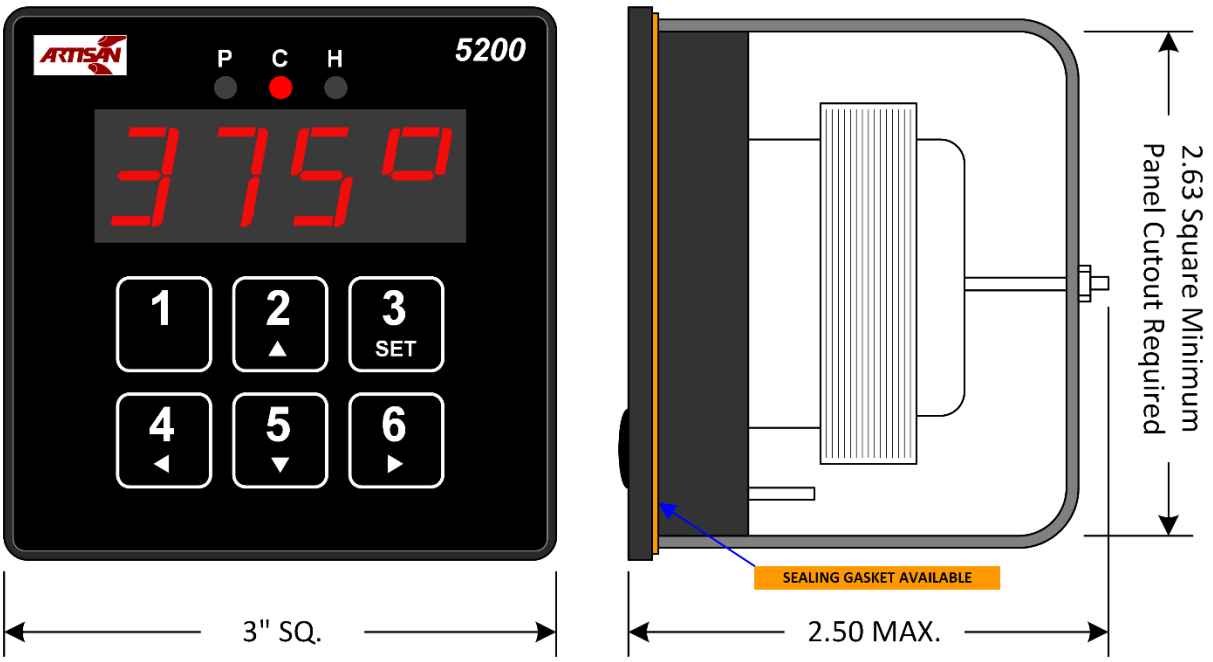
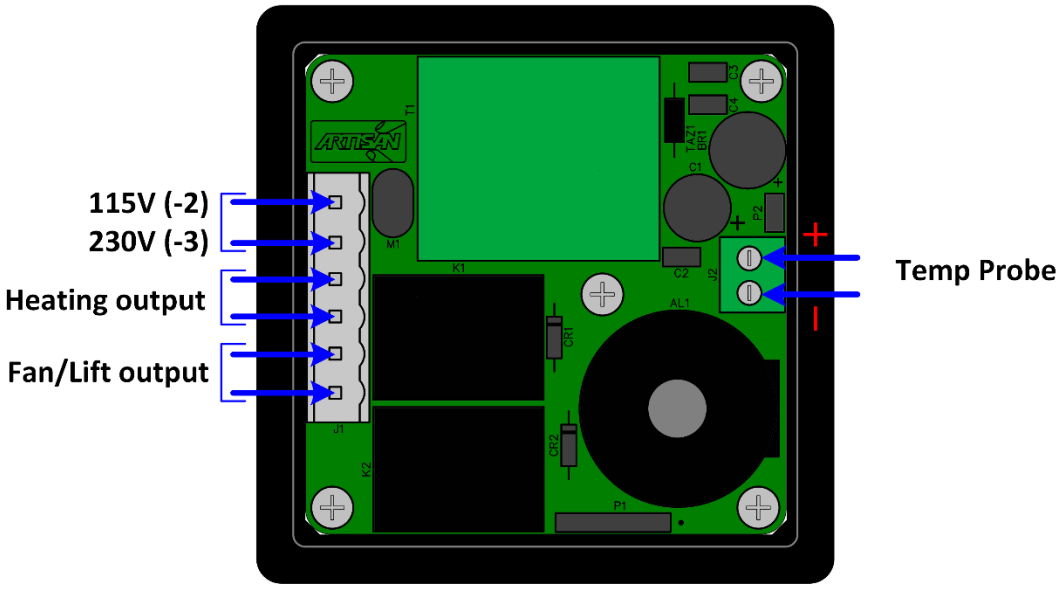

