

Replacing [®] RES-222/RES-440

Replacement Instructions



The front panel dimensions and terminal assignment of the RESISTRON RES-440 temperature controller are compatible with those of the RES-222.

The steps that are necessary to migrate from RES-222-0-3 or RES-222-0-5 (standard devices without modifications) to RES-440 are described

below. In addition, the differences between the controller types are explained.



These instructions provide only a brief overview of the two controllers. If in doubt, please refer to the latest version of the controller documentation, which is always binding.

Comparison of RES-222 / RES-440


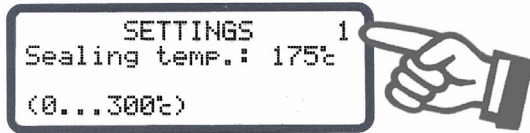
Dimensions

The front panel cutout dimensions of the RES-222 and RES-440 controllers are identical. The RES-440

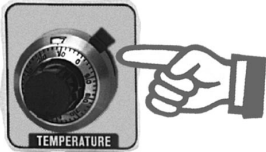
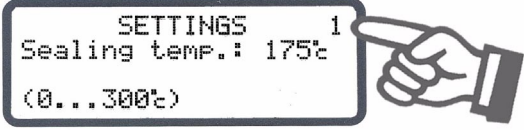
features a protective film to IP42 instead of the transparent hood. A transparent front cover featuring IP65 is available as an option.

RES-222	RES-440
	


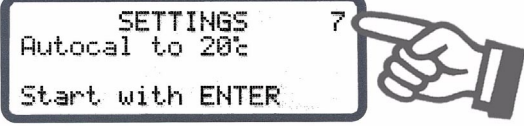
Temperature indication (actual value)

RES-222	RES-440
<p>Indication on an analog instrument (ATR-3).</p> 	<p>Indication on the 4-line display (dynamic bar and digital value).</p> 




Set point selection

<p>RES-222 Selection by means of a 10-turn potentiometer with a fine control knob.</p>	<p>RES-440 Selection with step 1 in the software menu. If the controller is active, the set point is also indicated on the display.</p>
	




Zero calibration

<p>RES-222 Zero calibration by means of a 10-turn potentiometer (the pointer of the indicating instrument must be set to "Z").</p>	<p>RES-440 Automatic zero calibration (AUTOCAL) with step 7 in the software menu.</p>
	

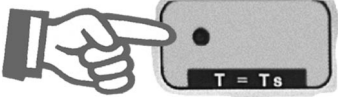
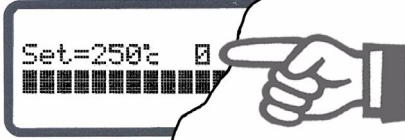
Alarm output / reset

<p>RES-222 Indicated by means of a red ALARM LED on the front panel. Reset by pressing the RESET key.</p>	<p>RES-440 Indicated on the display. The error is identified by a numeric code (☞ RES-440 documentation). Reset by pressing the RESET key ().</p>
	

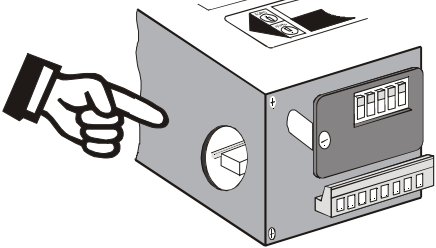
Manual mode

<p>RES-222 Selected by pressing the HAND key. The red ON LED is lit continuously.</p>	<p>RES-440 Selected by pressing the HAND key () while the main menu is displayed.</p>
	

"Temperature OK" signal

RES-222 Indicated by means of a red LED (T = Ts).	RES-440 Indicated by means of an icon on the display.
	

Line frequency setting (50/60Hz)

RES-222 Configured with a plug-in jumper.	RES-440 Detected automatically in the 47...63Hz range.
	<p style="text-align: center;">Automatic detection</p>

Installation and startup

⚠ Installation and startup may only be performed by technically trained, skilled persons who are familiar with the associated risks and warranty provisions.

The information provided here offers no more than a brief overview. If in doubt, please refer to the latest version of the controller documentation, which is always binding (↪ see also section „Safety and warning notes“ of the RES-440 documentation).

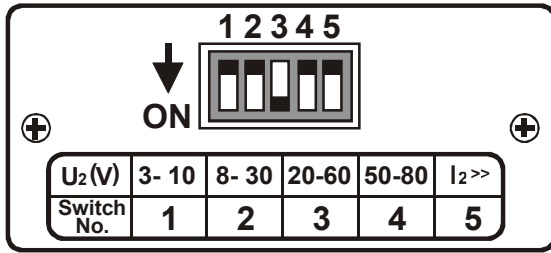
Proceed as follows to replace the RES-222 controller and install/start up the RES-440:

1. Switch off the line voltage and verify the safe isolation from the supply.

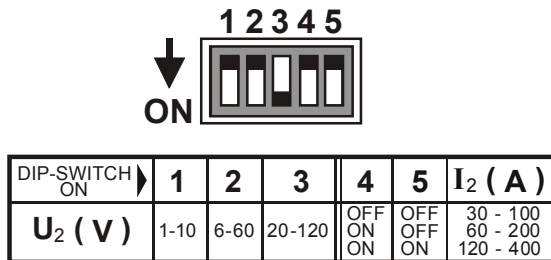
2. Remove the existing RES-222 controller.
3. The supply voltage specified on the nameplate of the RES-440 controller must be identical to the line voltage that is present in the plant or machine. The line frequency is automatically detected by the temperature controller in the range from 47 to 63Hz.
4. Set the DIP switches on the RES-440.

