and wiring) must be maintained. 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 controller mechanically. 
Weight	Approx. 0,5 kg (incl. plug-in connector parts)
Housing material	Plastic, polycarbonate, UL-94-V0