

Single Package Rooftop (3 to 15 Nominal Tons) High Short Circuit Current Rating (60 Hz HSCCR)

Supplemental Installation Instructions


NOTE: The HSCCR is a factory installed option (FIOP) only. These instructions are a supplement to the Make Electrical Connections section of the installation instructions for the units listed in the Model/Size Reference table below when equipped with the HSCCR FIOP.

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

It is important to recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

MODEL REFERENCE

The HSCCR is a factory-installed option available for the units listed in Table 1. See Table 2 for the HSCCR rating, in kA, per voltage.

Table 1 — Model/Size Reference

BRAND	UNITS	SIZES
CARRIER	48/50TC	08-16
	50TCQ	08-14
	48/50HC	07-14
	50HCQ	07-12
	48/50LC	07-12
	48/50FC	04-07
	50FCQ	04-07
	48/50GC	04-06
	50GCQ	04-06
BRYANT	48/50JC	04-06
	580J/558J	08-16
	548J	08-14
	581J/551J	07-14
	549J	07-12
	582K/559K	04-07
	547K	04-07
	581K/551K	04-06
ICP	549K	04-06
	RGS/RAS	089-180
	RHS	089-150
	RGH/RAH	072-150
	RHH	072-120
	RGV/RAV	036-072
	RHV	036-072
	RGW/RAW	036-060
	RHW	036-060

Table 1 is an encompassing list of all models that will include the HSCCR option. Contact your local representative on current offering.

Table 2 — HSCCR Rating (kA) per Voltage

VOLTAGE-PHASE-Hz	kA
208/230-1-60	10 kA
208/230-3-60	10 kA
460-3-60	10 kA

ELECTRICAL CONNECTIONS

⚠ DANGER

ELECTRICAL SHOCK HAZARD

Failure to follow this warning will result in personal injury or death.

Before performing service or maintenance operations on unit, turn off main power switch to unit and install lock(s) and lock-out tag(s). Ensure electrical service to rooftop unit agrees with voltage and amperage listed on the unit rating plate. Unit may have more than one power switch.

⚠ WARNING

ELECTRIC SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to unit ground lug in control compartment, or conduit approved for electrical ground when installed in accordance with NEC; ANSI/NFPA 70, latest edition (in Canada, Canadian Electrical Code CSA [Canadian Standards Association] C22.1), and local electrical codes.

NOTE: Field-supplied wiring shall conform with the limitations of minimum 63°F (35°C) rise.

Gas Heat/Electric Cooling Units, Electric Cooling Units, or Heat Pump Units

208/230V-1PH-60HZ, 208/230V-3PH-60HZ OR
460V-3PH-60HZ UNITS

NOTE: Main Power Connection is the same for both gas heat/electric cooling, electric cooling only units (without factory installed option or field installed accessory electric heaters) and heat pump units (without factory installed option or field installed accessory electric heaters). If the electric cooling or heat pump unit has field installed accessory electric heaters see instructions on page 3.

See Fig. 1 for installation diagram. In addition, refer to the Control and Power wiring diagrams located in the unit control box.

1. Remove cover from Unit Control Main Fuse Box, save any hardware for re-assembly.
2. Route field supplied power wires into fuse box through connector provided and attach to LINE side of fuse block.
3. Tighten each pressure lug set screw to:
 - 60A fuse - 2.3 Nm (20 lb-in)
 - 80A or 100A fuse - 4.5 Nm (40 lb-in).
4. Connect ground wiring to ground pressure lug provided.
5. Replace cover in reverse order.

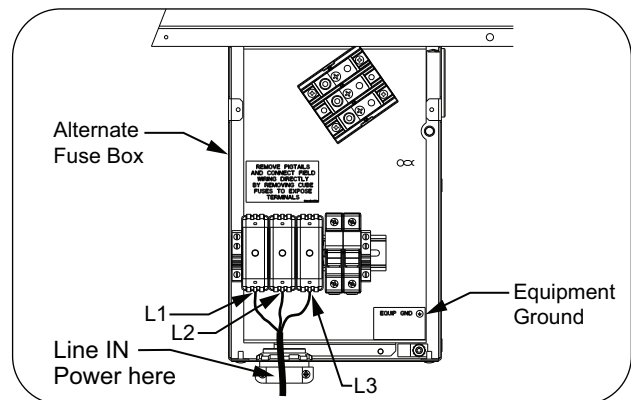
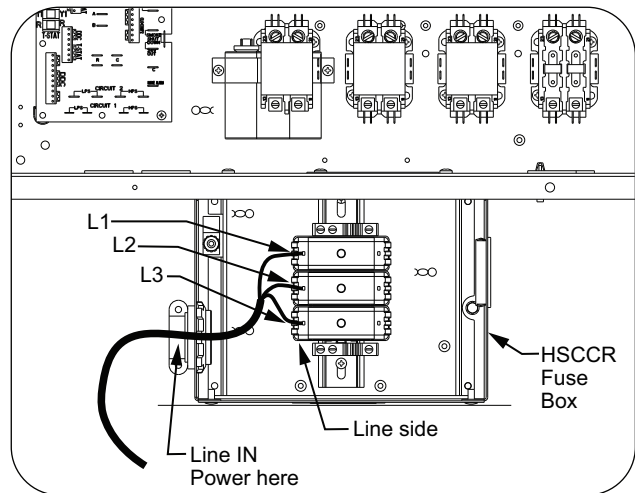
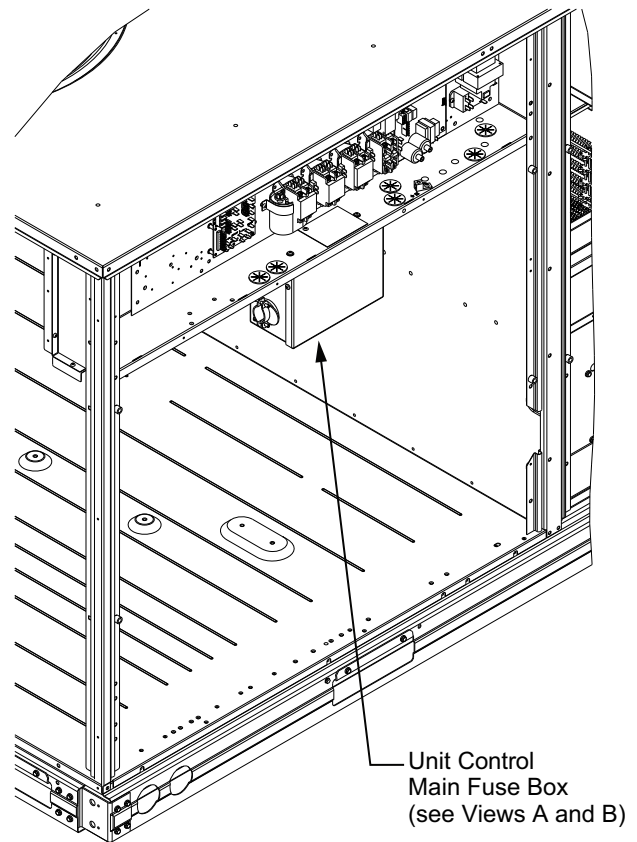


Fig. 1 — HSCCR Wiring for 208/230V and 460V Gas Heat/Electric Cooling, Electric Cooling, or Heat Pump Units

Field Power Wiring Installation for Electric Cooling Units with Electric Heat FIOF Installed or Heat Pump Units with Electric Heat FIOF Installed — Units with Vane Axial Fans Only

208/230V-1PH-60HZ, 208/230V-3PH-60HZ OR
460V-3PH-60HZ UNITS

NOTE: Power Distribution assembly for Electric Heaters may be factory or field installed. Field Power installation is the same for either configuration.

