

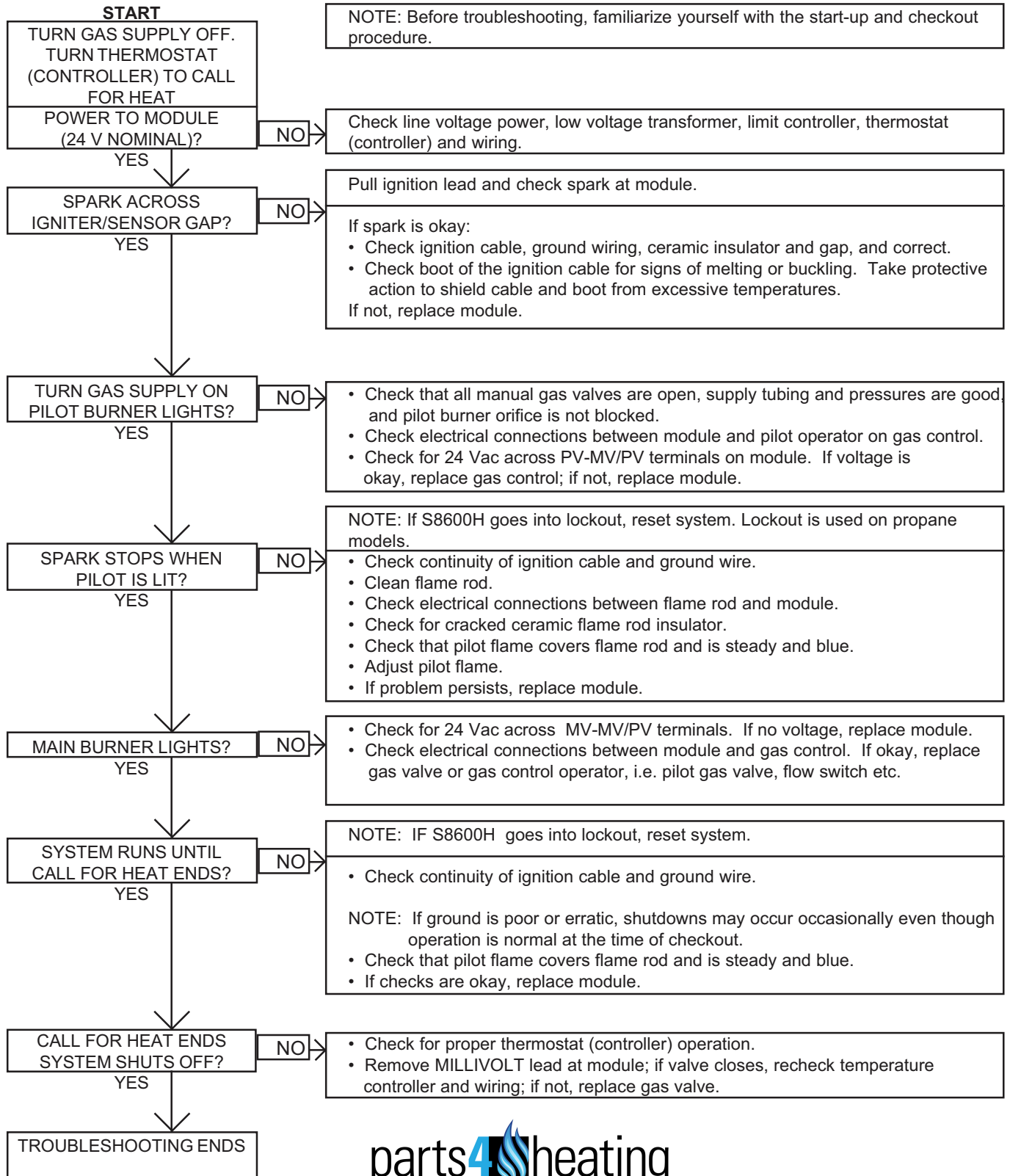
TROUBLESHOOTING

WARNING—HIGH VOLTAGE: For qualified technicians ONLY.

Electrical—Electronic Ignition IID

Intermittent Pilot System Honeywell S8600

NOTE: Some heaters may be equipped with an ignition module that shuts off pilot gas if pilot fails to light. To reset, interrupt power to heater.

