



## *USER MANUAL*

# *Smart Controller with Built-in Timer Functionality*

For additional information on Thermodyne Foodservice Products, Inc.,  
or to locate an authorized parts and service provider in your area,  
visit our website at [www.tdyne.com](http://www.tdyne.com).

Please visit our website to Register your Thermodyne unit. Registration ensures that you  
get up-to-date warranty and product information, along with fast and convenient service.

<http://www.tdyne.com/register.aspx>

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## IMPORTANT FOR YOUR SAFETY

**THIS MANUAL HAS BEEN PREPARED FOR PERSONNEL QUALIFIED TO INSTALL ELECTRICAL EQUIPMENT, WHO SHOULD PERFORM THE INITIAL FIELD STARTUP AND ADJUSTMENTS OF THE EQUIPMENT COVERED BY THIS MANUAL.**

This manual covers the Oven Controller circuit board and Application supplied by Thermodyne Food-service Products, Inc. **only**. Refer to the manufacturer's manual for information on any other equipment. Do not attempt any service or maintenance without consulting **all** manufacturer manuals.

**READ THIS MANUAL THOROUGHLY BEFORE OPERATING, INSTALLING OR PERFORMING MAINTENANCE ON THE EQUIPMENT.**

**⚠ WARNING:** Failure to follow all the instructions in this manual can cause property damage, injury or death.

**⚠ WARNING:** Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

**⚠ WARNING:** Electrical connections should be performed only by a certified professional.

**⚠ WARNING:** Electrical and grounding connections must comply with the applicable portions of the National Electric Code and/or all local electric codes. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** Before connecting the unit to the electrical supply, verify that the electrical and grounding connections comply with the applicable portions of the National Electric Code and/or other local electrical codes. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** Before connecting the unit to the electrical supply, verify that the electrical connection agrees with the specifications on the data plate. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** UL73 grounding instructions: This appliance must be connected to a grounded, metal, permanent wiring system. Or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** Appliances equipped with a flexible electric supply cord, are provided with a three-prong grounding plug. It is imperative that this plug be connected into a properly grounded three-prong receptacle. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** If the receptacle is not the proper grounding type, contact an electrician. Do not remove the grounding prong from the plug. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** Before performing any service that involves electrical connection or disconnection and/or exposure to electrical components, always perform the Electrical LOCKOUT/TAGOUT Procedure. Disconnect all circuits. Failure to comply with this procedure can cause property damage, injury or death.

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**⚠ WARNING:** Before removing any sheet metal panels or servicing this equipment, always perform the Electrical LOCKOUT/TAGOUT Procedure. Be sure all circuits are disconnected. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** Do not operate this equipment without properly placing and securing all covers and access panels. Failure to comply with this procedure can cause property damage, injury or death.

**⚠ WARNING:** Do not use or store gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. Failure to comply can cause property damage, injury or death.

**⚠ WARNING:** In the event of a power failure, do not attempt to operate this appliance. Failure to comply can cause property damage, injury or death.

**CAUTION:** These models have glass doors. Remove carton carefully.

**FOR YOUR SAFETY**

**DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS OR LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE. FAILURE TO COMPLY CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH.**

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# OPERATION

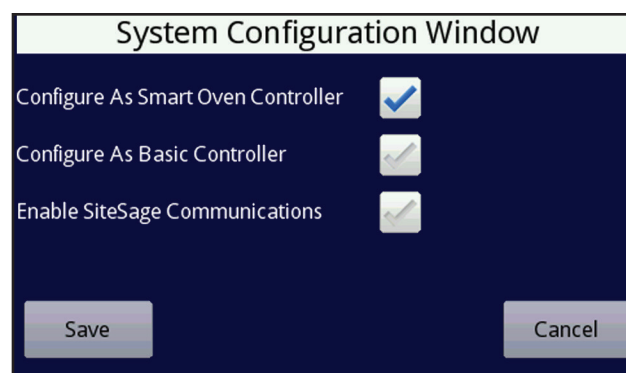
## SMART CONTROLLER

### PRECAUTIONS

This manual covers the Smart Controller circuit board and Application supplied by CyberTech Solutions only. Refer to the manufacturer's manual for information on any other equipment. Do not attempt any service or maintenance without consulting all manufacturer manuals.

### SYSTEM DESCRIPTION

The Smart Controller is designed to provide a complete embedded system to run the different oven configurations manufactured at Thermodyne. The Smart Controller provides a simple, yet powerful user friendly LCD display with touch screen interface to start, stop, and program cooking recipes. Along with stored recipes, the Smart Controller contains a WiFi chip that allows the Smart Controller to upload and download recipes and control the oven remotely.



**System Configuration Screen**

This screen allows Thermodyne technicians to configure the Smart Controller as a Smart Oven Controller or a Basic Controller. If the unit has never been turned on this screen will be presented to the user.

- The “**Configure As Smart Oven Controller**” checkbox will configure this unit to run Recipes or in Basic mode.
- The “**Configure As Basic Controller**” checkbox will configure this unit to simply act like a basic oven.
- The “**Enable SiteSage Communications**” checkbox will enable the smart controller to communicate with a SiteSage controller.
- The “**Save**” button will save the setting changes made on this screen. Once the settings are saved the unit will reboot into the user selected mode.
- The “**Cancel**” button will return to the previous screen. If this is the first time the unit has been turned on this button won't be displayed.
- This screen can be accessed from the Smart Oven Controller or Basic Controller screens by tapping the Thermodyne logo 7 times consecutively.

**Important: This should only be done under consent from Thermodyne Foodservice Products.**

## MAIN OPERATOR INTERFACE

The operator interface panel contains a number of control switches and indicators. These are explained as follows:

### Smart Controller Main Screen:



**Smart Controller Main Screen**

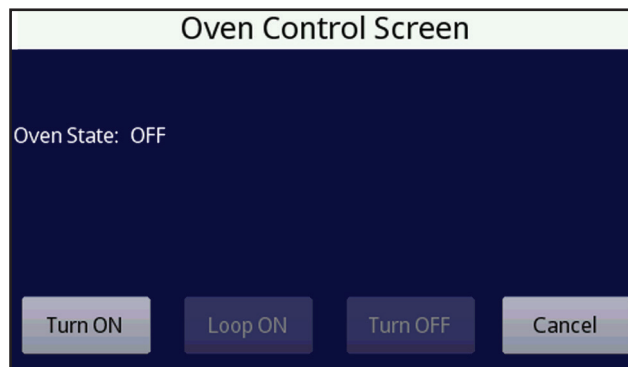
This screen is the main view of all operations that occur during the operation of the oven. From here one may load recipes, start/stop the recipes, and perform other miscellaneous operations.

No connection:			
Lowest connection level:		No REST server	
Getting better:		No REST server	
Even better:		No REST server	
Best connection level:		No REST server	

- This screen shows the date/time, active recipe (blue text), what step of the recipe that is currently running, the temperature of the oven/shelf and food probe if connected, and the minutes until the recipe is complete. The Oven State will contain one of the following values: Off, Preheat, Bake, Hold, and Done. These will be discussed in the Recipes section of this manual. The Oven State will contain the value of **“Basic”** if the oven is being used as a basic oven. Only when the recipe has completed the green box with **“RECIPE COMPLETE”** will be displayed. Otherwise the box is hidden from sight.

- The temperatures that are displayed are the current temperature of the oven/shelf and probe. When the recipe is running the [ ] area of the temperature will be populated with the actual temperature set point for the given recipe step. Recipe steps will be defined in the Recipes section of this manual.
- Touching the **“Oven Control”** button will display the Oven Control screen. This button will be disabled when the oven is running in Basic Oven mode.
- Touching the **“Recipes”** button will display the Oven Recipes screen.
- Touching the **“Basic Oven”** button will display the Basic Oven screen once the correct password has been entered. This button will be disabled when the oven is running a recipe.
- Touching the **“Utilities”** button will display the Oven Utilities screen once the correct password has been entered.

