

**Accessory Electric Heater and Single Point Box  
for Small Rooftop Units  
with Electric Cooling and Heat Pump  
Select 3 to 15 Ton Units**

# Installation Instructions

P/N CRHEATER101A00-CRHEATER112A00, CRHEATER103B00,  
CRHEATER104B00, CRHEATER113B00-CRHEATER116B00,  
CRHEATER117A00-CRHEATER119A00, CRHEATER128B00, CRHEATER129B00,  
CRHEATER264A00-CRHEATER269A00, CRHEATER288A00-CRHEATER297A00,  
CRHEATER299A00, CRHEATER301A00, CRHEATER308A00,  
CRHEATER316A00-CRHEATER321A00, CRHEATER360A00-CRHEATER364A00,  
CRHEATER367A00-CRHEATER384A00, CRSINGLE037A00-CRSINGLE054A00

NOTE: Read these instructions completely before attempting to install this accessory.

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
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## 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, including ANSI (American National Standards Institute) Z223.1. 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.

**⚠ WARNING**

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

Turn off all power to unit and install lockout tag. Power can come to unit from multiple sources. Verify power is off with a meter or probe.

**⚠ CAUTION****PERSONAL INJURY HAZARD**

Failure to follow this caution may result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing air conditioning equipment.

**Table 2 — PACKAGE CONTENTS: ELECTRIC HEATERS CRHEATER101A00-112A00,103B00, 104B00,113B00-116B00,117A00-119A00, 128B00,129B00,264A00-269A00,297A00, 301A00,308A00, 316A00-321A00, 360A00-364A00, 371A00-373A00, 378A00-380A00**

QTY	CONTENTS
1	Heater module
1	Heater slider track*
4	Screws*
1	Wiring label
1	Red wire (10 gage)†
1	Splice connector†
1	Wire tie†
1	Label, Max Temp/Static
1	Heater Cover**

\*Not included with CRHEATER101A00-109A00, 297A00, 301A00, 360A00-362A00, 371A00-373A00, 378A00, 379A00.

†Supplied with electric heater packages CRHEATER101A00, 102A00, 103B00, 104B00, 360A00-362A00 only.

\*\*Supplied with package CRHEATER301A00, 128B00, 129B00, 360A00-364A00, 371A00-373A00, 378A00-380A00 only.

**Table 1 — Package Usage**

**CARRIER MODELS**

MODEL NUMBER	CHASSIS GROUP	UNIT SIZES
50HC	AC-2	04-14
50HCQ	HP-2	04-12
50KC	AC-1	04-06
50KCQ	HP-1	04-06
50LC	AC-3	04-12
50TC	AC-1	04-16
50TCQ	HP-1	04-14

**BRYANT MODELS**

MODEL NUMBER	CHASSIS GROUP	UNIT SIZES
547J	HP-1	04-06
548J	HP-1	04-14
549J	HP-2	04-12
551J	AC-2	04-14
558J	AC-1	04-16
559J	AC-1	04-06

**ICP MODELS**

MODEL NUMBER	CHASSIS GROUP	UNIT SIZES
RAH	AC-2	036-150
RAS	AC-1	036-180
RAX	AC-1	036-060
RHH	HP-1	036-150
RHS	HP-2	036-120
RHX	HP-1	036-060

AC: Cooling Only (air conditioner)

HP: Heat Pump

1 - Standard Efficiency

2 - High Efficiency

3 - Ultra High Efficiency

**Table 3 — ELECTRIC HEATERS CRHEATER288A00-296A00, 299A00, 367A00-370A00, 374A00-377A00, 381A00-384A00**

QTY	CONTENTS
1	Heater module
1	Heater slide track
4	Screws
1	Wiring label
1	Label, Max Temp/Static
1	Heater Cover*

\*Supplied with package CRHEATER367A00-370A00, 374A00-377A00, 381A00-384A00 only.

**Table 4 — Single Point Box Kits**

**CRSINGLE037A00**

QUANTITY	ITEM DESCRIPTION
1	Single Point Box Housing Assembly (Height 18-in./449 mm)
1	Terminal block
3	Conductors, Tap, #10
1	Rain shield with conduit seal
12	Screws, #10 x 1/2-in.
7	Wire ties
1	Tube clamp
1	Seal strip

**CRSINGLE038A00**

QUANTITY	ITEM DESCRIPTION
1	Single Point Box Housing Assembly (Height 18-in./449 mm)
1	Terminal block/Fuse holder
1	Fuse block
6	Fuses, 60-A class RK5
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield with conduit seal
12	Screws, #10 x 1/2-in.
7	Wire ties
1	Tube clamp
1	Seal strip

**Table 4 — Single Point Box Kits (cont)**

<b>CRSINGLE039A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 18-in./449 mm)
1	Terminal block/Fuse holder
2	Fuse block
9	Fuses, 60-A class RK5
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield with conduit seal
12	Screws, #10 x 1/2-in.
7	Wire ties
1	Tube clamp
1	Seal strip

<b>CRSINGLE040A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 18-in./449 mm)
1	Terminal block/Fuse holder
1	Fuse block
4	Fuses, 60-A class RK5
1	Power distribution harness
2	Conductors, Tap, #10
1	Rain shield with conduit seal
12	Screws, #10 x 1/2-in.
7	Wire ties
1	Tube clamp
1	Seal strip

<b>CRSINGLE041A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 18-in./449 mm)
1	Terminal block/Fuse holder
1	Fuse block
6	Fuses, 60-A class RK5
1	Power distribution harness
2	Conductors, Tap, #10
1	Rain shield with conduit seal
12	Screws, #10 x 1/2-in.
7	Wire ties
1	Tube clamp
1	Seal strip

<b>CRSINGLE042A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 25-in./639 mm)
1	Terminal block
3	Conductors, Tap, #10
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE043A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 25-in./639 mm)
1	Terminal block/Fuse holder
1	Fuse block
2	Terminal block (TB-10)
6	Fuses, 60-A class RK5
1	Power distribution harness
6	Conductors, Tap, #10
2	Screws, #8 x 1/2-in.
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE044A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 25-in./639 mm)
1	Terminal block
2	Fuse block
6	Fuses, 60-A class T (600v)
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE045A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 25-in./639 mm)
1	Terminal block/Fuse holder
2	Fuse block
9	Fuses, 60-A class RK5
1	Power distribution harness
6	Conductors, Tap, #10
2	Terminal block (TB-10)
2	Screws, #8 x 1/2-in.
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE046A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 25-in./639 mm)
1	Terminal block/Fuse holder
3	Fuse block
12	Fuses, 60-A class RK5
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

**Table 4 — Single Point Box Kits (cont)**

<b>CRSINGLE047A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block
3	Conductors, Tap, #10
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE048A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 25-in./639 mm)
1	Terminal block
3	Fuse block
9	Fuses, 60-A class RK5
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE049A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block/Fuse holder
1	Fuse block
6	Fuses, 60-A class RK5
1	Power distribution harness
8	Conductors, Tap, #10
2	Terminal block (TB-10)
2	Screws, #8 x 1/2-in.
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE050A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block
2	Fuse block
6	Fuses, 60-A class T (600v)
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE051A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block/Fuse holder
2	Fuse block
9	Fuses, 60-A class RK5
1	Power distribution harness
8	Conductors, Tap, #10
2	Terminal block (TB-10)
2	Screws, #8 x 1/2-in.
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE052A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block
3	Fuse block
9	Fuses, 60-A class T (600 v)
1	Power distribution harness
3	Conductors, Tap, #10
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

<b>CRSINGLE053A00</b>	
<b>QUANTITY</b>	<b>ITEM DESCRIPTION</b>
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block
4	Fuse block
12	Fuses, 60-A class RK5
1	Power distribution harness
8	Conductors, Tap, #10
2	Terminal block (TB-10)
2	Screws, #8 x 1/2-in.
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

**Table 4 — Single Point Box Kits (cont)**

CRSINGLE054A00	
QUANTITY	ITEM DESCRIPTION
1	Single Point Box Housing Assembly (Height 33-in./845 mm)
1	Terminal block
5	Fuse block
15	Fuses, 60-A class RK5
1	Power distribution harness
8	Conductors, Tap, #10
2	Terminal block (TB-10)
2	Screws, #8 x 1/2-in.
1	Rain shield, small
1	Rain shield with conduit seal
8	Screws, #10 x 1/2-in.
7	Wire ties
1	Seal strip

**GENERAL**

**Puron® Units**

This installation instruction manual describes the installation of electric heaters and associated fuse block/field power termination kits (single point box or SPB) on select small rooftop units in nominal cooling capacities from 3 to 15 tons. These rooftop units use Puron refrigerant (R-410A). See Package Usage tables on page 2 for applicable unit models. Unit types include cooling units (AC) and heat pumps (HP) distributed over several chassis sizes. Unit types AC-1, AC-2, HP-1, HP-2 are identified. Unit type AC-3 consists of a single model: Carrier 50LC.

This information does not include selection data. Refer to project plans, job submittals and selection programs for heater and field power termination/SPB kit usage.

Some electric heaters used on these Puron (R-410A) units may also be installed in earlier R-22 rooftop units. For details on use with R-22 units, contact your local distributor office.

**Electric Heaters**

Heaters are shipped with one heater per carton. The carton is marked with a Sales Package Number. On all heaters except CRHEATER101A00 through 119A00, 103B00, 104B00, 113B00 through 116B00, 128B00, and 129B00, the heater Model Number (as marked on the heater infoplate) is the same as the Sales Package number. On CRHEATER101A00 through 119A00, 103B00, 104B00, 113B00 through 116B00, 128B00, and 129B00, the value in position 9 of the part number differs between the sales package part number (value is 1 and bare heater model number (value is 0).

The heaters are modular in design, with heater frames holding open coil resistance wires strung through ceramic insulators, limit switches and one or two control contactors. Power conductors are attached. One or two heater modules may be used in a unit.

Heater modules are installed in the compartment below the indoor (supply) fan outlet. Access is through the indoor access panel. Heater modules slide into the compartment on tracks along the bottom of the heater opening. (See Fig. 17.) Some heaters are “keyed” with a restrictor bar on the heater frame or restrictor plate on the back of the heater mounting plate to be able to go in only one slot. These keyed heaters have been designed and qualified to go only into the designated slot. Do not remove the key for the purpose of putting the heater in the wrong slot. Placing a keyed heater in the wrong slot could lead to overheating and unit damage from the heater not operating properly.

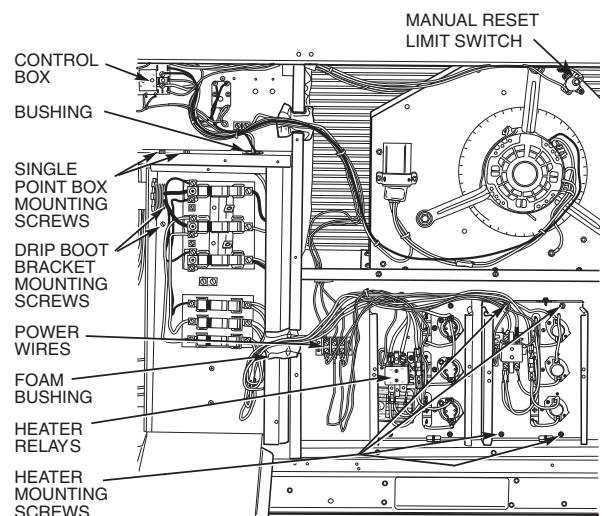
NOTE: The following heaters do not use the slide track: CRHEATER101A00-109A00, 297A00, 301A00, 360A00-362A00, 371A00-373A00, 378A00, 379A00.

Not all available heater modules may be used in every unit. Use only those heater modules that are UL listed for use in a specific size unit. Refer to the label on the unit cabinet and the unit data plate for the list of approved heaters. (See Fig. 2 and 3.) See “Appendix D — ELECTRIC HEATER DATA” on page 72 for electric heater module data.

**Single Point Boxes and Fuses**

The single point box (SPB) kits provide a field power termination location plus an enclosure for heater fuses when required by code. The SPBs are installed under the unit’s main control box and include a cover plus all internal wiring (see Fig. 1). Minimum components of the SPB are a field power terminal block with tap conductors (to connect to the unit’s main control box field terminals). Maximum component population includes up to five fuse blocks. See Table 4.

Fuses for electric heater circuits are required and provided when the unit’s MOCP exceeds 60-A or when the total heater Full Load Amp value exceeds 48-A. When fuses are required and provided, the cooling circuit is also provided with fuse protection; some units require minor wiring changes in the main control box (see section on TB10 terminal blocks).



**Fig. 1 — Typical Single Point Kit Installation**

**NO FUSES**

If the unit’s MOCP device rating is 60-A or less, then the MOCP device is recognized as providing the required overcurrent protection to the heater and no internal fusing is required. If two heater modules are installed, a single point box that contains only a field power terminal block is required. See tables at the beginning of Appendix A, B and C for where-used information on the single point boxes and for the relevant connections wiring diagram.

**UNITS WITH FACTORY-INSTALLED HACR**

The amp rating of the HACR factory-installed option is based on the size, voltage, indoor motor and other electrical options of the unit as shipped from the factory. When field-installed accessory electric heaters are added or changed in the unit, the HACR may no longer be of the proper amp rating and therefore will need to be removed from the unit. See unit nameplate and label on factory installed HACR for the amp rating of the HACR that was shipped with the unit from the factory. See unit nameplates for the proper fuse, HACR or maximum over-current protection device required on the unit with field installed electric heat.

**SINGLE POINT BOX CONTENTS**

See Package Content tables on pages 2-5 for a list of components included in each single point box kit. Note the height differences and their use in specific size units.

## Control Wiring

Heater modules contain one or two heater control contactors. If two heater modules are installed, or a two-circuit heater module is installed, the cooling unit (AC type) can be connected for one-stage or two-stage heating control. On all heat pump units (HP type), all heater contactors will be connected to provide second-stage heating control.



<b>Carrier Corporation</b> 7310 West Morris Street Indianapolis, IN 46231 U.S.A.		MODEL <b>50KC-A06A2A5A0A0A0</b>									
	QTY	VOLTS AC	PH	HZ	RLA	LRA	REF. SYSTEM R410A		TEST PRESSURE GAGE		
COMPR A	1	208/230	3	60	15.6	110	10.7 LBS	4.9 kg	HI	650 PSI	4482 kPa
COMPR B							LBS	kg	LO	450 PSI	3103 kPa
COMPR C							LBS	kg			
FAN MTR	QTY	VOLTS AC	PH	HZ	FLA	CHARGE SYSTEM PER INSTALLATION INSTRUCTIONS SUITABLE FOR OUTDOOR INSTALLATION					
OUTDOOR	1	208/230	1	60	1.5						
INDOOR	1	208/230	3	60	5.2						
PWR. EXH.											
ELC. HEAT											
OTHER											
POWER SUPPLY	208/230	VOLT	3	PH	60	HZ	MIN. CKT. AMPS	MAX FUSE OR HACR BREAKER PER NEC	40	MINIMUM UNIT DISCONNECT	
PERMISSIBLE VOLTAGE AT UNIT	253	MAX	187	MIN	26.2	MAX OVERCURRENT PROTECTION DEVICE		-	26	144	
DOWN SUPPLY	MIN CLEARANCE TO COMBUSTIBLE MATERIALS						1	INCHES	25	mm.	
	FOR FIRST 12 INCHES						305	mm.	OF DUCT WHEN ELECTRIC HEATER IS INSTALLED		
SIDE SUPPLY	MIN CLEARANCE TO COMBUSTIBLE MATERIALS						1	INCHES	25	mm.	
	FOR FIRST 12 INCHES						305	mm.	OF DUCT WHEN ELECTRIC HEATER IS INSTALLED		
*FOR INSTALLATION ON COMBUSTIBLE FLOORING OR CLASS A, B, OR C ROOFING MATERIAL											
ACCESSORY HEATER MODEL NUMBER	CHECK HERE	VOLTS	PH	HZ	HEATER FLA	MIN CKT AMPS	FUSE OR HACR BREAKER PER NEC	MAXIMUM OVERCURRENT PROTECTION DEVICE	SINGLE PT. BOX MODEL NUMBER	MINIMUM UNIT DISCONNECT	
102A		208/240	3	60	13.6/15.6	26.2/26.2	40/40	-/-	-	26/26	144/144
104B		208/240	3	60	21.9/25.3	33.9/38.1	40/40	-/-	-	31/35	144/144
105A		208/240	3	60	33.4/38.5	48.3/54.6	50/60	-/-	037	44/50	144/144
104B+104B		208/240	3	60	43.8/50.5	61.3/69.6	70/70	-/-	038	56/64	144/144
104B+105A		208/240	3	60	55.2/63.8	75.5/86.3	80/90	-/-	038	69/79	144/144
INSTALLER NOTE: 1. INSTALL ACCESS HEATER PER INSTALL INSTR ENCLOSED WITH HEATER. MARK SPACE "CHECK HERE" FOR MODEL USED USE MIN CKT AMPS & MAX OVERCURRENT DEVICE AMPS LISTED FOR HEATER. IF NO HEATER IS USED MARK SPACE "CHECK HERE" FOR NONE. 2. HEATERS ARE MANUFACTURED BY EMERSON HEATING PRODUCTS OR TUTCO ELECTRIC.											
CAPACITY Btu/Hr		CAPACITY kW		EER		COP					
COOLING		59000		17.2		13					
HP HEATING											
THIS EQUIPMENT COMPLIES WITH THE 2004 REQUIREMENTS OF ASHRAE 90.1											

Fig. 2 — Typical Unit Informative Data Label

	MODEL	<b>50KC-A06A2A5A0A0A0</b>	
	REFRIGERANT CHARGE	R410A	

ELECTRICAL DATA FOR ACCESSORY POWER EXHAUST ONLY


ACCESSORY POWER EXHAUST MODEL NUMBER	CHECK HERE	VOLTS	PH	HZ	POWER EXHAUST FLA	MIN CKT AMPS	FUSE OR HACR BREAKER PER NEC	MAXIMUM OVERCURRENT PROTECTION DEVICE	MINIMUM UNIT DISCONNECT
<b>CRPWREXH_</b>						<b>28.1</b>	<b>40</b>	<b>-/-</b>	FLA <b>28</b> LRA <b>146</b>

ELECTRICAL DATA FOR ACCESSORY POWER EXHAUST INSTALLED  
IN COMBINATAION WITH ELECTRIC HEATER

ACCESSORY HEATER MODEL NUMBER	CHECK HERE	VOLTS	PH	HZ	HEATER FLA	MIN CKT AMPS	FUSE OR HACR BREAKER PER NEC	MAXIMUM OVERCURRENT PROTECTION DEVICE	MINIMUM UNIT DISCONNECT
102A		208/240	3	60	13.6/15.6	<b>28.1/28.4</b>	<b>40/40</b>	<b>-/-</b>	FLA <b>28/28</b> LRA <b>146/146</b>
SINGLE PT BOX MODEL NUMBER -									
104B		208/240	3	60	21.9/25.3	<b>36.3/40.5</b>	<b>40/45</b>	<b>-/-</b>	FLA <b>33/37</b> LRA <b>146/146</b>
SINGLE PT BOX MODEL NUMBER -									
105A		208/240	3	60	33.4/38.5	<b>50.6/57.0</b>	<b>60/60</b>	<b>-/-</b>	FLA <b>47/52</b> LRA <b>146/146</b>
SINGLE PT BOX MODEL NUMBER 037									
104B+104B		208/240	3	60	43.8/50.5	<b>63.6/72.0</b>	<b>70/80</b>	<b>-/-</b>	FLA <b>59/66</b> LRA <b>146/146</b>
SINGLE PT BOX MODEL NUMBER 038									
104B+105A		208/240	3	60	55.2/63.8	<b>77.9/88.6</b>	<b>80/90</b>	<b>-/-</b>	FLA <b>72/82</b> LRA <b>146/146</b>
SINGLE PT BOX MODEL NUMBER 038									
SINGLE PT BOX MODEL NUMBER									FLA LRA


INSTALLER NOTE:

1. INSTALL ACCESS. HEATER AND/OR POWER EXHAUST PER INSTALL INSTR ENCLOSED WITH HEATER AND POWER EXHAUST. MARKSPACE "CHECK HERE" FOR MODEL USED. USE MIN CKT AMPS AND MAX OVER CURRENT DEVICE AMPS LISTED FOR HEATER AND POWER EXHAUST.
2. HEATERS ARE MANUFACTURED BY EMERSON HEATING PRODUCTS OR TUTCO ELECTRIC.



**\*50KC-A06A2A5A0A0A0\***





**ARI**  
PERFORMANCE  
CERTIFIED

ARI Standard 210/240  
Unitary Air Conditioners

**Fig. 3 — Typical Unit Informative Data Label, Power Exhaust Installed**

## TERMINAL BLOCK TB10 (208/230-V UNITS)

Two small terminal blocks (designated TB10) are included in these single-point boxes used on select 208/230-3-60 units.

SPB PNO CRSINGLE
043A00
045A00
049A00
051A00
053A00
054A00

TB10 is a small single-pole terminal block, 2½-in. (63 mm) long with seven ¼-in. male quick-connect terminals. One or two terminal blocks are used to aid in rearranging the unit's base cooling power circuit into two circuits, each under 60-A MOC. On units using both TB10 blocks, the indoor fan motor is separated into the second circuit. On units using only a single TB10 block, Compressor 2 is separated into the second circuit.

On the largest units and on all AC-3 (50LC) units, the TB10 blocks are not used and may be discarded. The tap conductors from fuse blocks FU2 and FU3 are connected in parallel to the main control box's power terminal block. See unit-SPB connection figures in the Appendix section (pages 29-73).

Tables 5-8 indicate TB10 use on AC-1, AC-2, HP-1 and HP-2 units using these single point boxes.

**Table 5 — TB10 Use on AC-1 Units**

AC-1 UNIT SIZE	SPB	TB10 QTY
08, 090, 091	043A 045A	2
09, 101, 102	049A 051A	2
12, 120, 121	049A 051A	2
14, 150	049A 051A	1
16, 180	049A 051A 053A	N/A

**Table 6 — TB10 Use on AC-2 Units**

AC-2 UNIT SIZE	SPB	TB10 QTY
07, 072	043A	2
08, 090	049A 051A	2
09, 102	049A 051A	2
12, 120	049A 051A	1
14, 150	049A 051A	N/A

**Table 7 — TB10 Use on HP-1 Units**

HP-1 UNIT SIZE	SPB	TB10 QTY
08, 090	049A 051A 053A	2
09, 102	049A 051A 053A	2
12, 120	049A 051A 053A 054A	1
14, 150	051A 053A 054A	N/A

**Table 8 — TB10 Use on HP-2 Units**

HP-2 UNIT SIZE	SPB	TB10 QTY
07, 072	043A 045A	2
08, 090	049A 051A 053A	2
09, 102	049A 051A 053A 054A	1
12, 120	049A 051A 053A 054A	N/A

## GENERAL INSTALLATION SEQUENCE

1. Pre-stage heater packages and single point boxes by placing the required component cartons at each unit.
2. Check the heater sales package number and single point box part number (if used) against the part numbers on the unit's infoplate. See Fig. 2 and 3 for typical data.
3. Disconnect power wiring into unit control box from factory-installed disconnect switch or HACR breaker and withdraw wiring from control box.
4. Install the single point box and connect power wiring tap conductors to field power terminals in main control box.
5. Install the electric heater module(s) and connect heater power conductors to single point box or main unit control box per appropriate connections figure. (See Appendix A, B, and C.)
6. Connect the heater control contactors to unit terminal block TB4.
7. Mark the unit info plate to indicate which heater module(s) have been installed.
8. Note the required wire size ampacity for the field power supply conductors as marked on the unit info plate as MIN CKT AMPS for accessory heater(s) plus convenience outlet and power exhaust when provided. Select and install suitable field power conductors from external safety disconnect to unit power connection points, or confirm wiring already provided is suitable for required MIN CKT AMPS.

## UNIT-SPECIFIC INSTALLATION INSTRUCTIONS

The unit-specific installation instructions are presented in two sections, grouped by common chassis and control box design. "SMALL to MEDIUM CABINET installation" on page 9 covers smaller chassis models. "LARGE CABINET installation" on page 17 covers the large chassis models. See Table 9 for section assignment for specific unit types and sizes.



**Table 9 — Unit-Specific Installation Instructions**

UNIT SIZE	GROUP				
	AC-1	AC-2	AC-3	HP-1	HP-2
04, 036					
05, 048					
06, 060					
07, 072					
08, 090					
09, 102					
11					
12, 120					
14, 150					
16, 180					

**LEGEND**

- See Small to Medium Cabinet Installation section for unit-specific installation instructions.
- See Large Cabinet Installation section for unit-specific installation instructions.

**SMALL TO MEDIUM CABINET INSTALLATION**

Product Groups/Sizes included in this section:

- AC-1 04-14 (036-150)
- AC-2 04-12 (036-120)
- AC-3 04-07
- HP-1 04-12 (036-120)
- HP-2 04-09 (036-102)

**Check Sales Packages**

Following the project drawing schedule tables or submittal documents, select the scheduled heaters and single point boxes (if used) and place at each unit.

Compare the sales package number(s) for scheduled heater modules against the approved usage table on the unit's info plate. See Fig. 2 and 3 for typical plate data. If the scheduled heater usage does not appear on the unit info plate label, STOP. Contact the project engineer or the local distributor sales office for clarification.

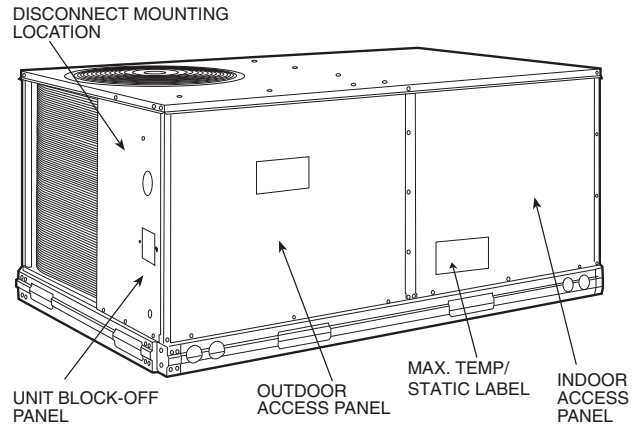
Open the cartons and inspect for damage.

NOTE: If one heater in a two-heater system needs to be replaced, both heaters must be replaced with a single module (except for CRHEATER102A00 + 102A00, CRHEATER117A00 + 117A00, and CRHEATER110A00 + 117A00). Both heaters need to be replaced with a single module that is designed to UL1995 5th edition.

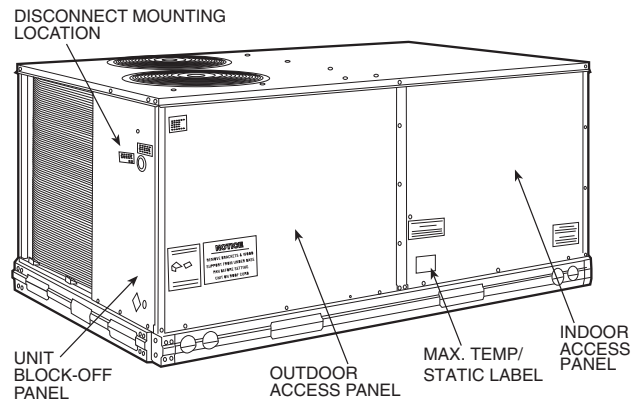
**Disconnect Field Power Supply**

1. Disconnect power to the unit. Lock-out/tag-out on unit disconnect switch.
2. Remove the outdoor access panel, control box cover, and indoor access panels from the unit. Save screws. See Fig. 4-6.
3. Use a voltmeter to check that no power is present at unit terminal block.
4. Remove control box cover and center post. Save screws. (See Fig. 6.)
5. If unit does not have the factory-installed disconnect or HACR option or has not had field power wiring connected, skip to Step 6.

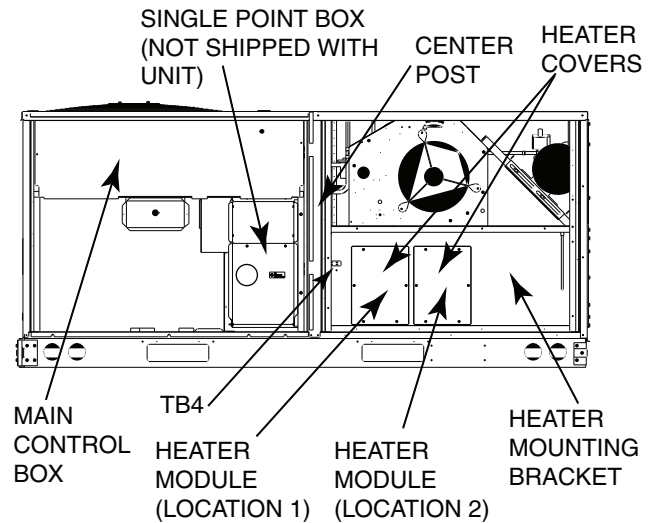
When unit is equipped with factory-installed disconnect or HACR or has field power wiring connected, disconnect the power leads at the control box terminals and withdraw the conductors from the control box.



**Fig. 4 — Typical Access Panel Location (AC-1/HP-1 04-07/036-072, HP-2 04-06/036-060, AC-2,3 04-06/036-060)**



**Fig. 5 — Typical Access Panel Location (AC-1 08-14/090-150, AC-2 07-12/072-120, AC-3 07, HP-1 08-12/090-120, HP-2 07-09/072-102)**



(All units except large [3 outdoor fan] cabinet)

**Fig. 6 — Typical Component Location**

6. Add seal strip to the rear bottom corner of the control panel as shown in Fig. 7. Foil tape open screw holes on the back of the single point box as shown in Fig. 7. Different single point boxes will have different screw holes open.
7. All bushings in the area of the control box where the single point box (SPB) mounts, must be removed prior to securing the SPB to the control box. (See Fig. 8.) Also, for units installed in the snow belt, all unplugged holes in the

bottom of the control box which are not used must be plugged before installing the SPB. Use foil tape or re-install the bushings from the outside of the control box prior to securing the SPB. (See Fig. 9.)

8. Remove the single point box cover. Secure single point box to the underside of the control box with the 2 screws provided. (See Fig. 1.) Re-install bushing on the SPB tap conductors. (See Fig. 9.)
9. Secure the rainshield (conduit drip boot bracket) assembly to the back of the single point box with 2 of the screws provided. (See Fig. 1.) The channel portion of the bracket assembly extends to the top panel behind the control box. Secure all wires to bracket with field-supplied wire tie as shown. (See Fig. 13.)

10. Connect power tap conductors to unit main control box.
  - a. Single point boxes with two or three tap conductors: Route the tap conductors (with bushing added per Step 5) into the unit main control box. Connect the power tap conductors to the designated terminals in the unit's control box for field power connections. Refer to the wiring diagram in the unit, to unit installation instructions for Field Power Wiring Connections or to Appendix A, B or C.

- b. Single point boxes with six tap conductors: (CRSINGLE043A00, 045A00, 049A00, 051A00, 053A00 and 054A00)

These single point boxes include two sets of three-lead power tap conductors connected to two separate fuse blocks, at FU2 and FU3. These kits also include two terminal blocks (TB10A and TB10B) and attachment screws; the TB10 block usage will be two, one or none, based on base unit. Refer to Tables 5-8 to determine quantity required for this unit.

- (1.) Units requiring TWO TB10 terminal blocks Mount these terminal blocks in the unit's control box next to compressor contactor C1. (See Fig. 10 and Appendix A or C.)

Locate two 42-in. (1067 mm) BLU and YEL wires with single insulated female terminal shipped in a bag with this kit.

At the single point box, locate the BLU tap conductor on fuse block FU2 (upper block); disconnect and discard. Connect the 42-in. BLU wire to FU2.

At the single point box, locate the YEL tap conductor on fuse block FU3 (second block); disconnect and discard. Connect the 42-in. YEL wire to FU3.

In the unit control box, relocate these wires: At IFC terminal 13, disconnect Compressor 1 BLU and Compressor 2 ORN leads; reconnect at TB10A. At C1 terminal 13, disconnect ID Fan YEL lead; reconnect at TB10B. At C1 terminal 11, disconnect BLK jumper; reconnect to IFC terminal 11.

Route the first set of tap conductors (attached at upper fuse block, with bushing per Step 5) into the main control box; connect at:

BLK: C1 terminal 11

YEL: C1 terminal 13

BLU (long lead with terminal): TB10A

Route the second set of tap conductors (attached at second fuse block) into the main control box; connect at:

BLK: IFC terminal 11

YEL (long lead with terminal): TB10B

BLU: IFC terminal 13

- (2.) Units requiring ONE TB10 terminal block Locate two 42-in (1067 mm) BLU and YEL wires with single insulated female terminal shipped in a bag with this kit.

At the single point box, locate the BLU tap conductor on fuse block FU3 (second block); disconnect and discard. Connect the 42-in. BLU wire to FU3.

Mount one TB10 terminal block in the unit's control box between compressor contactors C1 and C2. (See Fig. 10.)

Relocate these wires:

At IFC terminal 13, disconnect Compressor 2 ORN and OFM BLU leads; reconnect at TB10.

Remove these leads:

At C1-11, remove BLK jumper to C2-11. Discard.

At C1-13, remove YEL jumper to C2-13. Discard.

Route the first set of tap conductors (attached at upper fuse block, with bushing per Step 5) into the main control box; connect at:

BLK: C1 terminal 11

YEL: C1 terminal 13

BLU: IFC terminal 13

Route the second set of tap conductors (attached at second fuse block) into the main control box; connect at:

BLK: C2 terminal 11

YEL: C2 terminal 13

BLU: TB10

- (3.) Units requiring NO TB10 terminal block Route the first set of tap conductors (attached at upper fuse block, with bushing per Step 5) into the main control box.

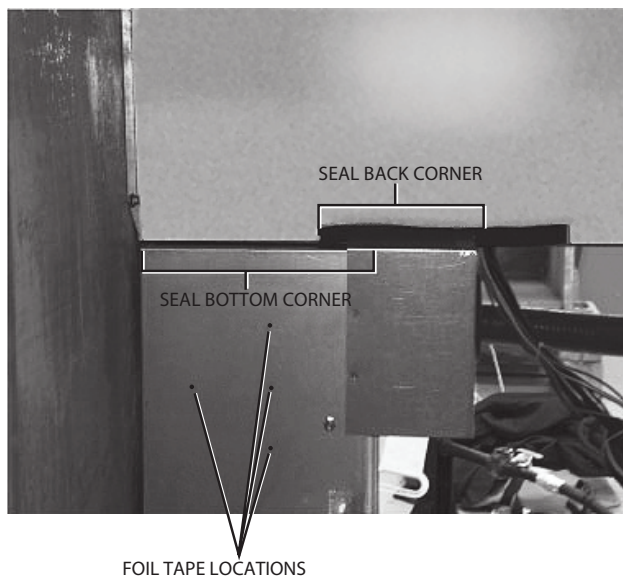
Route the second set of tap conductors (attached at second fuse block) into the main control box.

Connect both sets of tap conductors to unit terminal block TB1; connect at:

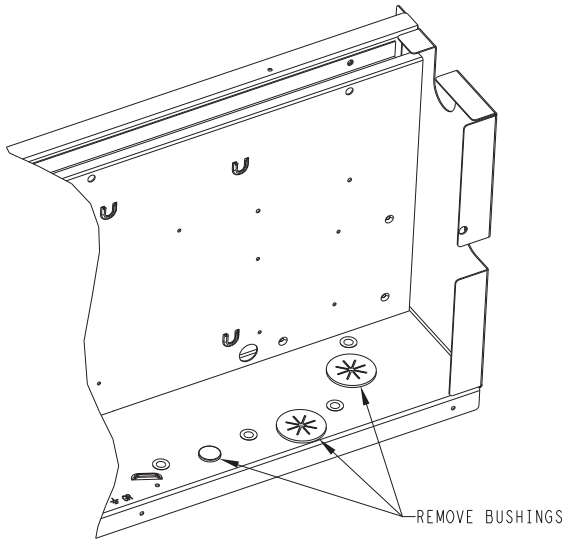
BLK: terminal 11

YEL: terminal 12

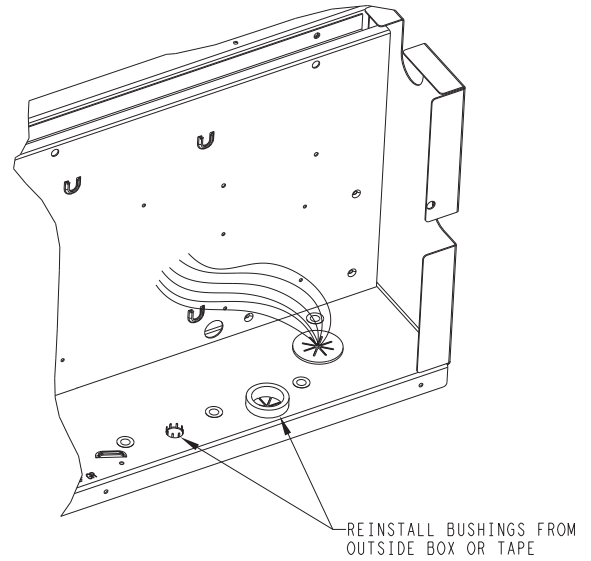
BLU: terminal 13



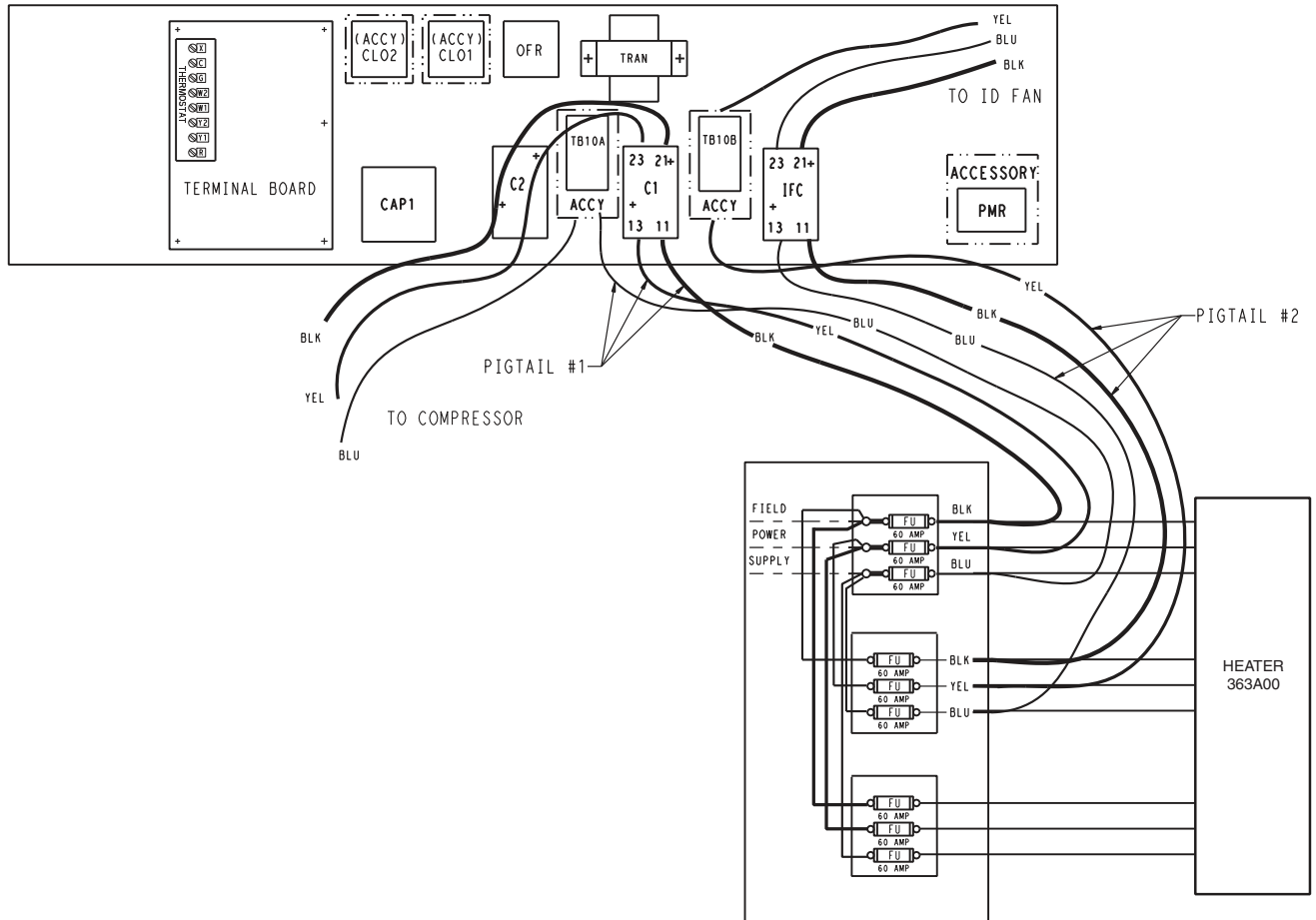
**Fig. 7 — Seal Strip and Foil Tape Locations**



