

DigiQ DX2 USER'S GUIDE Rev. 1.04 for Ver. 9.0 Firmware

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1. SAFETY WARNINGS

INSTALLATION/SAFETY INFORMATION: READ AND UNDERSTAND THIS USER'S GUIDE COMPLETELY BEFORE INSTALLING OR USING THIS PRODUCT!!

WARNING: FIRE HAZARD, BURN HAZARD!! Even quality electronics can fail CAUSING THE BLOWER TO RUN CONSTANTLY, RESULTING IN EXCESSIVE TEMPERATURES! Power Draft Blowers can get the pit temperature higher than natural draft. Use extra caution in opening the pit and determining blower

placement. Always inspect the probe wires for damage which can cause the blower to run constantly causing the pit to become excessively hot.

WARNING: FIRE HAZARD, BURN HAZARD!! FLAMES, SPARKS, AND LIT EMBERS CAN EXIT ANY OPENING ON THE PIT CAUSING FIRE!! Keep the pit located a safe distance away from flammable objects including buildings, walls, solvents, cars, fuel, wood piles, furniture, etc. and use caution when opening the pit. An ember that has fallen or is ejected from the pit can be blown by a light wind into a garage or other structure, debris field, woods, or grass field and cause fire. Have a fire extinguisher and water supply available near the pit. If the pit is used on a wooden or combustible surface such as a wooden deck, place the cooker on a non-flammable pad intended for this purpose.

WARNING: FIRE HAZARD, BURN HAZARD!! Even quality electronics can fail and cause the temperature to read incorrectly. Use a redundant dial thermometer as a backup temperature sensor to verify the control's reading of the pit temperature.

WARNING: SMOKE CAN COMBUST WHEN OXYGEN IS INTRODUCED AND PRODUCE SEVERE BURNS!! ALWAYS USE CAUTION WHEN OPENING THE LID OR DOOR OF THE PIT.

WARNING: KEEP YOUR CONTROL DRY!! Allowing the control to get wet can cause damage to its electronics and/or make it operate incorrectly, causing a hazardous condition.

WARNING: PIT FIRES CAN OCCUR WHEN LIQUIDS ARE SPILLED OR WHEN SURFACES INSIDE THE COOKER REACH THE IGNITION TEMPERATURE OF FATS!! Never pour or toss water directly into a fat fire. Reduce the temperature by cooling the fire in the firebox with a water spray. Close the cooking chamber door and the firebox while it is steaming to smother the fire. Repeat this procedure as necessary to get the pit fire under control.

NOTE: Pit fires can be largely avoided if the pit is kept clean and free from fat buildup during or between cooks. Changing drip trays during a cook cycle helps keep flammable fats in the pit to a minimum. Keep cooking temperatures low enough to avoid ignition.

WARNING: THERE ARE HOT SURFACES ON ALL PARTS OF THE COOKER BEFORE, DURING, AND AFTER COOKING!! Wear protective clothing when tending the pit, attempting to extinguish a fire, or dumping a firebox in a proper ash receptacle. Be ready to call your local fire company in the case of an emergency situation.

CAUTION: Fire danger is always present even in the best conditions. Continuously perform safety precaution procedures.

WARNING: SHOCK HAZARD, HIGH VOLTAGE!! The power supply for this product is plugged into a 120 or 240 VAC Mains. THIS VOLTAGE CAN CAUSE INJURY OR DEATH. KEEP THE POWER SUPPLY AWAY FROM WATER AND OFF OF THE GROUND. NEVER TOUCH THE POWER SUPPLY IF IT GETS WET.

2. LIMITED WARRANTY

THE BBQ GURU warrants this product to be free from defect in workmanship and materials for a period of 90 days from the date of purchase.

Should the unit malfunction, return it to the factory. If defective, it will be repaired or replaced at no cost.

There are no user serviceable parts on this unit. This warranty is void if the unit shows evidence of tampering or being subjected to moisture, excessive heat, corrosion, or other misuse.

Components which wear or damage with misuse are excluded.

THE BBQ GURU shall not be responsible for any damage or losses, however caused, which may be experienced as a result of the installation or use of this product. THE BBQ GURU's liability for any breach of this agreement shall not exceed the purchase price paid E. & E.O.

