HiE2 TROUBLESHOOTING w/ Digital Ignition Control

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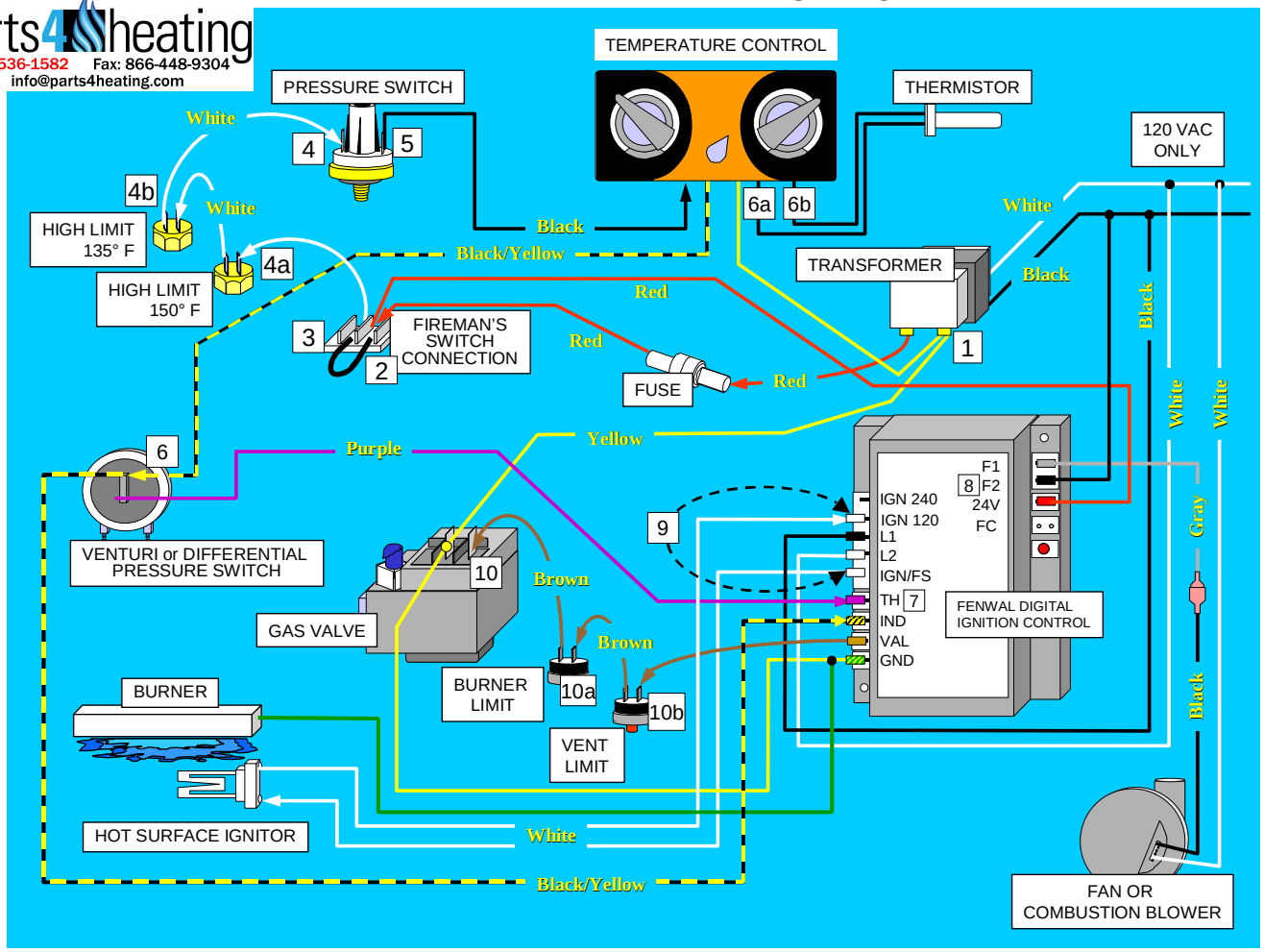


