



Wiring Diagrams

Units Produced After March, 1999

INDEX

UNIT	UNIT VOLTAGE-PHASE-Hz	TYPE	NUMBER	FIG. NO.
48TJ004,005	208/230-1-60	Schematic/Component Arrangement	50DK506213	1
	208/230-3-60		50DK506212	2
	460-3-60		50DK506214	3
	575-3-60		50DK506215	4
48TJ006	208/230-1-60	Schematic/Component Arrangement	50DK506213	1
	208/230-3-60		50DK506978	5
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	575-3-60		50DK506980	7
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48TJ008-014	208/230-3-60	Schematic/Component Arrangement	50DK507148	11
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50TJ004,005	208/230-1-60	Schematic/Component Arrangement	50DK506242	14
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	460-3-60		50DK507154	24
	575-3-60		50DK507187	25
	230-3-50		50DK507159	26
	400-3-50		50DK507159	26

ELECTRIC HEAT

UNIT VOLTAGE-PHASE	UNIT SIZE	ELECTRIC HEATER (kW)	LABEL	FIG. NO.
208/230-1	50TJ004-006	All	3-05531	27
208/230-3	50TJ004-007	All	3-05531	27
	50TJ008,009	7.8/10.4 12.0/16.0	3-05623	28
		18.6/24.8 24.0/32.0 31.8/42.4	3-05626	29
	50TJ012,014	7.8/10.4 12.0/16.0	3-05623	28
		24.0/32.0 31.8/42.4 37.5/50.0	3-05626	29
460-3	50TJ004-007	All	3-05532	30
	50TJ008,009	13.9 16.5	3-05624	31
		27.8 33.0 41.7	3-05625	32
	50TJ012,014	16.5	3-05624	31
		27.8 33.0 41.7 50.0	3-05625	32
575-3	50TJ008,009	18.0	3-05624	31
		36.0	3-05625	32
	50TJ012,014	18.0	3-05624	31
		36.0 54.0	3-05625	32

ACCESSORIES

COMPONENT	UNIT	FIG. NO.
Accusensor™ II Enthalpy Control	48/50TJ004-014	33
Accusensor III Enthalpy Control	48/50TJ004-014	34
Apollo Communications Control Wiring	48/50TJ004-014	35
Carrier TEMP System Thermostat and Apollo Communications Control Wiring	48/50TJ004-014	36
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OPERATING SEQUENCE — 48TJ UNITS

Cooling, Units Without Economizer — When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC) and compressor contactor no. 1 (C1) are energized, and evaporator-fan motor (IFM), compressor no. 1, and condenser fan(s) start. The liquid line solenoid valve for compressor no. 1 is deenergized open. The condenser-fan motor(s) runs continuously while unit is cooling. For units with 2 stages of cooling, if the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

Heating, Units Without Economizer — When the thermostat calls for heating, terminal W1 is energized. In order to prevent thermostat short-cycling, the unit is locked into the Heating mode for at least 1 minute when W1 is energized. The induced-draft motor (IDM) is then energized and the burner ignition sequence begins. The indoor (evaporator) fan motor (IFM) is energized 45 seconds after a flame is proven. On units equipped for two stages of heat, when additional heat is needed, W2 is energized and the high-fire solenoid on the main gas valve (MGV) is energized. When the thermostat is satisfied and W1 is deenergized, the IFM stops after a 45-second time-off delay.

Cooling, Units With Durablade Economizer — When the outdoor-air temperature is above the OAT (outdoor-air thermostat) setting and the room thermostat calls for cooling, compressor contactor no. 1 is energized to start compressor no. 1 and the outdoor (condenser) fan motor (OFM). The indoor (evaporator) fan motor (IFM) is energized and the economizer damper moves to the minimum position. Upon a further call for cooling, compressor contactor no. 2 will be energized, starting compressor no. 2 (008-014 only). After the thermostat is satisfied, the damper moves to the fully closed position when using an auto fan or to the minimum position when using a continuous fan.

When the outdoor-air temperature is below the OAT setting and the thermostat calls for cooling, the economizer dampers move to the minimum position. If the supply-air temperature is above 57 F, the damper continues to open until it reaches the fully open position or until the supply-air temperature drops below 52 F.

When the supply-air temperature falls to between 57 F and 52 F, the damper will remain at an intermediate open position. If the supply-air temperature falls below 52 F, the damper will modulate closed until it reaches the minimum position or until the supply-air temperature is above 52 F. When the thermostat is satisfied and the indoor-fan motor is still in operation, the damper will move to the minimum open setting. If the thermostat is satisfied and the indoor-fan motor is deenergized, the damper will move to the fully closed position.

If the outdoor air alone cannot satisfy the cooling requirements of the conditioned space, economizer cooling is integrated with mechanical cooling, providing second-stage cooling. Compressor no. 1 and the condenser fan will be energized and the position of the economizer damper will be determined by the supply-air temperature. Compressor no. 2 is locked out.

When the second stage of cooling is satisfied, the compressor and OFM will be deenergized. The damper position will be determined by the supply-air temperature.

After a 30-second delay, the IFM shuts off. If the thermostat fan selector switch is in the ON position, the IFM will run continuously.

Cooling, Units With EconoMiSer (48TJ004-007) — When the outdoor-air temperature (OAT) is above the ECON SP set point and the room thermostat calls for Stage 1 cooling (R to G + Y1), the indoor (evaporator) fan motor

(IFM) is energized and the EconoMiSer damper modulates to minimum position. The compressor contactor is energized to start the compressor and outdoor (condenser) fan motor (OFM). After the thermostat is satisfied, the damper modulates to the fully closed position when the IFM is deenergized.

When the OAT is below the ECON SP setting and the room thermostat calls for Stage 1 cooling (R to G + Y1), the EconoMiSer modulates to the minimum position when the IFM is energized. The EconoMiSer provides Stage 1 of cooling by modulating the return and outdoor air dampers to maintain a 55 F supply air set point. If the supply-air temperature (SAT) is greater than 57 F, the EconoMiSer modulates open, allowing a greater amount of outdoor air to enter the unit. If the SAT drops below 53 F, the outdoor air damper modulates closed to reduce the amount of outdoor air. When the SAT is between 53 and 57 F, the EconoMiSer maintains its position.

If outdoor air alone cannot satisfy the cooling requirements of the conditioned space, and the OAT is above the MECH CLG LOCKOUT set point, the EconoMiSer integrates free cooling with mechanical cooling. This is accomplished by the strategies below.

NOTE: Compressor has a 2-minute Minimum On, Minimum Off, and Interstage delay timer.

1. If Y1 is energized, and the room thermostat calls for Y2 (2-stage thermostat), the compressor and OFM are energized. The position of the EconoMiSer damper is maintained at its current value.
2. If Y1 is energized for more than 20 minutes, and Y2 is not energized (whether or not a 2-stage thermostat is used), the compressor and OFM are energized. The position of the EconoMiSer damper is maintained at its current value.
3. If Y1 is energized, and the compressor is already energized (see Step 2) and the room thermostat calls for Y2, the compressor continues to operate.
4. If the compressor is energized and the thermostat is satisfied, the compressor, the OFM, and IFM are deenergized and the EconoMiSer modulates closed.

When the OAT is below the MECH CLG LOCKOUT set point, the compressor remains off.

Cooling, Units With EconoMiSer (48TJ008-014) — When the outdoor-air temperature (OAT) is above the ECON SP set point and the room thermostat calls for Stage 1 cooling (R to G + Y1), the indoor (evaporator) fan motor (IFM) is energized and the EconoMiSer damper modulates to minimum position. The compressor contactor is energized to start the compressor and outdoor (condenser) fan motor (OFM). After the thermostat is satisfied, the damper modulates to the fully closed position when the IFM is deenergized.

When the OAT is below the ECON SP setting and the room thermostat calls for Stage 1 cooling (R to G + Y1), the EconoMiSer modulates to the minimum position when the IFM is energized. The EconoMiSer provides Stage 1 of cooling by modulating the return and outdoor air dampers to maintain a 55 F supply air set point. If the supply-air temperature (SAT) is greater than 57 F, the EconoMiSer modulates open, allowing a greater amount of outdoor air to enter the unit. If the SAT drops below 53 F, the outdoor air damper modulates closed to reduce the amount of outdoor air. When the SAT is between 53 and 57 F, the EconoMiSer maintains its position.

If outdoor air alone cannot satisfy the cooling requirements of the conditioned space, and the OAT is above the MECH CLG LOCKOUT set point, the EconoMiSer integrates free cooling with mechanical cooling. This is accomplished by the strategies below.

NOTE: Compressor has a 2-minute Minimum On, Minimum Off, and Interstage delay timer.

1. If Y1 is energized, and the room thermostat calls for Y2 (2-stage thermostat), compressor no. 1 and OFM are energized. The position of the EconoMi\$er damper is maintained at its current value.
2. If Y1 is energized for more than 20 minutes, and Y2 is not energized (whether or not a 2-stage thermostat is used), compressor no. 1 and OFM are energized. The position of the EconoMi\$er damper is maintained at its current value.
3. If Y1 is energized, and compressor no. 1 is already energized (see Step 2) and the room thermostat calls for Y2, the compressor contains to operate. If Y2 remains energized for more than 20 minutes, compressor no. 2 is energized.

NOTE: Compressor no. 2 cannot be energized unless there is a signal for Y2 from the space thermostat.

4. If compressor no. 2 is energized, and the Y2 signal from the thermostat is satisfied, compressors 1 and 2 are de-energized. Reasserting Y2 will start compressor no. 1 and (after a 20-minute interstage delay) compressor no. 2.
5. If compressor no. 1 is energized and the thermostat is satisfied, compressor no. 1, the OFM, and IFM are de-energized and the EconoMi\$er modulates closed.

When the OAT is below the MECH CLG LOCKOUT set point, the compressors remain off.

Heating, Units With Economizer — When the thermostat calls for heating, terminal W1 is energized. In order to prevent thermostat short-cycling, the unit is locked into the Heating mode for at least 1 minute when W1 is energized. The induced-draft motor is then energized and the burner ignition sequence begins. The indoor (evaporator) fan motor (IFM) is energized 45 seconds after a flame is ignited and the damper moves to the minimum position. On units equipped for two stages of heat, when additional heat is needed, W2 is energized and the high-fire solenoid on the main gas valve (MGV) is energized. When the thermostat is satisfied and W1 is deenergized, the IFM stops after a 45-second time-off delay. The economizer damper then moves to the fully closed position. When using continuous fan, the damper will remain in the minimum position.

OPERATING SEQUENCE — 50TJ UNITS

Cooling, Units Without Economizer — When thermostat calls for cooling, terminals G and Y1 are energized. The indoor (evaporator) fan contactor (IFC), and compressor contactor no. 1 (C1) are energized and evaporator-fan motor, compressor no. 1 and condenser fans start. The liquid line solenoid valve for compressor no. 1 is deenergized to open. The condenser-fan motor runs continuously while unit is cooling. On 50TJ008-014 units, if the thermostat calls for a second stage of cooling by energizing Y2, compressor contactor no. 2 (C2) is energized and compressor no. 2 starts.

Heating, Units Without Economizer (If Accessory Heater is Installed) — Upon a call for heating through terminal W1, IFC and heater contactor no. 1 (HC1) are energized. On units equipped for 2 stages of heat, when additional heat is needed, HC2 is energized through W2.