3. DIGIQ FEATURES

- Digital high intensity "Blaze Red" LED display
- Rugged, armored high-temperature pit and food probes
- Controls the pit and monitors the food temperature
- Full-time adaptive control algorithm learns the pit for better stability and accuracy
- Open lid detect senses when the pit's lid is open to minimize temperature disturbance
- Exclusive low and slow Ramp mode lowers the pit temperature as food temperatures approach the done setpoint so the food never overcooks
- Scrolling display messages to indicate status and what has been selected
- Audible alarm option to sound for food done
- Adjustable deviation alarm sounds when the pit's temperature goes too high or too low by a settable value
- Adjustable beeper intensity setting
- Displays in degrees F or C
- 32 to 475 degrees F range with +/- 2 degree F accuracy
- Runs on 100-240VAC (for worldwide use) or 12VDC for automotive supply use

4. PROBES

The probes provided with the DigiQ are rugged, stainless steel precision thermocouples. These are not low cost thermistors like inexpensive monitors. The thermocouple wires have an armor braid with moisture and smoke resistant Teflon insulation that is rated for temperatures up to 500 degrees F. The probes can pass under the lid of the pit or through a small opening without creating a large gap which would allow excess air to get in.

Do not kink the wires or let them come in contact with flames. Store them neatly rolled. The probes are user-replaceable and are available at www.thebbqguru.com. It is recommended that a spare set of probes is kept in case of unforeseen emergencies.

NOTE: Fully insert the probes into the control. Push the plug into the connection securely until it snaps in place. If the probes are not plugged in securely, sporadic temperature readings may occur and the DigiQ will not control the pit accurately. The temperature may also read low causing the pit to get excessively hot.

NOTE: The pit probe must be placed in the pit for proper temperature regulation. If the pit probe is not located in the pit, it can cause the blower to run constantly, making the pit excessively hot.

4.1. FOOD PROBE

If the food probe will not be used, it should be unplugged before applying power to the DigiQ, not during operation. This will allow the DigiQ time to configure its alarm operation to prevent false food alarms. The food probe can also be left plugged in, but not inserted into the food.

5. POWER DRAFT BLOWERS

All blowers are equipped with an adjustable damper and an aluminum nozzle. The blower housing is constructed of stainless steel for a clean, durable, and long lasting finish.

5.1. BLOWER DAMPER ADJUSTMENT

The adjustable damper can be completely closed to kill the fire or can be adjusted to a small opening for cold smoking. This feature allows fine adjustments to be made due to natural drafts that effect cooking temperature during the blower's off cycle. Testing on different settings is recommended. Open the damper fully for quick start up or grilling at high temperatures. Close half way for smaller cookers or low and slow cooking. Close three-quarters of the way for cold smoking.

6. KEY OPERATION

FOOD – shows the food temperature when pressed

PIT – shows the pit temperature when pressed

UP – indexes the setpoint up

DOWN – indexes the setpoint down

FOOD + PIT – powers the unit on or off when both buttons are held

UP + DOWN – enters the setup menu when both buttons are held

PIT + UP – invokes the Scan Mode

PIT + DOWN – invokes the Diagnostic Mode

6.1. KEY PRESS CHIRP

When the beeper intensity is set to above 0, any key press will cause an acknowledge chirp. Setting the Beeper Intensity in the menu to 0 will disable the chirp.

6.2. SILENCING THE BEEPER WITH ANY KEY PRESS

Any time the beeper is sounding, press any key to silence it and clear the alarm condition. To turn the beeper off, set the Beeper Intensity in the menu to 0.