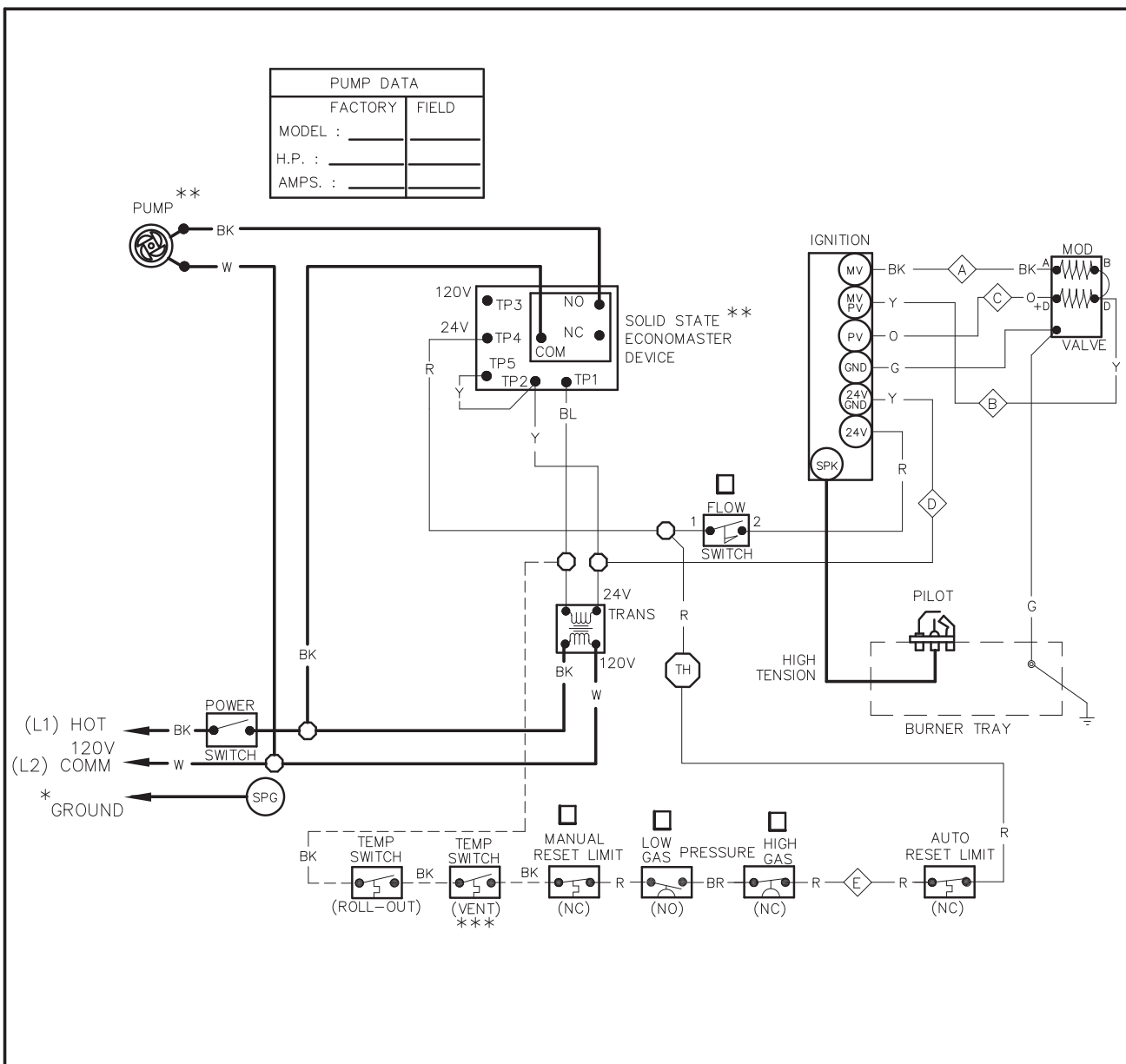


Mechanical

MECHANICAL PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
When heater is turned on nothing happens.	No power to the heater.....	Check the circuit breaker, outdoor controller, etc., upstream of heater.
	Bad transformer.....	If power to Leads L1 and L2 of transformer, but no power on 24V side, replace.
	Inoperative thermostat.....	Jumper thermostat, replace with new if heater fires.
	Inoperative toggle switch.....	If power to toggle switch, but not through switch, replace.
	Inoperative relay.....	If power to relay, but not operating, replace.
Thermostat in "ON" position causes relay and pump to operate, but heater does not fire.	Main gas valve closed.....	Open valve.
	Plugged bleed line on gas valve or gas pressure regulator.....	Loosen bleed line and clean.
	Broken pump coupler.....	Replace coupler. Inspect bearing assembly, and if frozen, lubricate or replace.
	Shutdown by low water cut-off, caused by air.....	Bleed air from system.
	Gas valve defective.....	Check for power to gas valve. If valve has power but will not open, check vent tube for blockage. If clear, replace valve.
Continuous shut down of manual reset High Limit.	Temperature setting too low.....	Reset High Limit to higher temperature.
	Low water flow.....	Check system water pumps.
	Interrupted pump operation.....	Check pump oil if necessary.
	Modulating control set too high.....	Reset modulator to a lower setting.
	Mechanical modulating control.....	Check and replace if necessary.
Sooting CAUTION-Soot may be combustible. Wet down and exercise caution when cleaning.	Air starvation.....	Refer to installation instructions regarding combustion air requirements.
	Condensation.....	Set bypass valve to prevent heater inlet temperature from dropping below 105° F.
	Toxic fumes which cause a chemical reaction with copper tubes or destroy combustion.....	Remove all sources of fumes, such as freon or chloride, or isolate the heater.
	Improper venting.....	Follow recommended vent installation instructions.
Continuous shut down of low water cut-off or flow switch.	Insufficient system flow.....	Check pumps and piping.
	Low water due to leaking.....	Inspect for leaking and repair.
	Air in system.....	Inspect for leakage and repair. Install an automatic air vent.
	Line strainer dirty.....	Clean.
	Lime in Heat Exchanger.....	Ream tubes.
Low flame.	Low gas supply.....	Debris in gas line (pipe dope, rocks, etc.).
		Gas line too small.
		Improper size gas meter.
		Gas regulator adjustment.
		Clean burners.
	Insects or debris clogging.....	Adjust gas pressure.
	Burner intake ports low gas pressure....	Refer to installation instructions regarding combustion air requirement.
	Venting or combustion air.....	
Outer jacket very hot (blistered paint)	Broken refractory.....	Replace refractory panels.
Combustion fan not running. (If applicable)	Fan relay.....	Replace fan relay.
	Fan.....	Loose wire connection.
		Failed fan motor.

