# evenheat
www.evenheat-kiln.com ®

# Set-Pro w/ Metal Clay Presets
## Precision Temperature Control
## Operating Instructions

For Use with Studio Pro STP and Kingpin 88 Models without "EX" at End of Serial Number
For Use with All Other Set-Pro Equipped Kilns with Serial Number's 102076 and Below

The Set-Pro with Metal Clay presets is a temperature control that allows you to use preset firing programs for your metal clay firings. The Set-Pro contains 5 preset programs for the Art Clay brand of metal clay and 5 preset programs for the PMC brand of metal clay. It also contains 4 Custom programs for those wishing to develop their own firing programs.

We have divided these programming instructions into three easy to follow sections:

**Firing with Preset Art Clay Programs**
**Firing with Preset PMC Programs**
**Firing with Custom Programs**

Simply go to the section that matches your desired firing style and follow the line-by-line instructions. Programming is not a difficult process and you'll begin to see the pattern emerge with continued use.

_____

## Firing with Preset Art Clay Programs

These preset metal clay programs are used for firing the Art Clay brand of metal clays.

Preset programs choices include:

Art Clay Silver Standard
Art Clay Silver Standard Slow Dry
Art Clay 650/1200 Low Fire
Art Clay Silver 650/1200 Low Fire Slow Dry
Art Clay Copper

Throw the power switch to the On position. The display will read IdLE along with chamber temperature.

Press the ENTER key.

Use the UP arrow to make the display read ArtC if it does not already.

Press the ENTER key.

# evenheat
www.evenheat-kiln.com ®

# Firing with Preset Art Clay Programs – *continued*

Use the UP arrow to select the preset Art Clay program you wish to use. Below is a listing of the preset Art Clay programs and the display abbreviations.

| | |
|---|---|
| Art Clay Silver Standard | S.S. |
| Art Clay Silver Standard Slow Dry | S.S.-S |
| Art Clay 650/1200 Low Fire | LF |
| Art Clay 650/1200 Low Fire Slow Dry | LF-S |
| Art Clay Copper | COPP |

Press the ENTER key.

The display will read °F 1 along with the preset temperature the kiln will reach during firing.

> *This is the temperature where your metal clay matures. We call it final temperature. You do have the option at this point of adjusting the final temperature for this program if you desire. Use the Up and Down arrow keys to adjust. If you are new to metal clay firing we would suggest that you do not adjust the final temperature at this point. Just know that you can if you ever wish to.*

Press the ENTER key

The display will read HLd1 along with the preset hold (a.k.a. soak) time.

> *Hold or soak time is the amount of time the firing will hold the final temperature. You do have the option of adjusting the hold time for this program if you desire. Use the Up and Down arrow keys to adjust. If you are new to metal clay firing we would suggest that you do not adjust the hold time at this point. Just know that you can if you ever wish to.*

Press the ENTER key

The display will read rEdI. This stands for Ready.

Press the ENTER key to start the firing.

The Set-Pro is now properly firing your ware according to the chosen preset Art Clay program. During firing the display will indicate chamber temperature along with time remaining in the hold/soak period once it gets there. You will also notice audible clicking sounds from the control relay.

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.

Allow the kiln chamber to cool to a temperature below 135°F before removing fired ware.

---

**evenheat**
www.evenheat-kiln.com ®

# Firing with Preset PMC Programs

These preset metal clay programs are used for firing the PMC brand of metal clays.

Preset programs choices include:

PMC Standard
PMC+ Fast
PMC3 Fast
PMC3 Slow
PMC Gold Slow

Throw the power switch to the On position. The display will read IdLE along with chamber temperature.

Press the ENTER key.

Use the UP arrow to make the display read PNNC if it does not already.

Press the ENTER key.

Use the UP arrow to select the preset PMC program you wish to use. Below is a listing of the preset PMC programs and the display abbreviations.

PMC Standard          Stnd
PMC+ Fast             P F
PMC3 Fast             P3 F
PMC3 Slow             P3 S
PMC Gold Slow         GoLd

Press the ENTER key.

The display will read °F 1 along with the preset temperature the kiln will reach during firing.

*This is the temperature where your metal clay matures. We call it final temperature. You do have the option at this point of adjusting the final temperature for this program if you desire. Use the Up and Down arrow keys to adjust. If you are new to metal clay firing we would suggest that you do not adjust the final temperature at this point. Just know that you can if you ever wish to.*

Press the ENTER key

The display will read HLd1 along with the preset hold (a.k.a. soak) time.