See Fig. 2 for installation diagram. In addition, refer to the Control and Power wiring diagrams located in the unit control box.

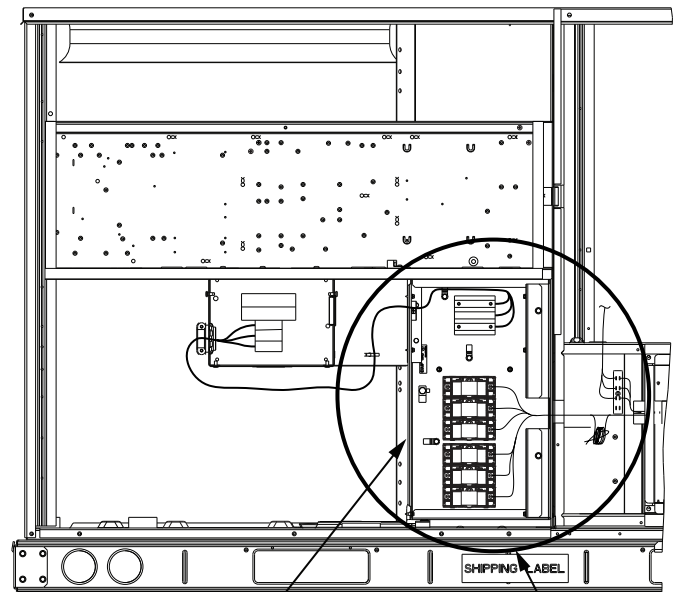
This procedure applies to the following units only:

BRAND	UNITS	SIZES
CARRIER	50FC	04-07
	50FCQ	04-07
	50GC	04-06
	50GCQ	04-06
	50JC	04-06
BRYANT	559K	04-07
	547K	04-07
	551K	04-06
	549K	04-06
ICP	RAV	036-072
	RHV	036-072
	RAW	036-060
	RHW	036-060

1. Remove cover(s) from Single Point Power Box (SPB), save any hardware for re-assembly.
2. Route line power wiring into SPB through knockout provided on side panel. Connection hardware is field-supplied.
3. Connect line power wires to terminal block lugs. Connect ground wiring to ground pressure lug. See Table 3 for tightening torque values.
4. Replace SPB cover(s) in reverse order.

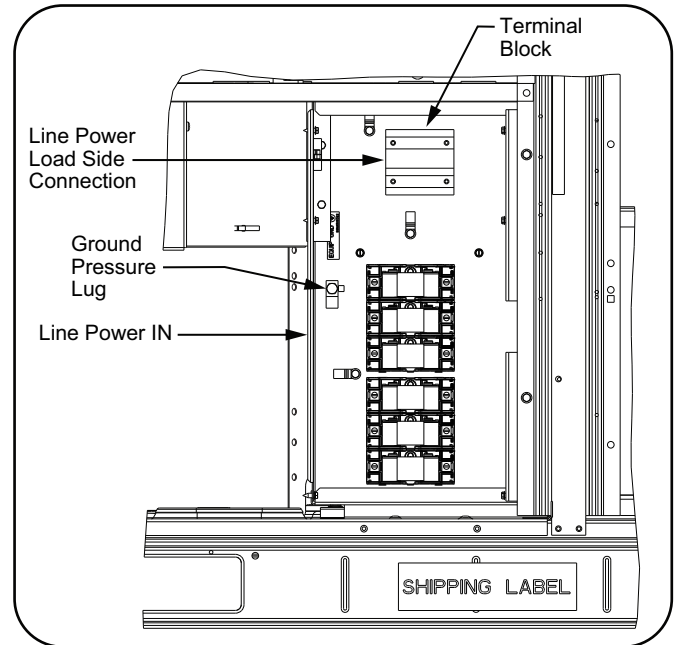
Table 3 — Tightening Torque Values for Aluminum Dual-Rated Socket Screw Connectors

AWG SIZE	TIGHTENING TORQUE (in.-lb)	
	LINE SIDE	LOAD SIDE
12	35	35
10	35	35
8	40	35
6	120	35
4	120	35
2	120	—
1	120	—
1/0	120	—
2/0	120	—



Single Point Power Box shown with cover(s) removed

View A



VIEW A

Fig. 2 — HSCCR Wiring for 208/230V and 460V Electric Cooling with Electric Heat FIOF Installed (50FC/50GC/50JC/559K/551K/RAV/RAW Units) or Heat Pump with Electric Heat FIOF Installed (50FCQ/50GCQ/547K/549K/RHV/RHW Units)

Field Power Wiring Installation for Electric Cooling Units with Electric Heat FIOP Installed and Heat Pump Units with Electric Heat FIOP Installed

208/230V-3PH-60HZ OR 460V-3PH-60HZ UNITS

NOTE: Power Distribution assembly for Electric Heaters may be factory or field installed. Field Power installation is the same for either configuration.

See Fig. 3 for installation diagram. In addition, refer to the Control and Power wiring diagrams located in the unit control box.

This procedure applies to the following units only:

BRAND	UNITS	SIZES
CARRIER	50TC	08-16
	50TCQ	08-14
	50HC	07-14
	50HCQ	07-12
	50LC	07-12
BRYANT	558J	08-16
	548J	08-14
	551J	08-14
	549J	07-12
ICP	RAS	089-180
	RHS	089-150
	RAH	072-150
	RHH	072-120

1. Remove cover(s) from Single Point Power Box (SPB), save any hardware for re-assembly.
2. Route line power wiring into SPB through knockout provided on side panel. Connection hardware is field-supplied.
3. Connect line power wires to terminal block lugs provided. Use open terminal lugs — do not disconnect unit power wires. Connect ground wiring to ground pressure lug. See Table 3 on page 3 for tightening torque values.
4. Replace SPB cover(s) in reverse order.

TYPICAL WIRING DIAGRAMS

Figures 4 - 15 are typical examples of HSCCR control and power wiring diagrams.

NOTE: The wiring diagrams for a specific model are mounted in the unit control box. Refer to the wiring diagrams in the unit control box when making the field power wiring connections for HSCCR units.