## Oven Control Screen:

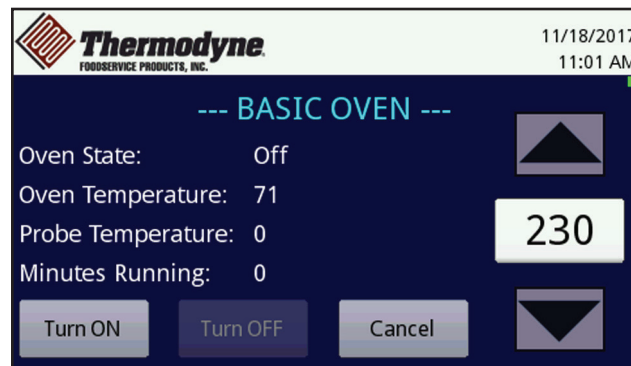


Oven Control Screen

This screen allows the starting and stopping of the active recipe. The current state of the oven is displayed in the “**Oven State**” line. This will display either “**OFF**” or “**ON**”.

- The “**Turn ON**” button will start the oven running the recipe. This button is available for both Timer and Clock based recipes. Refer to the Recipes section of this manual for the definition of Timer and Clock recipes.
- The “**Loop ON**” button will start the oven running the recipe in a looping mode. This button is only available for Clock based recipes.
- The “**Turn OFF**” button will stop the oven running the recipe.
- The “**Cancel**” button will return to the previous screen without performing any actions.
- Buttons that have a blue background and light gray text are disabled and cannot be activated based upon the current state of the oven.

## Basic Oven Control Screen:

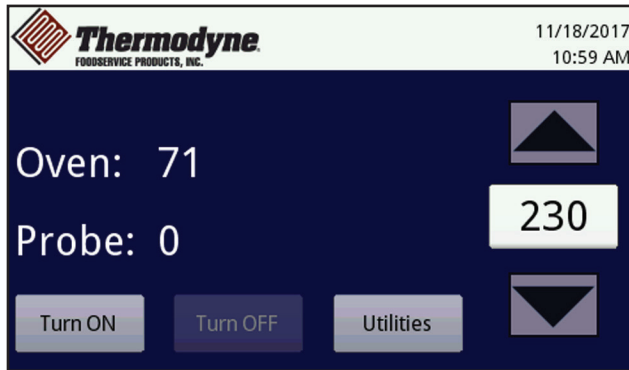


Basic Oven Control Screen

This screen allows the turning on and off of the oven in a basic mode (like a standard oven in a home). The current state of the oven is displayed in the “**Oven State**” line. This will display either “**OFF**” or “**Basic**”.

- The “**Turn ON**” button will turn the oven on using the temperature set point (in this case 230°).
- The “**Turn OFF**” button will turn the oven off.
- The “**Cancel**” button will return to the previous screen without performing any actions.
- The “**Temperature**” field may be used to enter the desired temperature to operate the oven. This may be changed any time regardless if the oven is turned on or off. The oven does not require turning off and then back on to make the new temperature active.
- The “**Up/Down**” buttons allows adjusting the temperature of the oven in 1 degree increments. Touching the button will make a 1 degree change every second and if held for more than 2 seconds will start to increment/decrement rapidly. Once either of the buttons are released for a few seconds the oven will be automatically set to the new temperature. The oven does not require turning off and then back on to make the new temperature active.
- Buttons that have a blue background and light gray text are disabled and cannot be activated based upon the current state of the oven.
- After 30 seconds of inactivity the user will be returned to the Main Screen.

## Basic Controller Screen:



**Basic Controller Screen**

This screen allows the turning on and off of the oven in a basic controller mode (like a standard oven in a home).

- The “**Turn ON**” button will turn the oven on using the temperature set point (in this case 230 degrees).
- The “**Turn OFF**” button will turn the oven off.
- The “**Utilities**” button will display the Oven Utilities screen once the correct password has been entered.
- The “**Temperature**” field may be used to enter the desired temperature to operate the oven. This may be changed any time regardless if the oven is turned on or off. The oven does not require turning off and then back on to make the new temperature active.
- The “**Up/Down**” buttons allows adjusting the temperature of the oven in 1 degree increments. Touching the button will make a 1 degree change every second and if held for more than 2 seconds will start to increment/decrement rapidly. Once either of the buttons are released for a few seconds the oven will be automatically set to the new temperature. The oven does not require turning off and then back on to make the new temperature active.

- Buttons that have a blue background and light gray text are disabled and cannot be activated based upon the current state of the oven.
- The food “**Probe**” temperature will be displayed only if a food probe is plugged into the oven. Otherwise, the label “**Probe**” and its value will be removed from the screen.
- The WiFi reception icon in the upper left corner of the screen (If WiFi is activated) will indicate the signal strength and the REST Server connection status. The following list shows the different icons and their meaning:

No connection:			
Lowest connection level:		No REST server	
Getting better:		No REST server	
Even better:		No REST server	
Best connection level:		No REST server	



## RECIPE SYSTEM

### Oven Recipes Screen:

Oven Recipes	
Recipe Name ^	New Recipe
A1 Simple Timer Test	Edit Recipe
A2 Simple Clock Test	Delete Recipe
Pork Shoulder	View Recipe
	Load Recipe
	Cancel

### Oven Recipes Screen

This screen allows the creation of a new recipe, editing a recipe, viewing a recipe, deleting a recipe, and loading a recipe. To edit, view, delete, or load a recipe simply touch the recipe name in the Recipe Name list and select the button of operation. The Load Recipe button will be grayed out if a recipe is already loaded and running. If a new recipe needs to be loaded, go to the Oven Control screen and turn the oven off.

- The **“New Recipe”** button allows the creation of a recipe. When selected and the correct password has been entered, the screen will change to the Recipe Details screen and all of the fields will be empty and waiting for user input.
- The **“Edit Recipe”** button allows the editing of an existing recipe. When selected and the correct password has been entered, the screen will change to the Recipe Details screen and all of the fields will be populated with the recipes data for editing.
- The **“View Recipe”** button allows the viewing of a recipe. When selected the screen will change to the Recipe Details screen and all of the fields will be populated with the recipes data for viewing.
- The **“Delete Recipe”** button allows the deletion of a recipe that is no longer needed. When selected and the correct password has been entered, a message box will be displayed prompting the user to select **“Yes”** or **“No”** if the recipe is to be deleted. Selecting **“Yes”** will indicate that the recipe has been deleted and the recipe name will

be removed from the Recipe Name list. Selecting **“No”** will indicate that the recipe has not been deleted.

- The **“Load Recipe”** button allows the loading of a recipe into the oven for running. When selected the screen will change to the Main Window screen and the recipe name will be displayed in the light blue text just below the date/time. From here the user may select the Oven Control button to start the recipe.
- The **“Cancel”** button will return to the previous screen without performing any actions.

### Recipe Details Screen:

Recipe Details			
Recipe Name		A2 Simple Clock Test	Add
Timer	<input type="checkbox"/>	Clock	<input checked="" type="checkbox"/>
		Looping	PLM 20
Step	Event	Time	Temp
1	Preheat	03:00 PM	s 100
2	Bake	11:20 PM	s 110 - 111
3	Hold	11:25 PM	s 100
4	Hold	12:00 AM	s 100
			Delete
			Save
			Cancel

### Recipe Details Screen

This screen will either be empty if the **“New Recipe”** button was selected or it will be populated with the selected recipes data. If the View Recipe button was selected, then the Add, Edit, Delete, and Save buttons will be grayed out showing they are disabled.

- **Recipe Name** – This field will contain the name of the recipe. Simply touching the field will pop up keyboard allowing the entry of a recipe name or changing the recipe name.
- **Timer** – A Timer type recipe is one that will run immediately when the oven is turned on. Each step of the recipe will contain the number of minutes that the step must run before automatically advancing to the next step. Touching this button will cause a blue checkmark to be displayed in the box.
- **Clock** – A Clock type recipe is one that will run each step at a set hour and minute of the day when the oven is turned on. Each step of the recipe will contain the hour and minute that the step must wait for before

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running that step. Touching this button will cause a blue checkmark to be displayed in the box.