5200
P C H
375
1
2
3
SET
4
5
6
3" SQ.
2.63 Square Minimum
Panel Cutout Required
SEALING GASKET AVAILABLE
2.50 MAX.


115V (-2)
230V (-3)
Heating output
Fan/Lift output
Temp Probe
+
-

CONFIGURATION

The controller must be configured with its basic operating parameters before using. These parameters are the operational mode (cooking or frying), the temperature units, and the control hysteresis. You may also display the current temperature and test the output relays in this configuration mode. To access these parameters press and hold the **[5▼]** button, apply the AC operating power, and then release the **[5▼]** button.

Operating Mode – The controller now displays its basic operating mode as shown in the table below. Use the **[2▲]** and **[5▼]** buttons to change to the desired operating mode. Press the **[3SET]** button to save and advance to the next parameter which is the temperature units.

LED Display	Operating Mode
OP:CF	Cooking controller with fan output on K2 *(default)*
OP:CO	Cooking controller with no fan output
OP:FL	Frying controller with Lift output on K2, 1 sec @ end
OP:Fr	Frying controller with no lift output
OP:FP	Frying controller for pressure, K2 on for fry cycle

Temperature Units – The unit can display temperature in either degrees Fahrenheit or Centigrade. Use the **[2▲]** and **[5▼]** buttons to change to the desired temperature units, **[3SET]** saves and advances to the next parameter which is the temperature control hysteresis.

LED Display	Temperature Units
Un:°F	Temperature in degrees Fahrenheit *(default)*
Un:°C	Temperature in degrees Centigrade

NOTE: If the controller has been configured for either of the cooking modes the Control Hysteresis is the next parameter, these next items configuring the manual melt cycle in frying mode only

Melt Cycle Parameters – The 5200 provides a built in melt cycle for fryers, the configuration items are the heat on time, the heat off time, and the temperature where the controller transitions to standard temperature control. Use the **[2▲]** and **[5▼]** buttons to change to the desired values, **[3SET]** saves and advances to each item and then finally to the temperature control hysteresis.

LED Display	Parameter	Setting
On:08	Heat On Time	Set between 1 and 60 sec *(default = 8 sec)*
OF:15	Heat Off Time	Set between 1 and 60 sec *(default = 15 sec)*
225°	Transition Temp	Set between 150° and 275° *(default = 225°)*

Control Hysteresis – This value is the number of degrees Fahrenheit above and below the setpoint at which the temperature control relay switches. The output relay will be on until the current temperature reaches the current setpoint *plus* the control hysteresis value, and the relay will be off until the temperature drops down to the setpoint *minus* the control hysteresis value. This value can be set anywhere from 3°F to 20°F and is set to the default value of 5°F during the factory testing. Use the **[2▲]** and **[5▼]** buttons to change to the desired value, **[3SET]** advances to the next parameter which is the temperature control hysteresis.

LED Display	Hysteresis Value
Hy:XX	XX = the value in °F from 03 – 20 *(default = 5)*

Temperature Display, Temperature Adjustment & Relay Check – Once you press the **[3SET]** button again the unit displays the current temperature. The following features are available in this mode:

Temperature Offset: The 5200 can apply small temperature adjustments to compensate for probe location within the equipment. Press and release the **[2▲]** button to add 1°F, press and release it again to add another 1°F. Press and release the **[5▼]** button to subtract 1°F, press and release it more to subtract more. The 5200 limits the adjustment to ±10°F.

Relay Check: Pressing and releasing the **[4◀]** button turns relay K1 (heating relay) on. Press and release the **[4◀]** button again to turn it off. Pressing and releasing the **[6▶]** button turns relay K2 (fan/lift relay) on. Press and release the **[6▶]** button again to turn it off.

This mode can be very useful for testing a new piece of equipment by turning the heaters on and watching the temperature rise (and/or current draw) to confirm proper heating operation and then using the fan relay to cool the system down. Press and release the **[3SET]** button and the configuration wraps around back to the Operating Mode display.