*Hold or soak time is the amount of time the firing will hold the final temperature. You do have the option of adjusting the hold time for this program if you desire. Use the Up and Down arrow keys to adjust. If you are new to metal clay firing we would suggest that you do not adjust the hold time at this point. Just know that you can if you ever wish to.*

Press the ENTER key

The display will read rEdI. This stands for Ready.

**evenheat**
www.evenheat-kiln.com

# Firing with Preset PMC Programs *- continued*

Press the ENTER key to start the firing.

The Set-Pro is now properly firing your ware according to the chosen preset PMC program. During firing the display will indicate chamber temperature along with time remaining in the hold/soak period once it gets there. You will also notice audible clicking sounds from the control relay.

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.

Allow the kiln chamber to cool to a temperature below 135°F before removing fired ware.

---

# Firing with Custom Programs

Custom programming allows you to define what will happen during the firing. This type of programming is useful when firing material other than metal clays such as glass fusing, glass beads, enamels, etc.

Since Custom programs are not preset you will need to have some idea of the temperatures and hold times used throughout your particular firing. This type of information is generally available from your material supplier, reference books and internet sources.

The Set-Pro allows you to program up to 4 Custom programs.

Throw the power switch to the On position. The display will read IdLE along with chamber temperature.

Press the ENTER key.

Use the UP arrow to make the display read USEr if it does not already.

Press the ENTER key.

Use the UP arrow key to choose which program number to store your firing program. Choices are 1, 2, 3 or 4.

Press the ENTER key.

The display will read SEG along with number of segments last used. Use the Arrow keys to choose the number of segments for your program. You can use up to 8 segments per firing program.

Press the ENTER key.

The display will read rA 1. This is asking for heating rate for segment 1. Use the Arrow keys to choose.

Press the ENTER key

The display will read °F 1. This is asking for the temperature to be reached in segment 1. Use the Arrow keys to choose.

Press the ENTER key

# Firing with Custom Programs – *continued*

The display will read HLd1. This is asking for the hold time desired at the segment 1 temperature. Use the Arrow keys to choose.

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.

Press the ENTER key to start the firing.

The Set-Pro is now properly firing your ware according to your Custom program. During firing the display will indicate chamber temperature along with time remaining in the hold/soak periods. You will also notice audible clicking sounds from the control relay.

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.

Allow the kiln chamber to cool to a temperature below 135°F before removing fired ware.

---

## Fun Stuff, Hints, Error Codes and Other Goodies

**Always Monitor Your Firing** – Metal Clay is a valuable commodity. A failure within the kiln can be costly. While we always recommend that you monitor the firing from the aspect of safety, you now have another reason to keep track of the kiln during use. Evenheat will not be held responsible for the loss of any ware for any reason.

**Modifying Preset Metal Clay Programs** – As mentioned in the above programming instructions it is possible to modify the preset Metal Clay programs final temperatures and hold times. Why would you want to do that? Well, you may find that you like the results of your Metal Clay when it is fired a little cooler or a little hotter or held at temperature for a shorter or longer period of time. That's fine, it's OK to tweak the firing to better suite your desires.

Keep in mind that once you change the preset and Custom program data, your change stays and will be used the next time you run the program. Relax, you can always change it back to the original settings if you wish. We have included a table of the Factory preset program settings at the end of this manual.

**"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. These On-the-Fly features are generally useful when using Custom programs for glass firing. They find little or no use in metal clay firing.

View Segment – At any point during the firing you may press the UP arrow one time to display the current action (ramping or holding) and current segment. 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 tME (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. You may use this procedure as often as necessary to get the hold time you desire.*

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 tMP (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. You may use this procedure as often as necessary to get the hold temperature you desire.*

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 press the UP arrow key one time. The display will eventually read SStP (stands for skip step). When it does, 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.*

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.

**Selecting and Running a Set Custom Program** – At some point you are likely to have set all 4 of the Custom programs to something you like and want to run again and again. The Set-Pro allows you to quickly select the program. From IdLE press the Enter key one time, UP arrow to the program you wish to run and then press the DOWN arrow. The display automatically cycles through the program settings and then displays rEdI. Simply press Start to begin the firing.

**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 in 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 until the display stops at 0000, then release the key. Wait a moment or two, then press the down arrow one time. The display will read FULL. It's 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 Custom program. However, that doesn't mean that you need to use all 8. If your Custom 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.

**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.

**evenheat**
www.evenheat-kiln.com

**Error Codes:**

**tC FAIL** - tC alternating with FAIL indicates the thermocouple has failed. Replace the defective thermocouple with Evenheat supplied thermocouple only. To clear, press any key.