- The **“Looping”** button, only available if the Clock checkbox is selected, allows the selecting the days of the week that the recipe should automatically run on. When selected the screen will change to the Recipe Looping Details screen.
- **PLM** – Power Loss Minutes. This number represents the number of minutes of a power outage that are allowed to pass before the recipe can no longer be automatically started when the oven is powered up after a power loss. In this screen the 20 represents 20 minutes. If power to the oven is lost for up to 20 minutes, then when power is restored the oven will automatically start the recipe. However if 21 minutes or more have passed and power is restored the oven will not automatically start the recipe. This number can be a value of 0 to 60 minutes. Touching this field will cause a keypad to pop up and allow entering/editing of the PLM value.
- **Step List** – This is the list of defined steps that are needed to complete the recipe. The columns of the list are:
  - **Step** – The steps of the recipe
  - **Event** – This is the event that will take place in this step.
  - **Time** – If the recipe is a Timer based recipe, then the time displayed will be the number of minutes that the step will run. If the recipe is a Clock based recipe, then the time displayed will be the hour and minutes that the step will wait for before executing.
  - **Temp** – This is the temperature of the oven when this step is active. Looking at the above recipe one notices that there is an “s” and an extra temperature in the different steps of the recipe. These are details to help the user know what

section of the oven is being used when the step is active. In this case the “s” represents that the Shelf will be used to set this temperature. The extra temperature, 111 in the screen above, represents the temperature setting of the Food Probe will be looking for before moving on to the next step. For example: the Shelf temperature is set to 230 °F and the Food Probe temperature is set to 160 °F. The system will keep the oven at 230 °F until the probe temperature is met. It will stay this way until the 160 °F is achieved and then the system will move on to the next step in the recipe. It doesn’t matter if the recipe is a Timer or Clock based recipe at this point because the system will wait for the Food Probe to reach 160 °F before advancing to the next step. Care must be taken to insure the Food Probe temperature can be reached for the given Shelf temperature setting.

- The **“Add”** button will add a new step to the recipe. This step will be appended to the end of the recipe. When selected the Timer/Clock Step Details screen will be displayed.
- The **“Edit”** button allows the editing of the selected recipe step. A recipe step in the list must be selected before selecting this button. When selected the Timer/Clock Step Details screen will be displayed.
- The **“Delete”** button allows the deleting of the selected recipe step. A recipe step in the list must be selected before selecting this button.
- The **“Save”** button will save the current recipe edits and return to the Oven Recipes screen.
- The **“Cancel”** button will return to the previous screen without performing any actions.

### Recipe Step Details – Clock Screen:

Recipe Step Details - Clock

Step: 1

☐ Chiller

☒ Preheat

☐ Bake

☐ Hold

☐ Done

Hour : Minute 05:20 AM PM

Shelf 100 Probe 0

Save

Cancel

### Recipe Step Details – Clock Screen

This screen will either be empty if the “Add” button was selected or it will be populated with the selected recipes data. Selecting the different **Event** (Chiller, Preheat, Bake, Hold, Done) will cause the other fields on the screen to be enabled or disabled. This type of operation will help the user to edit only the fields that are active for the selected event.

- **Chiller** – This event allows setting only the Shelf temperature. Valid temperature range is: 34 to 60 °F.
- **Preheat** – This event allows setting the Shelf temperature. Valid temperature range is: 70 to 320 °F.
- **Bake** – This event allows setting the Shelf temperature. Valid temperature range is: 70 to 230 °F. The Food Probe temperature may also be set during the Bake event.
- **Hold** – This event allows setting the Shelf temperature. Valid temperature range is: 70 to 230 °F.
- **Done** – This event will indicate that the recipe is complete. All recipes **MUST** contain a “Done” event for the recipe to execute properly!

- **Hour:Minute** – This field will contain the hour and minute(s) of when the Clock based recipe should start. Valid hour range is: 1 to 12 hours and 0 to 59 minutes.

**NOTE:** a colon **MUST** be placed between the hours and minutes values.

- **AM / PM** – Corresponds to the hours when the recipe step should start.
- **Food Probe** – This field will contain the temperature that the Food Probe will be looking for before advancing to the next step. Valid temperature range is: 80 to 200 °F.

Cooking with the Food Probe will change the operation of the oven in one very important aspect and needs to be understood fully before using. For example: the Shelf temperature is set to 230 °F and the Food Probe temperature is set to 160 °F. The system will keep the oven at 230 °F until the probe temperature is met. It will stay this way until the 160 °F is achieved and then the system will move on to the next step in the recipe. It doesn't matter if the recipe is a Timer or Clock based recipe at this point because the system will wait for the Food Probe to reach 160 °F before advancing to the next step. Care must be taken to insure the Food Probe temperature can be reached for the given Shelf temperature setting.

- The “**Save**” button will save the current recipe step edits and return to the Recipe Details screen.
- The “**Cancel**” button will return to the previous screen without performing any actions.

## Recipe Step Details – Timer Screen:



### Recipe Step Details – Timer Screen

This screen will either be empty if the “Add” button was selected or it will be populated with the selected recipes data. Selecting the different **Event** (Chiller, Preheat, Bake, Hold, Done) will cause the other fields on the screen to be enabled or disabled. This type of operation will help the user to edit only the fields that are active for the selected event.

- **Chiller** – This event allows setting only the Shelf temperature. Valid temperature range is: 34 to 60 °F.
- **Preheat** – This event allows setting the Shelf temperature. Valid temperature range is: 70 to 230 °F.
- **Bake** – This event allows setting the Shelf temperature. Valid temperature range is: 70 to 230 °F. The Food Probe temperature may also be set during the Bake event.
- **Hold** – This event allows setting the Shelf temperature. Valid temperature range is: 70 to 230 °F.

- **Done** – This event will indicate that the recipe is complete. All recipes **MUST** contain a “Done” event for the recipe to execute properly!
- **Minutes** – This field will contain the number of minutes the current step of the Timer based recipe should run before advancing to the next step. Valid hour range is: 1 to 9999 hours.
- **Food Probe** – This field will contain the temperature that the Food Probe will be looking for before advancing to the next step. Valid temperature range is: 80 to 200 °F.

Cooking with the Food Probe will change the operation of the oven in one very important aspect and needs to be understood fully before using. For example: the Shelf temperature is set to 230 °F and the Food Probe temperature is set to 160 °F. The system will keep the oven at 230 °F until the probe temperature is met. It will stay this way until the 160 °F is achieved and then the system will move on to the next step in the recipe. It doesn't matter if the recipe is a Timer or Clock based recipe at this point because the system will wait for the Food Probe to reach 160 °F before advancing to the next step. Care must be taken to insure the Food Probe temperature can be reached for the given Shelf temperature setting.

- The “**Save**” button will save the current recipe step edits and return to the Recipe Details screen.
- The “**Cancel**” button will return to the previous screen without performing any actions.

### Recipe Looping Details Screen:

The screen has a title bar "Recipe Looping Details". Below it, there is a checkbox labeled "Looping Enabled" which is checked. Underneath, there are seven days of the week: Sun, Mon, Tue, Wed, Thr, Fri, Sat. Each day has a corresponding checkbox. Sun, Tue, Thr, and Sat are checked. Mon, Wed, and Fri are unchecked. At the bottom right, there are two buttons: "Save" and "Cancel".

Sun	Mon	Tue	Wed	Thr	Fri	Sat
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

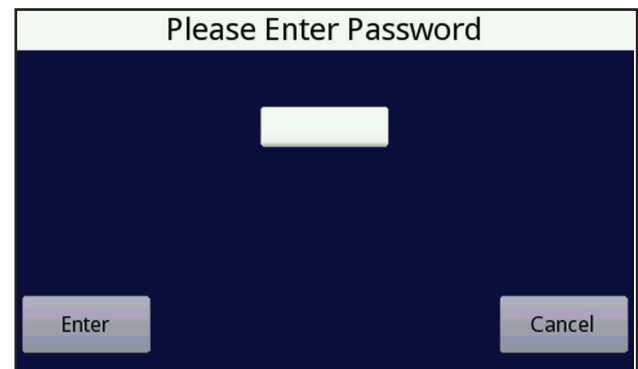
**Recipe Looping Details Screen**

This screen will only be available for Clock based recipes. The concept of looping is taking a recipe that starts at a certain time of the day and defining the days of the week that the recipe will run automatically without user intervention. The above screen indicates that the Looping Mode is enabled for this particular recipe and that on the days of Sunday, Tuesday, Thursday, and Saturday this recipe will automatically run without having to start it manually. This is particularly useful if the oven is used every day to run the same recipe. For example: the oven can be turned into a Chiller at 5:00PM, and at 6:00AM the next day it can Preheat to warm up the food in the oven, finally at 7:00AM the food can then be Baked and ready for 8:00AM use.

