

5 Troubleshooting

5.1 Diagnostic Codes and Remedies

Before You Call For Service Troubleshooting Tips Save time and money! Review the charts on the following pages first and you may not need to call for service.

This water heater incorporates a variety of shut off devices that prevents the operation of the water heater down if undesirable combustion conditions occur. Such as the presence of a blockage of the combustion air vent insufficient gas or pressure which can impact the safe operation of the water heater. Please contact a Qualified Service Technician if this occurs. When the water heater fails, the display shows the fault code, and a buzzer sounds continuously. Please follow the table below.

Error Code	Possible Cause	Fault Handling
When the system is turned on or working, the wired controller displays code "EO", and the buzzer alarms the fault.	1. The outlet water temperature sensor connector is loose or has poor contact. 2. The outlet water temperature sensor is damaged (open circuit, short circuit or metal parts).	1. Clamp the outlet water temperature sensor terminal. 2. Replace the water temperature sensor.
When the system is turned on the working or the working, the displays code "E1" and the buzzer alarms the fault.	1. The gas valve is not open. 2. The gas supply pressure or gas composition is abnormal, causing accidental flameout. 3. The igniter, ignition needle is damaged or the line is faulty. 4. Damage to the flame induction needle or wire failure. 5. The combustion system (burner, nozzle, air control panel, proportional valve, sectional valve) is damaged, the specifications are inconsistent or the wiring is wrong, resulting in abnormal combustion. 6. The control program or parameter settings are incorrect, resulting in unstable combustion. 7. The fan speed is abnormal, resulting in unstable combustion.	1. Open the gas valve to ensure that the water heater can get normal gas supply. 2. Confirm that the gas type and pressure meet the requirements of the water heater. 3. Check if the igniter, ignition pin and circuit are damaged, and replace the damaged parts. 4. Check if the flame induction needle is damaged and replace the damaged parts. 5. Check if the combustion system is damaged, if the wiring is wrong, and replace the damaged parts. 6. Check whether the program and parameters meet the values in the parameter table. 7. The wind speed of the fan is abnormal. Check whether the program and parameters meet the values in the parameter table.
When the system is turned on, the wired controller displays code "E2" and the buzzer alarms the fault.	1. The feedback pin is bent and in contact with other metal parts. 2. The feedback pin plug-in terminal is loose and hits the metal part. 3. Feedback pin wire is broken.	1. Replace the ignition feedback needle assembly. 2. Plug the feedback pin terminal correctly and firmly into the feedback pin. 3. Check if the wire is disconnected and replace the wire.

Error Code	Possible Cause	Fault Handling
When the system is turned on or working, the wired controller displays code "E3" and the buzzer alarms the fault.	1. The thermostat opens or the wire is faulty. 2. The gas supply pressure or gas composition does not match, causing abnormal combustion. 3. The control program or parameter settings are incorrect, resulting in abnormal requirements combustion. 4. The combustion system is damaged or the specifications are inconsistent, resulting in abnormal combustion.	1. Check the temperature controller or circuit and replace the damaged parts. 2. Confirm that the gas type and pressure meet the requirements of the water heater. 3. Check whether the program and parameters meet the values of the parameter table. 4. Check the combustion system for damage and replace damaged parts.
When the system is turned on or working, the wired controller displays code "E4" and the buzzer alarms the fault.	1. The inlet water temperature sensor connector is loose or has poor contact. 2. The inlet water temperature sensor is damaged (open circuit, short circuit or metal parts).	1. Clamp the water temperature sensor terminal. 2. Replace the water temperature sensor.
When the system is turned on or working, the wired controller displays code "E5" and the buzzer alarms the fault.	1. The fan signal is not detected or the speed is too low in the system startup 5S. 2. During operation, the fan speed is not detected for 2S consecutively, or the speed is too low. 3. The power supply voltage is too low, causing the fan speed to slow down.	1. The fan assembly, controller damage or line failure, causing the fan not to run or the speed is too low, check the fan, the main controller is damaged, the wiring is damaged, loose, replace the damaged parts. 2. Confirm whether the power supply and fan voltage meet the design requirements.
During the system working process, the wired controller displays code "E6" and the buzzer alarms the fault.	1. The gas supply pressure or gas composition does not match, causing abnormal combustion. 2. The control program or parameter settings are incorrect, resulting in abnormal combustion. 3. The water temperature sensor specifications do not match, the display temperature is much higher than the actual temperature. 4. The combustion system is damaged or the specifications are inconsistent, resulting in abnormal combustion. 5. The heat exchanger fins of the heat exchanger are poorly welded, and the heat transfer is slow. After the water valve is closed, the water in the tube is continuously heated.	1. Confirm that the gas type and pressure meet the requirements of the water heater. 2. Check whether the program and parameters meet the values of the parameter table. 3. Test whether the actual water outlet temperature and the wired controller display temperature are close($\pm 3^{\circ}\text{C}$), and replace the wrong outlet water temperature sensor. 4. Check the combustion system for damage and replace damaged parts. 5. Detect if the heat exchanger fins are poorly welded and replace the damaged parts.
When the system is turned on or working, the wired controller displays code "E7" and the buzzer alarms the fault.	1. The valve connector is loose or has poor contact. 2. The valve is short-circuited.	1. Clamp the water temperature sensor terminal. 2. Check if the valve coil is short-circuited and replace the damaged parts.

Error Code	Possible Cause	Fault Handling
When the system is turned on or working, the wired controller displays code " E8 " and the buzzer alarms the fault.	1. During operation, the fan speed continuously exceeds the set value of 5S speed. 2. The outdoor wind pressure is too high, and the fan speed exceeds the upper limit of the speed. 3. A large amount of carbon in the heat exchange fins (when the gas source is used incorrectly), causing blocked, and the fan speed increase exceeds the upper limit of the speed.	1. Check if the exhaust passage is blocked. 2. Stop starting, and start after no strong wind in the outdoor. 3. Remove the heat exchanger, use a brush to gently clean the carbon on the fins, and ensure that the type and pressure of the gas used subsequently meet the requirements of the water heater.
During the system working process, the wired controller displays " En " and the buzzer alarms the fault.	In order to prevent oxygen deficiency, some models have timing protection. Please turn off the tap and use it after a while.	1. Set the appropriate time according to the usage habits, and the timed shutdown time can be set to 20, 30, 40, 50, 60 minutes. 2. It is not necessary to set "OFF" to turn off the timing function.
Fault alarm release and reset method: If the above code appears, please check the waterway, the gas path is normal, press "Switch button" to turn off or turn off the power to restart. The water heater is restored to normal use. If the above operations cannot be resumed, please notify the after-sales service personnel.		

5.2 Non-defect when the following conditions occur:

Error Code	Possible Cause
White smoke at the exhaust	When the outdoor temperature is too low, the discharged smoke encounters outdoor cold air and condenses into a white mist.
Water is not hot	If the water flow is too low, the water will get cold. The minimum water flow rate is required to be 0.53 gallons per minute. Make sure the water heater is running smoothly.
The water heater suddenly shuts down	When the water heater is timed, the water heater will automatically shut down. Please wait for a while before using it.
Close the hot water valve, but the fan cannot stop immediately	This is a function to delay the fan off, so that the exhaust of the water is finished. Fully drained heaters that ensure user safety.
After the water heater starts, it does not	There is a distance from the water heater to the hot water tap, because the water pipe.
Can have hot water right away	It still takes some time to use the cold water in the cold water. Water and hot water. The longer the pipeline, the more time it takes.
After the water heater is powered on, the controller does not respond.	There is no power input, please check the circuit.