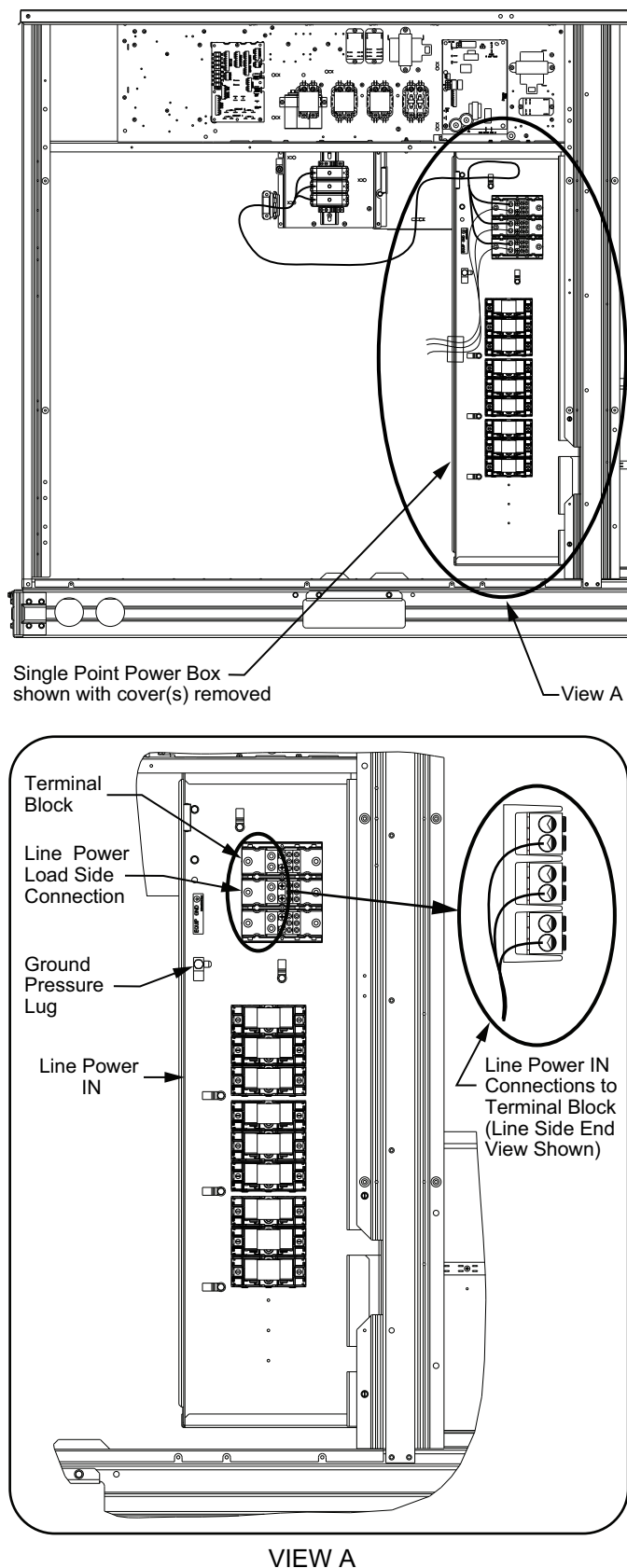
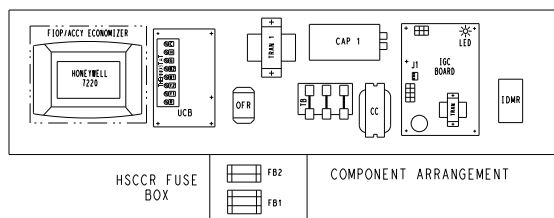


Fig. 3 — HSCCR Wiring for 208/230V and 460V Electric Cooling with Electric Heat FIOP Installed and Heat Pump Units with Electric Heat FIOP Installed



- NOTES:
1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD LAYOUT.
 2. TERMINAL BOARD JUMPERS 1, 2 AND 3 ARE CUT FOR REHEAT UNITS ONLY.
 3. REMOVE DESIGNATED JUMPERS ON TERMINAL BOARD WHEN ADDING SMOKE DETECTORS, OCCUPANCY AND REMOTE SHUTDOWN.
 4. USE HCC AS COARSE AND POT AS FINE ADJUSTMENTS FOR SETTING HIGH FAN SPEED. LOW SPEED IS AN OFFSET BASED ON DIP SWITCHES.
 5. 2-PIN LOW SPEED DIP SWITCH POSITIONS ARE FACTORY SET AS SHOWN.
 6. THE * WIRE COLOR IS FOR DIFFERENTIATION WITHIN THIS SCHEMATIC.
 7. COMPRESSOR LOADER PLUG CONTAINS BRIDGE RECTIFIER TO CONVERT AC TO DC.
 8. IGC P3 SETTING: 384 TON IS 75 SEC, 5 TON IS 90 SEC.

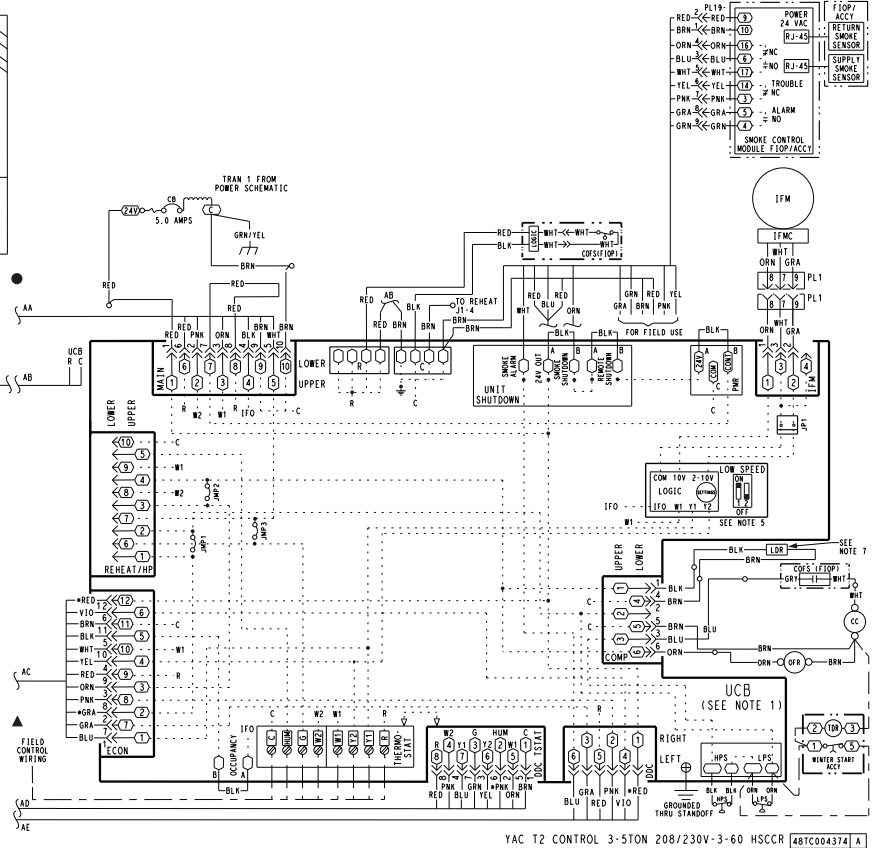
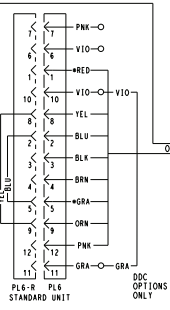
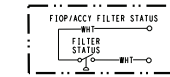
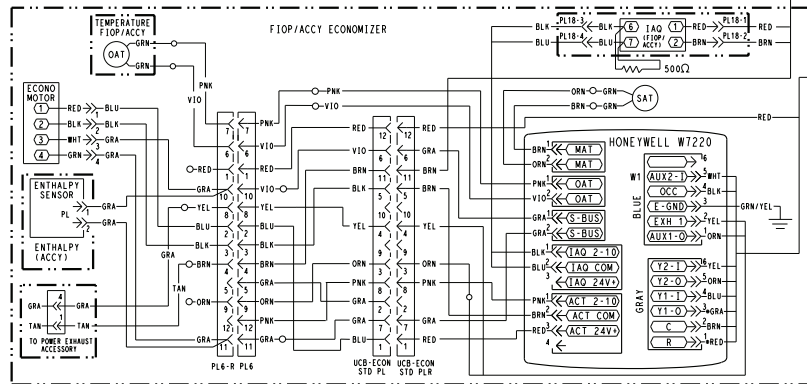
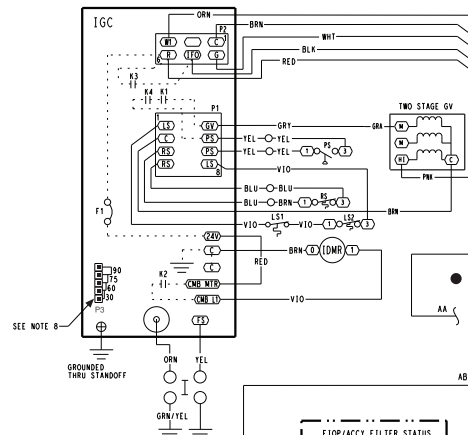
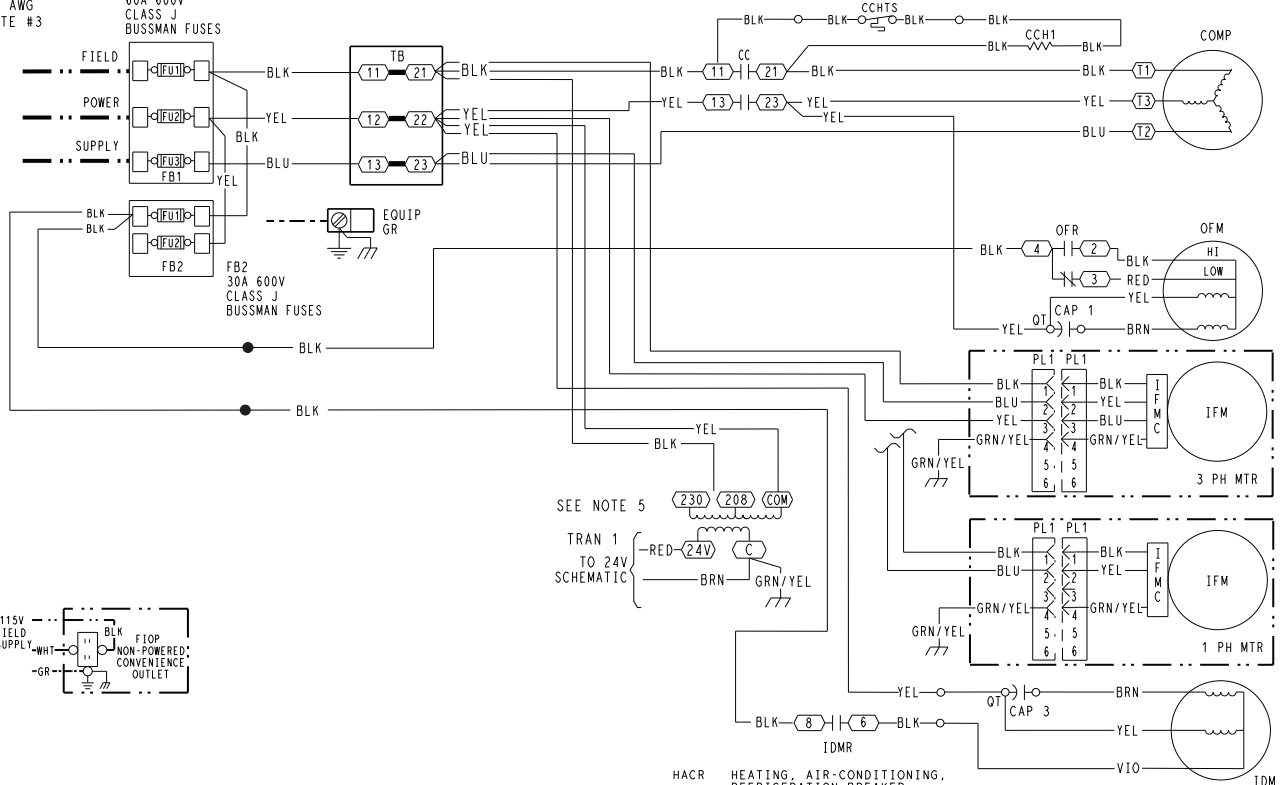