7. POWERING UP

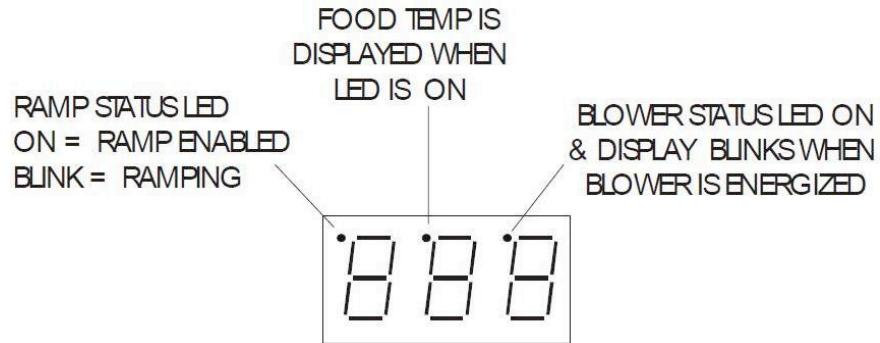
Upon applying power, the DigiQ will show  to test the display and then shows the version number.

7.1. POWER INTERRUPTION RECOVERY FEATURE WITH INTERNAL MEMORY

If there is a brief or sustained power interruption at any time while cooking, the DigiQ will automatically restart and continue to control the pit at the same settings that were originally set.

8. THE DISPLAY

The DigiQ's three digit LED display has three status indicators.



8.1. BLOWER STATUS INDICATOR

The Blower Status Indicator and Blower Display Warble will help determine how the fire is being controlled. When there is sufficient fuel in the pit, the blower will gently puff the fire, feeding it little bursts of oxygen. When the blower is energized, the display will blink about once per second (blower warble) and the blower status indicator will turn on. When the pit starts to run out of fuel, the blower will run almost all of the time.

8.1.1. DETERMINING THE OUTPUT PERCENTAGE FROM THE BLOWER WARBLE

The Blower Warble is designed so that the output percentage of the blower can be determined by counting how many display blinks (warbles) occur in a given cycle as per the table below:

Blink Pattern	Output %
None	0
...(1 Blink) → (Pause) → (1 Blink) → (Pause)...	10
...(2 Blinks) → (Pause) → (2 Blinks) → (Pause)...	20
...(3 Blinks) → (Pause) → (3 Blinks) → (Pause)...	30
...(4 Blinks) → (Pause) → (4 Blinks) → (Pause)...	40
...(5 Blinks) → (Pause) → (5 Blinks) → (Pause)...	50
...(6 Blinks) → (Pause) → (6 Blinks) → (Pause)...	60
...(7 Blinks) → (Pause) → (7 Blinks) → (Pause)...	70
...(8 Blinks) → (Pause) → (8 Blinks) → (Pause)...	80
...(9 Blinks) → (Pause) → (9 Blinks) → (Pause)...	90
Continuously Blinking	100

TIP: If the output percentage is around 80-100% for a long time, the pit may be running out of charcoal. If the output percentage is around 10% for a long time and the temperature is oscillating, close the blower damper adjustment slightly for better control.

8.2. FOOD DONE MESSAGE

When the food temperature reaches or exceeds the food setpoint, the display will scroll and the beeper will sound.



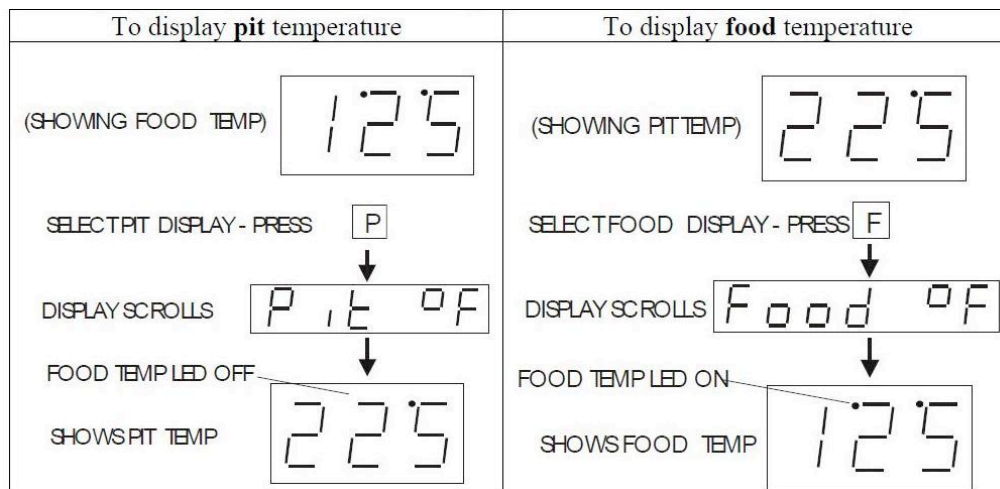
8.3. OVER/UNDER RANGE TEMPERATURE

If the temperature goes below 32 or above 485 degrees F on the food or pit probe, the display will show



8.4. FOOD OR PIT TEMPERATURE DISPLAYS

The DigiQ can display either the food or pit temperature. The default is pit.



