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For Use with Set-Pro controlled Glass Kilns with a serial number greater than 107718.

SET-PRO
w/ Express Mode

GLASS FIRING
Control Operating Manual

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PROGRAMMING VIDEOS GLASS

Thank you for purchasing a Set-Pro w/ Express Mode equipped kiln from Evenheat. Whether you're a beginner or a seasoned pro, the Set-Pro with Express Mode offers the ease and performance you expect from Evenheat.

The Set-Pro w/ Express Mode offers five programming modes: Glass Express, Metal Clay Express, Glass Bead Annealing Load-n-Go, Ceramic Express and Custom.

Glass Express Mode is designed exclusively for glass firing. It's quick, easy and accurate using preset firing parameters. Simply answer a few questions and you're ready to fire.

Metal Clay Express Mode is designed exclusively for firing Art Clay and PMC brands of metal clay. Preset firing programs for each brand make programming easy and accurate.

"Load-n-Go" Glass Bead Annealing is designed exclusively for glass bead annealing. Preset firing programs for Borosilicate, Morreti/ Effetre, COE 90, COE 96 and COE 82 glass give perfect results every time.

Ceramic Express Mode is designed exclusively for ceramic firing. Choose your cone number and firing speed and the Set-Pro does the rest automatically.

Custom Mode is designed for the creation of individual, custom firing programs.

This manual describes the use of the Set-Pro w/ Express Mode as it relates to using the Glass Express Mode and Custom Mode. For Set-Pro w/ Express Mode manuals relating to using the Metal Clay Express Mode, Bead Annealing "Load-n-Go" and Ceramic Express Mode please refer to the manuals disc included with your kiln, visit our web site at www.evenheat-kiln.com or contact us at info@evenheat-kiln.com.

CAUTION: The Set-Pro is used to control temperature, it is not a safety devise. Never leave the kiln unattended while firing. Check on the kiln at the end of the firing to ensure firing program has completed as planned.

CAUTION: Throw control power switch, located on kiln control panel, to the OFF position (O) when not in use.

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Use this Quick Guide to Immediately Begin the Glass Express Mode Programming Process (Glass Firing Only)

Glass Express Mode programming allows you to fire your glass using 3 simple parameters: the *COE of glass you are using, the type of firing you would like to accomplish and the relative speed of the firing (based on size and thickness of the glass). It's quick and easy to program and gives accurate and repeatable results time after time.

Quick Steps for Glass Express Mode Programming

1. Throw the power switch on the kiln control panel to the On position.

2. The Set-Pro begins its initialization process and the display will illuminate.

3. The Set-Pro will finish its initialization process and then display **IdLE** (Idle).

4. Press the Enter key one time to begin the programming process. The display will read **GLAS, ALAr, bEAd, M-C**, **CEr** or **CUSt**.

5. Use the Up or Down arrow keys to make the display read **GLAS** (Glass Express Mode) if it does not already.

6. Press the Enter key. **CO90**, **CO96** or **CO82** is displayed. These represent you're glass COE choices: COE 90, COE 96 or COE 82.

7. Use the Up or Down arrow keys to match the COE of the glass you are firing.

8. Press the Enter key. **SOFt**, **LAM**, **FUSE** or **CASt** is displayed. These represent you're firing process choices: SOFt is used for slumping, bending and draping. LAM is used for laminating, Tack Fuse and Fuse-to-Stick. FUSE is used for a Full Fuse. CASt is used for Casting.

9. Use the Up or Down arrow keys to choose desired firing process.

10. Press the Enter key. **FASt**, **MEd**, **SLO** or **rSLO** is displayed. These represent firing speed choices: FASt is Fast, MEd is Medium, SLO is Slow and rSLO is Extra Slow. *See the Firing Speed Selection Table below for guidance in choosing the recommended firing speed.*

11. Use the Up or Down arrow keys to choose desired firing speed.

12. Press the Enter key. The display will read **rEdI** which stands for Ready.

13. Press the Enter key to begin the firing. The Set-Pro is now running your Glass Express Mode program.

When the firing is complete the display alternates between **CPLt** and total firing time. Press the Start/Stop key at this point will cause the display to briefly read **StOP** and then **IdLE**.

*You may stop the firing at any time by pressing the Enter key. Doing so will cause the firing to stop and **StOP** will briefly be displayed.*

Firing Speed Selection Table - *Locate your glass thickness and largest dimension of your glass. Use the corresponding speed.*						
	Largest Glass Dimension					
Glass Thickness	2"	4"	8"	12"	16"	20"
1/8"	FAST	FAST	FAST	MEDIUM	MEDIUM	SLOW
1/4"	FAST	FAST	MEDIUM	MEDIUM	SLOW	SLOW
3/8"	FAST	MEDIUM	MEDIUM	SLOW	SLOW	EXTRA SLOW
1/2"	MEDIUM	MEDIUM	SLOW	SLOW	EXTRA SLOW	*Use Custom Mode*
5/8"	MEDIUM	SLOW	SLOW	EXTRA SLOW	*Use Custom Mode*	*Use Custom Mode*
3/4"	SLOW	SLOW	EXTRA SLOW	*Use Custom Mode*	*Use Custom Mode*	*Use Custom Mode*

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Use this Quick Guide to Immediately Begin the Custom Mode Programming Process

The Custom Mode allows the creation of your own, individual firing programs. You choose the rate of temperature increase or decrease, the temperature you want to achieve and any hold time once you're there. These 3 items, taken together create what's known as a segment. Segments are basically chained together to create a multi-segment program. Enjoy full artistic control with Custom Mode Programming. The Custom Mode can be used for all types of firing including glass, metal clay and ceramic.