Cooling, Units With Durablade Economizer — When the outdoor-air temperature is above the outdoor-air thermostat (OAT) setting and the room thermostat calls for cooling, compressor contactor no. 1 is energized to start compressor no. 1 and the condenser-fan motor. The evaporator-fan motor is energized and the economizer damper moves to the minimum position. Upon a further call for cooling, compressor contactor no. 2 will be energized (50TJ008-014), starting compressor no. 2. After the thermostat is satisfied, the damper moves to the fully closed position.

When the outdoor-air temperature is below the OAT setting and the thermostat calls for cooling, the economizer dampers move to the minimum position. If the supply-air temperature is above 57 F, the damper continues to open until it reaches the fully open position or until the supply-air temperature drops below 57 F.

When the supply-air temperature falls to between 57 F and 52 F, the damper will remain at an intermediate open position. If the supply-air temperature falls below 52 F, the damper will modulate closed until it reaches the minimum position or until the supply-air temperature is above 52 F. When the thermostat is satisfied, the damper will move to the fully closed position.

If the outdoor air alone cannot satisfy the cooling requirements of the conditioned space, economizer cooling is integrated with mechanical cooling, providing second-stage cooling. Compressor no. 1 and the condenser fan will be energized and the position of the economizer damper will be determined by the supply-air temperature. Compressor no. 2 (50TJ008-014) is locked out.

When the second stage of cooling is satisfied, the compressor and condenser-fan motor will be deenergized. The damper position will be determined by the supply-air temperature.

When the first stage of cooling is satisfied, the damper will move to fully closed position.

Cooling, Units With EconoMi\$er (50TJ004-007)

— When the outdoor-air temperature (OAT) is above the ECON SP set point and the room thermostat calls for Stage 1 cooling (R to G + Y1), the indoor (evaporator) fan motor (IFM) is energized and the EconoMi\$er damper modulates to minimum position. The compressor contactor is energized to start the compressor and outdoor (condenser) fan motor (OFM). After the thermostat is satisfied, the damper modulates to the fully closed position when the IFM is deenergized.

When the OAT is below the ECON SP setting and the room thermostat calls for Stage 1 cooling (R to G + Y1), the EconoMi\$er modulates to the minimum position when the IFM is energized. The EconoMi\$er provides Stage 1 of cooling by modulating the return and outdoor-air dampers to maintain a 55 F supply air set point. If the supply-air temperature (SAT) is greater than 57 F, the EconoMi\$er modulates open, allowing a greater amount of outdoor air to enter the unit. If the SAT drops below 53 F, the outdoor air damper modulates closed to reduce the amount of outdoor air. When the SAT is between 53 and 57 F, the EconoMi\$er maintains its position.

If outdoor-air alone cannot satisfy the cooling requirements of the conditioned space, and the OAT is above the MECH CLG LOCKOUT set point, the EconoMi\$er integrates free cooling with mechanical cooling. This is accomplished by the strategies below.

NOTE: Compressor has a 2-minute Minimum On, Minimum Off, and Interstage delay timer.

1. If Y1 is energized, and the room thermostat calls for Y2 (2-stage thermostat), the compressor and OFM are energized. The position of the EconoMi\$er damper is maintained at its current value.
2. If Y1 is energized for more than 20 minutes, and Y2 is not energized (whether or not a 2-stage thermostat is used), the compressor and OFM are energized. The position of the EconoMi\$er damper is maintained at its current value.
3. If Y1 is energized, and the compressor is already energized (see Step 2) and the room thermostat calls for Y2, the compressor continues to operate.
4. If compressor is energized and the thermostat is satisfied, the compressor, the OFM, and IFM are deenergized and the EconoMi\$er modulates closed.

When the OAT is below the MECH CLG LOCKOUT set point, the compressor remains off.

Cooling, Units With EconoMiSer (50TJ008-014) — When the outdoor-air temperature (OAT) is above the ECON SP set point and the room thermostat calls for Stage 1 cooling (R to G + Y1), the indoor (evaporator) fan motor (IFM) is energized and the EconoMiSer damper modulates to minimum position. The compressor contactor is energized to start the compressor and outdoor (condenser) fan motor (OFM). After the thermostat is satisfied, the damper modulates to the fully closed position when the IFM is deenergized.

When the OAT is below the ECON SP setting and the room thermostat calls for Stage 1 cooling (R to G + Y1), the EconoMiSer modulates to the minimum position when the IFM is energized. The EconoMiSer provides Stage 1 of cooling by modulating the return and outdoor-air dampers to maintain a 55 F supply air set point. If the supply-air temperature (SAT) is greater than 57 F, the EconoMiSer modulates open, allowing a greater amount of outdoor air to enter the unit. If the SAT drops below 53 F, the outdoor air damper modulates closed to reduce the amount of outdoor air. When the SAT is between 53 and 57 F, the EconoMiSer maintains its position.

If outdoor-air alone cannot satisfy the cooling requirements of the conditioned space, and the OAT is above the MECH CLG LOCKOUT set point, the EconoMiSer integrates free cooling with mechanical cooling. This is accomplished by the strategies below.

NOTE: Compressors have a 2-minute Minimum On, Minimum Off, and Interstage delay timer.

1. If Y1 is energized, and the room thermostat calls for Y2 (2-stage thermostat), compressor no. 1 and OFM are energized. The position of the EconoMiSer damper is maintained at its current value.

2. If Y1 is energized for more than 20 minutes, and Y2 is not energized (whether or not a 2-stage thermostat is used), compressor no. 1 and OFM are energized. The position of the EconoMiSer damper is maintained at its current value.

3. If Y1 is energized, and compressor no. 1 is already energized (see Step 2) and the room thermostat calls for Y2, compressor no. 1 continues to operate. If Y2 remains energized for more than 20 minutes, compressor no. 2 is energized.

NOTE: Compressor no. 2 cannot be energized unless there is a signal for Y2 from the space thermostat.

4. If compressor no. 2 is energized, and the Y2 signal from the thermostat is satisfied, compressor no. 1 and 2 are deenergized. Reasserting Y2 will start compressor no. 1 and (after a 20-minute interstage delay) compressor 2.
5. If compressor no. 1 is energized and the thermostat is satisfied, compressor no. 1, the OFM, and IFM are deenergized and the EconoMiSer modulates closed.

When the OAT is below the MECH CLG LOCKOUT set point, the compressors remain off.

Heating, Units With Economizer (If Accessory Heater is Installed) —

When the room thermostat calls for heat through terminal W1, the evaporator-fan contactor and heater contactor no. 1 are energized. On units equipped for 2 stages of heat, when additional heat is needed, heater contactor no. 2 is energized through W2. The economizer damper moves to the minimum position during heating. When the thermostat is satisfied, the damper moves to the fully closed position.

LEGEND FOR FIG. 1-26

AHA	— Adjustable Heat Anticipator
AWG	— American Wire Gauge
BR	— Blower Relay
C	— Contactor, Compressor
CAP	— Capacitor
CB	— Circuit Breaker
CC	— Cooling Compensator
COMP	— Compressor Motor
CR	— Control Relay
D	— Diode
EC	— Enthalpy Control
ECON	— Economizer
EPS	— Emergency Power Supply (9-V Battery)
EQUIP	— Equipment
ER	— Economizer Relay
FPT	— Freeze-Protection Thermostat
FU	— Fuse
GND	— Ground
GVR	— Gas Valve Relay
HC	— Heater Contactor
HPS	— High-Pressure Switch
HS	— Hall Effect Sensor
HV TRAN	— High-Voltage Transformer
I	— Ignitor
IDM	— Induced Draft Motor
IFC	— Indoor (Evaporator) Fan Contactor
IFM	— Indoor (Evaporator) Fan Motor

IFR	— Indoor (Evaporator) Fan Relay
IGC	— Integrated Gas Unit Controller
LED	— Light-Emitting Diode
LPS	— Low-Pressure Switch (Loss of Charge)
LS	— Limit Switch
LSM	— Limit Switch (Manual Reset)
MCA	— Minimum Circuit Amps
MGV	— Main Gas Valve
MTR	— Motor
OAT	— Outdoor-Air Thermostat
OFC	— Outdoor (Condenser) Fan Contactor
OFM	— Outdoor (Condenser) Fan Motor
P	— Plug
PL	— Plug Assembly
QT	— Quadruple Terminal
R	— Relay
RS	— Rollout Switch
SAT	— Supply-Air Thermostat
SEN	— Sensor
ST	— Start Thermistor
SW	— Switch
SW1	— Switch Fully Open
SW2	— Switch Fully Closed
SW3	— Switch Minimum Vent Position
SW4	— Switch Maximum Vent Position
TB	— Terminal Block
TC	— Thermostat-Cooling

TDR	— Time-Delay Relay
TH	— Thermostat-Heating
TRAN	— Transformer
	Field Splice
	Marked Wire
	Terminal (Marked)
	Terminal (Unmarked)
	Terminal Block
	Splice
	Factory Wiring
	Field Control Wiring
	Field Power Wiring
	Accessory or Optional Wiring
	To indicate common potential only, not to represent wiring.

NOTES FOR FIG. 1

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
3. Set heat anticipator at .14 amp. For units with 2 stages of heating, set stage 2 anticipator at .14 amp.
4. Use copper conductors only.
5. TRAN is wired for 230 v unit. If unit is to be run with 208 v power supply, disconnect BLK wire from 230 v tap (ORN) and connect 208 v tap (RED). Insulate end of 230 v tap.

NOTES FOR FIG. 2, 5, AND 8

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator at .14 amp. For units with 2 stages of heating, set stage 2 anticipator at .14 amp.
5. Use copper conductors only.
6. TRAN is wired for 230 v unit. If unit is to be run with 208 v power supply, disconnect BLK wire from 230 v tap (ORN) and connect 208 v tap (RED). Insulate end of 230 v tap.

NOTES FOR FIG. 3, 4, 6, 7, 9, AND 10

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator at .14 amp for first stage. For units with 2 stages of heating, set stage 2 at .14 amp.
5. Use copper conductors only.

NOTES FOR FIG. 11

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator for first stage at .14 amp, second stage at 0.2 amp.
5. Use copper conductors only.
6. TRAN is wired for 230 v only. If unit is to be run with 208 v power supply, disconnect BLK wire from 230 v tap (ORN) and connect to 208 v tap (RED). Insulate end of 230 v tap.

NOTES FOR FIG. 12 AND 13

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator for first stage at .14 amp, second stage at 0.2 amp.
5. Use copper conductors only.