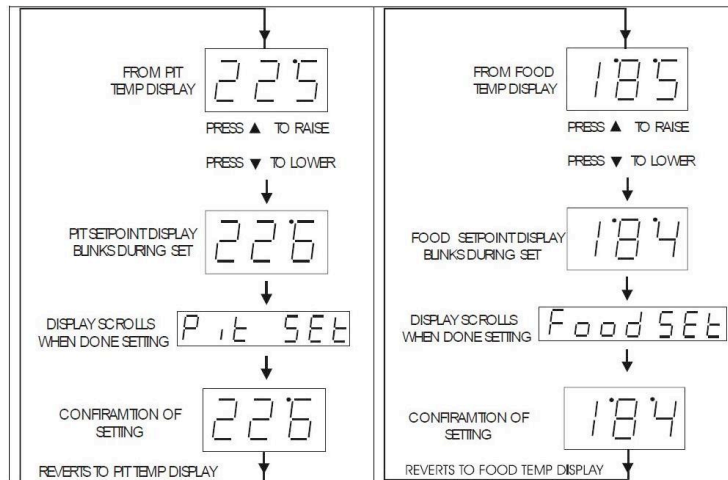
8.5. SCAN MODE

Pressing PIT + UP invokes the Scan Mode. In the Scan Mode, the display will flash between the pit temperature and the food temperature about every four seconds. To turn the scan mode off, unplug power. If an alarm occurs during scanning, the display will show the temperature causing the alarm condition until the alarm condition goes away or is acknowledged by pressing any key. Pressing the UP or DOWN keys will change the setpoint of the temperature that is shown on the display.

9. SETTING THE SETPOINTS

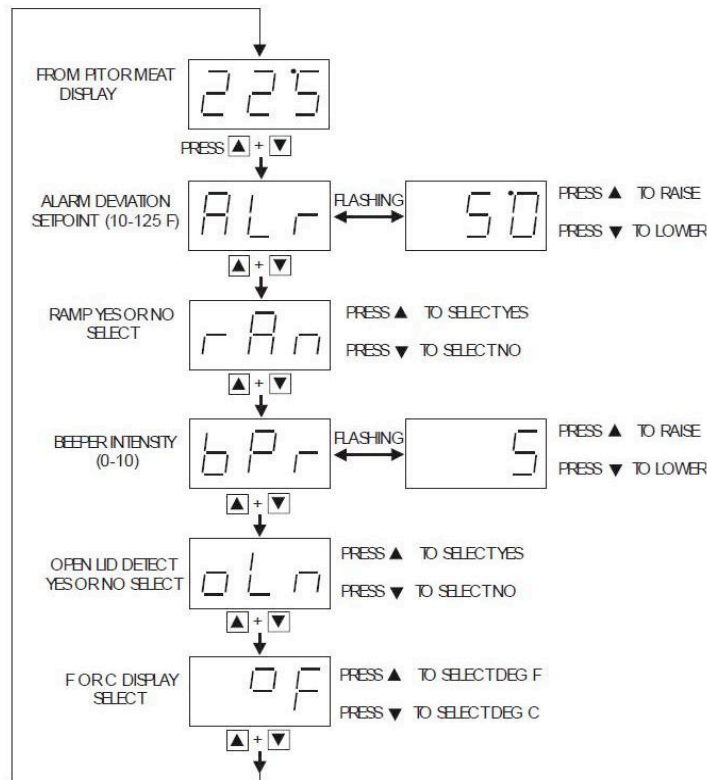
To display the pit setpoint temperature, tap the UP or DOWN key while displaying the pit temperature. To set the pit setpoint simply press the UP or DOWN key.

