

## Temperature Regulation

Once the furnace is ready to operate, Controller can be programmed.

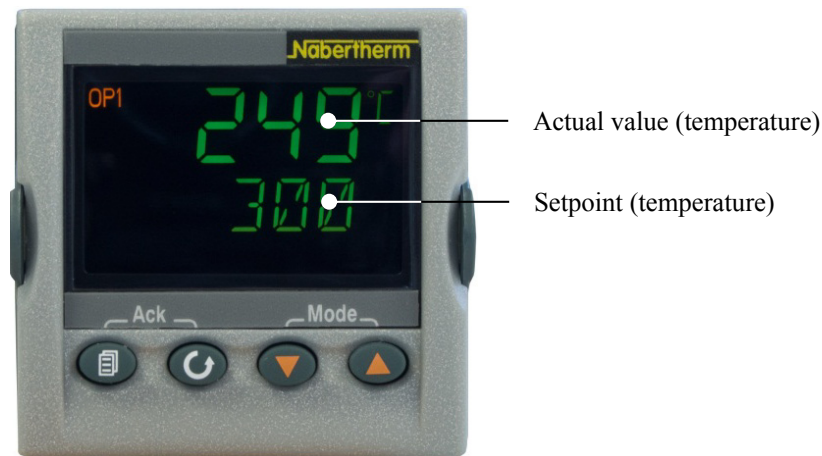


Fig. 1: Controller R7

Two temperatures are shown in the display.






At the top is the actual value.

249 °C


















Beneath this is the specified target temperature.

300

### Setting the Setpoint:

























Button	Description	Display
 	From the main display: Use   to increase or decrease the setpoint. The device applies the new setpoint as soon as the button is released. A brief flash indicates that the value is now current.	 300 °C 249 °C
<b>Note</b>	When delivered, this controller is set as a fixed setpoint controller. But for several processes it is important that the temperature is raised slowly for the first firing. A ramp function can be set on Controller R 7 for this purpose.	

### Setting a Temperature Ramp:









Button	Description	Display
	Press  until "SP.RAT" appears in the display.	OFF SP.RAT
 	Use   to set the required heating ramp in °C/min (Example 2 °C/min) Increase the value with  (OFF ... 1,9; 2) Decrease the value with  (2 ... 0,1; OFF) Wait 2 seconds until the setting is applied automatically (display flashes 1x).	 2 OFF SP.RAT
	Press  to go to the main display.	249 °C 300
 	Use   to change a setpoint to the required value. The set rate is used only when the setpoint has been changed. The rate can be used for heating or cooling. The starting temperature of the rate is always the actual temperature. If the target temperature is set below the actual temperature, it is a cooling rate. When a rate has started, "RUN" is shown in the display. Increase the value with  Decrease the value with 	249 °C 300  RUN







Button	Description	Display
Note	If the ramp mode is no longer needed, set the parameter "SP.RAT" to OFF again.	

### Automatic Adjustment of the Control Parameters to the Process Characteristic:

Button	Description	Display
	Press  for >5 seconds until "Lev1" appears in the display.	LEv1 GOTO
	Press  1x until "LEv2" appears in the display and wait for 2 seconds - the display changes to "0"	LEv2 ↓ 0
	Press  2x until code "2" is displayed and wait 2 seconds. (The display returns to the main display)	2 ↓ 550 °C
	Press  until "A.TUNE" appears in the display.	OFF A.TUNE
 	Use   to set OFF or ON. Change with  (ON) Change with  (OFF) Wait 2 seconds until the setting is applied automatically (display flashes 1x).	ON ↙ OFF A.TUNE
	Press  until you return to the main display.	249 °C 300
 	Use   to set the required temperature in °C (Example 100 °C). (During optimization, TUNE flashes in the display). When optimization is finished, the determined control parameters are applied automatically.	100 °C ↙ 0 °C
	Press  for >5 seconds until "Lev2" appears in the display.	LEv2 GOTO
	Press  1x until "LEv1" appears in the display and wait 2 seconds. Input finished.	

### Manual Adjustment of the Control Parameters to the Process Characteristic:

Button	Description	Display
	Press  for >5 seconds until "Lev1" appears in the display.	LEv1 GOTO
	Press  1x until "LEv2" appears in the display and wait for 2 seconds - the display changes to "0"	LEv2 ↓ 0
	Press  2x until code "2" is displayed and wait 2 seconds. (The display returns to the main display)	2 ↓ 550 °C
	Press  until "PB", "TI", "TD" appear in the display PB: Proportional Band TI: Integral Time TD: Differential Time	5  PB

Button	Description	Display
 	Set the required parameters with   (Example 10) Increase the value with  (OFF/1 ... 9; 10) Decrease the value with  (10... 2; 1/OFF) Wait 2 seconds until the setting is applied automatically (display flashes 1x).	<b>10</b> ↙ <b>5</b> <b>PB</b>