

INSTALLATION INSTRUCTIONS

AES Series Accessory Electric Heater and AXB Series Single Point Box For 6 thru 12-1/2 Ton PAS/E and PHS/E Series Package Units

These instructions must be read and understood completely before attempting installation.

General

Electric heater assembly consists of:

- | | |
|-------------------|-------------------------|
| 1 - Heater module | 1 - Red Wire (10 gage)* |
| 4 - Screws | 1 - Splicer Connector* |
| 1 - Wiring Label | 1 - Wire Tie* |

Single point kit consists of:

- 1 - Single point box
- 1 - Bushing
- 5 - Screws
- 1 - Bracket and conduit drip boot assembly.

* Supplied with electric heaters: AES007EHA & AES009EHA.

NOTE: Single point kit not required on standard efficiency 6 ton cooling units with MOCP of 60 and lower.

WARNING

Electrical shock hazard.

Installation or repairs made by unqualified persons can result in hazards to you and others. Installation must conform with local building codes or, in the absence of local codes, with National Electrical Code ANSI/NFPA 70-1996 or current edition.

The information contained in this manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.

Shut OFF electric power at unit disconnect and/or service panel before beginning the following procedures.

Failure to carefully read and follow all instructions in this manual can result in malfunction, property damage, personal injury, and/or death.

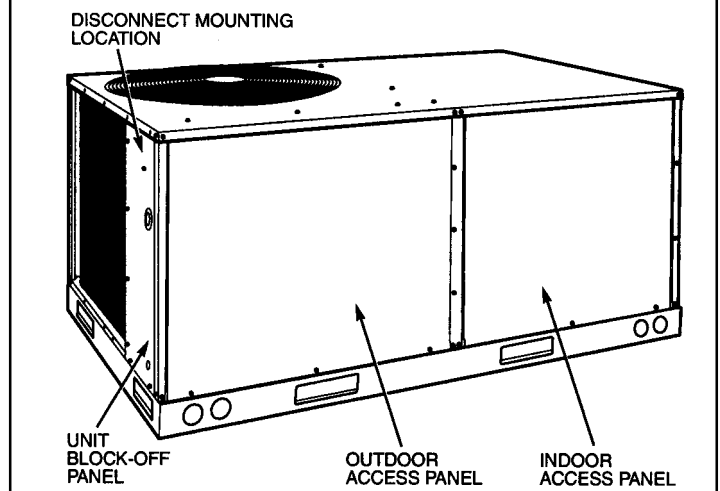
BEFORE STARTING INSTALLATION, DISCONNECT ALL POWER TO THE UNIT.

INSTALLATION:

1. Remove electric heater modules and single point box from packaging and inspect for damage.
2. Remove indoor and outdoor access panels. See Fig. 1.
3. Remove control box cover and center post. Save screws. See Fig. 2.
4. Remove the single point box cover. Secure single point box to the underside of the control box with 2 screws provided. See Fig. 3.
5. Secure the conduit drip boot bracket assembly to the back of the single point box with 2 of the screws provided. See Fig. 3. 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 in Fig. 4.

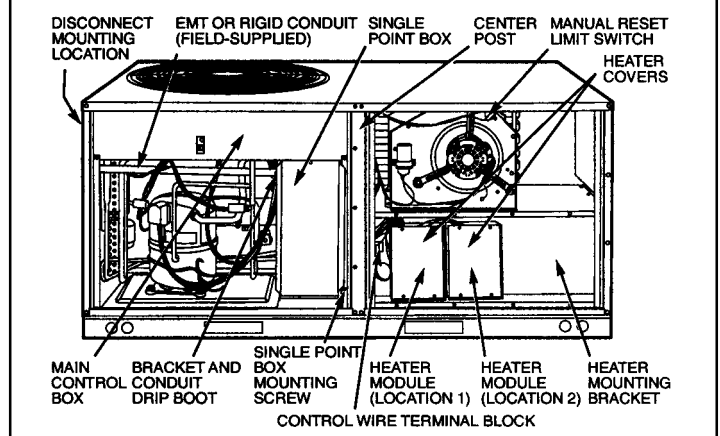
NOTE: The conduit drip boot and bracket are not used on standard efficiency 6 ton electric cooling units.

Figure 1 - Typical Access Panel Location



6. Remove heat cover(s) from heater mounting bracket. Save screws. Install single module electric heat option in location 1 (nearest the single point box). See Fig. 2.

Figure 2 - Typical Component Location



NOTE: Modules AES013, AES015, AES032, AES027, AES033, and AES036 are keyed and must be installed in location 1 even when used as part of a 2-module option. See Fig. 5.

7. Fasten heater module to heater mounting bracket with the 4 screws saved from Step 6. See Fig. 3.
8. Route power wires from heater module(s) through the foam bushing in the center partition and into the single point box. See Fig. 3.
9. Install bushing in hole between control box and single point box. Route unit power pigtailed through bushing. See Fig. 3.
10. Refer to Tables on pages 6 to 9 to determine appropriate power wiring figure for wiring single point box.