⚠ The settings of the DIP switches on the RES-440 are NOT the same as on the RES-222. Please set these switches in accordance with the ROPEX Application Report in order to avoid malfunctions.

Old setting ranges on the RES-222:



New setting ranges on the RES-440:



The table below compares the two controllers. These settings can be taken as a guide (e.g. when the controller is started up for the first time):

	RES-222	RES-440
	DIP switch ON	
U_2	1	1
	2	2
	3	3
	4	3
I_2	5	4

5. Install the RES-440 controller in place of the RES-222. The terminals of the two controllers are identical. The existing connector plug-in parts can be used without rewiring.
6. Switch on the line voltage.
7. A power-up message appears on the display when the controller is switched on to indicate that it has been started up correctly.

8. One of the following states then appears:

DISPLAY	ACTION
Main menu Shows the SET and ACTUAL temperatures or the dynamic bar	Go to 9
Shows error code 104, 106, 109 or 211	Go to 9
Shows error code 101...103, 201...203, 801 or 9xx	Fault diagnosis (↪ RES-440 documentation)

9. Select the language and reset the controller to the factory settings.

Press the key for at least 2s (to open the Configuration menu). Step 20 is displayed. Select the desired language with the keys. Confirm your selection by pressing . Press the key to display step 21 (factory settings). Press the key to confirm the factory settings (an acknowledgment message appears). Step 22 is displayed next.

10. Set the temperature range to 500°C (Only if you have so far been using an RES-222-0-5 controller)

Then set "Alloy 20, max 500°C" with the keys in step 22. Confirm your selection by pressing .

11. Set the function of relay K1

Press the key repeatedly until step 29 is displayed. Select "Relay K1 active if Tact = Tset" with the keys. Confirm your selection by pressing . Press the key for at least 2s (to return to the main or Alarm menu).

12. Calibrate the zero point

Activate the AUTOCAL function while the heatsealing band is still cold.

Press the key repeatedly until step 7 is displayed. Then select the AUTOCAL function by pressing the key. If this function is executed correctly, the main menu is displayed again automatically.

If the zero has not been calibrated successfully, an error message appears on the display. In this case the controller configuration is incorrect (↪ see section „Controller configuration“ of the RES-440 documentation and the ROPEX Application Report). Configure the controller correctly and repeat the AUTOCAL function.

13. Set the heatsealing temperature (select the set point)

Press the key briefly (to display step 1 in the Settings menu). Set the required temperature with the keys. Confirm your selection by pressing . Press the key for at least 2s (to return to the main menu). The set heatsealing temperature is displayed in the main menu.

Then activate the "START" signal (HEAT). The indication on the display (actual value and dynamic bar) permits the heating and control process to be observed:

If an error code is displayed, please proceed as described in section „Error messages“ of the RES-440 documentation.

The controller is now ready

Optional:

Set the switching thresholds for the "Temperature OK" signal

If you accept the factory settings, the switching thresholds for activation of the "Temperature OK" output signal via relay K1 (terminals 16-18) are set to -10...+10K (RES-222: -5...+5%). If necessary, the high and low thresholds can be set separately between 5 and 99K. Proceed as follows to do so:

(after working through the above steps 1... 11):

14. Press the key for at least 2s (to open the Configuration menu). Step 20 is displayed. Press the key repeatedly until step 24 is displayed. Select the low switching threshold ("Set point reached") with the keys. Confirm your selection by pressing .

15. Press the key once. Step 25 is displayed. Select the high switching threshold ("Set point

exceeded") with the keys. Confirm your selection by pressing . Press the key for at least 2s (to return to the main or Alarm menu).

RES-440 factory settings / as-delivered condition

If you accept the factory settings (step 21 in the software menu, see step 9 above), the following defaults are restored:

Menu step	Function	Value
1	Heatsealing temperature	0°C
6	Hold mode	OFF
22	Alloy/range	Alloy A20, max. 300°C
23	Maximum temperature	300°C
24	Set point reached	-10K
25	Set point exceeded	+10K
26	Time control	OFF
29	Relay K1 function	Deactivated
30	Cycle counter	0
31	Alarm relay	Closed by alarm

The selected language (step 20 in the software menu) remains set regardless of the factory settings.

As-delivered condition:

The RES-440 controller is delivered with the above factory settings and with the language set to "German".

Menu structure of the RES-440