**Fig. 8 — Control Box - Bushings to Remove**



**Fig. 9 — Bushings Replaced from Outside Control Box**

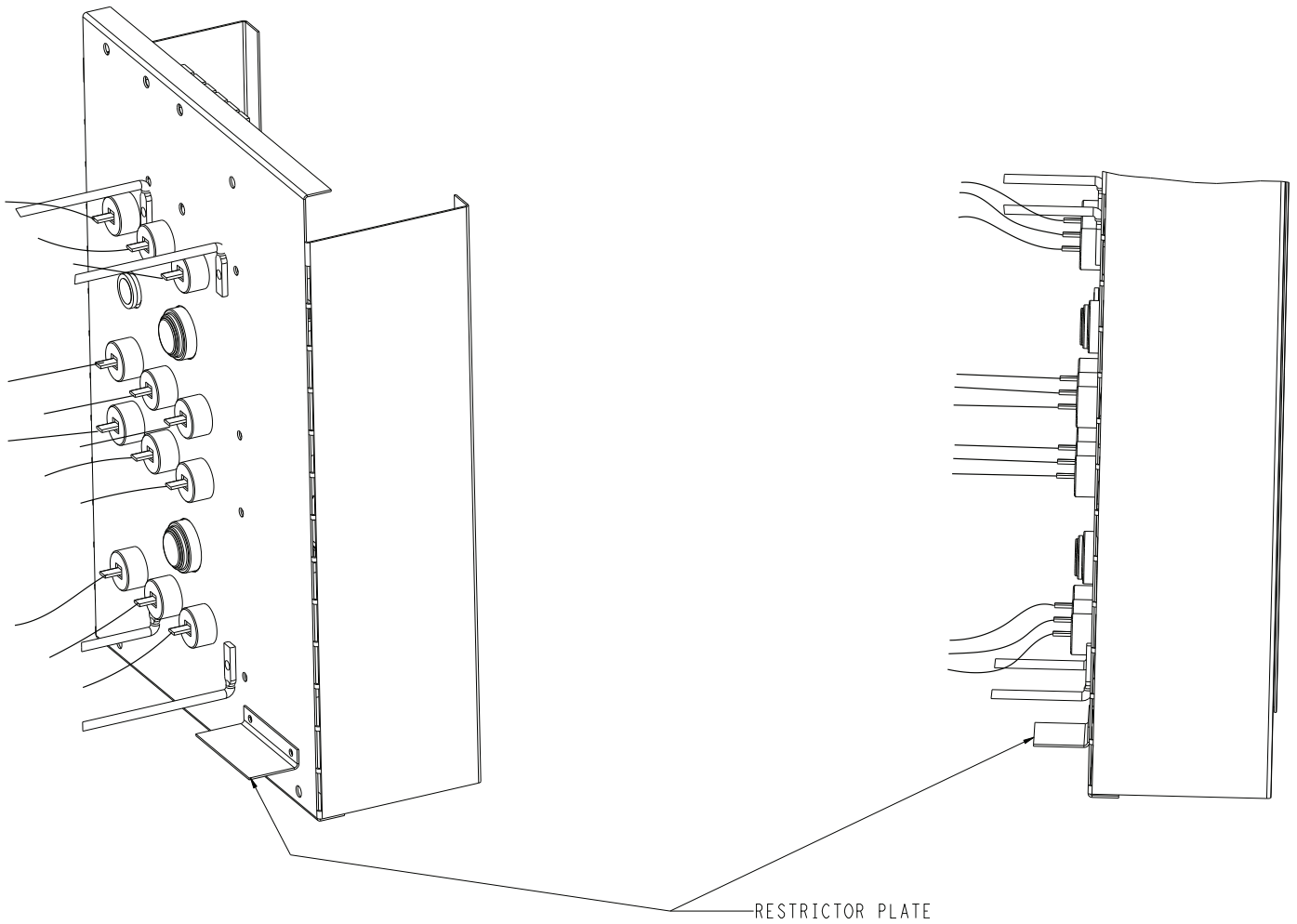


**Fig. 10 — TB10 Locations and Connections**

## INSTALLING ELECTRIC HEATER

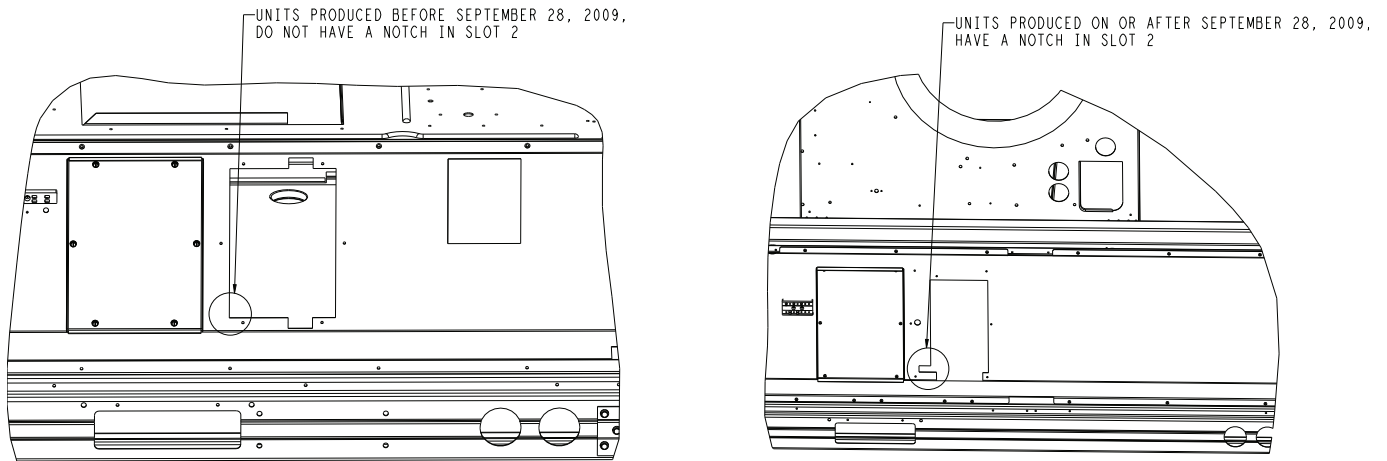
CRHEATER101A00-109A00, 110A-112A00, 103B00, 104B00, 113B00-116B00, 117A00-119A00, 128B00, 129B00, 264A00-269A00, 297A00, 299A00, 301A00, 308A00, 316A00-321A00, 360A00-364A00, 371A00-373A00, 378A00-380A00

1. Identify heater cover(s) to remove. See Fig. 16 and 17. On units without the notch in slot 2 (units with a production date before September 28, 2009) where a heater(s) needs to be replaced with one of CRHEATER113B00-116B00, 128B00-29B00, it is recommended to drill out the rivets fastening the restrictor plate to the back of the heater control box/mounting plate and remove the restrictor plate. It is not recommended to bend the restrictor plate flat to allow the heater to be installed into slot 2 because it will leave air gaps between the heater mounting plate and the unit mounting bracket. See Fig. 11 and 12.
  - a. All two-heater installations: Remove both heater covers. Save covers and screws.
  - b. All single-heater installations EXCEPT 113B00-116B00, 265A00-269A00, 299A00, 301A00: Remove the heater cover at Heater 1 position. Save cover and screws.
  - c. Heater CRHEATER113B00-116B00, 265A00-269A00 ONLY: Remove the heater cover at Heater 2 position. Save cover and screws.
  - d. Heater CRHEATER128B00, 129B00, 301A00, 360A00-377A00, 380A00-384A00 ONLY: Remove both heater covers. Save the screws. Discard the covers.
2. Open the heater package(s) and remove the heater module, heater support track (where provided), heater cover (where provided), screws, wiring label, miscellaneous parts.
3. All heaters EXCEPT CRHEATER101A00-109A00, 301A00, 360A00-362A00, 371A00-373A00, 378A00, 379A00: Install heater slide bracket(s) from the heater kit through the bottom of the heater mounting hole(s) and fasten each with the two screws provided. (See Fig. 17.)
4. Install the heater module(s) in the heater support bracket opening(s). On two-heater installations where there is no key-forced heater position (see right hand photo in Fig. 12 for example of notch in slot 2 that makes a key forced heater position), install the heater with the higher kW rating in heater position 1. The installation uses 8 screws (4 per module).
  - a. Heaters 101A00-109A00, 265A00-269A00: To install module, insert heater frame into location notch in heater bracket opening in unit and slide heater through the opening. Fasten heater module to heater mounting bracket with the 4 screws saved from Step 1. (See Fig. 16.)
  - b. Heater CRHEATER301A00, 360A00-362A00, 371A00-373A00 only: To install module, insert both heater frames into location notches in heater bracket opening in unit and slide heater through the opening. Fasten heater module to heater mounting bracket with the 8 screws saved from Step 1. (See Fig. 18.)
- c. Heater CRHEATER128B00-129B00 only: To install module, insert heater frame into slot 2 in heater bracket opening in unit, engage flange on heater with track in unit, and slide heater through the opening. Fasten heater module to heater mounting bracket with 8 screws saved from Step 1. (See Fig. 18.)
- d. All other heaters: To install module, engage flange on heater with track in unit and slide heater through mounting bracket opening. Fasten heater module to heater mounting bracket with the 4 screws saved from Step 1. (See Fig. 17.)
5. Single-phase heater conversion 208/230-v heaters 101A00-104B00, 360A00, 361A00 are factory-wired for 3-phase applications but can be converted to single-phase by changing one wire as described below. Three-phase applications: Skip to Step 6 and see Fig. 25. For single-phase applications, rewire the heater as follows (see Fig. 13): Connect RED wire provided with kit to Heater Relay (HR) and to L1 as shown.
  - a. Disconnect YELLOW wire from HR Terminal 3 and reconnect to HR Terminal 1.
  - b. Using the wire tie provided, fasten the RED wire to heater power wire harness near existing wire tie on heater module. This provides strain relief for the RED wire. (See Fig. 14.) Connect the BLACK and RED conductors in the heater power wire harness to the same L1 pole on single point box TB or fuse block. Connect the BLUE and YELLOW conductors in the heater power wire harness to the same L2 pole on single point box TB or fuse block. (See Fig. 13.)
6. Route power wires from heater module(s) through the foam bushing in the center partition and into the single point box. (See Fig. 1.) Connect to terminal block or fuse blocks per schematics in Appendix A or B. See the tables at beginning of each Appendix to identify the appropriate figure. All heaters are single bank heaters except CRHEATER111A00, 112A00, 128B00, 129B00, 268A00, 269A00, 301A00, 318A00, 360A00-364A00, 371A00-373A00, and 380A00, which are dual bank heaters. These heaters will be wired as two heaters (i.e., 6, 9, or 12 leads). Fusing is shown pictorially on the unit wiring schematic label. If no single point box is required for the unit and heater combination, run the heater power supply wiring through the grommet holes to the main unit control box's field power connection points or to optional factory-supplied disconnect.
7. Factory control wiring for heaters runs from unit control box to terminal block TB-4, mounted in the heater compartment above module 1 location. (See Fig. 6 and 19-24.) Connect the heater control wiring at TB-4.

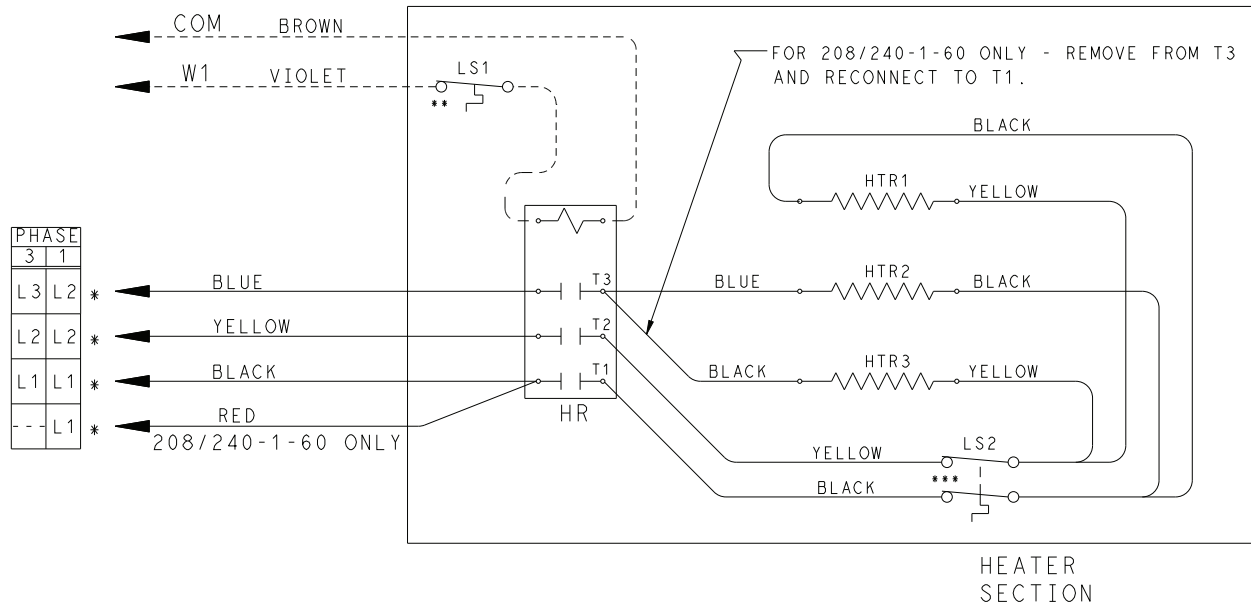


The view shown is for CRHEATER113B00-116B00. The restrictor plate is also present on the CRHEATER128B00-129B00 that has the larger heater mounting plate.

**Fig. 11 — Restrictor Plate Views**



**Fig. 12 — Slot 2 with and without Notch**

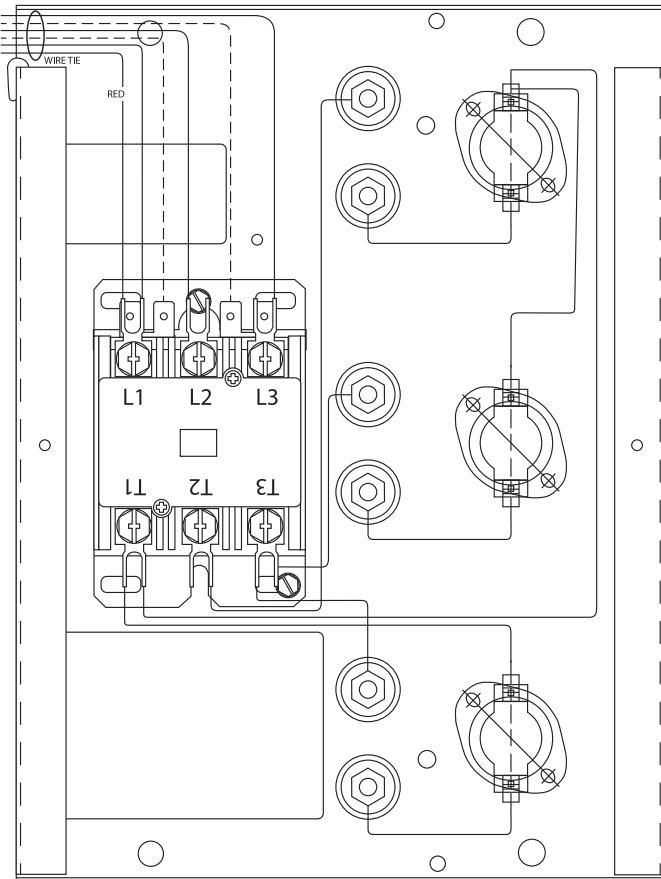


**WARNING:** ELECTRIC SHOCK HAZARD - DISCONNECT ALL BRANCH CIRCUITS BEFORE REMOVING THIS COVER.

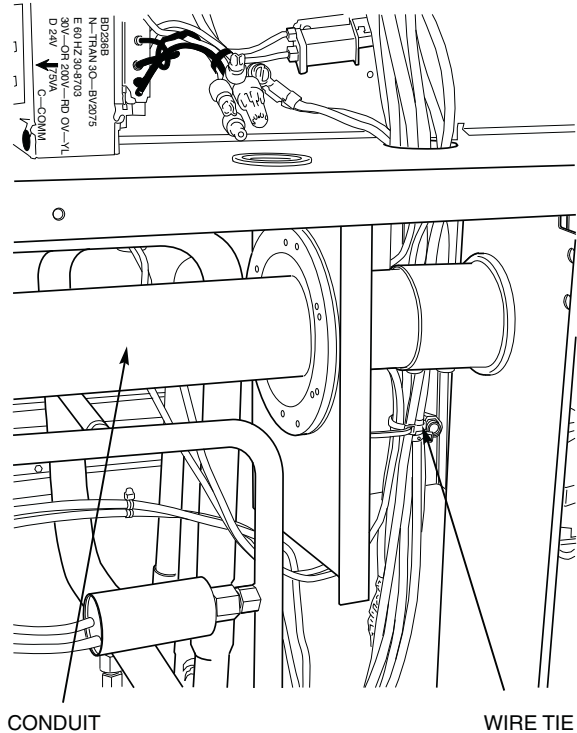
**NOTE:**

- \* Power supply wiring per NEC & local codes. Suitable for at least 75°C Use copper conductor wiring only. Field wire, NEC Class I
- \*\* Replace Auto Reset with Therm-O-Disc type 60TX11 L140-50F
- \*\*\* Replace Non-Resettable with Therm-O-Disc type 64FX14 L225F SINGLE POINT CONNECTION

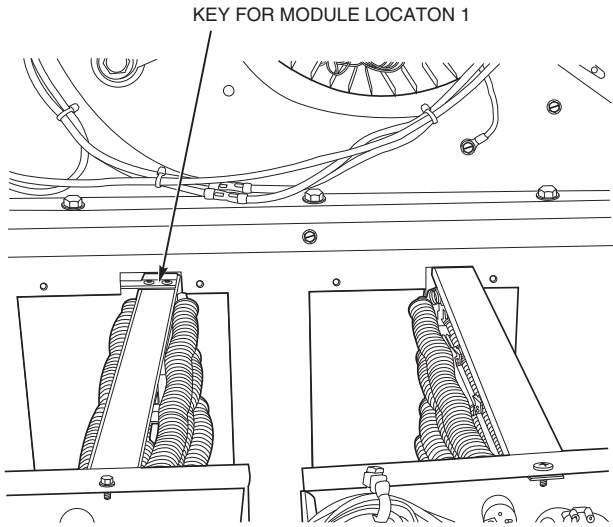
**Fig. 13 — Single-Phase Heater Wiring**



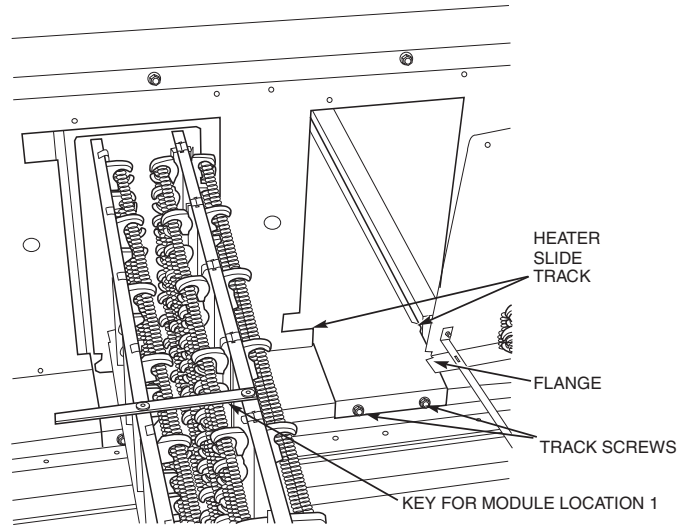
**Fig. 14 — Typical Single-Phase Wiring Installed**



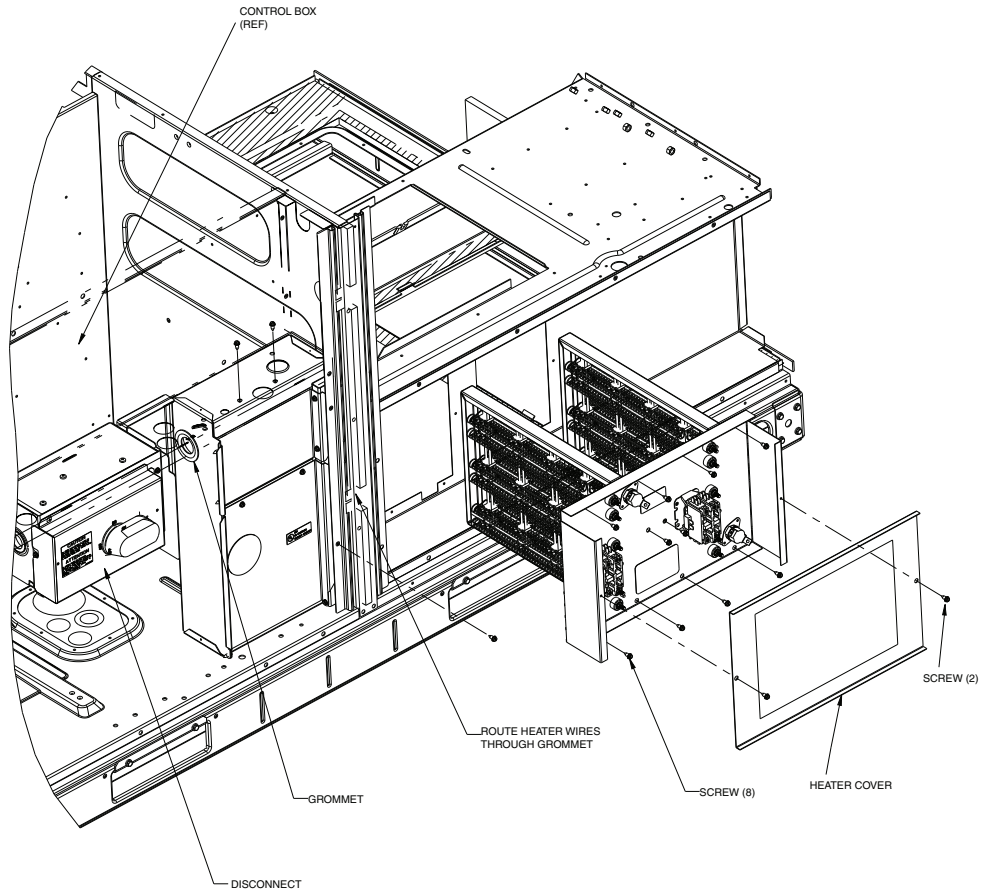
**Fig. 15 — Typical Conduit Installation**



**Fig. 16 — Typical Electric Heat Installation**  
 (AC-1 Sizes 04 to 07 and 036 to 072, AC-2 Sizes 04-06,  
 HP-1 Sizes 04-07 and 036 to 072, HP-2 Sizes 04-06)

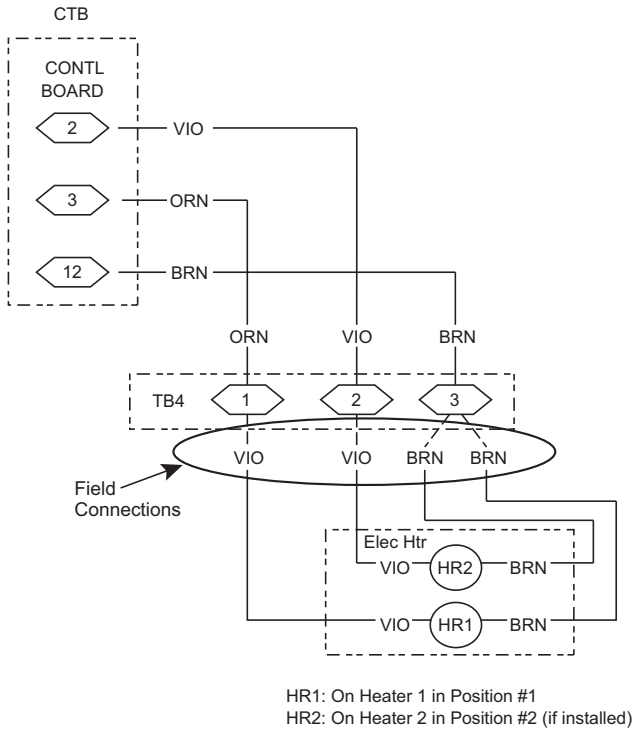


**Fig. 17 — Typical Module Installation**  
 (AC-1 Sizes 08 to 14 and 090 to 150, AC-2 Sizes 07-12,  
 HP-1 Sizes 08-12 and 090 to 121, HP-2 Sizes 07-09)

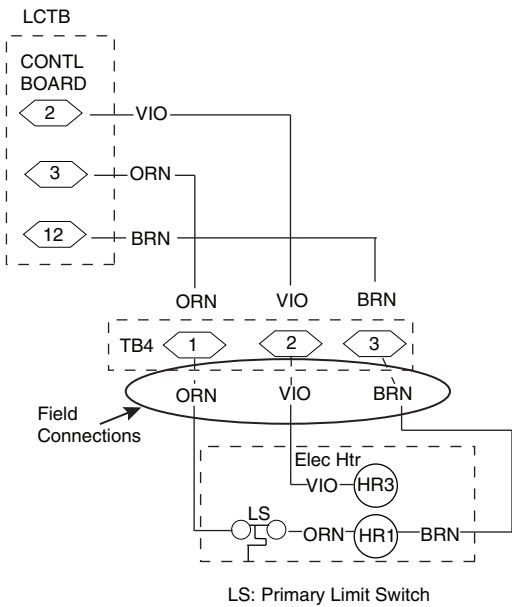


Only CRHEATER301A00 is shown in the figure. CRHEATER128B00-129B00 has only one bank of heaters with a wide mounting plate covering both slots.

**Fig. 18 — Installing CRHEATER301A00 and CHEATER128B00-129B00, 360A00-364A00, 371A00-373A00, 380A00**

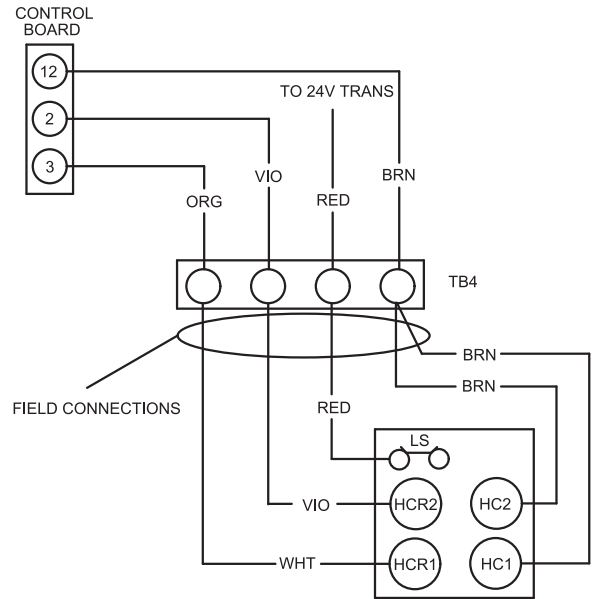


**Fig. 19 — Accessory Electric Heater Control Connections (AC-1 Except Size 16 and 180, AC-2 Except Size 14 and 150)**

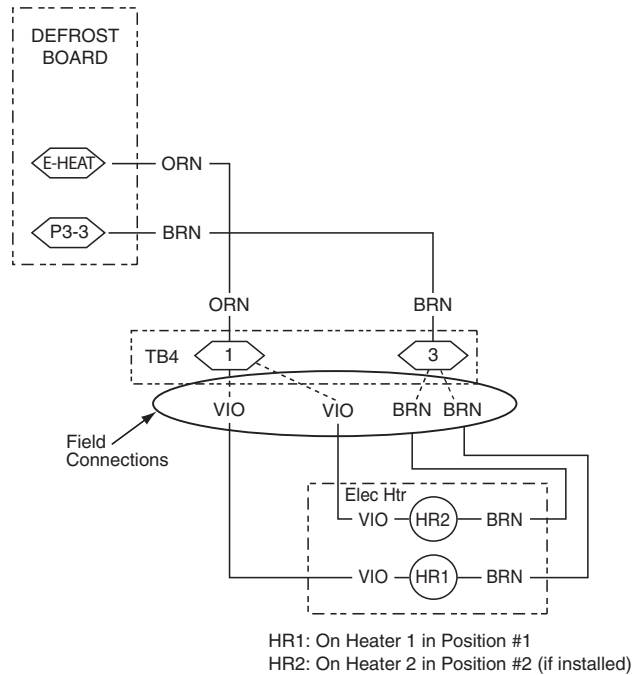


For simplicity, not all control wiring internal to the electric heaters is shown.

**Fig. 20 — Accessory Electric Heater Control Connections (AC-1 Size 08-14, AC-2 Size 08-12) (CRHEATER128B00, 129B00 only)**

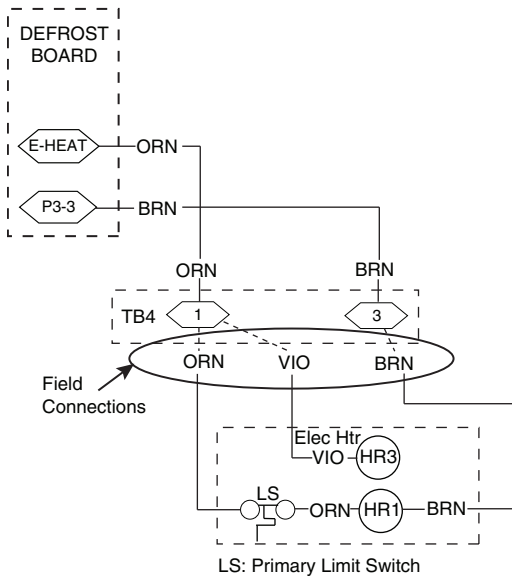


**Fig. 21 — Accessory Electric Heater Control Connections (AC-2, Size 06 and 060, 575V only), (CRHEATER301A00 only)**



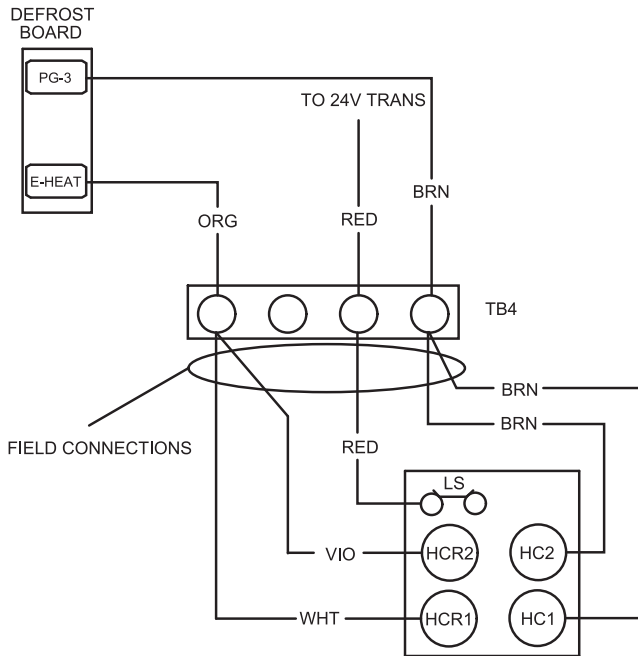
**Fig. 22 — Accessory Electric Heater Control Connections (HP-1 Except Size 14 and 150, HP-2 Except Size 12 and 120)**



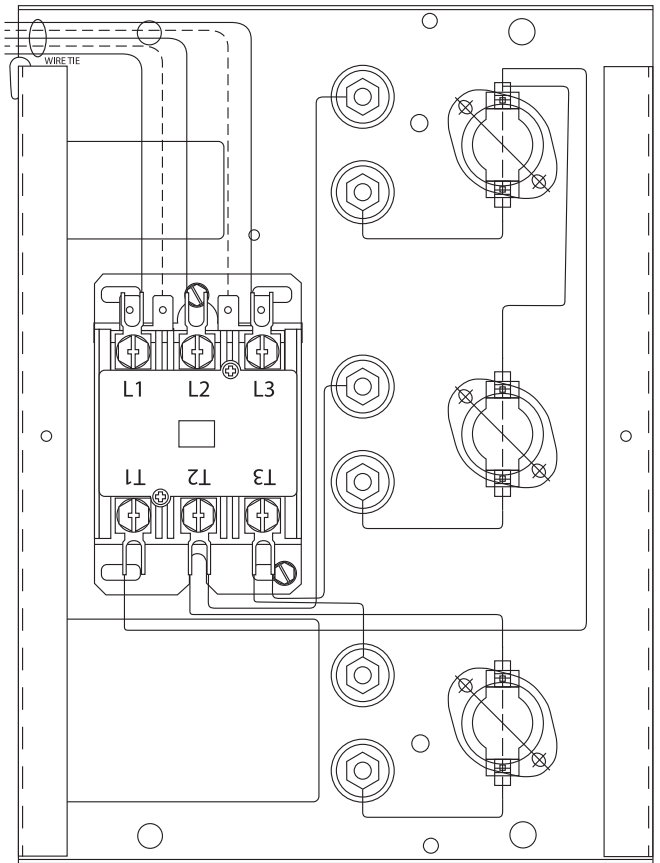


For simplicity, not all control wiring internal to the electric heaters is shown.

**Fig. 23 — Accessory Electric Heater Control Connections (HP-1 Size 08-12, HP-2 Size 08-09) (CRHEATER128B00, 129B00 only)**



**Fig. 24 — Accessory Electric Heater Control Connections (HP-2, Size 06 and 060, 575V only), (CRHEATER301A00 only)**



**Fig. 25 — Typical 3-Phase Wiring Installed**

## LARGE CABINET INSTALLATION

Product Groups/Sizes included in this section:

- AC-1 16 (180)
- AC-2 14 (150)
- AC-3 08-12
- HP-1 14 (150)
- HP-2 12 (120)

### Check Sales Packages

Following the project drawing schedule tables or submittal documents, select the scheduled heaters and single point boxes (if used) and place at each unit.

Compare the sales package number(s) for scheduled heater modules against the approved usage table on the unit's info plate. See Fig. 2 and 3 for typical plate data. If the scheduled heater usage does not appear on the unit info plate label, STOP. Contact the project engineer or the local distributor sales office for clarification.

Open the cartons and inspect for damage.

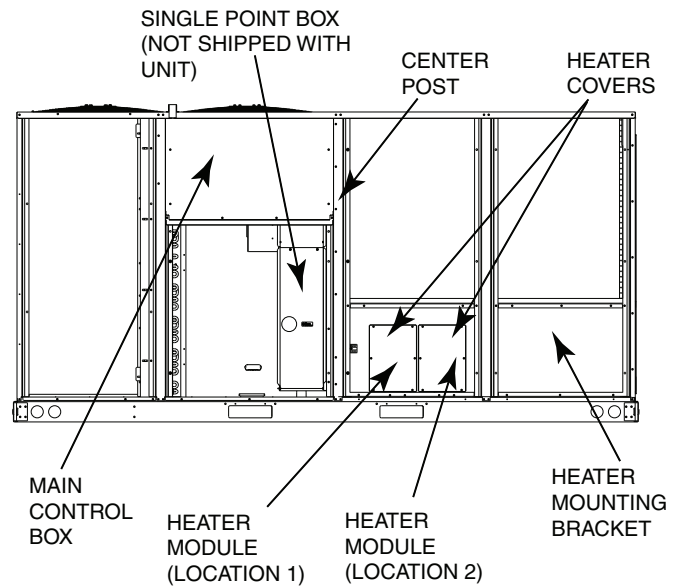
### Disconnect Field Power Supply

1. Disconnect power to the unit. Lock-out/tag-out on unit disconnect switch.
2. Open and remove the access panel and cover to the main control box.
3. Use a voltmeter to check that no power is present at unit terminal block.

### Install Single Point Box (CRSINGLE047A00, 049A00, 050A00-054A00)

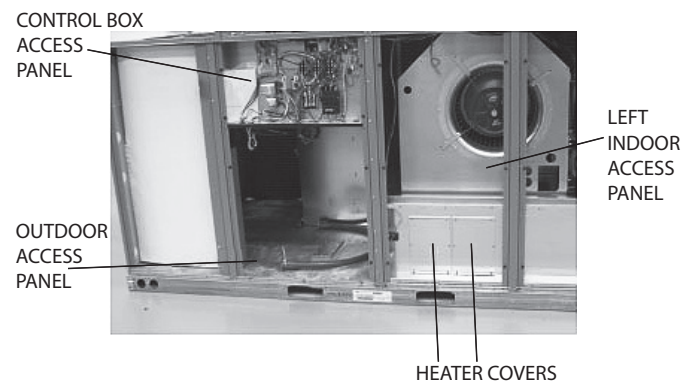
1. Remove kits from boxes and verify that all of the correct parts have arrived undamaged.

2. If power is already connected to unit, disconnect all power to the unit per correct lock-out/tag-out procedures. Disconnect field power wiring or optional factory-installed disconnect or HACR power leads at TB1 and withdraw the wiring from the unit control box.
3. Remove outdoor access, control box, and left indoor access panels from the unit and save screws. See Fig. 26. Fig. 27 shows the unit with the panels already removed.
4. Optional – The center post may be removed to facilitate wiring.
5. Remove the bushings and plug from the control panel per Fig. 28. Save the bushings and discard the plug.
6. Add seal strip to the rear bottom corner of the control panel as shown in Fig. 29.
7. Foil tape open screw holes on the back of the single point box as shown in Fig. 29. Different single point boxes will have different screw holes open.
8. Remove the cover from the single point box.
9. Install the single point box under the control panel with two screws down through the control panel (Fig. 28) and one screw (not shown) into the center post. (See Fig. 28.) Holes have been provided. Foam wire guides in the center post may have to be removed. If center post was removed per step 4, the single point box will have to be screwed into it later.
10. The single point box kit will contain two rain shield brackets, a larger bracket with boot seal and a smaller (shorter) bracket without a seal. Remove the seal from the larger bracket and push the conduit drip boot seal into the short rain shield bracket. (See Fig. 30.) Discard the larger bracket.
11. Install the rain shield bracket to the left and behind the single point box using the two screws and holes provided.
12. Re-install the bushings removed in Step 5.
13. Connect the tap conductors.
  - a. CRSINGLE047A00, 050A00 and 052A00:  
Connect the blue, yellow, and black power tap conductors (pigtailed) from the single point box to the unit's power terminal block TB-1 per unit label wiring schematic and per Appendix A or B and connection figures. A representative installation of two 480v heaters and corresponding single point box is shown in Fig. 31-33.
  - b. CRSINGLE051A00, 053A00 and 054A00:  
These kits include two sets of tap conductors (blue, yellow and black pigtailed) connected at fuse blocks 1 and 2. Connect these leads in parallel to the unit's power terminal block TB-1 per the unit label wiring schematic and per Appendix A, B or C and connection figures. (These kits also include two small terminal blocks (TB10). The TB10 blocks are not used with large cabinet units in this section; discard.)