Quick Steps for Custom Mode Programming

1. Throw the power switch on the kiln control panel to the On position.

2. The Set-Pro begins its initialization process and the display will illuminate.

3. The Set-Pro will finish its initialization process and then display **IdLE** (Idle).

4. Press the Enter key one time to begin the programming process. The display will read **GLAS**, **ALAr**, **bEAd**, **M-C**, **CEr** or **CUSt**.

5. Use the Up or Down arrow keys to make the display read **CUSt** (Custom Mode) if it does not already.

6. Press the Enter key. **USr** is displayed along with some number.

7. Use the Up arrow key to choose. You're choosing which of the 4User program numbers will be used to store your program. Your choices are 1 thru 4.

8. Press the Enter key. **SEG** is displayed along with some number.

9. Use the Up or Down arrow keys to choose. You're choosing the total number of segments used in the program. Your choices are 1 thru 8.

10. Press the Enter key. **rA 1** is displayed along with some number.

11. Use the Up and Down arrow keys to choose. You're programming the temperature rate (°/hr.) for this segment.

12. Press the Enter key. **°F 1** is displayed along with some number.

13. Use the Up and Down arrow keys to choose. You're programming the temperature set point for this segment.

14. Press the Enter key. **HLd 1** is displayed along with some number.

15. Use the Up and Down arrow keys to choose. You're programming the hold time for this segment.

16. Press the Enter key. **rA 2** is displayed. Repeat steps 11 thru 14 for all remaining segments.

17. Once all remaining segments have been programmed the display will read **rEdI** (Ready).

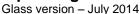18. Press the Enter key to begin the firing. The Set-Pro is now running your Custom Mode program.

When the firing is complete the display alternates between **CPLt** and total firing time. Press the Start/Stop key at this point will cause the display to briefly read **StOP** and then **IdLE**.

*You may stop the firing at any time by pressing the Enter key. Doing so will cause the firing to stop and **StOP** will briefly be displayed.*

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Set-Pro Key Layout & Key Descriptions

F or °C -The Set-Pro can be set to display in either Fahrenheit or Celsius.

Display -Large, bright LED display can be seen from a distance.

Start/Stop - Enter

The Start/Stop key starts and stops the firing process. It's also used to enter or store firing program information during the programming process.

UP Arrow – VIEW SEG – SKIP SEG

Used to select values when programming and allows for Viewing the current running segment as well as performing the Skip Ahead feature.

Down Arrow – REVIEW

Used to select values when programming and allows for the Review program feature.

See the Set-Pro Key Function Table on page 16, for more detailed key information.

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Glass Express Mode Programming (Detailed)

Glass Express Mode features easy, 3 step programming that automatically develops your firing program based on the COE of your glass, the type of firing you would like to accomplish and the speed at which to fire. It's quick, it's easy and gives reliable, repeatable results fire after fire.

1. Throw the power switch on the kiln control panel to the On position.

2. The Set-Pro begins its initialization process and the display will illuminate.

3. The Set-Pro will finish its initialization process and then display **IdLE** (Idle).

   Idle simply means the Set-Pro is at rest and is not running any programs.

4. Press the Enter key one time to begin the Glass Express Mode programming process. The display will read **GLAS**, **ALAr, bEAd, M-C**, **CEr** or **CUSt**.

   The Set-Pro includes preset programs designed to fire glass, metal clays, glass bead annealing, ceramic as well as offering custom programs.

   These choices are displayed as:

   GLAS – Glass Express Mode
   ALAr – Beginning and End Process Alarms
   bEAd – Load-n-Go Bead Annealing Process
   M-C – Metal Clay Express Mode
   CEr – Ceramic Express Mode
   CUSt – Custom Mode

5. Use the Up or Down arrow keys to make the display read **GLAS** (Glass Express Mode) if it does not already.

6. Press the Enter key. The display will read **CO90**, **CO96** or **CO82**.

   The Set-Pro needs to know the COE of the glass you are firing. COE stands for "Coefficient of Expansion". COE is a measure of the expansion and contraction of the glass as it's heated and cooled. The Glass Express Mode was designed with multiple COE choices allowing you to fire popular glasses available from many manufacturers. Simply choose the COE that matches the glass you intend to fire. *If your glass COE is not listed please use the Custom Mode (see page 8).*

   COE choices are displayed as:

   CO90 - Use for 90 COE labeled glasses similar to Uroboros, Bullseye and Wissmach System 90.
   CO96 - Use for 96 COE labeled glasses similar to Uroboros and Spectrum System 96.
   CO82 - Use for 82 COE labeled float glass similar to Armstrong "Float Fire 82".

7. Use the Up or Down arrow keys to select and match the COE of the glass you are firing.

8. Press the Enter key. The display will read **SOFt**, **LAM**, **FUSE** or **CASt**.

   The Set-Pro needs to know the firing process you would like to use. The Glass Express Mode allows you to choose one of four different firing processes: Soften (Slumping, Bending), Laminate (Fuse-to-Stick), Fuse (Full Fuse) and Cast (Casting). *If you would like to use a process that is not listed, such as painting, please use the Custom Mode (see page 8).*

   Firing process choices are displayed as:

   SOFt - Soften - Use for slumping, bending or draping.
   LAM - Laminate - Also known as Tack Fuse and Fuse-to-Stick, laminating bonds separate pieces of glass together.
   FUSE - Fuse - Full fuse. Fully liquefies separate pieces of glass into a single piece.
   CASt - Casting - Use when filling a mold or casting with a quantity of glass.

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Glass Express Mode Programming (Detailed) – continued from previous page

9. Press the Enter key. The display will read **FASt**, **MEd**, **SLO** or **rSLO**.

The Set-Pro is asking for the desired firing speed. Firing speed is dependent upon both glass thickness and overall glass size. Use the Firing Speed Selection Table below for guidance in determining the recommended firing speed for your particular firing.

