



TAP II USER MANUAL

The Most Advanced Control Technology Available

1. OVERVIEW

The TAP II Kiln Controller by SDS Industries is the most precise, easy-to-use kiln controller on the market, enabling you to control your kiln with a sleek, easy-to-use touchscreen not so different from the interface of a smartphone.

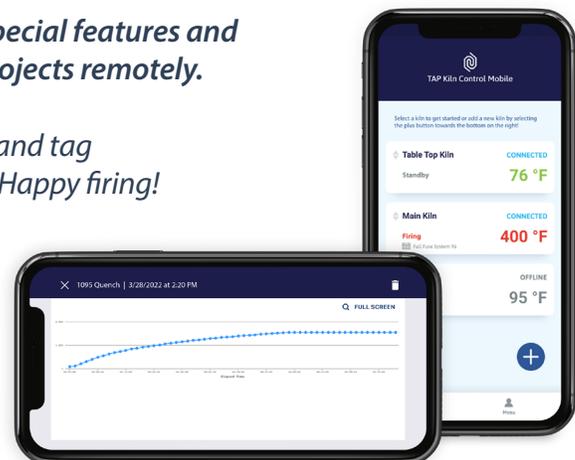
In this User Manual, you'll learn about the following:

1. Overview
2. Safety Warning
3. General Operation
 - a. First Time Startup
 - b. Quick Start
4. Schedule Management
5. Run a Firing
6. Menu Settings
7. Error Log
8. Firing Logs
9. Software Updates
10. Screen Calibration
11. TAP Kiln Control Mobile Features
12. Table of Errors

THE ULTIMATE REMOTE KILN CONTROL

Download the TAP Kiln Control Mobile app for access to special features and for the convenience of controlling and monitoring your projects remotely.

Post your firing process and finished products on Instagram and tag @SDSIndustries and #TAPKilnControl to show off your work. Happy firing!



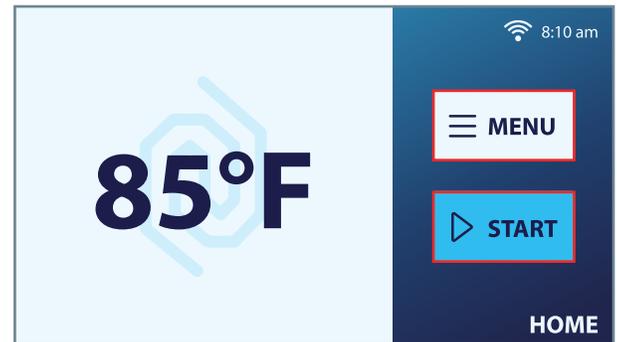
2. SAFETY WARNING

This controller is not a safety device. Never leave an operational unit unattended. Use this device at your own risk. It is the kiln/oven operator's responsibility to physically monitor their firing.

3. GENERAL OPERATION

The TAP II Kiln Controller Home screen is simple and easy to follow!

From here, you can view the current kiln temperature, access settings via the Menu, and manage your Schedules or begin a firing via the Start button.



TIPS

As you navigate the TAP II Kiln Controller device, please note:



Coach marks symbols, which you can tap for information and tips



Slide your finger up or down the bar to scroll the list



Click the back button to return to the previous page



Click the edit symbols to edit your existing Schedules



Click the star symbols to add or remove Schedules from your Favorites list

First Time Startup - Setting Up Your Kiln

1. Press/Toggle the Power Button/Switch to turn on your device
SDS Industries will display on the screen for about 20 seconds during startup, followed by a Safety Screen and then the Home screen.
 2. Press Menu, then Settings, and select "Network". Follow the instructions to connect your kiln to WiFi, so all software updates are downloaded and applied automatically moving forward
 3. Update the rest of the settings to your liking, including Date and Time, Display Format, Notification preferences, and more
 4. Return to the Home screen and head to the next section, Quick Start, to begin using your Kiln and TAP II Kiln Controller!
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Quick Start - Using Your Kiln

Ready to fire up your kiln?

1. Press Start
2. Select a Schedule

Some TAP II Kiln Controllers come pre-loaded with schedules from your kiln manufacturer. If you have questions about your pre-loaded schedules, please contact your kiln manufacturer.

If no Schedules display on screen, please skip to the Create New Schedule section below.

3. Press Start and follow the on-screen prompts
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4. SCHEDULE MANAGEMENT

Create a New Schedule

With the TAP II Kiln Controller, you can create, edit, label, and save an unlimited number of firing schedules and steps. To create a new, custom schedule, follow the instructions below.