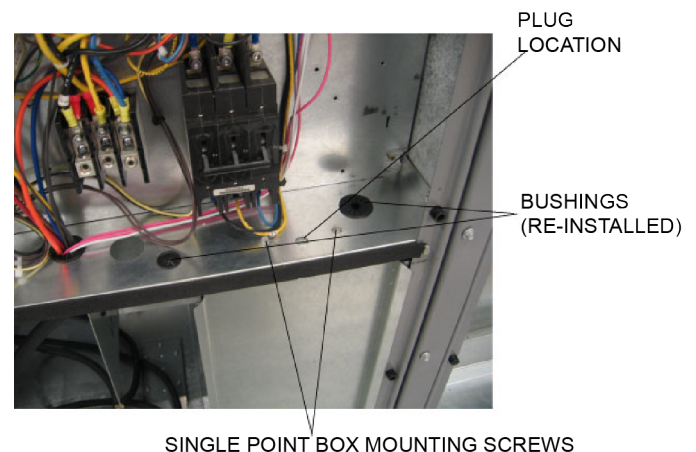


(AC-1 16,180; AC-2 14,150; AC-3 08-12, HP-1 14,150; HP-2 12,120)

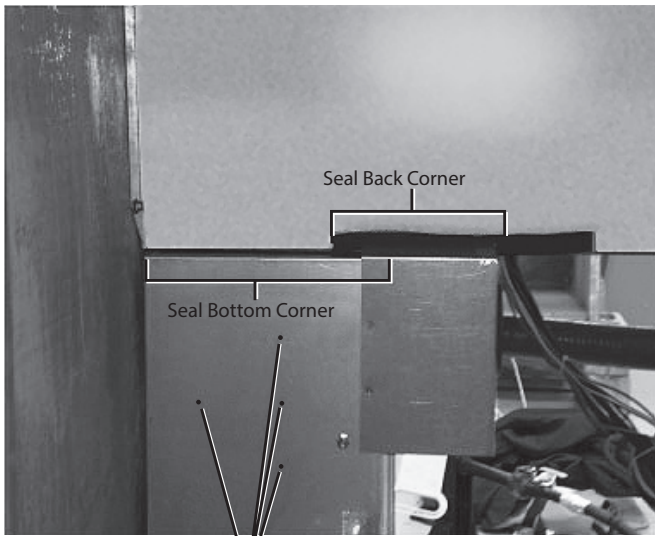
**Fig. 26 — Typical Component Location**



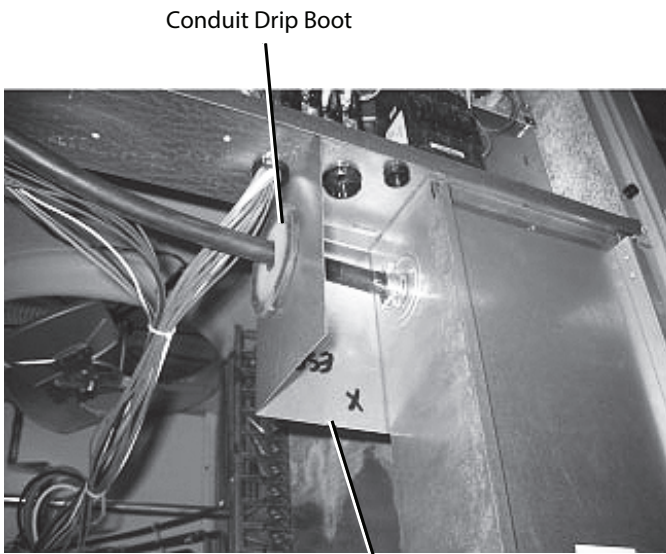
**Fig. 27 — Typical Unit with Access Panels Removed**



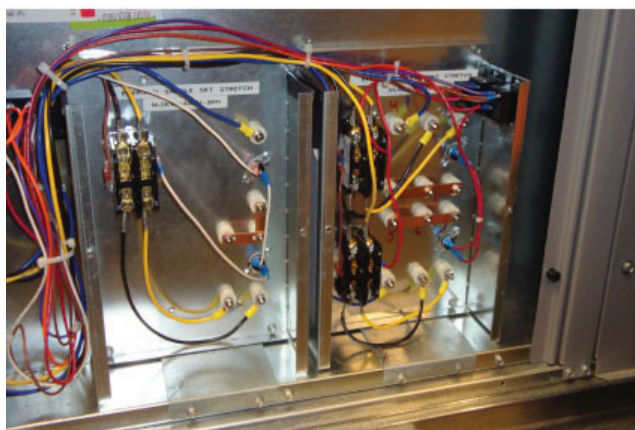
**Fig. 28 — Single Point Box Installation Details**



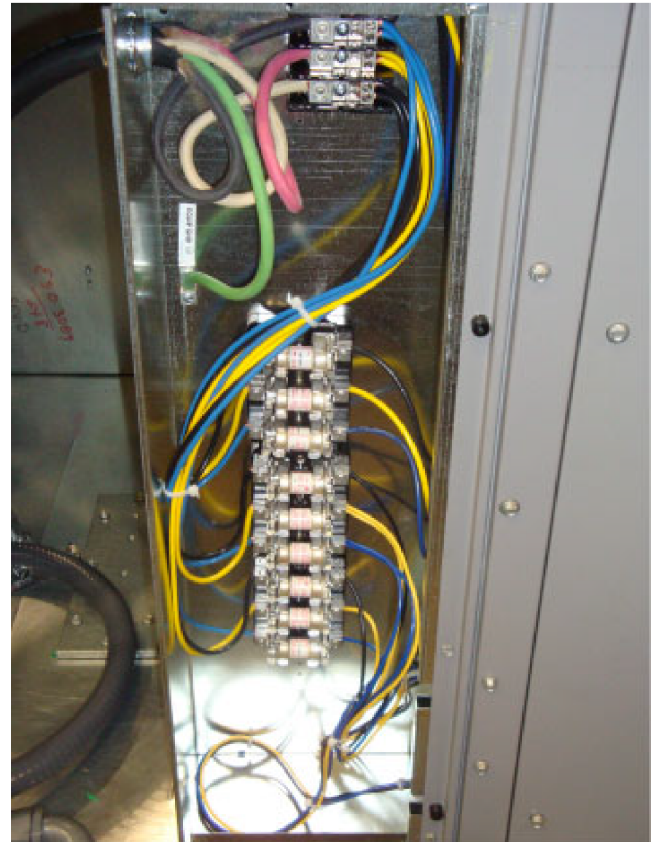
**Fig. 29 — Seal Strip and Foil Tape Locations**



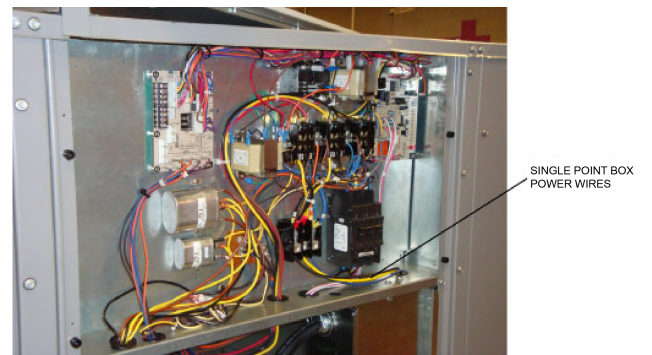
**Fig. 30 — Rain Shield Installation**



**Fig. 31 — Heater Wiring (2-pole contactor shown, has been replaced with 3-pole contactor)**



**Fig. 32 — Typical Single Point Box Wiring**



**Fig. 33 — Typical Control Panel Wiring**

**Install CRHEATER288A00-296A00, 367A00-370A00, 374A00-377A00, 381A00-384A00**

For electric heater control connections on AC units, see Fig. 41-45. For electric heater control connections on HP units, see Fig. 46-50.

1. Remove and save the heater covers for CRHEATER288A00-296A00; discard the covers for CREHEATER367A00-370A00, 374A00-377A00, 381A00-384A00.
2. Install heater slide track(s) from the heater kit through the bottom of the heater mounting hole(s) and fasten each with the two screws provided. (See Fig. 34.)
3. Install the CRHEATER288A00-296A00 heater(s) (Fig. 36, 230v shown) into their mounting location(s) using the screws provided. Table 10 gives the correct heater location as a function of heater size, voltage, and supply air flow direction and unit supply air opening size.
4. Heater CRHEATER367A00-370A00, 374A00-377A00, 381A00-384A00 consist of 2 heater assemblies mounted

to one larger mounting plate. Install these heaters through both slots using the screws provided.

**NOTE: Heaters with Restrictor Plates**

Heater part numbers CRHEATER288A00, 289A00, 290A00, 294A00, 295A00 and 296A00 have a restrictor plate attached to the heater base plate (see Fig. 35). The horizontal projection of this plate engages a slot on the lower left-hand side of heater position 2 (right-hand opening), thus permitting a heater mounting in the right-hand heater opening and preventing its inadvertent mounting in the left-hand heater opening.

5. Connect the heater control wiring to terminal block TB4 (located left of heaters, see Fig. 51 and 52.)

TB4 has five terminals. (See Fig. 37-40.) Bottom row left terminal is "R Use"; it has a factory RED connection. Bottom row right terminal is "C Use"; it has a factory BRN connection. For AC units, top row left is designated as "W1Use" and has factory ORN connections. The top row center is designated as "W2 Use" and has factory VIO connections. For HP units, top row left and center terminals are designated "W2 Use" and have factory ORN connections. The fifth terminal is for field-option connection of a staging control.

a. CRHEATER288A00-293A00 Heaters:

These heaters have two control wires: ORN for heater contactor and BRN for control common. Connect BRN wire(s) to TB4's "C Use" terminal. (Second BRN wire will require use of the piggyback terminal on the factory BRN wire.) For AC units, connect heater ORN control wiring to ORN on TB4 for first stage heating. (See Fig. 41.) For HP units, connect heater ORN control wire(s) to an available terminal on TB4's "W2 Use" group. (See Fig. 46.)

b. CRHEATER294A00-296A00 Heaters:

These heaters have four control wires: ORN and VIO for heater contactors, RED for safety circuit power and BRN for control common. Connect RED wire to TB4's "R Use". Connect BRN wire to TB4's "C Use" terminal. For AC units with one heater package that has these 4 control wires, connect heater ORN control wiring to ORN on TB4 for first stage heating and to VIO on TB4 for second stage heating. See Fig. 42.

c. For HP units, connect ORN and VIO wires to TB4's "W2 Use" terminals. (See Fig. 47.)

d. CRHEATER370A00, 377A00, 384A00 Dual Module Heaters:

These heaters have four control wires: Two ORN for heater contactors and relays and two BRN for control common. Connect BRN wires to TB4's "C Use" terminal. (Second BRN wire will require use of the piggyback terminal on the factory BRN wire.) Connect ORN heater control wire with W1 label to ORN on TB4 for first stage heating and the ORN heater control wire with W2 label to VIO on TB4 for second stage heating. (See Fig. 43.) For HP units, connect both ORN heater control wires to an available terminal on TB4's "W2 Use" group. (See Fig. 39 and 48.) See heater wiring label shipped with the heater for complete details of heater internal wiring. Label must be placed on the heater cover(s) per Step 3 on page 28.

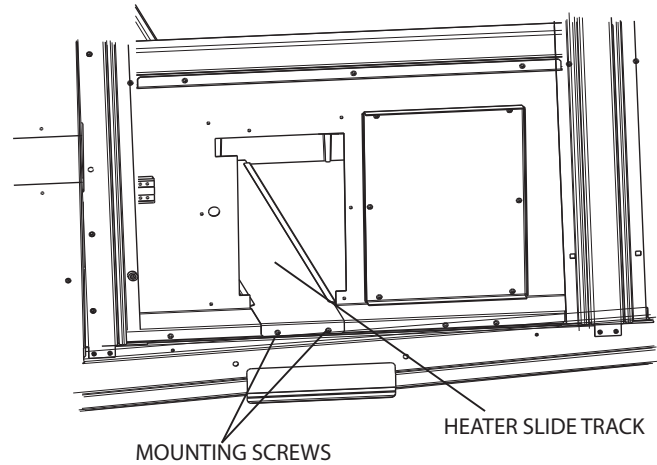
e. CRHEATER367A00, 368A00, 374A00, 375A00, 381A00, 382A00 Dual Module Heaters:

These heaters have six control wires: Two ORN and one VIO for heater relays, one RED for safety circuit power and two BRN for control common. Connect RED wire to TB4's "R Use". Connect BRN wires to TB4's "C Use" terminal. For AC units, connect both the ORN and VIO heater control wires that are bundled together with a RED and BRN wire to ORN on TB4 for first stage heating and connect the other ORN heater control wire bundled only with a single BRN wire to

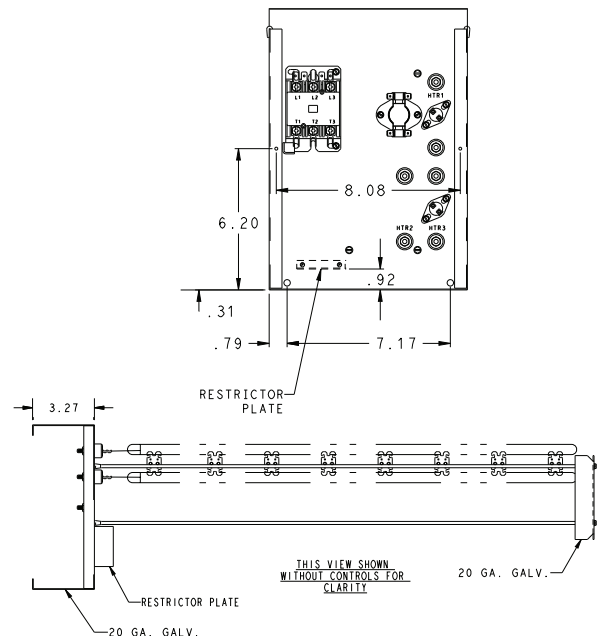
VIO on TB4 for second stage heating. (See Fig. 44.) For HP units, connect all three ORN and VIO wires to TB4's "W2 Use" terminals. (See Fig. 39 and 49.) See heater wiring label shipped with the heater for complete details of heater internal wiring. Label must be placed on the heater cover(s) per Step 3 on page 28.

f. CRHEATER369A00, 376A00, 383 Dual Module Heaters:

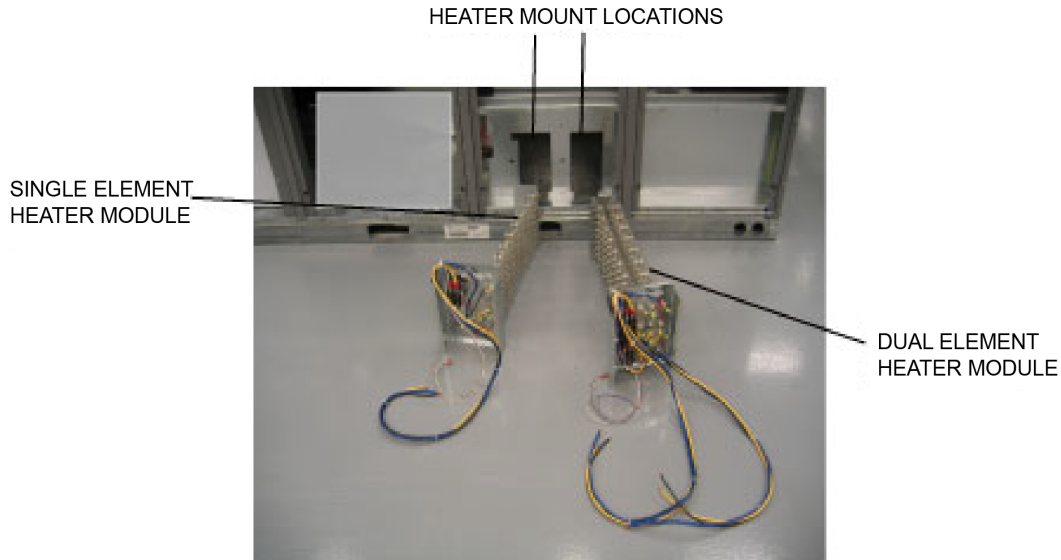
These heaters have seven control wires: Two ORN and two VIO for heater relays, one RED for safety circuit power and two BRN for control common. Connect RED wire to TB4's "R Use". Connect BRN wires to TB4's "C Use" terminal. For AC units, connect both the ORN and VIO heater control wires that are bundled together with a RED and BRN wire to ORN on TB4 for first stage heating and connect the ORN and VIO heater control wires bundled only with a single BRN wire to VIO on TB4 for second stage heating. (See Fig. 45.) For HP units, connect all four ORN and VIO wires to TB4's "W2 Use" terminals. (See Fig. 39 and 50.) See heater wiring label shipped with the heater for complete details of heater internal wiring. Label must be placed on the heater cover(s) per Step 3 on page 28.



**Fig. 34 — Heater Slide Track Installation**



**Fig. 35 — Restrictor Plate**



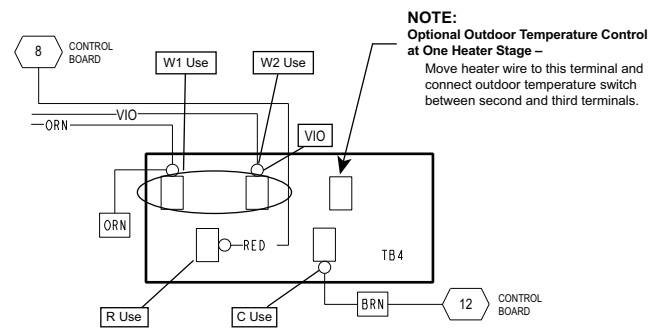
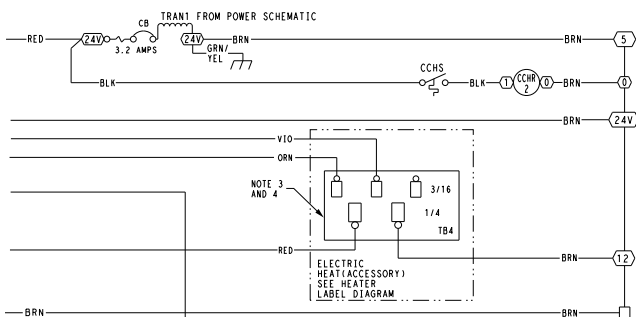
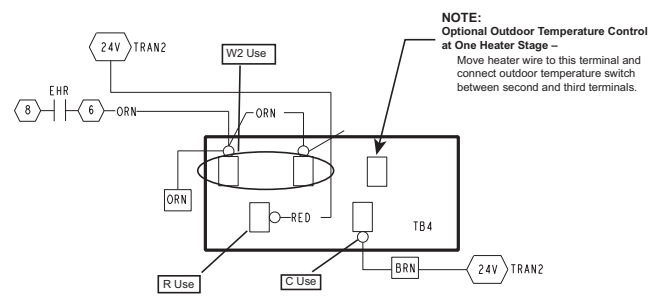
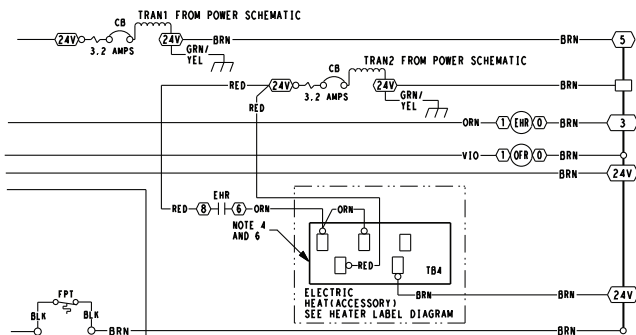
**Fig. 36 — Typical Heater**

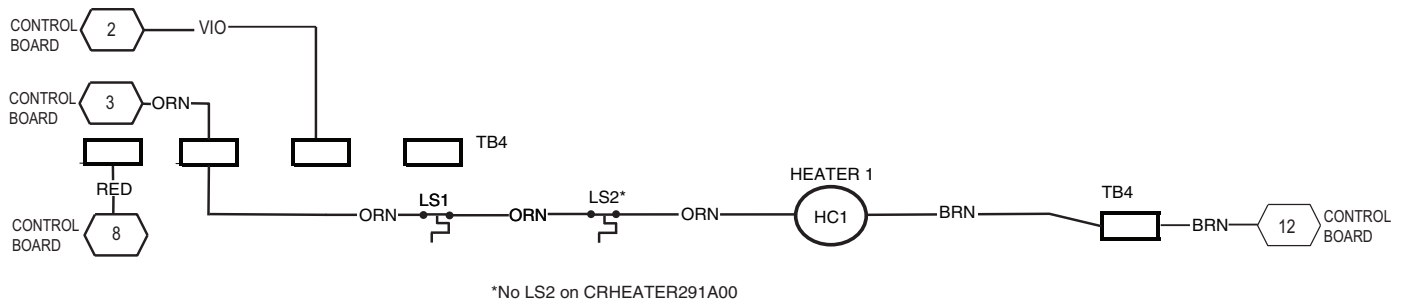
**Table 10 — Heater Location**

HEATER CRHEATERXXXX00*	kW	VOLTS	HEATER SLOT LOCATION	
			LEFT	RIGHT
288A	10.0	240	—	288A
291A	16.5	240	291A	—
294A	33.5	240	—	294A
289A	10.0	480	—	289A
292A	16.5	480	292A	—
295A	33.5	480	—	295A†
290A	10.0	600	—	290A
293A	16.5	600	293A	—
296A	33.5	600	—	296A

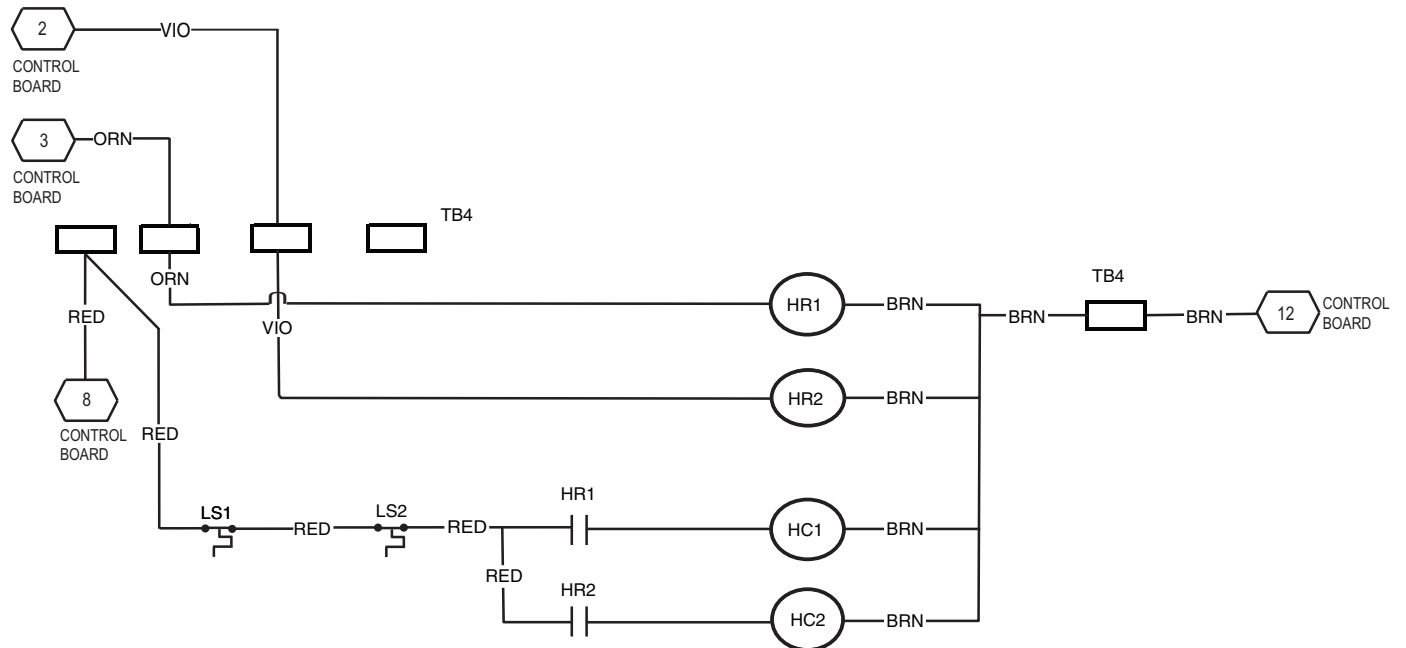
\* XXXX - 4 digit heater in table. For example, CRHEATER291A000 is listed as 291A.

† For CRHEATER295A00 packages produced prior to July 31, 2019 and without a Carrier p/n 50TM001277 on the heater label, then on certain applications, CRHEATER295A00 may have to be installed in the left slot. If you have a CRHEATER295A00 that does not have a 50TM001277 Carrier p/n on the heater label (produced prior to July 31, 2019), then please see I/K-CRHEATER-02 installation instructions.

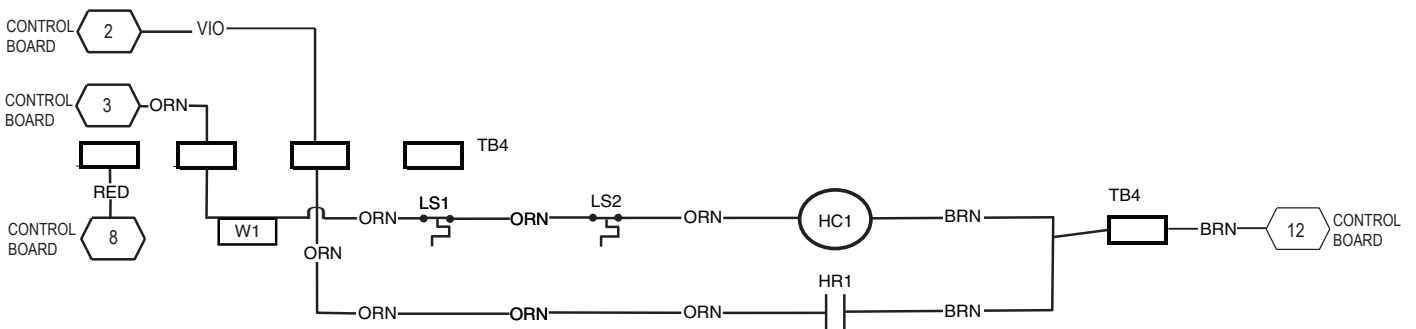




**Fig. 41 — Electric Heater Control Connections - Air Conditioner with CRHEATER288A00-293A00**

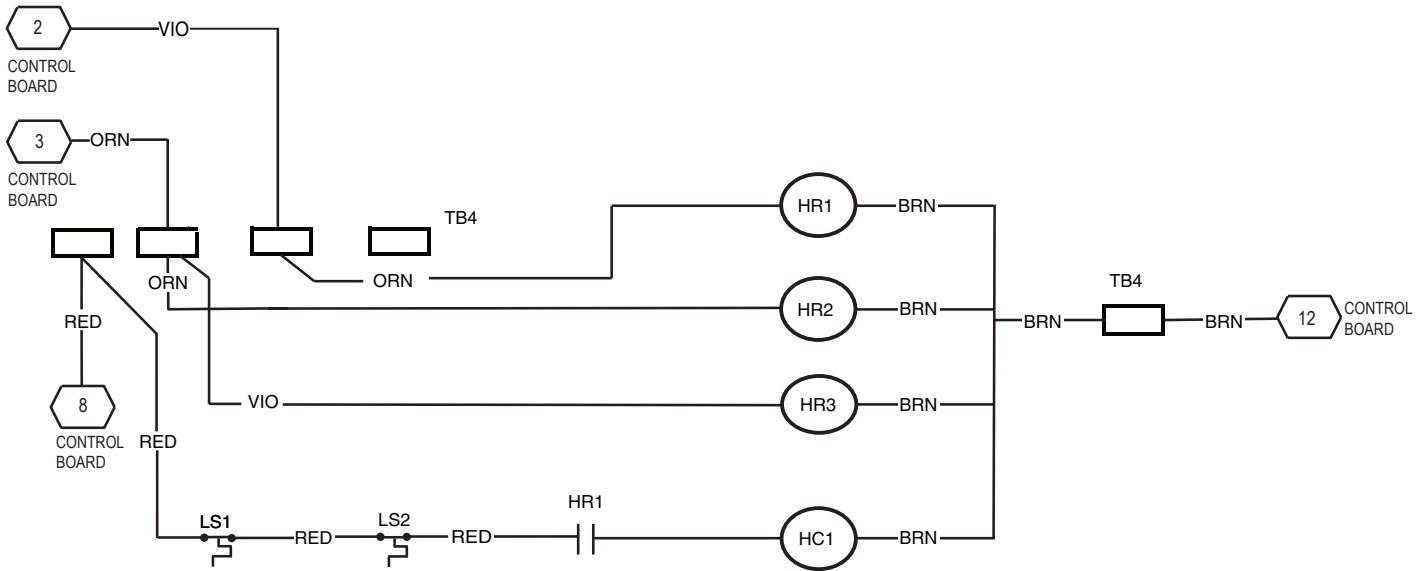


**Fig. 42 — Electric Heater Control Connections - Air Conditioner with CRHEATER294A00-296A00**

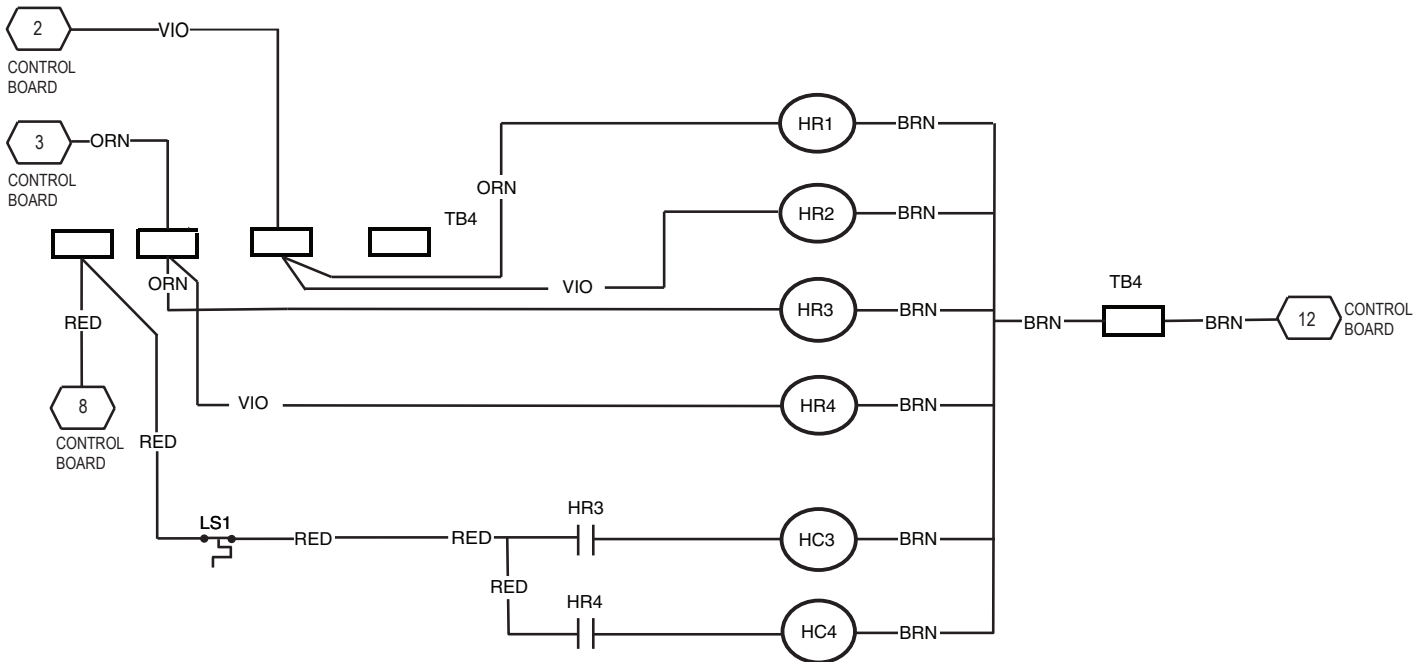


\* 2 stage heat shown. Connect orange wire from Heater 2 HC1 to orange on TB4 for 1 stage heat.

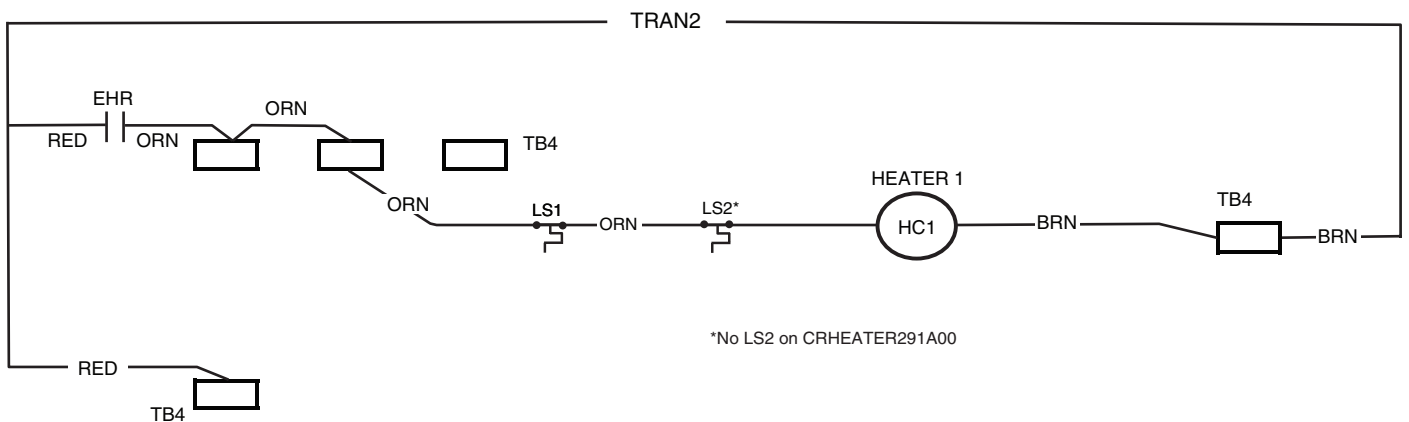
**Fig. 43 — Electric Heater Control Connections - Air Conditioner with CRHEATER370A00, 377A00, 384A00**



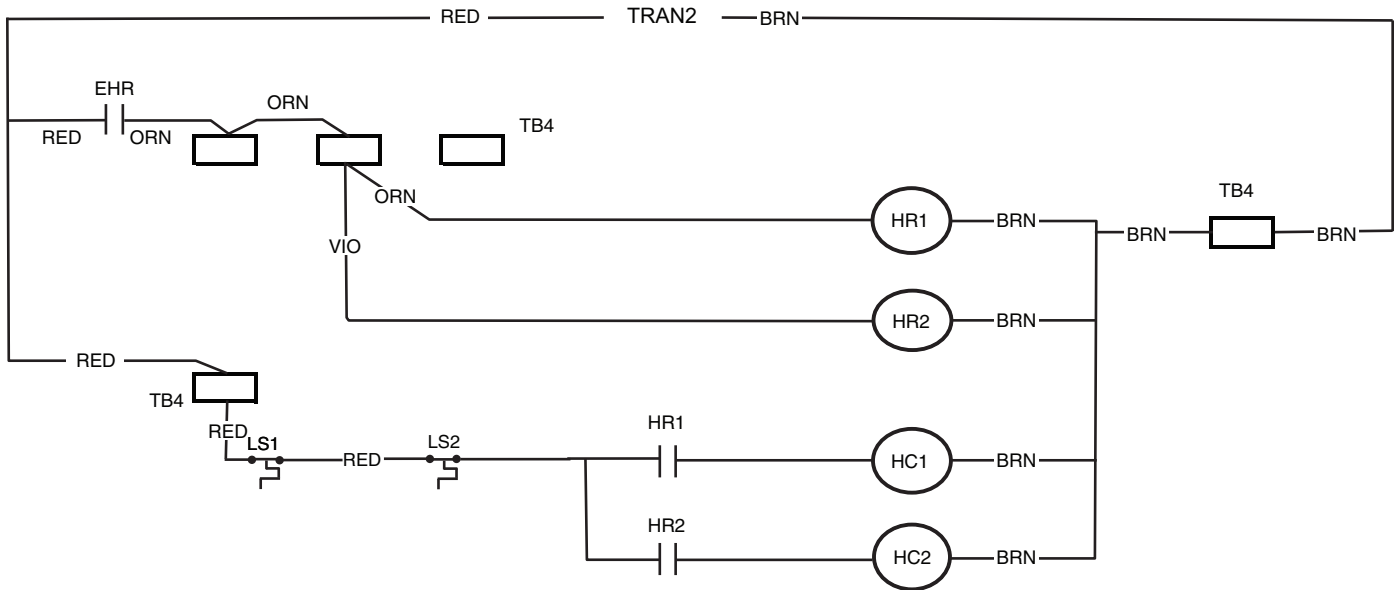
**Fig. 44 — Electric Heater Control Connections - Air Conditioner with CRHEATER367A00, 368A00, 374A00, 375A00, 381A00, 382A00**



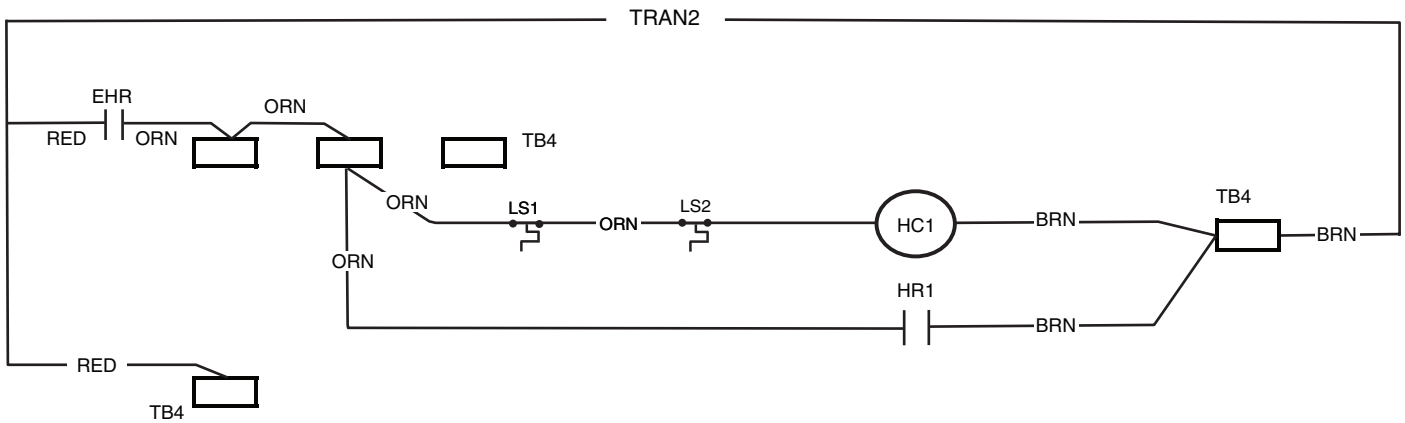
**Fig. 45 — Electric Heater Control Connections - Air Conditioner with CRHEATER369A00, 376A00, 383A00**



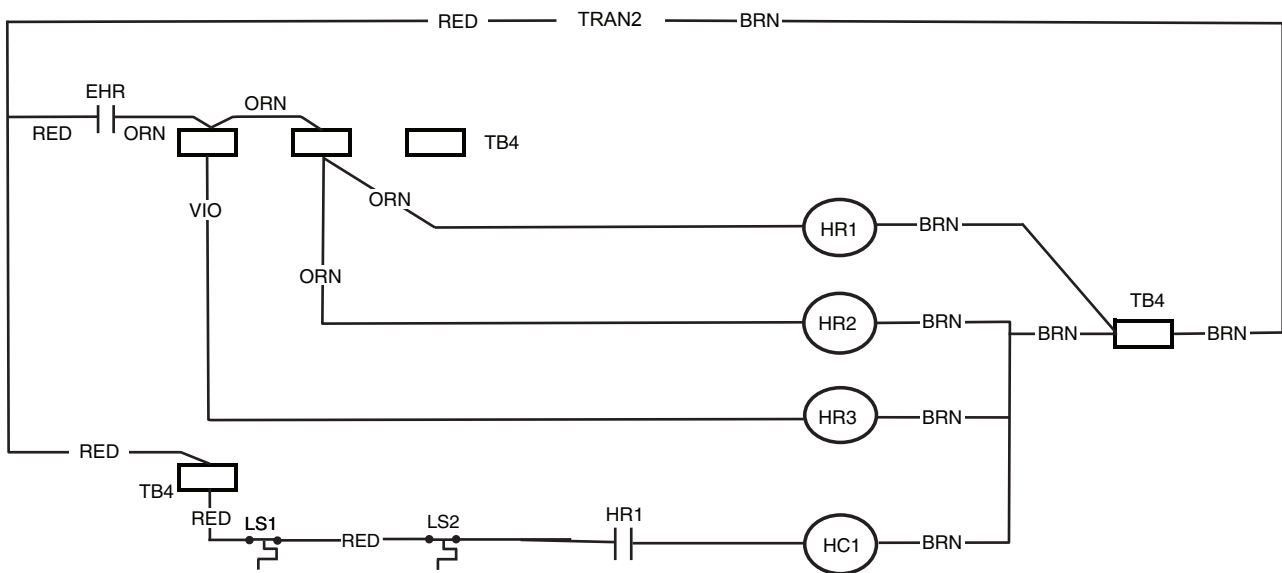
**Fig. 46 — Electric Heater Control Connections - Heat Pump with CRHEATER288A00-293A00**



**Fig. 47 — Electric Heater Control Connections - Heat Pump with CRHEATER294A00-296A00**

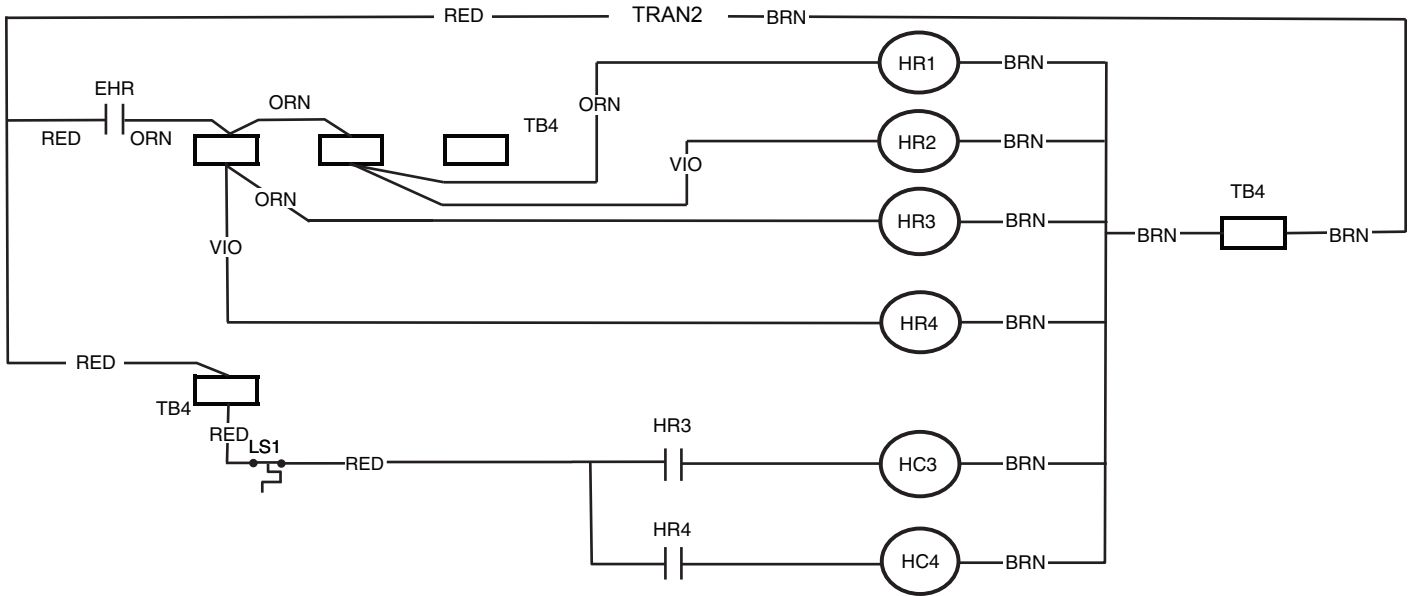


**Fig. 48 — Electric Heater Control Connections - Heat Pump with CRHEATER370A00, 377A00, 384A00**



**Fig. 49 — Electric Heater Control Connections - Heat Pump with CRHEATER367A00, 386A00, 374A00, 375A00, 381A00, 382A00**

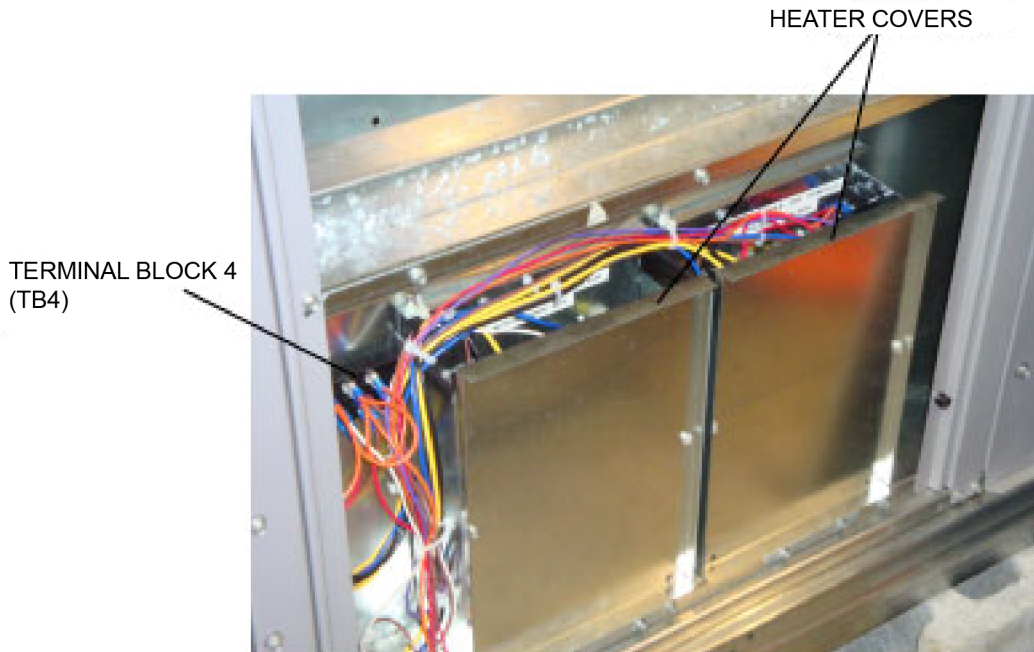




**Fig. 50 — Electric Heater Control Connections - Heat Pump with CRHEATER369A00, 376A00, 383A00**



**Fig. 51 — Heater Wiring**



**Fig. 52 — Heater Wiring and Covers**

### UNIT POWER SUPPLY WIRING – ALL UNITS

NOTE: Installers of unit power supply wiring connecting to these air conditioning and heat pump units must be familiar with applicable requirements of the National Electrical Code (NFPA Standard 70), Articles 440, 430 and 424 dealing with multiple load systems incorporating refrigeration compressors, motors and electric heating. Installers must also be familiar with and observe all local codes regarding unit power supply wiring.