Firing Speed choices are displayed as:

FASt - Fast
MEd - Medium
SLO - Slow
rSLO - Extra Slow

To use the Firing Speed Selection Table simply find the thickness of your glass and its largest dimension. The recommended speed is at the intersection. For example, if your glass thickness is 3/8" and you're firing an 8" circle, the recommended firing speed is Medium.

Firing Speed Selection Table						
	Largest Glass Dimension					
Glass Thickness	2"	4"	8"	12"	16"	20"
1/8"	FAST	FAST	FAST	MEDIUM	MEDIUM	SLOW
1/4"	FAST	FAST	MEDIUM	MEDIUM	SLOW	SLOW
3/8"	FAST	MEDIUM	MEDIUM	SLOW	SLOW	EXTRA SLOW
1/2"	MEDIUM	MEDIUM	SLOW	SLOW	EXTRA SLOW	*Use Custom Mode*
5/8"	MEDIUM	SLOW	SLOW	EXTRA SLOW	*Use Custom Mode*	*Use Custom Mode*
3/4"	SLOW	SLOW	EXTRA SLOW	*Use Custom Mode*	*Use Custom Mode*	*Use Custom Mode*

10. Use the Up or Down arrow keys to select your desired firing speed.

11. Press the Enter key. The display will display **rEDI** (Ready). You have successfully programmed your Glass Express Mode Program.

12. Press the Enter key to begin the firing. The Set-Pro Glass Express Mode program you created is now running and firing the kiln.

When the firing is complete the display alternates between **CPLt** and total firing time. Pressing the Start/Stop key at this point will cause the display to briefly read **StOP** and then **IdLE**.

The Set-Pro automatically stops running the firing program once complete. However, you may always stop a firing in progress, at any time, by pressing the Start/Stop key. ***StOP** is displayed briefly and then **IdLE***.

Glass Express Mode Firing Data

The Glass Express Mode uses preset firing data to fire your glass. You will find the actual, preset firing data used in the Glass Express Mode programs starting on page 17 of this manual.

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Custom Mode Programming (Detailed)

The Custom Mode is a method of programming that allows the artist to precisely define every aspect of the firing. You're creating a custom firing program designed for the work at hand.

Creating a custom program is not difficult. It does, however, require some knowledge and forethought about what you want to do and how to go about it. We have included a "Basic Glass Firing Guide" with your new kiln that goes through the basics. But these are just the basics and you will want to seek out more detailed information. Having said that, you do need to know how to translate what you want into a firing program and we're going to show you how to do it.

1. Throw the power switch on the kiln control panel to the On position.

2. The Set-Pro begins its initialization process and the display will illuminate.

3. The Set-Pro will finish its initialization process and then display **IdLE** (Idle).

> Idle simply means the Set-Pro is at rest and is not running any programs.

4. Press the Enter key one time to begin the Custom Mode programming process. The display will read **GLAS**, **ALAr, bEAd, M-C**, **CEr** or **CUSt**.

> The Set-Pro includes preset programs designed to fire glass, metal clays, ceramic as well as offering custom programs.

> > These choices are displayed as:

> > **GLAS** – Glass Express Mode
> > **ALAr** - Beginning and End Process Alarms
> > **bEAd** – Load-n-Go Bead Annealing Process
> > **M-C** – Metal Clay Express Mode
> > **CEr** – Ceramic Express Mode
> > **CUSt** – Custom Mode

5. Use the Up or Down arrow keys to make the display read **CUSt** (Custom Mode) if it does not already.

6. Press the Enter key. The display will read **USr** along with some number.

> The Set-Pro needs to know which of the 4 available locations you would like to store your Custom Mode program. In other words: a program number. Your choices are 1 thru 4.

7. Use the Up arrow key only to select the desired program number.

8. Press the Enter key. The display will read **SEG** along with some number.

> The Set-Pro needs to know the total number of segments you would like to use for the Custom Mode program.

> Most glass firing programs require the kiln to go to multiple temperatures and to use multiple heating rates throughout the firing. In order for the Set-Pro to perform all these changes, it breaks the entire program down into smaller bits called "Segments". Your program will consist of many segments, chained together, one after another, to create the finished program. During firing, the Set-Pro works from one segment to the next until all segments have been completed.

> A Segment consists of these 3 questions: Rate: how fast am I supposed to get to temperature? Set Point: what temperature am I going to? Hold Time: the amount of time to hold at my Set Point temperature?

> You can use up to 8 segments for your program. Your choices are 1 thru 8.

9. Use the Up and Down arrow keys to select desired number of segments to be used in the Custom program.

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Custom Mode Programming (Detailed) – continued from previous page

10. Press the Enter key. The display will read **rA-1** along with some number.

> The Set-Pro is asking for the desired temperature rate to be used in segment 1. *rA stands for Rate and the 1 means you're programming the rate of temperature change for segment 1.*

> Rate means speed and you need to tell the Set-Pro how fast you want the temperature to change. Rate for the Set-Pro is programmed in degrees per hour (°/hr.). The choice is yours.

11. Use the UP and DOWN arrow keys to select your desired rate.

12. Press the Enter key. The display will read **°F 1** (**°C 1** if using Celsius).

> The Set-Pro is asking for the temperature set point you wish to reach in segment 1. *°F stands for the temperature set point (°C is displayed if you're using the Celsius scale) and the 1 means you're programming the temperature you would like to reach in segment 1.*

> The choice is yours.