STEP 1

24 VAC at Transformer?
- No → 1. Check incoming power 2. Check Transformer wiring. 3. Replace Transformer.
- Yes ↓

STEP 2

24 VAC at Red wire of terminal block?
- No → Fuse is blown. Look for short circuits. Do not jumper or bypass fuse. Replace fuse with same size & amperage.
- Yes ↓

STEP 3

24 VAC at White wire of terminal block?
- No → Check Fireman's switch. If a remote is installed make sure it is calling for heat.
- Yes ↓

STEP 4

24 VAC at White wire of Pressure Switch?
- No → 1. Check each Limit individually. 4a & 4b
  2. Check if damage to disc, head, exchanger.
  3. Perform *Temperature Rise Test*.
- Yes ↓

STEP 5

24 VAC at Black wire of Pressure Switch?
- No → Is Pump On? *Perform Back Pressure test.* If 2 PSI or more replace pressure switch. If less, check pump, filter, plumbing and heat exchanger for water flow restrictions.
- Yes ↓

STEP 6

24 VAC at Black/Yellow wire of Ignition Control?
- No → Is Temp Board calling for heat?
  - Yes → Do *Thermistor Test*.
    - Good → Replace Temp Board.
    - Failed → Replace Thermistor.
  - No
- Yes ↓

Go to Step 7

STEP 7

Is Fan On?
- No → Is there 120 VAC at F2? 8
  - No → Check supply wire.
  - Yes → Is there 120 VAC at F1?
    - No → Make sure there is 24 VAC at IND, if there is, replace Ignition Control.
    - Yes → Check wiring to Fan. If wiring is OK, replace Fan.
- Yes ↓

STEP 8

24 VAC at TH of Ignition Control?
- No → 1. Check for vent blockage or dirty air filter. 2. Perform *Air Flow Test*. 3. Replace Venturi Pressure Switch.
- Yes ↓

STEP 9

Is Ignitor glowing
- No → Check Ignitor and supply wiring. Perform *Ignitor Resistance Test*. Replace Ignitor. 9
- Yes ↓

STEP 10

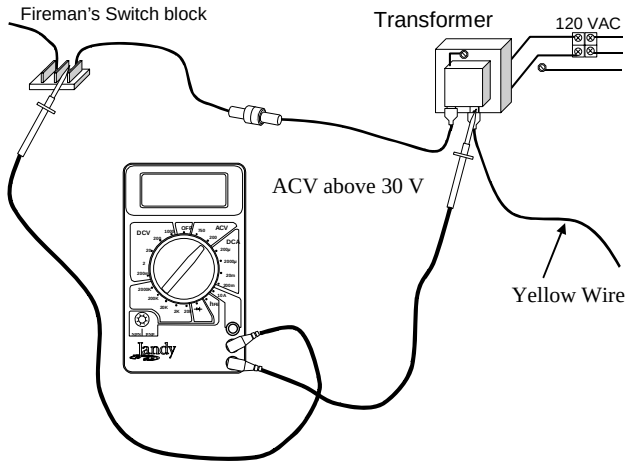
24 VAC at Brown wire of Gas Valve?
- No → Check Burner and Vent Limits. 10a & 10b
- Yes ↓

Does heater fire?
- No → Is Gas Valve On? Do a supply side gas pressure test. Replace Gas valve.
- Yes ↓

Yes, but goes out after a few seconds. Heater is not sensing rectification. Check commons, make sure combustion chamber is grounded. If all is OK replace Ignition Control.