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11. Run control wires from heater module(s) to the control wire terminal block located next to the heater module(s). Connect the control wires as shown in Fig. 20

HEAT PUMP UNITS - The electric heat is internally wired as the second stage of heat.

ELECTRIC COOLING UNITS - Electric cooling units with 2 electric heater modules can be wired for one or 2 stage options as shown in Fig. 20 connect single module heater option control wire (violet) to TB4 terminal 1.

12. Replace the center post and secure the single point box to the center post with one screw. See Fig. 2.
13. Remove knockouts for appropriate size conduit from unit block-off panel and single point box. Install conduit (rigid or electro-metallic tubing) through conduit drip boot as shown in Figure 4. Drip boot will accept conduit sizes 3/4 in. to 1-1/2 inches. The drip boot eliminates the need for water-tight conduit fittings at the single point box.

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

14. Place adhesive-backed wiring label on flanged side of heater cover.
15. Fasten heater cover to heater module with 2 screws provided with heater. Flanges of cover should face out.
16. Set manual reset limit switch by depressing button located between the terminal on the switch. Refer to Figure 2 for switch location.
17. Close single point box cover and secure with one screw.
18. Replace control box cover, using remainder of screws saved from Step 3.
19. Replace indoor and outdoor panels with screws saved from Step 2.
20. Turn on unit power.