In most instances, adding electric heaters to these units will result in an increase in unit power supply wire size compared to base unit electrical loads. These changes may also impact the size selection of the branch circuit overload protection device and the unit safety disconnect switch. Check the unit's informative data label (see Fig. 2 and 3 for examples) for minimum wiring sizing ampacity for full combined load (including power exhaust if also installed), for branch circuit protection size (a maximum value) and for unit minimum disconnect switch size.

DEVICE	INFOPLATE DESIGNATION
Power Supply Wire	MIN CKT AMPS
Branch Circuit Protection	FUSE OR HACR BREAKER
Disconnect Switch	MINIMUM UNIT DISCONNECT

All wiring that terminates at a unit-mounted terminal must be selected from wiring materials under the NEC Table 310.15(B)(16), 75 C (or higher) column only. Check specifications for external disconnect lug sizes to determine if 60 C wiring materials may be used between branch circuit origin and the disconnect switch.

There are four different situations that an installer can encounter with these units. Three are for new unit installations (base unit has not been connected to a power supply already): Unit without factory disconnect switch, unit with factory disconnect switch and unit with factory HACR breaker. The fourth situation is for an existing unit already connected to a power supply and the heaters are being retrofitted. For each situation, there is usually a without single point box and a with single point box condition. Each situation is discussed below.

### New Unit Without Factory Disconnect or HACR

#### INSTALLATION WITHOUT SINGLE POINT BOX

Unit power supply wires from the external (field-supplied) disconnect switch are connected to the base unit's power connection terminal lugs. Refer to unit wiring label to identify these terminals (these may be lugs on contactors or at power terminal block). The heater power wires are also connected at these terminals.

#### INSTALLATION WITH SINGLE POINT BOX

Remove knockouts for appropriate size conduit from unit block-off panel and single point box. Install conduit (rigid or electrometallic tubing) through conduit drip boot as shown. (See Fig. 15.)

Drip boot will accept conduit sizes  $\frac{3}{4}$ -in. to  $1\frac{1}{2}$ -in. The drip boot eliminates the need for watertight conduit fittings at the single point box.

Unit power supply wires from the external (field-supplied) disconnect switch are connected to the power lugs on the field connection device provided in the single point box. This device may be a terminal block or fuse block FU2's line side terminals. The heater power wires are connected to the load side terminals on the same device.

### New Unit With Factory Disconnect

The optional factory-supplied disconnect has a maximum rating per Table 11.

Check this unit's infodata plate for the MINIMUM DISCONNECT SWITCH value (see Fig. 2 and 3) and compare to the Table 11 value.

**Table 11 — Optional Factory-Installed Disconnect Amp Ratings**

UNIT GROUP	UNIT SIZES	VOLTS	DISCONNECT SIZE AMPS
AC-1 <sup>1</sup>	04-07	208/230	80
		460, 575	60
	08-14	208/230	80
		460, 575	
	16	208/230	115 <sup>4</sup>
		460, 575	100
AC-2 <sup>2</sup>	04-06	208/230	80
		460, 575	60
	07-12	208/230	80
		460, 575	
	14	208/230	115 <sup>4</sup>
		460, 575	100
AC-3 <sup>3</sup>	04-06	208/230	80
		460, 575	60
	07-09	208/230	80
		460, 575	
	12	208/230	115 <sup>4</sup>
		460, 575	100
HP-1 <sup>1</sup>	04-07	208/230	80
		460, 575	60
	08-12	208/230	80
		460, 575	115 <sup>4</sup>
	14	208/230	100
		460, 575	80
HP-2 <sup>2</sup>	04-06	208/230	80
		460, 575	60
	08-09	208/230	115 <sup>4</sup>
		460, 575	
	12	208/230	100
		460, 575	80

**NOTES:**

1. Standard Efficiency.
2. High Efficiency.
3. Ultra High Efficiency.
4. A is Application Limit based on factory wire size.

IF REQUIRED MINIMUM DISCONNECT VALUE IS LOWER THAN RATING IN TABLE 11

Reconnect the factory wiring from the factory disconnect at the single point box's terminal block or fuse block FU2's line side terminals (or to main control box's line connection lugs if no single point box is installed). Remove any factory test leads connected at disconnect line side terminals; discard these wires. Connect unit power supply wires to disconnect switch line side lugs.

IF REQUIRED MINIMUM DISCONNECT VALUE IS HIGHER THAN RATING IN TABLE 11

For units with 60-A, 80-A or 100-A disconnect, remove the factory disconnect switch assembly and wiring. Install a field-supplied disconnect switch sized per unit marking. Complete connections per instructions under "New Unit Without Factory Disconnect or HACR."

FOR UNIT WITH 115-A DISCONNECT AND REQUIRED MINIMUM DISCONNECT VALUE PER UNIT INFO DATA PLATE IS LESS THAN 200-A

Remove the factory wires at load side terminals of the disconnect switch. Size new wires based on unit MIN CKT AMPS value for unit plus heaters plus power exhaust (if installed). Connect new wires at disconnect switch load side terminals and to single point box's terminal block or fuse block FU2's line side terminals. Remove any factory test leads connected at

disconnect line side terminals; discard these wires. Connect unit power supply wires to disconnect switch line side lugs.

FOR UNIT WITH 115-A DISCONNECT AND REQUIRED MINIMUM DISCONNECT VALUE PER UNIT INFODATA PLATE IS GREATER THAN 200-A

Remove the factory disconnect switch assembly and wiring. Install a field-supplied disconnect switch sized per unit marking. Complete connections per instructions under "New Unit Without Factory Disconnect or HACR."

**New Unit With Factory HACR**

The amp rating of the HACR factory-installed option is based on the size, voltage, indoor motor and other electrical options of the unit as shipped from the factory.

When field-installed accessory electric heaters are added to the unit, the HACR may no longer be of the proper amp rating and therefore will need to be removed from the unit.

Check this unit's infodata plate for the FUSE OR HACR BREAKER value (see Fig. 2 and 3) and compare to the factory HACR breaker rating value.

IF MARKED HACR VALUE ON UNIT DATAPLATE IS UNCHANGED FROM RATING UNIT-MOUNTED HACR

Reconnect the factory wiring from the factory HACR at the single point box's terminal block or fuse block FU2's line side terminals (or to main control box's line connection lugs if no single point box is installed). Remove any factory test leads connected at HACR line side terminals; discard these wires. Connect unit power supply wires to HACR line side lugs.

IF MARKED HACR VALUE ON UNIT DATAPLATE IS GREATER THAN RATING ON UNIT-MOUNTED HACR

Remove the factory HACR switch assembly and wiring. Install a field-supplied fused or HACR disconnect switch sized per unit marking. Complete connections per instructions under "New Unit Without Factory Disconnect or HACR."

**Existing Unit**

An existing unit will usually have been installed following the values marked on the base unit's informative data plate for wire sizing, branch circuit over-current protection and disconnect switch rating. When electric heaters are added to air conditioning (cooling) units, these values may be changed; when electric heaters are added to heat pump units, one or more of these values will be changed.

Check the installed unit's field power wires for conductor size and determine conductor rated ampacity per NEC Table 310.15(B)(16). Compare this value to the MIN CKT AMPS value on the unit infoplate for base unit plus electric heaters (plus power exhaust if connected). If the MIN CKT AMPS value is greater than the rated ampacity of the power supply wires, the unit power supply conductors must be replaced.

NOTE: Supply wiring must comply with NEC (National Electrical Code) and all local requirements.

Check the installed unit's branch circuit over-current protection device (fuse or HACR breaker) for rating in amps. Compare this value to the FUSE OR HACR BREAKER value on the unit infoplate for base unit plus electric heaters (plus power exhaust if connected). If the FUSE OR HACR BREAKER value is greater than the rated ampacity of the installed device, the unit branch circuit over-current protection device must be replaced.

Check the installed unit's disconnect switch for rating in amps. Compare this value to MINIMUM UNIT DISCONNECT value on the unit infoplate for base unit plus electric heaters (plus power exhaust if connected). If the MINIMUM UNIT DISCONNECT value is greater than the rated ampacity of the installed disconnect switch, the unit disconnect switch must be replaced.

To complete the unit power wiring at the single point box or base unit terminals, follow the appropriate directions under “New Unit” discussions.

### Complete Unit Installation

1. Mark the appropriate block on the unit nameplate for the accessory heater kW installed. Note the required MIN CKT AMPS value for this unit-heater combination. Ensure the field power conductors are sized to handle this ampacity.
2. Locate the heater covers. For all heaters except CRHEATER301A00, CREHEATER128B00-129B00, CRHEATER360A00-364A00, CREHEATER367A00-377A00, and CRHEATER380A00-384A00, the heater cover is the plate removed from the heater mounting bracket in Step 4 (page 9) or Step 3 (page 18). For CRHEATER301A00, CREHEATER128B00-129B00, CRHEATER360A00-364A00, CREHEATER367A00-377A00, and CRHEATER380A00-384A00 only, a new, wider cover is included in the accessory heater package. See Fig. 18.
3. Place adhesive-backed wiring label on flanged side of heater cover.
4. Fasten heater cover to heater module with 2 screws provided with heater. Flanges of cover must face out. (See Fig. 52.)
5. Set manual reset limit switch (on supply fan housing) by depressing button located between the terminals on the switch. (See Fig. 1.)
6. Close single point box cover and secure with one screw.
7. Replace control box cover, using remainder of screws saved from Step 4 (page 9) or Step 3 (page 18) of Installing Single Point Box sections.
8. Run conduit through (rigid or EMT) the conduit drip boot in the rain shield bracket to the single point box. Provide an appropriate fitting to connect the conduit to the single point box wall and ground appropriately. (See Fig. 31.)

Drip boot eliminates the need for watertight conduit fittings at the single point box.

9. Run wire through conduit connecting outside power to the designated terminals at the top of the single point box. Ground appropriately. (See Fig. 33.)
10. Replace indoor and outdoor panels with screws saved from Step 2 of Disconnect Field Supply section (page 9) and Step 3 of Install Single Point Box section (page 18). Place adhesive-backed Max. Air/Max. Static label on external panel that covers heaters. (See Fig. 4, 5, and 53.)
11. If all other work on the unit is done, reapply unit power per lock-out/tag-out procedures.

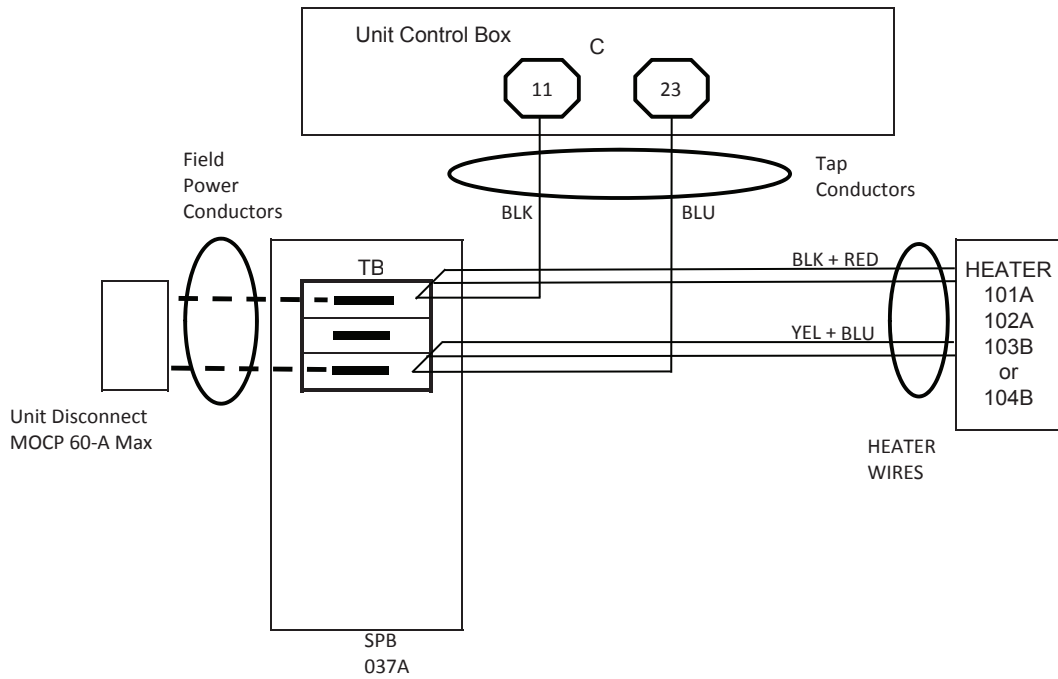


Fig. 53 — Max. Air Temp/Max. External Static

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS

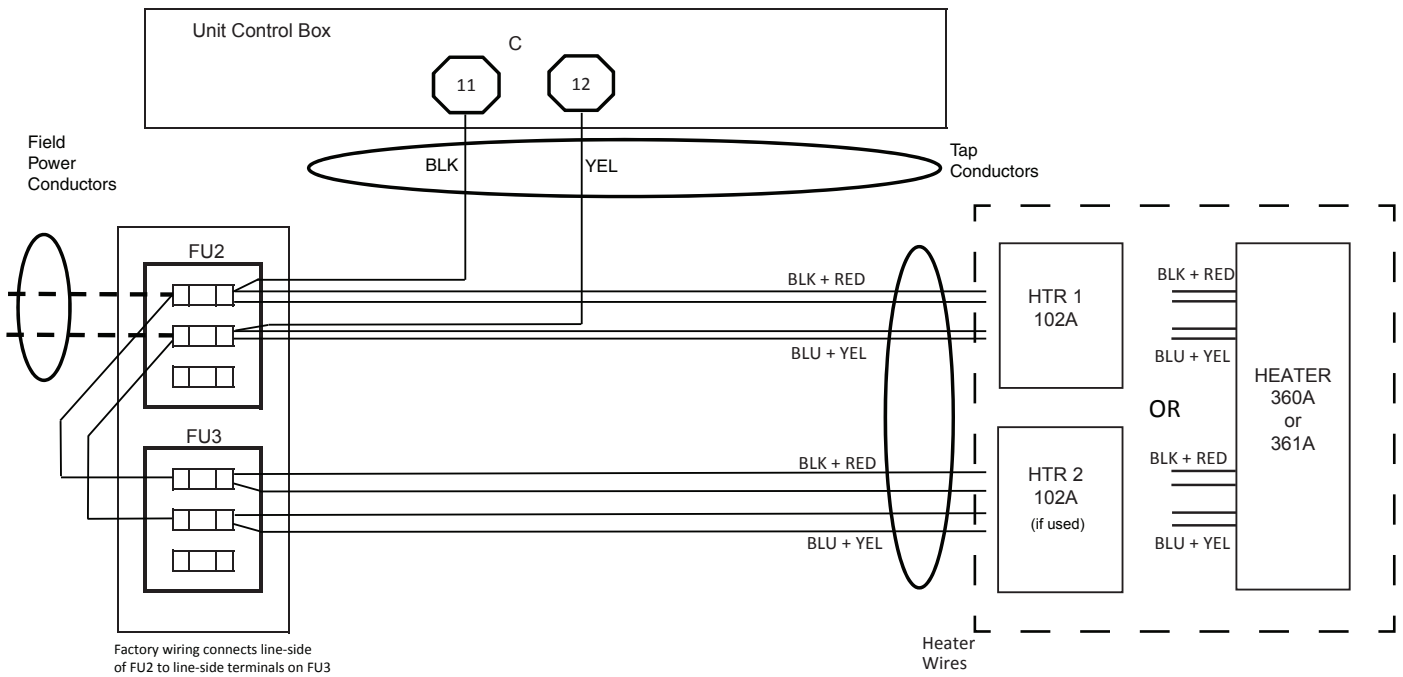
**Table A — Single Point Box Wiring Diagrams for AC-1 and AC-2 Units**

SPB CRSINGLEnnnA00	AC-1 UNITS					AC-2 UNITS				
	04-07 036-072	08 090-091	09-12 102-121	14 150	16 180	04-06 036-060	07 072	08-09 090-102	11-12 120	14 150
<b>1-Phase (See page 12 for conversion instructions)</b>										
037	Fig. A					Fig. A				
040	Fig. B					Fig. B				
<b>3-Phase</b>										
NONE	Fig. C				Fig. C	Fig. C				Fig. C
037	Fig. D					Fig. D				
038	Fig. E					Fig. E				
042		Fig. D					Fig. D			
043		Fig. F					Fig. F			
044		Fig. G								
045		Fig. H								
047			Fig. D	Fig. D	Fig. D			Fig. D	Fig. D	Fig. D
049			Fig. I	Fig. J	Fig. P			Fig. I	Fig. I	Fig. P
050			Fig. K	Fig. K	Fig. K			Fig. K	Fig. K	Fig. K
051			Fig. L	Fig. O	Fig. Q			Fig. L	Fig. L	Fig. Q
053					Fig. R			Fig. M	Fig. N	Fig. R
054									Fig. S	Fig. T

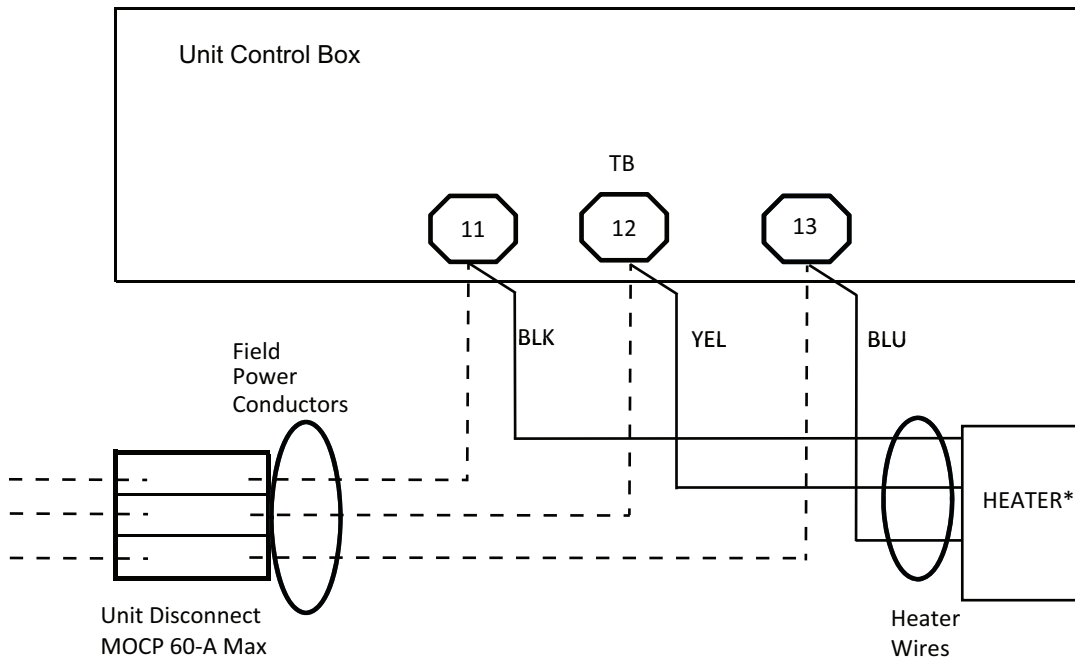


**Fig. A — AC 1-Phase Single Point Box CRSINGLE037A00 (AC-1, Sizes 04-07; AC-2, Sizes 04-06; HP-1 Sizes 04-06; HP-2, Sizes 04-06)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



**Fig. B — AC 1-Phase Single Point Box CRSINGLE040A00 (AC-1, Sizes 04-07; AC-2, Sizes 04-06)**

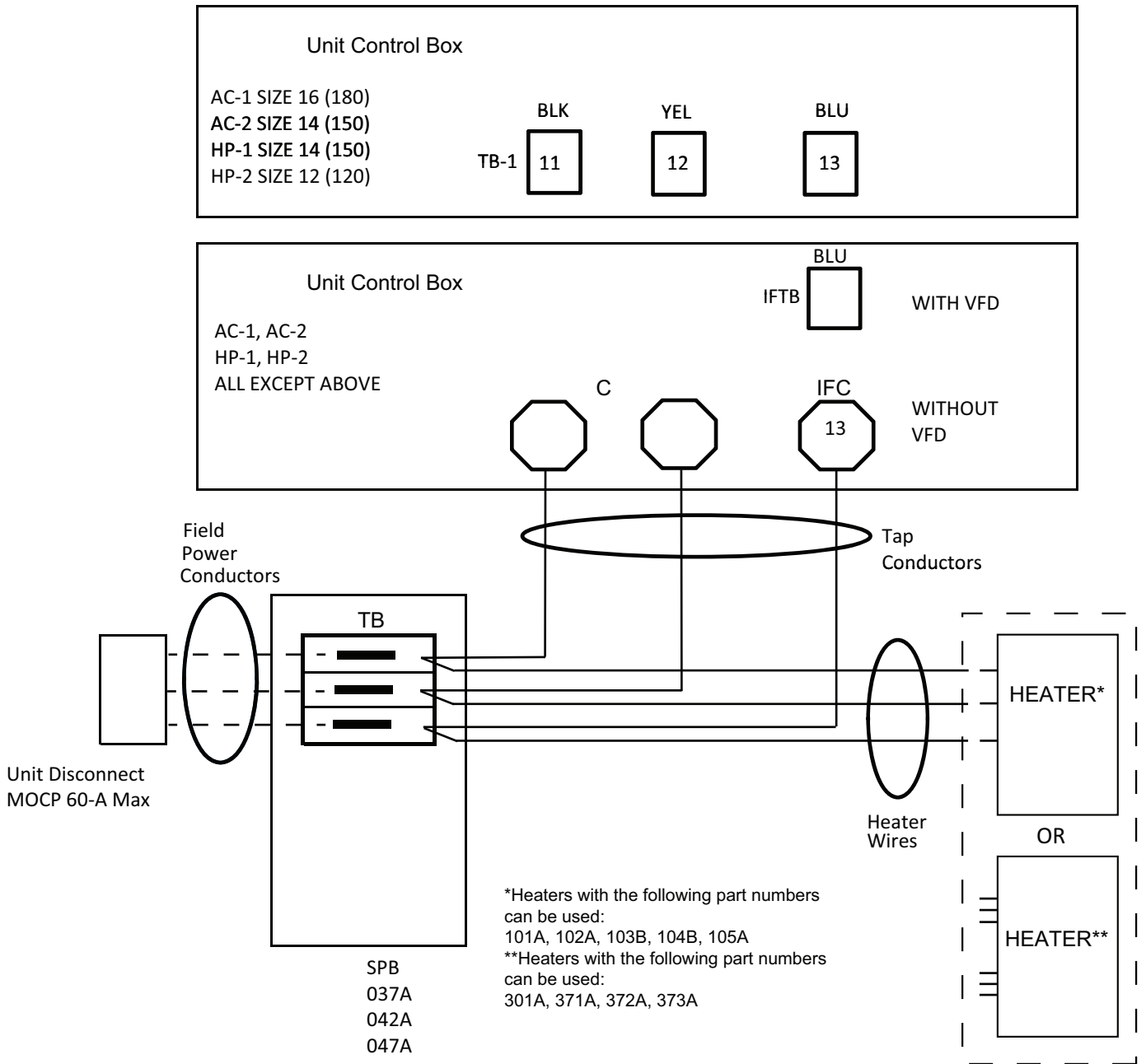


\*Heaters with the following part numbers can be used:  
 101A, 102A, 103B, 104B, 106A, 107A, 108A, 109A, 288A,  
 289A, 291A, 292A, 293A, 297A, 378A, 379A

NOTE: Heaters that do not require a single point kit as indicated in the Product Data are standard units with contractor-provided disconnect. If a non-fused disconnect FIOP is ordered, a Single Point Box will be required because the wire sizes will not fit under the contactor.

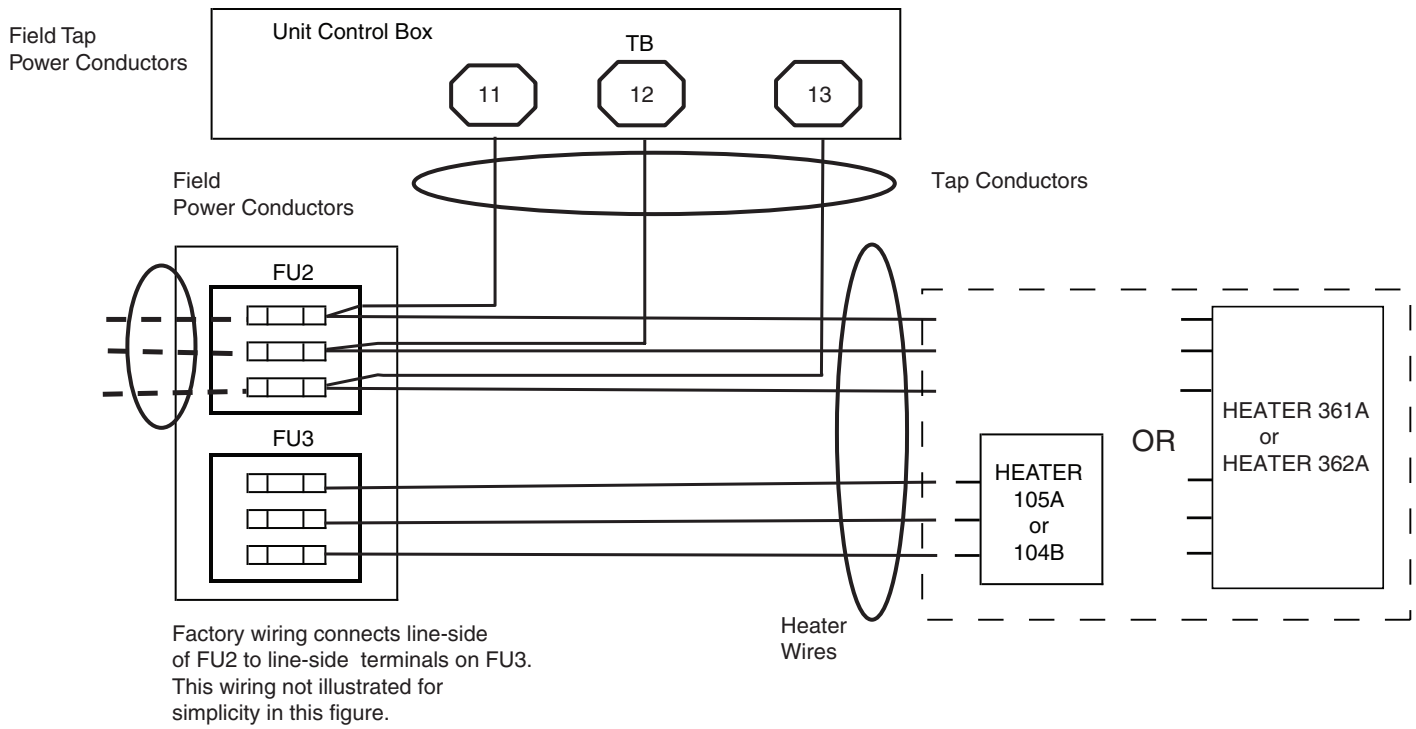
**Fig. C — AC, HP Units — No Single Point Box**

**APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS**



**Fig. D — AC/HP Single Point Box CRSINGLE037A00, 042A00, and 047A00 (AC-1, Sizes 04-16; AC-2, Sizes 04-14; HP-1, Sizes 04-14 for 037A00 and 047A00 only; HP-2, Sizes 04-12)**

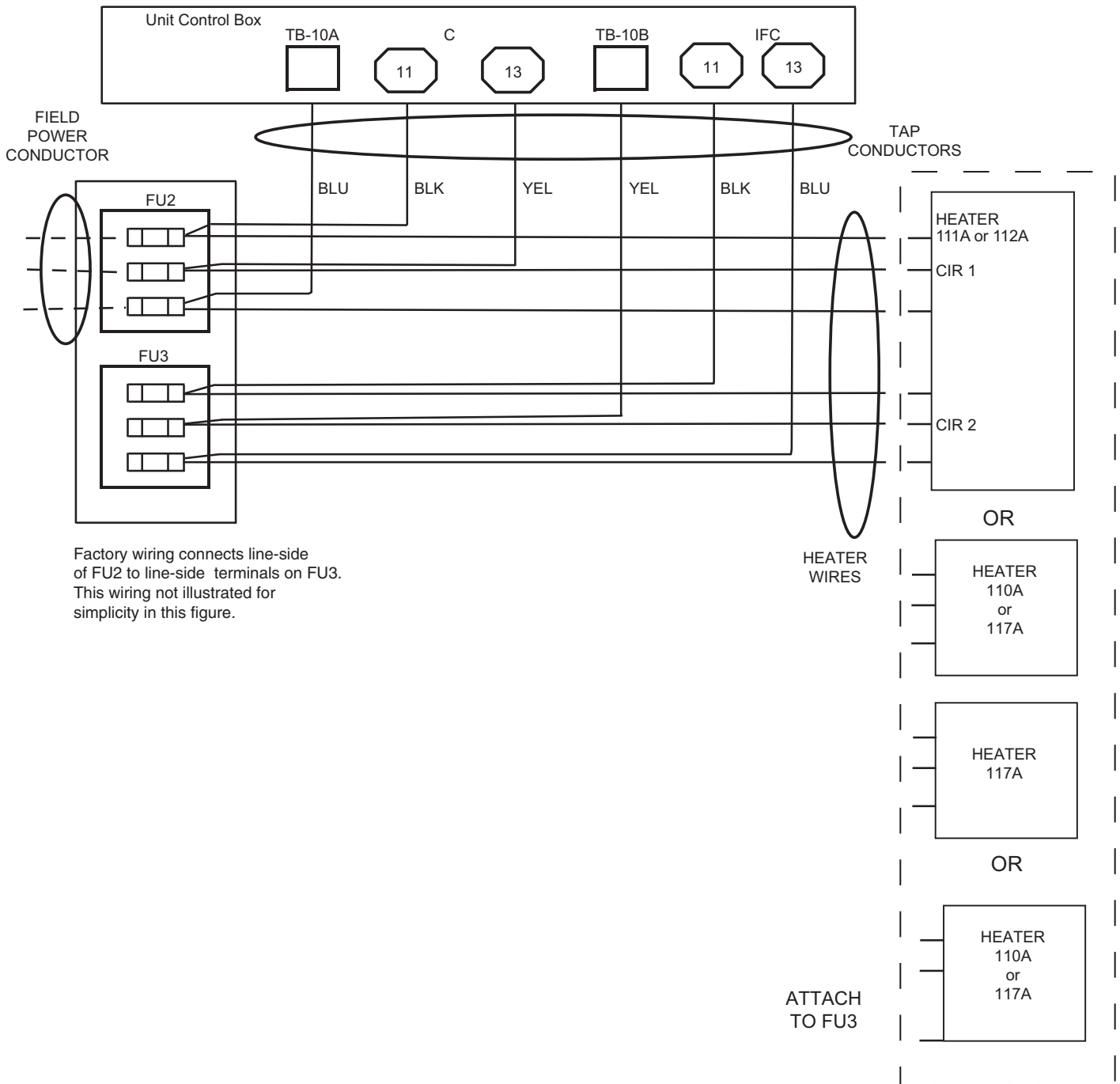
## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



**Fig. E — AC Single Point Box CRSINGLE038A00 (AC-1, Sizes 04-07; AC-2, Sizes 04-06)**

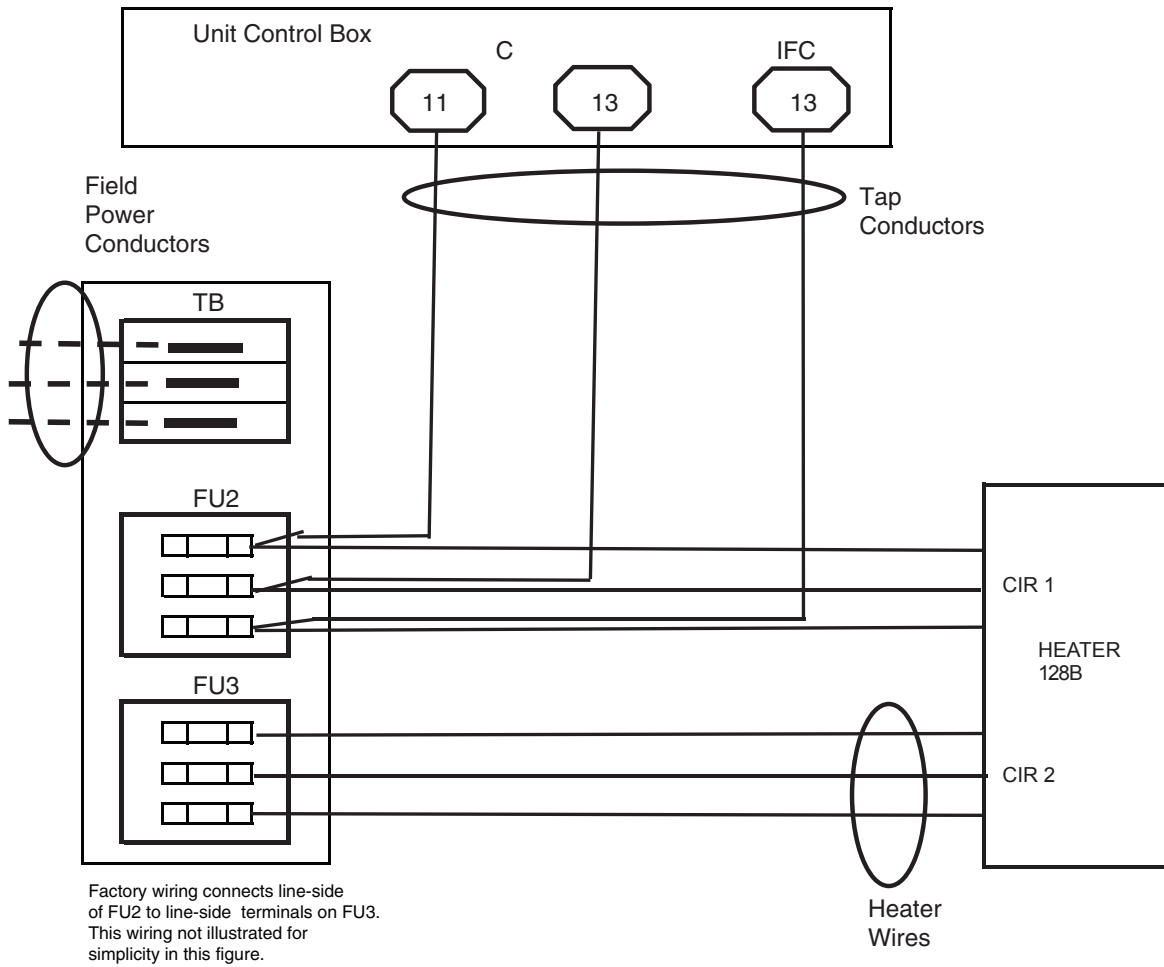


## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



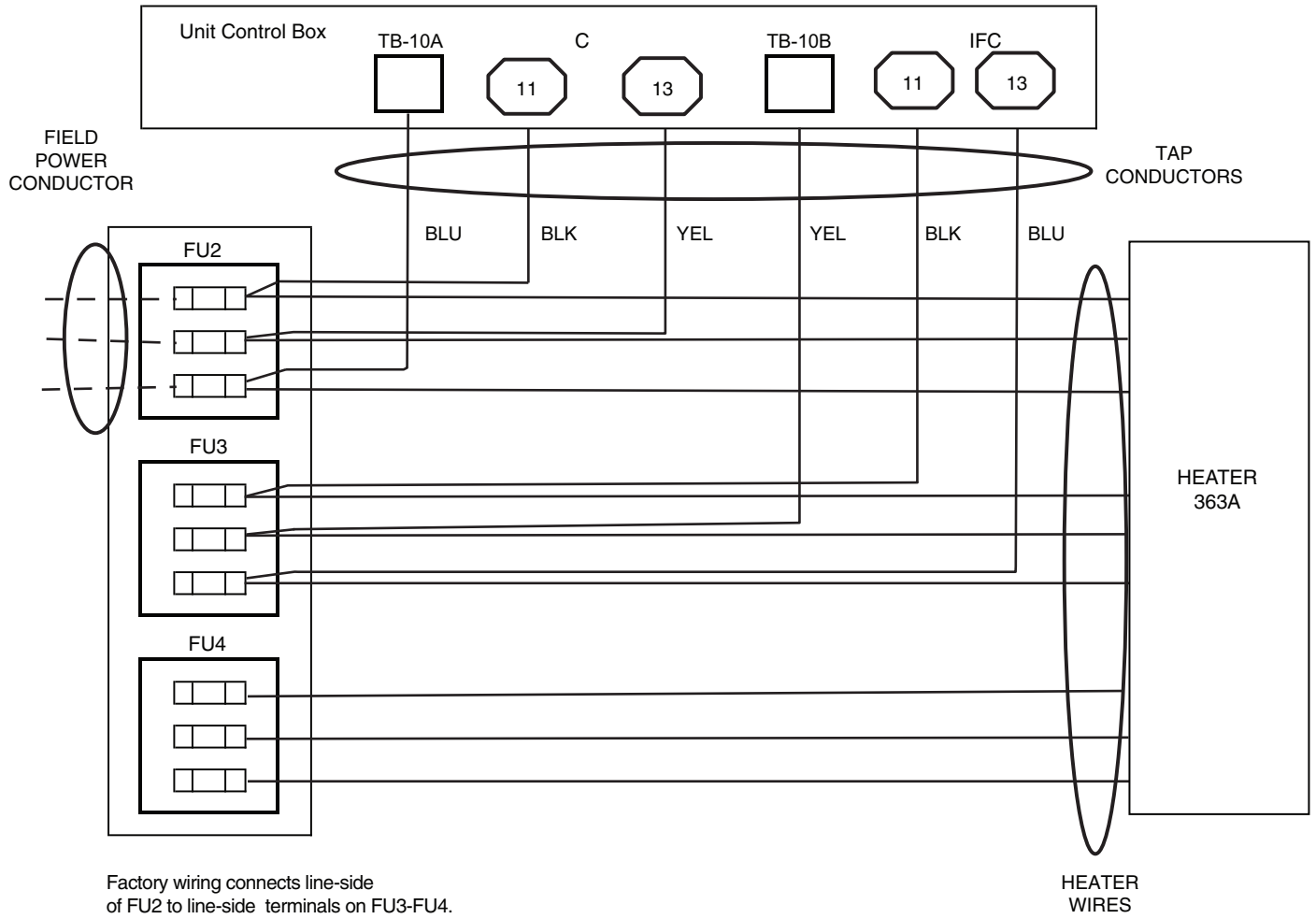
**Fig. F — AC Single Point Box CRSINGLE043A00 (AC-1, Size 08; AC-2, Size 07)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



