Novus N1050 Programming Guide

ADJUSTING DIGITAL CONTROLLER UPON START-UP

Upon start-up, all Mini hell will display the current chamber temperature (white LEDs) and begin the heating process to the factory default temperature set-point 800°C (green LEDs). The controller will also display the current temperature unit on the upper right-hand corner of the controller and the **RUN**, **AT** and **OUT** lights will be lit.

> If the controller does NOT show the RUN light upon startup, press the **P** button (5 times) to see RUN and press **arrow up** once to enable parameter to YES. To return, press **P** button once or give the controller 10 sec. to return on its own.

RUN FUNCTION The **RUN** function allows you to enable and disable the device operation. It works like a general key.

When in the on condition (**RUN = YES**), the controller is enabled to operate, and the control outputs and the alarm are acting normally.

When in the off condition (**RUN = No**), the controller does not act on the process, summarily switching off its outputs. No function is performed and only the measured temperature indication remains operative.

Function available in the **RUN** parameter in the controller Operation cycle. The **RUN** indicator on the frontal panel of the controller turns on when the control is enabled (**RUN = YES**).

Temperature Setpoint
Chamber Temperature
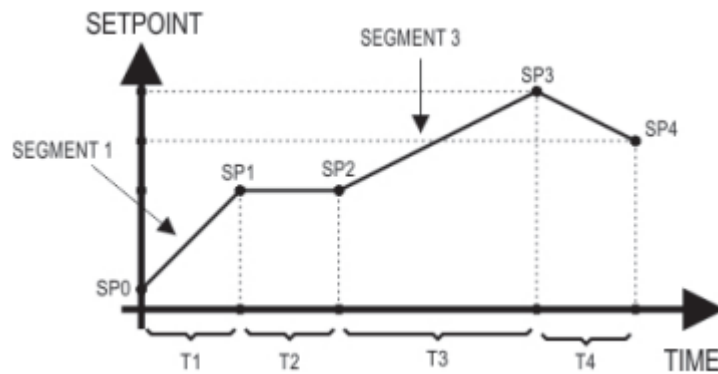
SET-POINT TEMPERATURE CHANGE

As the controller begins to heat to the set-point (green LEDs), you can quickly change the temperature by pressing the **UP** or **DOWN** arrow button on the controller.

Your oven's controller parameter values have been set at the factory to work with your model accordingly and is ready for immediate use. Once the oven's power switch and fan switch are turned to ON, your oven will begin to heat to the pre-set temperature setpoint shown on the controller's lower right hand corner. Oven will also start auto tuning to find best possible PID settings. **AT** diode will be visible on the screen. Do not open the kiln door or turn off the power untill auto tuning is complete AT (yellow LED) will turn off. The auto tuning proces must be completed before using the controller.

ANTY OVERHEAT ALARM

Your oven has anty overheat system. It might turn on when low set-point value will be selected for example 200°C. Temperature sensor heat up slower that air in the chamber so kiln might overshoot selected temperature. If actual temperature will be 50°C higher than selected temperature **A1** diode will lit. When temperature will drop bellow the 50°C over the set value **A1** diode will turn off and oven will back to normal operation.

RAMP AND SOAK PROGRAMMING

The Ramp and Soak Controller provides the opportunity to control applications needing set-point changes overtime. Examples of this are RAMP changes where a gradual rate of temperature change can be set. These can be separated by SOAK periods during which the process is held at a constant value. Each individual time interval in the program or SEGMENT, together with its associated moving setpoint value can be stored as a unique PROGRAM, as represented by the diagram.

HOW TO CREATE A RAMP AND SOAK PROGRAM

1. Press and hold **P** button to enter menu. Press and hold **P** button to see **PR.TB** (Program time base) Select between HH:MM (hours:minutes) or MM:SS (Minutes:Seconds)

2. Press **P** once to advance to PR.P (Function Resume Program) Select one of the options which defines the behavior of the controller when it resumes from power interruption.

ProG Returns at the beginning of the program.

P.SEG Returns the beginning of the segment

E.SEG Returns at the exact point where it stopped.

oFF Returns with control disabled (**RUN = No**).

3. Press **P** once to advance to PRn (Number of program to edit). Selects the ramp and soak profile program to be edited/viewed. Total of 5 programs possible (1 – 5). Once you select a program number to edit, the parameters that follow refer to the selected program.

4. Press **P** once to advance to P.TOL(Maximum deviation from SP) Input the maximum allowable deviation from PV with respect to SP (set-point). If exceeded, the program is suspended (the internal timer freezes) until PV (process value) is within the allowable deviation value.

Programming Set-points and time segments

5. Press **P** once to advance to P.SP0 (Program SP 0 to 4)

 Set the SP temperature of the program. P.SP0 is the

6. Press **P** once to advance to P.T1 (Program Segment Time)

 Set the duration time of the segment in the program being edited.

7. Press **P** once to advance to P.E1 (Program Event)

 Set this parameter to OFF. The alarm settings cannot be modified

Reapeat Steps 5-7 for each additional segment on the same program.

8. Press **P** once to advance to LP(Link Programs) Select a program number to be linked to another after the initial program ends. It is possible to create large, more complex program with up to 20 segments. Thus, at the end of the execution of a linked program, the controller immediately starts executing the next selected program numer
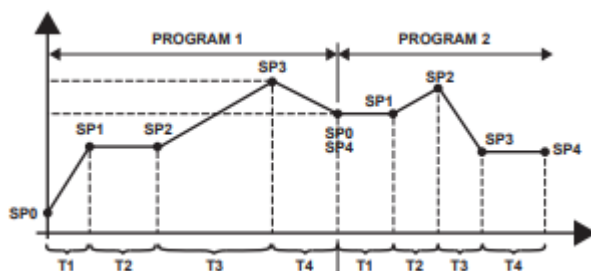
Example of linked programs

How to start a program

1. Press **P** (4 times) to see **PROG** (Program)
2. Press **arrow up** or **arrow down** and select the program number to run.
3. Press **P** to advance to **RUN** and using the select **YES**.
4. Press **P** to return to main menu.

Links to youtube tutorials:

AUTO TUNING: https://youtu.be/EFimD8skbrM

Programming (single temp): https://youtu.be/PxPDd94NIW0

Programming (ramp and soak): https://youtu.be/UW-FcCAk_PQ