Fig. 4 — Typical Control Wiring Diagram, 3-5 Ton (48GC/581K/RGW) 208/230V-3-60 HSCCR Unit Shown

MAXIMUM WIRE
SIZE 4 AWG
SEE NOTE #3

FB1
60A 600V
CLASS J
BUSSMAN FUSES



NOTES

1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90° C WIRE OR ITS EQUIVALENT.
2. COMPRESSOR AND FAN MOTORS ARE THERMALLY PROTECTED.
3. USE COPPER CONDUCTOR ONLY.
4. DO NOT DISCONNECT POWER PLUG OR SIGNAL WIRE WHILE UNDER LOAD.
5. ON 208/230V UNITS, TRAN IS WIRED FOR 230V. IF UNIT IS TO BE RUN WITH 208V POWER SUPPLY, DISCONNECT BLK WIRE FROM 230V TAP AND CONNECT TO 208V TAP.

LEGEND

(Y)	MARKED WIRE
(X)	TERMINAL (MARKED)
()	TERMINAL (UNMARKED)
[X]	TERMINAL BLOCK
●	SPLICE
○	SPLICE (MARKED)
—	FACTORY WIRING
- - -	FIELD CONTROL WIRING
- - - -	FIELD POWER WIRING
- - - - -	CIRCUIT BOARD TRACE
- - - - -	ACCESSORY OR OPTIONAL WIRING

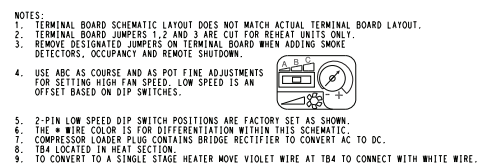
ACCY	ACCESSORY
AUX	AUXILIARY
AWG	AMERICAN WIRE GAGE
BA	BUILDING AUTOMATION NETWORK
CC	CONTACTOR, COMPRESSOR
C	COMMON
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCHR	CRANKCASE HEATER RELAY
CCHTS	CRANKCASE HEATER TEMP SWITCH
CLO	COMPRESSOR LOCKOUT
CLV	COOLING LIQUID VALVE
CMB	CENTRIFUGAL MOTOR BLOWER
COFS	CONDENSATE OVERFLOW SWITCH
COM	SIGNAL COMMON
COMP	COMPRESSOR MOTOR
DDC	DIRECT DIGITAL CONTROL
DFB	DEFROST BOARD
DFT	DEFROST THERMOSTAT
ENR	ELECTRIC HEAT RELAY
ENTH	ENTHALPY
EQUIP	EQUIPMENT
ERV	ENERGY RECOVERY VENTILATOR
ESL	ENTHALPY SENSOR - LOW
FB	FUSE BLOCK
FIOP	FACTORY INSTALLED OPTION
FPT	FREEZE PROTECTION THERMOSTAT
FS	FLAME SWITCH
FST	FAN HOUSING TEMP SENSOR
FU	FUSE
G	THERMOSTAT FAN CALL
GR(GND)	GROUND
GV	GAS VALVE

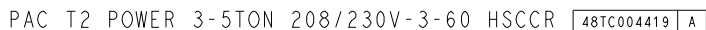
HACR	HEATING, AIR-CONDITIONING, REFRIGERATION BREAKER
HGRH	HOT GAS REHEAT
HPC	HEAD PRESSURE CONTROL
HPS	HIGH PRESSURE SWITCH
HR	HEATER RELAY
HUM	HUMIDISTAT
HSCCR	HIGH SHORT-CIRCUIT CURRENT RATINGS
I	IGNITOR
IAQ	INDOOR AIR QUALITY SENSORS
IDM	INDUCED DRAFT MOTOR
IDMR	INDUCED DRAFT RELAY
IFM	INDOOR FAN MOTOR
IFMC	INDOOR FAN MOTOR CONTROL
IFO	INDOOR FAN ON SIGNAL
IGC	INTEGRATED GAS CONTROL
IRH	INDOOR RELATIVE HUMIDITY
JMP	JUMPER
L1	LINE 1
LA	LOW AMBIENT LOCKOUT
LAR	LOW AMBIENT RELAY
LAS	LOW AMBIENT SWITCH
LDR	COMPRESSOR LOADER
LEN	LOCAL EQUIPMENT NETWORK
LOC	LOSS OF CHARGE
LOOP PWR	CURRENT LOOP POWER
LPS	LOW PRESSURE SWITCH
LS	LIMIT SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
LTLO	LOW TEMP LOCKOUT
MBB	MAIN BASE BOARD
MOV	METAL OXIDE VARISTOR
MTR	MOTOR
OAO	OUTDOOR AIR QUALITY
OAT	OUTDOOR AIR TEMP, SEN
OFM	OUTDOOR FAN MOTOR