NOTES FOR FIG. 14, 15, 18, AND 21

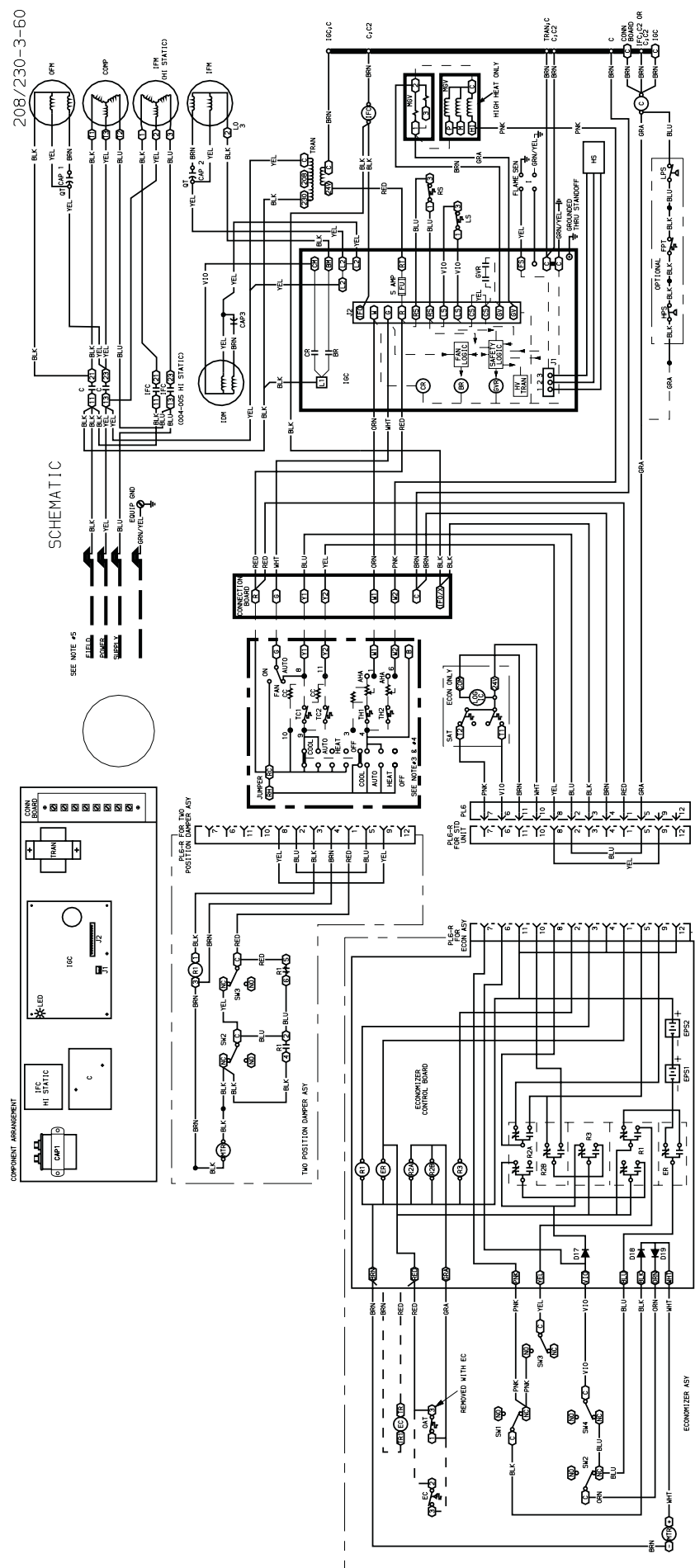
1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator at 1 amp.
5. Use copper conductors only.
6. Use copper, copper-clad aluminum or aluminum conductors.
7. TRAN is wired for 230 v unit. If unit is to be run with 208 v power supply, disconnect BLK wire from 230 v tap (ORN) and connect 208 v tap (RED). Insulate end of 230 v tap (208/230 units only).

NOTES FOR FIG. 16, 17, 19, 20, 22, 23, 25, AND 26

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator at 1 amp.
5. Use copper conductors only.
6. Use copper, copper-clad aluminum or aluminum conductors.

NOTES FOR FIG. 24

1. If any of the original wire furnished must be replaced, it must be replaced with type 90 C wire or its equivalent.
2. Three-phase motors are protected under primary single-phasing conditions.
3. Thermostat: HH07AT170, 172, 174, and P272-2783
Subbase: HH93AZ176, 178, and P272-1882, 1883
4. Set heat anticipator at 1 amp.
5. Use copper conductors only.
6. Use copper, copper-clad aluminum or aluminum conductors.
7. For 208/230-3-60 units: TRAN is wired for 230 v only. If unit is to be run with 208 v power supply, disconnect BLK wire from 230 v tap (ORN) and connect to 200 v tap (BLU). Insulate end of 230 v tap.





SCHEMATIC

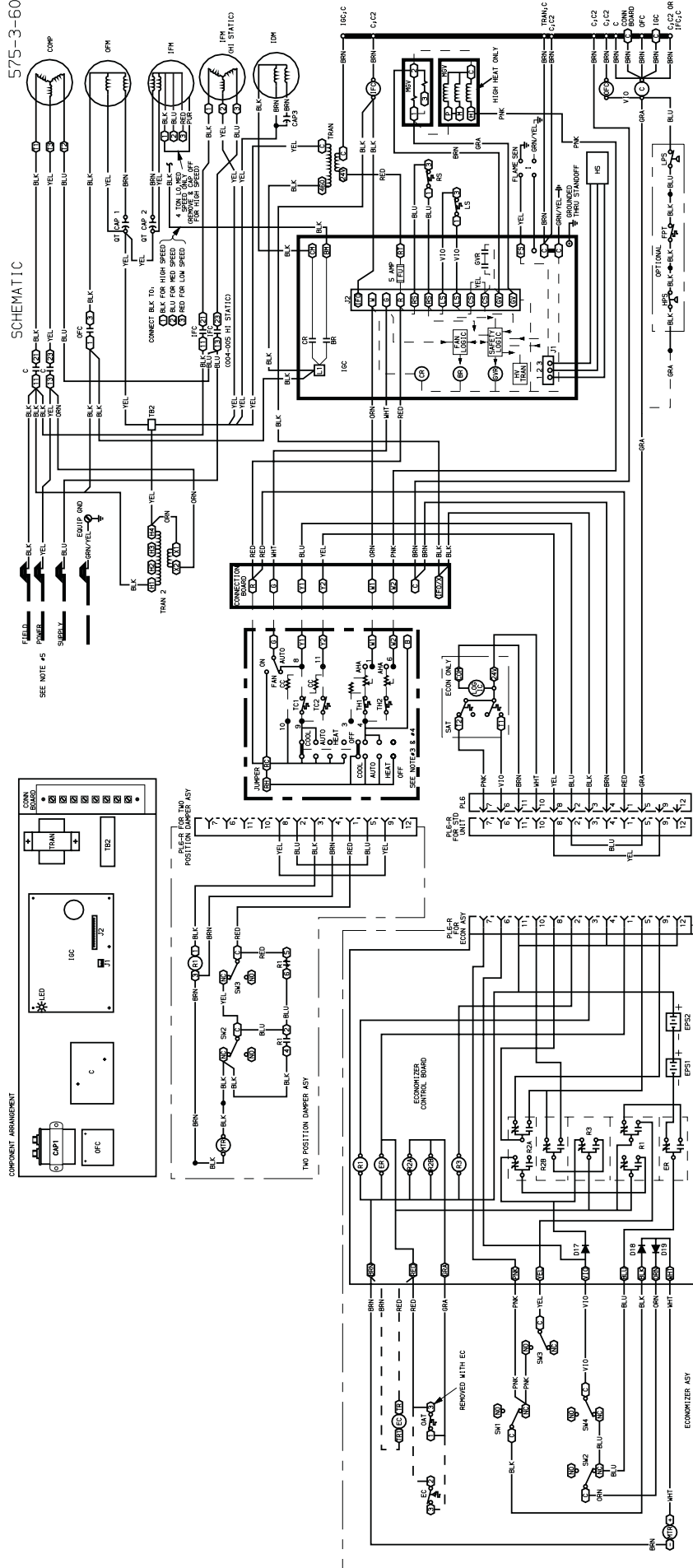


Fig. 4 — Label Diagram, Schematic and Component Arrangement; 48TJ004,005, 575-3-60

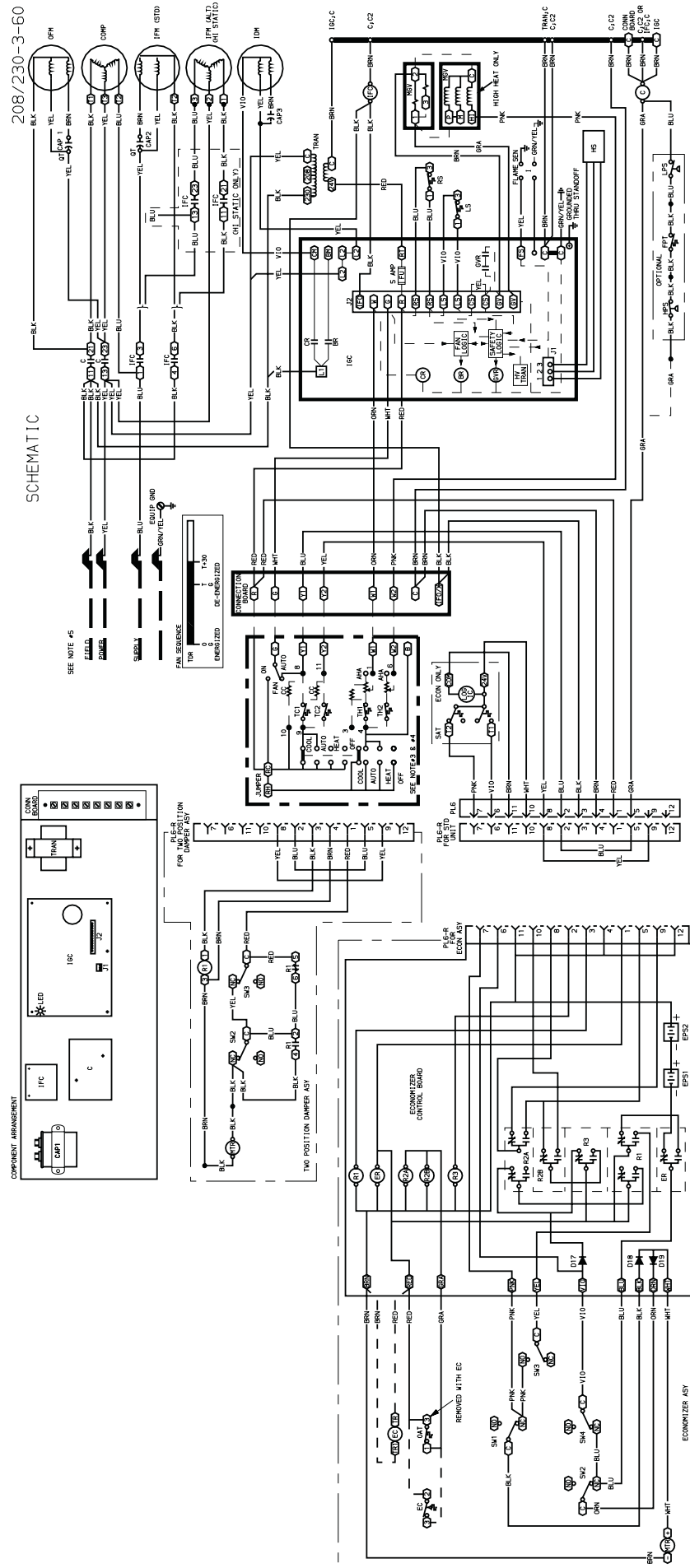
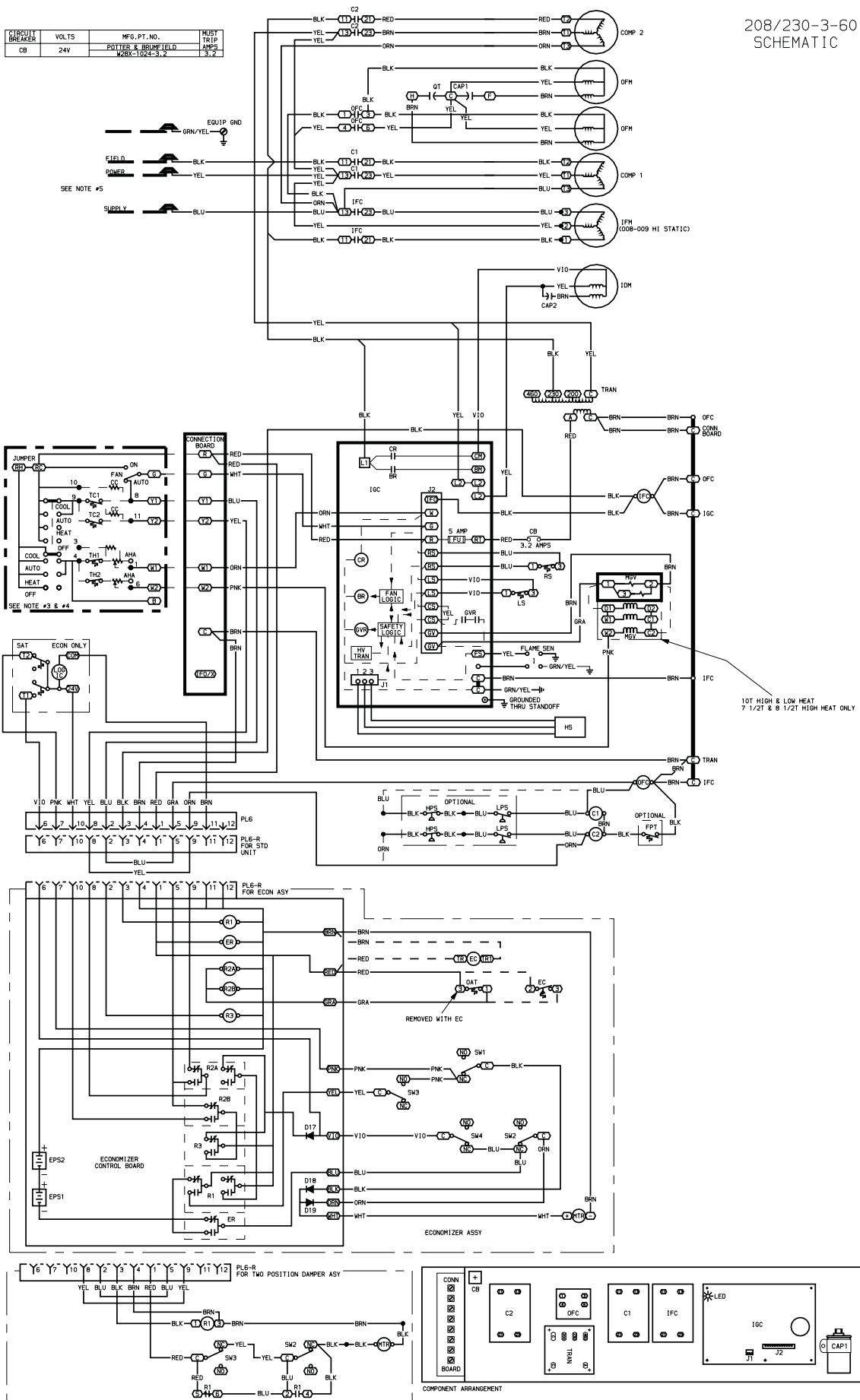