1. From the Home Screen, press Start
2. Press New and follow the instructions on screen

Please note that Schedules must be entered manually into the TAP II Kiln Controller; there is no way to mass-upload Schedules at this time.

Edit an Existing Schedule

If you would like to add/delete a step or adjust an already existing schedule, please follow these instructions.

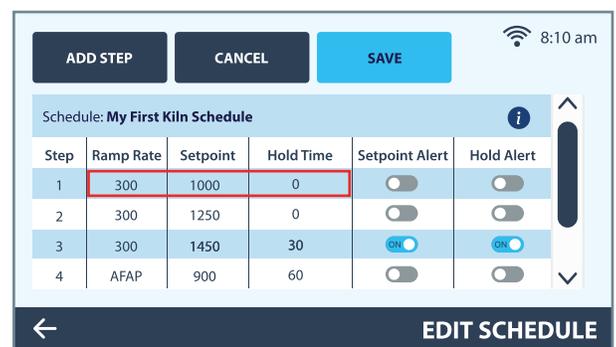
1. From the Home Screen, press Start
2. Press the Edit Symbol to the right of the Schedule Name



If you would like to update an already existing step:

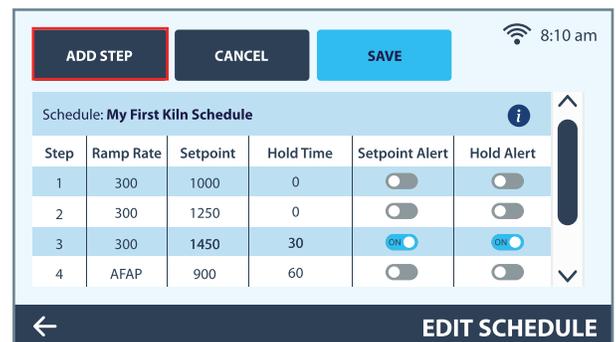
1. Click any of the numbers in the table under Ramp Rate, Setpoint, or Hold Time to update them
2. Click any of the buttons under the Alerts to toggle them on/off

Please note, the Setpoint Alert and Hold Alert toggles are only shown when the settings are enabled under Settings>Notifications>Alerts.



If you would like to add a new step:

1. Select a current step number, then press the "ADD STEP" button
2. Follow the on-screen prompt to indicate if you'd like the new step to appear before or after the current step
3. A new, blank line will appear on your screen
4. Click each of the spaces in your blank Step to set the parameters and alerts you desire

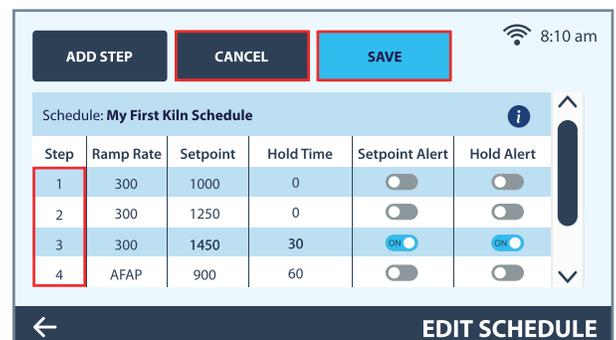


To delete an existing step:

1. Double tap the Step Number you would like to delete and press "YES"

To save or cancel editing:

1. When done editing your Schedule, press "SAVE".
2. If you would like to Cancel your edits, press "CANCEL" to return to the Schedule Selector



Delete a Schedule

If you would like to delete a schedule:

1. From the Home Screen, press Start
2. Tap the Schedule that you would like to remove and press "DELETE"



Managing Your Favorites List

Your favorites list is a great way to keep your most-used Schedules easy to find.

To add/remove a schedule on your Favorites list, tap the star symbol on the left of the Schedule Name.

To view your Favorites List:

1. From the Home Screen, press Start
2. Tap the Favorites tab at the top of the screen to view your list



5. RUN A FIRING

Start a Firing

1. Press Start
2. Select a Schedule

Some TAP Kiln Controllers come pre-loaded with schedules from your kiln manufacturer. If you have questions about your pre-loaded schedules, please contact your kiln manufacturer.

If no Schedules display on screen, please skip to the Create New Schedule section below.

3. Press Start and follow the instructions on screen.



Monitor Your Firing

While the TAP II Kiln Controller is unrivaled in its precision, we recommend periodically monitoring your work throughout the firing process.