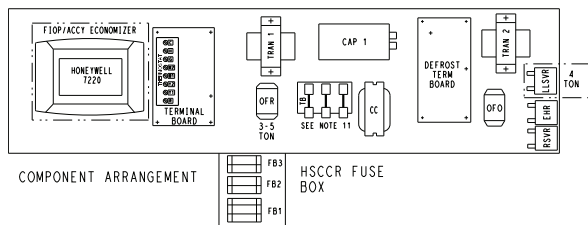
OFR	OUTDOOR FAN RELAY
OL	OVERLOAD PER POWER EXHAUST RELAY
PH	PHASE
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PMR	PHASE MONITOR RELAY
PS	PRESSURE SWITCH
PWM	PULSE WIDTH MODULATION
QT	QUADRUPLE TERMINAL
R	THERMOSTAT POWER
RAT	RETURN AIR TEMP, SEN
RDV	REHEAT DISCHARGE VALVE
RH	RELATIVE HUMIDITY
RLV	REHEAT LIQUID VALVE
RNET	LOCAL ACCESS NETWORK
RS	ROLLOUT SWITCH
RVS	REVERSING VALVE SOLENOID
SAT	SUPPLY AIR TEMP SENSOR
SDP	SYSTEM DISCHARGE PRESSURE
SPRH	SPACE RELATIVE HUMIDITY
SPT	SPACE TEMPERATURE SENSOR
SPTO	SPACE TEMPERATURE OFFSET
SSP	SYSTEM SUCTION PRESSURE
STD	STANDARD
SW	SWITCH
TB	TERMINAL BLOCK
TDR	TIME DELAY RELAY
TRAN	TRANSFORMER
UCB	UNIT CONTROL BOARD
W1	1st STAGE OF HEATING CALL
W2	2nd STAGE OF HEATING CALL
Y1	1st STAGE OF COOLING CALL
Y2	2nd STAGE OF COOLING CALL

YAC T2 POWER 3-5TON 208/230V-3-60 HSCCR 48TC004420 A

Fig. 5 — Typical Power Wiring Diagram, 3-5 Ton (48GC/581K/RGW) 208/230V-3-60 HSCCR Unit Shown







- NOTES:**
1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD LAYOUT.
 2. TERMINAL BOARD JUMPS 1, 2 AND 3 ARE CUT FOR HEATPUMP UNITS.
 3. REMOVE DESIGNATED JUMPS ON TERMINAL BOARD WHEN ADDING SMOKE DETECTORS, OCCUPANCY AND REMOTE SHUTDOWN.
 4. FOR HIGH FAN SPEED SETTING, USE A-B-C FOR COARSE AND POTENTIOMETER FOR FINE ADJUSTMENTS. LOW SPEED IS AN OFFSET BASED ON DIP SWITCHES.
 5. 2-PIN LOW SPEED DIP SWITCH POSITIONS ARE FACTORY SET AS SHOWN.
 6. THE W WIRE COLOR IS FOR DIFFERENTIATION WITHIN THIS SCHEMATIC.
 7. COMPRESSOR LEADER PLUG CONTAINS BRIDGE RECTIFIER TO CONVERT AC TO DC.
 8. TB4 LOCATED IN HEAT SECTION.
 9. TO CONVERT TO A SINGLE STAGE HEATER MOVE VIOLET WIRE AT TB4 TO CONNECT WITH WHITE WIRE.
 10. ON 3 & 5 TON UNITS, PINK FROM MPC CONNECTS DIRECTLY TO TEL FROM PIN ③.
 11. 3 PHASE UNIT SHOWN, ON 1 PHASE UNITS THIS IS A 2 POLE TERMINAL BLOCK.