- The **“Save”** button will save the current looping edits and return to the Recipe Details Clock screen.
- The **“Cancel”** button will return to the previous screen without performing any actions.

## UTILITY SCREENS

### Password Screen:

The screen has a title bar "Please Enter Password". Below it, there is a large white rectangular input field for the password. At the bottom left, there is a button labeled "Enter". At the bottom right, there is a button labeled "Cancel".

**Password Screen**

When the **“Utilities”** button is selected from the Main screen, the user will be presented with the Password Entry screen. Enter the password and select the **“Enter”** button. If the password is correct, the Oven Utilities screen will be displayed. If the password is incorrect, then the user will be returned to the Main screen. The default password for the oven is: 1514

- The **“Enter”** button will validate the entered password and allow the user to view the Oven Utilities screen.
- The **“Cancel”** button will return to the previous screen without performing any actions.



## Oven Utilities Screen:



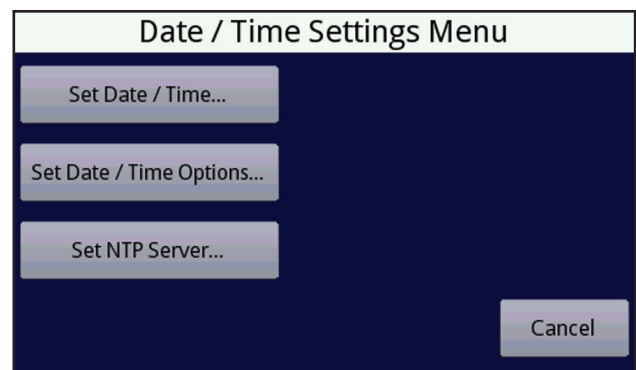
### Oven Utilities Screen

This screen is a menu of options that can be performed. These options are designed to be startup configuration and troubleshooting screens that once the oven is operational should not need to be accessed.

- The “**Date / Time Settings**” button allows the user to perform clock based operations on the oven. These include: setting the date & time, setting clock options and designating the network time server to query the time from.
- The “**Temperature Settings**” button allows the user to perform temperature based operations on the oven. These include: setting temperature offsets, setting the display mode of temperatures in °F or °C, and monitoring the temperature sensors if there is a problem.
- The “**Change Password**” button allows the user to change the default password to a new password.
- The “**WiFi Settings**” button allows the user to perform network based operations on the oven. These include: enabling WiFi on the oven, setting addresses, monitoring network status, etc.
- The “**Inputs / Outputs**” button allows the user to monitor inputs and change the state of the outputs of the oven to aid in troubleshooting problems with the oven. **THIS OPTION SHOULD ONLY BE ACCESSED BY A TRAINED TECHNICIAN! FAILURE TO HEED THIS WARNING WILL RESULT IN VOIDING OF THE OVENS WARRANTY.**
- The “**Current Monitoring**” button allows the user to view the current draw of the oven. This is another diagnostic tool.

- The “**Miscellaneous**” button allows to change oven settings that don’t have a specific category they fit in.
- The “**Firmware Update**” button allows the user to see the current version of the firmware running on the oven and allow the user to update it via USB or WiFi.
- The “**About**” button will display information about the oven.
- The “**Cancel**” button will return to the previous screen without performing any actions.

## Date / Time Settings Menu Screen:

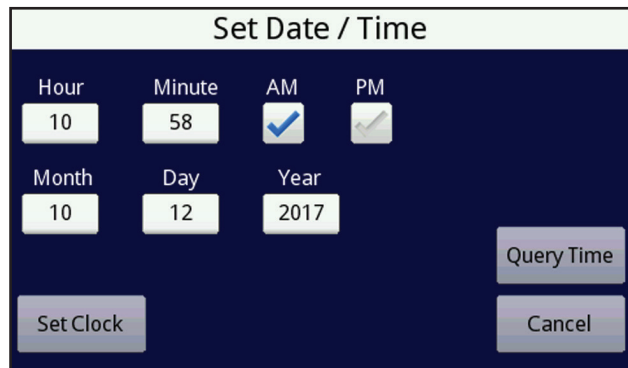


### Date / Time Settings Menu Screen

This screen allows the user to select the desired date and time operation.

- The “**Set Date / Time**” button allows the user to set the date and time of the oven. The clock may not be set if the oven is currently running a recipe.
- The “**Set Date / Time Options**” button allows the user to perform date / time based operations on the oven. These include: enabling daylight saving time and setting the time zone of the oven. This button will be disabled if WiFi is not active.
- The “**Set NTP Server**” button allows the user to change the default Network Time Protocol serve to a different server if needed. This button will be disabled if WiFi is not active.
- The “**Cancel**” button will return to the previous screen without performing any actions.

### Set Date / Time Screen:

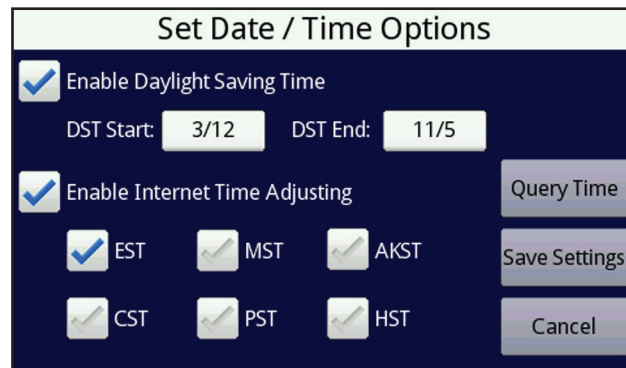


**Set Date / Time Screen**

This screen allows setting the date and time of the ovens clock. Simply touch the fields and enter the appropriate values and select the “**Set Clock**” button.

- **Hour** – This field will contain the hour of the system clock. Valid hour range is: 1 to 12 hours.
- **Minute** – This field will contain the minutes of system clock. Valid minute range is: 0 to 59 hours.
- **AM / PM** – Corresponds to the hours of the system clock.
- **Month** – This field will contain the month of the system clock. Valid month range is: 1 to 12 hours.
- **Day** – This field will contain the day of the system clock. Valid month range is: 1 to 12 hours.
- **Year** – This field will contain the year of the system clock. Valid year range is: 2015 and up.
- The “**Query Time**” button will, if the WiFi is enabled, allow querying the time from the NTP server and set the clock automatically.
- The “**Set Clock**” button will set the date and time of the oven and cause it to reboot. The reboot is necessary due to the timing functions of the Smart Controller.
- The “**Cancel**” button will return to the previous screen without performing any actions.

### Set Date / Time Options Screen:

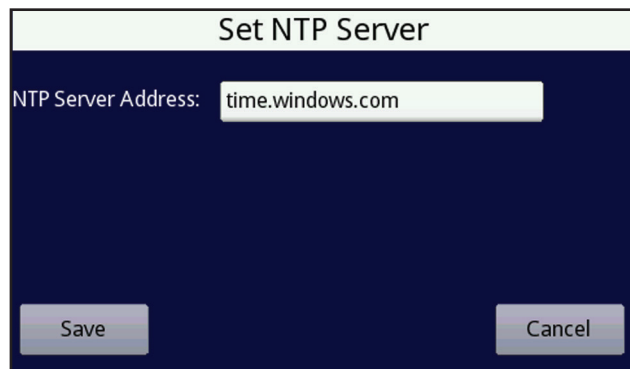


**Set Date / Time Options Screen**

This screen allows setting the date and time options of the ovens clock.