Please remember: This controller is not a safety device. Never leave an operational unit unattended. Use this device at your own risk.

On the Execute Schedule screen, you'll see the current Step, Kiln Temperature, Elapsed Time, and other important details.

If your TAP Kiln Controller is displaying the temperature splash screen, simply tap the screen to return to the Execute Schedule details.



Edit Schedule During a Firing

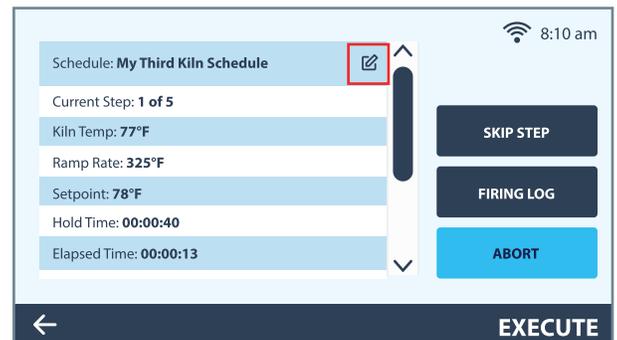
As you monitor your firing, you may decide that an adjustment must be made to the Schedule. You can only edit the current and future steps of a live Schedule. Once the firing is complete, you may edit any steps of the Schedule.

To edit a Schedule mid-firing, follow these steps:

1. On the Execute Schedule screen, click the Edit symbol next to the Schedule Name

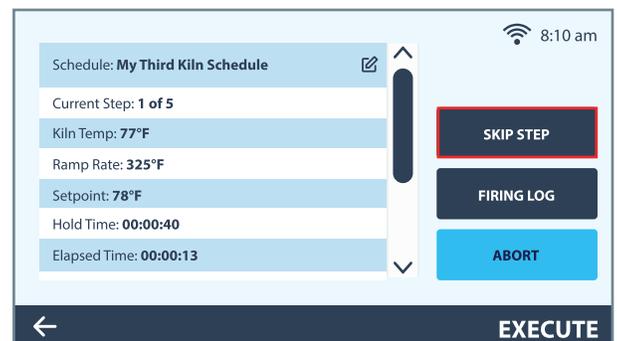
If your TAP Kiln Controller is displaying the temperature screen, simply tap the screen to return to the Execute Schedule details.

2. Follow the "Edit Existing Schedule" instructions above to adjust, add or delete Steps



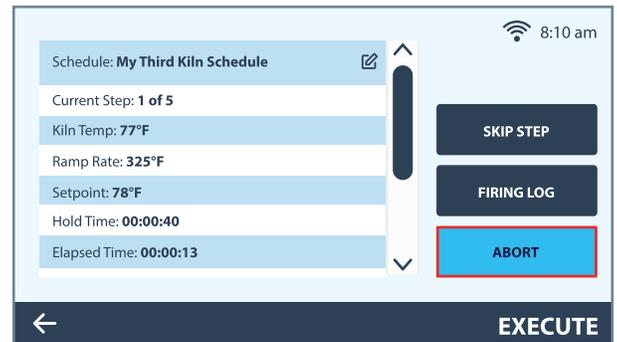
Skip a Step

If you would like to skip the remainder of the current Step and move on to the next step in your Schedule, press "SKIP STEP" and then "YES" to confirm.



Abort the Firing

If you would like to abort the current firing, press "ABORT" and then "YES" to confirm.



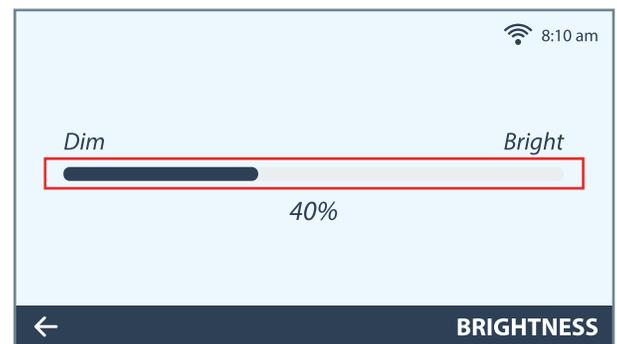
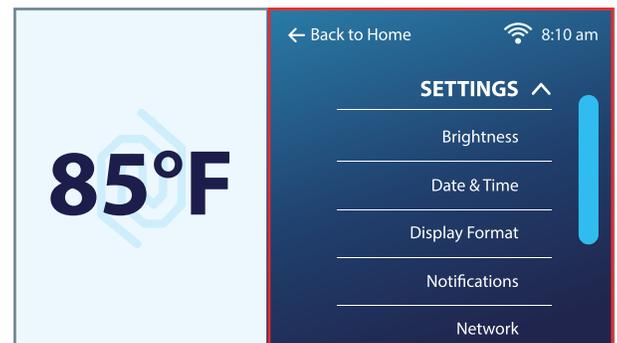
6. MENU & SETTINGS