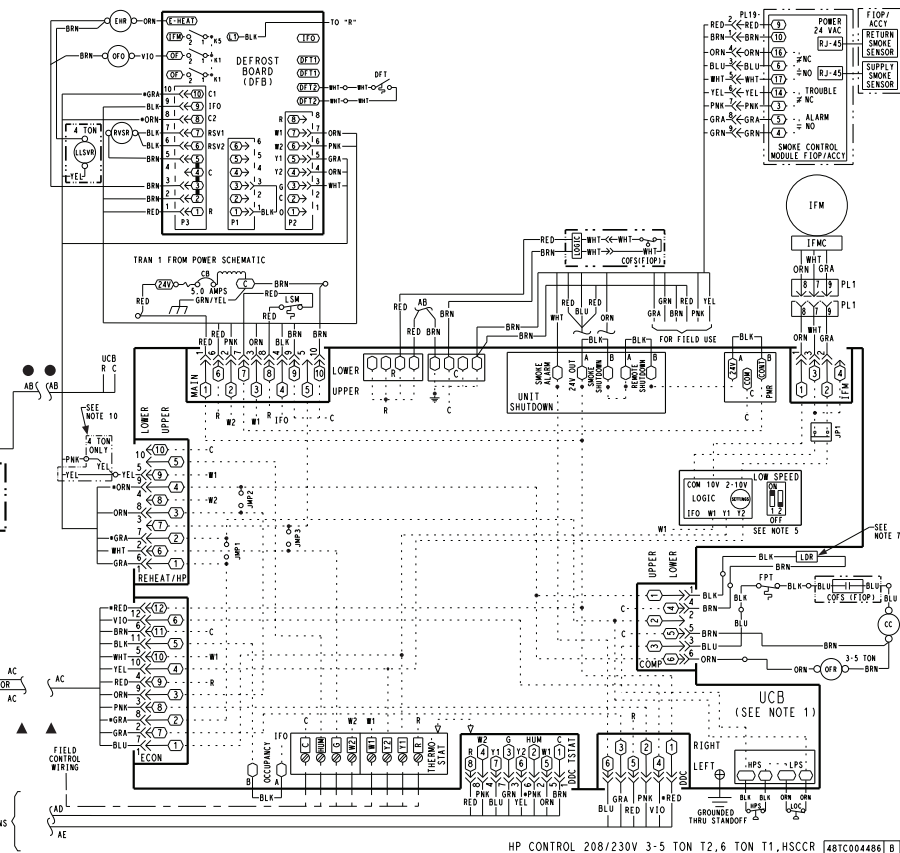
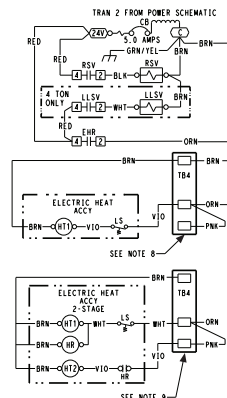
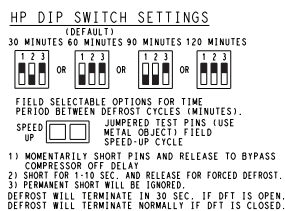
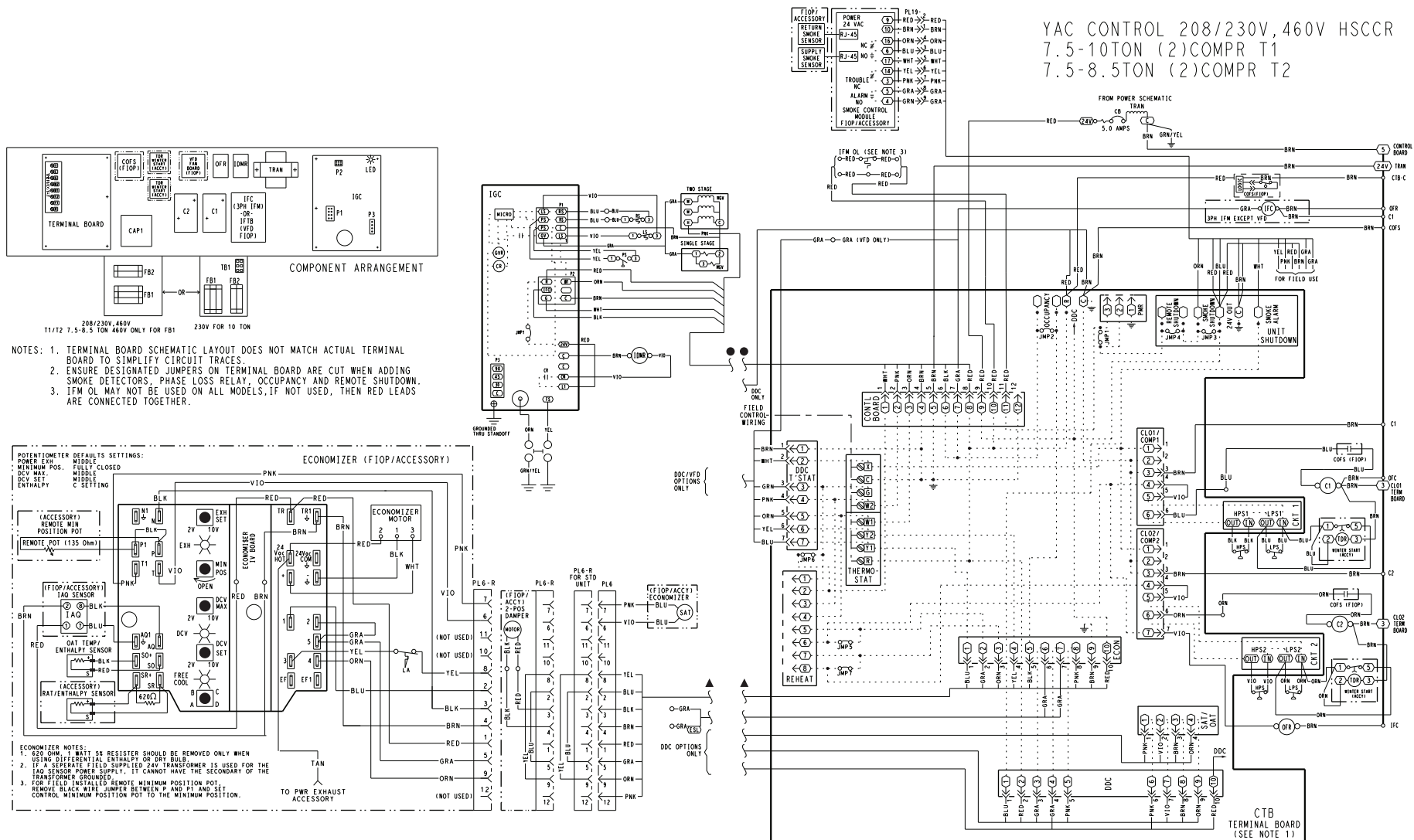


Fig. 8 — Typical Control Wiring Diagram, 3 to 5 Ton (50GCQ/549K/RHW) and 6 Ton (50FCQ/547K/RHV) 208/230V HSCCR Units Shown





10TON 460V (2)COMPR T1

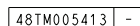
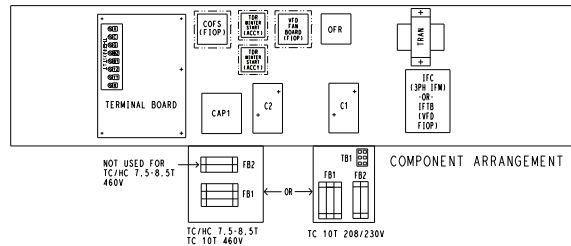
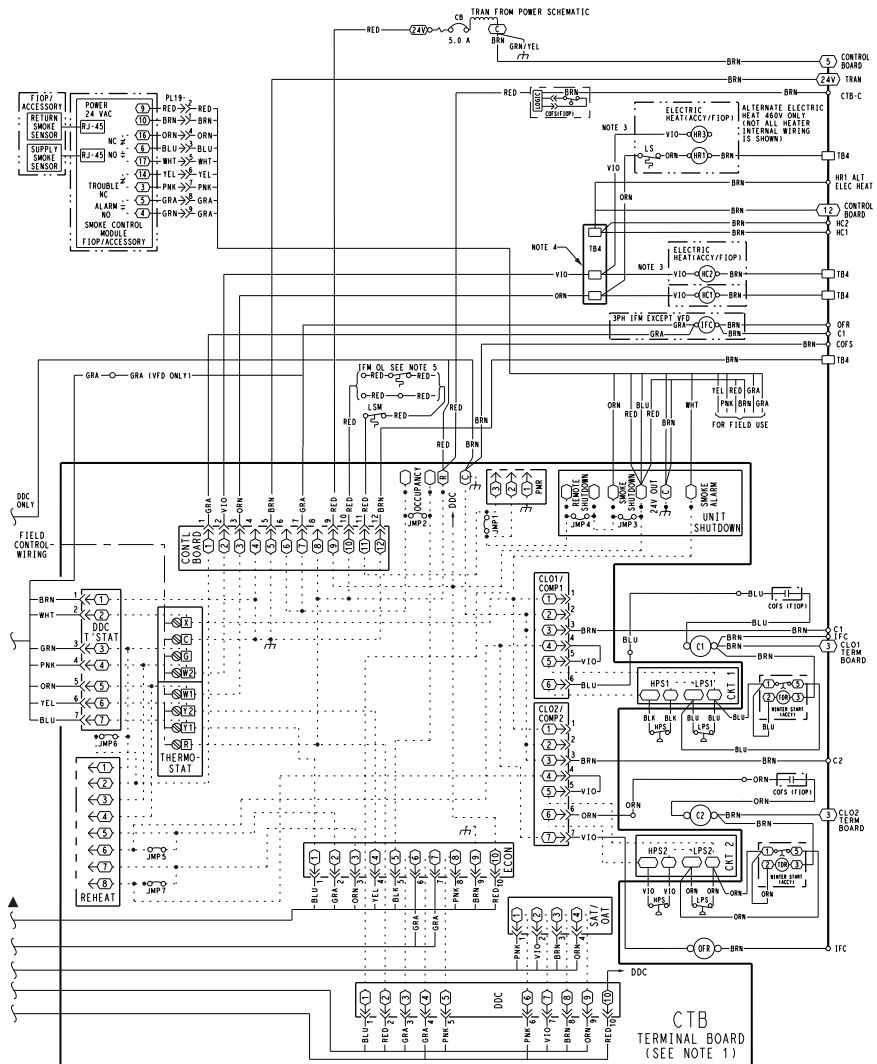
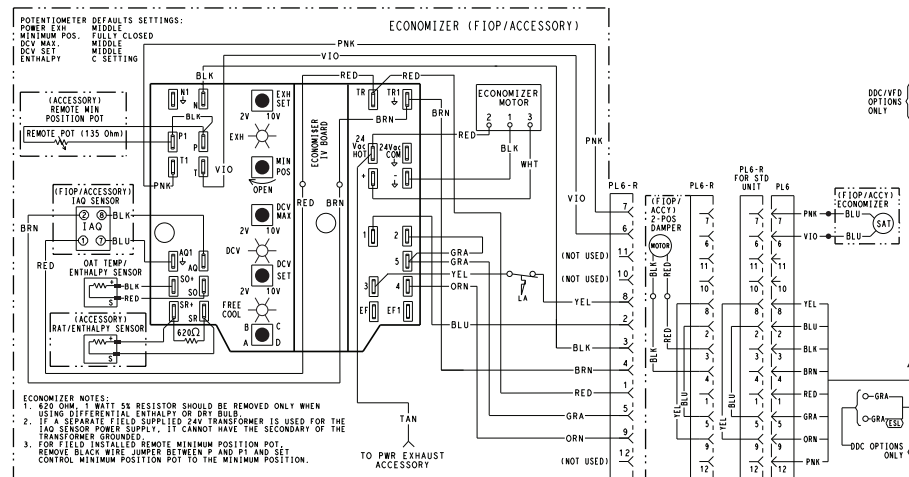