To display the food setpoint temperature, tap the UP or DOWN key while displaying the pit temperature. To set the food setpoint simply press the UP or DOWN key.



10. SETUP MENU

Press the UP & DOWN keys simultaneously to enter the setup menu. The screens below are shown in the order they appear as the UP + DOWN keys are pressed again. When the F/C select is reached and the UP + DOWN keys are pressed again, the setup menu loops, so the pit temperature will be displayed again.

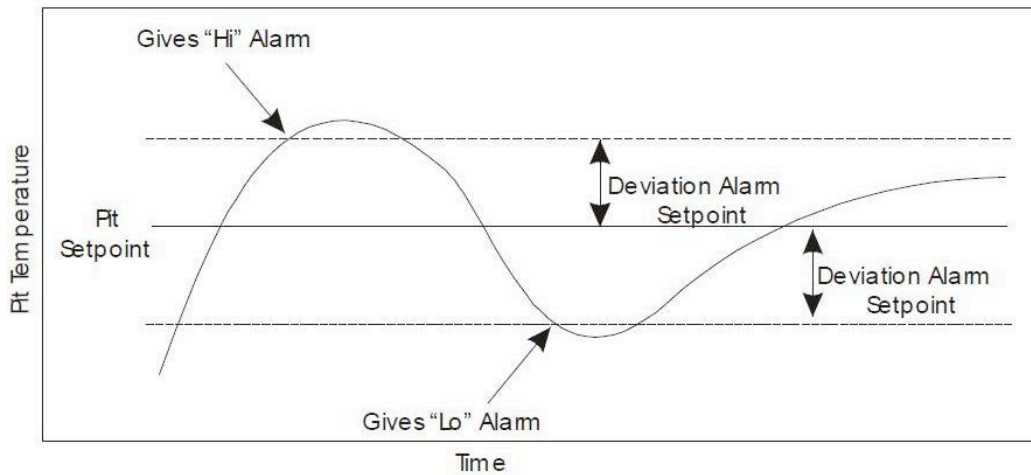


10.1. ALARM DEVIATION SETPOINT

If the temperature of the pit deviates above the setpoint by the alarm deviation setpoint, the alarm will sound and the display will blink H I. If the temperature of the pit deviates below the setpoint by the alarm deviation setpoint, the alarm will sound and the display will blink L O.

The alarm will not sound when the control is first powered up and the pit is cold. The alarm is only allowed once the temperature gets close to the pit temperature setpoint. The alarm deviation is settable from 20 to 125 degrees F and the factory default is 50 degree F.

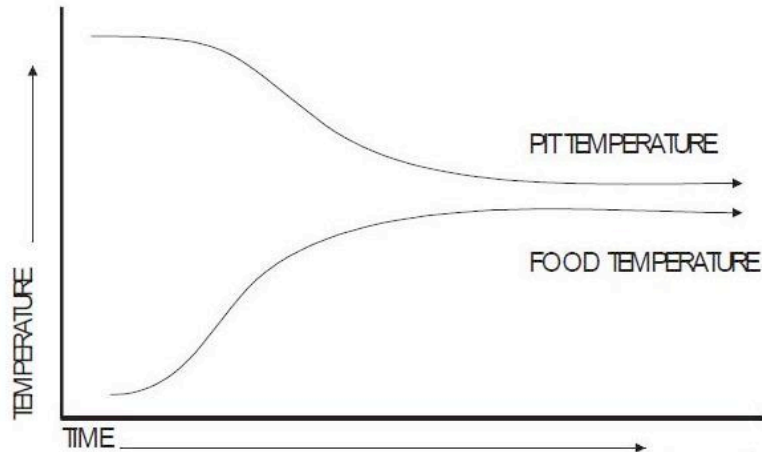
If the ramp feature is turned on and the pit is actively ramping, the only time that the low alarm will become active is if the pit temperature drops 20 degrees below the food setpoint temperature.



