

Temperature controller

RESISTRON® RES-5002

Conversion instructions from RES-401 to
RES-5002 for qualified professionals



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1 Validity of the operating instructions

These operating instructions apply to all models of the temperature controller RESISTRON® RES-5002 manufactured January 2020 and later.

2 Intended use

The current version of the temperature controller RES-5002 is downward compatible with the previous version RES-401.

This means that the temperature controller RES-5002 can be used instead of the temperature controller RES-401.

3 Selecting device

The temperature controller RESISTRON® RES-5002 has the following features:

- The line voltage can be anywhere within the range of 110 VAC to 480 VAC.

	Article number	
Line voltage	RES-401	RES-5002
115 VAC	740101	7500200
230 VAC	740102	
400 VAC	740103	

3.1 Corresponding system components



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.

Device	Type		Certification	Article number
Current transformer	PEX-W5		UL	885107
	PEX-W4 ¹⁾		UL	885106
	PEX-W3 ¹⁾		-	885105
Mains filter	LF-06480	6 A, 480 VAC	UL	885500
	LF-35480	35 A, 480 VAC	-	885506
	LF-10520	10 A, 480 VAC	• UL • CSA	885504
	LF-50520	50 A, 480 VAC	• UL • CSA	885509

¹ No longer available

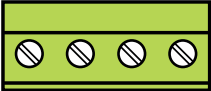
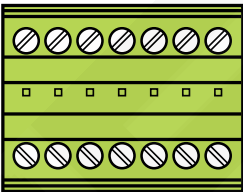
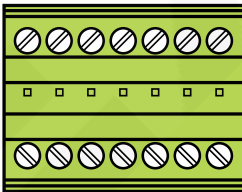
4 What is new?

	Temperature controller	
	RES-401	RES-5002
Visualization software	<i>ROPEX visualization software</i>	<i>ROPEXvisual®</i>
Interface	DIAG USB 2.0 in conjunction with the communication interface <i>CI-USB-1</i> , article no. 886550.	Micro USB The temperature controller can be connected to a PC to make maintenance and startup easier with the aid of the visualization software <i>ROPEXvisual®</i> .
Line voltage	• 115 VAC • 230 VAC • 400 VAC	110 VAC...480 VAC The temperature controller automatically recognizes the line voltage.
	When the line voltage is being supplied, the temperature controller is ready for operation.	Once the line voltage is activated, the temperature controller switches from standby to measuring mode or control mode.
24 VDC supply voltage	-	Standby When the 24 VDC supply voltage is switched on but there is no line voltage, the temperature controller remains in standby. The actual value 0 °C is output at ANALOG output terminal 17. As soon as line voltage is supplied, the temperature controller switches to measuring mode or control mode.
Terminal strip for supply voltage (included) Terminals 1 to 4	Not mechanically compatible with the terminal strip of the <i>RES-5002</i>	Not mechanically compatible with the terminal strip of the <i>RES-401</i>
	Terminal assignment identical	Terminal assignment identical
Terminal strip for control signals (included) Terminals 5 to 18	-	Not compatible with the previous terminal assignment; refer to Connection diagram showing terminals [► 7]
Start AUTOCAL feature	Button	► Connect external button between terminal 5 (AUTOCAL) and terminal 12 (+24 VDC)
Output ALARM	-	Semiconductor output Configurable with the aid of the slide
Error code display	-	In the even of an alarm, an error code is shown as voltage at the analog output and via <i>ROPEXvisual®</i> .

Further information can be found in the operating instructions for the temperature controller *RES-5002* and for the visualization software *ROPEXvisual*®; refer to [Homepage](#) > [Products](#) > [Downloads](#).

5 Connecting device

5.1 Terminal strips supply voltage and control signals

		Terminal assignment	
		RES-401	RES-5002
Terminal strip	Supply voltage Terminals 1 - 4		
		• Not mechanically compatible • Terminal assignment identical	
	Control signals Terminals 5 - 18		
		• Mechanically compatible • Terminal assignment not identical	
Signal	Output for reference voltage U_{REF}	-	15
	U_R voltage measurement	7	8
	ALARM OUTPUT	-	18 (semiconductor switches to terminal 12)
	ANALOG OUTPUT	14	17
	+24 VDC	-	12
	GND (ground) for START signal	13	13
	Ground (protective ground conductor)	13	14
	0 V (internal ground)	15, 16	13
	SET POINT Potentiometer	17	Connect 16, 13 and 15 as voltage divider
	START with contact	18 (connect to 15)	6 (connect to 12)
	START (HEAT) with 24 VDC signal	12	6