13. Use the Up and Down arrow keys to select your set point temperature.

14. Press the Enter key. The display will read **HLd1** along with some number.

> The Set-Pro is asking for the amount of time you wish to hold at the set point temperature. *HLd stands for Hold (a.k.a. soak or dwell) and the 1 means you're programming the amount of time you want the temperature to stay at the segment 1 temperature once you reach it.*

> Hold time is programmed in hours and minutes. Values to the left of the decimal point are hours and values to the right of the decimal are minutes. You do not have to hold at temperature if you don't want to, in which case hold time would be 0.

15. Use the Up and Down arrow keys to select your desired hold time.

16. Press the Enter key. If you have chosen to use more than 1 segment for your firing the display will read **rA 2** along with some number. If you have chosen to use only 1 segment for this firing skip ahead to line #21 for further instruction.

> The Set-Pro is asking for temperature rate, this time for segment 2.

17. Use the Up and Down arrow keys to select your desired rate.

18. Press the Enter key. The display will read **°F 2** along with some number.

> The Set-Pro is asking for the temperature set point, this time for segment 2.

19. Use the Up and Down arrow keys to select your desired temperature set point.

20. Press the Enter key. The display will read **HLd2** along with some number.

> The Set-Pro is asking for the amount of hold time at your temperature set point, this time for segment 2.

As you can see from the emerging pattern, the Set-Pro will continue to ask the same three questions: rate, temperature and time for all remaining segments. Just keep answering the questions. Doing so creates that beautiful chain of events called a firing program!

21. Once all your segments are programmed the Set-Pro will display **rEdI** which means it's ready to fire your Custom Mode program.

22. Press the Enter key to begin the firing. The Set-Pro Custom Mode program you created is now running and firing the kiln.

When the firing is complete the display alternates between **CPLt** and total firing time. Pressing the Start/Stop key at this point will cause the display to briefly read **StOP** and then **IdLE**.

The Set-Pro automatically stops running the firing program once complete. However, you may always stop a firing in progress, at any time, by pressing the Start/Stop key. *StOP is displayed briefly and then IdLE*.

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On-The-Fly Features

The Set-Pro contains a set of features that allow you to adjust and tweak the firing while it's actually running! We've dubbed these features as "On-the-Fly". With these features it's possible to add a little bit of time to a hold if needed, add a little bit of temp to a hold or just leave the segment entirely and move to the next segment (like anneal).

Knowing that these features are available, and using them, will positively affect your glass firing skills and allow you to create the glass you want to create.

Adding Time to a Hold

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. It's a handy little feature that you should really get to know. *The Add Time feature is available for use with both Glass Express Mode and Custom Mode programs.*

To Use the Add Time Feature

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 during a hold to get the hold time you desire. *It should be noted that the Adding Time to a Hold feature is a temporary adjustment only. That is, it does not change the program stored in memory.*

Adding Temperature to a Hold

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 increments. *The Add Temperature feature is available for use with both Glass Express Mode and Custom Mode programs.*

To Use the Add Temperature Feature

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 temperature). 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 during a hold to get the hold temperature you desire. *It should be noted that the Adding Temperature to a Hold feature is a temporary adjustment only. That is, it does not change the program stored in memory.*

Skipping Ahead to the Next Segment

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. It's a handy little feature that you should really get to know. *The Skip Ahead feature is available for use with both Glass Express Mode and Custom Mode programs.*

To Use the Skip Ahead Feature

At 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.

View Segment Feature

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. This will tell you if you're ramping or holding and which segment you're doing this in. After a moment or two the display will go back to normal operation. *The View Segment feature is available for use with both Glass Express Mode and Custom Mode programs.*

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Programming and Use Features

Initialization (Boot-Up)

When the Set-Pro is powered up it goes through an initialization process. Various data is displayed until the initialization is complete and the display reads **IdLE**.

IdLE (Idle)

Idle simply means the Set-Pro is not running any firing programs at the moment.

Beginning and End of Process Alarm Feature

The Set-Pro allows you to set a special Beginning of Process Alarm and End of Process Alarm to sound at very important firing points.

> The Beginning of Process Alarm sounds when you have reached you're fusing, slumping or casting temperature. If you're interested in keeping an eye on the process and watching the glass from this point, this alarm helps you know when this occurs.

> The End of Process Alarm sounds when you have completed you're fusing, slumping or casting process hold time. It lets you know that the firing is now on its way to the anneal portion of the firing. This is very important information as it allows you time to react and force cool to the anneal temperature. If you have ever missed the opportunity to force cool to the anneal, this End of Process Alarm is made just for you!

> > *From the standpoint of actual use, the End of Process Alarm is arguably the most valuable. When you're firing glass, knowing when your glass has taken the complete or desired shape is important. Time and action at the end of the final soak/hold is crucial to the success of your glass firing. The End of Process Alarm let's you know when this occurs and gives you the opportunity to react properly and in time, take advantage of it!*

> To choose your desired Beginning and End of Process Alarms combination:

> 1. Throw the power switch on the kiln control panel to the On position.

> 2. The Set-Pro begins its initialization process and the display will illuminate.

> 3. The Set-Pro will finish its initialization process and then display **IdLE** (Idle). Idle simply means the Set-Pro is at rest and is not running any programs.

> 4. Press the Enter key one time to begin the Alarm setting process. The display will read **GLAS**, **ALAr, bEAd, M-C, CEr** or **CUSt**.

> 5. Use the Up or Down arrow keys to make the display read **ALAr** (Process Alarm) if it does not already.

> 6. Press the Enter key. The display will read either **OFF, bEGn, End or botH.** These choices allow you to decide at what point the Process Alarms function. You can set them to both be silent (OFF), have just the beginning of process alarm sound (bEGn), have just the end of process alarm sound (End) or have both of them sound (botH).