Now that you know how to run your kiln, let's review some settings that you can customize and logs you can access on your TAP II Kiln Controller. We recommend adjusting your Settings as needed before firing up the kiln, as you cannot access Settings during a firing.

Display Brightness

To adjust the brightness of your TAP II Kiln Controller screen:

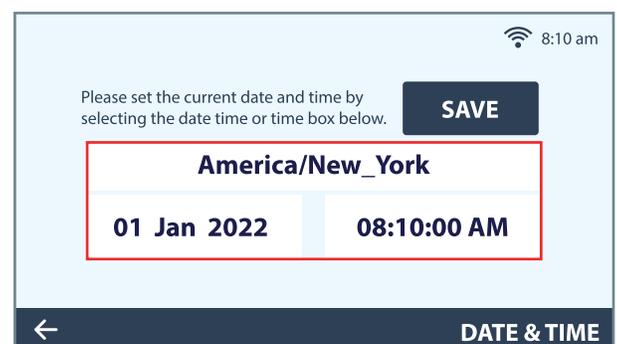
1. Press Menu > Settings > Brightness
2. Slide the Brightness bar between Dim and Bright to find your desired level of brightness
3. Click the back button in the bottom left of the screen to save your setting and return to the menu



Date & Time

To set the Date and Time on your TAP II Kiln Controller screen:

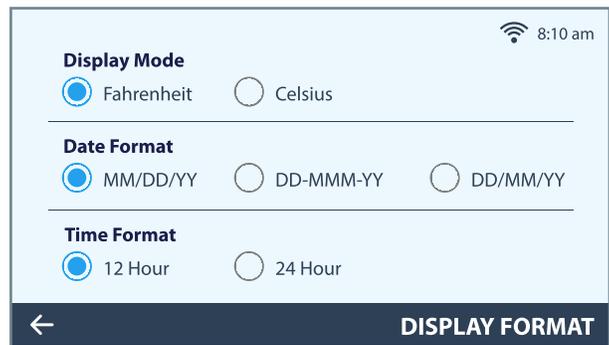
1. Press Menu > Settings > Date & Time
2. Tap the Time Zone text, Date text, and Time text to make your updates
3. Press "SAVE"



Display Format

To change the Display Format on your TAP II Kiln Controller screen:

1. Press Menu > Settings > Display Format
2. Select your preferred display settings
3. Click the back button in the bottom left of the screen to save your setting and return to the menu



Notifications

Alerts and Alarms are TAP II Kiln Controller features that allow you to more closely monitor your kiln.

When Alerts are Enabled in your Settings, you have the ability to set audible and visual display Alerts for events in your Schedules, like achieving a Setpoint or when only 2 minutes of your Hold Time remains.

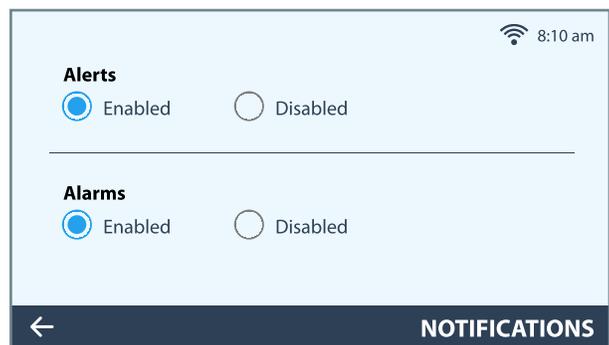
Please Note: Once Enabled in Settings, any desired Alerts must be toggled on individually in each of your Schedules. See Edit Schedules, above.

Please Also Note: If Disabled in Settings, this setting overrides the Alerts previously set up in your Schedules, so you will no longer receive event Alerts.

When Alarms are Enabled in your Settings, you will receive an audible and visual display Alarm when something unexpected has happened, like exceeding the maximum allowable kiln temperature or the kiln ramping faster than expected. If alarms are disabled, however, an error log entry will still be created for any unexpected firing condition.

