

Eurotherm 2132 Controller Manual

Single Program Ramp Rate Controller with Soak



NOTE: Please read instructions before using your kiln.
Failure to do so may result in damage to the kiln and it's contents.

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SECTION 1 - Getting to know your Controller

The Eurotherm 2132 Digital Temperature controller is designed to allow automatic firing to a set temperature at a set rate of rise. Once the Kiln has reached that temperature the Kiln can then Soak (dwell) at the set temperature for a set number of minutes.

The Controller has one digital read out with two output indicator lights to the left of the display:

The Top **GREEN** read out shows the current temp of **PV** or **Process Value**.

This represents the Temperature of the Kiln at that moment. This is the temperature being measured at that moment by the Thermocouple (the internal thermometer that protrudes into kiln).

OP2 normally indicates when the elements in the Kiln are ON.



The button to the bottom left of the controller cycles through the steps.

The "▲" or "▼" arrows adjust the Set Value.



The button is used to select and enter the steps


SECTION 2 – Programming your Controller



2.0 Turning the Kiln On

- I. Turn power ON at the power point (if not already hardwired).
- II. Turn the BLACK ON/OFF Rocker or Silver Toggle switch on the front of the control panel to the ON position.
- III. Before you set the controller you need to switch the **RESET/RUN** toggle switch to **RESET**. This should now display 'MAN'.



2.1 Setting the Firing temperature

Set the Temperature you wish to fire to by pressing the "▲" or "▼" arrows on the front of the digital controller. The longer you hold the buttons down the faster the setting changes (Like an alarm clock).

To Check which units the controller is displaying (°C or °F). Press the  button quickly and the units will flash for ½ a second.

If at any time you get stuck press both the  button and the  button simultaneously to be returned to the Home display.

2.2 Setting the Ramp Rate (SPrr)

Now press and release the  Button this will show °C or °F. Now Press the  button again this will display **SPrr** . **SPrr** is the Ramp Rate which we need to set in Deg °C per minute. (Deg°C/min)


If the SPrr is set to less than 0.1 then the ramp feature is disabled and the Kiln will run at full power (unregulated ramp rate) up to the set temperature.

Most people are used to using DegC/hr rather than DegC/Min. The conversion table below should help you convert.

CONVERSION TABLE DegC/Hr to DegC/Min

| Deg C/hr | Deg C/min | Deg C/hr | Deg C/min | Deg C/hr | Deg C/min |
|-----------|-----------|------------|------------|----------|-----------|
| 6 | 0.1 | 96 | 1.6 | 186 | 3.1 |
| 12 | 0.2 | 102 | 1.7 | 192 | 3.2 |
| 18 | 0.3 | 108 | 1.8 | 198 | 3.3 |
| 24 | 0.4 | 114 | 1.9 | 204 | 3.4 |
| 30 | 0.5 | 120 | 2 | 210 | 3.5 |
| 36 | 0.6 | 126 | 2.1 | 216 | 3.6 |
| 42 | 0.7 | 132 | 2.2 | 222 | 3.7 |
| 48 | 0.8 | 138 | 2.3 | 228 | 3.8 |
| 54 | 0.9 | 144 | 2.4 | 234 | 3.9 |
| 60 | 1 | 150 | 2.5 | 240 | 4 |
| 66 | 1.1 | 156 | 2.6 | 246 | 4.1 |
| 72 | 1.2 | 162 | 2.7 | 252 | 4.2 |
| 78 | 1.3 | 168 | 2.8 | 258 | 4.3 |
| 84 | 1.4 | 174 | 2.9 | 264 | 4.4 |
| 90 | 1.5 | 180 | 3 | 270 | 4.5 |

2.3 Setting the Soak time or Dwell. (DWELL)

Now press and release the  Button once more and you will see **DWELL** displayed.

This is the amount of time in minutes that the Kiln will hold its top temperature before switching off and beginning to cool.



We recommend that you always use a Soak or Dwell at top temperature to give the kiln time to even out top to bottom and also to give time for the heat to penetrate the ware to ensure a perfect firing.

A Soak or Dwell will also help glazes mature properly and give a nice glossy look.

SECTION 3 - Running the Kiln

3.1 To Start the Firing

It is advised that you always turn the Kiln OFF and then back ON between or after each firing. This resets the controller so it knows to begin a new firing and ensures it does not become confused.

Ensure the Controller is at the Home screen by pressing the  button and the  button simultaneously.

Then to begin firing switch the **RESET/RUN** toggle to **RUN**.

The Kiln should now begin to rise at the desired ramp rate showing the temperature inside the kiln.

The controller will indicate that the kiln elements are being turned on by illumination of a small square red indicator light (marked OP2) in the top left hand corner of the controller.

3.2 Completion of Firing

At the moment that the kiln reaches the set value (set temperature) the program will now move into the “timed soak” stage of the program. When the “timed Soak” period has been completed, the controller will show ‘**END**’ light will be ON. The Kiln will now “Turn Off” as the firing is now completed and the kiln temperature will begin to fall. The display will continue to display the falling temperature.

SECTION 4 - Firing Time

4.1 Influences on Firing Time

For kilns & kilns fitted with Non Indicating Control firing time depends upon many use factors including the type of ware, the mass of the ware and the temperature which the furnace is required to operate at. Once the operator has learned the heating time taken for the particular process for which the kiln is being used, this time should be noted so that in future, the kiln can be checked to observe that it is not taking an unusually long time to reach the set temperature- which could indicate a problem with the kiln.

NOTE: The firing time will vary slightly with variations in the mass of the load, but this is normal.

NOTE: If a ramp rate of < 0.1 (zero) is set, the ramp feature of the control will be defeated and the kiln will heat at the fastest possible speed. ie The natural full power heating rate of the kiln.

4.3 Firing Time - Influences on Firing Time

It is possible to set the firing rate to a speed that is faster than the kiln power can provide. Therefore it is important to learn what the kiln is capable of providing particularly at the very end of the firing. The maximum firing rate will be influenced by many factors including the type of ware, the mass of the ware and the maximum temperature to which the kiln is required to operate. Once the operator has learned the maximum heating rates and has the times, then the firing rate can be set so that it is always controlling the kiln and so the firing time (for a particular setting rate) from one firing to another will always be the same. The kiln can be checked to observe that it is not taking an unusually long time to reach the set temperature-which could indicate a problem with the kiln.

SECTION 5 - Suggested Firing Ramp Rates and Soaks.

| | Top Temp | Ramp Rate (SPrr) | Soak (DWELL) |
|---|-----------------|---------------------|--------------|
| Bisque (Check Clay Recommendations) | 980°C - 1000°C | 1°C – 1.7°C / min | 10 mins |
| Earthenware Glaze (Check Glaze recommendations) | 1080°C - 1100°C | 1.7 °C – 2.5°C /min | 15 - 30 mins |
| Stoneware / Porcelain (Check Clay Recommendations) | 1220°C - 1260°C | 1°C – 1.7°C / min | 10 mins |
| Stoneware / Porcelain Glaze (Check Glaze recommendations) | 1220°C - 1260°C | 1.7 °C – 2.5°C /min | 0 - 15 mins |