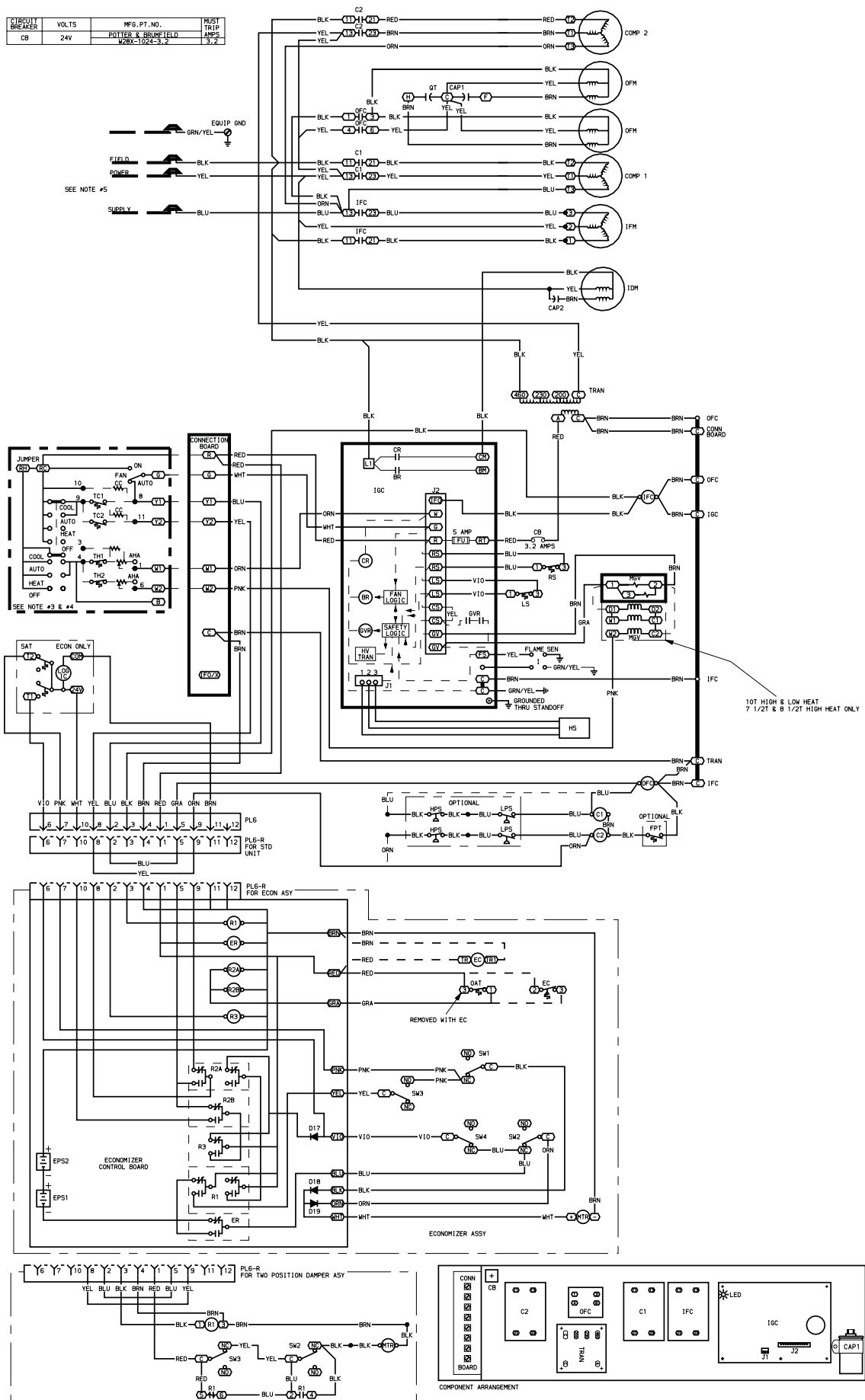
Fig. 5 — Label Diagram, Schematic and Component Arrangement; 48TJ006, 208/230-3-60