Figure 4 - Typical Conduit Installation

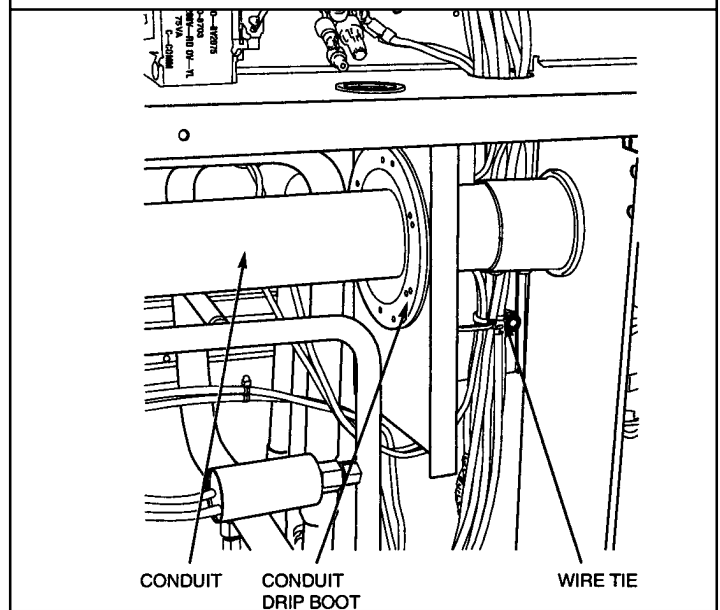


Figure 5 - Typical Electric Heat Installation

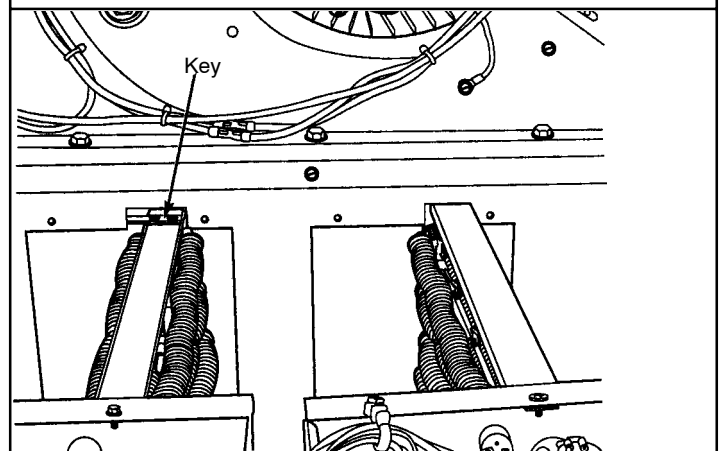


Figure 6 - Typical 3-Phase Wiring Installed

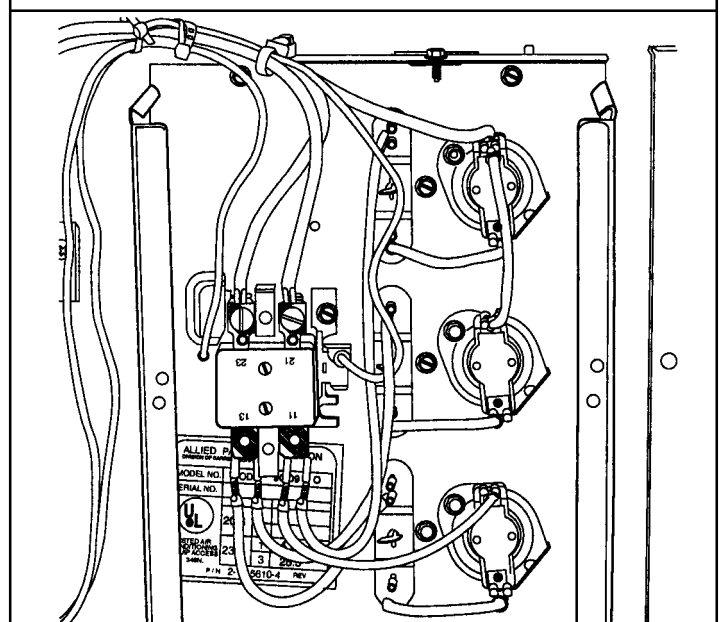
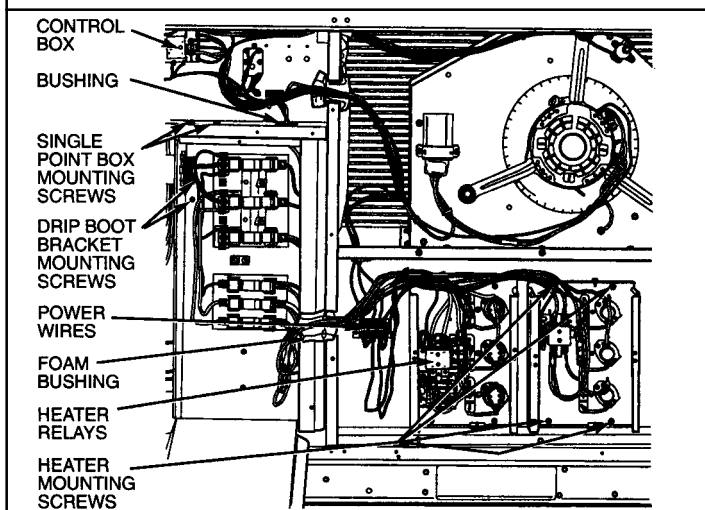
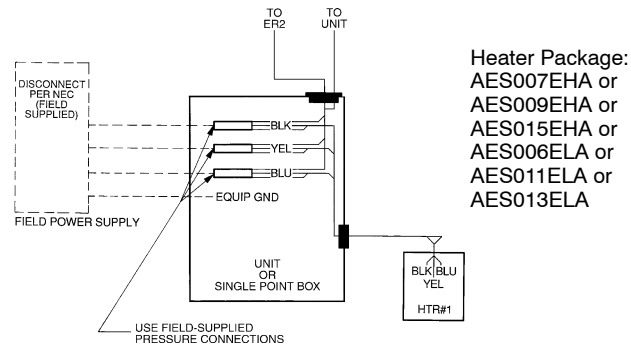


