

Sequence of Operation GC10A-4E & GC6A-10E

Power In When the wall switch is turned on to either gas, electric or both the power moves from the wall switch to the DSI board through the Molex connector.

1. Gas - When the wall switch (flame) is turned on for gas operation, the orange wire (OR 1) is energized with DC voltage.
2. Electric - When the switch (lightning bolt) is turned on for electric operation the white wire (WHT 2) is energized with DC voltage.

The power moves from the internal board circuits to the brown wire at the (BRN 3) connection.

From this point the power for gas, electric or both moves through the thermostat, thermal cut off and enters the board again at the lower (BRN 1) connection. This completes the circuit to the lower connection on the board.

When the switch for GAS ignition is turned on -

1. Power is sent to the coil on the board. The coil creates a spark for ignition.
2. Power is sent to (RED 4) connection. From this point, power flows through red wire, through the ECO and to the gas valve.

When the switch for ELECTRIC is turned on -

1. Power is sent from the board to the yellow wire (YLW 2). The yellow wire carries DC voltage to the relay in the back of the water heater. The 12 volt energizes the relay which sends the 110 V to the element.

Quick Diagnostic GC10A-4E & GC6A-10E

Following the sequence of operation:

No power to board through the orange or white wire.

- Test for power into wall switch. If no power, check wiring, fuse, breaker, etc.
- If switch has power but does not work, check to see if switch is wired correctly. If switch is wired correctly, replace switch.

No power out of board at BRN 3.

- Confirm power entering the board at orange (OR1), white (WHT 2) or both with the switch on.
- Check molex connector for proper connection.
- Bad board (replace).

No power at brown (BRN 1), when calling for gas or electric operation.

- Check thermostat for voltage or continuity. Replace if necessary.
- Check thermal cutoff for voltage or continuity. Replace if necessary.
- Confirm molex connector is making contact.

No power through red wire from RED 4.

- Confirm power coming in at brown (BRN 1).
- Confirm molex connector is making contact.
- Bad board (replace).

No power through yellow wire (YLW 2) to relay. Electric operation only.

- Confirm continuity from red (RED 4) at Molex connector to Valve Ground. If the ECO or Valve coils are open then the board will not send power to the yellow wire (YLW 2).
- Confirm power coming in the brown wire (BRN 1).
- Confirm molex connector is making contact.
- Bad board (replace).

No power through relay (electric).

- Confirm AC present.
- Confirm DC through yellow wire (YLW 2).
- Check AC into element. No power, replace relay.
- Power into element from relay (no heat), replace element.

WIRING DIAGRAM COMBINATION GAS/ELECTRIC

