



Set-Pro

Precision Temperature Control Operating Instructions

The Set-Pro is a temperature control that allows you to control the rate of temperature increase (or decrease), the temperatures you want to go to and any hold or soak time at those temperatures. The combination of these 3 items is called a segment and the Set-Pro is designed to control up to 8 of these segments per firing. Typical firings require multiple heating and cooling steps and the Set-Pro does it well.

The Set-Pro can also store up to 4 firing programs (user programs). This is a great feature when you like to use the same firing programs again and again. There's no need to re-program the firing data, just pick your program and go.

The following instructions explain the concepts and keystrokes of entering your firing data into the Set-Pro. If you would like to view a step-by-step programming sample we invite you to visit this page on the Evenheat Kiln web site at <http://www.evenheat-kiln.com/stpsample/stpsample.htm>

Programming the Set-Pro

- Throw the power switch to the ON position (up). The Set-Pro display will light up and **ErrP** will most likely be displayed. Press any key to clear this message. The display will read **IdLE** along with chamber temperature. This is telling you the controller is not running a program.
- Press the ENTER key.
- **UsrX** (*X being 1, 2, 3 or 4*) is displayed along with the User Program last used. Use the ARROW keys to choose the user program you want.

This is asking which of the 4 user programs you want to program/use. You can choose 1, 2, 3 or 4. Once the program is entered it stays there and can be used again and again without having to re-program it. You always have the option of changing the program settings if you wish.

- Press the ENTER key.
- **SEG** is displayed along with number of segments last used. Use the ARROW keys to choose the number of segments for this program.

A segment is a combination of a temperature rate change (in degrees per hour), a set point temperature (temperature you want to get to) and a hold/soak time at the set point temperature. That's one segment! You can program up to 8 of these segments per program.

- Press the ENTER key.
- **rA 1** is displayed along with the heating rate last used on segment 1. Use the ARROW keys to choose your heating rate for segment 1.

The heating rate is programmed in degrees per hour. The Set-Pro will control both ascending and descending (up or down) heating rates. You don't have to tell it which way to go, it will figure it out by itself. Keep in mind that the kiln or oven will only heat so fast and cool so slowly. It's not a rocket and it sure isn't a refrigerator.

- Press the ENTER key
- °F 1 is displayed along with the set point temperature last used on segment 1. Use the ARROW keys to choose the set point temperature for segment 1. If your Set-Pro is setup for the Celsius scale you will see °C 1 displayed instead of °F 1.

The set point temperature is simply the temperature you want to get to in that segment.

- Press the ENTER key
- **HLd1** is displayed along with the hold time last used on segment 1. Use the ARROW keys to choose a hold time.

Hold time (a.k.a. soak) is programmed in hours and minutes. If you don't want to hold at the set point temperature enter 00.00.

- Press the ENTER key
- If you have chosen to use more than 1 segment you will be asked to enter the firing data for the remaining segments. It asks you the same questions over again. Once you have completed programming the remaining segments the display will read **rEdI**. This stands for "ready" which means your done programming and the Set-Pro is ready to go.
- To start, or run the program simply press the START key. The display will briefly read **ON** and then read chamber temperature.
- When the firing is complete the display will read **CPLt** along with the total firing time. Pressing the ENTER key one time will cause the display to briefly read **StOP** then **IdLE** along with chamber temperature.
- That's it. You now know everything there is to know about programming your Set-Pro. Well, almost everything.

Fun Stuff, Hints, Error Codes and Other Goodies

"On-the-Fly" Features - Sometimes your programmed firing data just doesn't work. It's going to happen. It's either too hot, too cool, too long or too short. Such is the nature of firing. Situations like these are easily fixed by using the On-the-Fly features designed into the Set-Pro.

- View Segment – At any point during the firing you may press the UP arrow one time to display the current segment and the current action (ramping or holding). It will also display the associated traveling set point temperature or hold temperature. This will tell you if you're ramping or holding, which segment your doing this in and the temperature at which this is occurring. After a moment or two the display will go back to normal operation.

What the heck is a traveling set point? - A traveling set point is the temperature that the kiln is attempting to achieve at any given point during a ramping operation. As you might expect, this temperature changes with time as the ramping operation progresses. So, if you notice that this number changes during the ramping portion of the firing, that's why.

- Add Time – During a hold period it's sometimes necessary to add just a little more time to the programmed hold time. The Set-Pro allows you to add time to a hold in 5 minute increments.

*While holding at a temperature (display reads temperature along with remaining hold time), repeatedly press the **UP** arrow key until the display reads **tnnE** (stands for time). Press the **ENTER** key one time. You have now added 5 minutes to the hold time. The display will go back to reading temperature and remaining hold time and you will notice that 5 minutes has been added to the hold.*

- Add Temperature – During a hold period it's sometimes necessary to add just a little extra temperature to the programmed set point temperature. The Set-Pro allows you to add more temperature in 5 degree increments.

*While holding at a temperature (display reads temperature along with remaining hold time), repeatedly press the **UP** arrow key until the display reads **tnnP** (stands for temp). Press the **ENTER** key one time. You have now added 5 degrees to the set point temperature. Once set, the display will go back to reading temperature and remaining hold time.*

- Skip Step – During firing it's often desired to stop what you're currently doing and skip ahead to another segment in the program. For instance, when firing glass you may have the perfect result before your hold time completes. Allowing the hold time to complete would further change the glass and lead to disappointment. In such a case the Set-Pro allows you to skip ahead to the next segment in the program for the annealing or cooling portion of the program.