> > **OFF** = Beginning of Process and End of Process Alarms are both Off and will not sound.
> > **bEGn** = Beginning of Process Alarm will sound, End of Process Alarm will not sound.
> > **End** = End of Process Alarm will sound, Beginning of Process alarm will not sound.
> > **botH** = Both the Beginning and End of Process Alarms will sound.

> 7. Use the Arrow keys to choose your desired process alarm setting. Press the Enter key to store your choice.

8. Press the Enter key. The display will read **IdLE** which stands for Idle. You Process Alarm choice is now programmed.

Once you have chosen which combination of process alarms you desire, your choice stays programmed for all remaining programs and use until you decide to choose a different combination.

To silence any alarms simply press one of the arrow keys.

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Programming and Use Features – continued from previous page

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/Stop key to start the program. If it's not what you want, Press the Start/Stop key again to get to **IdLE** and enter a new program.

> *When reviewing a Glass Express Mode program the Set-Pro will display your chosen COE, firing style and firing speed. You will also see the actual preset firing data that will be used to fire your Glass Express Mode program. You will find tables describing the preset Glass Express Mode data starting on page 17 of this manual.*

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/Stop to start the program.

Storing a Custom Mode Program

As you go through the Custom Mode programming process and complete it, your program is automatically stored in the program number you selected at the beginning of the programming process.

Selecting and Running a Custom Mode Program

At some point you are likely to have set all 4 Custom Mode programs set to something you like and want to run again and again. The Set-Pro allows you to quickly select the program you desire.

> **To Select a Custom Mode Program**
>
> From **IdLE** press the Enter key one time. Use the UP or DOWN arrow keys to choose **USEr**. Press the Enter key. Use the UP arrow key to choose the Custom Mode program you wish to run and then press the DOWN arrow. The Set-Pro display automatically cycles through the chosen 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 Start/Stop key. The display will briefly read **StOP** and then read **IdLE** along with chamber temperature.

4 User Programs in Custom Mode

The Set-Pro allows the artist to save up to 4 Custom Mode programs in memory. Your programs remain in these 4 locations indefinitely and can be recalled or changed at any time.

8 Segments per Custom Mode Program

Firing programs are built using segments. The Set-Pro allows you to use up to 8 segments for each Custom Mode firing program. *Typical glass programs generally use 8 segments or less.*

Programming a Time Value

The Set-Pro accepts time as Hours and Minutes. When programming a time value, a red dot will illuminate in the middle of the four display digits. Numbers to the left of the dot indicate hours and numbers to the right of the dot indicate minutes.

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Programming and Use Features – continued from previous page

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 or use the **FULL** command. The **FULL** command instructs the controller to go Full on (or Full off) to the set point temperature. 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**.

Using the UP and DOWN 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, use only 1 or 2. When it comes time to choose just select the number of segments you need.

Writing Over Data

You will want to change the data in your Custom Mode programs at some point. We expect this as you try new techniques and fine tune your skills. When you do, you'll see the old firing data as you're programming in the new data. Simply key in the new data as though the old never existed.

Clearing Function

There is no feature 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 that 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 consult Evenheat if you wish to adjust this setting.

Maximum Programmable Temperature

Depending upon the glass kiln model, the maximum temperature that can be programmed in the Set-Pro is either 1700°F (927°C) or 2000°F (1093°C). These maximums are factory set to limit glass kiln operation. These maximums can be set higher for non-glass kiln applications. Please consult Evenheat if you wish to adjust this setting.

Firing Down to Room Temperature

Over the years we've seen users attempt to program their kilns to come down to room temperature at the end of the firing. They have literally programmed in 72° as the last segment temperature. Don't do this. If your actual room temperature goes above what you have programmed the firing won't end until the room temp drops, you get an error or you stop the firing. If you want to control the cooling down to some low, final temperature don't make it room temperature. We suggest 200° or above.

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Programming and Use Features – continued from previous page

Delay Start Feature

The Set-Pro can delay the start of your firing for up to 100 hours. This feature becomes valuable when different electrical rates are charged at different times of the day.

To Use the Delay Start feature

With the display reading **rEdI** press the DOWN arrow key one time. **dELA** is displayed. Use the UP and DOWN arrow keys to select the amount of delay start time. Press the Enter key. The display will read **rEdI**. Press the Start/Stop key one time. The Set-Pro will display **dLY** along with remaining delay start time. When the delay start counts down to 0 the firing program will start.

To stop the delay start feature press the Start/Stop one time.

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Set-Pro Display Conditions

Display Alternating Between IdLE (Idle) and Temperature

Program is not running: kiln chamber temperature is displayed.

Display Reading Temperature

Program is running and is ramping to temperature: kiln chamber temperature is displayed.

Display Alternating Between Time Value and Temperature

Program is running and is holding at temperature: kiln chamber temperature is displayed along with the time value counting down remaining hold time.

Dot Displayed Between the 10's and 100's Digits

Indicates the value being displayed is a time value.

Dot Displayed to the Right of the 1's Digit

Indicates that a Celsius temperature is being displayed. If no dot is displayed the Set-Pro is displaying in Fahrenheit.