To turn Alerts and Alarms on/off on your TAP II Kiln Controller screen:

1. Press Menu > Settings > Notifications
2. Select Enable or Disable for kiln Alerts and Alarms
3. Click the back button in the bottom left of the screen to save your setting and return to the menu

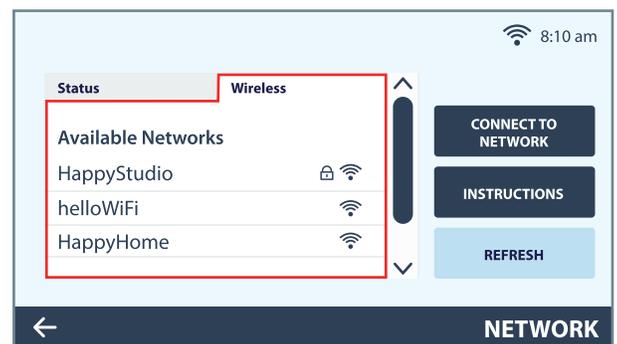


Network

Please make sure your TAP II Kiln Controller is connected to WiFi so all software updates are downloaded and applied automatically.

To set up or check the connection status of your TAP II Kiln Controller to the Wireless Network:

1. Press Menu > Settings > Network
2. View the current "Status" of your Wireless Network connection or click the "Wireless" tab to connect to a new Network
3. Select your preferred Wireless Network from the Available Networks list, then press "Connect to Network" and follow the on-screen prompts

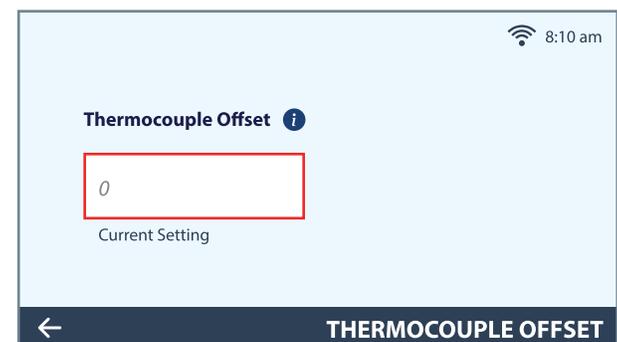


Thermocouple Offset

As your Thermocouple (the kiln's sensor for measuring temperature) ages, its performance can degrade and projects may not fire as expected. Instead of adjusting the settings for each of your Schedules to account for the degradation, you may want to simply offset the Thermocouple in your TAP II Kiln Controller Settings.

After confirming your kiln's temperature (via a separate thermometer or other method), follow these instructions to offset your kiln's Thermocouple:

1. Press Menu > Settings > Thermocouple Offset
2. Follow the on-screen instructions to offset the Thermocouple by a set number of degrees
3. Click the back button in the bottom left of the screen to save your setting and return to the menu



Advanced

The advanced settings are used by kiln manufacturers and define specific kiln configuration settings. If there is something you think you need to modify within advanced settings, please contact your kiln manufacturer.

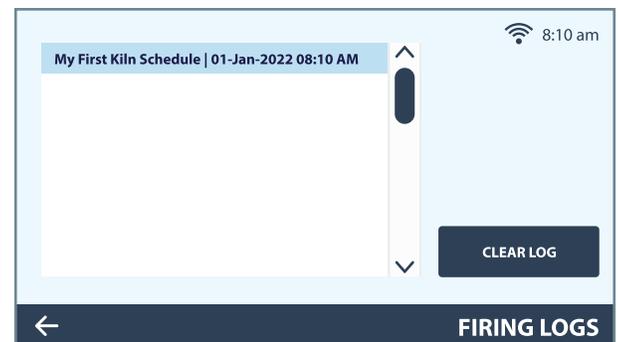
7. ERROR LOG

Any time a kiln error occurs, the error details will display in this log. Specific error conditions can be found below within the Table of Errors, along with possible causes and recommendations for resolution.



8. FIRING LOGS

All of your kiln firings are displayed in this log. Download the TAP Kiln Control Mobile app for extra features including simple, helpful charts displaying the details of your firings (Premium subscription required).



9. SOFTWARE UPDATES

Please make sure your TAP II Kiln Controller is connected to Wi-Fi so all software updates are downloaded and applied automatically.

Don't worry—an update will not interrupt a firing that is currently in progress!

