

XYZ Corp.
Fry Controller FC-1234
Initial Operating Specification

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Interface

Displays: Time, Temperature, Auto Compensation On/Off, Heater On/Off, and Valve Open/Closed.

User keypad inputs: Numeric keypad, Select (✓), Cancel (×).

Additional inputs: Start switch, temperature reading, ambient sensor fail, probe over temp.

Output: Heater.

Nine presets are stored in memory for quick recall. Factory default for all presets is 270F, 1:00, auto compensation off.

Idle

On power-up, the heater becomes active and regulates to the currently selected preset's temperature, and the heater LED lights whenever the heater is active.

If the current temperature is too hot or too cold compared to the current preset, the display shows the 'Hot' or 'CoLd' and the current temperature.

If the current temperature is within regulating range, the display shows 'PrE# rdy', where # is the preset number 1-9.

Cooking Cycle

Close the Start switch to begin a cooking cycle with the current preset, even if the temperature is not yet ready.

The valve LED turns on to indicate that the fryer is closed and cooking.

The timer counts down, and is adjusted according to temperature if auto compensation is selected in the current preset.

All keypad keys are disabled.

Cooking continues so long as the Start switch is closed. When time is complete, food continues to cook but the timer flashes 00:00 and sounds the speaker.

When the Start switch is opened, counter is incremented by one, wrapping 99 to 1, and the unit returns to the Idle state.

Viewing the Current Preset

Press the Select key to display the time, temperature, and auto compensation settings for the currently selected preset. The unit returns to Idle after five seconds. Press either Select or Cancel during the five seconds to instantly return the unit to Idle.

Viewing Other Presets

Press a # key from 1-9 to display that preset's settings for five seconds. Press another # key from 1-9 to display a different preset. After five seconds, the unit returns to Idle. Press Select or Cancel to instantly return the unit to Idle.

Editing a Preset

1. Hold a # key from 1-9 for five seconds. The speaker beeps and begins to edit that preset.
2. The display flashes the current time for this preset. Press Select to keep this time, Cancel to exit with no changes, or enter a new time, and then press Select to accept the new time, or Cancel to exit with no changes.
3. The display flashes the current temperature for this preset. As above, enter a new temperature with Select, or use Cancel to quit with no changes.
4. The display flashes 'Auto On' or 'Auto OFF'. Press Select to accept, Cancel to quit, or press any # key to toggle On/OFF. Finally, Select to accept the new value, or X to quit.
5. The display flashes all final values at once. Press Select to accept, or Cancel to quit with no changes.

At any time during editing, if the Start switch is closed, the unit immediately goes into Cooking mode using the previous values.

Clearing the Counter

Hold the Cancel button for five seconds to clear the counter. The counter is reset to 00.

Factory Temperature Adjustment

A small adjustment may be made to calibrate the probe's readings to an external measurement.

1. Hold the 0 key for ten seconds.
2. The display shows 'OFF Set'.
3. Press Cancel to quit without changes.
4. Press Select.
5. The unit displays the current temperature.
6. Enter the new temperature.
7. Press Select to accept the new temperature, Cancel to quit without changes.

If 25 seconds pass without the Select key being pressed, the entry is cancelled and the unit returns to Idle without changes.

Error Displays

On error, the heater and Heater LED turn off and the speaker sounds an alarm.

The Valve LED echos the Start input.

Cooking cycles cannot be started.

The Time display flashes a message, and the Temp display flashes a code:

ChEc	11	After three minutes, less than 6F rise.
ChEc	12	After three minutes, failed to pass 250F.
FaiL	21	Temp change more than 100F in 2 seconds.
FaiL	22	Ambient circuit error input.
FaiL	23	Temp circuit limit error input.
hiGh	31	Temp > 415F.
Prob	41	Temp > 500F.
Prob	42	Probe circuit: 0 freq input.
Prob	43	Probe cold: after three minutes, less than 45F.

Check tests initiate at power up or after preset change.

Error Log

To view the log of up to 9 of the most recent errors:

1. Hold the select button for 10 seconds.
2. The display shows the error message, the count shows 01, the most recent error.
3. If no error for this entry, the display shows 'No Err'.
4. A # key selects other error log entries, 1-9.
5. The Cancel key returns the unit back to Idle.
6. Hold the 0 key for five seconds to clear the error log, returning back to entry 01 which will now show 'No Err'.