Figure 3 - Typical Single Point Kit Location

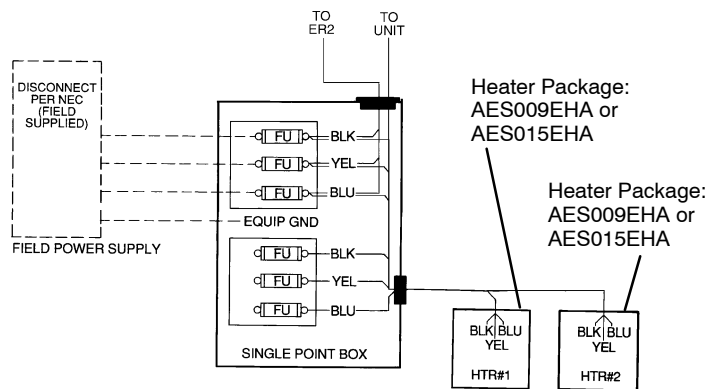


ELECTRIC HEATER POWER WIRING CONNECTIONS



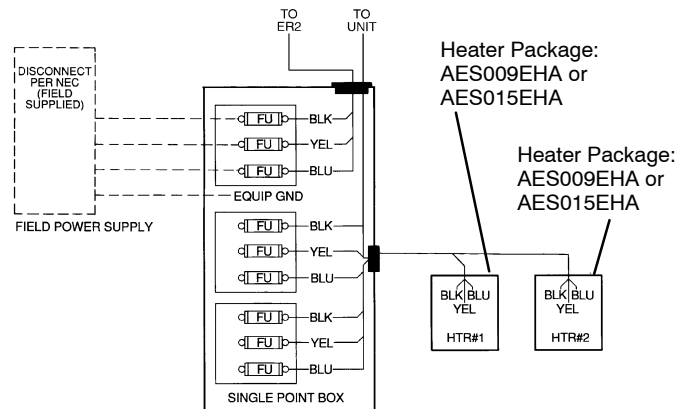
No Single Point Kit Required

**Figure 7 - Electric Cooling & Heat Pump Units,
208/230-3-60, Less than 60 Amps MOC
460-3-60, Less than 30 Amps MOC**



Single Point Kit - AXB002SPA

**Figure 8 - Electric Cooling & Heat Pump Units,
208/230-3-60, Greater than 60 Amps MOC**



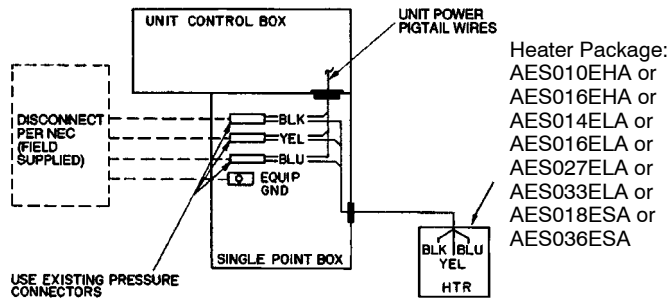
Single Point Kit - AXB003SPA

**Figure 9 - Heat Pump Units,
208/230-3-60, Greater than 60 Amps MOC**

LEGEND

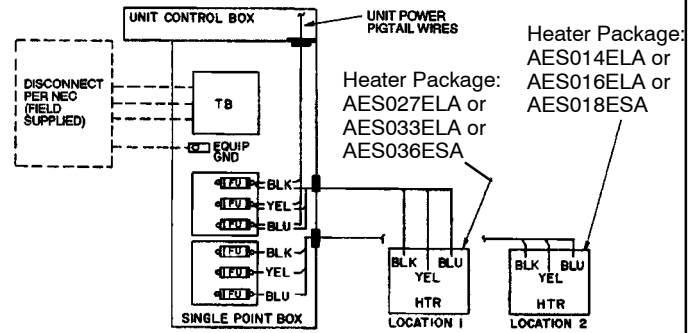
EQUIP - Equipment	HTR - Heater
FU - Fuse	NEC - National Electric Code
GND - Ground	TB - Terminal Block

ELECTRIC HEATER POWER WIRING CONNECTIONS



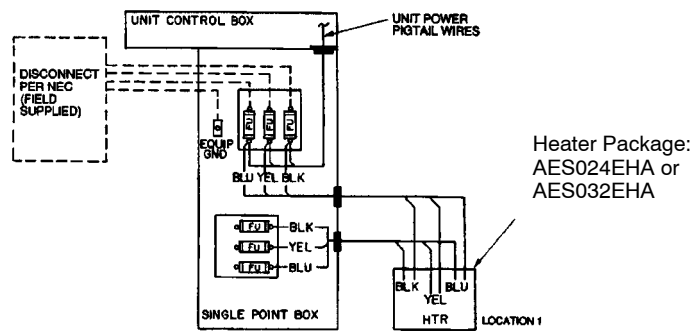
Single Point Kit - AXB006SPA & AXB011SPA

**Figure 10 - Electric Cooling & Heat Pump Units,
208/230-3-60, 460-3-60, & 575-3-60**



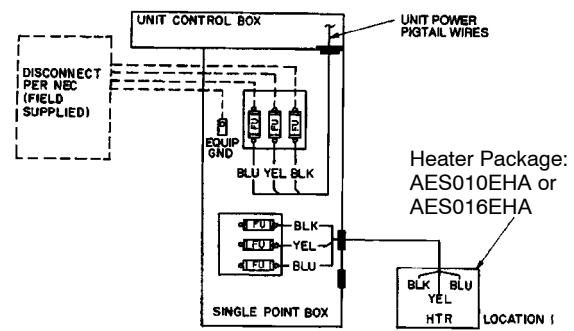
Single Point Kit - AXB008SPA & AXB014SPA

**Figure 13 - Electric Cooling Units
460-3-60, & 575-3-60**



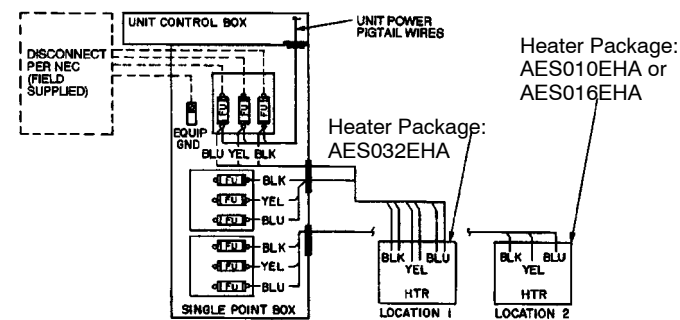
Single Point Kit - AXB007SPA & AXB012SPA

**Figure 11 - Electric Cooling Units,
208/230-3-60**



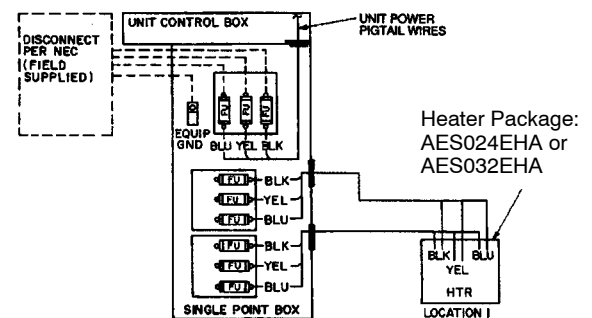
Single Point Kit - AXB007SPA & AXB012SPA