WIRING DIAGRAMS

Wiring Diagram—W2/WH2 133



NOTES: * USE GROUND CONNECTION PROVIDED. FAILURE TO PROVIDE PROPER GROUND MAY RESULT IN LOCK-OUT
ALL GROUND $\perp$ TERMINATE AT SPG .

****** PUMP USED MUST BE RATED 10 AMPS MAX OR 3/4 HP MAX.
PUMP DELAY ADJUSTABLE BETWEEN 3 AND 10 MINUTES.

******* VENT TEMP SWITCH ONLY PROVIDED ON INDOOR BOILERS

$\diamond$ - $\diamond$ CONNECTIONS FOR OPTIONAL E-4 ALARM PANEL.

☒ CHECK CONTROLS PROVIDED (WIRED AS SHOWN)

$\otimes$ IF ANY OF THE ORIGINAL WIRE AS SUPPLIED MUST BE REPLACED,
IT MUST BE REPLACED WITH ITS EQUIVALENT,
105°C OR 150°C AS NOTED.

CHECKED BY:

APPROVED BY:

ORIG E.O. 2725

11/17/92

CHG E.O. 3883

09/22/06

Ralpak

WIRING DIAGRAM IID ECONOMASTER FIRING MODE — MECHANICAL MODULATING

BOILER INPUTS: 136,000 BTUH

BOILER SIZE: **133**

BOILER TYPE: **H1/W2**