Fig. 11 — Typical Power Wiring Diagram, 7.5-8.5 Ton (48HC/581J/RGH) and 7.5-10 Ton (50TC/580J/RGS) 208/230V HSCCR Units Shown



- NOTES: 1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD TO SIMPLIFY CIRCUIT TRACES.
 2. ENSURE DESIGNATED JUMPERS ON TERMINAL BOARD ARE CUT WHEN ADDING SMOKE DETECTORS, PHASE LOSS RELAY, OCCUPANCY AND REMOTE SHUTDOWN.
 3. FOR SINGLE STAGE ELECTRIC HEAT OPTION, MOVE HEATER VIOLET WIRE FROM TB4-VIOLET TO TB4-ORANGE.
 4. TB4 LOCATED IN HEAT SECTION.
 5. IFM OIL MAY NOT BE USED ON ALL MODELS, IF NOT USED, THEN RED LEADS ARE CONNECTED TOGETHER.



PAC CONTROL 208/230V, 460V HSCCR
 7.5-10TON (2)COMPR T1
 7.5-8.5TON (2)COMPR T2

48TMO05382

Fig. 12 — Typical Control Wiring Diagram, 7.5-8.5 Ton (50HC/551J/RAH) and 7.5-10 Ton (50TC/558J/RAS) 208/230V HSCCR Units Shown

