



Technical Data Sheet

Troubleshooting The Sterling Electronic Control System

Sterling B-Vent Model 8501 – Serial #001001 to #002451

Manufactured From September 1991 to June 1992

KIT CONTENTS:

None

TOOLS REQUIRED:

Slotted Screwdriver
Phillips Screwdriver
AC Meter or Multi-meter
Wire to Ground Module

WARNING: Servicing of gas control, appliances, systems and leak testing must be PERFORMED BY QUALIFIED PERSONNEL ONLY. ELECTRICAL SHOCK AND GAS EXPLOSION HAZARDS ARE PRESENT.

BEFORE YOU BEGIN:

- 1) Make sure the power cord is plugged into a working, properly grounded outlet.
- 2) Turn the gas valve control to the "on" position.

TEST PROCEDURE:

STEP 1. Adjust the thermostat up to call for heat. If ignition clicks can be heard from the pilot area, proceed to step 2.

1.1 If no clicks can be heard after 5 seconds, check the fuse on the electronic control module housing. Replace if necessary.

NOTE: To perform the rest of the tests, the electronic control housing must be removed from the back of the heater. Remove the housing by removing the 2 screws with a phillips screwdriver. Place the control housing on the floor.

IMPORTANT: The housing must be grounded. Use a piece of wire to electrically connect the housing to the frame of the stove. Check to be sure all connections are snug.

1.2 Check to insure that there is 120 VAC between each fuse holder terminal and the white wire from the power cord with the AC meter. Repair or replace power cord if necessary.

IMPORTANT: Unplug the power cord and cover the fuse terminals with electric tape to prevent electrical shock. Plug the power cord back in to continue test procedure.



1.3 Check to insure that there is 24 VAC between the light blue wire from the transformer to the thermostat and the "GND" terminal on the electronic module. If not, replace the transformer.

1.4 Check to insure that there is 24 VAC between the "TH" terminal and the "GND" terminal on the electronic module. If not, thermostat, thermostat wiring, or the spill switch is open preventing operation. Check each component individually and replace the defective piece.

1.5 Check to insure there is 24 Vac between the "TH" terminal and the pilot flame deflector. If not, there is no ground between the module housing and the heater frame.

1.6 With 120 VAC power "off", remove the orange wire from the top of the electronic module, turn 120 VAC power "on" and use a screwdriver held against the metal case and within 1/8" of the terminal in the tube on top of the electronic module. If a spark is present, the orange wire is shorted to the frame of the heater. Replace the defective wire. If no spark is present, replace the electronic module.

STEP 2: After spark clicks are heard, the pilot should light and flame should deflect toward both burner tubes and engulf the flame sensor pin (the straight vertical pin). Do not bend the flame sensor.

2.1 If pilot lights, go to step 3. If pilot fails to light, be sure there is 24 VAC between the "C" and "P" terminals on the gas valve. If 24 VAC are present, proceed to 2.2. If 24 VAC are not present, check for 24 VAC between "GND" and "PV" terminals on the electronic module. If not, replace module. If there is 24 VAC at "GND" and "PV" terminals, check terminals and wire between electronic module and the gas valve. Replace damaged wire (s).

2.2 Check pilot orifice to ensure gas flow. If gas does not flow, check gas supply. If gas is being supplied, but not flowing through the orifice, change the gas valve.

STEP 3: After pilot lights, spark clicks should stop and main burners should light. If sparks continue after the burner lights, the flame sensor rod and white wire to electronic module "SEN" terminal should be checked for continuity. If the wire is shorted it should be replaced. Use only high temp wire.

3.1 Visually inspect the sensor probe. If the probe is bent or the ceramic base is cracked, replace the sensor probe.

3.2 If the probe is dirty, clean it with a fine sandpaper.

3.3 If probe is intact, clean and properly connected, replace the probe. If the problem persists, replace the control module.



3.4 If the pilot lights, spark ignition stops but the burners do not light, check for 24 VAC between "C" and "M" terminals on the gas valve. If 24 VAC is present, replace the gas valve. If not, check for VAC between "GND" and "MV" terminals on the electronic module. If 24 VAC is present, check the wires and replace any damaged wires. If 24 VAC is not present, replace electronic module.

STEP 4: If after operating for a period of time the heater shuts off and the thermostat cannot restart the burners, the spill switch is probably opening due to inadequate drafts or a defective switch. Change switch or correct a problem with the vent.