5.2 Connection diagram showing terminals

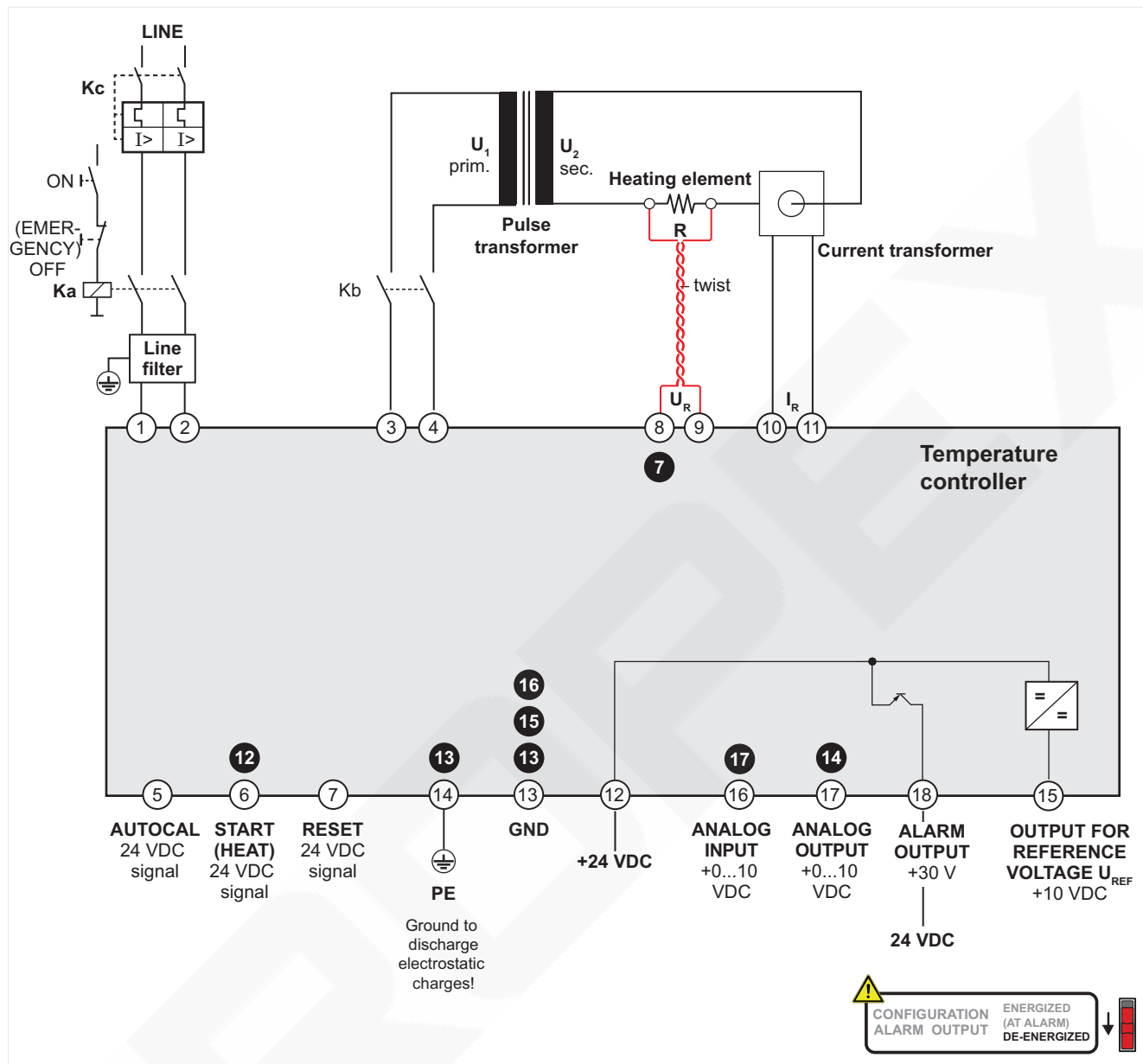
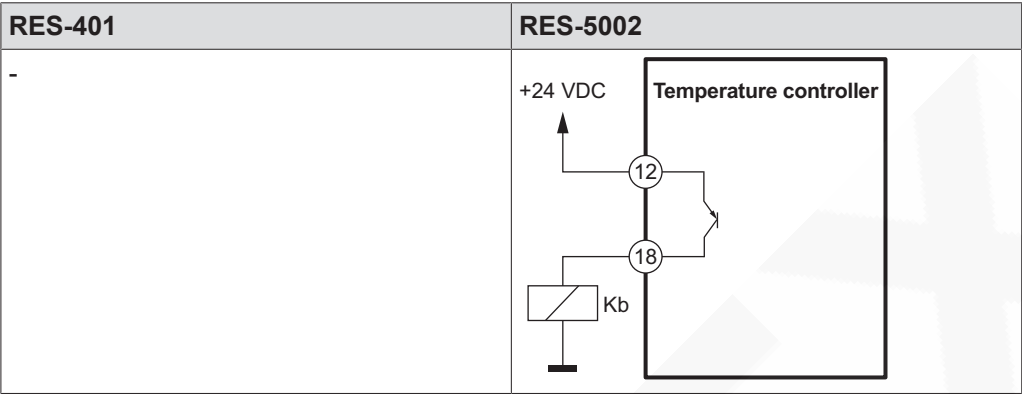


Illustration 1: Comparison of RES-401 and RES-5002 terminal assignment

How terminals are shown, example	Terminal assignment on temperature controller
6	RES-401
14	RES-5002

5.3 Connecting contactor Kb

The following wiring diagram shows an example of how to connect the Kb contactor.



5.4 Connecting potentiometer

The following wiring diagram shows how to connect the potentiometer (PD-x).