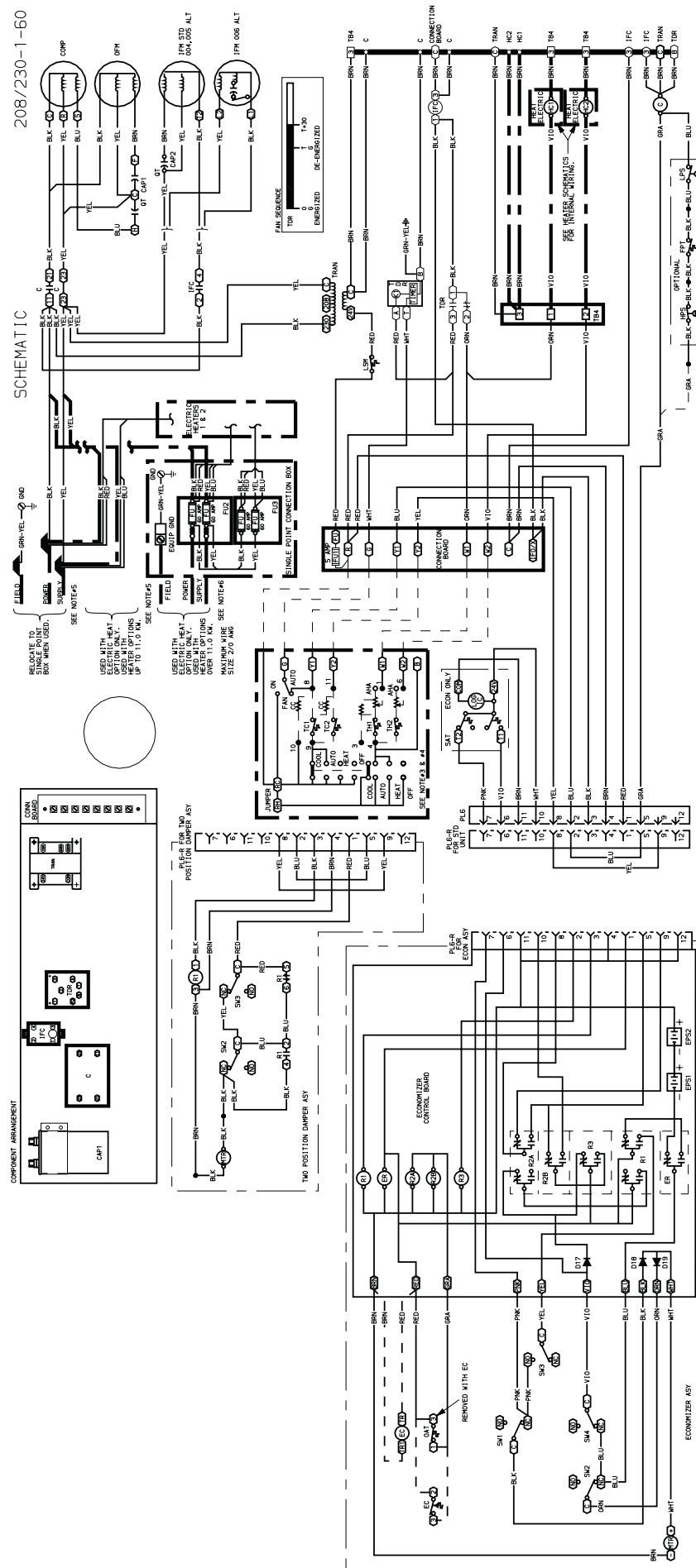


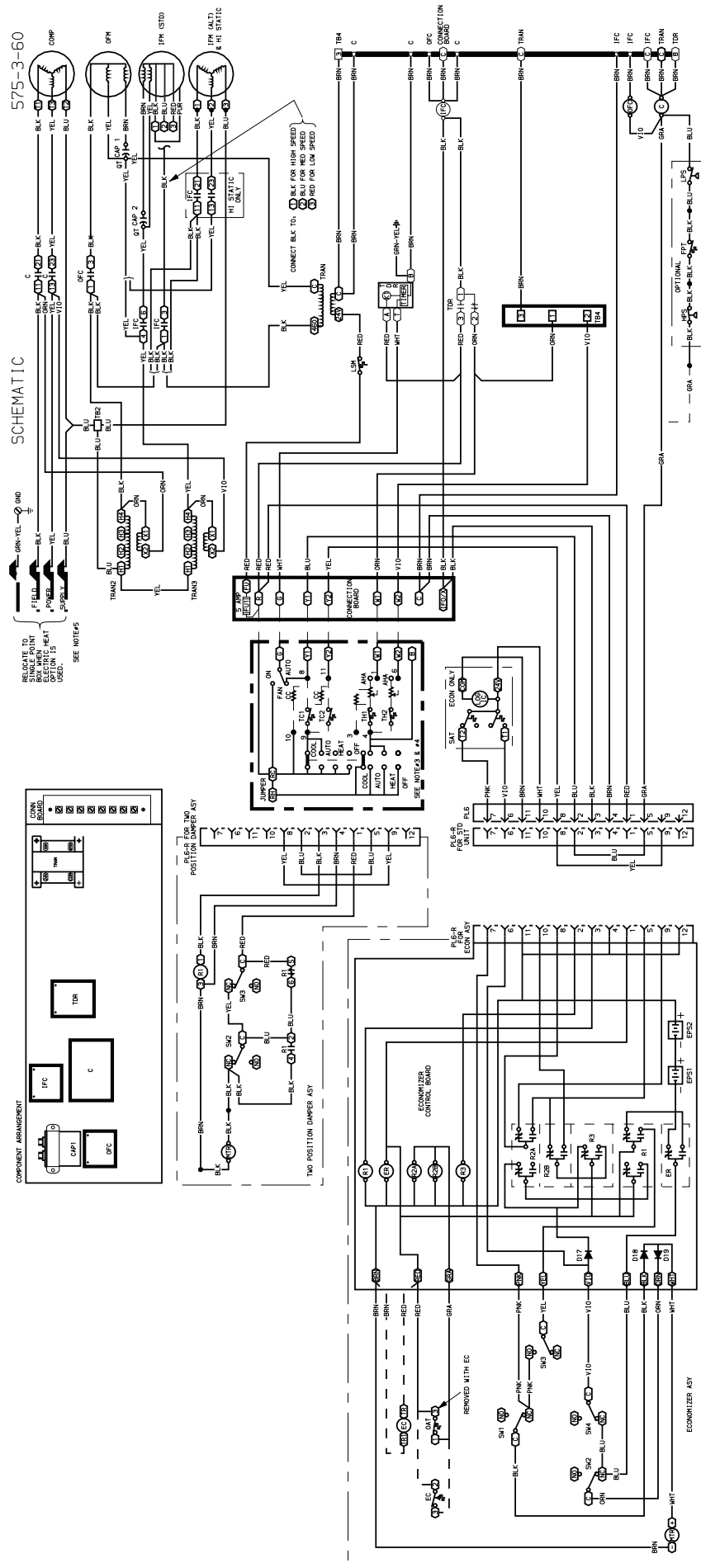


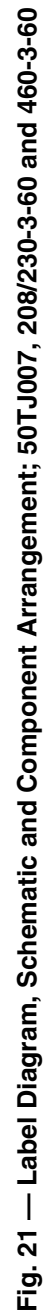


575-3-60
SCHEMATIC









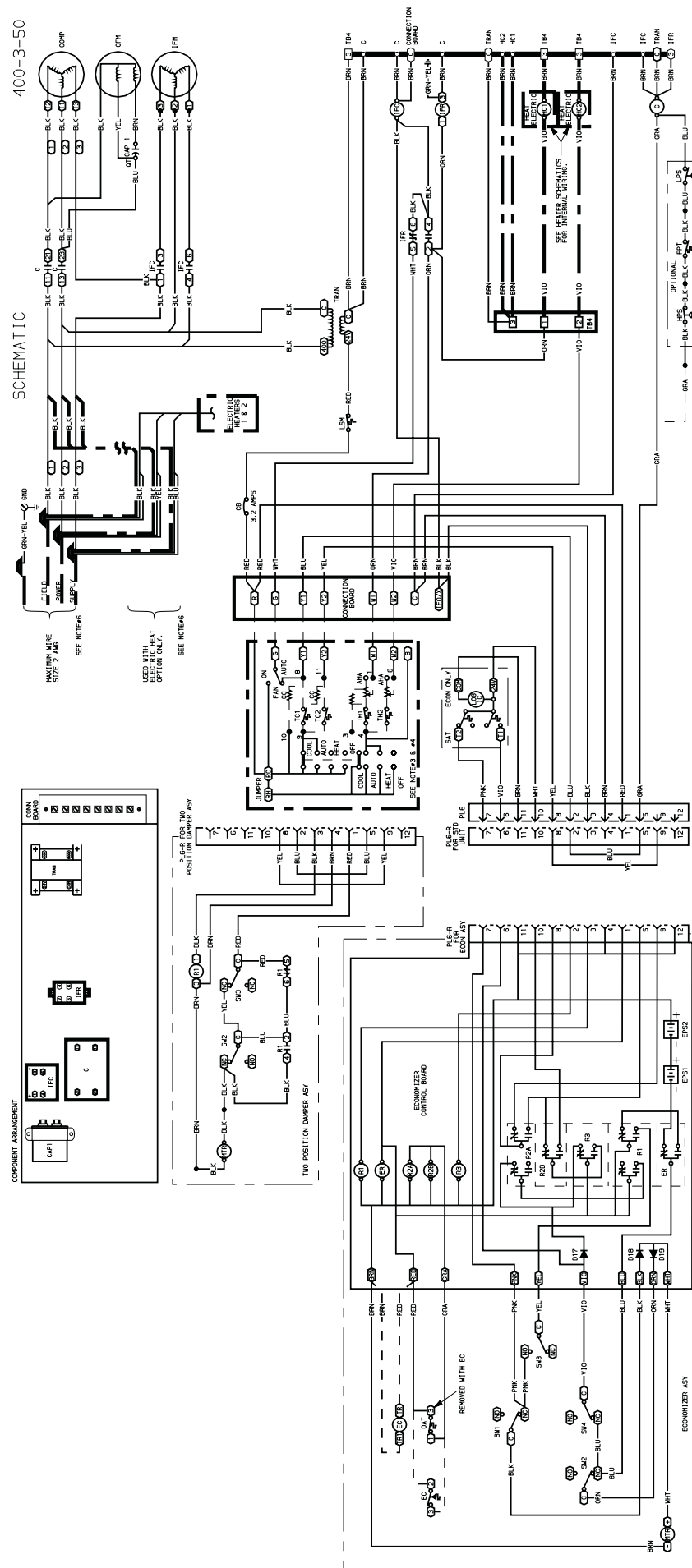


Fig. 23 — Label Diagram, Schematic and Component Arrangement; 50TJ007, 400-3-50

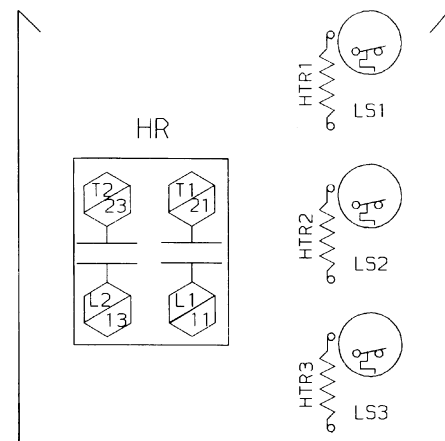
208/230-3-60 & 460-3-60







COMPONENT ARRANGEMENT



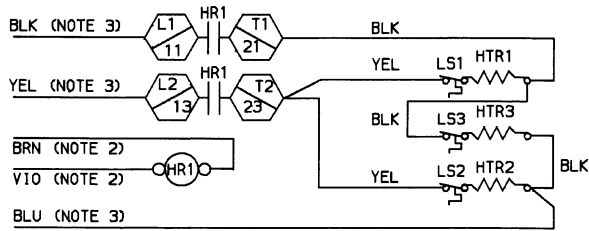
LEGEND

HTR	—	Heater
HR	—	Heater Relay
LS	—	Limit Switch
NEC	—	National Electrical Code
SC	—	Splice Connector
		Factory Wiring
		Field Control Wiring
		Sylvania
		Marked Terminal
		Elmwood
		Unmarked Terminal

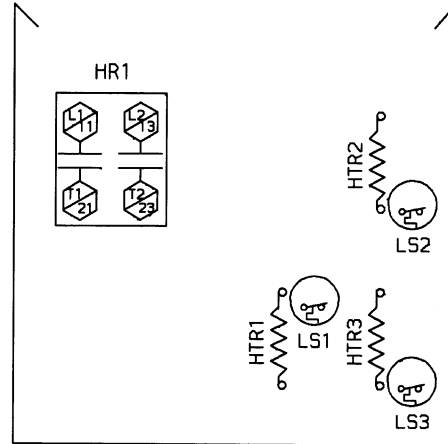
1. To be wired in accordance with NEC and local codes.
2. BRN and VIO 24-vac wires are supplied with heater and connected at installation to base unit as shown on base unit wiring diagram.
3. For single phase, disconnect YEL1 wire from terminal L1/11 and connect RED1 wire and splice connector to loose terminal on YEL1 as shown above.
4. Power wires are supplied with heater and connected at installation to base unit field power connection box as shown on base unit wiring diagram. For field installation of electric heaters, field power connection box shown on equipment nameplate must be used.

Fig. 27 — Accessory Electric Heater Label Diagram; 4.9/6.5 kW, 6.5/8.7 kW, 9.8/13.0 kW, 13.1/17.4 kW, 15.8/21.0 kW; 208/240 V; Single-Phase (Units 50TJ004-006) and 4.9/6.5 kW, 7.9/10.5 kW, 12.0/16.0 kW, 15.8/21.0 kW, 19.9/26.5 kW; 208/240 V; 3-Phase (Units 50TJ004-007)

SCHEMATIC DIAGRAM



COMPONENT ARRANGEMENT



⚠ WARNING

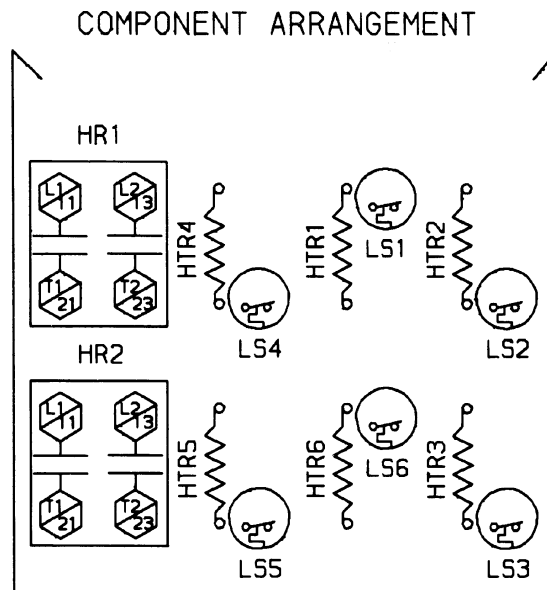
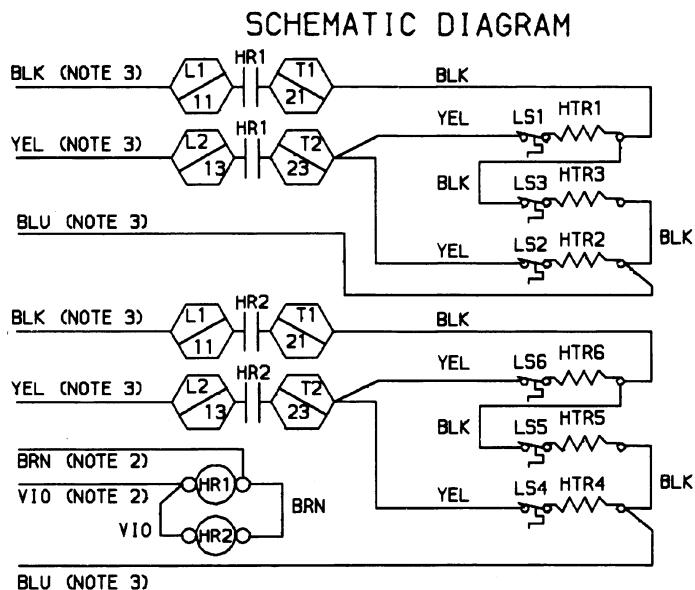
Electric shock hazard —
 Disconnect all branch circuits before removing this cover.