Set-Pro Display Messages

ALAr	Process Alarm, page 11	ErrF	Error F, page 16	PMC	PMC, N/A
ArtC	Art Clay, N/A	ErrP	Error P, page 16	PrHt	Pre Heat, N/A
bEAd	Bead, N/A	Err1	Error 1, page 16	rA	Rate, page 9
bEGn	Beginning Process Alarm, page 11	°F	Fahrenheit, page 13	rEdl	Ready, pages 7 & 9
botH	Both Beginning and End Alarms, page 11	FASt	Fast, page 7	rSLO	Extra Slow, page 7
bron	Prometheus Bronze, N/A	FULL	Full, page 13	S.S.	Art Clay Silver Standard, N/A
°C	Celsius (Centigrade), page 13	FUSE	Fuse, page 6	S.S.-S	Art Clay Silver Standard Slow Dry, N/A
CASt	Cast, page 6	GLAS	Glass Express Mode, pages 6	SEG	Segments, page 8
CEr	Ceramic Express Mode, N/A	GoLd	PMC Gold Slow, N/A	SIZE	Bead Size Load-n-Go, N/A
CO82	COE 82, page 6	HLd	Hold, page 9	SLO	Slow, page 7
CO90	COE 90, page 6	IdLE	Idle, page 11	SOFt	Soften, page 6
CO96	COE 96, page 6	LAM	Laminate, page 6	SStP	Skip Segment, page 10
COnE	Cone, N/A	LF	Art Clay Silver 650/1200 Low Fire, N/A	Stnd	PMC Standard, N/A
COP2	Prometheus Copper, N/A	LF-S	Art Clay Silver 650/1200 Low Fire Slow Dry, N/A	StOP	Stop, page 12
COPP	Art Clay Copper, N/A	M-C	Metal Clay Express Mode, N/A	tC	Thermocouple, page 16
CPLt	Firing Complete, pages 7 & 9	MEd	Medium, page 7	tC/FAIL	Thermocouple Failure, page 16
CUSt	Custom Mode, page 8	OFF	Off, page 11	tME	Time, page 10
dELA	Delay Start, page 14	P F	PMC+ Fast, N/A	tMP	Temperature, page 10
dLY	Delay Start, page 14	P3 F	PMC3 Fast, N/A	USr	User, page 8
End	End, page 11	P3 S	PMC3 Slow, N/A		
Errd	Error D, page 16	PC	Prometheus Clay, N/A		

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Key Function Table

Start/Stop - ENTER		
While at the Idle Position (IdLE)	While Running a Program	At Any Other Position
Pressing once allows you to choose between Express Mode and Custom Mode programming	Stops the currently running program	Pressing once with **rEdI** displayed starts the currently loaded firing program. While programming, it stores the currently displayed data and moves programming to the next step.

UP Arrow – VIEW SEG – SKIP SEG		
While at the Idle Position (IdLE)	While Running a Program	At Any Other Position
No Function	Allows you to access the View Segment, Add Temperature, Add Time and Skip Segment features.	Used to select various program values while programming.

DOWN Arrow - REVIEW		
While at the Idle Position (IdLE)	While Running a Program	At Any Other Position
Pressing twice takes you directly to the **rEdI** position	Allows you to view entire currently running program.	Used to select various program values while programming. Pressing once while **rEdI** is displayed allows for setting of any delay time.

Set-Pro Error Messages

The Set-Pro monitors each firing and compares performance to a set of standards. If the firing does not meet performance standards the Set-Pro automatically stops the firing and displays a corresponding Error Code describing the fault. These codes are identified and described below.

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 be caused by a temperature rate that is too fast, particularly on a kiln constructed of refractory fiber. Slow down your rates and re-test. It may also 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.

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Preset Express Mode Data

SOFTEN - 90 COE - FAST SPEED - (Slumping, Bending, Draping 90 COE)

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1225°F	990°F	940°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	12 Min.	25 Min.	45 Min.	1 Min.	

SOFTEN - 90 COE - MEDIUM SPEED - (Slumping, Bending, Draping 90 COE)

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1225°F	990°F	960°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	12 Min.	30 Min.	60 Min.	1 Min.	

SOFTEN - 90 COE - SLOW SPEED - (Slumping, Bending, Draping 90 COE)

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1200°F	1225°F	990°F	960°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	12 Min.	60 Min.	120 Min.	1 Min.	1 Min.

SOFTEN - 90 COE - EXTRA SLOW SPEED - (Slumping, Bending, Draping 90 COE)

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1175°F	1250°F	960°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	25 Min.	5 Hrs	1 Min.	1 Min.

SOFTEN - 96 COE - FAST SPEED - (Slumping, Bending, Draping 96 COE)

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1225°F	980°F	950°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	12 Min.	25 Min.	45 Min.	1 Min.	

SOFTEN - 96 COE - MEDIUM SPEED - (Slumping, Bending, Draping 96 COE)

	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1225°F	980°F	950°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	12 Min.	30 Min.	60 Min.	1 Min.	

*AFAP = As Fast As Possible

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Preset Express Mode Data

SOFTEN - 96 COE - SLOW SPEED - (Slumping, Bending, Draping 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1150°F	1225°F	980°F	950°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	12 Min.	60 Min.	120 Min.	1 Min.	1 Min.

SOFTEN - 96 COE - EXTRA SLOW SPEED - (Slumping, Bending, Draping 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1150°F	1225°F	950°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	20 Min.	5 Hrs	1 Min.	1 Min.

SOFTEN - 82 COE - FAST SPEED - (Slumping, Bending, Draping 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1280°F	1035°F	1015°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	12 Min.	25 Min.	45 Min.	1 Min.	

SOFTEN - 82 COE - MEDIUM SPEED - (Slumping, Bending, Draping 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1280°F	1035°F	1015°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	12 Min.	30 Min.	60 Min.	1 Min.	

SOFTEN - 82 COE - SLOW SPEED - (Slumping, Bending, Draping 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1250°F	1280°F	1035°F	1015°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	12 Min.	60 Min.	120 Min.	1 Min.	1 Min.

SOFTEN - 82 COE - EXTRA SLOW SPEED - (Slumping, Bending, Draping 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1250°F	1280°F	1015°F	750°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	20 Min.	5 Hrs	1 Min.	1 Min.