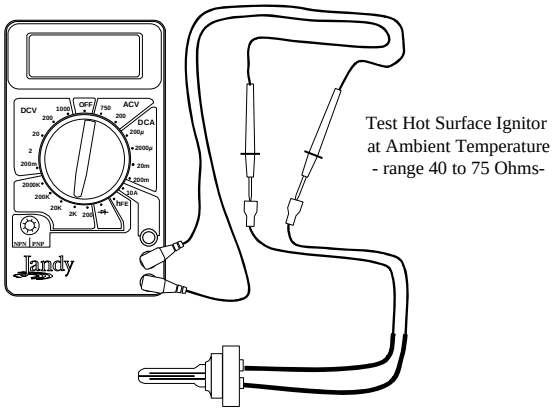
Safety Circuit Test

Leave black probe on Transformer terminal with yellow wire.
Move red probe to each component



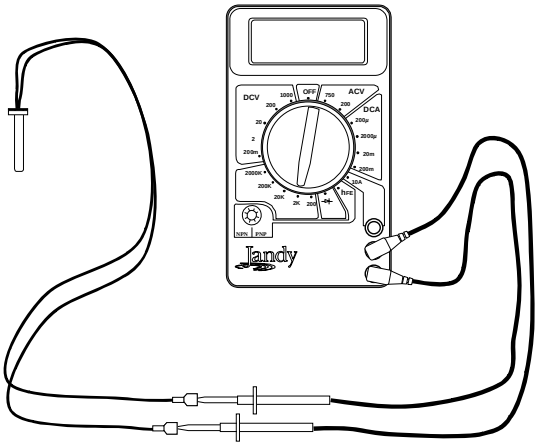
Hot Surface Ignitor Test

Ignitor must be disconnected from the Ignition Control and cool to the touch. Resistance through the Hot Surface Ignitor should be 40 to 75 Ohms.



Thermistor Test

Remove thermistor leads from temperature board. Set meter to test resistance above 20 K Ohms. Using chart at the right, compare the actual water temperature to the resistance reading to determine if the thermistor is OK.



Thermistor Test Chart

Temp	Resistance	Temp	Resistance
50° F	19.898 K Ohms	78° F	9.735 K Ohms
51° F	19.435 K Ohms	79° F	9.483 K Ohms
52° F	18.871 K Ohms	80° F	9.284 K Ohms
53° F	18.382 K Ohms	81° F	9.079 K Ohms
54° F	17.902 K Ohms	82° F	8.864 K Ohms
55° F	17.473 K Ohms	83° F	8.655 K Ohms
56° F	16.988 K Ohms	84° F	8.450 K Ohms
57° F	16.549 K Ohms	85° F	8.253 K Ohms
58° F	16.150 K Ohms	86° F	8.057 K Ohms
59° F	15.710 K Ohms	87° F	7.871 K Ohms
60° F	15.314 K Ohms	88° F	7.687 K Ohms
61° F	14.923 K Ohms	89° F	7.509 K Ohms
62° F	14.547 K Ohms	90° F	7.335 K Ohms
63° F	14.193 K Ohms	91° F	7.166 K Ohms
64° F	13.823 K Ohms	92° F	7.001 K Ohms
65° F	13.477 K Ohms	93° F	6.840 K Ohms
66° F	13.138 K Ohms	94° F	6.685 K Ohms
67° F	12.813 K Ohms	95° F	6.531 K Ohms
68° F	12.492 K Ohms	96° F	6.384 K Ohms
69° F	12.186 K Ohms	97° F	6.238 K Ohms
70° F	11.893 K Ohms	98° F	6.099 K Ohms
71° F	11.593 K Ohms	99° F	5.963 K Ohms
72° F	11.309 K Ohms	100° F	5.829 K Ohms
73° F	11.032 K Ohms	101° F	5.700 K Ohms
74° F	10.765 K Ohms	102° F	5.572 K Ohms
75° F	10.502 K Ohms	103° F	5.449 K Ohms
76° F	10.250 K Ohms	104° F	5.327 K Ohms
77° F	10.000 K Ohms		

Temperature Rise Test

MODEL		TEMP. DIFF.	
		MINIMUM	MAXIMUM
EHE (HI E2)	350	20	29