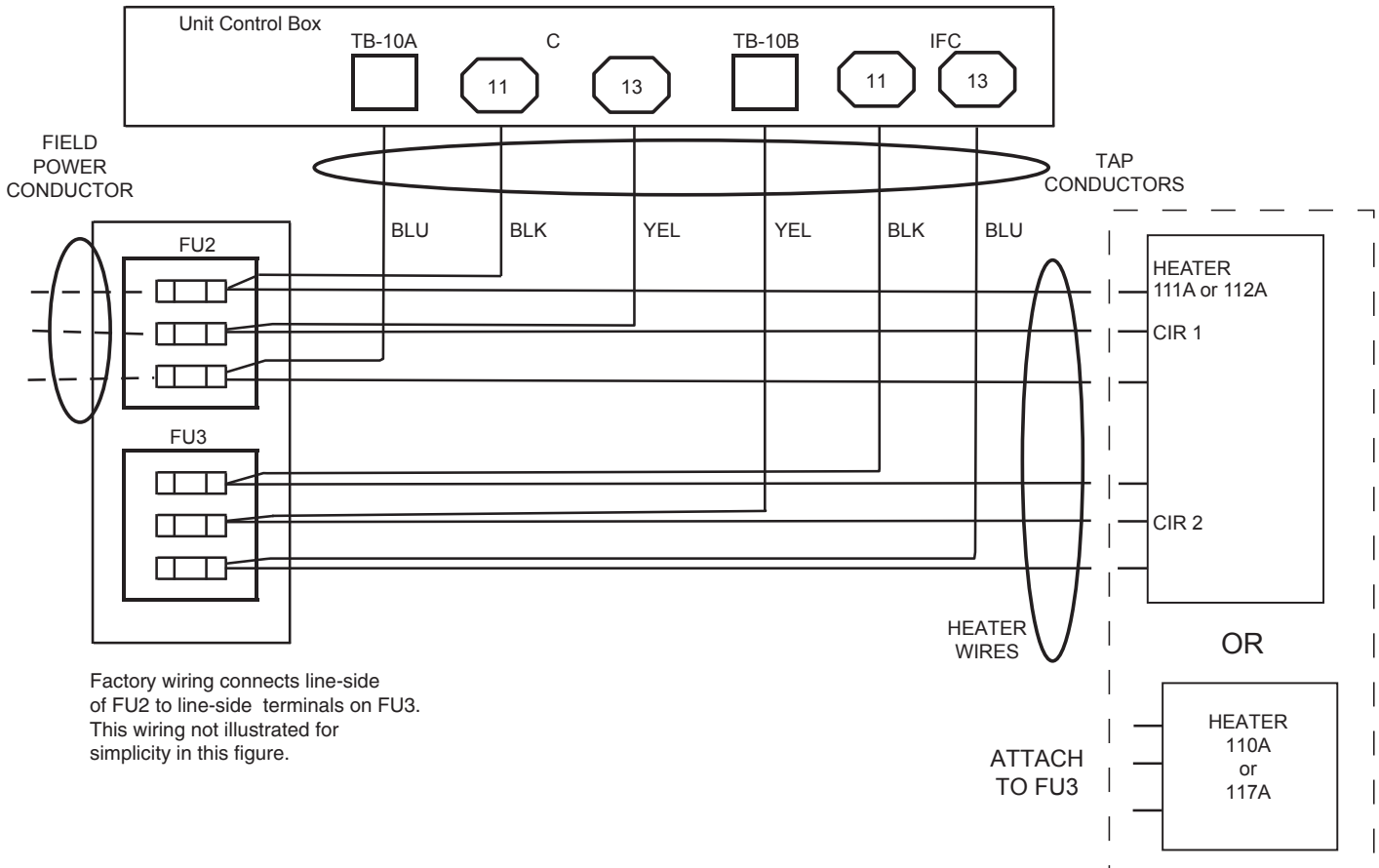
**Fig. G — AC Single Point Box CRSINGLE044A00 (AC-1, Size 08)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS

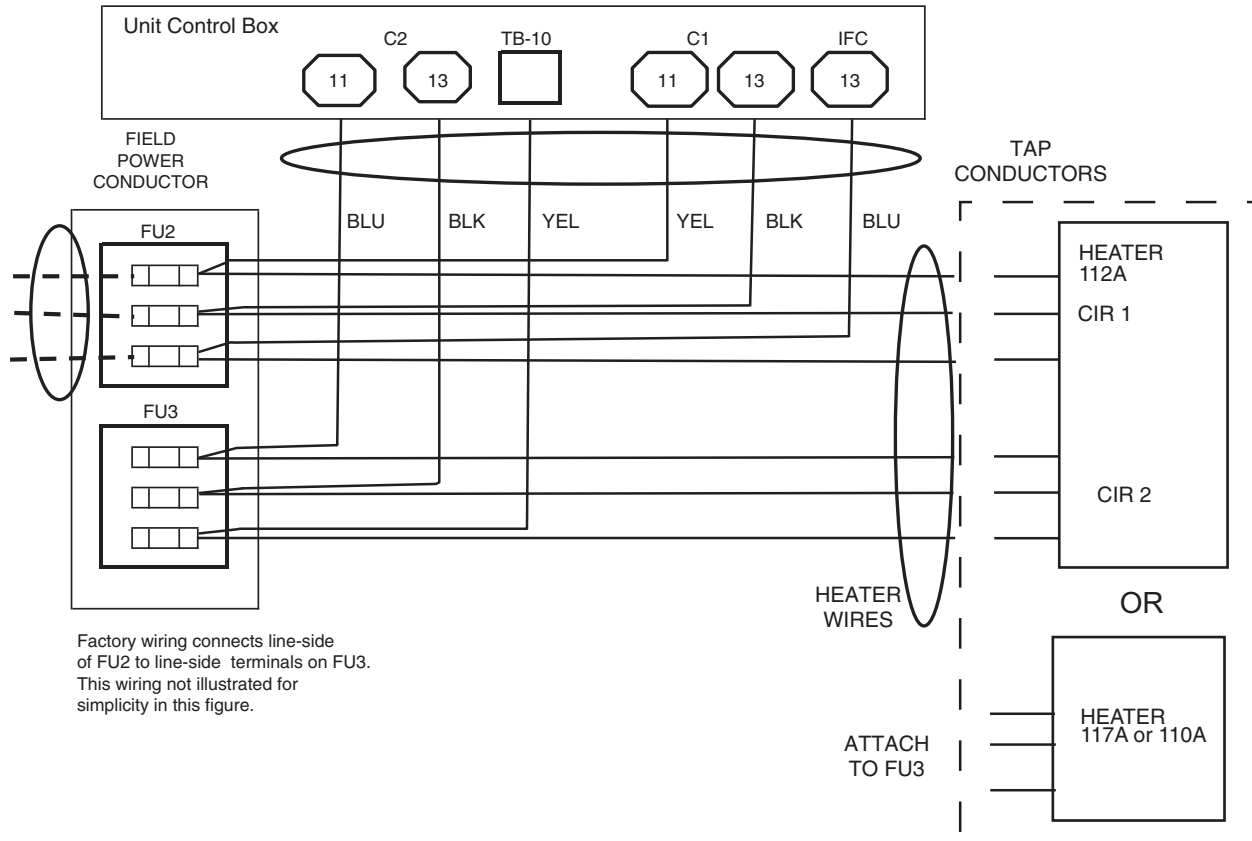


**Fig. H — AC Single Point Box CRSINGLE045A00 (AC-1, Size 08)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



**Fig. I — AC Single Point Box CRSINGLE049A00 (AC-1, Sizes 09-12; AC-2, Sizes 08-12)**



**Fig. J — AC Single Point Box CRSINGLE049A00 (AC-1, Size 14)**

APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS

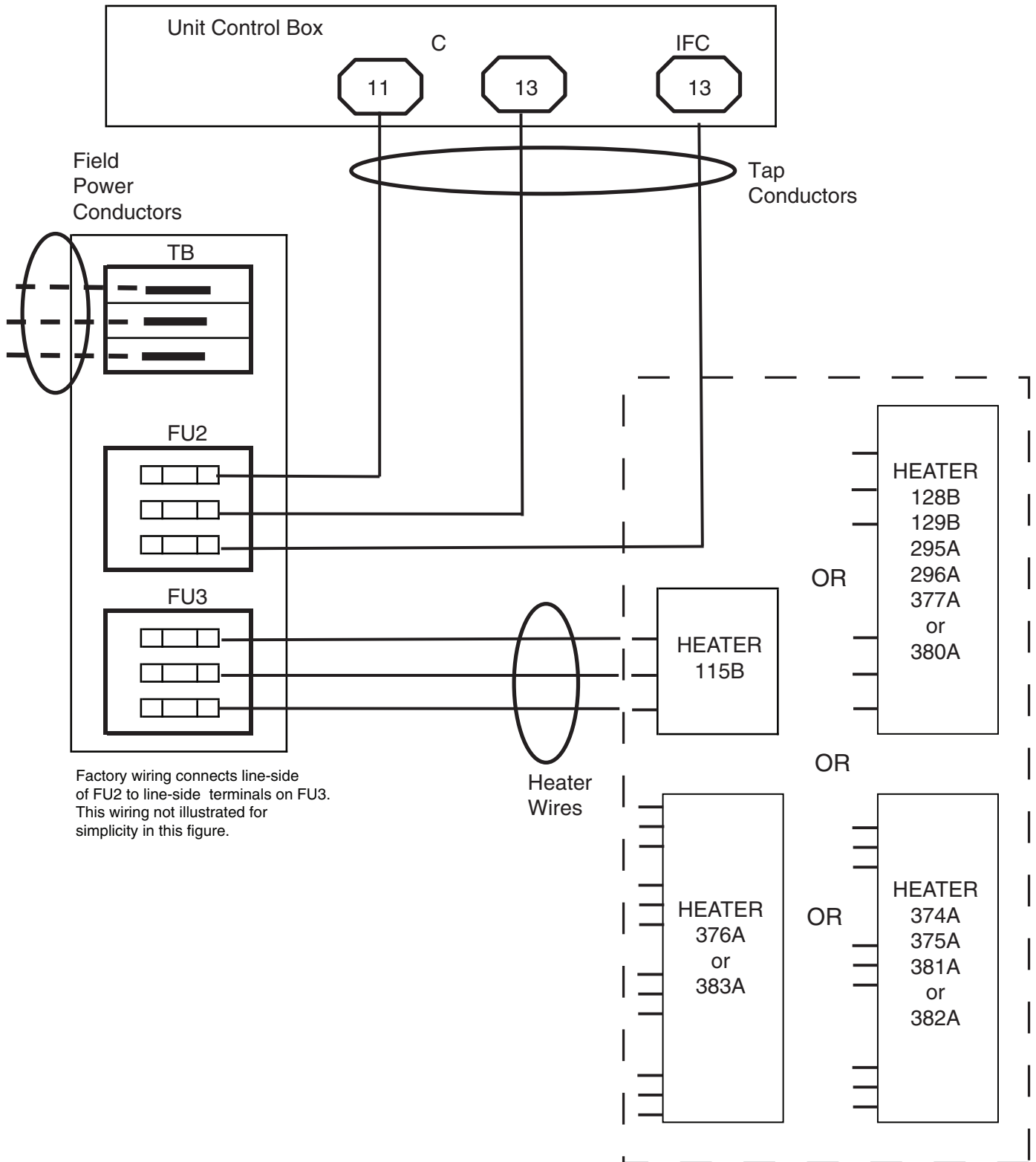
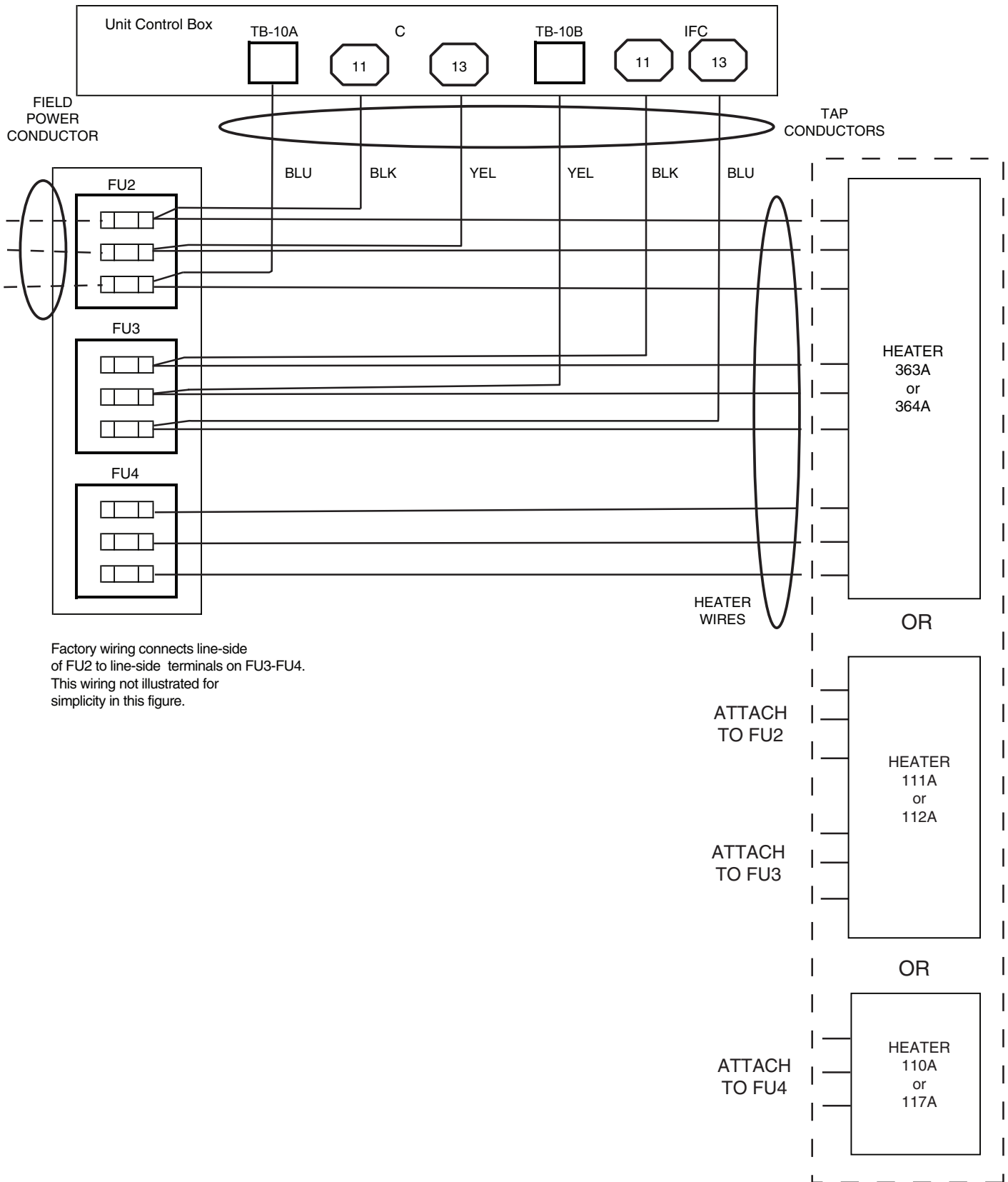


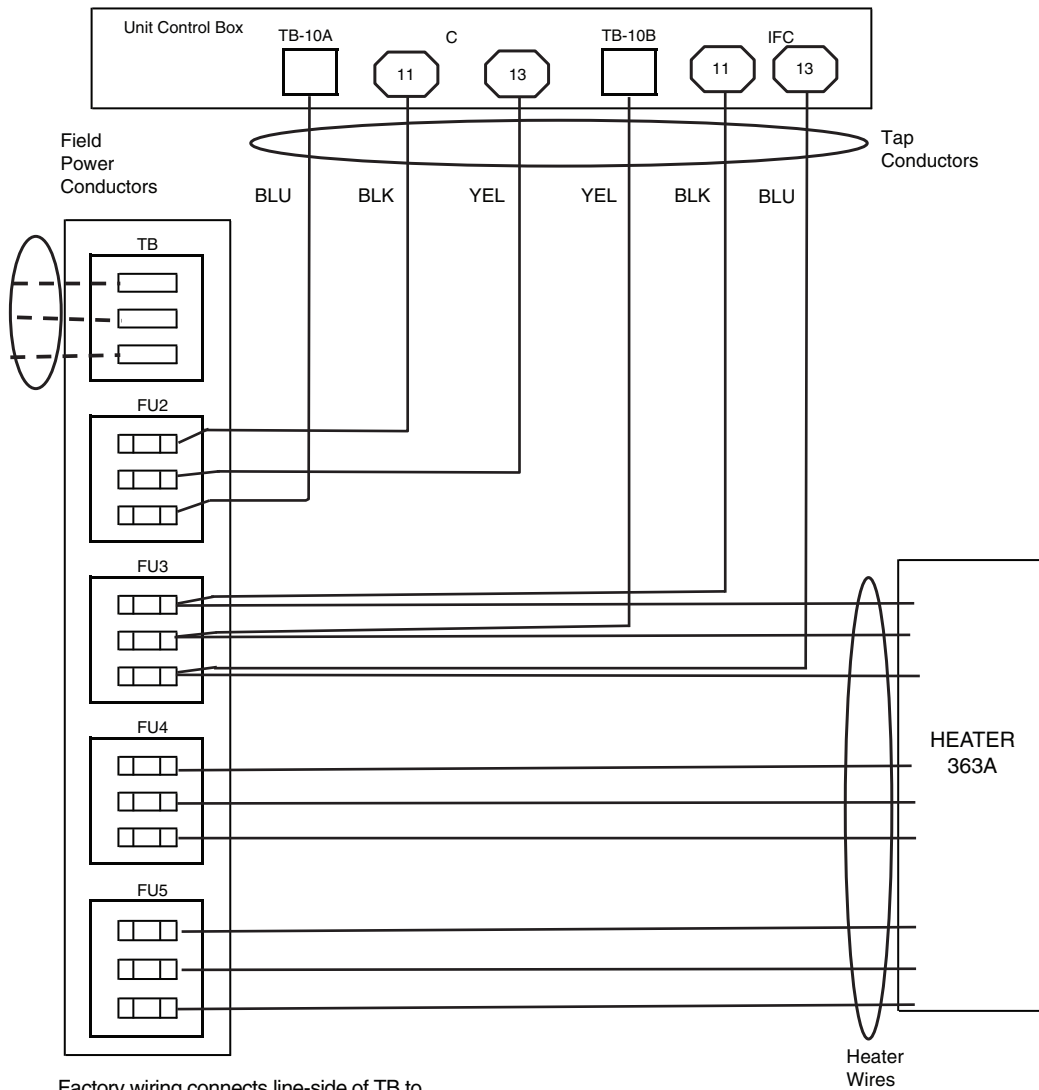
Fig. K — AC Single Point Box CRSINGLE050A00 (AC-1, Sizes 09-16; AC-2, Sizes 08-14)

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



**Fig. L — AC Single Point Box CRSINGLE051A00 (AC-1, Sizes 09-12; AC-2, Sizes 08-12)**

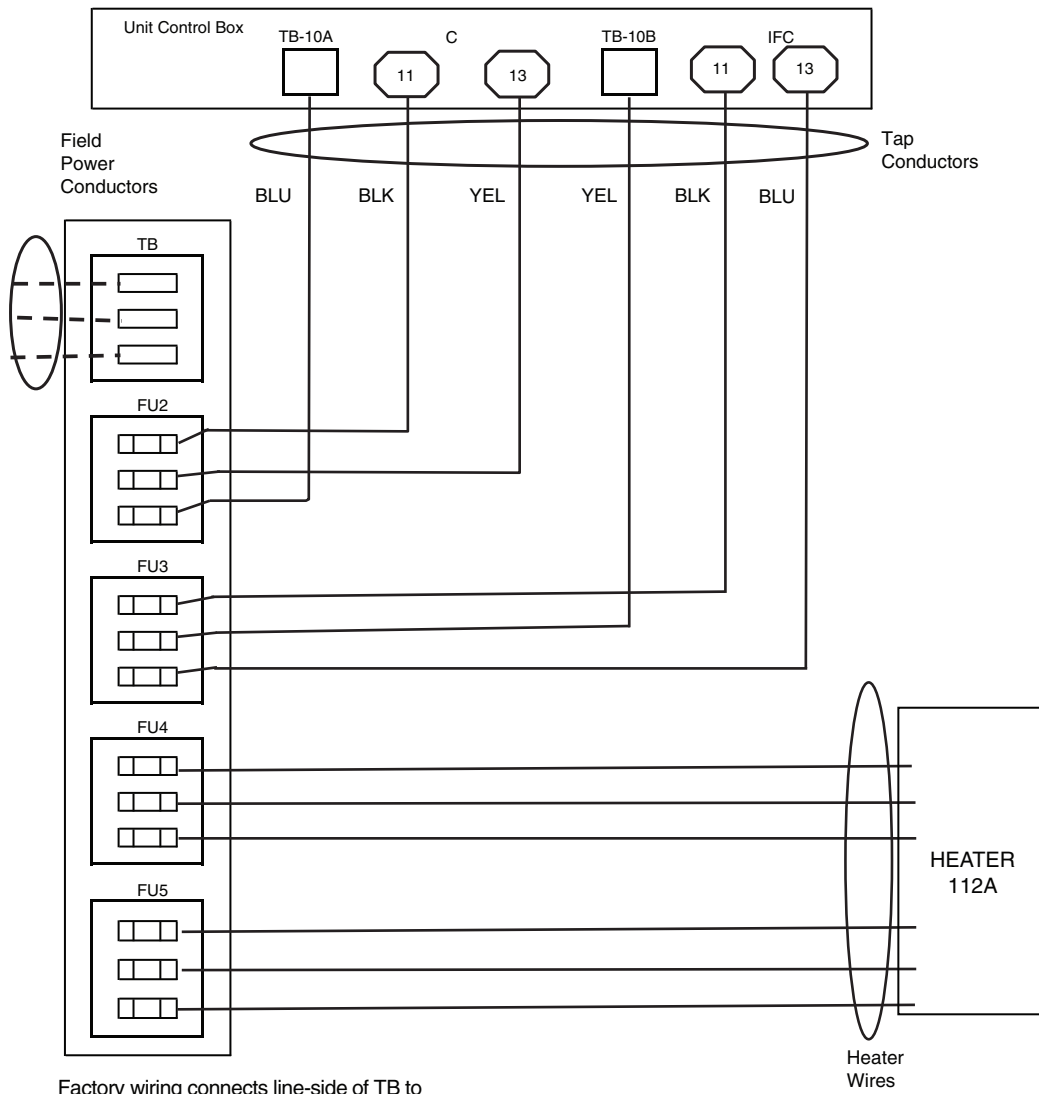
## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



Factory wiring connects line-side of TB to line-side terminals on FU2-FU5. This wiring not illustrated for simplicity in this figure.

**Fig. M — AC Single Point Box CRSINGLE053A00 (AC-2, Sizes 08-09)**

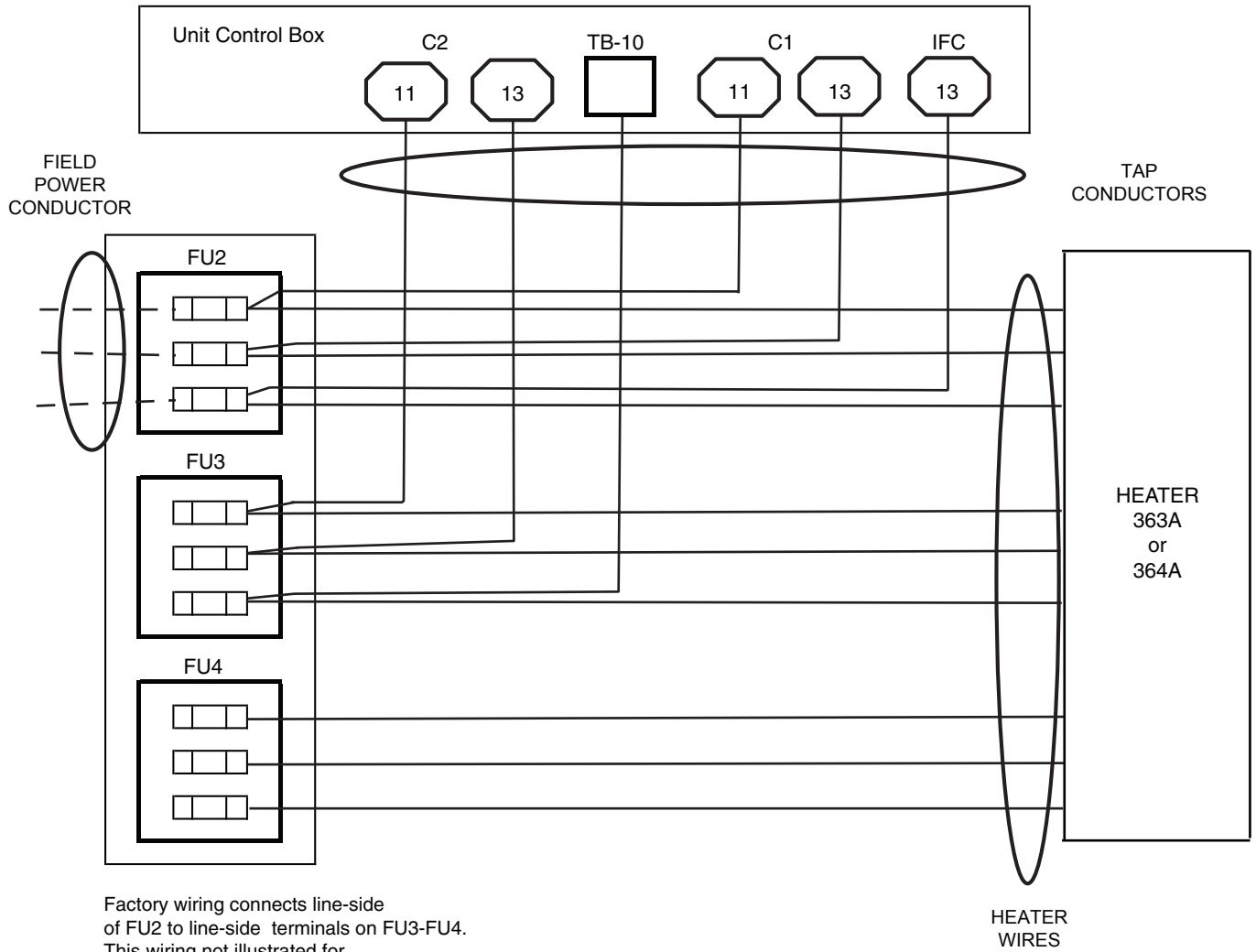
## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



**Fig. N — AC Single Point Box CRSINGLE053A00 (AC-2, Sizes 11-12)**

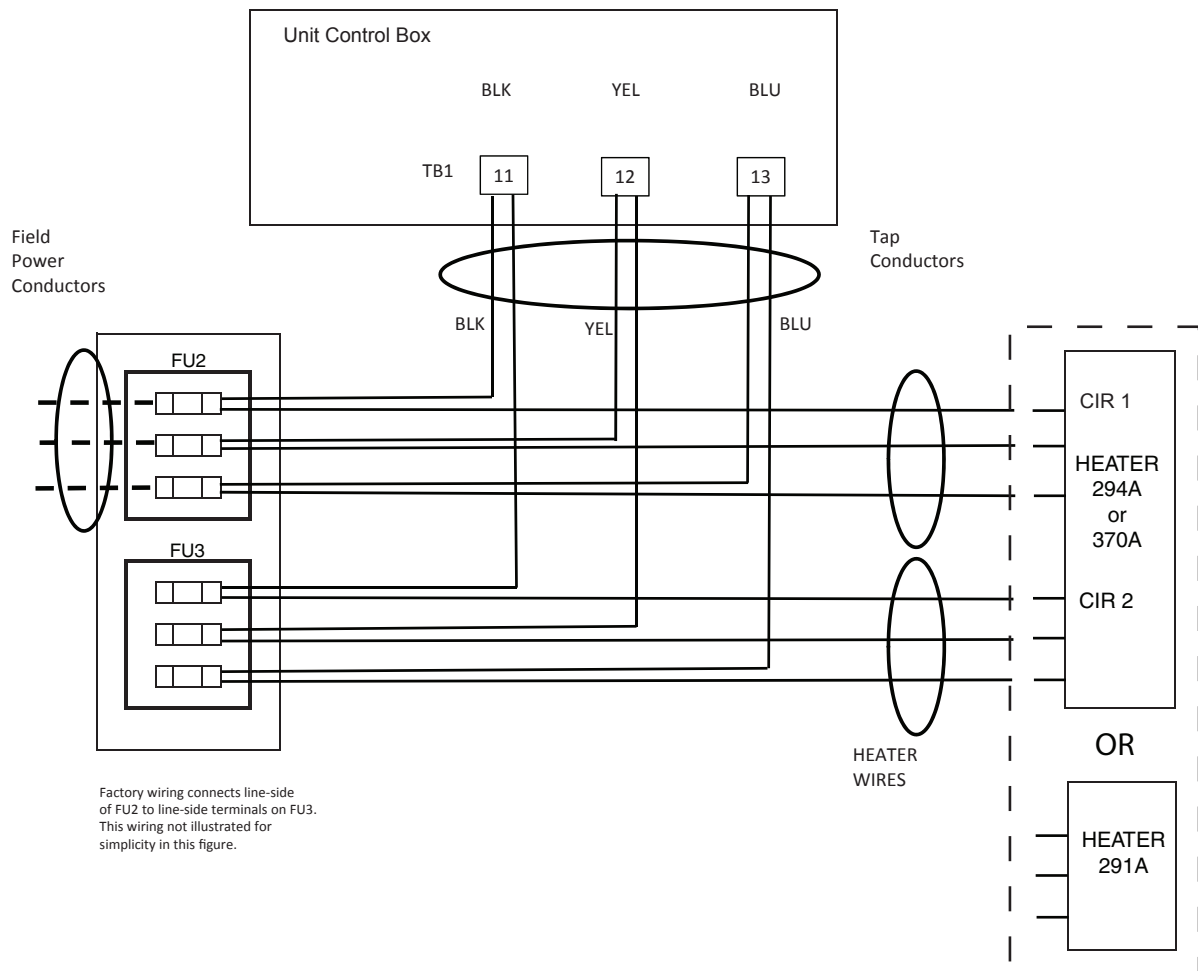


**APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS**



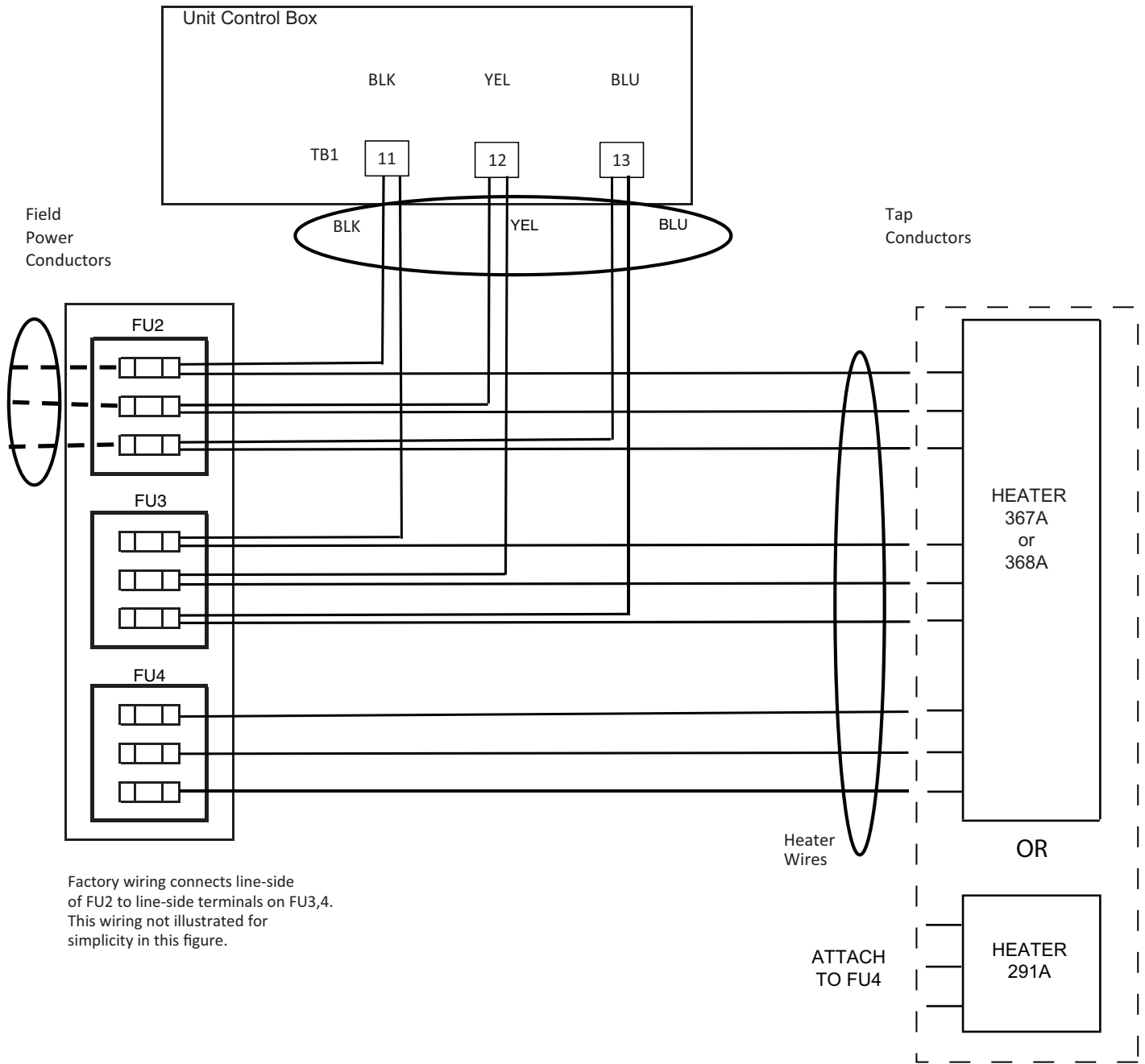
**Fig. O — AC Single Point Box CRSINGLE051A00 (AC-1, Size 14)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



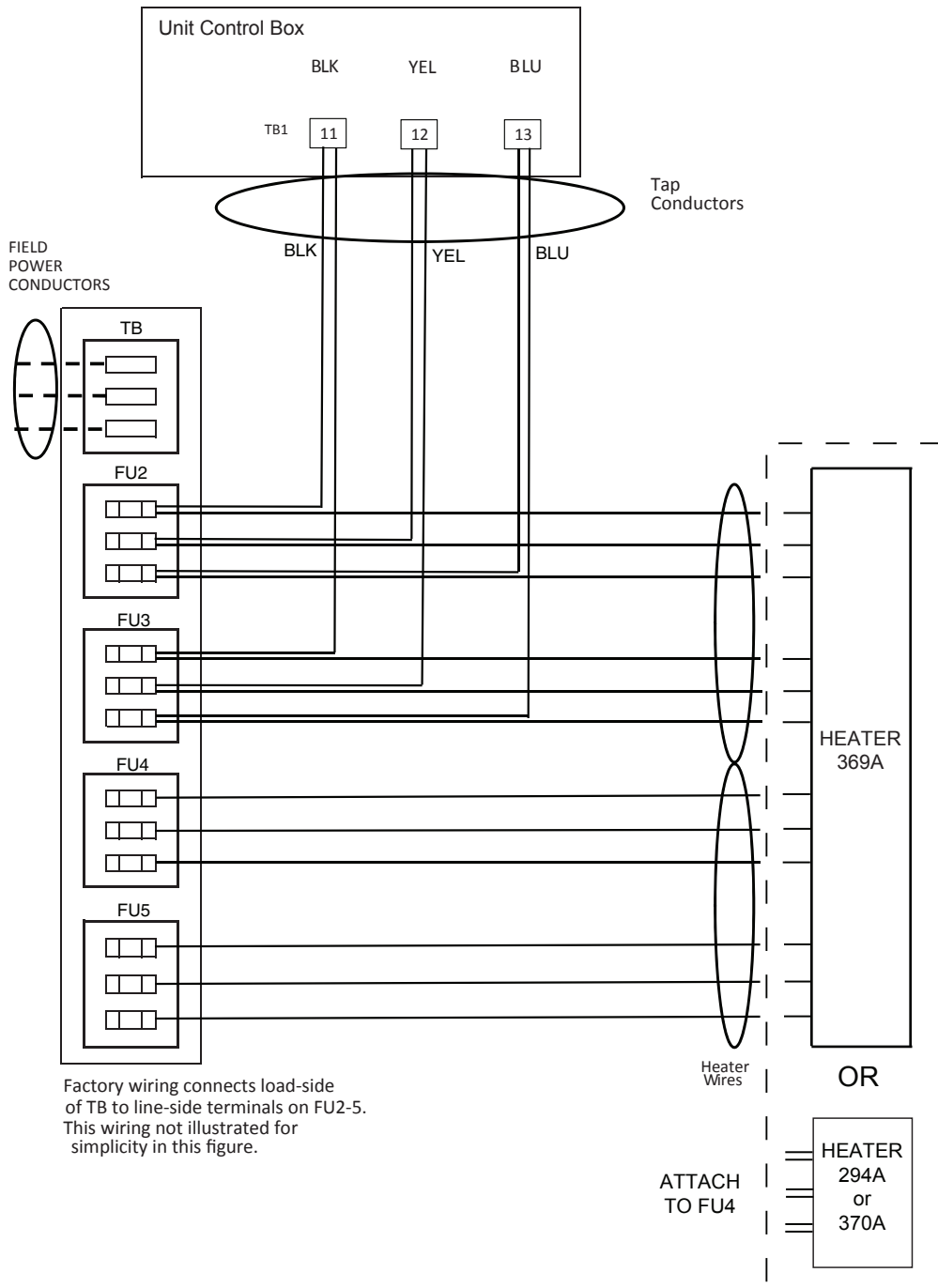
**Fig. P — AC Single Point Box CRSINGLE049A00 (AC-1, Size 16; AC-2, Size 14)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



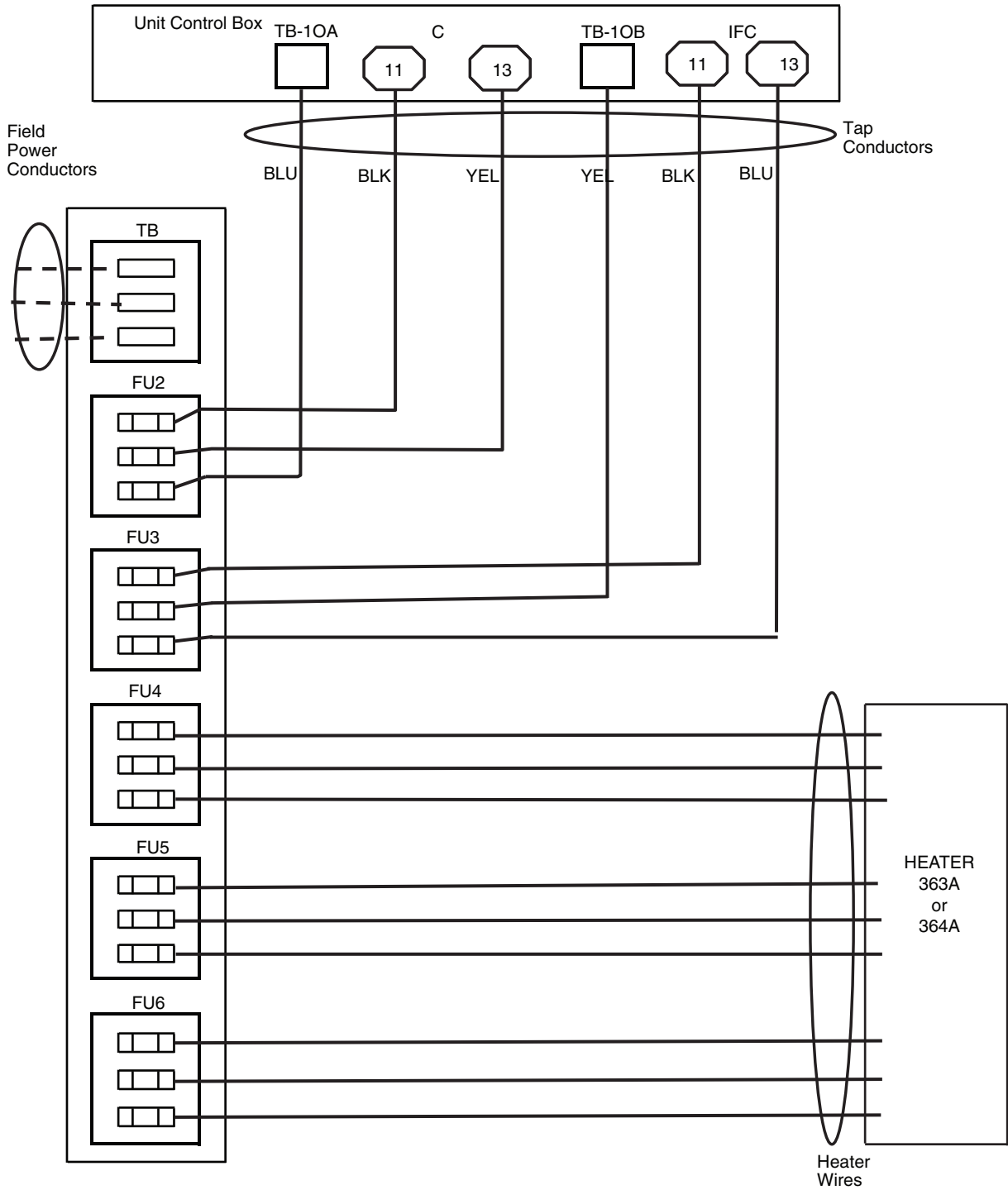
**Fig. Q — AC Single Point Box CRSINGLE051A00 (AC-1, Size 16; AC-2, Size 14)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



**Fig. R — AC Single Point Box CRSINGLE053A00 (AC-1, Size 16; AC-2, Size 14)**

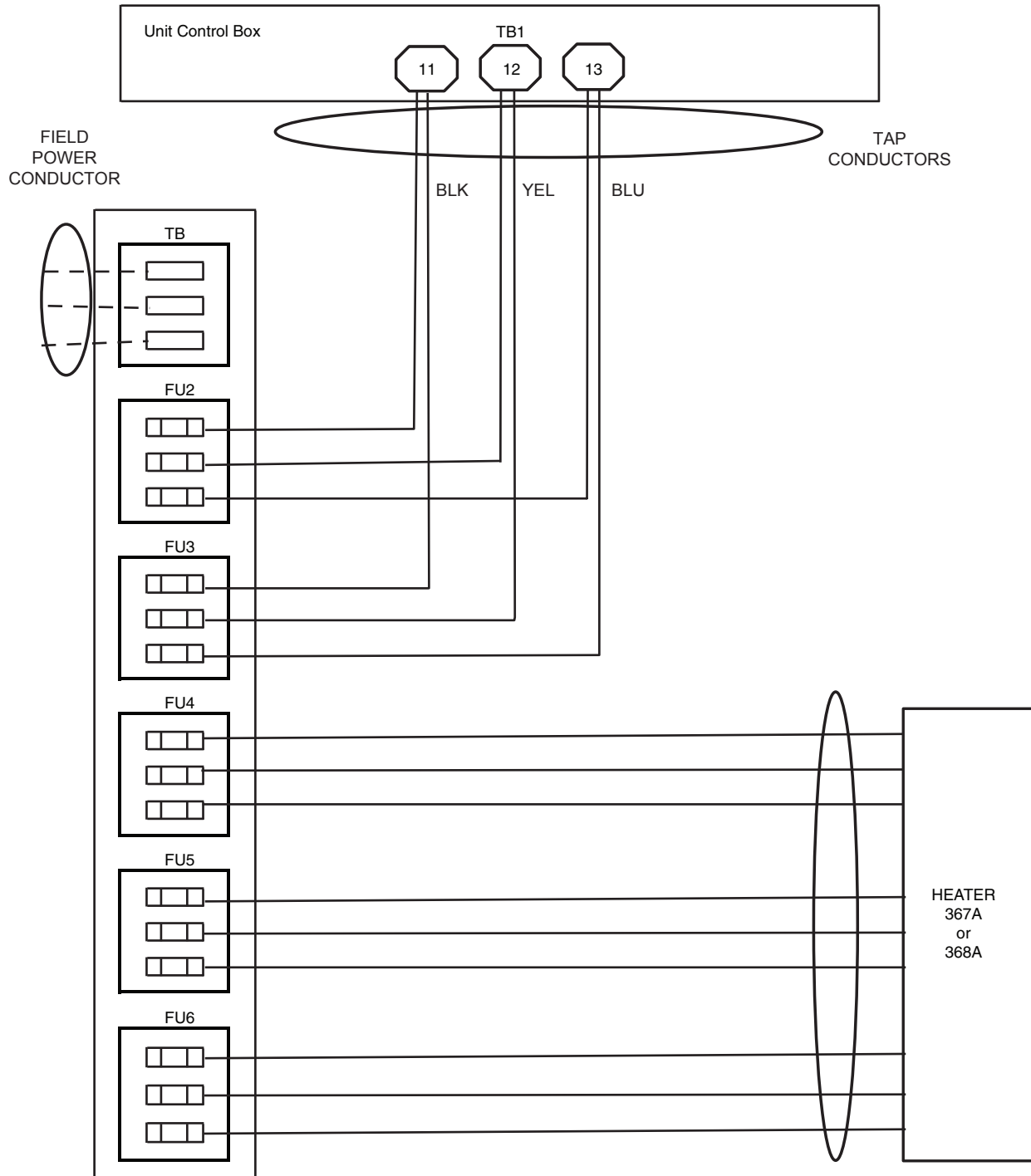
## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



Factory wiring connects line-side of TB to line-side terminals on FU2-FU6. This wiring not illustrated for simplicity in this figure.