KEY

—— 24V 105°C
---- 24V 150°C
—— 120V 105°C
---- 120V 150°C

$\bigcirc$ WIRE NUT

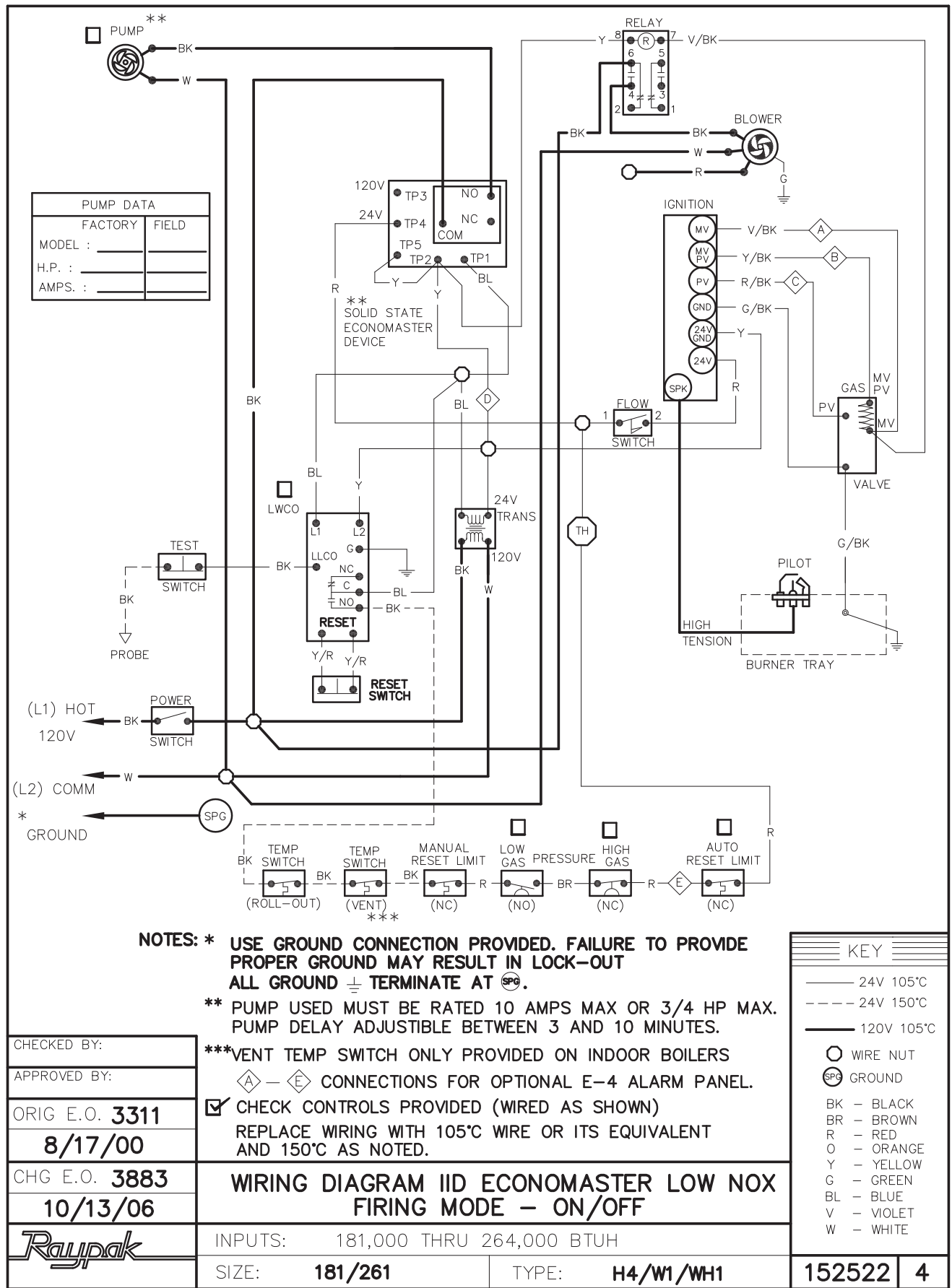
SPG GROUND

BK — BLACK
BR — BROWN
R — RED
O — ORANGE
Y — YELLOW
G — GREEN
BL — BLUE
V — VIOLET
W — WHITE

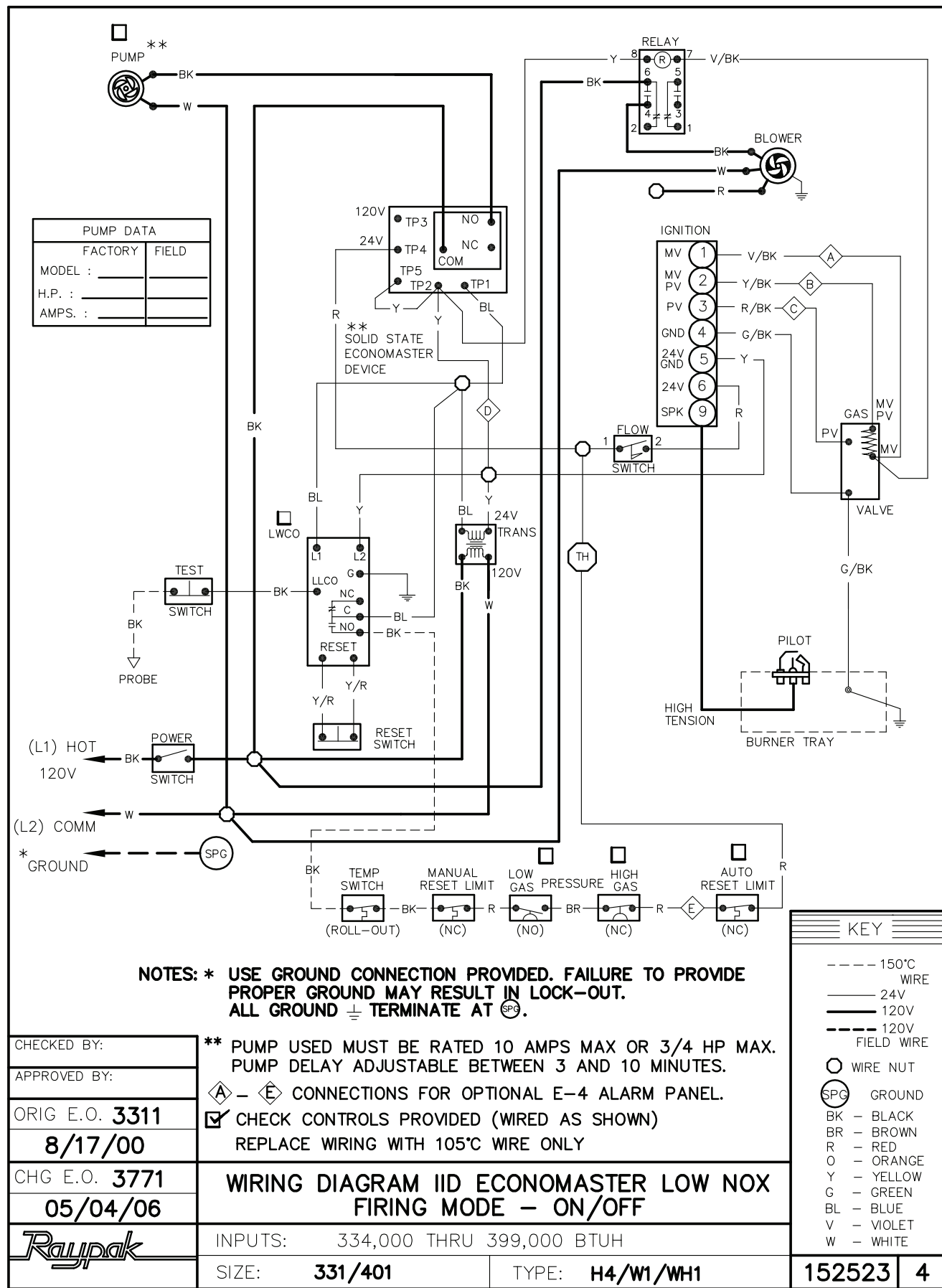
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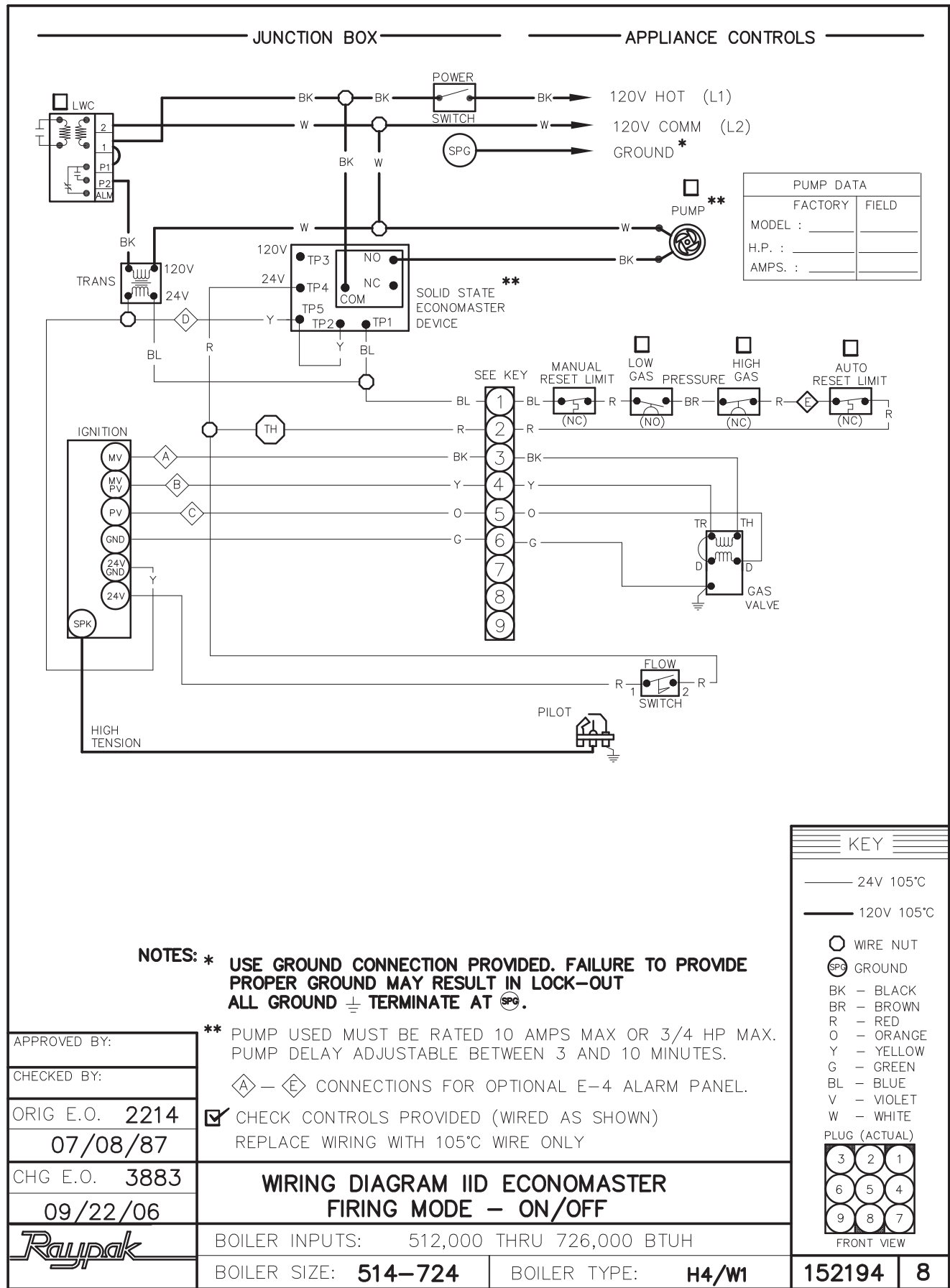
Wiring Diagram—WH1 0181/0261