*Any time during the firing repeatedly press the **UP** arrow key until the display reads **SStP** (stands for skip step). Press the **ENTER** key one time. You have now skipped to the next programmed segment. If you need to continue to skip ahead even further feel free to do so. Once you skip the display will go back to reading temperature.*

- When you use the On-the-Fly features, by repeatedly pressing the UP arrow during firing, the display will first read the hold or ramp segment that your in, the hold time or temperature for that segment and then tnnE, tnnP and SStP. This is actually part of the View Segment feature described above. This is good information to know before you make changes. If you decide not to make any changes simply don't press any keys and the display will go back to normal operation after a moment or two.
- You may use the On-the-Fly features as often as you like. If you have added 5 minutes to a hold and want to add another 5 minutes, feel free. The same is true for adding temperature or skipping ahead.
- On-the-Fly adjustments to the firing are temporary and are used for that firing only. That is, they do not change the program stored in memory.

Program Review – It's always best to review your program before starting it. When the controller is reading IdLE just press the REVIEW key and the display will automatically show you what's programmed. Just watch. When it's done reviewing rEDI will be displayed. Press START to start the program. If it's not what you want, Press Start twice to get to IdLE and enter a new program.

Start Now – For you brave souls out there who want to skip the program review you can get to the rEDI command quickly by pressing the REVIEW key twice (when IdLE is displayed). This bypasses the review process and gets you directly to rEDI. Just press the START to start the program.

Stopping the Program – At any time you may stop the program while it's running by pressing the STOP key. The display will briefly read StOP then read IdLE along with chamber temperature.

Temperature Rate Options – Temperature is programmed in degrees per hour (°/hr.). At some point you may like to go as fast as possible. You can do this two ways. You can program in the maximum rate of 9999 which works fine but takes forever to program (if you don't believe it, try it). A better way is to use the FULL command. This basically tells the controller to go full on (or full off) to the set point temperature. The nice thing about this FULL setting is that it's faster to program than 9999. When you want to set your rate to FULL simply press the down arrow key. The numbers will go down of course but the display will stop at FULL. Too easy and a heck of a lot quicker than 9999!

Using the ARROW keys – When using the arrow keys, especially when holding them down, the “tens” position will change first then the “hundreds” position will change then the “thousands” position will change. This process is designed to get you where you want to go a little faster, and easier. Another twist to this feature allows you to “tap” the button to change the position slowly. For instance: let's say you're holding down the up arrow key and the hundreds position is changing. Simply let go of the arrow key and press it once to increment the hundreds up by 1. Press it once again and it moves up by 1 again. And so on and so forth. This feature is true when any position is the one being changed. We hope you find it useful.

Number of Segments – The Set-Pro can control up to 8 segments per use or program. However, that doesn't mean that you need to use all 8. If your program only needs 1 or 2 segments to operate, great. When it comes time to choose just select the number of segments you need.

Clearing Function – There is no button that allows you to perform an “ALL CLEAR” function, i.e. set all the settings to 0. Sorry. We understand the desire for such a feature but it's really not necessary. Besides, the folks who make the electronics look at us kinda funny every time we mention adding it.

Fahrenheit or Celsius – Your Set-Pro was set at the factory for use in the Fahrenheit or Celsius temperatures scales. If programmed to the Fahrenheit scale you will see °F when programming your set point temperatures. If set to Celsius you will see °C when programming your set point temperature. You will also note a small, red dot will be illuminated at the bottom right of the Set-Pro display area to indicate a Celsius temperature. This small, red dot is not illuminated when using the Fahrenheit scale. If you would like to change which temperature scale you are using please contact us.

Error Codes:

ErrP – This indicates that there was a power interruption long enough to stop the firing.

tC FAIL – tC alternating with FAIL indicates the thermocouple (temperature sensor) has failed.

tC – If you get this message it means the thermocouple is connected backwards.

Other Codes:

CPLt – Firing complete.

FULL – Full On or Full Off setting used when programming rate. You don't need to tell it Full On or Full Off, it knows!! Located below 0.

IdLE – Means the controller isn't running any program. It's just waiting patiently for you.

SEG – Means segment. Only displayed once as you choose the number of segments in your program.

rA – Followed by a number such as rA 1, rA 2.....rA 8. Tells you in which segment you're programming the rate.

°F - Followed by a number such as °F 1, °F 2.....°F 8. Tells you in which segment you're programming the set point temperature.

°C - Followed by a number such as °C 1, °C 2.....°C 8. Tells you in which segment you're programming the set point temperature.

HLd - Followed by a number such as HLd 1, HLd 2.....HLd 8. Tells you in which segment you're programming the temperature hold.

rEdI – Means the controller is ready to run. Pressing the Start key once at this point will run or start the program.

On – Appears briefly when program is started.

SStP – Skip Segment prompt.

StOP – Means stop. Displayed when you manually stop the kiln using the Start/Stop/Enter key.

tnnE – Add time prompt

tnnP – Add temperature prompt

Usr – Followed by the number 1, 2, 3 or 4. Asking which of the 4 user programs you wish to program.

Dot in Lower Right Corner – An illuminated dot in the lower right hand corner of the display area indicates that all temperatures are in Celsius. If there is no illuminated dot in the lower right corner of the display area then all temperatures are in Fahrenheit.

We've attempted to make these instructions as simple and straight forward as possible with just a bit of humor to get you through. If you need further assistance in operating your Set-Pro give us a call or shoot us an e-mail. We would be happy to help you out. You will also find additional information on our website, including a Set-Pro programming example at <http://www.evenheat-kiln.com/stpsample/stpsample.htm>



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