**Fig. S — AC Single Point Box CRSINGLE054A00 (AC-2, Sizes 11-12)**

## APPENDIX A — AC-1, AC-2 COOLING APPLICATIONS



Factory wiring connects line-side of TB to line-side terminals on FU2-FU6. This wiring not illustrated for simplicity in this figure.

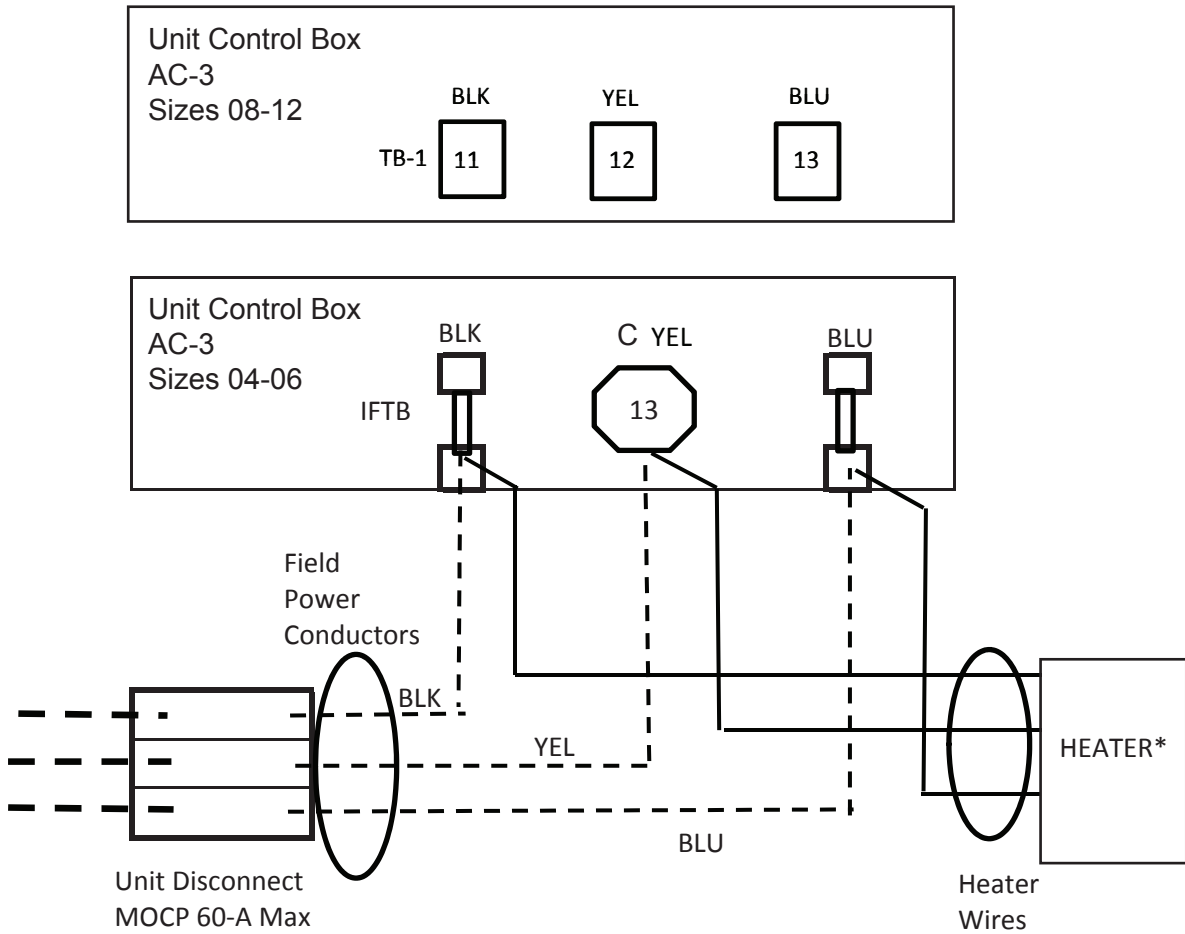
HEATER WIRES

**Fig. T — AC Single Point Box CRSINGLE054A00 (AC-2, Size 14)**

## APPENDIX B — AC-3 50LC COOLING APPLICATIONS

### Table B — Single Point Box Wiring Diagrams for AC-3 Units

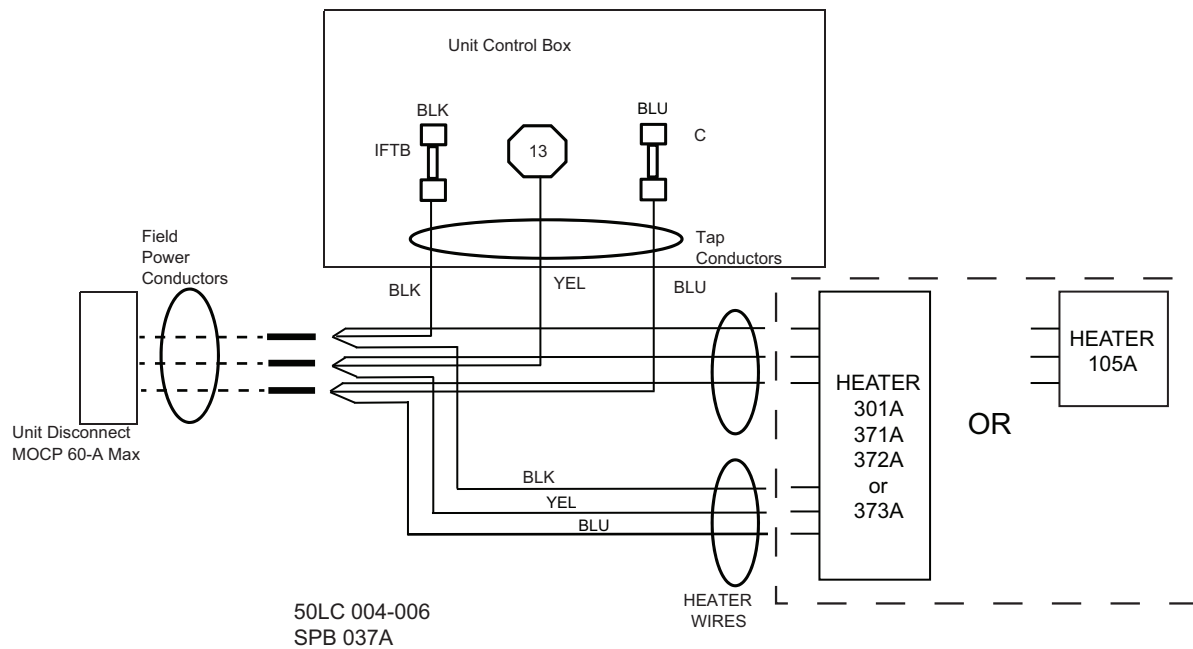
SPB CRSINGLENNNA00	50LC UNIT SIZES		
	04-06	07	08-12
NONE	Fig. U		Fig. U
037	Fig. V		
038	Fig. W		
047		Fig. X	Fig. AA
049		Fig. Y, Z	Fig. AB
050			Fig. AD, AE
051			Fig. AC



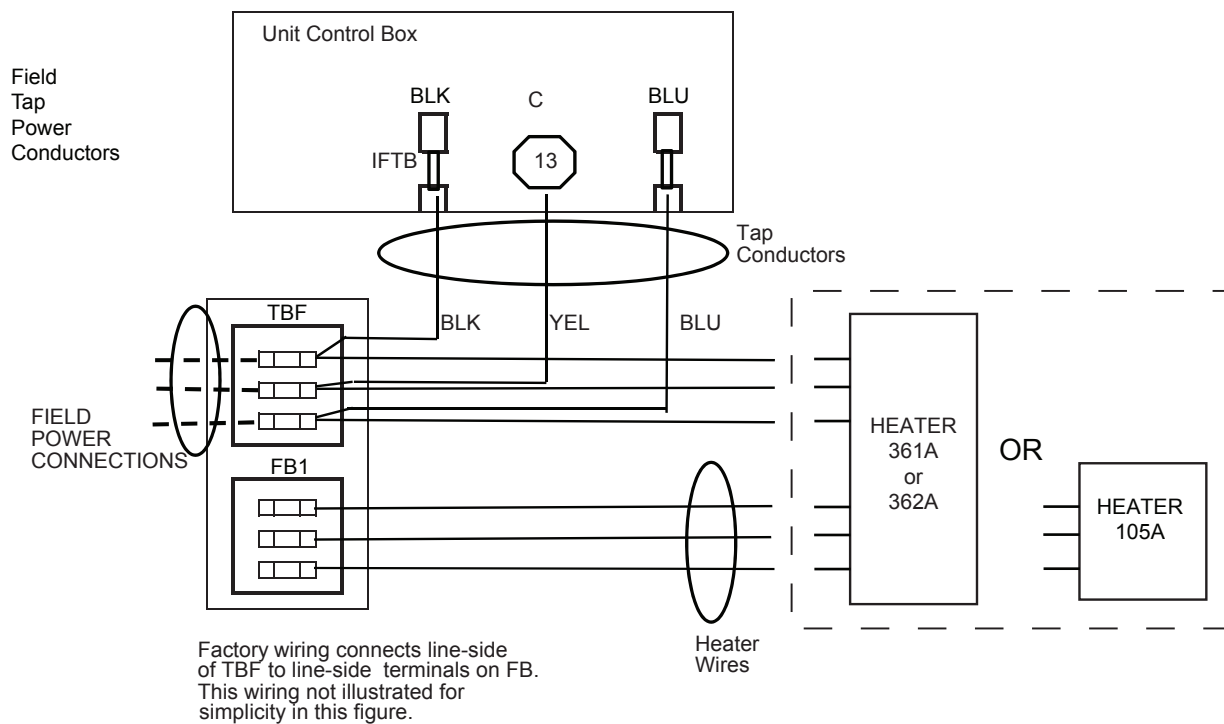
\*Heaters with the following part numbers can be used:  
 101A, 102A, 103B, 104B, 106A, 107A, 108A, 109A, 288A,  
 289A, 291A, 292A, 293A, 297A, 378A, 379A

**Fig. U — AC-3 No Single Point Box**

## APPENDIX B — AC-3 50LC COOLING APPLICATIONS



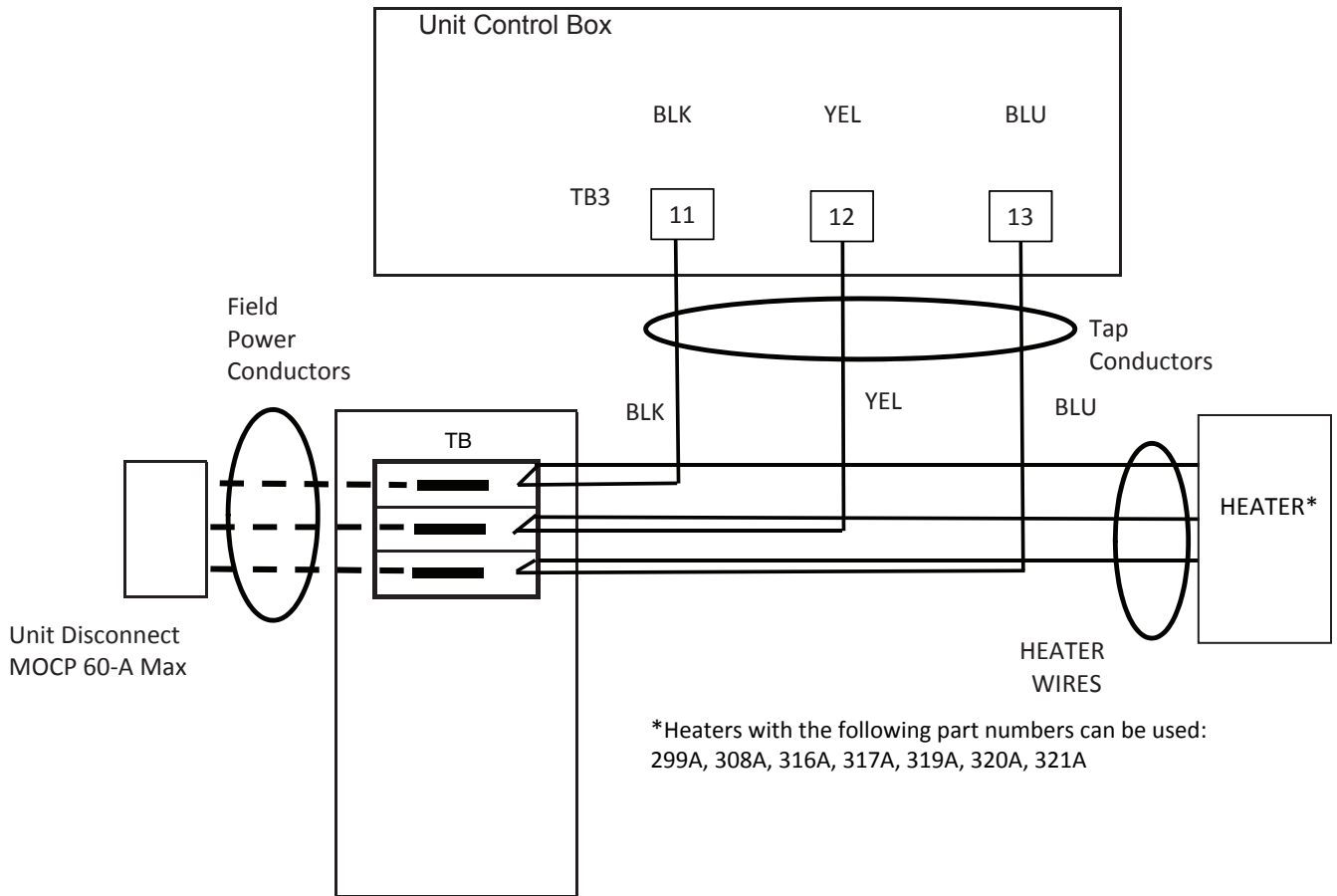
**Fig. V — AC-3 Single Point Box CRSINGLE037A00, Sizes 04-06**



**Fig. W — AC-3 Single Point Box CRSINGLE038A00, Sizes 04-06**

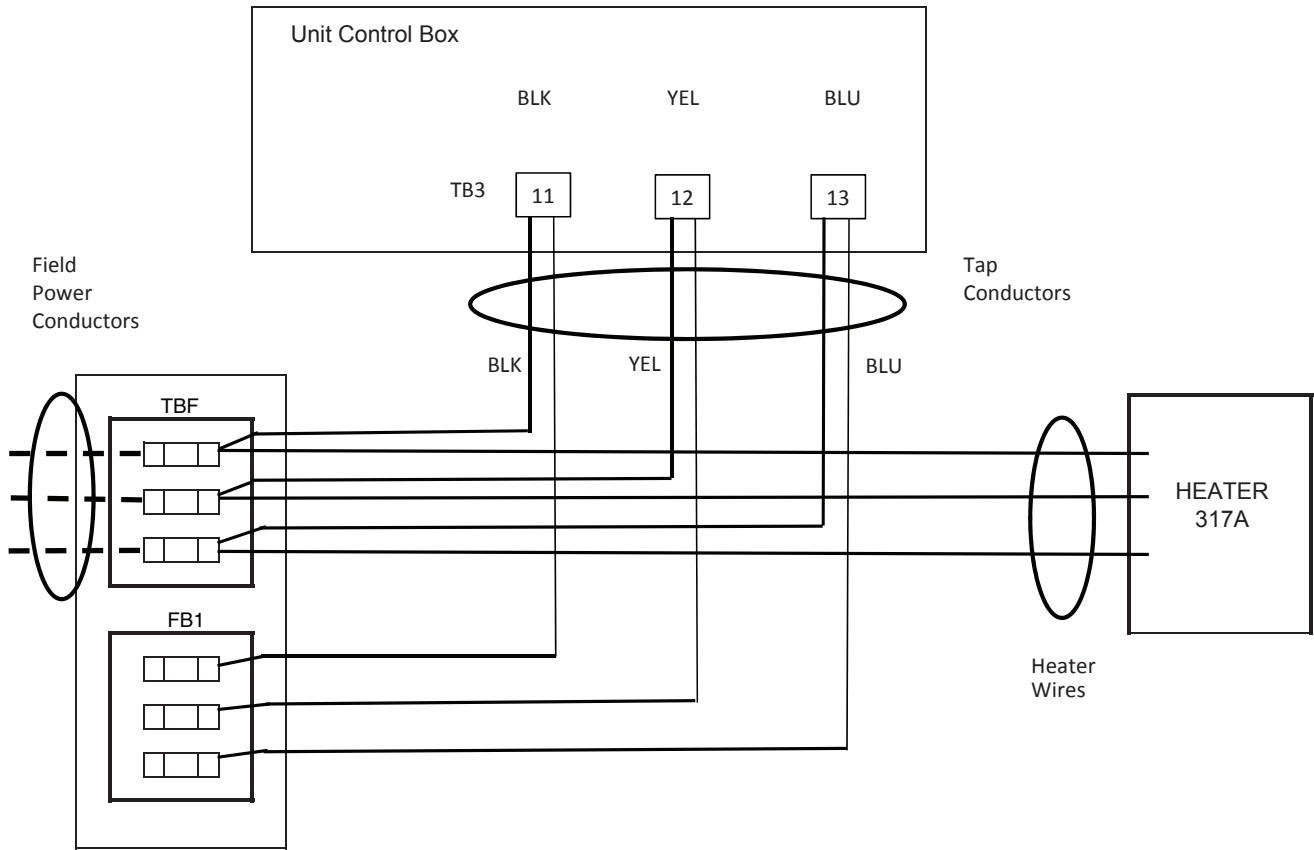


**APPENDIX B — AC-3 50LC COOLING APPLICATIONS**



**Fig. X — AC-3 Single Point Box CRSINGLE047A00, Size 07**

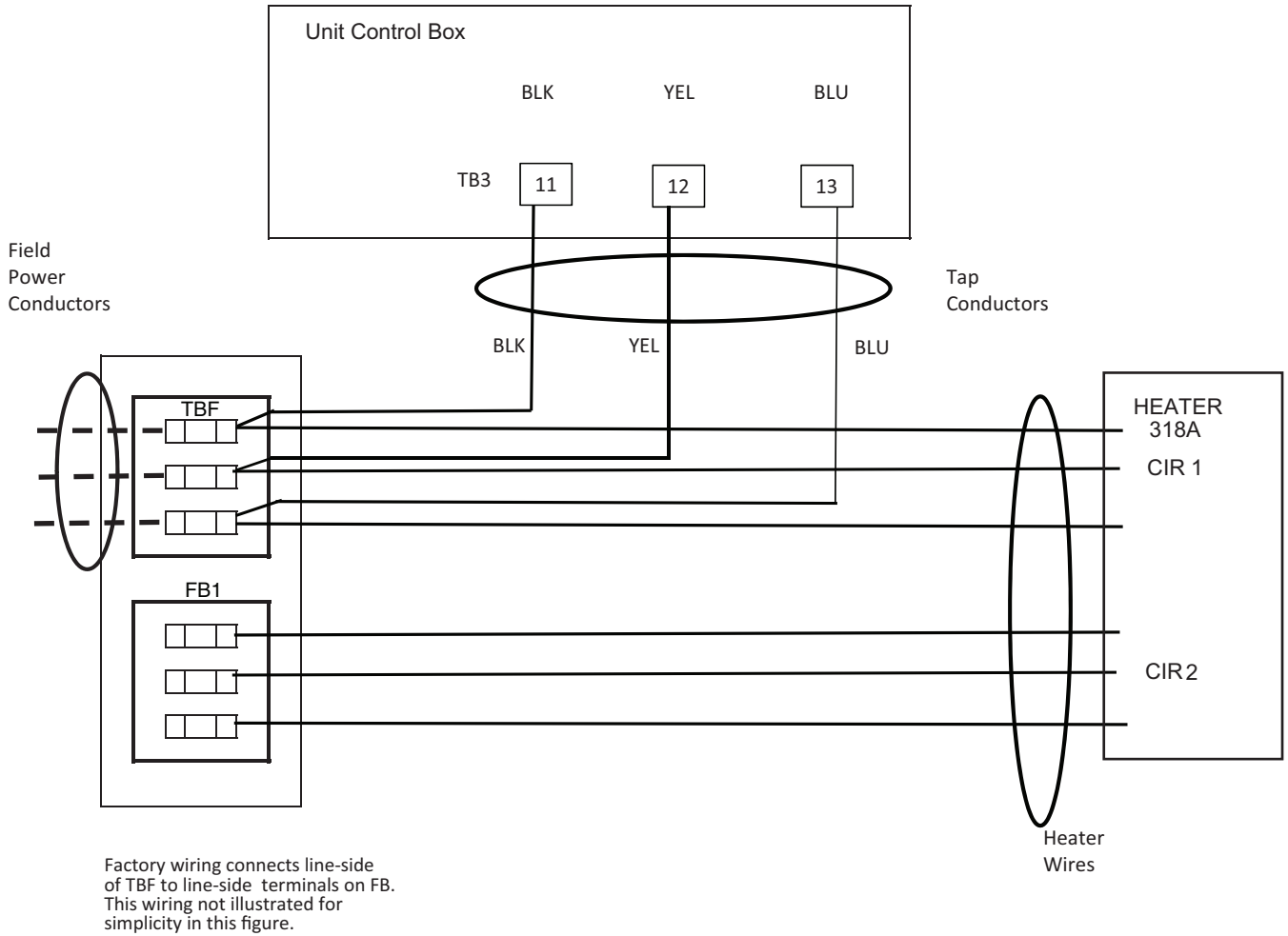
## APPENDIX B — AC-3 50LC COOLING APPLICATIONS



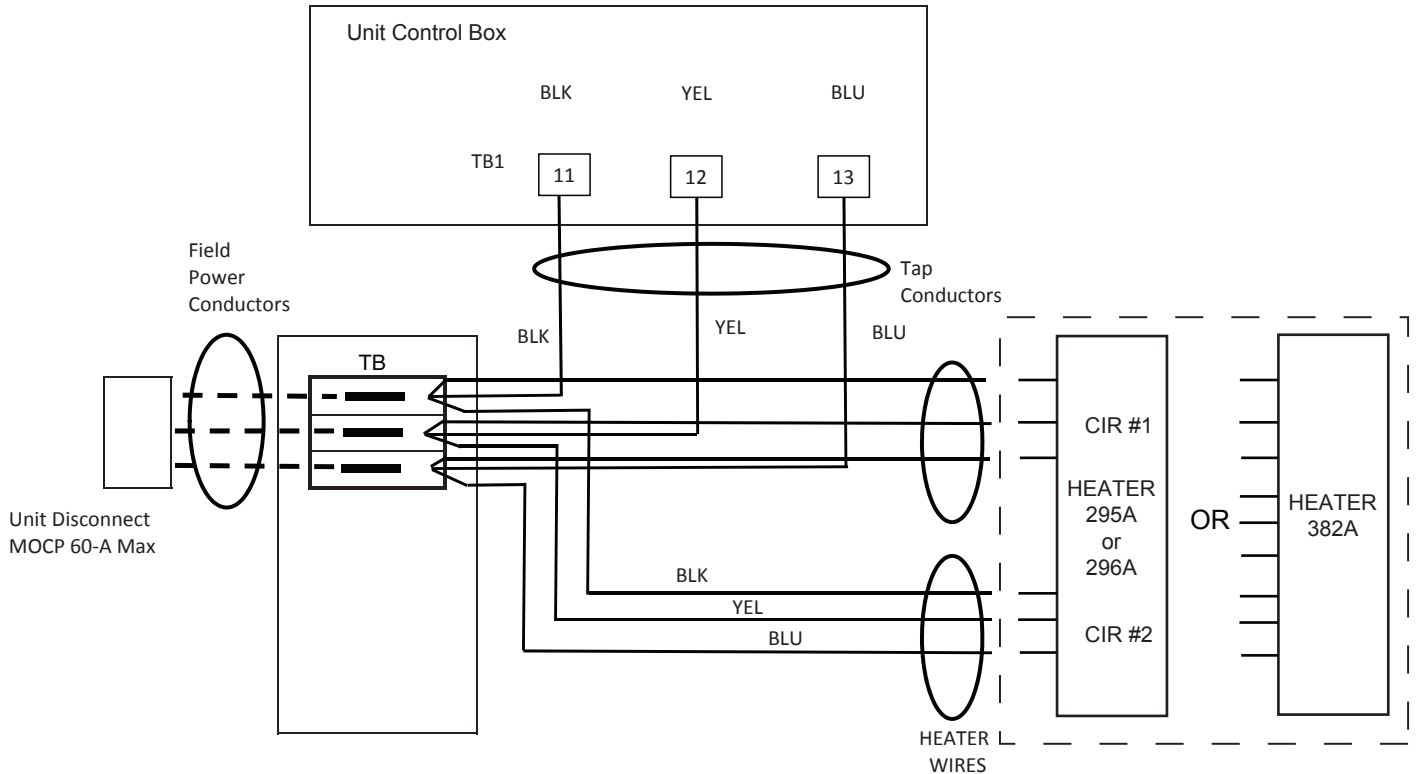
Factory wiring connects line-side of TBF to line-side terminals on FB. This wiring not illustrated for simplicity in this figure.

**Fig. Y — AC-3 Single Point Box CRSINGLE049A00, Size 07 (Single Circuit Heater)**

**APPENDIX B — AC-3 50LC COOLING APPLICATIONS**

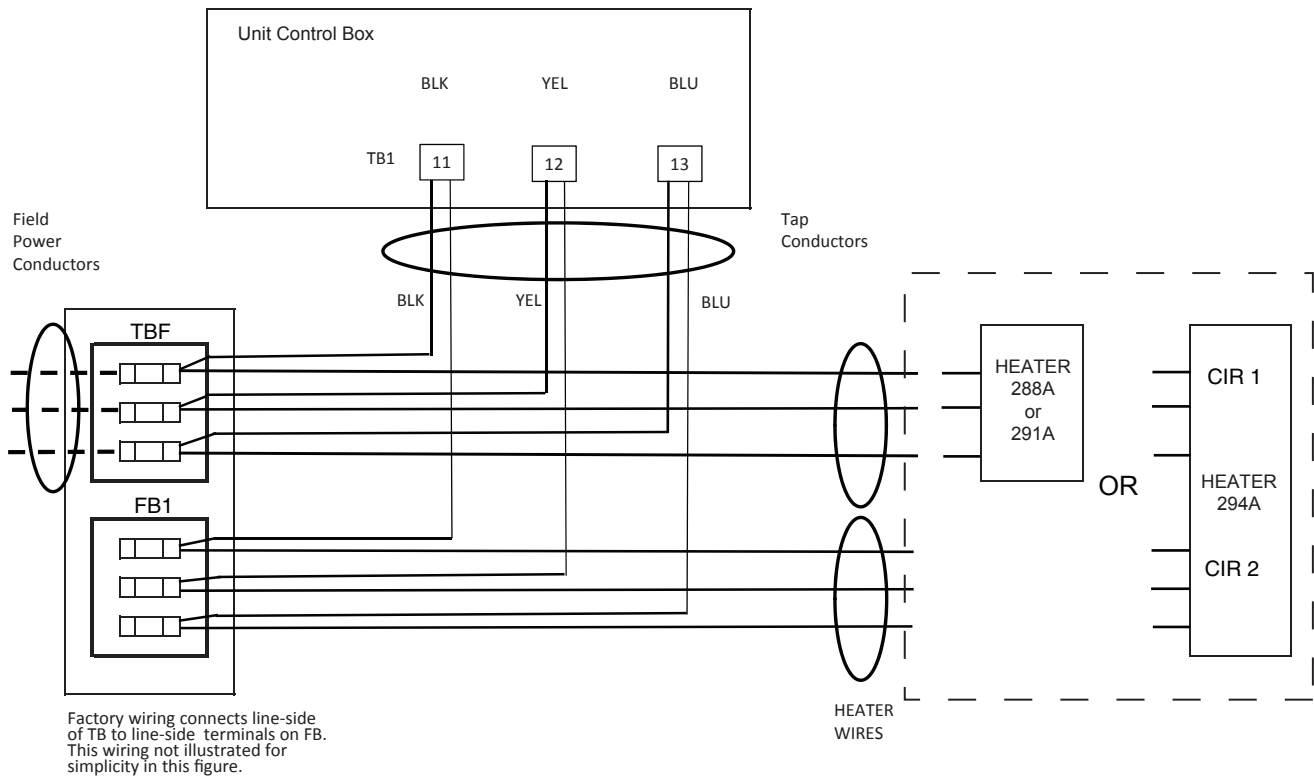


**Fig. Z — AC-3 Single Point Box CRSINGLE049A00, Size 07 (Two Circuit Heater)**



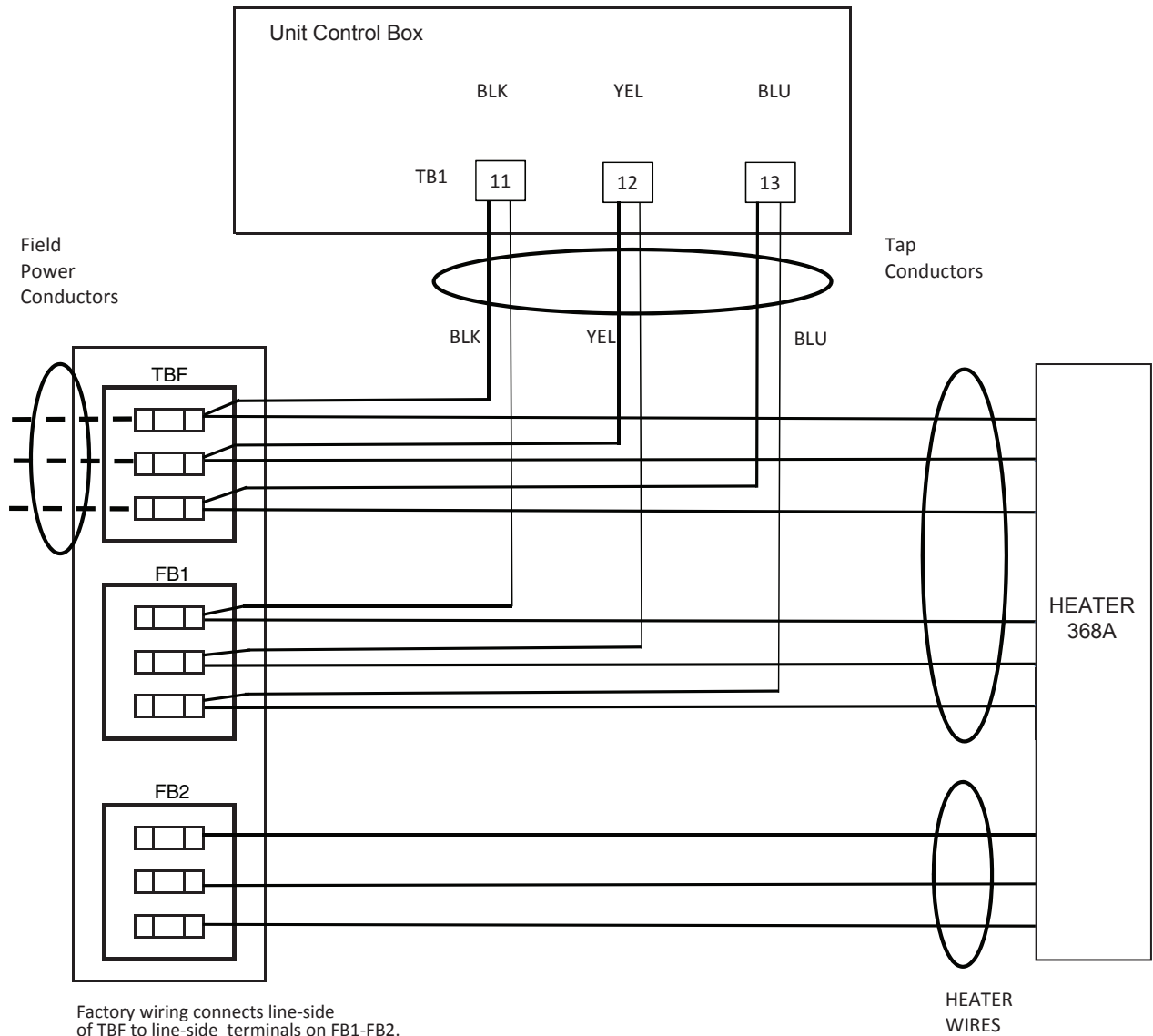
**Fig. AA — AC-3 Single Point Box CRSINGLE047A00, Sizes 08-12**

## APPENDIX B — AC-3 50LC COOLING APPLICATIONS



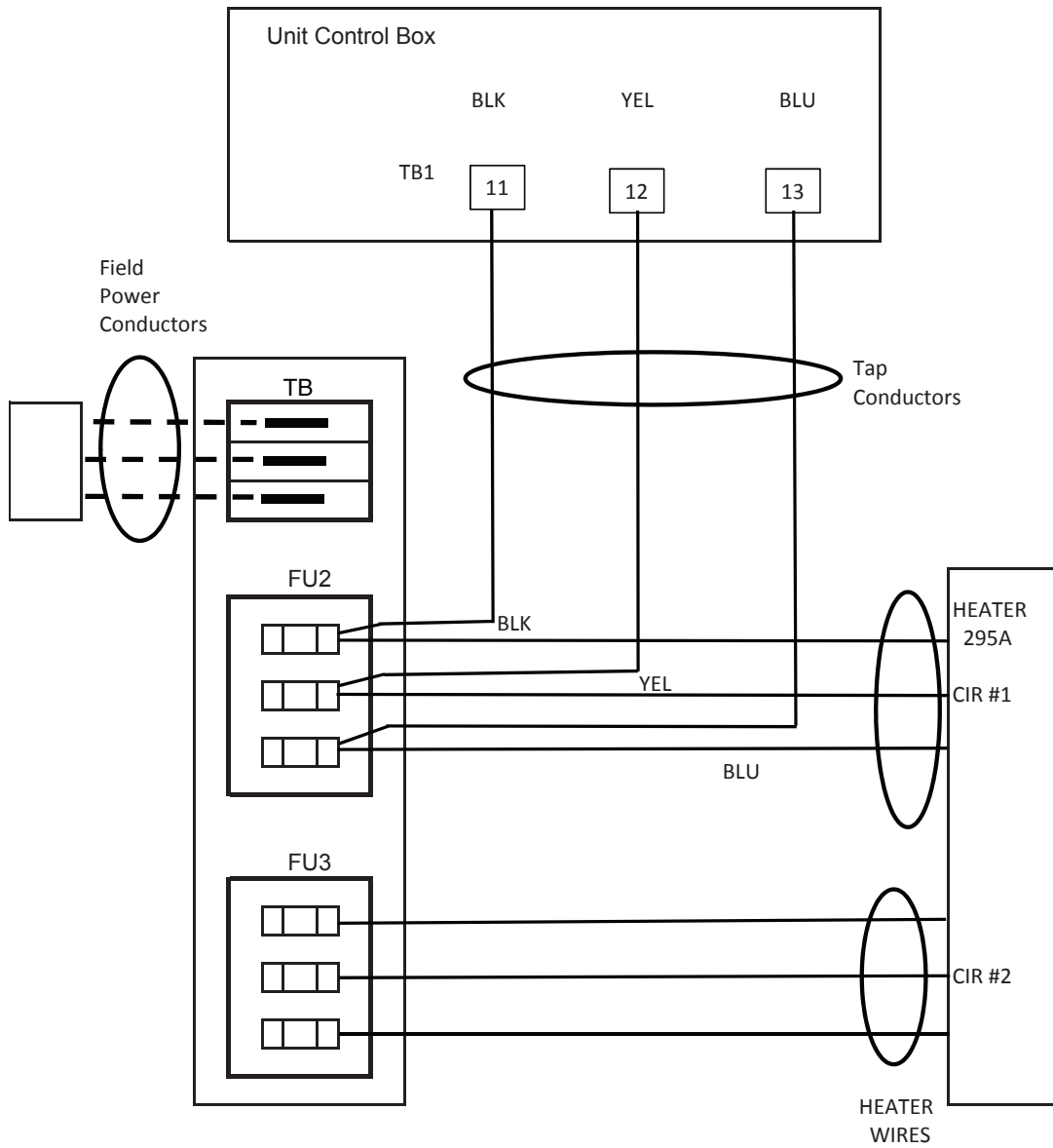
**Fig. AB — AC-3 Single Point Box CRSINGLE049A00, Sizes 08-12**