**Figure 14 - Heat Pump Units,
208/230-3-60**



Single Point Kit - AXB011SPA & AXB015SPA

**Figure 12 - Electric Cooling Units,
208/230-3-60**



Single Point Kit - AXB009SPA & AXB015SPA

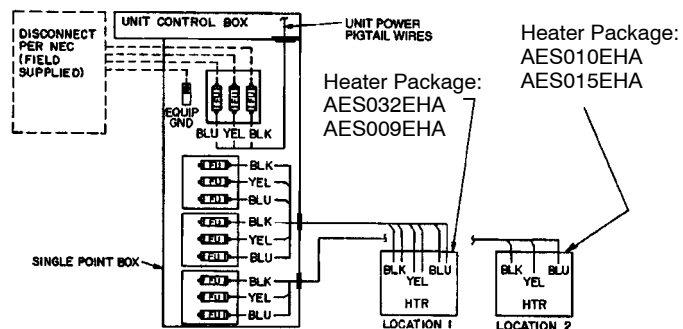
**Figure 15 - Heat Pump Units,
208/230-3-60**

LEGEND

EQUIP - Equipment
FU - Fuse
GND - Ground

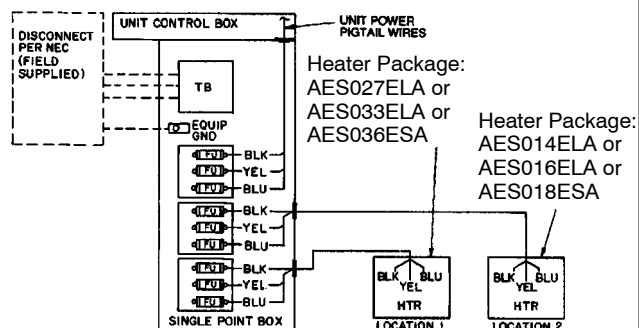
HTR - Heater
NEC - National Electric Code
TB - Terminal Block

ELECTRIC HEATER POWER WIRING CONNECTIONS



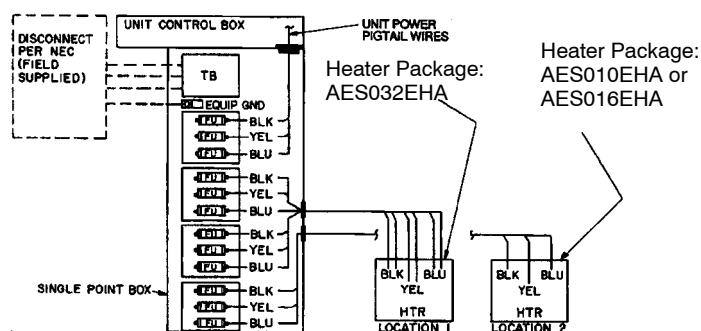
Single Point Kit - AXB013SPA

**Figure 16 - Heat Pump Units,
208/230-3-60**



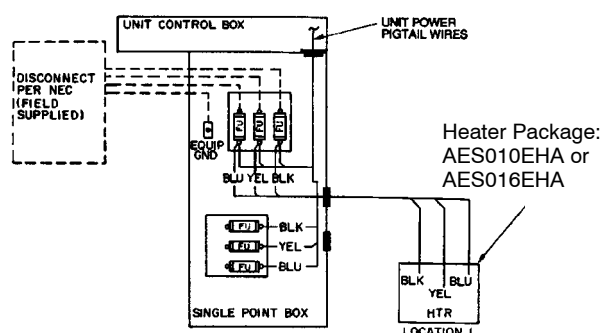
Single Point Kit - AXB010SPA & AXB016SPA