- **Enable Daylight Saving Time** – Checking this box will enable the clock to adjust itself for daylight saving time based upon the start and end DST dates in the textboxes below.
- **DST Start** – The starting month and day to adjust the clock.
- **DST End** – The ending month and day to adjust the clock.
- **Enable Internet Time Adjusting** – Checking this box will enable the clock to be adjusted via the internet using the options on this screen.
- **EST** – Eastern Standard Time
- **CST** – Central Standard Time
- **MST** – Mountain Standard Time
- **PST** – Pacific Standard Time
- **AKST** – Alaskan Standard Time
- **HST** – Hawaii Standard Time
- The “**Query Time**” button will, if the WiFi is enabled, allow querying the time from the NTP server and set the clock automatically.
- The “**Save Settings**” button save the current settings on this screen.
- The “**Cancel**” button will return to the previous screen without performing any actions.

### Set NTP Server Screen:

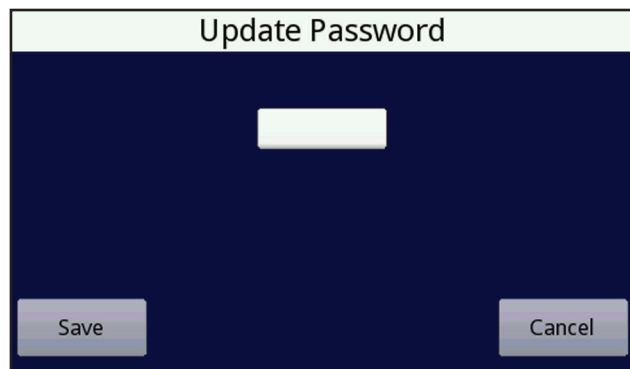


#### Set NTP Server Screen

This screen allows setting the Network Time Protocol server where the date and time will be retrieved to set the clock of the oven.

- **NTP Server Address** – The address of the server where the date and time will be retrieved to set the clock of the oven.
- The **“Save”** button save the current settings on this screen.
- The **“Cancel”** button will return to the previous screen without performing any actions.

### Change Password Screen:

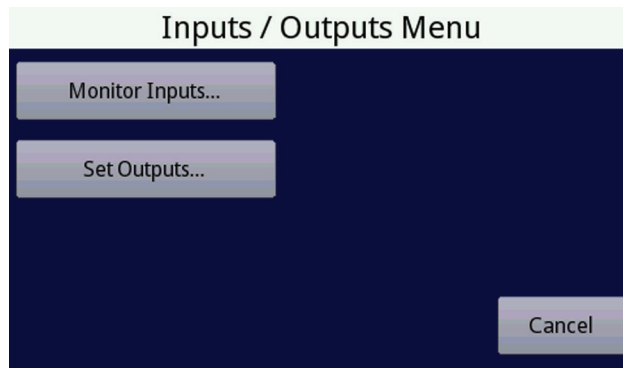


#### Change Password Screen

This screen allows the changing of the password that allows access to the Utilities screen. Touching the password field will cause a keyboard to be displayed. Simply enter the new password. This can be any combination of letters and numbers. Blank passwords and passwords containing spaces are not acceptable and the oven will ask to re-enter a different password.

- The **“Save Setting”** button will store the new password and return to the previous screen.
- The **“Cancel”** button will return to the previous screen without performing any actions.

### Inputs / Outputs Menu Screen:



#### Inputs / Outputs Menu Screen

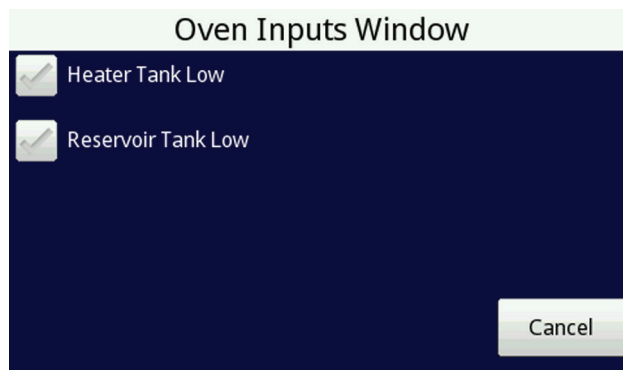
This screen allows the user to select the desired operation to monitor the inputs or set the outputs.

- The **“Monitor Inputs”** button allows the user view the oven inputs.
- The **“Set Outputs”** button allows the user to view and set the oven outputs.

**THIS OPTION SHOULD ONLY BE ACCESSED BY A TRAINED TECHNICIAN! FAILURE TO HEED THIS WARNING WILL RESULT IN VOIDING OF THE OVENS WARRANTY.**

- The **“Cancel”** button will return to the previous screen without performing any actions.

### Monitor Inputs Screen:



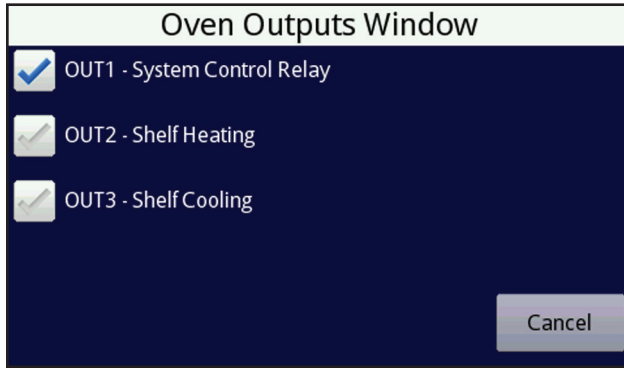
#### Monitor Inputs Screen

This screen allows a trained technician to view the ovens inputs to diagnose oven issues when they arise.

- The **“Cancel”** button will return to the previous screen without performing any actions.



## Set Outputs Screen:



Set Outputs Screen

**THIS OPTION SHOULD ONLY BE ACCESSED BY A TRAINED TECHNICIAN! FAILURE TO HEED THIS WARNING WILL RESULT IN VOIDING OF THE OVENS WARRANTY.**

This screen allows a trained technician to turn on the outputs of the oven on to troubleshoot problems. The outputs can only be turned on when the oven is **NOT** running a recipe. If a recipe is actively running, the technician will not be able to change the state of the outputs. To change the state of the output simply touch the checkbox that is desired and the output will toggle ON. When touched again the output will be turned OFF.

- The output(s) will only stay on for 30 seconds before the controller will turn the output back off. This is done to protect the oven if a technician turns on an output and forgets to turn it back off. This can damage the oven severely if the heating or cooling is left on for a long period of time. To bypass this 30 second timer and leave the output(s) on for an indefinite time period, remove the checkmark **“Enable Output Control Safety”** on the Miscellaneous Settings screen.
- This screen is updated automatically when a recipe is running and the outputs that are used will toggle ON and OFF automatically. The ability of setting the state of the outputs when the oven is running will be disabled. Again this may be used as an aid in troubleshooting issues with the oven.
- The **“Cancel”** button will revert the outputs to their initial state when this screen was entered before returning to the previous screen.

## Miscellaneous Settings Screen:



Miscellaneous Settings Screen:

This screen is designed to show different settings of the oven that don't have a specific category they fit in.

- The **“Enable Output Control Safety”** checkbox (default is checked) will cause the outputs screen to revert the state of the outputs back to their default setting after a 30 second timeout. Unchecking this box will cause the 30 second timer to be bypassed thus allowing the output to be left on indefinitely (extremely dangerous). Refer to the outputs screen for a detailed description of this option.
- The **“Clear Fluid Requires Changing Msg”** checkbox will cause the controller to clear displaying the Fluid Requires Changing message for another year. The user is responsible for changing the fluid before setting this checkbox.
- The **“Enable Sound”** checkbox will enable the sound when touching buttons if checked.
- The **“Online With SiteSage”** checkbox will only indicate that the smart controller is communicating with the SiteSage controller. This is only a feedback mechanism and placing a check in the checkbox will **NOT** enable the communications.
- The **“Save”** button will save the setting changes made on this screen.
- The **“Cancel”** button will return to the previous screen.

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### Update Oven Firmware Screen:



#### Update Oven Firmware Screen

This screen is designed to show the current firmware version of the Cobra Controller software and provide the user the ability to update the firmware. When this screen is first opened the **“Update via USB”** and **“Update via Web”** buttons are grayed out. If a USB drive is detected then the **“Update via USB”** button will be enabled and the version of the file on the USB drive will be displayed in the **“New Oven Firmware Version”**. If the oven is connected via WiFi the **“Update via Web”** button will be enabled.