Once the configuration is complete turn the 5200 controller off and then back on again to begin using the controller in its configured mode.

COOKING OPERATION

Turn the controller on and the controller displays `OFF` on the LED display. In this state the controller is ready to cook or edit any of the 6 preset recipes.

Cooking a Recipe - To start cooking a recipe, press any one of the six buttons to start the preheat cycle for that recipe. Let's assume that the recipe is to preheat and cook at 375°, cook time is 1h 20m, and we want to hold at 200°.

Preheating: While the oven is reaching the preheat temperature, the **P** LED is lit and the LED display cycles between `PreH` and `375°`. Once the oven has reached the desire preheat temperature the alarm sounds for 5 seconds, the **P** LED starts flashing, and the LED display shows `PreH` and `donE`, press any button and the unit displays `rdY` and is ready to cook.

Cooking: The user put the product to be cooked into the oven and presses any button to start the cook cycle. The controller then displays `c1:20` and `375°`, the **C** LED turns on and the time value starts counting down. Once the time counts down to 0:00 the controller displays `donE`, flashes the **C** LED, and sounds its alarm. If the recipe has a hold temperature (as this one does) the temperature control system changes to the holding temperature, else it turns the heaters off.

Holding: Once the user touches any button the alarm is turned off. If there is a hold temperature the LED display shows `200°` , `0:10` , `hold` and with the hold time increasing until the user presses and holds any button for two seconds to stop the cooking cycle. If there is no hold temperature the controller goes back to the OFF state. The controller can be left in the hold state for up to 24 hours after which it will shut the heat off and return to the OFF state.

NOTE - To stop the cooking cycle at any time press and hold the **[3SET]** button for two seconds until you hear a double chirp.

Editing a Recipe - To enter editing mode press and hold the **[3SET]** button for two seconds until you hear a double chirp, the controller now shows **Edit** on the LED display. Select the recipe to edit by pressing any of the six buttons and the controller loads that recipe into memory and displays the Preheat temperature.

Changing Recipe Values: When the controller shows a recipe value the right-most digit is highlighted (brighter than the other digits). To increase that digit press the **[2▲]** button, to decrease that digit press the **[5▼]** button. To move the highlight to the other digits use the **[4◀]** and **[6▶]** buttons accordingly. Once the value is set properly press the **[3SET]** button to save that value and advance to the next recipe item.

During the editing of the four recipe values, the associated LED above the display will be lit, **P** for the preheat temperature, **C** for the cooking temperature and time, and **H** for the holding temperature.

Once the holding temperature is set press and hold the **[3SET]** button for two seconds and the recipe is saved and the LED display goes back to showing **Set** and is ready to edit another recipe. This can also be done at any point in the editing sequence, say after the cook temperature is changed pressing and holding the **[3SET]** button saves the recipe and returns to the Set mode.

NOTE – Setting either the Preheat or Hold temperatures below 150 (display will show **OFF**) disables that part of the cooking recipe.

FRYING OPERATION

Turn the controller on and it starts the Melt Cycle. If the oil temperature is above the preset transition temperature the controller proceeds to the Heat Up Cycle.

Melt Cycle: During a melt cycle the LED display cycles between **MLt** and the current oil temperature, ie: **175°**. Once the temperature reaches the preset transition temperature the controller then starts the heat up cycle which brings the oil temperature up to its preset temperature.

Heat Up Cycle: During this cycle the controller LED display cycles between **HEAt** and the current oil temperature **243°**. The temperature control is now controlling the heat output to get to the preset frying temperature. Once the oil temperature is above 5°F below preset frying temperature the controller beeps for 5 seconds and the LED displays **HEAt** and **donE** and also chirps every 5 seconds to tell the operators that the fryer is ready to use. Press any button and the controller is ready to start frying and displays **rdY**.

Once the controller has the oil up to temperature the operator can either run a frying cycle or edit the frying temperature and the frying times associated with the six buttons. You can also view the current oil temperature by pressing and holding the **[1]** and **[6]** buttons. Release both buttons and the display returns to the ready display.

Editing:

To enter editing mode press and hold the **[3SET]** button for two seconds until the controller emits a double chirp, then the controller first displays the frying temperature.