*AFAP = As Fast As Possible

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Preset Express Mode Data

LAMINATE - 90 COE - FAST SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 90 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1325°F	990°F	940°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	15 Min.	25 Min.	45 Min.	1 Min.	

LAMINATE - 90 COE - MEDIUM SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 90 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1325°F	990°F	960°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	15 Min.	30 Min.	60 Min.	1 Min.	

LAMINATE - 90 COE - SLOW SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 90 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1200°F	1325°F	990°F	960°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	15 Min.	60 Min.	120 Min.	1 Min.	1 Min.

LAMINATE - 90 COE - EXTRA SLOW SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 90 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1175°F	1325°F	960°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	20 Min.	5 Hrs	1 Min.	1 Min.

LAMINATE - 96 COE - FAST SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 96 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1325°F	980°F	950°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	15 Min.	25 Min.	45 Min.	1 Min.	

LAMINATE - 96 COE - MEDIUM SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 96 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1325°F	980°F	950°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	15 Min.	30 Min.	60 Min.	1 Min.	

*AFAP = As Fast As Possible

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Preset Express Mode Data

LAMINATE - 96 COE - SLOW SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 96 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1150°F	1325°F	980°F	950°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	15 Min.	60 Min.	120 Min.	1 Min.	1 Min.

LAMINATE - 96 COE - EXTRA SLOW SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 96 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1150°F	1325°F	950°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	20 Min.	5 Hrs	1 Min.	1 Min.

LAMINATE - 82 COE - FAST SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 82 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1430°F	1035°F	1015°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	15 Min.	25 Min.	45 Min.	1 Min.	

LAMINATE - 82 COE - MEDIUM SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 82 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1430°F	1035°F	1015°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	15 Min.	30 Min.	60 Min.	1 Min.	

LAMINATE - 82 COE - SLOW SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 82 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1250°F	1430°F	1035°F	1015°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	15 Min.	60 Min.	120 Min.	1 Min.	1 Min.

LAMINATE - 82 COE - EXTRA SLOW SPEED - (Laminating, Tack Fuse, Fuse-to-Stick 82 COE)							
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1250°F	1430°F	1015°F	750°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	20 Min.	5 Hrs	1 Min.	1 Min.

*AFAP = As Fast As Possible

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Preset Express Mode Data

FUSE - 90 COE - FAST SPEED - (Full Fuse 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1450°F	990°F	940°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	15 Min.	25 Min.	45 Min.	1 Min.	

FUSE - 90 COE - MEDIUM SPEED - (Full Fuse 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1450°F	990°F	960°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	15 Min.	30 Min.	60 Min.	1 Min.	

FUSE - 90 COE - SLOW SPEED - (Full Fuse 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1200°F	1450°F	990°F	960°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	15 Min.	60 Min.	120 Min.	1 Min.	1 Min.

FUSE - 90 COE - EXTRA SLOW SPEED - (Full Fuse 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1175°F	1450°F	960°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	60 Min.	5 Hrs	1 Min.	1 Min.

FUSE - 96 COE - FAST SPEED - (Full Fuse 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1450°F	980°F	950°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	15 Min.	25 Min.	45 Min.	1 Min.	

FUSE - 96 COE - MEDIUM SPEED - (Full Fuse 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1450°F	980°F	950°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	15 Min.	30 Min.	60 Min.	1 Min.	

*AFAP = As Fast As Possible

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Preset Express Mode Data

FUSE - 96 COE - SLOW SPEED - (Full Fuse 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1150°F	1450°F	980°F	950°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	15 Min.	60 Min.	120 Min.	1 Min.	1 Min.

FUSE - 96 COE - EXTRA SLOW SPEED - (Full Fuse 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1150°F	1450°F	950°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	60 Min.	5 Hrs	1 Min.	1 Min.

FUSE - 82 COE - FAST SPEED - (Full Fuse 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1500°F	1035°F	1015°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	15 Min.	25 Min.	45 Min.	1 Min.	

FUSE - 82 COE - MEDIUM SPEED - (Full Fuse 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1500°F	1035°F	1015°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	15 Min.	30 Min.	60 Min.	1 Min.	

FUSE - 82 COE - SLOW SPEED - (Full Fuse 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1250°F	1500°F	1035°F	1015°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	15 Min.	60 Min.	120 Min.	1 Min.	1 Min.

FUSE - 82 COE - EXTRA SLOW SPEED - (Full Fuse 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1250°F	1500°F	1015°F	750°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	60 Min.	5 Hrs	1 Min.	1 Min.

*AFAP = As Fast As Possible

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Preset Express Mode Data

CAST - 90 COE - FAST SPEED - (Casting 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1500°F	990°F	940°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	60 Min.	25 Min.	45 Min.	1 Min.	

CAST - 90 COE - MEDIUM SPEED - (Casting 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1200°F	1500°F	990°F	960°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	60 Min.	30 Min.	60 Min.	1 Min.	

CAST - 90 COE - SLOW SPEED - (Casting 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1200°F	1500°F	990°F	960°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	60 Min.	60 Min.	120 Min.	1 Min.	1 Min.

CAST - 90 COE - EXTRA SLOW SPEED - (Casting 90 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1175°F	1475°F	960°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	1 Hr 25 Min.	5 Hrs	1 Min.	1 Min.

CAST - 96 COE - FAST SPEED - (Casting 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1500°F	980°F	950°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	60 Min.	25 Min.	45 Min.	1 Min.	

CAST - 96 COE - MEDIUM SPEED - (Casting 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1150°F	1500°F	980°F	950°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	60 Min.	30 Min.	60 Min.	1 Min.	