- The **“Update via USB”** button, when enabled, allows the updating of the oven firmware from a USB. Pressing this button will ask for confirmation to update the firmware. Once confirmed, the process of updating will start. If the version of firmware on the USB is less than or equal to the version running on the oven, the **“Update via USB”** button will not be enabled.
- The **“Update via Web”** button, when enabled, allows the updating of the oven firmware from the internet. Pressing this button will cause the oven to query the version of the firmware on the update website. If the versions match then the update process will be stopped. If the version on the website is newer, the user will be prompted to confirm the updating of the firmware. Once confirmed, the process of updating will start.
- The **“Cancel”** button will return to the previous screen.

### About Screen:



#### About Screen

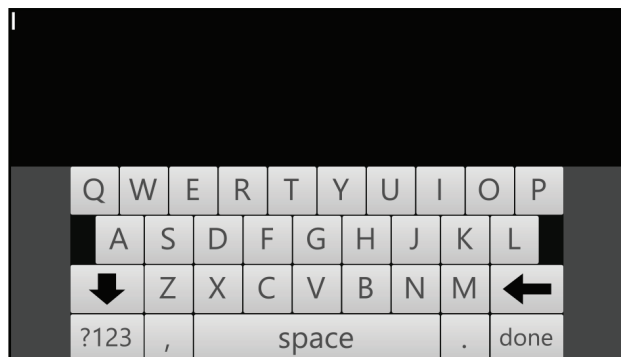
This screen is designed to show the firmware version of the Smart Controller along with the support contact information.

- The **“Exit”** button will return to the previous screen.

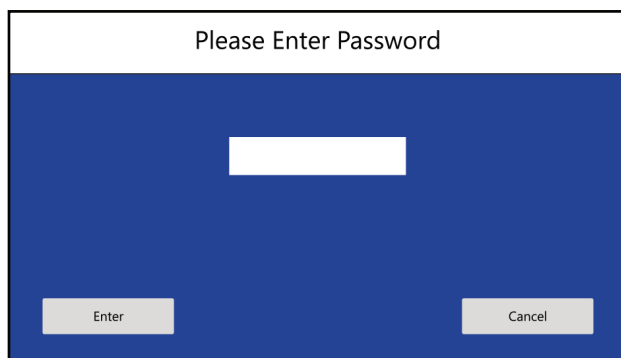
## Timer Options Screen

To enable the use of the built-in integrated timer, you must perform, or have the factory perform, the following steps:

- Press Timer Option Button. This brings up a one-time password to unlock this feature. Once the timer feature has been unlocked, accessing the Timer Options screen will revert to being protected by the system password default: 1514.



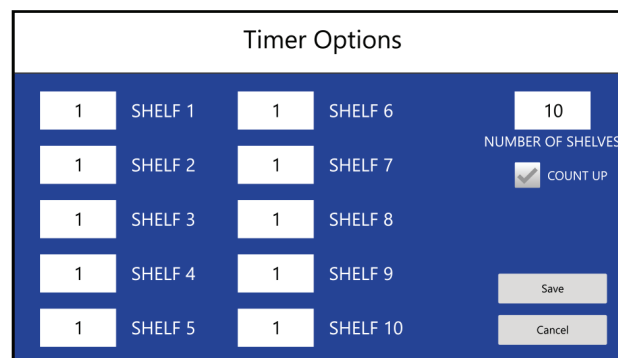
Timer Option Button Screen



Enter Password Screen

- On the Timer Options screen, there is a NUMBER OF SHELVES button. When pressed, it will bring up a keyboard that will allow the factory or end user to input the number of shelves (between 1 and 10) for the equipment being used. In the case of your 300NDNL, this would be 5 Shelves.
- Once the number of shelves has been entered, the NUMBER OF PANS field will become active allowing the user to input the number of pans per shelf. This number will dictate the number of fields shown on the TIMER DEFAULT SCREEN on the per shelf basis.

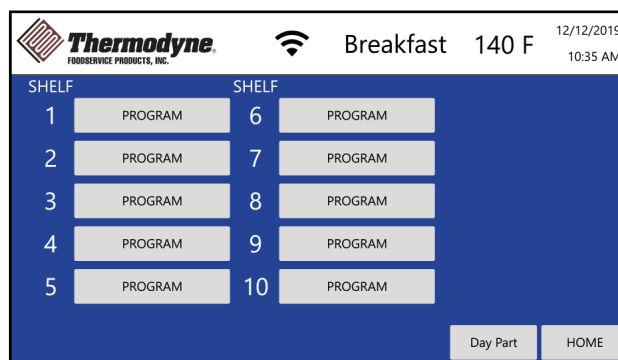
- The standard timer is a COUNT DOWN timer, you have the option to change this to a COUNT UP timer by checking the box on the Timer Options screen.



Timer Options Screen

## Timer Default Screen

- The individual fields on this screen represent pans of product being timed.
- To program individual pans of product, the end user will touch and hold the field representing that pan for 3 seconds.



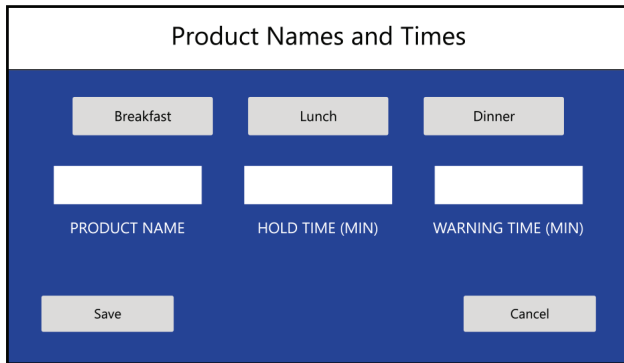
Program Individual Pan Screen

This will bring up the keyboard, so that the system password (1514) can be entered. Entering the password is required for initial set up only, or if changing the parameters of the timer field.

- On the screen the user can input the following:
  - Name of the product being held in this pan.
  - Set a hold time, the amount of time being counted down or counted up.
  - Set a warning time. The warning time is the amount of early warning time set by the end user before a timer has reached its completion. This amount of time will

dictate when the timer / product on the timer screen will turn yellow and flash.

- Program three-day parts: Breakfast, Lunch and Dinner if desired.
- The product name / time remaining will alternate on the display. The name for 2 seconds and the time for 4 seconds.



Product Names and Times

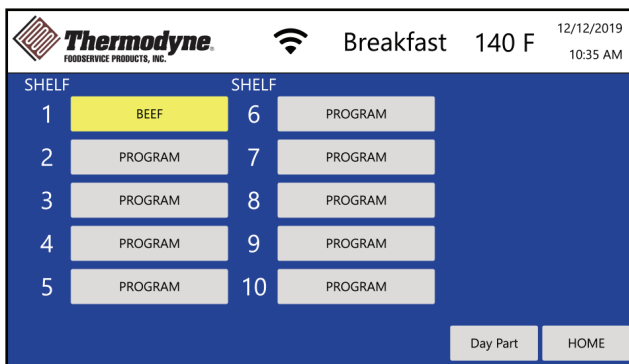
Breakfast	Lunch	Dinner
<input type="text"/>	<input type="text"/>	<input type="text"/>
PRODUCT NAME	HOLD TIME (MIN)	WARNING TIME (MIN)

Save Cancel

**Product Name and Time Remaining Screen**

### Color and Flash Coding

- A single tap of a white timer button will turn the button GREEN and begin to count down from the preset time. If the timer button is tapped again, this will turn the button white, stop the timer and display the product name.
- If 2 or more pans have the same product name, a FLASHING GREEN button will indicate the first timer started and the first product to be served (FIRST IN / FIRST OUT). When the timer has expired and been cleared (turned white), the second timer in sequence will begin to flash indicating this is now the first product to be served.