**Figure 19 - Heat Pump Units,
460-3-60 & 575-3-60**



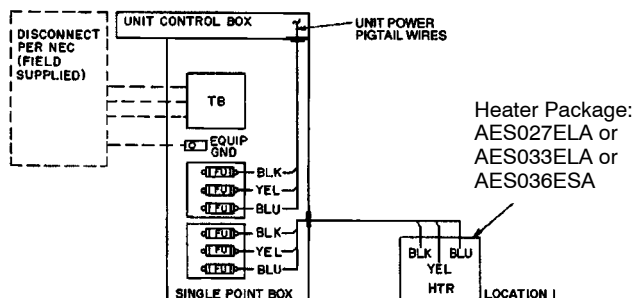
Single Point Kit - AXB017SPA

**Figure 17 - Heat Pump Units,
208/230-3-60**



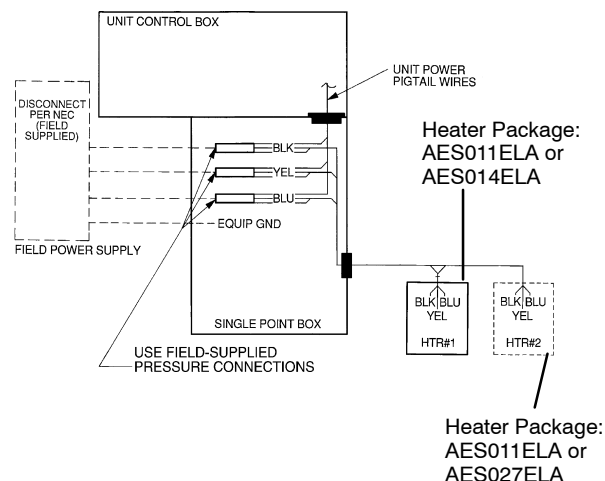
Single Point Kit - AXB012SPA

**Figure 20 - 12-1/2 Ton Electric Cooling Units,
208/230-3-60**



Single Point Kit - AXB008SPA & AXB014SPA

**Figure 18 - Heat Pump Units,
460-3-60 & 575-3-60**



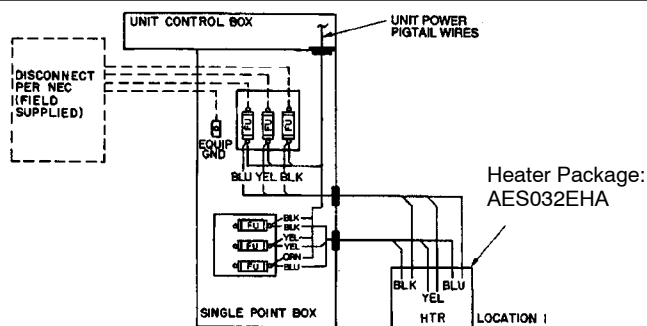
**Figure 21 - Electric Cooling Units,
460-3-60**

LEGEND

EQUIP - Equipment
FU - Fuse
GND - Ground

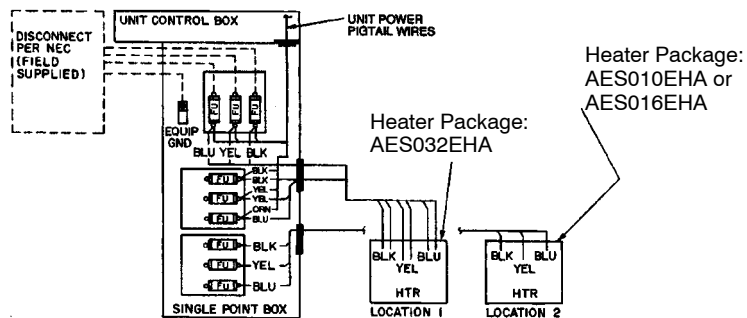
HTR - Heater
NEC - National Electric Code
TB - Terminal Block

ELECTRIC HEATER POWER WIRING CONNECTIONS



Single Point Kit - AXB012SPA

**Figure 22 - 12-1/2 Ton Electric Cooling Units,
208/230-3-600**



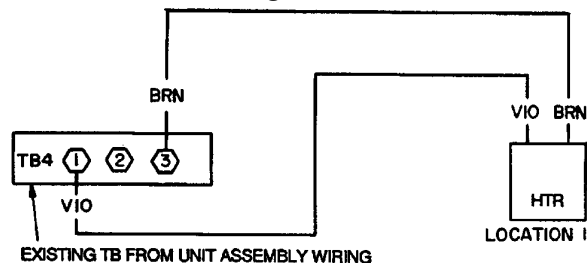
Single Point Kit - AXB015SPA

**Figure 23 - 12-1/2 Ton Electric Cooling Units,
208/230-3-600**

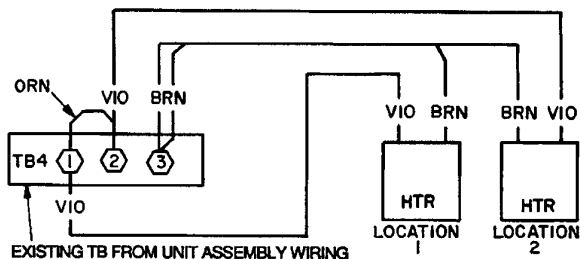
LEGEND

EQUIP - Equipment	HTR - Heater
FU - Fuse	NEC - National Electric Code
GND - Ground	TB - Terminal Block