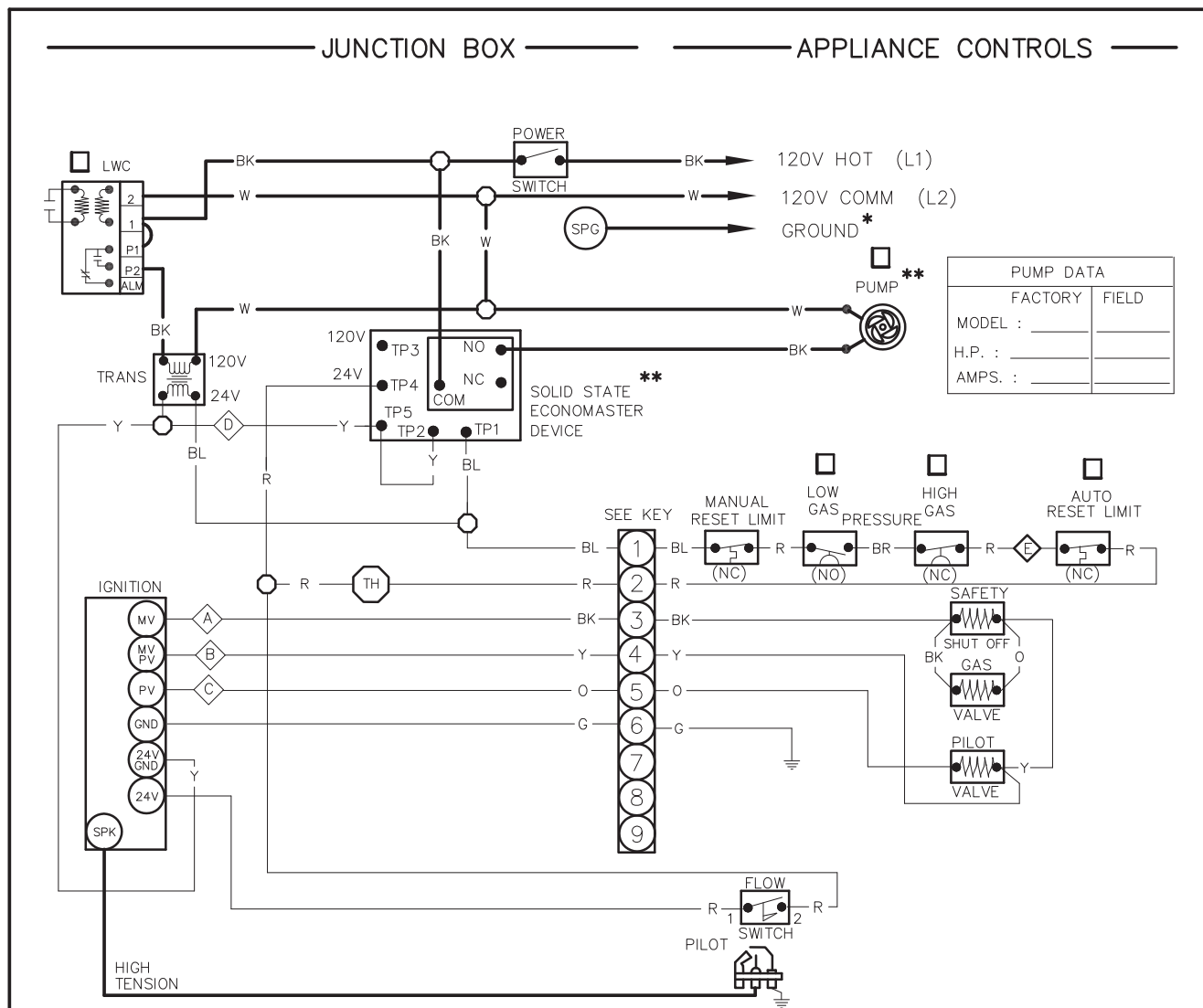
Wiring Diagram—WH1 0331/0401



Wiring Diagram—WH1 0514-0724



Wiring Diagram—WH1 0824-1826



NOTES: * USE GROUND CONNECTION PROVIDED. FAILURE TO PROVIDE PROPER GROUND MAY RESULT IN LOCK-OUT
ALL GROUND $\pm$ TERMINATE AT **SPG**.

****** PUMP USED MUST BE RATED 10 AMPS MAX OR 3/4 HP MAX. PUMP DELAY ADJUSTABLE BETWEEN 3 AND 10 MINUTES.

◇ — ◇ CONNECTIONS FOR OPTIONAL E-4 ALARM PANEL.