NOTES:

1. To be wired in accordance with NEC and local codes.
2. BRN and VIO 24-vac wires are supplied with heater and connected at installation to base unit as shown on base unit wiring diagram.
3. Power wires are supplied with heater and connected at installation to base unit field power connection box as shown on base unit wiring diagram. For field installation of electric heaters, field power connection box shown on equipment nameplate must be used.

LEGEND
HTR — Heater
HR — Heater Relay
LS — Limit Switch
NEC — National Electrical Code
 Sylvania
 Marked Terminal
 Elmwood
 Unmarked Terminal

Fig. 28 — Accessory Electric Heater Label Diagram; 50TJ008-014; 7.8/10.4 kW and 12.0/16.0 kW, 208/240 V, 3-Phase



⚠ WARNING

Electric shock hazard —
Disconnect all branch circuits before removing this cover.

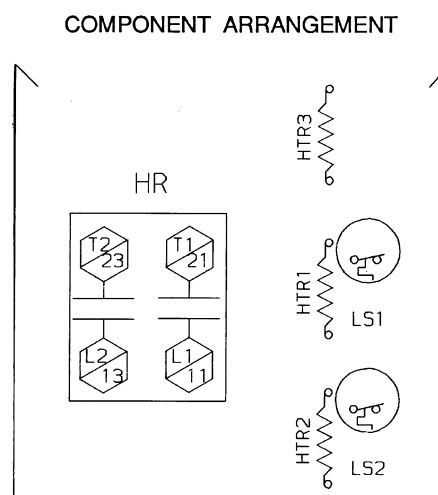
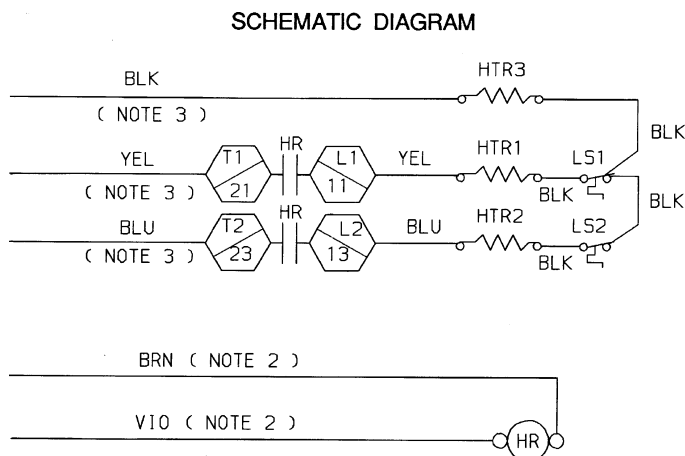
NOTES:

1. To be wired in accordance with NEC and local codes.
2. BRN and VIO 24-vac wires are supplied with heater and connected at installation to base unit as shown on base unit wiring diagram.
3. Power wires are supplied with heater and connected at installation to base unit field power connection box as shown on base unit wiring diagram. For field installation of electric heaters, field power connection box shown on equipment nameplate must be used.

Fig. 29 — Accessory Electric Heater Label Diagram; 18.6/24.8 kW, 24.0/32.0 kW, 31.8/42.4 kW, and 37.5/50.0 kW, 208/240 V, 3 Phase

LEGEND

HTR — Heater
HR — Heater Relay
LS — Limit Switch
NEC — National Electrical Code
 Sylvania
 Marked Terminal
 Elmwood
 Unmarked Terminal



⚠ WARNING

Electric shock hazard —
Disconnect all branch circuits before removing this cover.

NOTES:

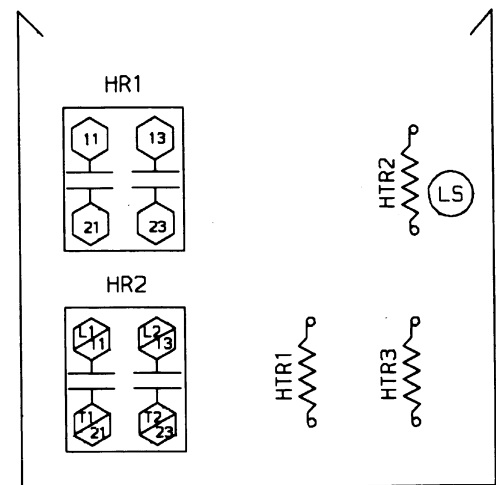
1. To be wired in accordance with NEC and local codes.
2. BRN and VIO 24-vac wires are supplied with heater and connected at installation to base unit as shown on base unit wiring diagram.
3. Power wires are supplied with heater and connected at installation to base unit field power connection box as shown on base unit wiring diagram. For field installation of electric heaters, field power connection box shown on equipment nameplate must be used.

Fig. 30 — Accessory Electric Heater Label Diagram; 6.0 kW, 11.5 kW, 14.0 kW, 23.0 kW, 25.0 kW; 480 V; 3-Phase (Units 50TJ004-007)

LEGEND

HTR — Heater
HR — Heater Relay
LS — Limit Switch
NEC — National Electrical Code
 Sylvania
 Marked Terminal
 Elmwood
 Unmarked Terminal

COMPONENT ARRANGEMENT



Electric shock hazard —
Disconnect all branch circuits before removing this cover.

HTR — Heater
HR — Heater Relay
LS — Limit Switch
NEC — National Electrical Code

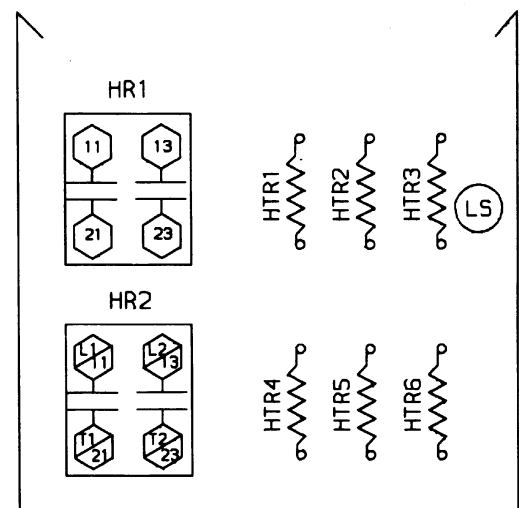


Sylvania
Marked Terminal
Elmwood
Unmarked Terminal

1. To be wired in accordance with NEC and local codes.
2. BRN and VIO 24-vac wires are supplied with heater and connected at installation to base unit as shown on base unit wiring diagram.
3. Power wires are supplied with heater and connected at installation to base unit field power connection box as shown on base unit wiring diagram. For field installation of electric heaters, field power connection box shown on equipment nameplate must be used.

**Fig. 31 — Accessory Electric Heater Label Diagram; 13.9 kW and 16.5 kW, 480 V, 3 Phase;
18 kW, 575 V, 3 Phase**

COMPONENT ARRANGEMENT



Electric shock hazard —
Disconnect all branch circuits before removing this cover.

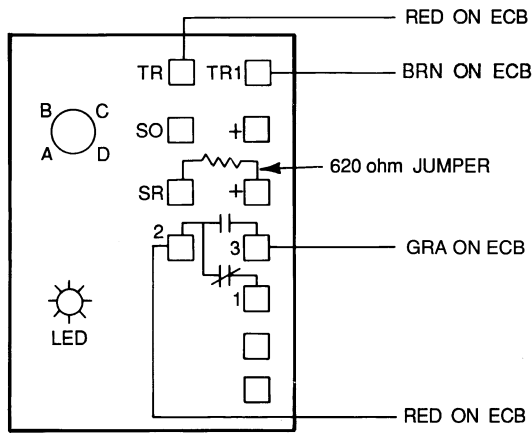
HTR — Heater
HR — Heater Relay
LS — Limit Switch
NEC — National Electrical Code



Sylvania
Marked Terminal
Elmwood
Unmarked Terminal

1. To be wired in accordance with NEC and local codes.
2. BRN and VIO 24-vac wires are supplied with heater and connected at installation to base unit as shown on base unit wiring diagram.
3. Power wires are supplied with heater and connected at installation to base unit field power connection box as shown on base unit wiring diagram. For field installation of electric heaters, field power connection box shown on equipment nameplate must be used.

Fig. 32 — Accessory Electric Heater Label Diagram; 27.8 kW, 33.0 kW, 41.7 kW, and 50.0 kW, 480 V, 3 Phase; 36.0 kW and 54.0 kW, 575 V, 3 Phase

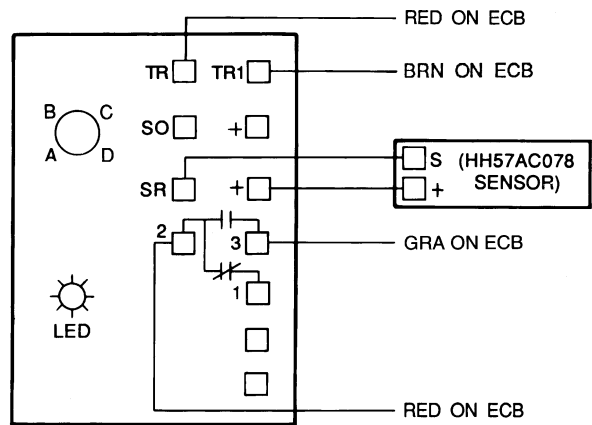


LEGEND

ECB — Economizer (Durablade) Control Board
LED — Light-Emitting Diode

NOTE: Switches shown in high enthalpy state. Terminals 2 and 3 close on enthalpy decrease.

Fig. 33 — Accusensor™ II Enthalpy Control (Part No. HH57AC077) Wiring



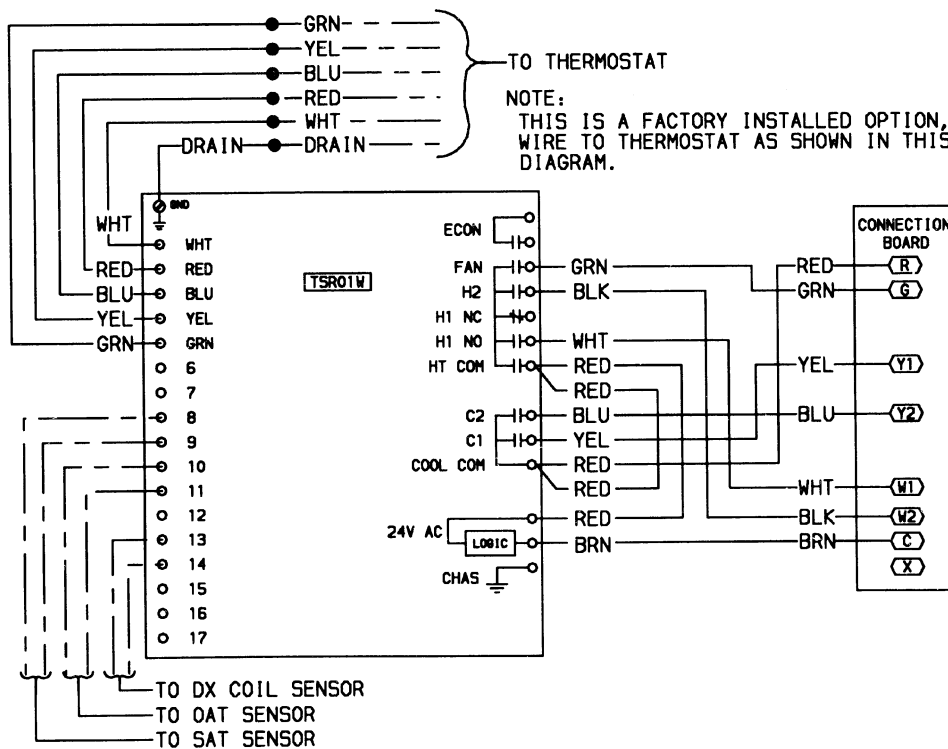
LEGEND

ECB — Economizer (Durablade) Control Board
LED — Light-Emitting Diode

NOTES:

1. Remove factory-installed 620-ohm jumper across SR and + before connecting wires from HH57AC078 sensor.
2. Switches are shown in high outdoor-air enthalpy state. Terminals 2 and 3 close on low outdoor-air enthalpy relative to indoor-air enthalpy.

