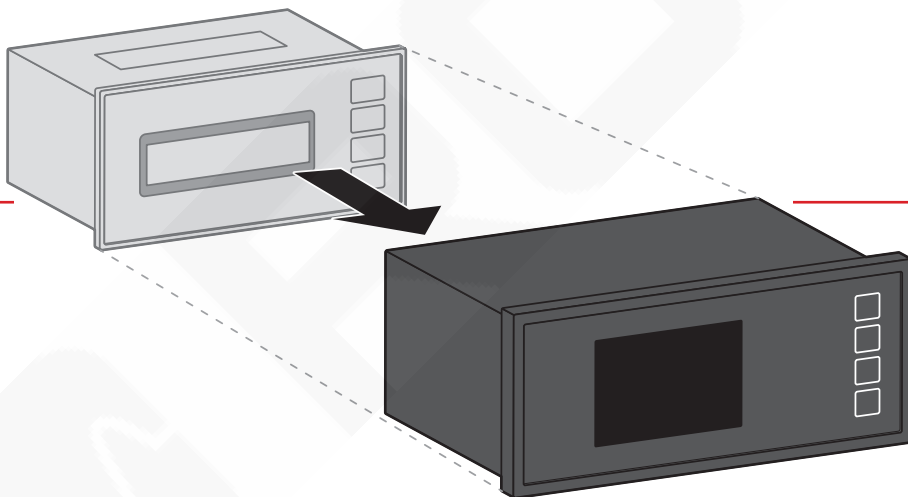


Temperature controller

RESISTRON[®] RES-5200

Conversion instructions from RES-420 to
RES-5200



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1 Validity of the operating instructions

These operating instructions apply to all models of the temperature controller RESISTRON® RES-5200 manufactured January 2024 and later.

2 Intended use

The current version of the RESISTRON® RES-5200 is downward compatible with the previous version RES-420.

This means that this temperature controller RESISTRON® RES-5200 can be used instead of the RESISTRON® RES-420.

3 Selecting device

The temperature controller RESISTRON® RES-5200 has the following features:

- The line voltage can be anywhere within the range of 110 VAC to 480 VAC.
- The temperature controller is always equipped with a TFT display.

Line voltage	RES-420		RES-5200	
	Article number	Display	Article number	Display
115 VAC	742011	LCD	7520040	TFT
	742021	VFD		
230 VAC	742012	LCD		
	742022	VFD		
400 VAC	742013	LCD		
	742023	VFD		

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
Line filter	LF-06480	6 A, 480 VAC	• UL	885500
	LF-35480	35 A, 480 VAC	-	885506

¹ No longer available


Device	Type		Certification	Article number
Line filter	LF-10520	10 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885504
	LF-16520	16 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885512
	LF-20520	20 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885510
	LF-30520	30 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885511
	LF-32520	32 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885513
	LF-50520	50 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885509
	LF-60520	60 A, 480 VAC	<ul style="list-style-type: none"> • UL • CSA 	885514

4 What is new?

The temperature controller RESISTRON® RES-420 can be replaced with the temperature controller RESISTRON® RES-5200.

Functions and interface

	Temperature controller	
	RES-420	RES-5200
Availability	Available	Beginning 03/2024
Interface	DIAG USB 2.0 in conjunction with the communication interface <i>CI-USB-1</i> , article no. 886550.	USB-C interface The temperature controller can be connected to a PC to perform maintenance and startup with the aid of the visualization software <i>ROPEXvisual</i> ®.
Line voltage	<ul style="list-style-type: none"> • 115 VAC • 230 VAC • 400 VAC 	110 VAC...480 VAC
Display	Refer to section Selecting device [► 3]	
Signals	-	Additional output signals
	-	U _{REF}
	-	ANALOG OUT
Output ALARM	Make contact	Changeover contact
Maximum start temperature (menu number 506)	-	Maximum temperature permitted upon START Default: 100 °C Adapt temperature to the application to prevent alarm 305.

	Temperature controller	
	RES-420	RES-5200
Terminals	The assignment of the terminals has been changed; refer to section Terminal assignment [▶ 5]	
Menu structure	The configuration menu has been restructured. To make it easier to navigate in the configuration menu, there is now an additional drop-down menu. Use the drop-down menu to directly branch off to the newly defined menu categories; refer to section Overview of menu structure [▶ 8]	
Certification		 CSA for the US and Canada



Further information can be found in the operating instructions for the temperature controller *RES-5200* and for the visualization software *ROPEXvisual*®; refer to Downloads.