**APPENDIX B — AC-3 50LC COOLING APPLICATIONS**



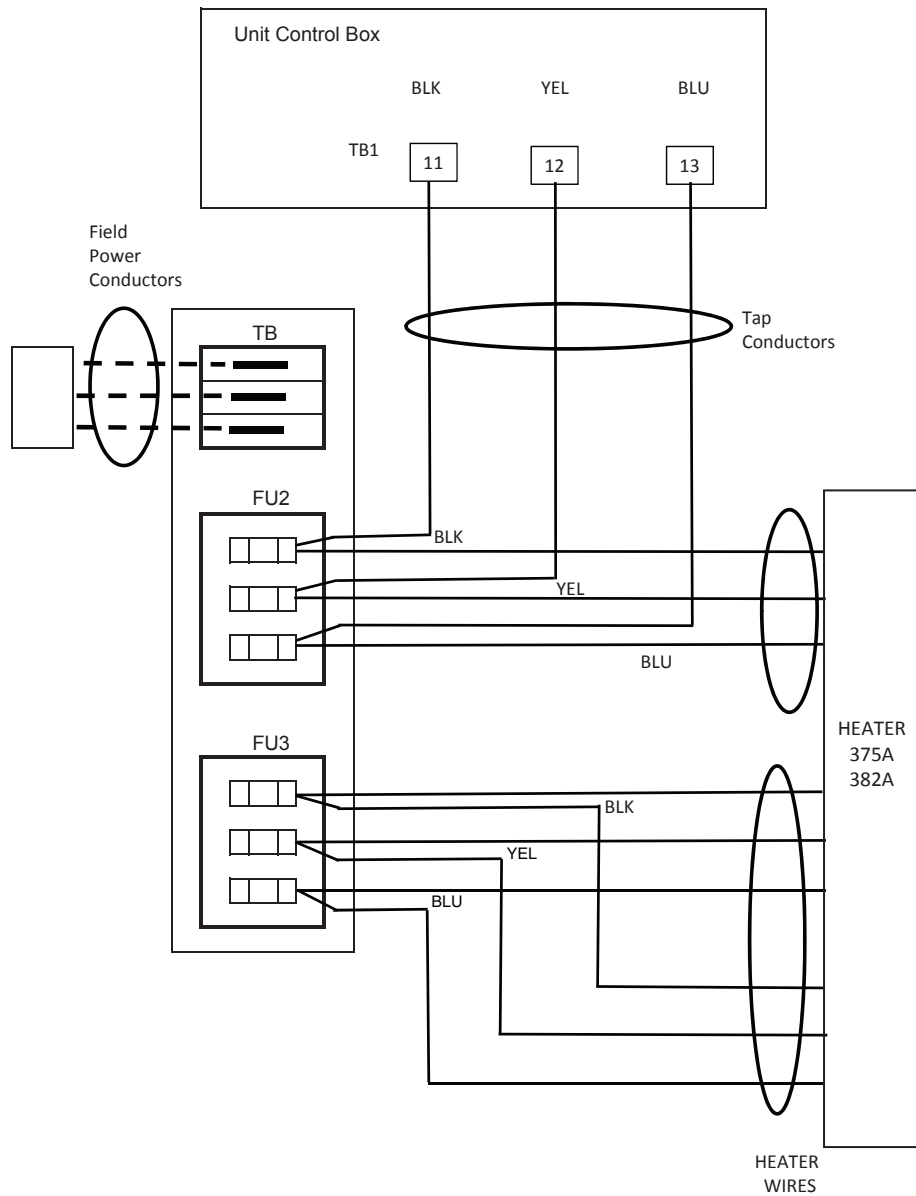
**Fig. AC — AC-3 Single Point Box CRSINGLE051A00, Sizes 08-12**

**APPENDIX B — AC-3 50LC COOLING APPLICATIONS**



**Fig. AD — AC-3 Single Point Box CRSINGLE050A00, Sizes 08-12**

## APPENDIX B — AC-3 50LC COOLING APPLICATIONS



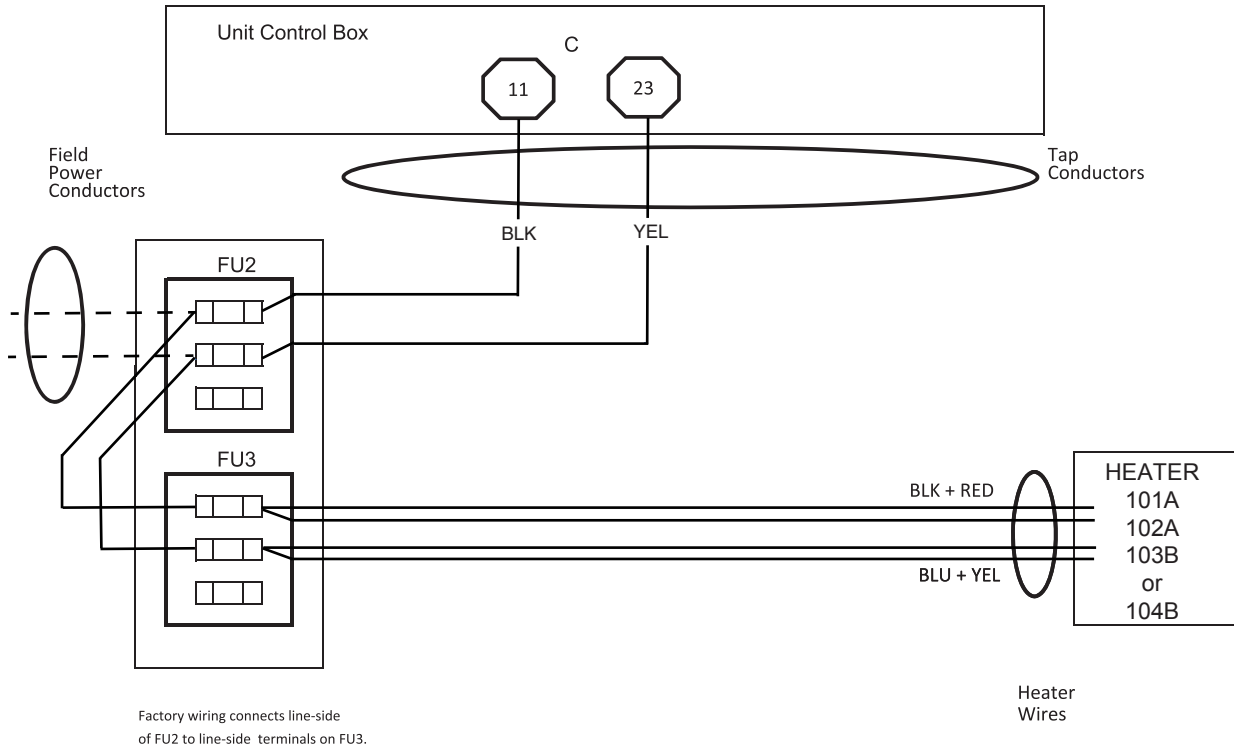
**Fig. AE — AC-3 Single Point Box CRSINGLE050A00, Sizes 08-12**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS

**Table C — Single Point Box Wiring Diagrams for HP-1 and HP-2 Units**

SPB CRSINGLENNNA00	HP-1 UNITS				HP-2 UNITS			
	04-07 036-072	08-09 090-102	12 120	14 150	04-06 036-060	07 072	08-09 090-102	12 120
<b>1-Phase (See page 12 for conversion instructions)</b>								
037	Fig. A*				Fig. A*			
040	Fig. AF				Fig. AF			
041	Fig. AG				Fig. AG			
<b>3-Phase</b>								
NONE	Fig. C*				Fig. C*			
037	Fig. D*				Fig. D*			
038	Fig. AH				Fig. AH			
039	Fig. AI				Fig. AI			
042						Fig. D*		
043						Fig. AH		
045						Fig. AI		
047		Fig. D*	Fig. D*	Fig. D*			Fig. D*	Fig. D*
049		Fig. AJ	Fig. AK				Fig. AJ, AK	Fig. AW
050				Fig. AL				Fig. AL
051		Fig. AM	Fig. AN	Fig. AO			Fig. AM, AN	Fig. AX
052		Fig. AP	Fig. AP	Fig. AQ			Fig. AP	Fig. AQ
053		Fig. AR	Fig. AS	Fig. AT			Fig. AR, AS	Fig. AT
054			Fig. AU	Fig. AV				Fig. AV

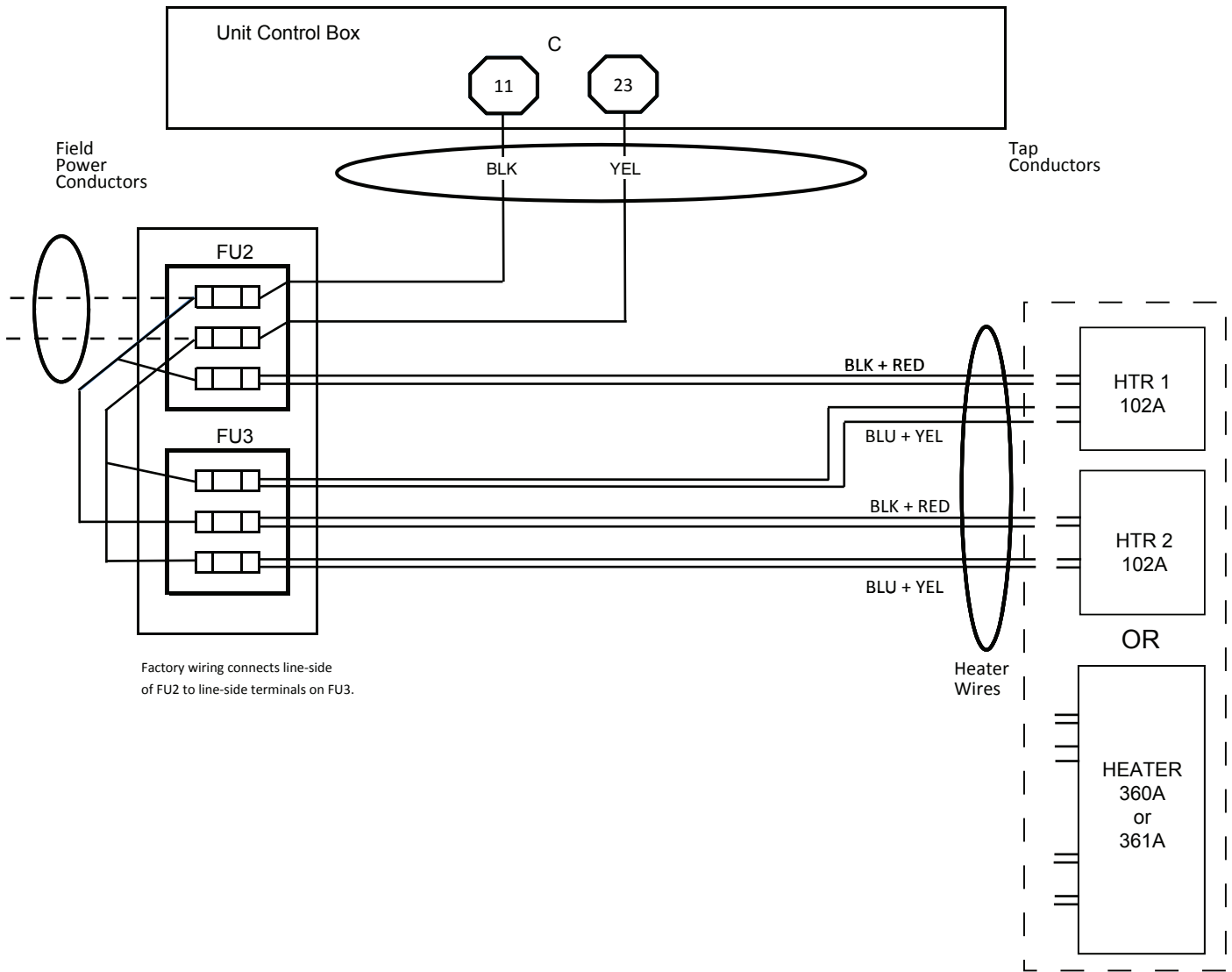
\*Figure is in Appendix A.



**Fig. AF — Heat Pump 1-Phase Single Point Box CRSINGLE040A00 (HP-1, Sizes 04-06; HP-2, Sizes 04-06)**

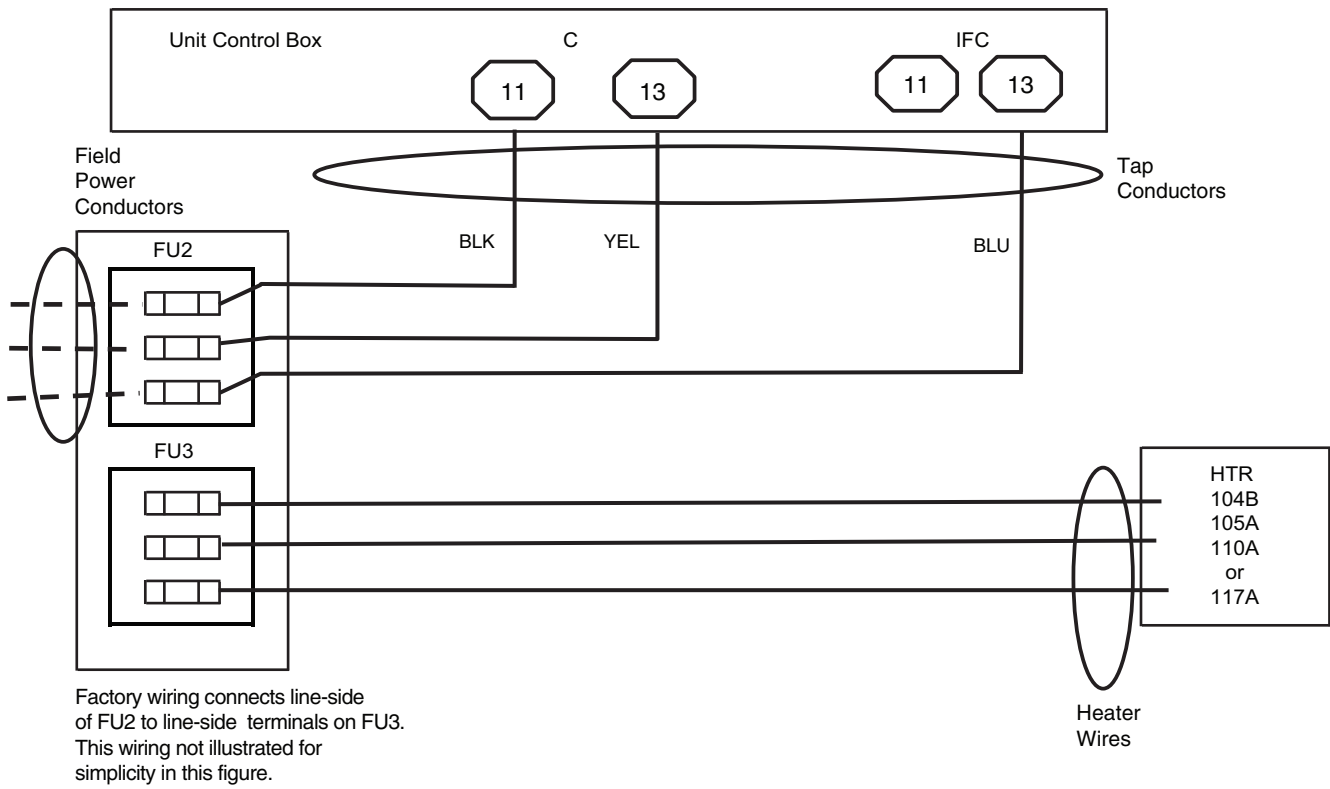


## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



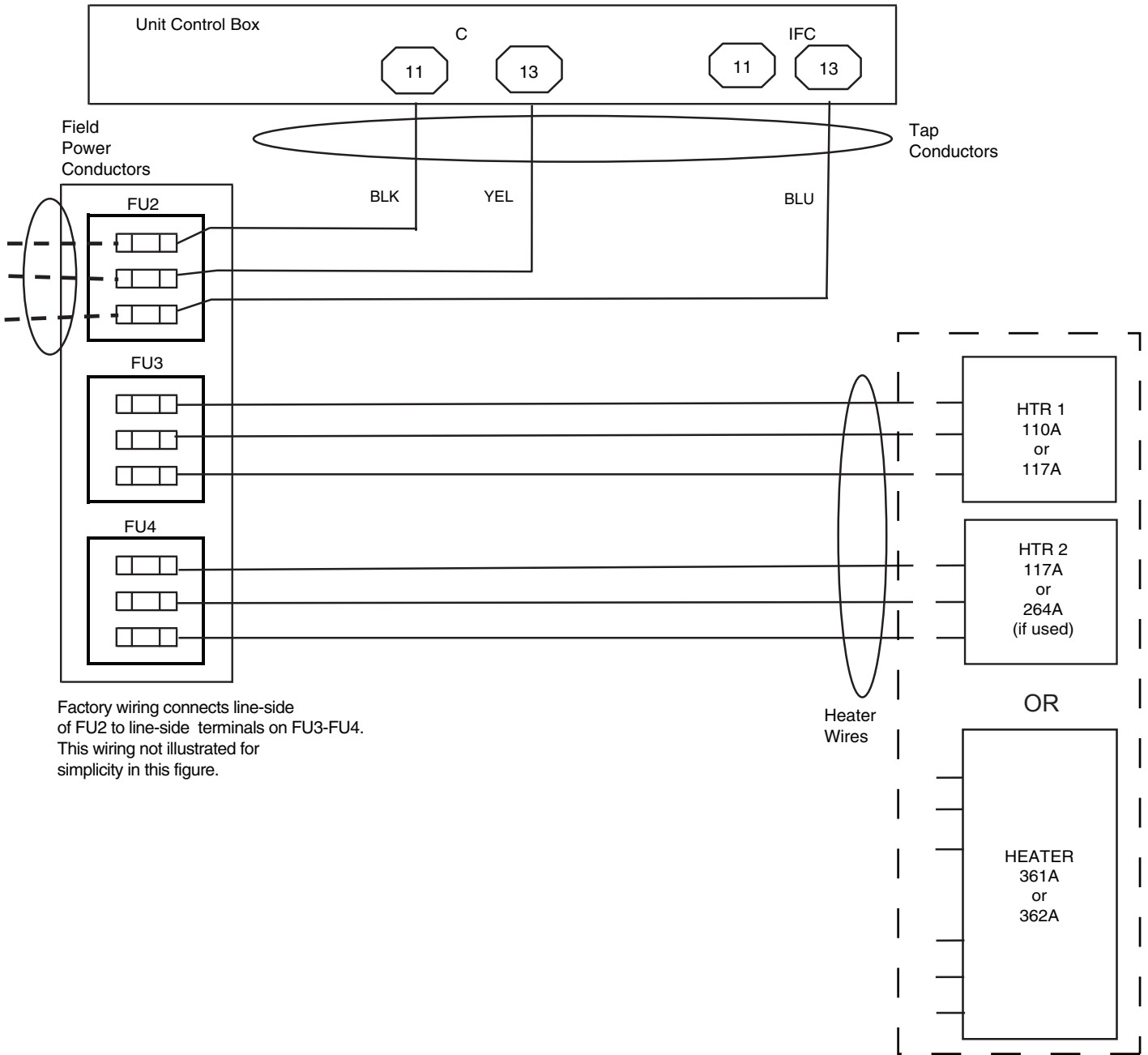
**Fig. AG — Heat Pump 1-Phase Single Point Box CRSINGLE041A00 (HP-1, Sizes 04-06; HP-2 Sizes 04-06)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



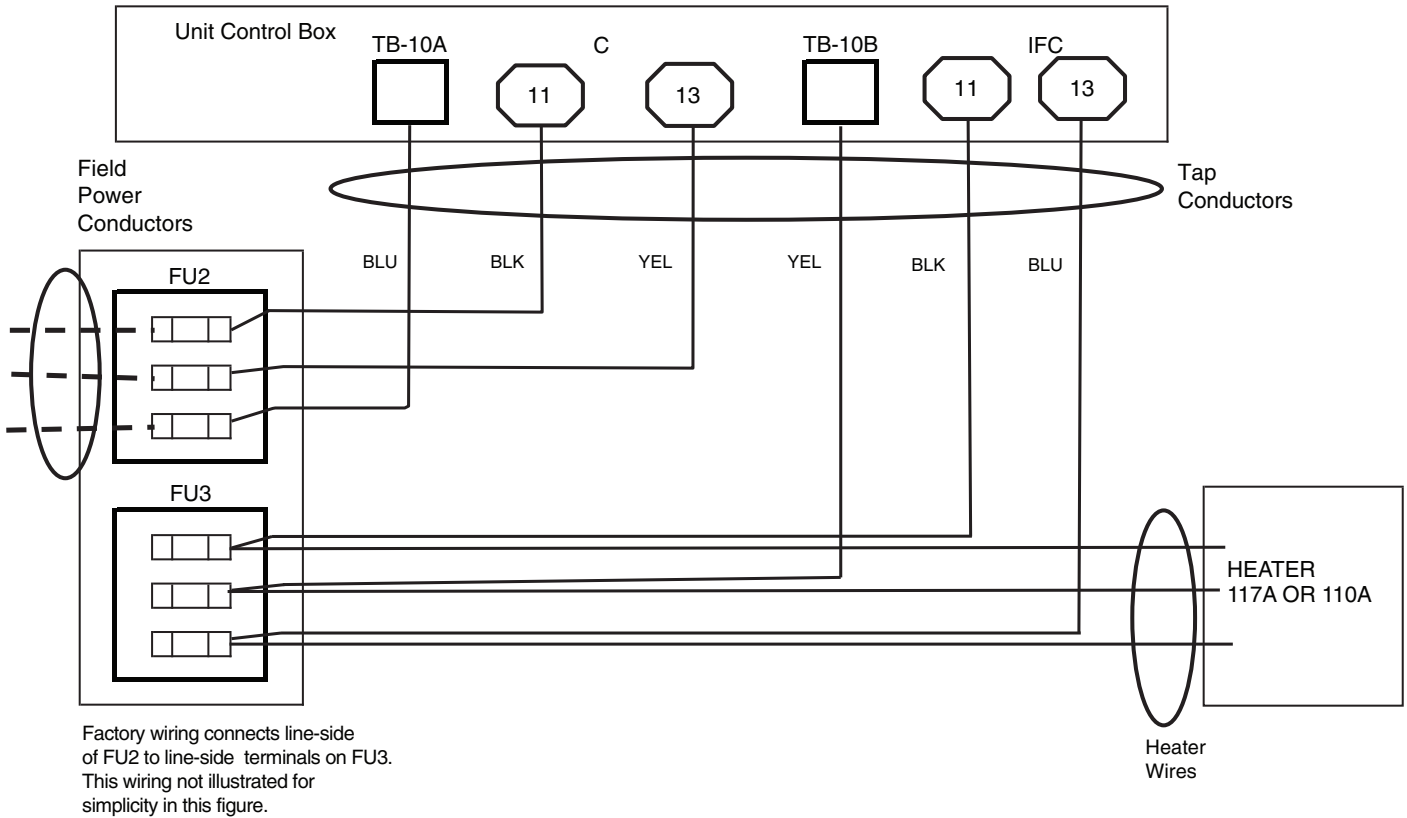
**Fig. AH — Heat Pump Single Point Box CRSINGLE038A00 and CRSINGLE043A00  
(HP-1, Sizes 04-07; HP-2, Sizes 04-07)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS

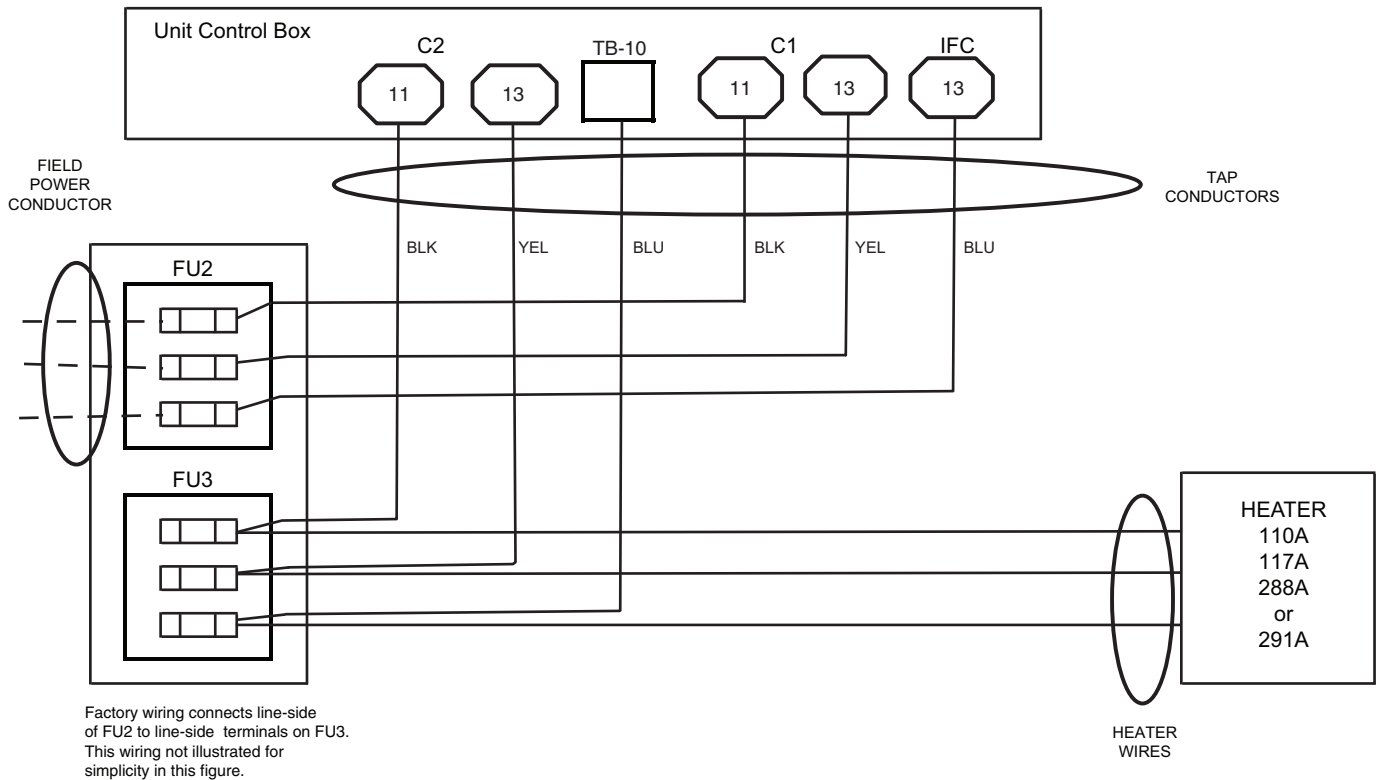


**Fig. AI — Heat Pump Single Point Box CRSINGLE039A00 and CRSINGLE045A00  
(HP-1, Sizes 04-07; HP-2, Sizes 04-07)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS

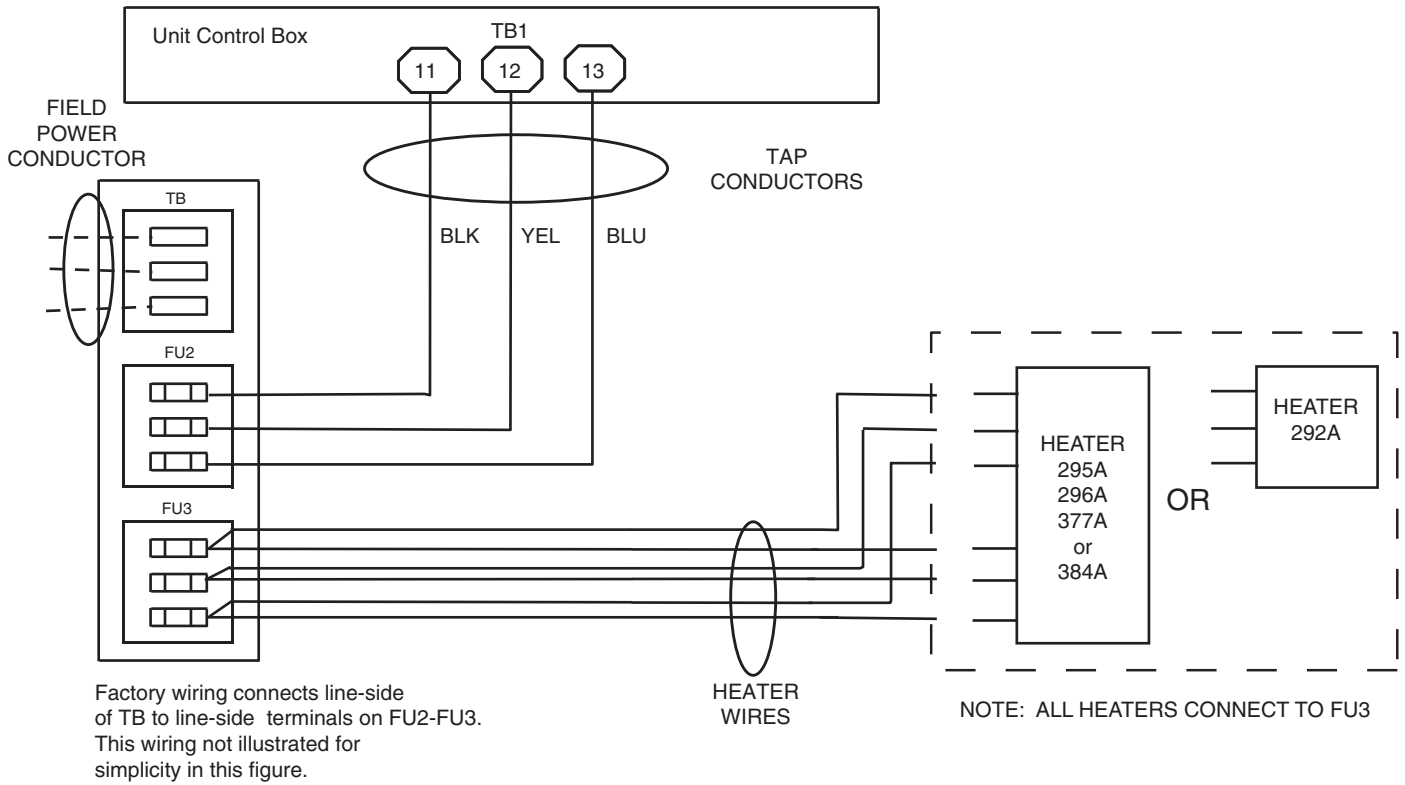


**Fig. AJ — Heat Pump Single Point Box CRSINGLE049A00 (HP-1, Sizes 08-09; HP-2, Sizes 08-09)**

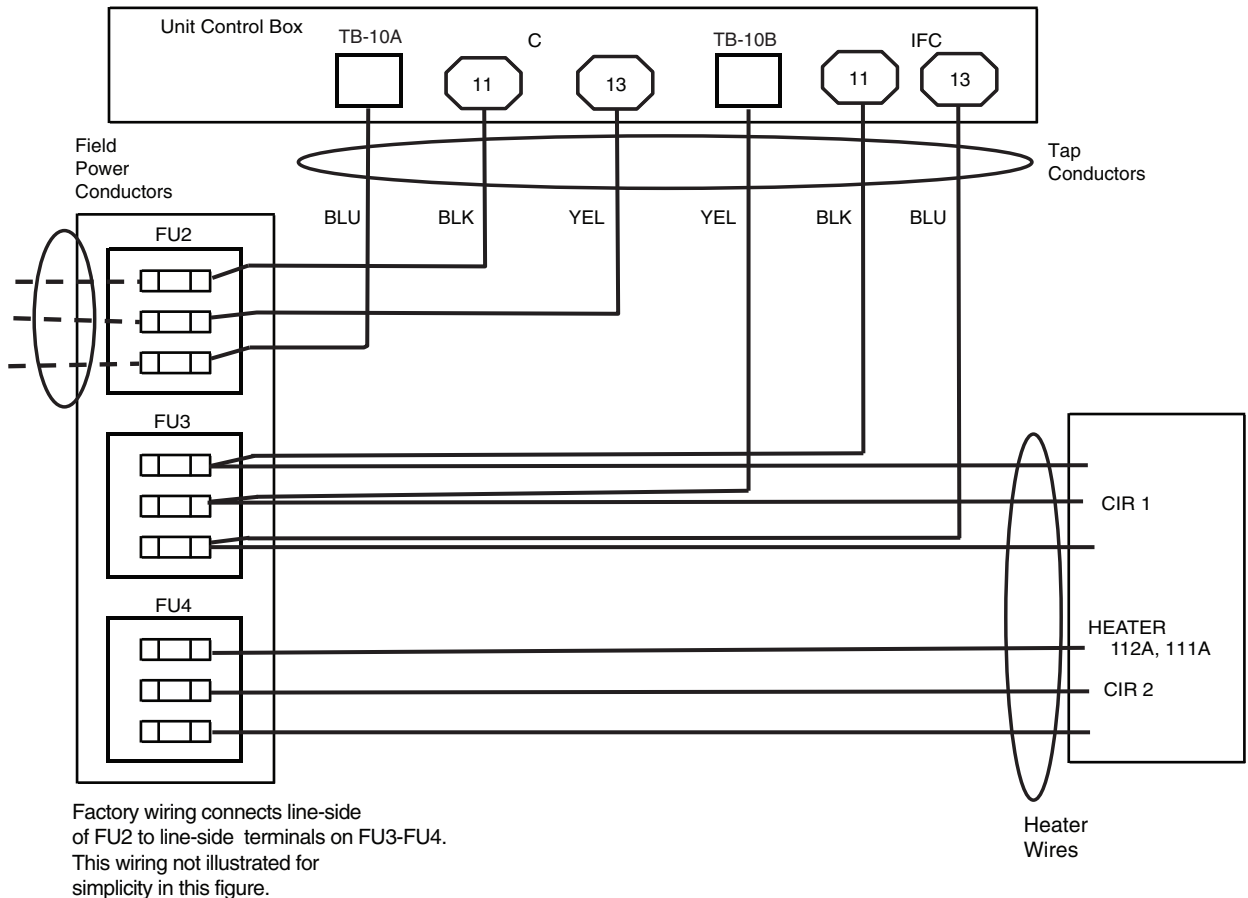


**Fig. AK — Heat Pump Single Point Box CRSINGLE049A00 (HP-1, Size 12; HP-2, Sizes 08-09)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS

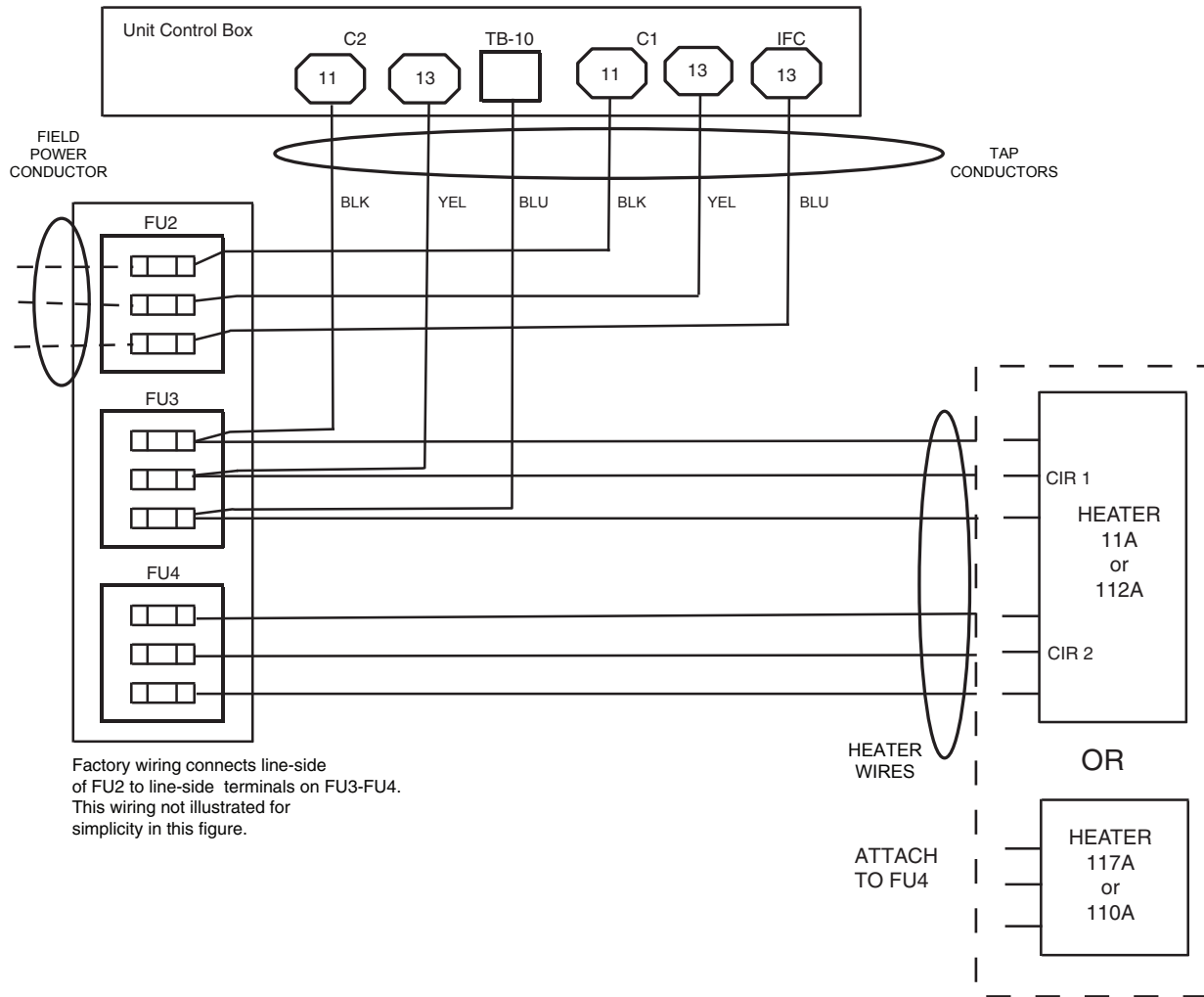


**Fig. AL — Heat Pump Single Point Box CRSINGLE050A00 (HP-1, Size 14; HP-2, Size 12)**



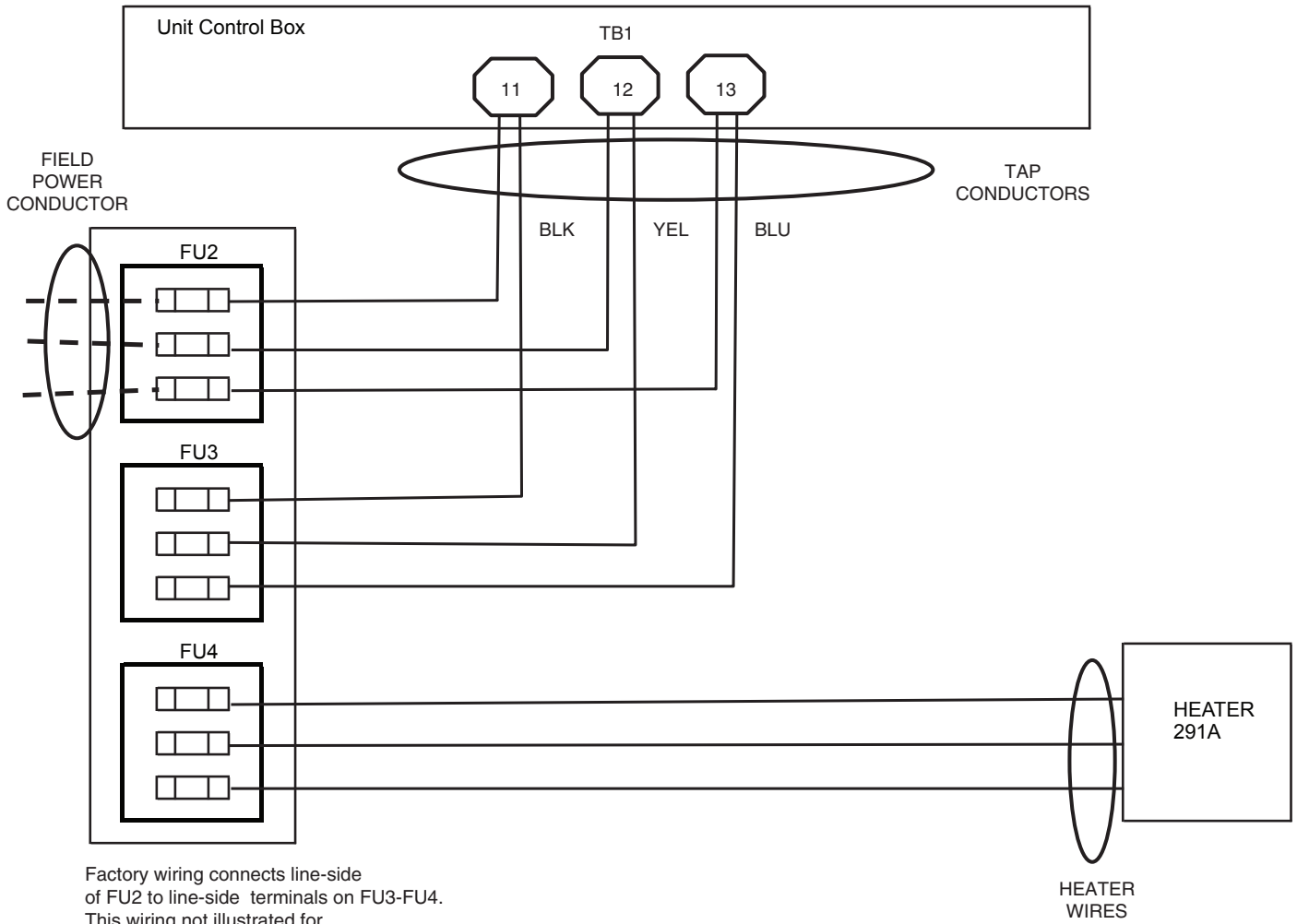
**Fig. AM — Heat Pump Single Point Box CRSINGLE051A00 (HP-1, Sizes 08-09; HP-2, Sizes 08-09)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



**Fig. AN — Heat Pump Single Point Box CRSINGLE051A00 (HP-1, Size 12; HP-2, Sizes 08-09)**

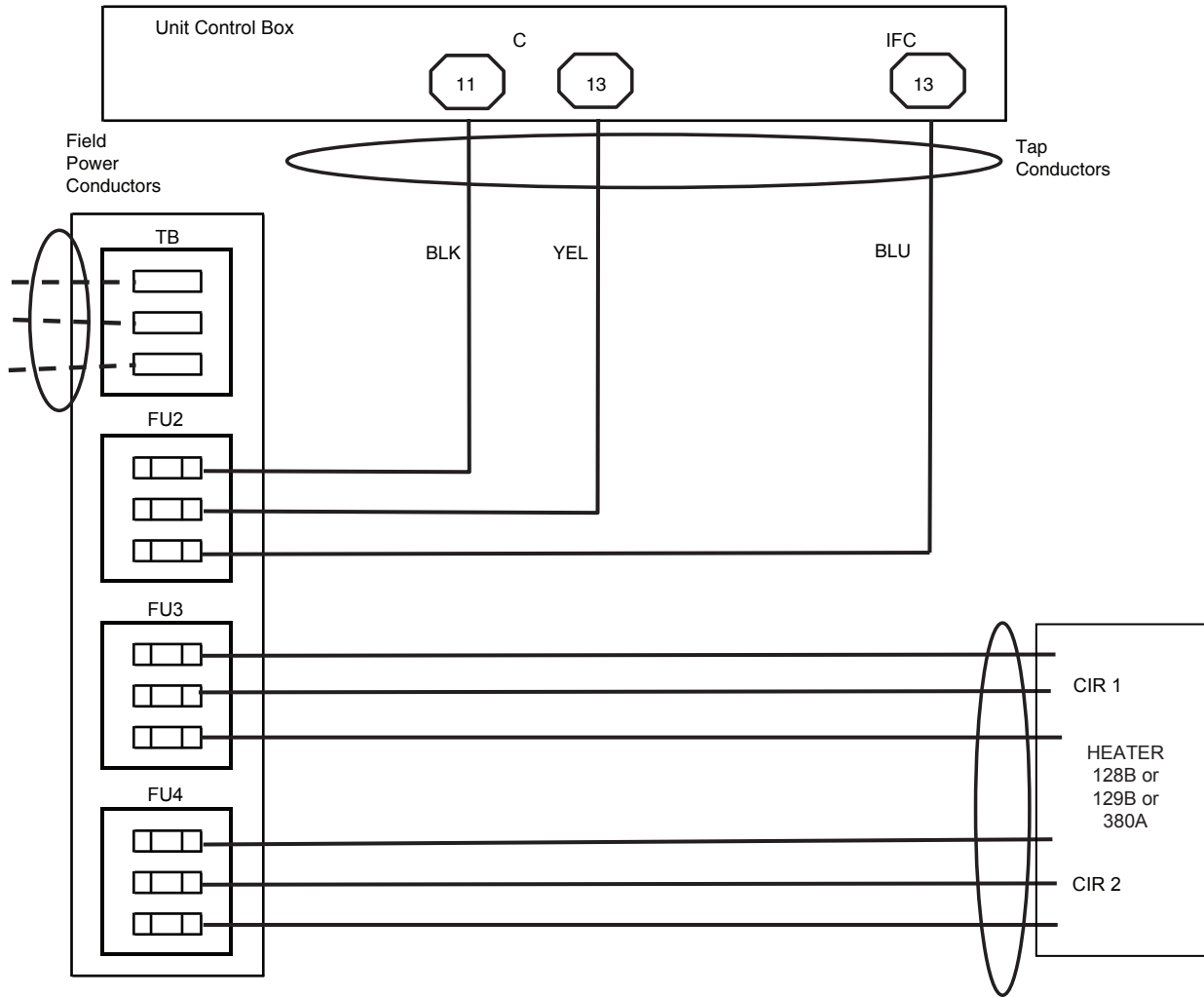
**APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS**



Factory wiring connects line-side of FU2 to line-side terminals on FU3-FU4. This wiring not illustrated for simplicity in this figure.