Fig. 34 — Accusensor III Enthalpy Control (Part No. HH57AC077 and HH57AC078) Wiring



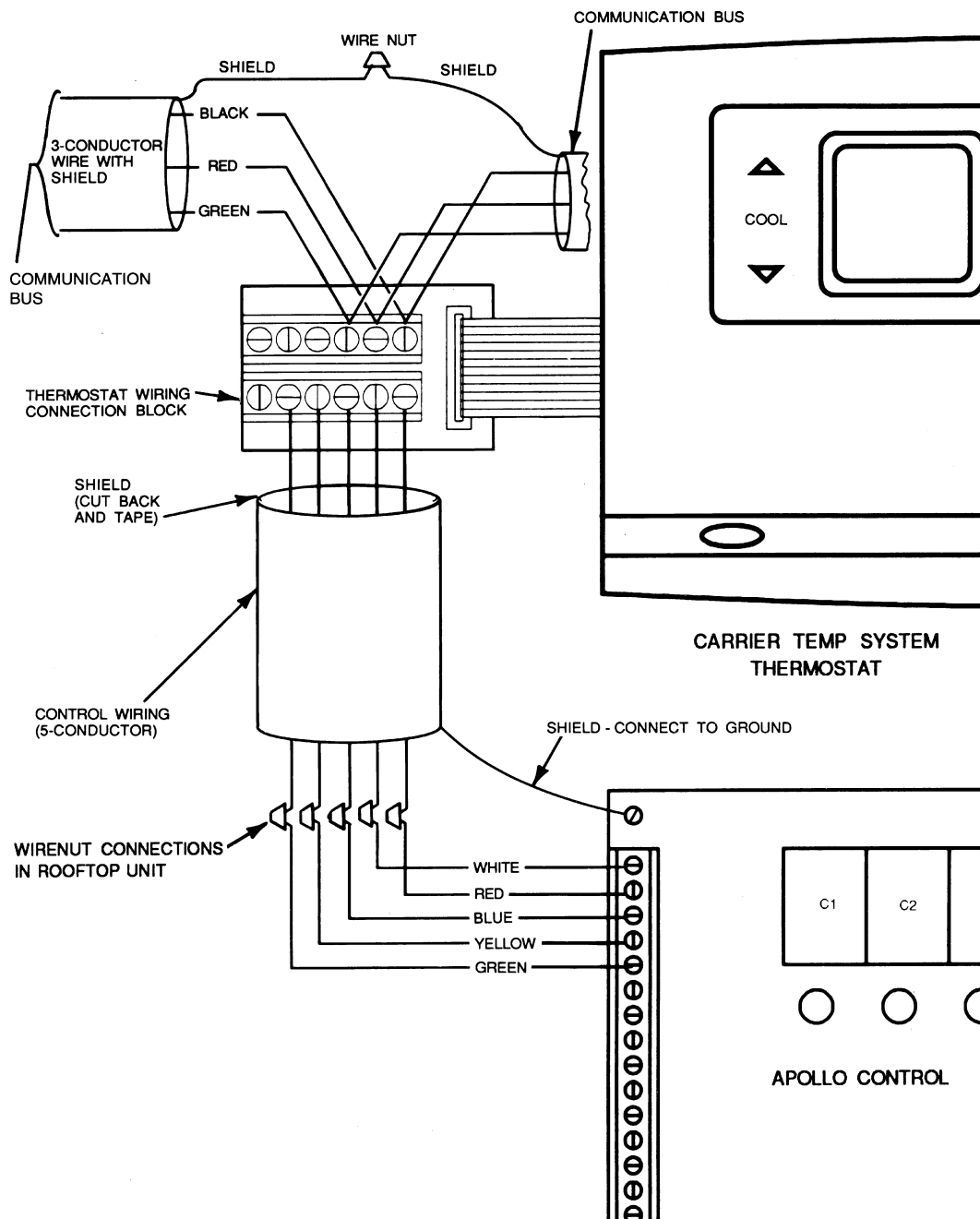
LEGEND

CHAS — Chassis Ground
COM — Common
DX — Direct Expansion
ECON — Economizer

GND — Ground
HT COM — Heat Common
OAT — Outdoor-Air Thermostat
SAT — Supply-Air Thermostat

— Factory Wiring
 - - - Field Control Wiring

Fig. 35 — Apollo Communicating Control Wiring



NOTE: Refer to Product Support Bulletin No. 93-005 for shielded wire applications when wiring the thermostat to the Apollo control and for all communication bus wiring connections.