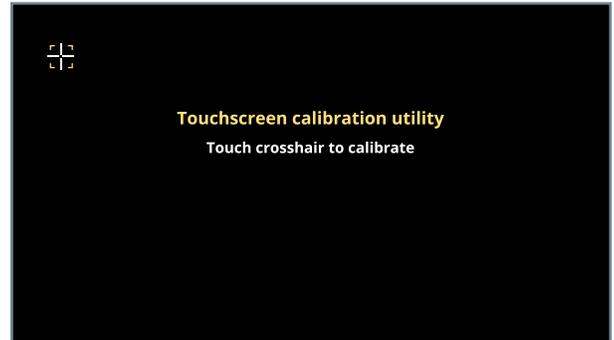
The TAP II Kiln Controller must be rebooted for a software update to complete. You'll receive an on-screen prompt asking if you'd like to reboot NOW or if you'd like to wait until the next time the Controller is rebooted manually at your convenience.

10. ADJUSTING SCREEN CALIBRATION

If the screen is not accurately responding to your touch, for example, you tap a “2” but the screen displays a “3,” you may need to recalibrate your touchscreen. This periodically happens with resistive touchscreens.

To recalibrate your touchscreen:

1. Turn the power to your TAP II Kiln Controller off and back on
2. When the Safety Screen appears, DO NOT press “OK”. Instead, turn the power off and on again
3. Repeat Step 2 one more time, until the Recalibration Screen appears
4. Follow the instructions on screen, tapping and holding each of the crosshairs for 5 seconds
5. Once the recalibration is complete, the screen will reset within 30 seconds and you may use your device



11. TAP KILN CONTROL MOBILE FEATURES

TAP Kiln Control Mobile is the most advanced, easy-to-use kiln control app on the market. The app allows you to conveniently perform all the essential TAP Kiln Control functions from your mobile device, and enables you to maintain complete control over your kilns, even in a scenario when you need to step away from your projects.

Features:

- » Create a TAP Kiln Control Mobile account and easily add all your TAP Kiln Controllers
- » Start and stop your kiln from your mobile device
- » Monitor your kiln with real-time updates
- » Quickly check the status of your kilns with easy-to-read indicators
- » Receive push notifications for schedule step advancement, firing completion, and error conditions
- » View specific schedules, settings, diagnostics, and error logs
- » Create and modify schedules
- » Update kiln settings
- » View firing logs with by-the-minute data points
- » Skip steps and abort firings
- » Submit in-app feedback and access our helpful Support Team with any questions

12. TABLE OF ERRORS

MESSAGE ON CONTROLLER	ERROR CONDITION	POSSIBLE CAUSE	POSSIBLE SOLUTION
The maximum allowable temperature for this device has been exceeded, the firing is Aborted.	Max Temperature Exceeded	Programmed Temperature too High Relay Failure	Reduce programmed top temperature Verify relay turns off when 12VDC removed
The controller has detected a failure to heat, the firing is Aborted.	Failing to Heat for Too Long	Intermittent/Shorted Thermocouple Relay Failure Element Failure Reduced Power Available	Check Thermocouple to ensure not broken or shorted Verify relay turns on when 12VDC applied Verify Element is not Open Circuit Verify source power
The controller has detected a ramp rate in excess of the programmed ramp rate, the firing is aborted. This could be due to a latched relay.	Ramp Rate Exceeded	Relay Failure Controller Output Failure	Verify relay turns off when 12VDC removed Verify controller output 0VDC when in standby
The controller has detected a failure to cool. This firing is aborted.	Failure to Cool	Relay Failure Controller Output Failure	Verify relay turns off when 12VDC removed Verify controller output 0VDC when in standby
The controller has detected a high temperature deviation from the setpoint, the firing is aborted. This could be due to a latched relay.	High Temp Deviation from Setpoint	Relay Failure Controller Output Failure	Verify relay turns off when 12VDC removed Verify controller output 0VDC when in standby
The controller has detected a rising temperature while not actively firing. This could be the result of latched relays.	Rising Temperature Alarm	Relay Failure Controller Output Failure	Verify relay turns off when 12VDC removed Verify controller output 0VDC when in standby
No thermocouple is detected. Firing is Aborted.	No Thermocouple Detected Alarm	Thermocouple Failure Thermocouple connection bad Controller Input Failure	Verify Thermocouple is not broken Verify Thermocouple Connection at the controller and Iso-thermal block Contact SDS Industries

Please contact our Support Team with any questions. We're happy to assist you!