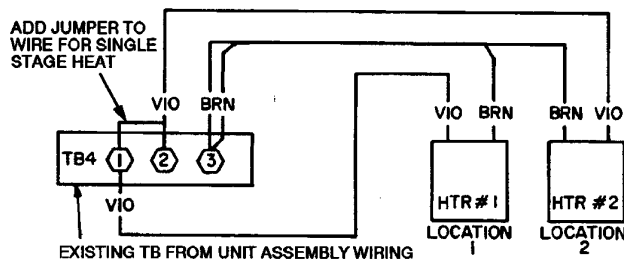
Figure 24 - Control Wiring



ALL SINGLE MODULE HEAT OPTIONS



HEAT PUMP UNITS — 2-MODULE HEAT OPTIONS



ELECTRIC COOLING UNITS — 2-MODULE HEAT OPTIONS

PAS SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
					Nominal kW	FLA	MCA	MOCF ***	FLA	LRA	
PAS072	208-3-60	1	AES007EHA	5.2	4.9	13.6	32.4	40	31	180	-
		1	AES009EHA		7.9	21.9	33.9	35	31		-
		1	AES015EHA		12	33.4	48.2	50	44		-
		1 ea.	AES009EHA, AES009EHA		15.8	43.8	61.2	70	56		AXB002SPA
		1 ea.	AES009EHA, AES015EHA		19.9	55.2	75.6	80	70		AXB002SPA
PAS072	230-3-60	1	AES007EHA	5.2	6.5	15.6	32.4	40	31	180	-
		1	AES009EHA		10.5	25.3	38.1	40	35		-
		1	AES015EHA		16	38.4	54.6	60	50		-
		1 ea.	AES009EHA, AES009EHA		21	50.5	69.6	70	64		AXB002SPA
		1 ea.	AES032EHA, AES010EHA		26.5	63.8	86.2	90	79		AXB002SPA
PAS072	460-3-60	1	AES006ELA	2.6	6	7.2	15.4	20	15	90	-
		1	AES011ELA		11.5	13.8	20.5	25	19		-
		1	AES013ELA		14	16.8	24.3	25	22		-
		1 ea.	AES011ELA, AES011ELA		23	27.7	37.8	40	35		-
		1 ea.	AES014ELA, AES027ELA		25.5	30.7	41.6	45	38		-
PAS090	208-3-60	1	AES010EHA	5.8	7.8	21.7	40.1	45	42	229	AXB006SPA
		1	AES016EHA		12.0	33.4	48.9	50	45		AXB006SPA
		1	AES024EHA		18.6	51.7	71.9	80	66		AXB007SPA
		1	AES032EHA		24.0	66.7	90.6	100	83		AXB007SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	117.7	125	108		AXB009SPA
PAS090	230-3-60	1	AES010EHA	5.8	10.4	25.0	40.1	45	42	229	AXB006SPA
		1	AES016EHA		16.0	38.5	55.4	60	51		AXB006SPA
		1	AES024EHA		24.8	59.7	81.8	90 #	75		AXB007SPA
		1	AES032EHA		32.0	77.0	103.5	110 #	95		AXB007SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	134.8	150 #	124		AXB009SPA
PAS090	460-3-60	1	AES014ELA	2.6	13.9	16.7	24.1	25	22	108	AXB006SPA
		1	AES016ELA		16.5	19.8	28.1	30	26		AXB006SPA
		1	AES027ELA		27.8	33.4	45.0	50	41		AXB006SPA
		1	AES033ELA		33.0	39.7	52.9	60	49		AXB006SPA
		1 ea.	AES014ELA, AES027ELA		41.7	50.2	65.9	70 #	61		AXB008SPA
PAS090	575-3-60	1	AES018ESA	2.6	17.0	17.1	23.9	25	22	97	AXB006SPA
		1	AES036ESA		34.0	34.1	45.3	50	42		AXB006SPA
PAS120	208-3-60	1	AES010EHA	5.8	7.8	21.7	43.1	50	45	307	AXB011SPA
		1	AES016EHA		12.0	33.4	48.9	60	45		AXB011SPA
		1	AES032EHA		24.0	66.7	90.6	100	83		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	117.7	125	108		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		37.5	104.2	137.5	150	127		AXB015SPA
PAS120	230-3-60	1	AES010EHA	5.8	10.4	25.0	43.1	50	45	307	AXB011SPA
		1	AES016EHA		16.0	38.5	55.4	60	51		AXB011SPA
		1	AES032EHA		32.0	77.0	103.5	110	95		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	134.8	150	124		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		50.0	120.3	127.5	150	145		AXB015SPA
PAS120	460-3-60	1	AES016ELA	2.6	16.5	19.8	28.1	30	26	152	AXB011SPA
		1	AES027ELA		27.8	33.4	45.0	50	41		AXB011SPA
		1	AES033ELA		33.0	39.7	52.9	60	49		AXB011SPA
		1 ea.	AES033ELA, AES014ELA		41.7	50.2	65.9	70	61		AXB014SPA
		1 ea.	AES033ELA, AES016ELA		50.0	60.1	63.4	70	72		AXB014SPA
PAS120	575-3-60	1	AES018ESA	2.6	17.0	17.1	23.9	25	22	107	AXB011SPA
		1	AES036ESA		34.0	34.1	45.3	50	42		AXB011SPA
		1 ea.	AES036ESA, AES018ESA		51.0	51.2	53.8	60	61		AXB014SPA
PAS150	208-3-60	1	AES010EHA	10.6	7.8	21.7	65.2	80	68	383	AXB012SPA
		1	AES016EHA		12.0	33.4	65.2	70	68		AXB012SPA
		1	AES032EHA		24.0	66.7	96.6	100	89		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	123.7	125	114		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		37.5	104.2	143.5	150	132		AXB015SPA

PAS SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY (CONT.)