To change the temperature use the **[2▲]** button to increase the highlighted digit value, to decrease that digit press the **[5▼]** button. To move the highlight to the other digits use the **[4◀]** and **[6▶]** buttons accordingly. Once the temperature is set properly press the **[3SET]** button to save it and advance to the time cycle editing.

Once the **[3SET]** button is pressed and released the controller displays **Edit**. To view or edit the time associated with any of the six buttons simply press and release that button and the time is displayed. The time value is adjusted in the same manner as the oil temperature: use the **[2▲]** button to increase the highlighted digit value, to decrease that digit press the **[5▼]** button. To move the highlight to the other digits use the **[4◀]** and **[6▶]** buttons accordingly. Once the time value is set press the **[3SET]** button and the display returns to displaying **Edit**. Once the values are all set properly press and hold the **[3SET]** button for 2 seconds until the controller chirps twice and release the button, the controller is now back to ready mode displaying **rdY**.

Frying:

To start one of the six frying cycle place the product into the fryer and simply press the button for the desired cycle time, the controller displays that time and start counting down. If the frying mode is set to frying with a lift output the K2 relay energizes when the cycle starts.

At any time during the frying cycle the cycle can be paused by pressing and releasing the **[3SET]** button. When the cycle is paused the time display is frozen at the current time and starts flashing. To continue the frying cycle simply press and release the **[3SET]** button again and the fry cycle continues, to clear the paused frying cycle and return to ready mode press and hold the **[3SET]** button for two seconds until you hear a double chirp.

When the frying cycle time counts down to 0 the controller displays **done** and beeps for 5 seconds. At any time the operator can touch any key to return to the ready state. If the frying mode is set to use the lift output the K2 relay turns off once any key is touched.

OTHER FEATURES:

Boil Out: This controller provides a special mode for cleaning the pot with water and additive chemicals, it is accessible within either the Melt Cycle, Heat Up Cycle, or when ready to fry. Press and hold the **[4◀]** button for two seconds until the double chirp and the controller enters the boil out mode. The temperature control is set to hold the water at 190°F, and the controller displays **boil** and the elapsed time in minutes and seconds. Pressing and releasing the **[5▼]** button resets the elapsed time to 0:00. You can also view the current oil temperature by pressing and holding the **[1]** and **[6]** buttons. To exit boil out mode press and hold the **[4◀]** button for two seconds until the double chirp and the controller returns to normal operation.

Firmware Version: To view the firmware version, press and hold the **[4◀]** button and turn the controller on. It displays its version number (in this case it would be **1.34**), release the button and the controller continues on to normal operation.

History Log: The 5200 controller maintains a log of all important controller events such as temperature calibration, configuration change, and so forth. To access the history log press and hold the **[6▶]** button and power the controller up and it displays the most recent event in the log.

The table below lists all the history events and their associated displays. Use the up and down arrows to move through the list of events, `----` is displayed once there are no more events to display. Turn the controller off and back on to return to normal operation

History Log Items:

LED Display	Description
FrSt	Factory Reset
tCAL	Temperature input calibration
SCfg	System configuration change
Prob	Temperature probe error
HtLO	System not heating (heat low)
HtHI	System overheating (heat high)
rdEE	Error reading non-volatile memory
nrSt	Noise reset (electrical interference)

Default Recipes and Limits for Cooking & Frying:

The controller has built-in default recipes for both cooking and frying, and the temperature setting limits are different between the two modes. When configuring the controller and you change the mode from either cook mode to either fry mode (or vice versa) the default recipes are written to the non-volatile memory.

Default Cooking Recipe: Preheat to 350°F, cook at 350°F for 1 hour and 20 minutes (1:20), hold at 150°F
Default Frying Recipe: Set for 13 minutes and 0 seconds (13:00), default oil temp is 325°F

The upper temperature limit is 375°F in frying mode and 400°F in cooking mode.

Temperature Control Differences:

The temperature control method for cooking and frying are different, the cooking control is standard thermostatic control with hysteresis, the heat is on until the temperature reaches the setpoint plus the hysteresis value where it is turned off, once the temperature reaches the setpoint minus the hysteresis value the heat is turned back on.

In frying mode the heat is turned on until the temperature reaches the setpoint *minus* the hysteresis value, then it is turned off and a timer is started. If the temperature does not reach the setpoint within 30 seconds the heat is turned on again until it does reach the setpoint and then turned off. Once the temperature drops down to the setpoint minus the hysteresis value the heat is turned back on.