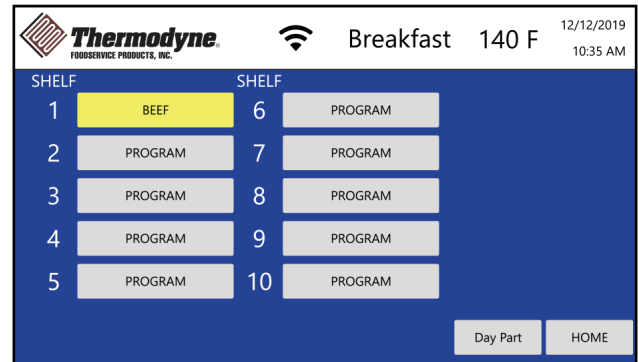
Thermodyne FOODSERVICE PRODUCTS, INC. Breakfast 140 F 12/12/2019 10:35 AM

SHELF	1	2	3	4	5	SHELF	6	7	8	9	10
	BEEF	PROGRAM	PROGRAM	PROGRAM	PROGRAM		PROGRAM	PROGRAM	PROGRAM	PROGRAM	PROGRAM

Day Part HOME

**Same Product Name Screen**

- When the timer has reached its warning time, the button will turn YELLOW and flash indicating its now time to prepare new product to replace the existing product which is about to expire.
- Once the timer has reached its expiration it will turn RED, begin flashing, as well as set off an audible alarm.

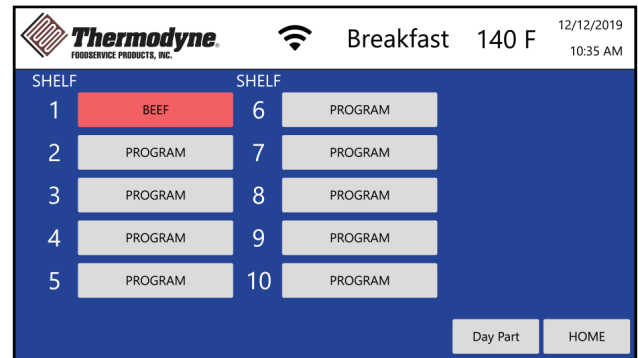


Thermodyne FOODSERVICE PRODUCTS, INC. Breakfast 140 F 12/12/2019 10:35 AM

SHELF	1	2	3	4	5	SHELF	6	7	8	9	10
	BEEF	PROGRAM	PROGRAM	PROGRAM	PROGRAM		PROGRAM	PROGRAM	PROGRAM	PROGRAM	PROGRAM

Day Part HOME

**Warming Time Reached Screen**



Thermodyne FOODSERVICE PRODUCTS, INC. Breakfast 140 F 12/12/2019 10:35 AM

SHELF	1	2	3	4	5	SHELF	6	7	8	9	10
	BEEF	PROGRAM	PROGRAM	PROGRAM	PROGRAM		PROGRAM	PROGRAM	PROGRAM	PROGRAM	PROGRAM

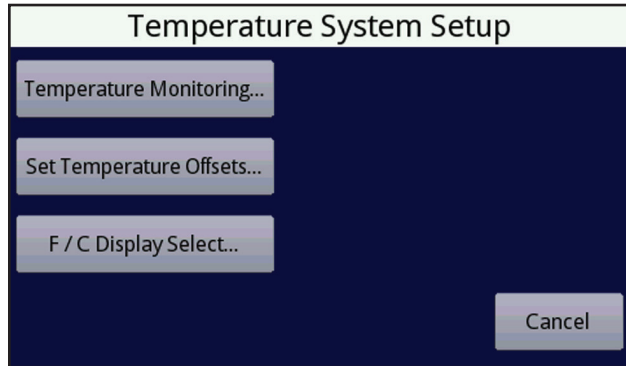
Day Part HOME

**Timer Expiration Screen**

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## TEMPERATURE SYSTEM

### Temperature Options Screen:



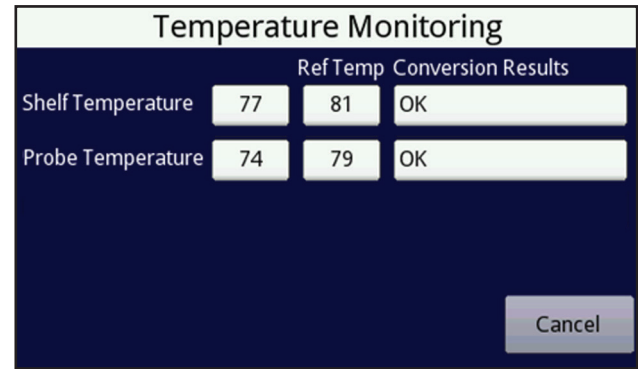
The Temperature System Setup screen has a dark blue background. At the top, there is a light green header bar with the text "Temperature System Setup". Below this, there are three buttons: "Temperature Monitoring...", "Set Temperature Offsets...", and "F / C Display Select...". In the bottom right corner, there is a "Cancel" button.

### Temperature Options Screen

This screen is a menu of options that can be performed on the temperature system.

- The “**Temperature Monitoring**” button allows the user to view the state of the temperature sensors in the oven.
- The “**Set Temperature Offsets**” button allows the user to change the raw temperature reading to a reading that is adjusted after a temperature calibration has been performed.
- The “**°F / °C Display Select**” button allows the user to change the displaying of the temperatures in “F / °C.
- The “**Cancel**” button will return to the previous screen without performing any actions.

### Temperature Monitoring Screen:



The Temperature Monitoring screen has a dark blue background. At the top, there is a light green header bar with the text "Temperature Monitoring". Below this, there is a table with three columns: "Shelf Temperature", "Ref Temp", and "Conversion Results". The table has two rows: "Shelf Temperature" and "Probe Temperature". The "Shelf Temperature" row shows values 77, 81, and OK. The "Probe Temperature" row shows values 74, 79, and OK. In the bottom right corner, there is a "Cancel" button.

	Ref Temp	Conversion Results
Shelf Temperature	77	81 OK
Probe Temperature	74	79 OK

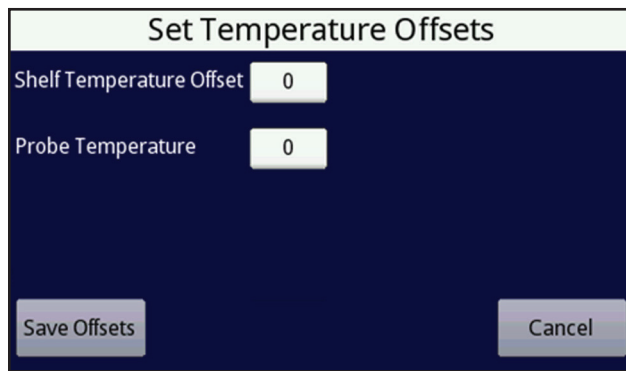
### Temperature Monitoring Screen

This screen will display the temperatures of the different sensors in the oven in real time. This will aid in troubleshooting problems related to the temperature sensors. The sensors monitored are: shelf and food probe.

- The first column displays the actual temperature of the sensor (+ - the temperature offset set in the Temperature Offsets screen).
- The second column displays the reference temperature of the sensor chip on the circuit board.
- The third column displays the results of the conversion of the temperature sensor.
- **OK** – Temperature conversion successful
- **OPEN CIRCUIT** – Temperature sensor has a loose or broken lead.
- **SHORT TO GROUND** – One of the temperature sensor leads is touching ground.
- **SHORT TO VCC** – One of the temperature sensor leads is touching +3 to +5VDC.
- **NO SENSOR DETECTED** – The temperature sensor is not present or the conversion chip has failed.
- **READING OUT-OF-RANGE** – The temperature sensor has gone bad and causing an invalid reading to be generated.
- The “**Cancel**” button will return to the previous screen without performing any actions.

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### Set Temperature Offsets Screen:

The screenshot shows a screen titled "Set Temperature Offsets" with a dark blue background. It features two input fields: "Shelf Temperature Offset" and "Probe Temperature", both containing the value "0". At the bottom, there are two buttons: "Save Offsets" on the left and "Cancel" on the right.