**Err1** – Error 1 indicates the temperature in the kiln is rising slower than 15°F/hr during an up ramp. If this rate continues for 8 minutes, the firing will be stopped. Err1 may be an indication that elements are worn or defective or that a relay has stopped working.

**ErrF** – Error F indicates the temperature in the kiln is decreasing less than 15°F/hr during a down ramp. If this rate continues for 8 minutes, the firing will be stopped. ErrF may be an indication that a relay has stuck in the on position.

**Errd** – Error d indicates that the kiln temperature is 100°F above the traveling set point, which is the current desired temperature in the kiln. The traveling set point will increase or decrease according to the programmed rate. Errd may indicate a stuck relay in the on position or a problem with a thermocouple not reading properly.

**ErrP** – ErrP is displayed whenever there is a power interruption that is long enough to stop the firing. If the power interruption is brief, the kiln will continue to fire when power is restored; in this case there will be no indication of a power failure. To clear the error press any key.

**tC** – The Red and Yellow thermocouple wires are reversed.


**Display Messages:**

**°C** - Segment temperature in °C (Centigrade / Celsius) Followed by a number such as °C 1, °C 2……°C 8.  Tells you in which segment you're programming the set point temperature. *A decimal point will illuminate in the lower right corner of the display when the °C scale is used.*

**COPP** – Indicates preset Metal Clay program used to fire "Art Clay Copper" clay.

**CPLt** – Firing cycle complete (firing time is alternately displayed).

**Errp** – There has been a power interruption that has stopped the firing. Press any key to clear.

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

**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.

**GoLd** – Indicates preset Metal Clay program used to fire "PMC Gold" clay. Slow firing.

**HLd** - Hold / Soak time in hours:minutes at a hold temperature. Followed by a number such as HLd 1, HLd 2…….HLd 8.  Tells you in which segment you're programming the temperature hold.

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

**LF** – Indicates preset Metal Clay program used to fire "Art Clay 650/1200 Low Fire" clay.

**LF-S** – Indicates preset Metal Clay program used to fire "Art Clay 650/1200 Low Fire Slow Dry" clay.

**On** – Appears briefly when program is started.

**P F** – Indicates preset Metal Clay program used to fire "PMC+" clay. Fast firing.

**evenheat**
**www.evenheat-kiln.com**

Set-Pro w/ Metal Clay Presets Aug 2010

**P3 F** – Indicates preset Metal Clay program used to fire "PMC3" clay. Fast firing.

**P3 S** – Indicates preset Metal Clay program used to fire "PMC3" clay. Slow firing.

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

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

**S.S.** – Indicates preset Metal Clay program used to fire "Art Clay Silver Standard" clay.

**S.S.-S** – Indicates preset Metal Clay program used to fire "Art Clay Silver Standard Slow Dry" clay.

**SEG** – Short for Segments. You can enter up to 8 segments in a program.

**SStP** – Skip Step (used to advance to the next ramp).

**Stnd** – Indicates preset Metal Clay program used to fire "PMC Standard" clay.

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

**tME** – Indicates time (5 minutes) will be added to the hold time when Enter is pressed.

**tMP** – Indicates temperature (5 degrees) will be added to the hold temperature when Enter is pressed.

**USr #** - User program number displayed. 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.

## Factory Preset Metal Clay Program Data

| Preset Program | Firing Data |
|---|---|
| Art Clay Silver Standard (S.S.) | Full Power to 1472°F, 30 minute hold |
| Art Clay Silver Standard Slow Dry (S.S.-S) | Full Power to 1472°F, 30 minute hold |
| Art Clay 650/1200 Low Fire (LF) | Full Power to 1200°F, 30 minute hold |
| Art Clay 650/1200 Low Fire Slow Dry (LF-S) | Full Power to 1200°F, 30 minute hold |
| Art Clay Copper (COPP) | Full Power to 1778°F, 30 minute hold |
| PMC Standard (Stnd) | Full Power to 1650°F, 2 hour hold |
| PMC+ Fast (P F) | Full Power to 1650°F, 10 minute hold |
| PMC3 Fast (P3 F) | Full Power to 1290°F, 10 minute hold |
| PMC3 Slow (P3 S) | Rate of 1500°F/hour to 1110°F, 45 minute hold |
| PMC Gold Slow (GoLd) | Rate of 1500°F/hour to 1290°F, 1-1/2 hour hold |

We've attempted to make these instructions as simple and straight forward as possible with just a bit of fun 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.

**evenheat**
**www.evenheat-kiln.com** ®