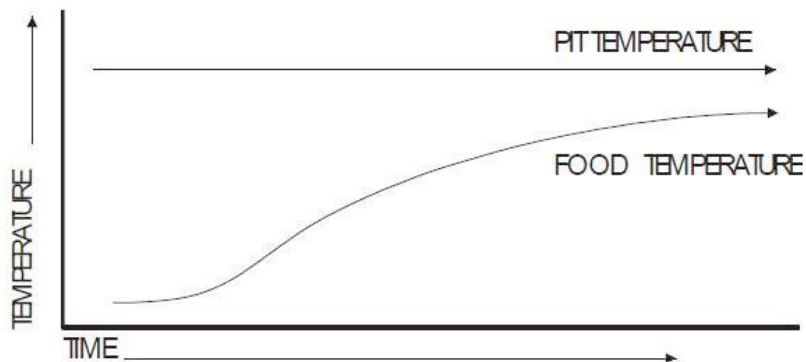
10.2. RAMP

When the ramp is set to r A Y (ramp yes), the low and slow ramp mode is enabled. This mode is used for slow cooks so the food never overcooks. This feature will gradually lower the pit temperature to the food setpoint temperature when the food is within 30 degrees of being done. The controller will hold the pit temperature slightly above the food setpoint as long as there is fuel.

The factory default setting is r A N (ramp no), so ramp must be enabled to use it. Note: when using this feature, the pit temperature can be started higher than normal to reduce cook time and not overcook the food. If the food probe is not plugged in and the ramp mode is turned on, the ramp LED will be on but no ramping will take place.



Food /Pit plot with Ramp Set to Yes rAy



Food /Pit plot with Ramp Set to No rAn

10.3. BEEPER INTENSITY

bPr

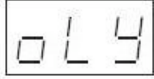
The beeper intensity can be adjusted from 0-10. 0 is off, 1 is a small, infrequent chirp and a 10 is a frequent, loud beep. The factory default is 4. If you have multiple pits, this feature is useful for distinguishing one pit from another, by giving each one a unique beep duration.

10.4. OPEN LID DETECT

This feature will allow quick recovery to the setpoint temperature after the lid is opened. When the

open lid is set to oLy (open lid yes), open lid detect is enabled. When the lid is opened, the temperature will drop. This can cause the blower to over-fire the coals and cause overshoot when the lid is shut. This mode detects when the pit's lid is open and minimizes the blower running during that time. Some overshoot will always be present when the pit's lid is opened and closed even if the blower

is off, because it still introduces oxygen to the fire. The factory default is oLy, so disable this feature if there are problems with excess air currents in the pit. To disable this feature, set it to



(open lid no). To prevent false alarms, the alarm will not sound when the temperature drops and the lid is open.

10.4.1. OPEN LID DETECT – OVERSHOOT ELIMINATOR

When the open lid detect is enabled, the rate that the temperature rises in the pit will be limited, preventing over-firing. This will make a typical startup to a temperature of 250 degrees F take a minimum of 20 minutes and will help to eliminate startup overshoot.

11. ADAPTIVE CONTROL STRATEGY

The DigiQ's Adaptive Control Strategy is designed to operate with a wide variety of pits by continually learning what the pit is doing and adapting to many factors such as outside air temperature, amount of charcoal, damper settings, etc. For the DigiQ to work properly and determine how to adapt, the temperature inside the pit cannot oscillate up and down and the lid must stay closed. If the lid is opened often, especially on startup, the control cannot be expected to maintain setpoint. If the lid is left closed for approximately 10-20 minutes, the temperature will become stable after the control adapts. If the lid has been shut for at least 20-30 minutes and the temperature is going up and down significantly (+/- 10 degrees or more), the fan damper needs to be closed more. The pit may run a few degrees high or low due to various conditions but the control will bring it back to the setpoint. Pit temperatures of 20 degrees high or low rarely have an effect on the quality of food.