**Fig. AO — Heat Pump Single Point Box CRSINGLE051A00 (HP-1, Size 14)**

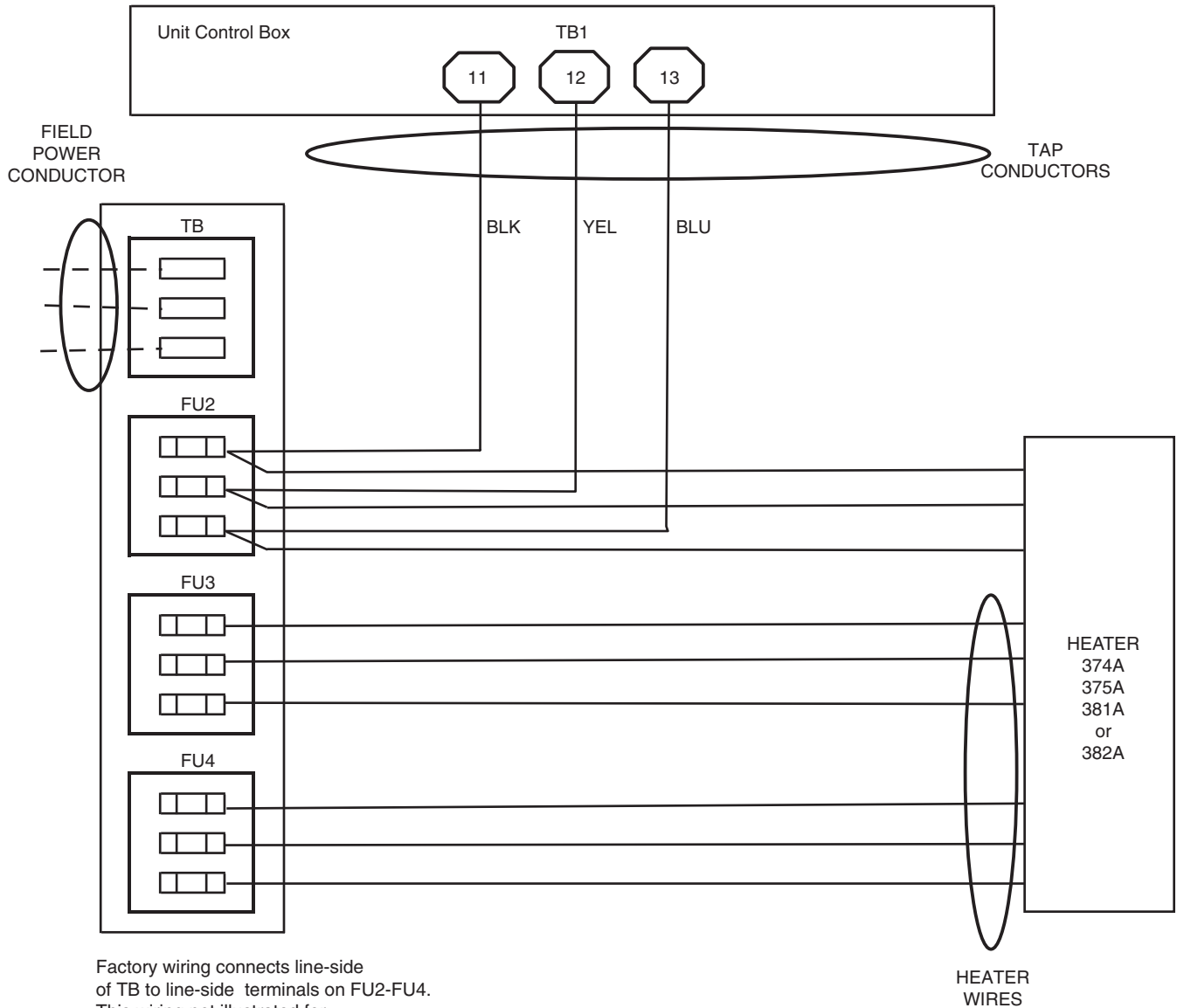
## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



**Fig. AP — Heat Pump Single Point Box CRSINGLE052A00 (HP-1, Sizes 08-12; HP-2, Sizes 08-09)**

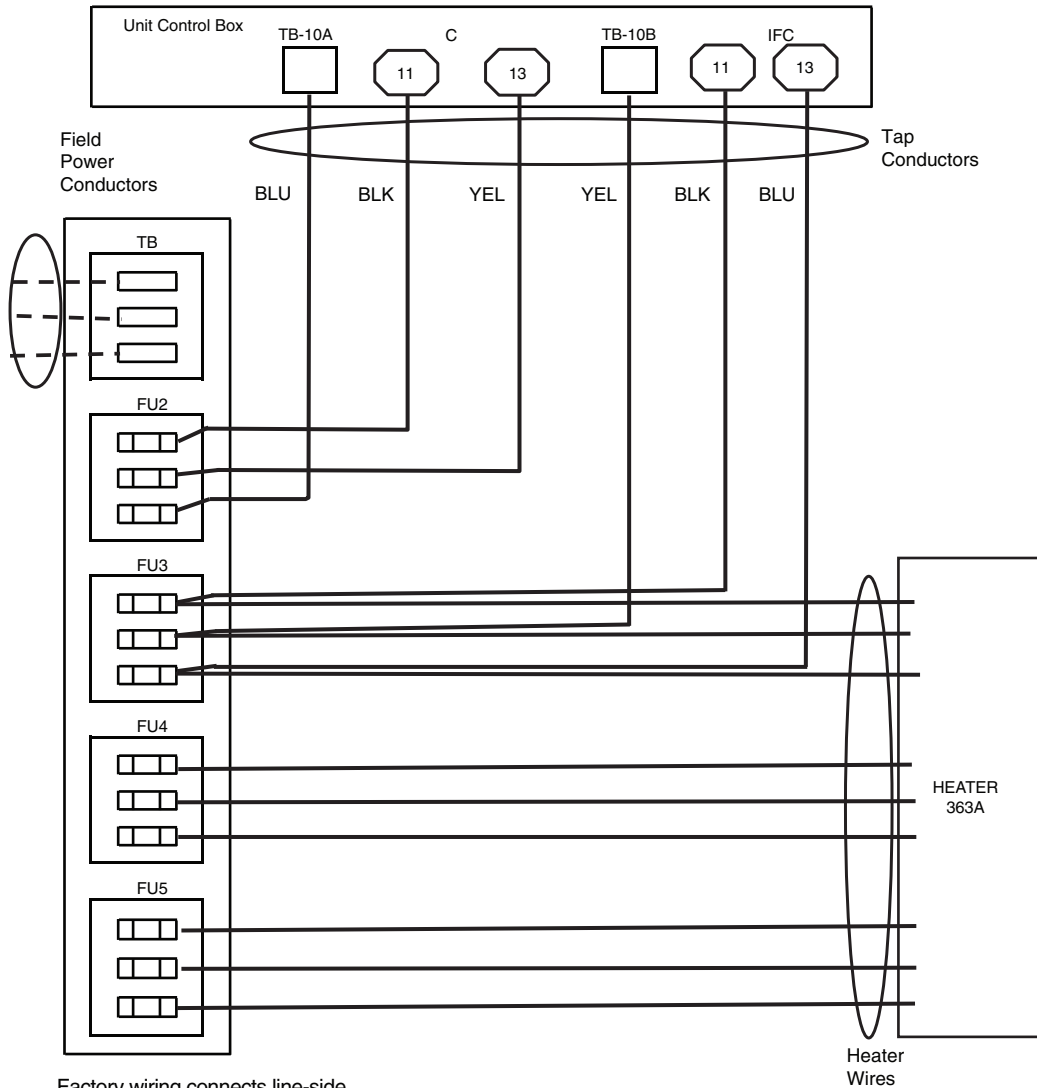


## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



**Fig. AQ — Heat Pump Single Point Box CRSINGLE052A00 (HP-1, Size 14; HP-2, Size 12)**

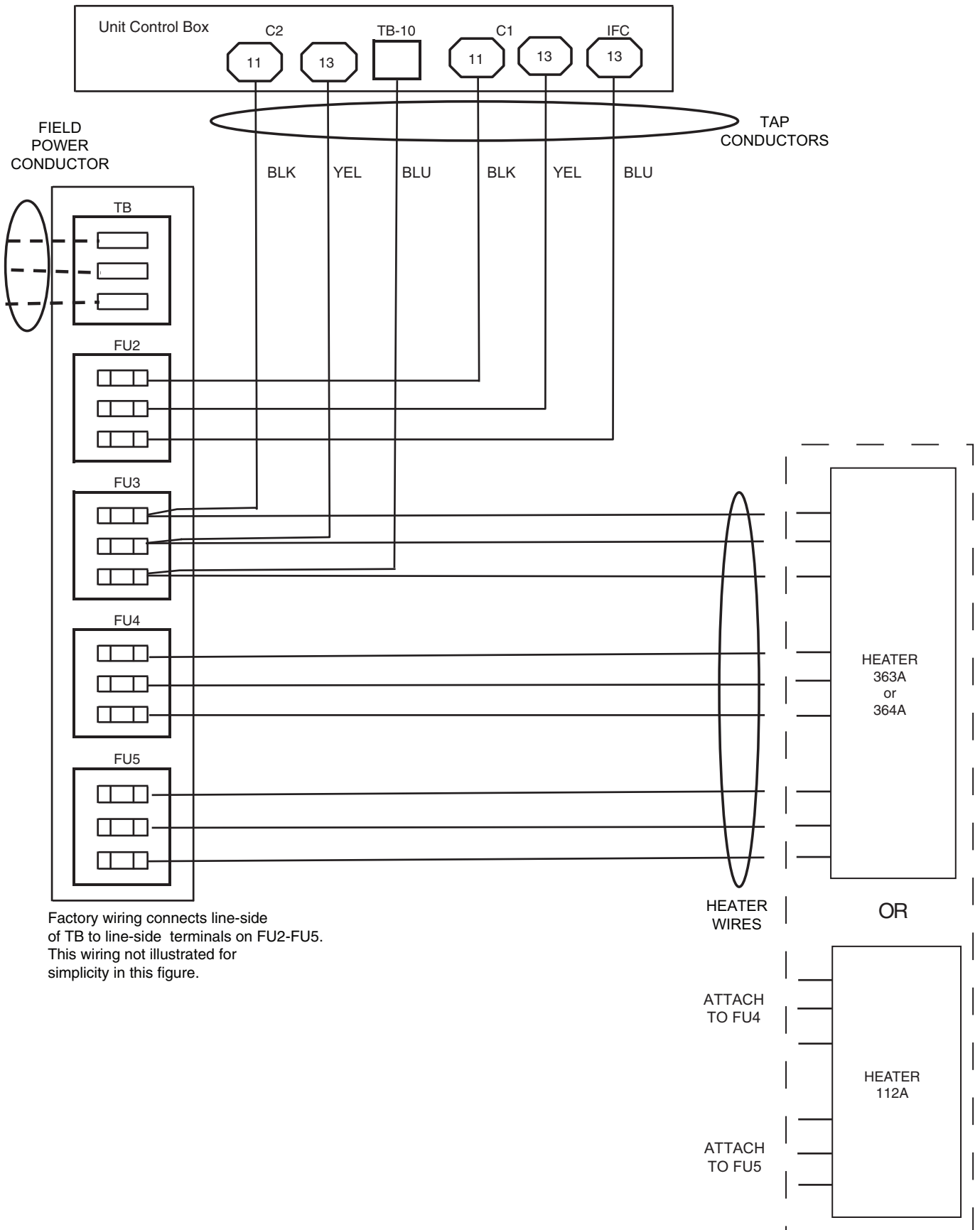
## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



Factory wiring connects line-side of TB to line-side terminals on FU2-FU5. This wiring not illustrated for simplicity in this figure.

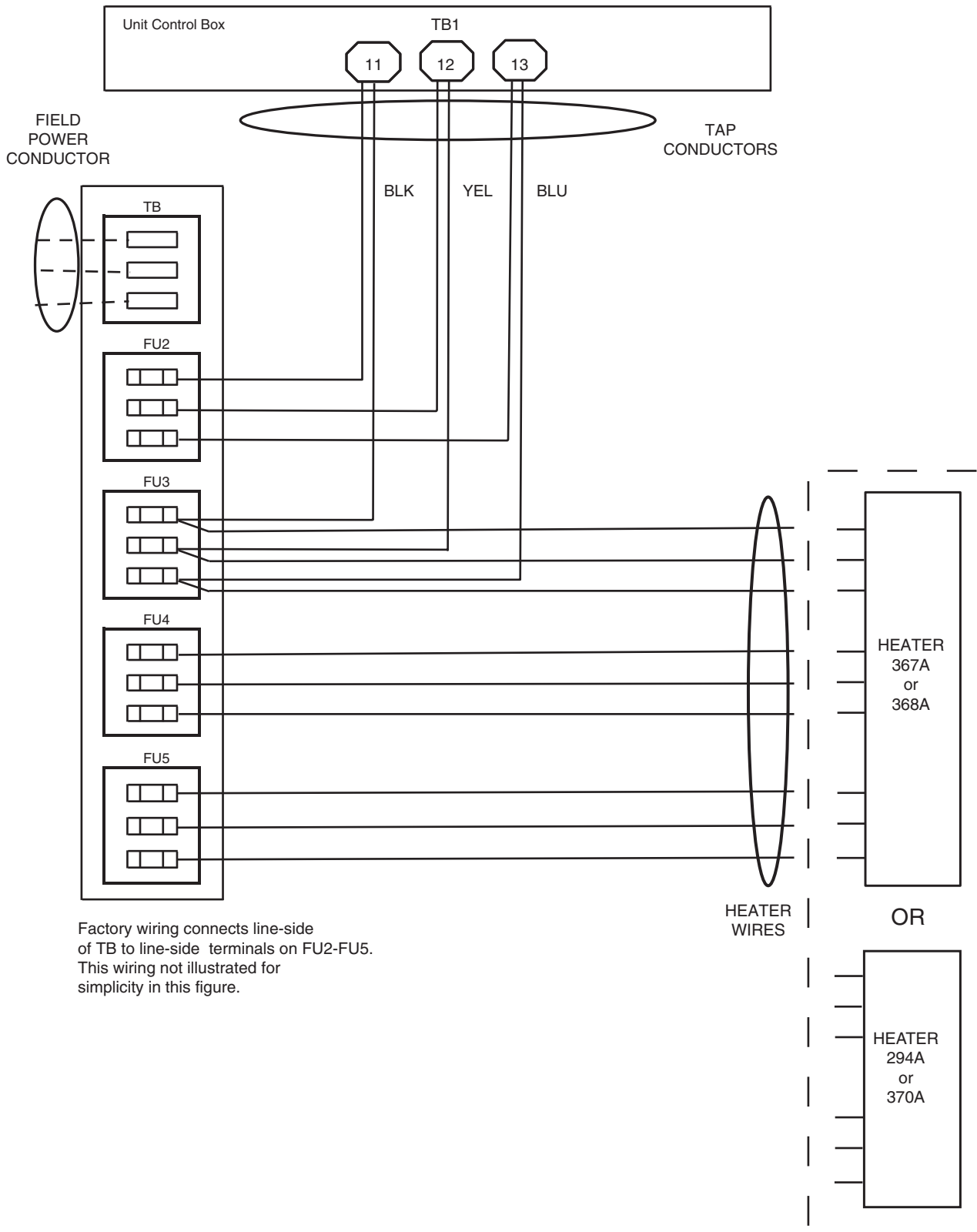
**Fig. AR — Heat Pump Single Point Box CRSINGLE053A00 (HP-1, Sizes 08-09; HP-2, Sizes 08-09)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



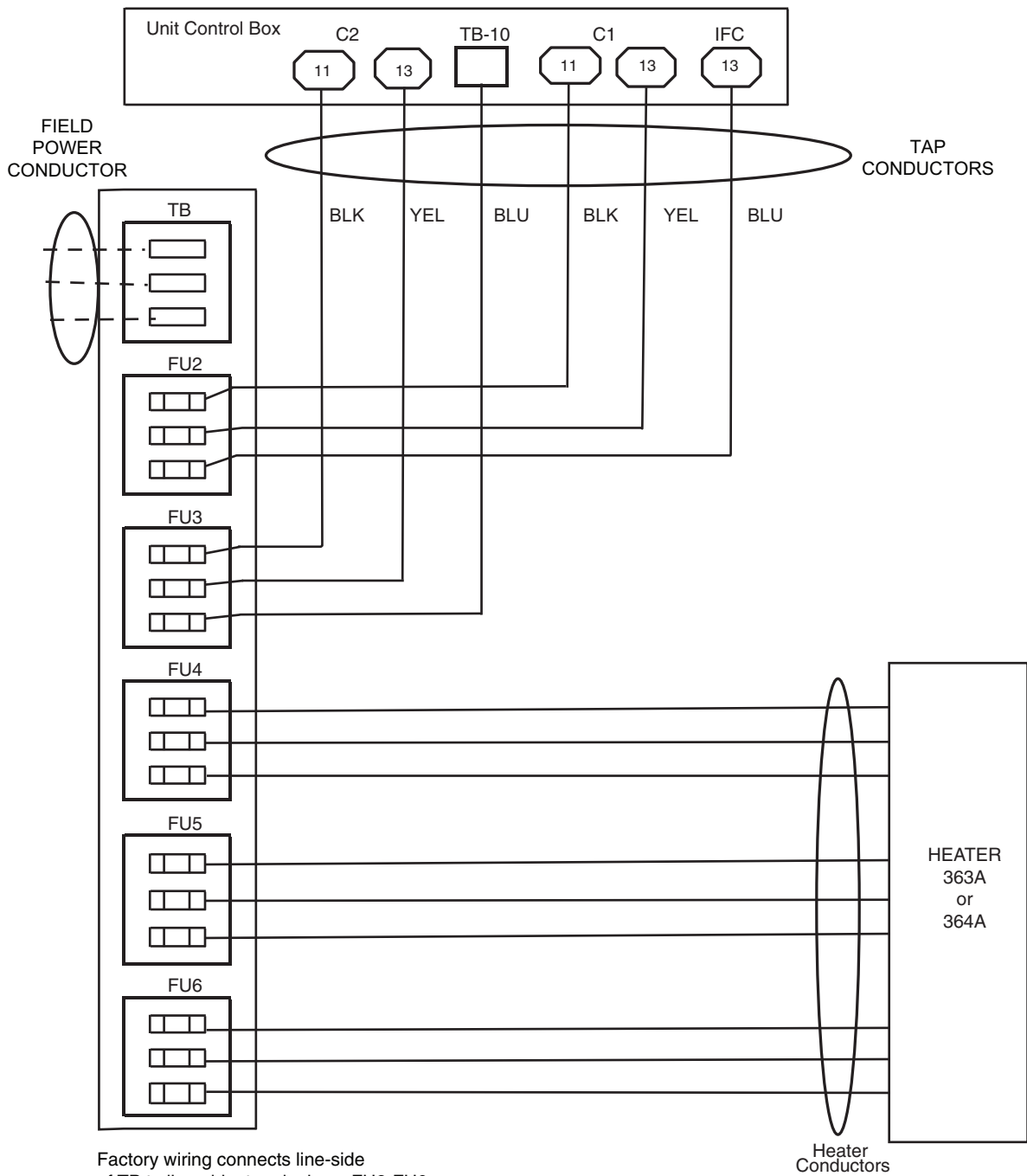
**Fig. AS — Heat Pump Single Point Box CRSINGLE053A00 (HP-1, Size 12; HP-2, Sizes 08-09)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



**Fig. AT — Heat Pump Single Point Box CRSINGLE053A00 (HP-1, Size 14; HP-2, Size 12)**

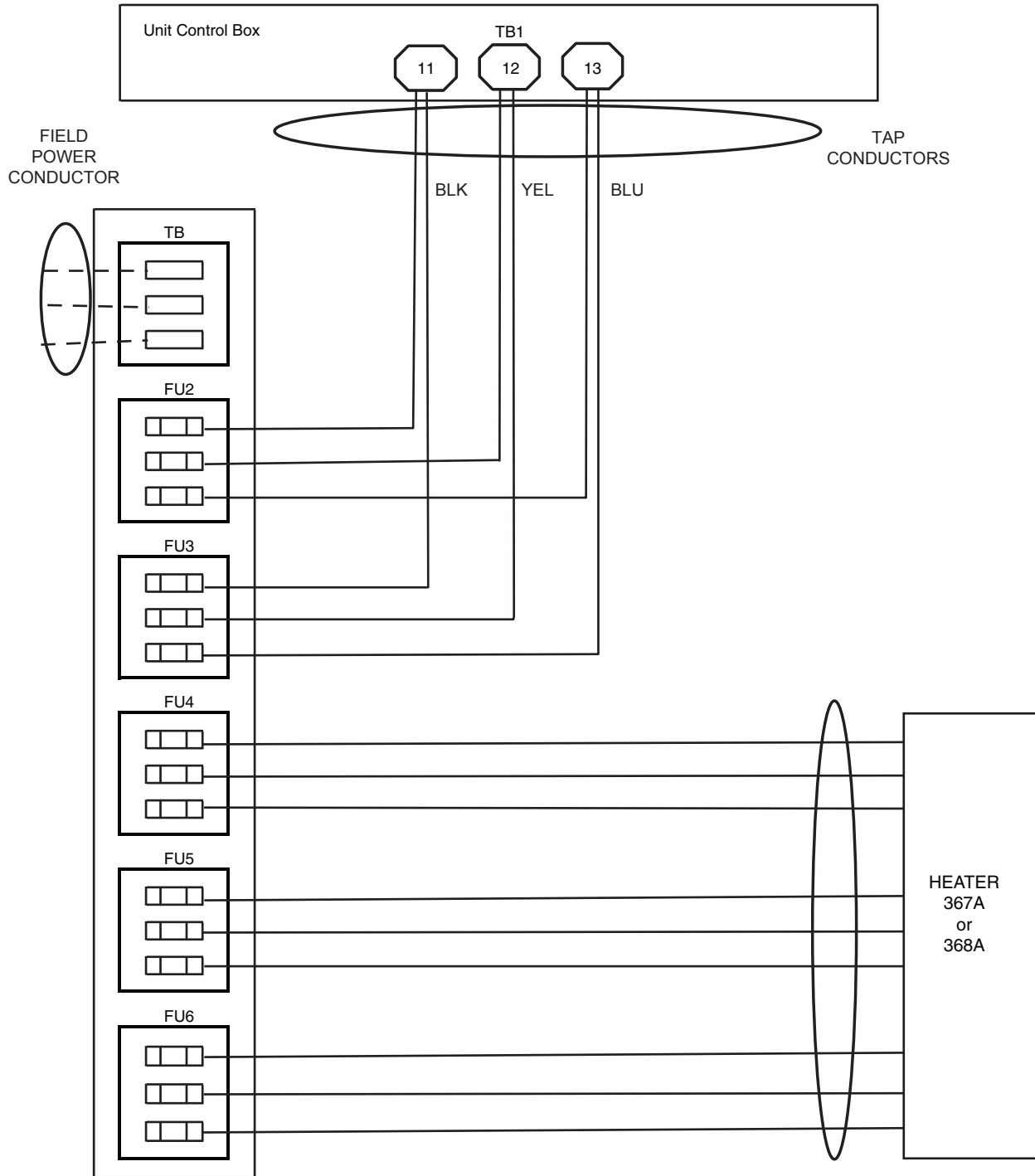
## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



Factory wiring connects line-side of TB to line-side terminals on FU2-FU6. This wiring not illustrated for simplicity in this figure.

**Fig. AU — Heat Pump Single Point Box CRSINGLE054A00 (HP-1, Size 12)**

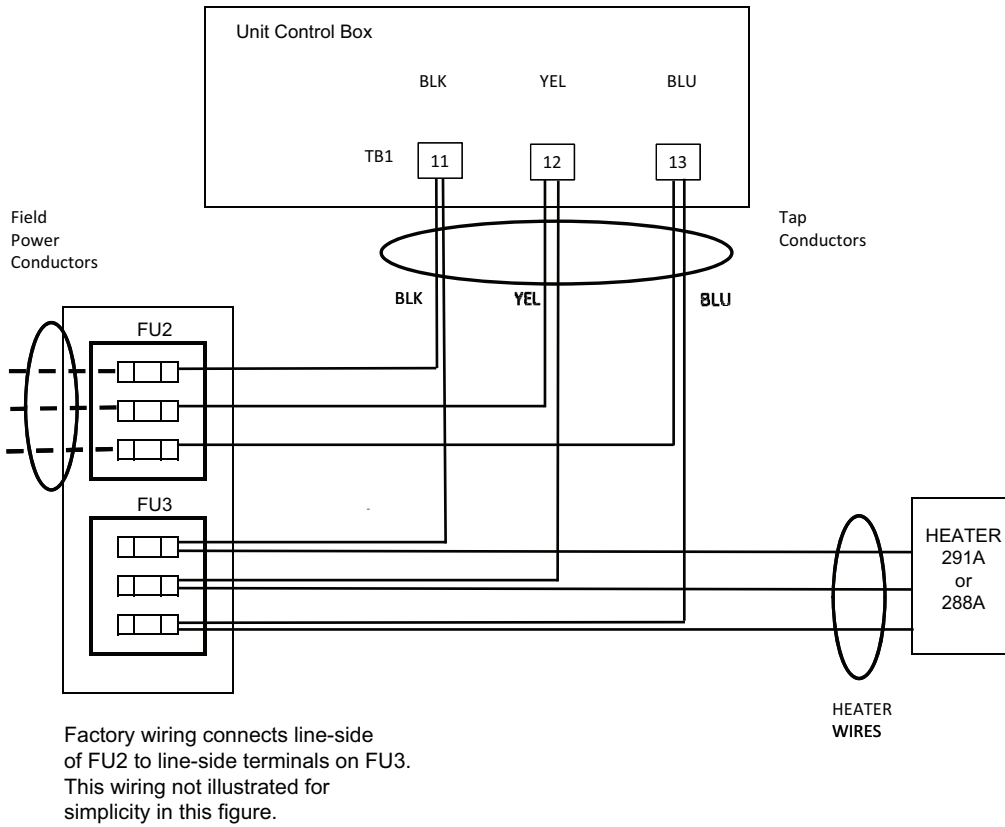
## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



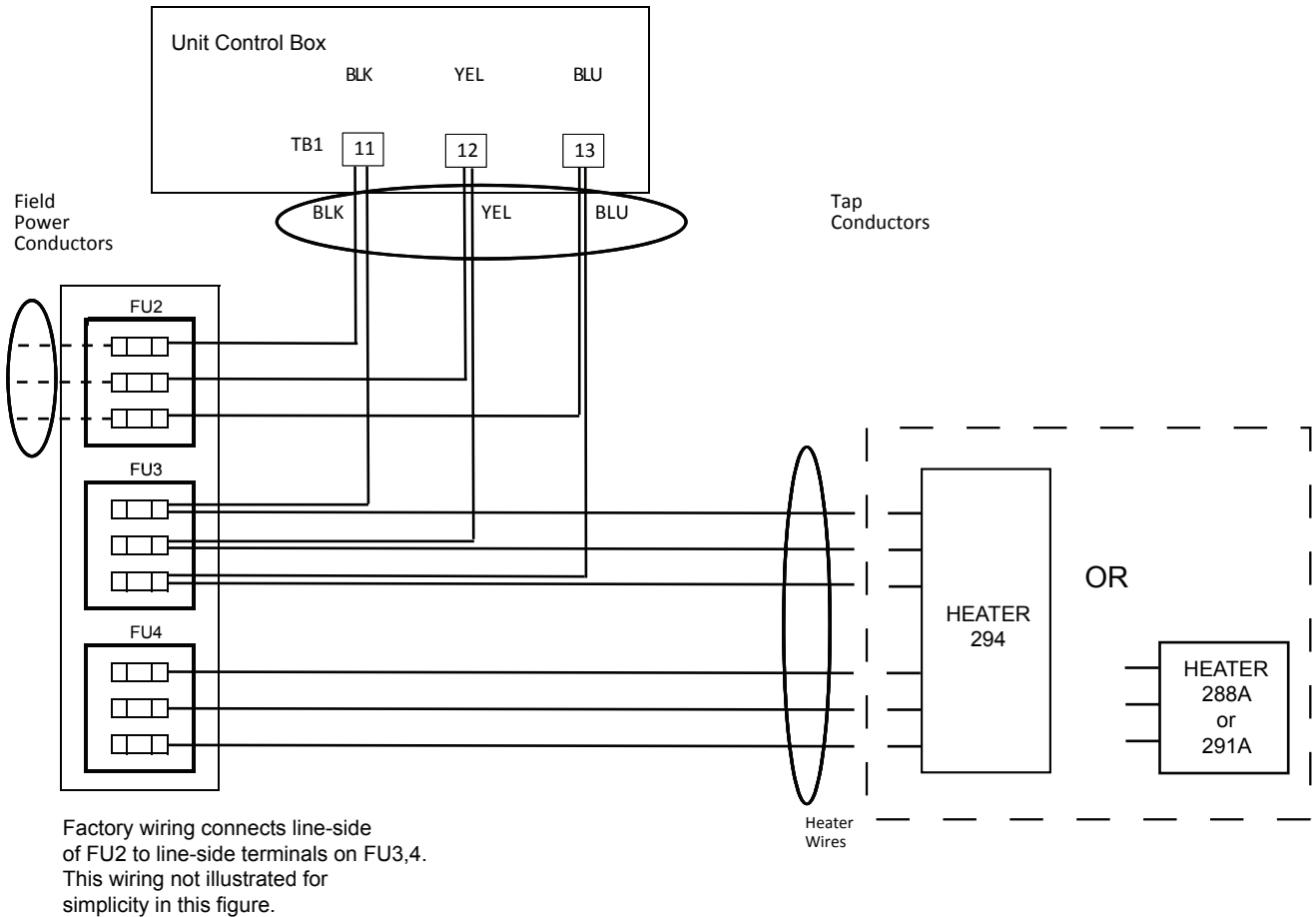
Factory wiring connects line-side of TB to line-side terminals on FU2-FU6. This wiring not illustrated for simplicity in this figure.

**Fig. AV — Heat Pump Single Point Box CRSINGLE054A00 (HP-1, Size 14; HP-2, Size 12)**

## APPENDIX C — HP-1, HP-2 HEAT PUMP APPLICATIONS



**Fig. AW — Heat Pump Single Point Box CRSINGLE049A00 (HP-2, Size 12)**



**Fig. AX — Heat Pump Single Point Box CRSINGLE051A00 (HP-2, Size 12)**

## APPENDIX D — ELECTRIC HEATER DATA

**Table D — Electric Heater Data (CRHEATERnnnn00)**

SALES PKG NBR	HEATER MODEL NBR	VOLTS	kW	FLA 1-PH	FLA 3-PH	QTY CIRS	USED ON AC-1	USED ON HP-1	USED ON AC-2	USED ON HP-2	USED ON AC-3															
101A	001A	208/240	3.3/4.4	15.9/18.6	9.4/10.6	1	04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06															
102A	002A		4.9/6.5	23.6/27.3	13.8/15.7	1																				
103B	003B		6.5/8.7	31.2/36.2	18.1/20.7	1																				
104B	004B		7.9/10.5	38.0/43.8	22.2/25.3	1																				
105A	005A		12.1/16.0	—	33.6/38.4	1																				
106A	006A	480	6.0	—	7.0	1						08-14 (090-150)	08-12 (090-121)	07-12 (072-120)	07-09 (072-102)											
107A	007A		8.8	—	10.5	1																				
108A	008A		11.5	—	13.8	1																				
109A	009A		14.0	—	16.8	1																				
110A	010A	208/240	12.0/16.0	—	33.3/38.5	1											12-14	12	11-12	08-12	08-09					
111A	011A		18.6/24.8	—	51.7/59.7	2																				
112A	012A		24.0/32.0	—	66.7/77.1	2																				
113B	013B	480	16.5	—	19.8	1	16 (180)	14 (150)	14 (150)	12 (120)	08-12															
114B	014B		27.8	—	33.4	1																				
115B	015B		33.0	—	39.7	1																				
116B	016B		13.9	—	16.7	1																				
117A	017A	208/240	7.8/10.4	—	21.7/25.0	1						04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06										
118A	018A	600	18.0	—	17.0	1																				
119A	019A		36.0	—	34.0	1																				
128B	128B	480	41.7	—	50.2	2											08-14 (090-150)	08-12 (090-121)	07-12 (072-120)	07-09 (072-102)						
129B	129B		50.0	—	60.1	2																				
264A	264A	208/240	4.9/6.5	—	13.5/15.6	1																16 (180)	14 (150)	14 (150)	12 (120)	08-12
265A	265A	480	6.0	—	7.2	1																				
266A	266A		11.5	—	13.8	1																				
267A	267A		14.0	—	16.8	1																				
268A	268A		23.0	—	27.7	2																				
269A	269A		25.5	—	30.7	2																				
288A	288A	208/240	7.5/10.0	—	21.3/24.5	1	04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06															
289A	289A	480	10.0	—	12.1	1																				
290A	290A	600	10.0	—	9.6	1																				
291A	291A	208/240	12.4/16.5	—	34.5/39.7	1																				
292A	292A	480	16.5	—	19.9	1																				
293A	293A	600	16.5	—	15.9	1																				
294A	294A	208/240	25.2/33.5	—	70.0/80.6	2																				
295A	295A	480	33.5	—	40.3	2																				
296A	296A	600	33.5	—	32.2	2						08-14 (090-150)	08-12 (090-121)	08-12 (090-121)	08-12 (090-121)											
297A	297A		10.0	—	9.6	1																				
299A	299A		28.0	—	26.9	1																				
301A	301A	23.0	—	23.0	2																					
308A	308A	18.0	—	17.3	1	16 (180)	14 (150)	14 (150)	12 (120)	08-12																
316A	316A	208/240	4.9/6.5	—	13.6/15.6						1															
317A	317A		12.0/16.0	—	33.4/38.5						1															
318A	318A		18.8/24.8	—	52.1/60.1						2															
319A	319A	480	6.0	—	7.2						1						04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06					
320A	320A		14.0	—	16.8						1															
321A	321A		25.5	—	30.1						1															
360A	360A	208/240	13.1/17.4	62.8/72.5	36.3/41.9						2	08-14 (090-150)	08-12 (090-121)	08-12 (090-121)	08-12 (090-121)											
361A	361A		15.8/21.0	75.8/87.5	43.8/50.5						2															
362A	362A		19.9/26.5	—	55.2/63.8						2															
363A	363A	208/240	31.8/42.4	—	88.4/102.0	2	16 (180)	14 (150)	14 (150)	12 (120)	08-12															
364A	364A		37.6/50.0	—	104.2/120.3	2																				
367A	367A	208/240	32.7/43.5	—	90.7/104.7	2																04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06
368A	368A		37.6/50.0	—	104.3/120.3	2																				
369A	369A		50.3/67.0	—	139.7/161.2	2																				
370A	370A		19.9/26.5	—	55.3/63.8	2																				



**APPENDIX D — ELECTRIC HEATER DATA**

**Table D — Electric Heater Data (CRHEATERnnnn00) (cont)**

SALES PKG NBR	HEATER MODEL NBR	VOLTS	kW	FLA 1-PH	FLA 3-PH	QTY CIRS	USED ON AC-1	USED ON HP-1	USED ON AC-2	USED ON HP-2	USED ON AC-3
371A	371A	480	23.0	—	27.7	2	04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06
372A	372A		23.0	—	27.7	2					
373A	373A		25.5	—	30.7	2					
374A	374A	480	43.5	—	52.3	2	16 (180)	14 (150)	14 (150)	12 (120)	08-12
375A	375A		50.0	—	60.2	2					
376A	376A		67.0	—	80.6	2					
377A	377A		26.5	—	31.9	2					
378A	378A	600	15.0	—	14.4	1	04-07 (036-072)	04-07 (036-072)	04-06 (036-060)	04-06 (036-060)	04-06
379A	379A		15.0	—	14.4	1					
380A	380A	600	54.0	—	52.0	2	12-14 (121-150)	120 (121)			
381A	381A	600	43.5	—	41.9	2	16 (180)	14 (150)	14 (150)	12 (120)	08-12
382A	382A		50.0	—	48.1	2					
383A	383A		67.0	—	64.5	2					
384A	384A		26.5	—	25.5	2					

**NOTES:**

1. "Used on" data is simplified to indicate general cabinet size use. Not every heater is approved for use on every unit size. Consult product data, electronic selection programs and price pages for detailed usage data.
2. Shaded areas indicate no usage of heater in this row on unit type in this column.
3. The first stage of CRHEATER128B00 and 129B00 is half of the full load kW.
4. The QTY CIRS is equal to the number of heat stages available. EXCEPTION: heaters 111A, 112A, 268A, 269A, and 318A have single stage heat.