✓ CHECK CONTROLS PROVIDED (WIRED AS SHOWN)
REPLACE WIRING WITH 105°C WIRE ONLY

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WIRING DIAGRAM IID/ECONOMASTER FIRING MODE — ON/OFF

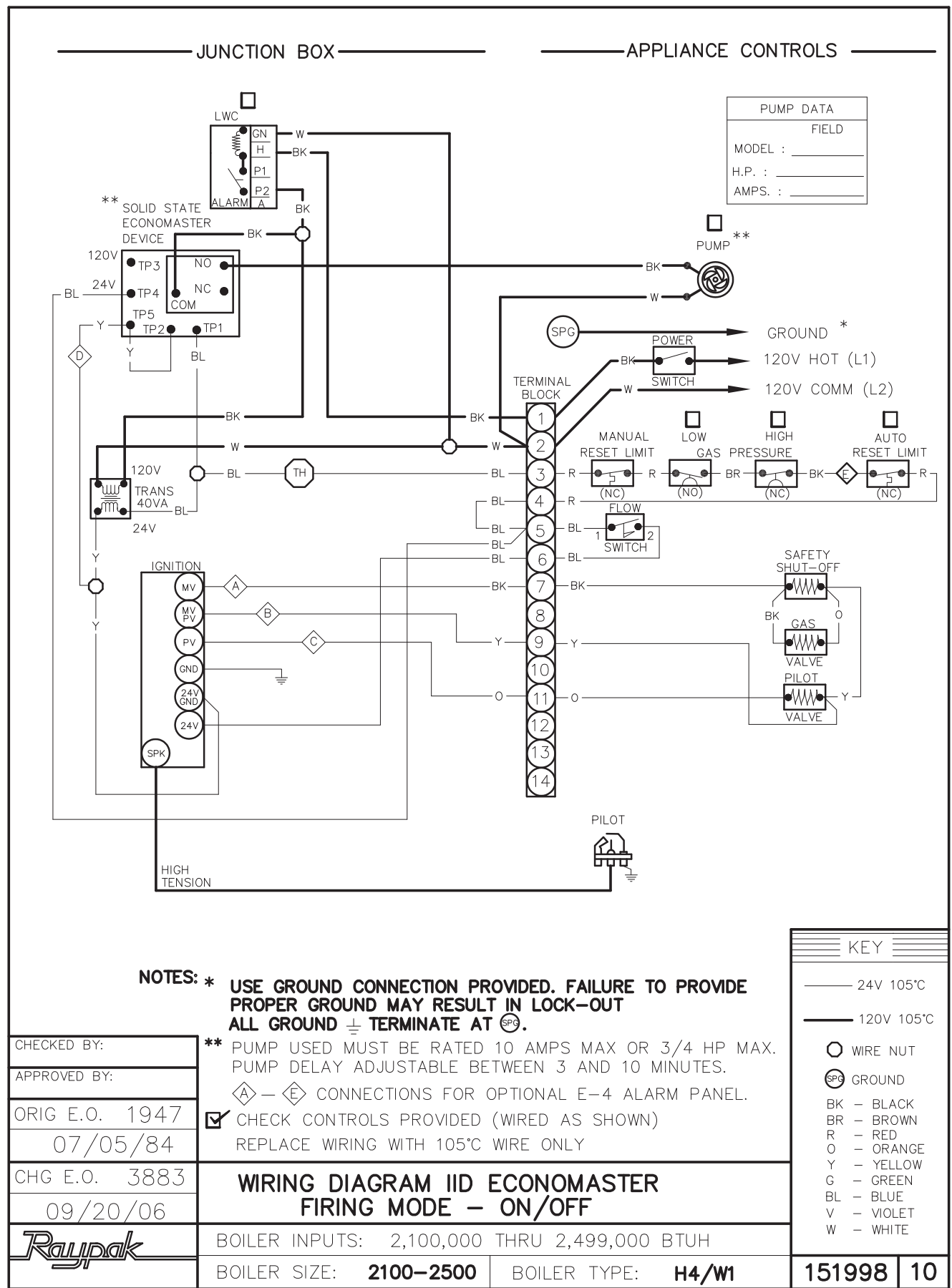
BOILER INPUTS: 825,000 THRU 1,826,000 BTUH