5 Connecting device

5.1 Terminal assignment



5.1.1 Terminal strip for supply voltage and pulse transformer

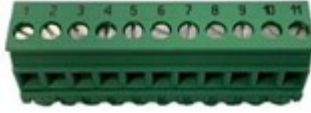

Note The terminal strip for the supply voltage and for connection of the pulse transformer (terminals 1 to 4) is mechanically compatible with the previous terminal strip (terminals 12 to 15).

		Connection assignment	
		RES-420	RES-5200
Terminal strip			
Signal	Pulse transformer	12, 13	3, 4
	Line voltage input	14, 15	1, 2

5.1.2 Terminal strip for control signals

The connection assignment of the terminal strip for the control signals (terminals 5 to 11 and 12 to 18) is no longer compatible with the previous assignment (terminals 1 to 11).

		Connection assignment	
		RES-420	RES-5200
Terminal strip			
		Terminals 1 to 11	Terminals 5 to 11

	Connection assignment	
	RES-420	RES-5200
Terminal strip	 Terminals 1 to 11 The control signals are on one terminal strip.	 Terminals 12 to 18 The control signals are divided between two terminal strips.
Type of terminal strip	Screw terminal	Spring-type terminal

The following table shows the assignment of the terminals.

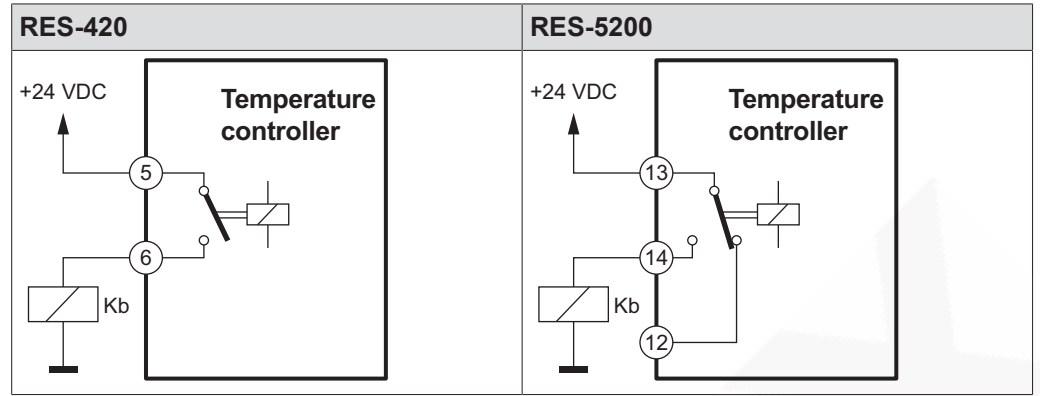
RES-420		RES-5200	
Signal	Assignment	Signal	Assignment
BOOSTER +	1	BOOSTER CONTROL OUTPUT +	15
BOOSTER 0 V	2	BOOSTER CONTROL OUTPUT -	16
0 V (internal earth)	2, 11	-	
START 24 VDC	3	START	6
GND (protective ground/earth)	4	Protective earth	7
GND (reference earth for START signal)		GND (reference earth for START and ANALOG OUT signals)	18
ALARM (relay output)	5, 6	ALARM (relay output)	12, 13, 14
START contact	7 (connect to 2)	START	6 (connect to 5)
I_R (current measurement)	8, 9	I_R (current measurement)	10, 11
U_R (voltage measurement)	10, 11	U_R (voltage measurement)	8, 9
-	-	U_{REF}	5
-	-	ANALOG OUT	17

5.2 ALARM output

Signal	RES-420	RES-5200
ALARM output	Relay make contact	Relay changeover contact

5.2.1 Connecting contactor Kb

The following circuit diagram shows how to connect the contactor Kb.