*AFAP = As Fast As Possible

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Preset Express Mode Data

CAST - 96 COE - SLOW SPEED - (Casting 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1150°F	1500°F	980°F	950°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	60 Min.	60 Min.	120 Min.	1 Min.	1 Min.

CAST - 96 COE - EXTRA SLOW SPEED - (Casting 96 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1150°F	1475°F	950°F	760°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	1 Hr 25 Min.	5 Hrs	1 Min.	1 Min.

CAST - 82 COE - FAST SPEED - (Casting 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	500°F/Hr.	500°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	600°F/Hr.	300°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1520°F	1035°F	1015°F	750°F	
Hold Time	10 Min.	10 Min.	5 Min.	60 Min.	25 Min.	45 Min.	1 Min.	

CAST - 82 COE - MEDIUM SPEED - (Casting 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	400°F/Hr.	400°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	300°F/Hr.	150°F/Hr.	
Set Point Temperature	450°F	1000°F	1250°F	1520°F	1035°F	1015°F	750°F	
Hold Time	15 Min.	15 Min.	20 Min.	60 Min.	30 Min.	60 Min.	1 Min.	

CAST - 82 COE - SLOW SPEED - (Casting 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	300°F/Hr.	300°F/Hr.	500°F/Hr.	700°F/Hr.	*AFAP	100°F/Hr.	50°F/Hr.	100°F/Hr.
Set Point Temperature	450°F	1000°F	1250°F	1520°F	1035°F	1015°F	750°F	200°F
Hold Time	20 Min.	20 Min.	30 Min.	60 Min.	60 Min.	120 Min.	1 Min.	1 Min.

CAST - 82 COE - EXTRA SLOW SPEED - (Casting 82 COE)								
	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Segment 6	Segment 7	Segment 8
Rate	200°F/Hr.	250°F/Hr.	250°F/Hr.	500°F/Hr.	500°F/Hr.	*AFAP	30°F/Hr.	50°F/Hr.
Set Point Temperature	250°F	500°F	750°F	1250°F	1520°F	1015°F	750°F	200°F
Hold Time	60 Min.	60 Min.	60 Min.	60 Min.	1 Hr 25 Min.	5 Hrs	1 Min.	1 Min.

*AFAP = As Fast As Possible

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Kiln Trouble Shooting

Listed below are some of the more probable kiln problems you'll encounter along with their most common cause and repair advice. Please feel free to contact Evenheat for assistance when dealing with these and other potential kiln problems.

No Display

Check to see that the kiln is actually plugged in. It happens! Also check the circuit protection (breakers or fuses) to see that they are not tripped or open. Breakers and fuses don't trip or open for no reason. They indicate a fault which should be investigated by licensed personnel. See below.

Kiln Won't Reach Temperature

A low voltage will certainly slow a kiln down and, if the drop is low enough, it may cause failure to reach temperature. Low voltage is generally associated with your power service or provider and is rarely a fault in the kiln.

A failed element reduces the heat produced. Failed elements tend to be very visual and are easily seen. With the kiln off (not running and unplugged) have a look at the elements for any breaks. If you see no breaks in the heating element then suspect a relay problem.

A failed relay (fails to close) reduces the heat produced. While a relay failure acts like an element failure, a relay is not visible. If the heating elements appear to be intact replace the relay.

Kiln won't stop firing (won't shut off)

Most likely a failed relay (failed closed). A failed relay may cause the kiln temperature to increase when it should be decreasing. Depending upon your particular kiln model you may see up to 3 relays used in its design. Identifying the failed relay is fairly simple as the element connected to it will remain on. Unplug the kiln and remove the kiln control panel. Simply follow the element leads to the relay to identify it. Relays are maintenance items and we recommend replacing all of them when needing to replace one.

Check your program.

tC/Fail is Displayed

The thermocouple (temperature sensor) circuit is faulty. The thermocouple circuit is broken at some point, usually the thermocouple itself. The thermocouple circuit consists of the thermocouple, any connecting blocks and the thermocouple lead wire connecting to the Set-Pro.

Circuit Protection Opens ("Blown" Breaker or Fuse)

Circuit protection can open for various reasons. The BIG TWO are a short circuit and overheating. We'll look at each separately.

Short circuits occur when line voltage finds its way to another line or ground. They are usually violent occurrences with lots of noise, flashes of light and maybe a bit of smoke! During a short circuit the amperage goes very high. This increase in amperage exceeds your breaker/fuse rating which causes them to open ("blow"). *That's exactly why they're there*. Short circuits generally happen immediately upon plugging the kiln in or running the firing. They generally do NOT happen after the kiln has been on for some time.

Overheating of the breakers/fuses can cause them to open ("blow"). Overheating needs time to happen. If the kiln is running fine for a while and then the breakers or the fuses open we can be fairly confident that the problem is overheating and not a short circuit. Overheating reduces the amount of amperage a breaker/fuse will allow to pass before it opens. Overheating is caused by many factors, the most common are: loose wire connections at the breakers/fuses, the size of the wire "feeding" the kiln is too small, the electrical receptacle is faulty or breaker/fuse is faulty.

Reasons for a Failed Heating Element

Glass kiln elements rarely fail on their own. When they do fail it's usually from contamination. Contamination is stuff like glass bits, glass separator, fiber paper, etc. that finds its way into the element groove. If you do have an element failure, double check the groove at the point of failure. Remove power form the kiln and attempt to remove any debris from the groove with a sharp tool. Not doing so may allow the debris to destroy the replacement element.

Reasons for a Failed Relay

Relays are the switches that turn the heating elements on and off. They are moving parts and they're working all the time. Long, slow firings and extended anneals make the relays work more which shortens their overall lifespan. Relay replacement is expected at some point.

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