Fig. 36 — Carrier TEMP System Thermostat and Apollo Communicating Control Wiring

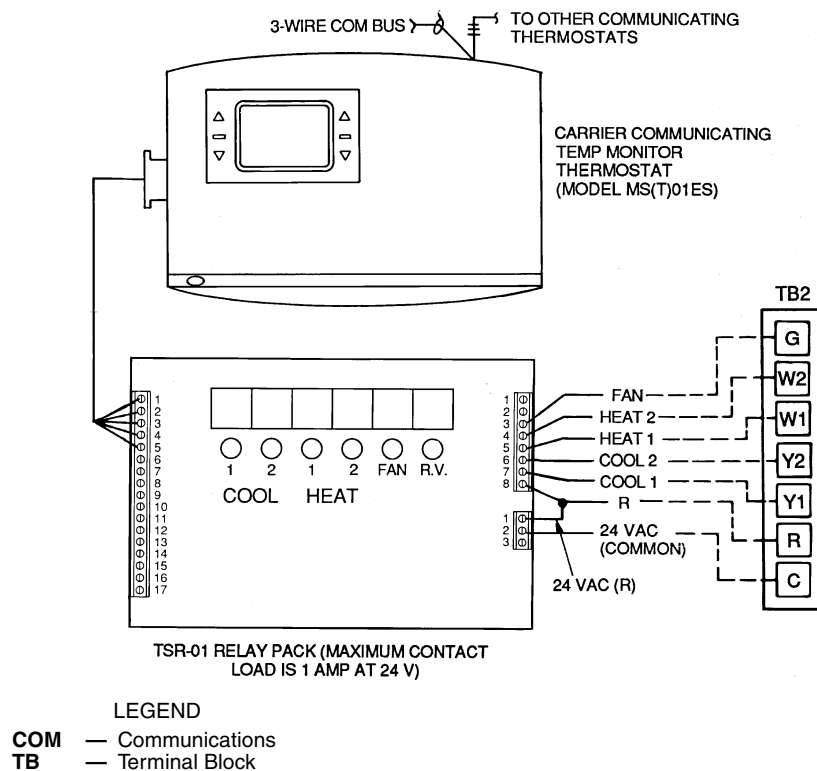


Fig. 37 — Electronic Thermostat

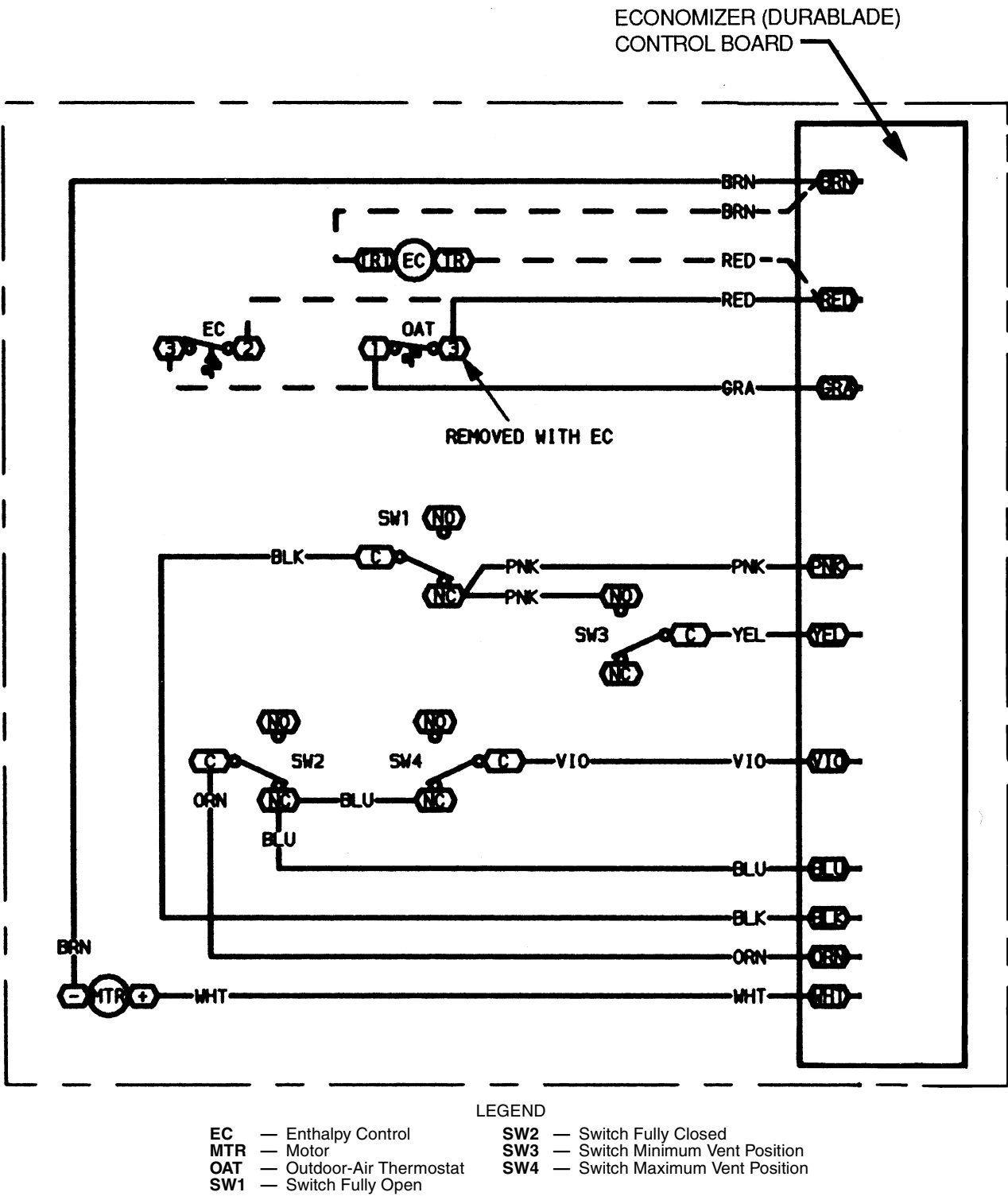


Fig. 38 — Enthalpy Control and Durablade Economizer Control Board Wiring

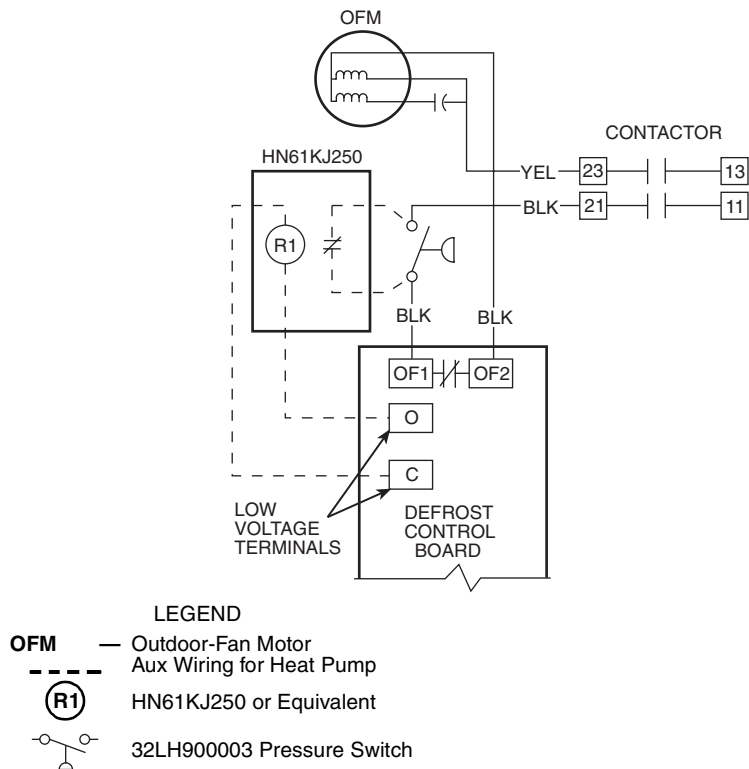


Fig. 39 — Motormaster® IV Control Wiring

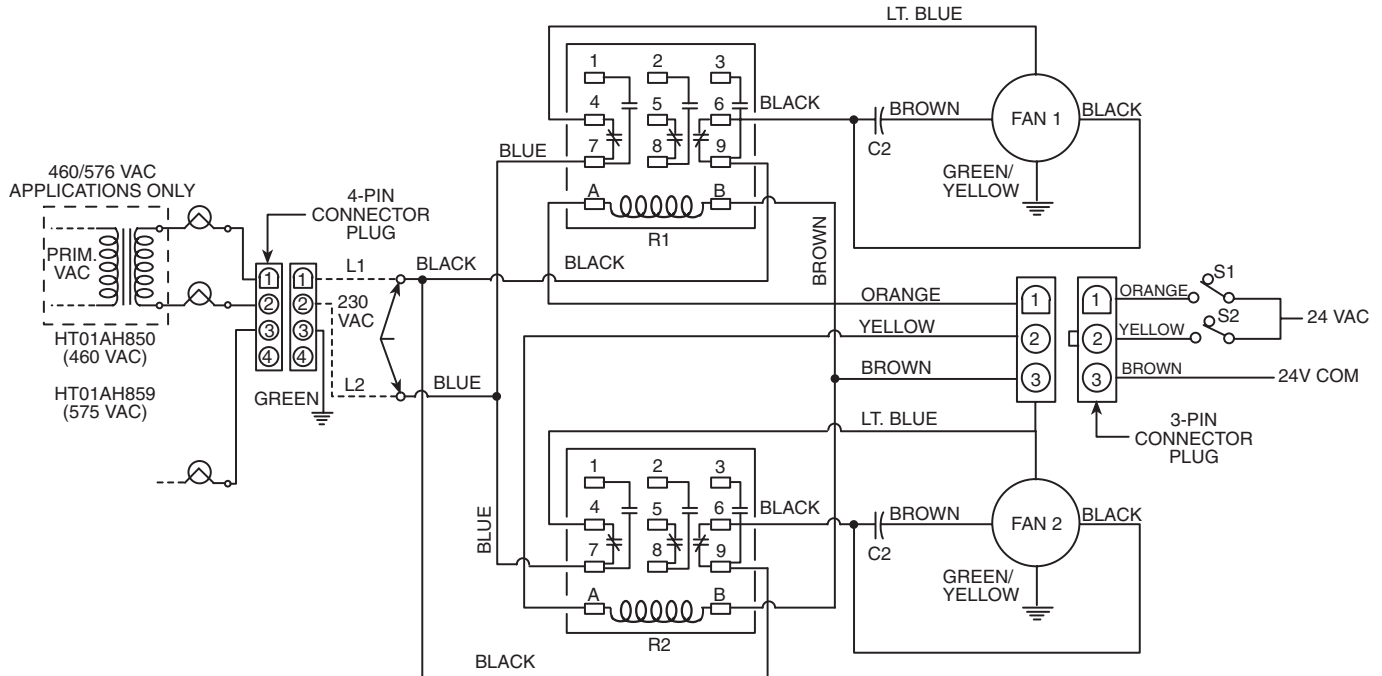


Fig. 40 — EconoMi\$er and Power Exhaust Wiring

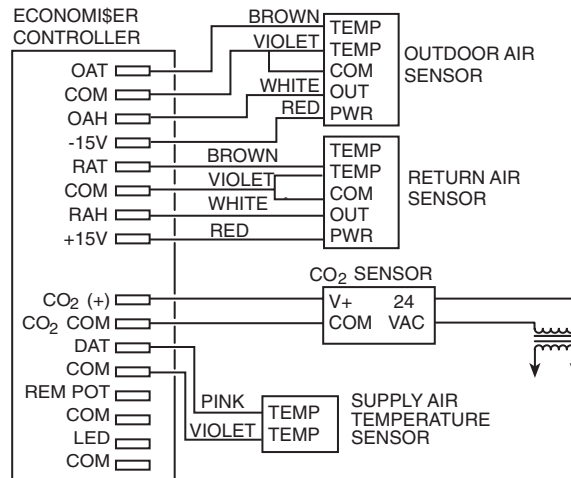


Fig. 41 — EconoMi\$er Sensor Wiring

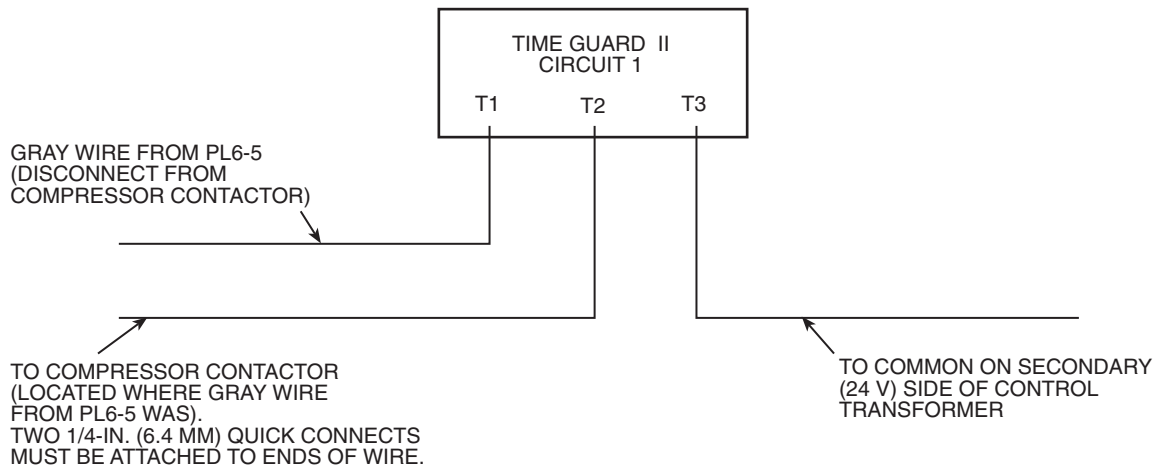
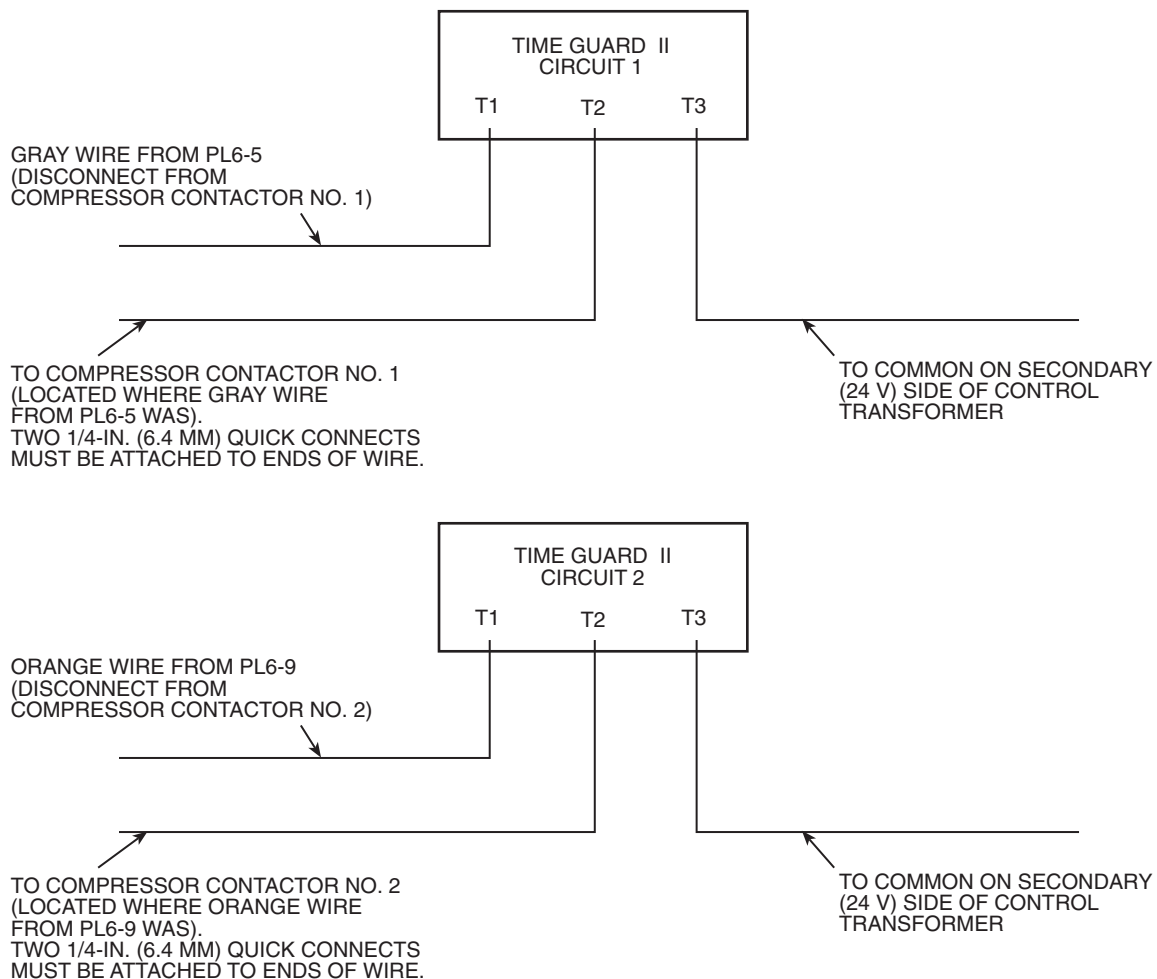


Fig. 42 — 48/50TJ004-007; Time Guard® II Control Wiring



LEGEND

PL — Plug
T — Terminal

Fig. 43 — 48/50TJ008-014; Time Guard® II Control Wiring