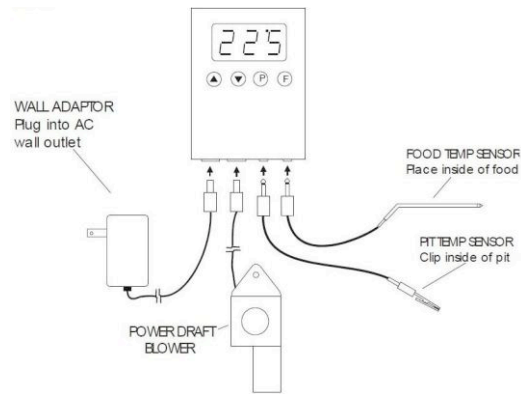
11.1. DIAGNOSTICS

Air currents in your grill or smoker can make a sensitive and accurate instrument like the DigiQ read actual temperatures rapidly (ie: 223, 224, 223, 225, 224, 226, etc. when the pit temperature is set to 225°F). The DigiQ control is programmed to snap to the pit set point temperature when the pit is within +/- 5 degrees of the temperature set. When Diagnostics Mode is invoked by pressing the DOWN + PIT keys simultaneously, the user can see a more sensitive display of the actual temperature. When a calculation is made by the control, a chirp will be heard. (This is used by our technical support team for troubleshooting purposes).

To exit diagnostic mode, unplug power. If the pit temperature is running consistently more than 10 degrees high or low, try booting the DigiQ down by holding the PIT + FOOD keys or unplugging power.

12. CONNECTIONS

From left to right: Power Input, Blower Output, Food Probe, Pit Probe, per the diagram below.



13. BUILDING A PROPER FIRE

Stack the charcoal inside the pit so it's shaped like a pyramid, small at the top and large at the bottom. Light the fire by lighting a few coals at the top. Do not over-fire the charcoal or light it at the bottom, because it could cause startup overshoot and over firing.

13.1. ELIMINATING LARGE FLUCTUATIONS IN THE PIT TEMPERATURE

Normally the DigiQ will be able to adjust the airflow via the blower to deliver precise control and no damper adjustment will be required. If the pit has become over-fired or if the fire was built too big, large temperature swings (+/- 10 degrees or more) may occur. To eliminate this, restrict the airflow by adjusting the blower damper. Try closing the damper to half the current setting and the pit should stabilize within 10-15 minutes after adjustment.

13.2. EXTINGUISHING THE PIT

If there is fuel left over from the cook, save this fuel by closing off any open dampers, removing the blower, and plugging the inducer sleeve opening with a kill plug. This will put the fire out in approximately 30-45 minutes.

14. CALIBRATION

The DigiQ is already calibrated from the factory and should not require recalibration. The following calibration procedure is included if the DigiQ were to require it. This procedure relies on the accurate phase change temperatures of water at the freezing (32 degrees F) and the boiling (212 degrees F) points.

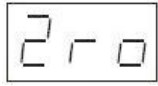
Materials:

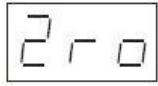
- ice (crushed is best)
- water
- 2 Styrofoam cups
- DigiQ control
- DigiQ food probe
- DigiQ power supply

Plug the food probe and power supply connector into the DigiQ but do not apply power.

14.1. CALIBRATING THE ZERO (low end temperature)

Press and hold UP + DOWN and apply electrical power. After approximately one second, the unit will chirp. Let go of the keys.

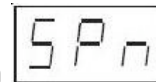


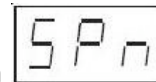
The display will flash between  and the temperature of the food probe. Let the DigiQ warm up for about 15-20 minutes before proceeding.

Fill one of the Styrofoam cups with an ice/water slurry using 75% ice and 25% water. Place the food probe into the bottom of the cup and stir it using the probe. Adjust the value shown on the display to show 33 degrees F using the UP or DOWN key.

NOTE: The display will only update every 3 seconds, so if the value needs to be raised by 2, press the UP key twice which will make 2 beeps.

14.2. CALIBRATING THE SPAN (high end temperature)



Press and hold the UP + DOWN keys until a beep sounds. The screen will flash between  and the temperature of the food probe.

Fill the second cup with boiling water. Place the food probe into the bottom of the cup and stir it around gently. Adjust the value shown on the display to show 211 degrees F using the UP or DOWN key.

14.3 SAVING THE CALIBRATION VALUES

To save the calibration, press and hold PIT + FOOD. This will power the unit down and save the calibration to memory.

15. CONTACT THE BBQ GURU

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