PAC POWER 3 PH HSCCR
7.5-8.5TON (2)COMPR T1,T2 208/230V,460V
10TON (2)COMPR T1, 460V

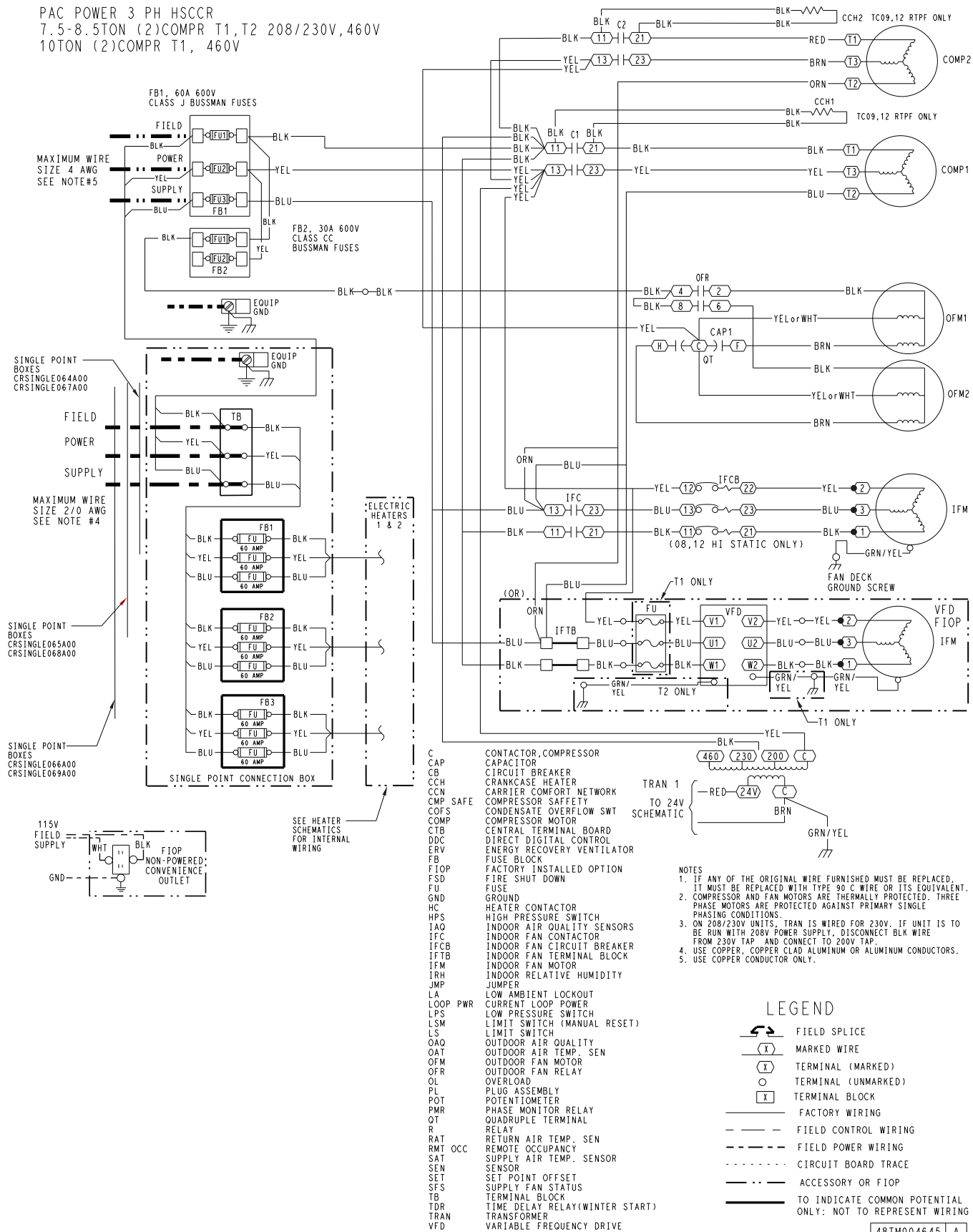
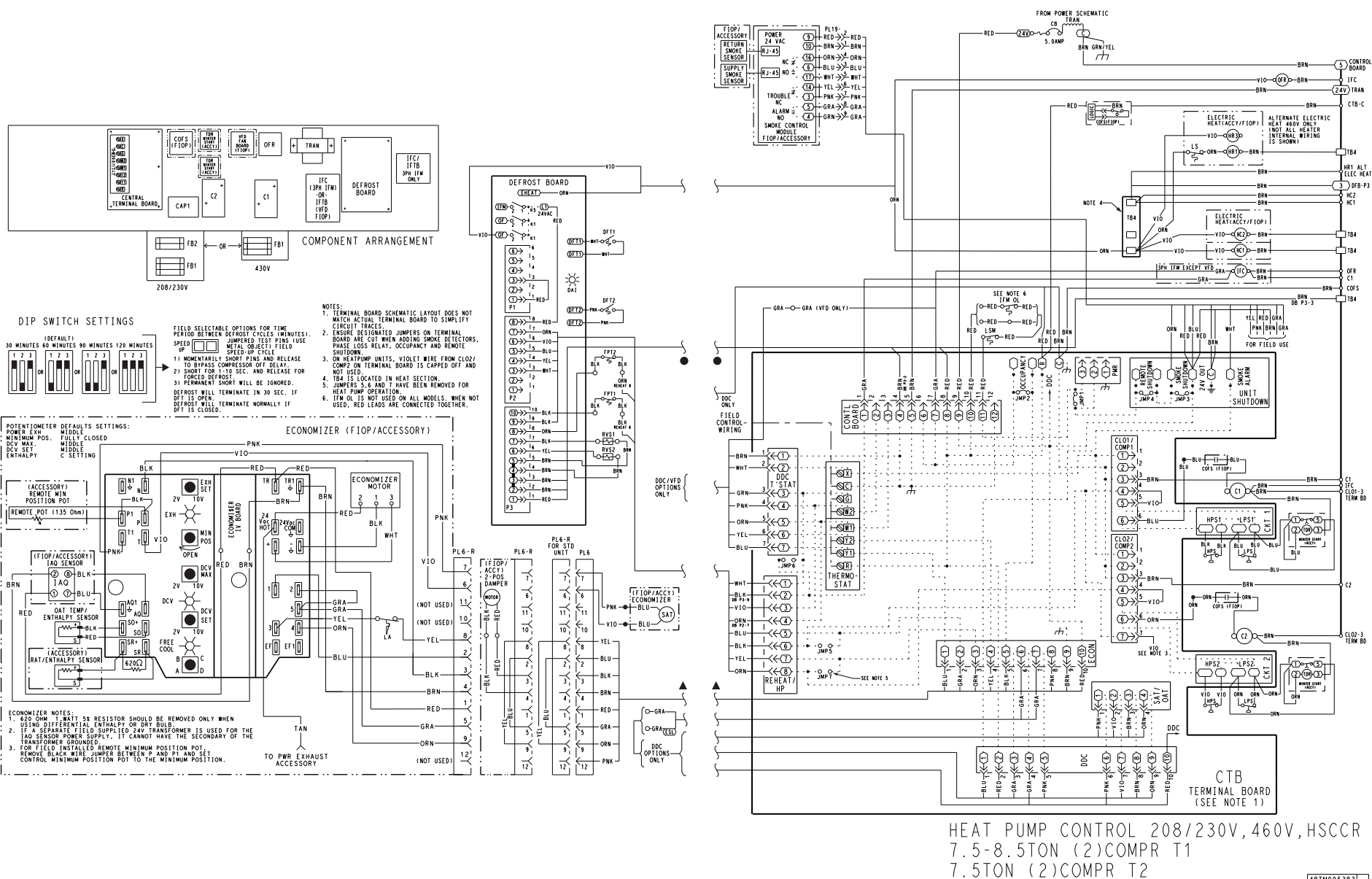
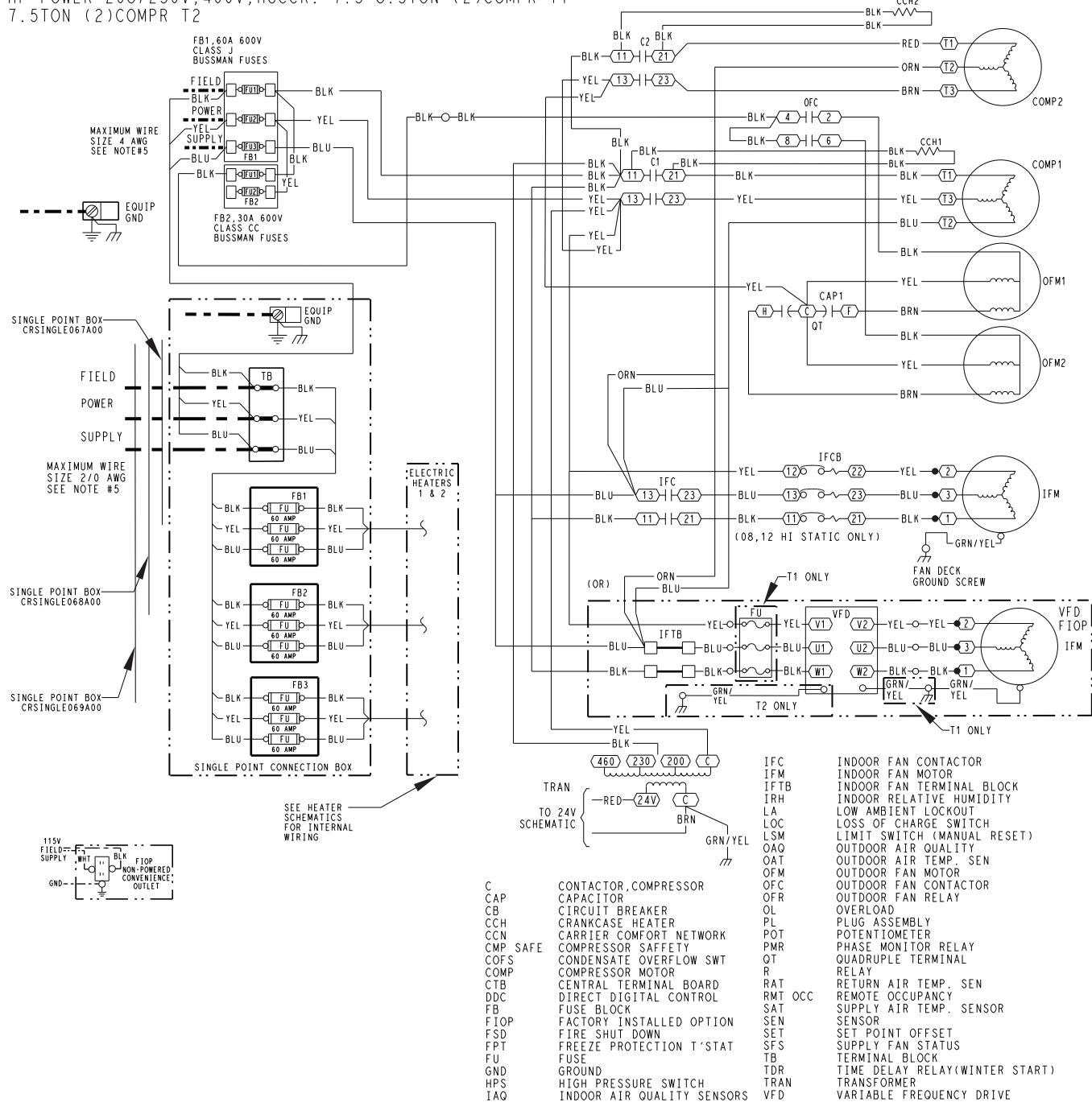


Fig. 13 — Typical Power Wiring Diagram, 7.5-8.5 Ton (50HC/551J/RAH) and 7.5-10 Ton (50TC/558J/RAS) 208/230V HSCCR Units Shown



HP POWER 208/230V, 460V, HSCCR. 7.5-8.5TON (2)COMPR T1
7.5TON (2)COMPR T2



48TM004621 A

Fig. 15 — Typical Power Wiring Diagram, 7.5 Ton (50HCQ/549J/RHH) and 7.5-8.5 Ton (50TCQ/548J/RHS) 208/230V HSCCR Units Shown