Set Temperature Offsets

Shelf Temperature Offset 0

Probe Temperature 0

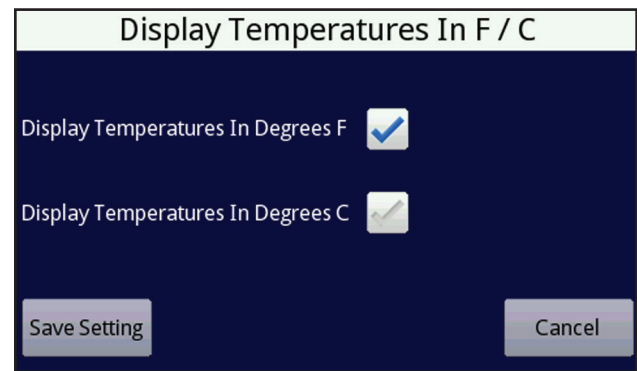
Save Offsets Cancel

#### Set Temperature Offsets Screen

This screen will display the offsets of the different sensors in the oven. This screen allows changing the fine tuning of the factory calibrated temperature readings. This is accomplished by adding or subtracting an offset value to correct the temperature reading. **THIS OPTION SHOULD ONLY BE ACCESSED BY A TRAINED TECHNICIAN! FAILURE TO HEED THIS WARNING WILL RESULT IN VOIDING OF THE OVENS WARRANTY.**

- The first column displays the actual offset value for the temperature sensor. Valid range is: -100 to 100.
- The “**Save Offsets**” button will store the offsets and return to the previous screen.
- The “**Cancel**” button will return to the previous screen without performing any actions.

### Display Temperatures In °F / °C Screen:

The screenshot shows a screen titled "Display Temperatures In F / C" with a dark blue background. It features two checkboxes: "Display Temperatures In Degrees F" which is checked with a blue checkmark, and "Display Temperatures In Degrees C" which is unchecked. At the bottom, there are two buttons: "Save Setting" on the left and "Cancel" on the right.

Display Temperatures In F / C

Display Temperatures In Degrees F ☒

Display Temperatures In Degrees C ☐

Save Setting Cancel

#### Display Temperatures In °F / °C Screen

This screen allows the selection of displaying temperatures in degrees °F or °C.

- The “**Save Setting**” button will store the selection and return to the previous screen.
- The “**Cancel**” button will return to the previous screen without performing any actions.



## WARRANTY

Thermodyne Foodservice Products, Inc. warrants to the original purchaser for use of each new Thermodyne Conductive Cooking/Holding Oven the following: Any part which proves to be defective in materials or workmanship within the warranty period will, subject to the terms of this warranty, be repaired or replaced at Thermodyne Foodservice, Inc.'s option. Claims under this warranty must be presented to Thermodyne Foodservice Products, Inc. in writing, promptly.

Thermodyne stainless steel cabinets are warranted for 5 years and all other original equipment parts such as heat transfer plates, doors, casters, fluid system components and electrical components are warranted against defect for 2 years from the date of purchase.

This warranty applies only to Thermodyne Conductive Cooking/Holding Ovens in the Continental United States. This warranty shall not apply if the oven or any part is subjected to accident, casualty, alteration, misuse, abuse, neglect, faulty installation, or if the date of manufacture is altered or removed.

The obligation of Thermodyne Foodservice Products, Inc. is limited specifically to the aforementioned. No additional guarantees or warranty, expressed or implied, to include without limitation warranties of Fitness or Merchantability with respect to Thermodyne Conduction Ovens and Thermodyne Foodservice Products, Inc. regarding other liability with respect thereto including, without limitation, liability for incidental, special, or consequential damages.

### RESPONSIBILITIES OF PURCHASER

It is the responsibility of the purchaser to:

1. Arrange on site electrical services in accordance with Thermodyne specifications.
2. Receive shipment of Thermodyne conduction oven to include unloading, uncrating, inspecting for damage in shipment, and installation of the oven in its proper location; in accordance with installation instructions.
3. Arrange that the electric services are connected properly by a qualified technician. All such connections must be in accordance with applicable code requirements and Thermodyne installation procedures.

Please note the specific details on the Warranty and make certain that service connections are made to the proper utility services. This warranty and purchasers responsibility information should be retained for future reference.

### For assistance please call:

Toll Free: (800) 526-9182

Local: (260) 428-2535

## HEAT TRANSFER FLUID MSDS

Dow Chemical U.S.A.  
Midland, MI 48674  
Emergency Phone: 517-636-4400  
Product Code: 23545  
Product Name: PROPYLENE GLYCOL  
HEAT TRANSFER FLUID  
Effective Date: 03-02-88  
Date Printed: 06/02/88  
MSDS: 000130

1. **INGREDIENTS:**  
Propylene glycol CAS# 000057-55-6 95%  
Dipotassium phosphate CAS# 007758-11-4 <5%  
Deionized water CAS# 007732-18-5 <5%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

2. **PHYSICAL DATA:**  
BOILING POINT: 370F, 188C  
VAP. PRESS: 0.22 mmHg @ 20C, 68F  
VAP. DENSITY: 2.62  
SOL. IN WATER: Complete  
SP. Gravity: 1,050 @ 60/60F, 16C  
APPEARANCE: Colorless.  
ODOR: Odorless liquid.
3. **FIRE AND EXPLOSION HAZARD DATA:**  
FLASH POINT: 215F, 102C  
METHOD USED: COC  
FLAMMABLE LIMITS  
LFL: 2.6% @ 100C  
UFL: 12.5% @ 130C  
EXTINGUISHING MEDIA: Water fog, alcohol foam, dry chemical  
FIRE AND EXPLOSION HAZARDS: None.  
FIRE-FIGHTING EQUIPMENT: None.
4. **REACTIVITY DATA:**  
STABILITY: (CONDITIONS TO AVOID)  
Stable over normal  
Operating temperature range of -30F to 250F.  
INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)

Oxidizing material.  
HAZARDOUS DECOMPOSITION PRODUCTS: None  
HAZARDOUS POLYMERIZATION: Will not occur,

5. **ENVIRONMENTAL AND DISPOSAL INFORMATION:**  
ACTION TO TAKE FOR SPILLS/LEAKS: Cover with absorbent material, soak up and sweep into bag.
6. **HEALTH HAZARD DATA:**  
EYE: May cause slight transient eye irritation. Corneal injury is unlikely.  
SKIN CONTACT: Essentially nonirritating to skin on prolonged contact.

**SKIN ABSORPTION:** A single prolonged skin exposure is not likely to result in absorption of harmful amounts. The LD50 for skin absorption in rabbits is >10,000 mg/kg.

Repeated exposures may cause slight flaking, tenderness and softening of skin.  
**INGESTION:** Single does oral toxicity is low. The LD50 for female rats is about 20.3 g/kg

**INHALATION:** A single prolonged (hours) inhalation exposure is not likely to cause adverse side effects. Mists are not to be hazardous.

**SYSTEMIC & OTHER EFFECTS:** Repeated excessive ingestion may cause central nervous system effects. No carcinogenic effects have been seen in long-term animal studies. Birth defects are unlikely. Exposures having no adverse effects on the mother should have no effect on the fetus. In animal studies, has been shown not to interfere with reproduction. Results of mutagenicity tests in vitro (test tube) and in animals have been negative.

7. **FIRST AID**  
EYES: Irrigate immediately with water for at least 5 minutes.  
SKIN: wash off in flowing water or shower  
INGESTION: Induce vomiting if large amounts are ingested, consult medical  
INHALATION: Remove to fresh air if effects occur. Consult medical.  
NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.
8. **HANDLING PRECAUTIONS:**  
EXPOSURE GUIDELINE (S): Dow IHG is 10mg/m3 for propylene glycol mist. Dow IHG 440 ppm for propylene glycol vapors.  
VENTILATION: Good general ventilation sufficient.  
RESPIRATORY PROTECTION: No respiratory protection should be needed.  
SKIN PROTECTION: No precautions other than clean body covering should be needed.  
EYE PROTECTION: Use safety glasses.

9. **ADDITIONAL INFORMATION:**  
REGULATORY REQUIREMENTS:  
SARA HAZARD CATEGORY: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Section 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: A delayed hazard.  
SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Exercise reasonable care and caution.  
MSDS STATUS: Revised Section 9

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## NOTES