BOILER SIZE: **824-1826**

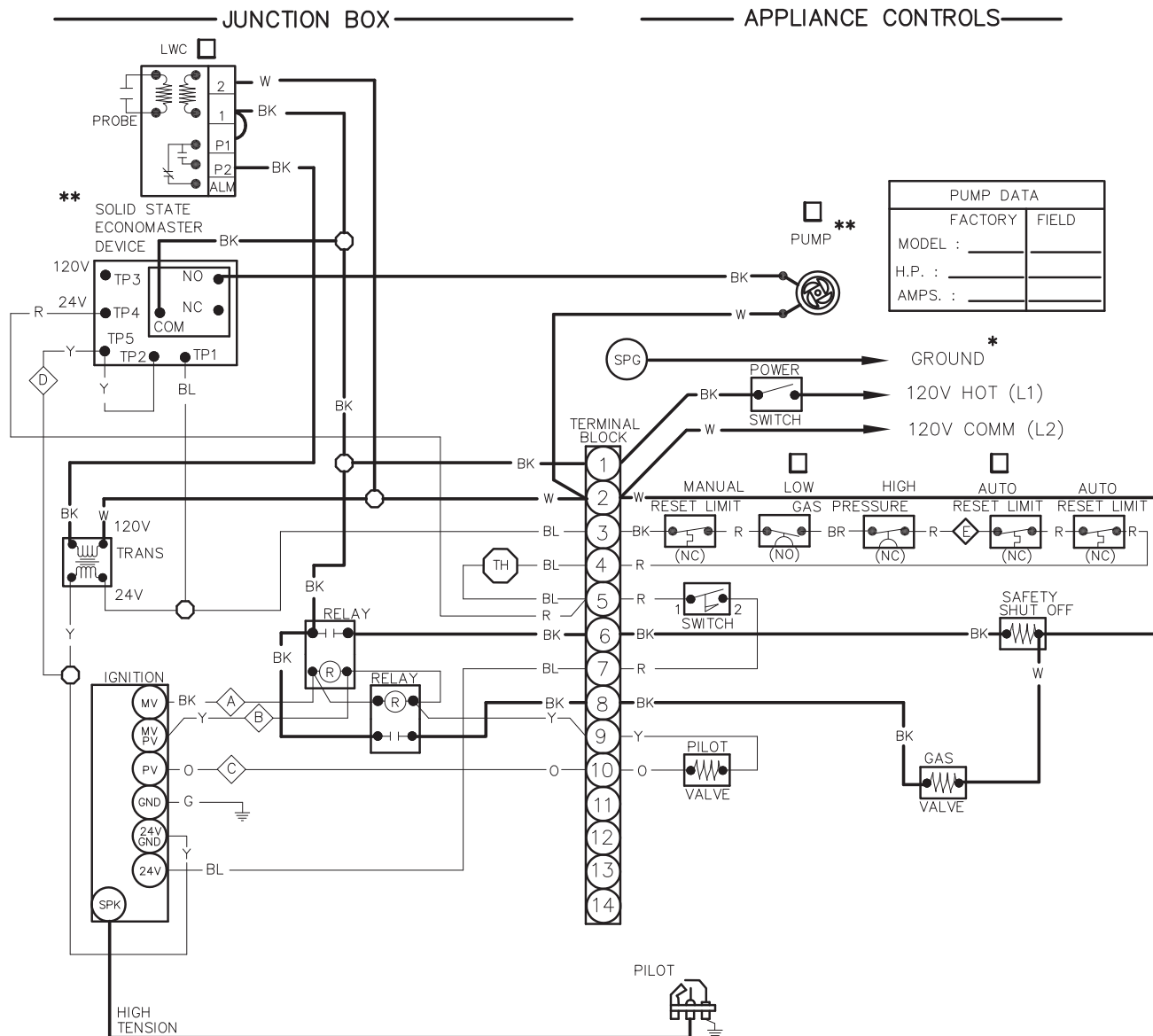
BOILER TYPE: **H4/W1**

KEY										
—	24V 105°C									
—	120V 105°C									
○	WIRE NUT									
SPG	GROUND									
BK	BLACK									
BR	BROWN									
R	RED									
O	ORANGE									
Y	YELLOW									
G	GREEN									
BL	BLUE									
V	VIOLET									
W	WHITE									
PLUG (ACTUAL)										
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3	2	1								
6	5	4								
9	8	7								
FRONT VIEW										
152170	6									

Wiring Diagram—WH1 2100–2500



Wiring Diagram—WH1 3001-4001



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CHG E.O. 3883
09/20/06
<i>Raupak</i>

**WIRING DIAGRAM IID ECONOMASTER
FIRING MODE — ON/OFF**

BOILER INPUTS: 3,000,000 THRU 4,000,000 BTUH

SIZE: **3001-4001** TYPE: **H4/W1**

KEY	
—	24V 105°C
—	120V 105°C
○	WIRE NUT
⊙	GROUND
BK	BLACK
BR	BROWN
R	RED
O	ORANGE
Y	YELLOW
G	GREEN
BL	BLUE
V	VIOLET
W	WHITE
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Troubleshooting—Pumps

Failure To Pump

1. Pump not properly primed.
2. Wrong direction of rotation.
3. Speed too low.
4. Total head too high.

Reduced Capacity and/or Head

1. Air pockets or leaks in suction line.
2. Clogged impeller.
3. Foot valve strainer too small or clogged.
4. Excessive suction lift (over 15 feet).
5. Insufficient positive suction head (for hot water).
6. Total head more than that for which pump is intended.
7. Excessively worn impeller and wearing rings.

Rapid Wear of Coupling

1. Misalignment or a bent shaft.
2. Sagging motor mounts (over-oiling).

Pump Loses Prime

1. Air leaks in suction line.
2. Excess air in water.
3. Water seal in stuffing box not functioning.
4. Excessive suction lift and pump operating too near shut-off point.

Overloaded Driving Unit

1. Head much lower than that for which pump is designed.
2. Speed too high or higher than that contemplated.

Mechanical Troubles and Noise

1. Misalignment.
2. Excessive suction lift or vapor binding (hot water).
3. Bent shaft and/or damaged bearings.
4. Suction and discharge piping not properly supported and anchored.