5.3 Connection diagram showing terminals

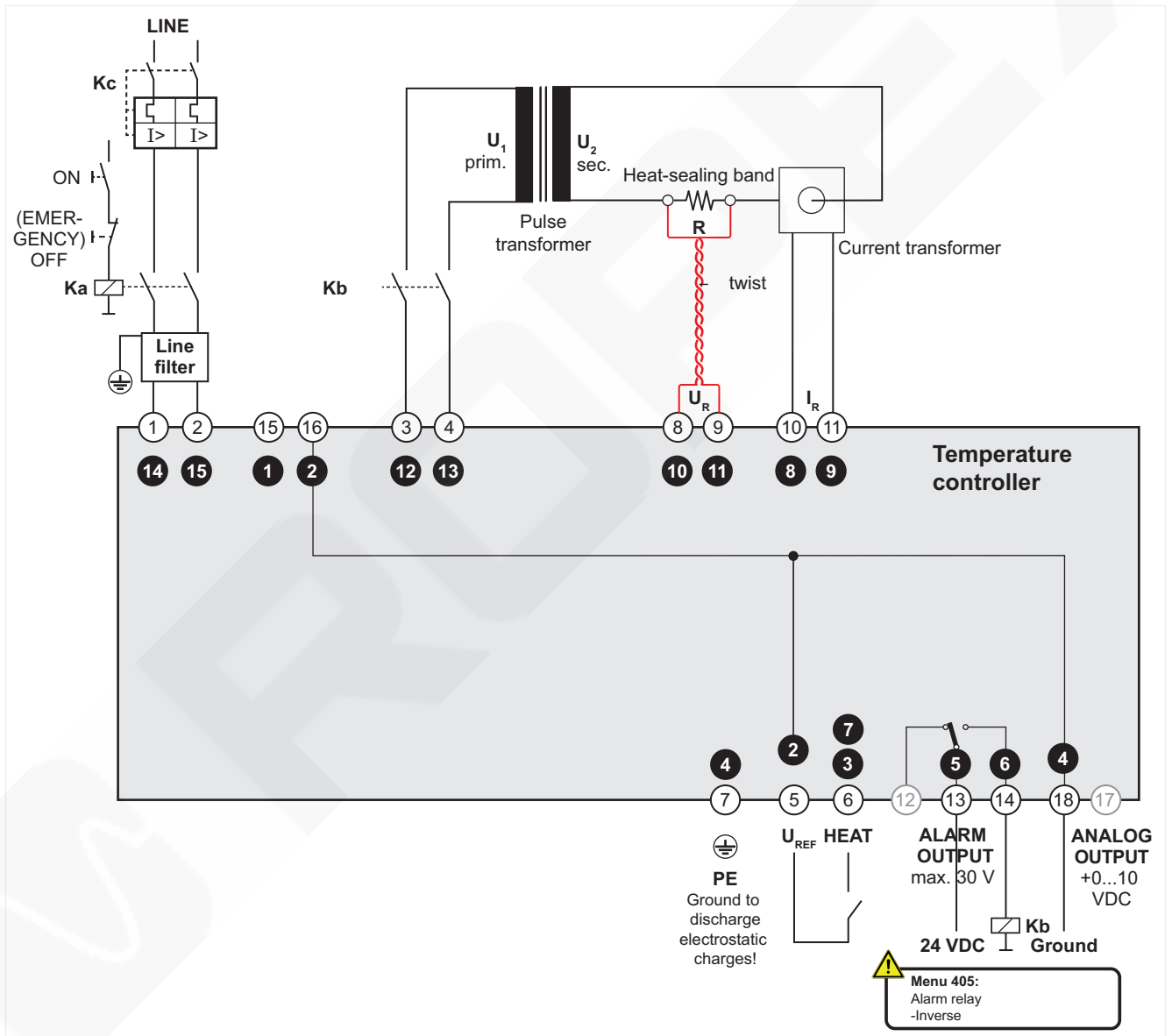


Illustration 1: Comparison of RES-420 and RES-5200 terminal assignment

How terminals are shown, example	Terminal assignment of temperature controller
6	RES-420

How terminals are shown, example	Terminal assignment of temperature controller
(14)	RES-5200
(12)	RES-5200 not connected

Function	Achieved via	Terminal	
		RES-420	RES-5200
HEAT	24 VDC signal	3	6
		4	18
	Contact	7	6
		2	5

6 Overview of menu structure

Drop-down menu

	Menu group	Menu number
KONFIGURATION	Operation	2xx
Bedienung	Heating element	3xx
Heizelement	Machine	4xx
Maschine	Diagnosis	5xx
Diagnose	Information	6xx
Informationen		

Further information can be found in the operating instructions for the temperature controllers.

The following table provides an overview of the menu numbers required for retrofitting.

Menu name	RES-420	RES-5200	
	Menu number	Menu number	Main menu
Sealing temperature	101	101	
Hold mode	106	203	Operation
AUTOCAL	107	107	
AUTOCOMP	108	108	
Language	201	201	Operation
Default	202	202	Operation
Alloy	203	301	Heating element
Temperature coefficient	204	302	Heating element
Temperature range	205	305	Heating element
Maximum temperature	206	306	Heating element
Setpoint reached	207	501	Diagnosis
Setpoint exceeded	208	502	Diagnosis
"MANUAL" and "AUTOCAL" buttons locked	213	206, 205	Operation

	RES-420	RES-5200	
Menu name	Menu number	Menu number	Main menu
Cycles	214	601	Information
Alarm relay	215	405	Machine
Temp. diagnosis	217	503	Diagnosis
Temp. diag. index	218	504	Diagnosis
Heatup timeout	219	505	Diagnosis
Length of measurement pulse	220	307	Heating element
AUTOCOMP	221	309	Heating element
Constant regulation ratio	223	310	Heating element
Temperature unit	225	204	Operation
System time and date	226	603	Information