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
					Nominal kW	FLA	MCA	MOCP ***	FLA	LRA	
PAS150	230-3-60	1	AES010EHA	10.6	10.4	25.0	65.2	80	68	383	AXB012SPA
		1	AES016EHA		16.0	38.5	65.2	70	68		AXB012SPA
		1	AES032EHA		32.0	77.0	109.5	110	101		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	140.8	150	129		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		50.0	120.3	133.5	150	151		AXB015SPA
PAS150	460-3-60	1	AES016ELA	4.8	16.5	19.8	30.8	40	31	192	AXB011SPA
		1	AES027ELA		27.8	33.4	47.8	50	44		AXB011SPA
		1	AES033ELA		33.0	39.7	55.6	60	51		AXB011SPA
		1 ea.	AES027ELA, AES014ELA		41.7	50.2	68.7	70	63		AXB014SPA
		1 ea.	AES033ELA, AES018ELA		50.0	60.1	66.1	80	75		AXB014SPA
PAS150	575-3-60	1	AES018ESA	4.8	17.0	17.1	26.1	30	25	154	AXB011SPA
		1	AES036ESA		34.0	34.1	47.5	50	44		AXB011SPA
		1 ea.	AES036ESA, AES018ESA		51.0	51.2	56.0	60	63		AXB014SPA

PAE SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
					Nominal kW	FLA	MCA	MOCP ***	FLA	LRA	
PAE072	208-3-60	1	AES007EHA	5.2	4.9	13.6	32.4	40	31	180	-
		1	AES009EHA		7.9	21.9	33.9	35	31		-
		1	AES015EHA		12	33.4	48.2	50	44		-
		1 ea.	AES009EHA, AES009EHA		15.8	43.8	61.2	70	56		AXB002SPA
		1 ea.	AES009EHA, AES015EHA		19.9	55.2	75.6	80	70		AXB002SPA
PAE072	230-3-60	1	AES007EHA	5.2	6.5	15.6	32.4	40	31	180	-
		1	AES009EHA		10.5	25.3	38.1	40	35		-
		1	AES015EHA		16	38.4	54.6	60	50		-
		1 ea.	AES009EHA, AES009EHA		21	50.5	69.6	70	64		AXB002SPA
		1 ea.	AES032EHA, AES010EHA		26.5	63.8	86.2	90	79		AXB002SPA
PAE072	460-3-60	1	AES006ELA	2.6	6	7.2	15.4	20	15	90	-
		1	AES011ELA		11.5	13.8	20.5	25	19		-
		1	AES013ELA		14	16.8	24.3	25	22		-
		1 ea.	AES011ELA, AES011ELA		23	27.7	37.8	40	35		-
		1 ea.	AES014ELA, AES027ELA		25.5	30.7	41.6	45	38		-
PAE090	208-3-60	1	AES010EHA	5.8	7.8	21.7	44.3	45	42	229	AXB006SPA
		1	AES016EHA		12.0	33.4	48.9	50	45		AXB006SPA
		1	AES024EHA		18.6	51.7	71.9	80	66		AXB007SPA
		1	AES032EHA		24.0	66.7	90.6	100	83		AXB007SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	117.7	125	108		AXB009SPA
PAE090	230-3-60	1	AES010EHA	5.8	10.4	25.0	44.3	45	42	229	AXB006SPA
		1	AES016EHA		16.0	38.5	55.4	60	51		AXB006SPA
		1	AES024EHA		24.8	59.7	81.8	90 #	75		AXB007SPA
		1	AES032EHA		32.0	77.0	103.5	110 #	95		AXB007SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	134.8	150 #	124		AXB009SPA
PAE090	460-3-60	1	AES014ELA	2.6	13.9	16.7	24.1	25	25	108	AXB006SPA
		1	AES016ELA		16.5	19.8	28.1	30	26		AXB006SPA
		1	AES027ELA		27.8	33.4	45.0	50	41		AXB006SPA
		1	AES033ELA		33.0	39.7	52.9	60	49		AXB006SPA
		1 ea.	AES014ELA, AES027ELA		41.7	50.2	65.9	70 #	61		AXB008SPA
PAE090	575-3-60	1	AES018ESA	2.6	17.0	17.1	23.9	25	22	97	AXB006SPA
		1	AES036ESA		34.0	34.1	45.3	50	42		AXB006SPA

NOTE: See legend and notes for accessories.

PAE SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY (CONT.)

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
					Nominal kW	FLA	MCA	MOCPS ***	FLA	LRA	
PAE102	208-3-60	1	AES010EHA	5.8	7.8	21.7	44.3	45	42	229	AXB006SPA
		1	AES016EHA		12.0	33.4	48.9	50	45		AXB006SPA
		1	AES024EHA		18.6	51.7	71.9	80	66		AXB007SPA
		1	AES032EHA		24.0	66.7	90.6	100	83		AXB007SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	117.7	125	108		AXB009SPA
PAE102	230-3-60	1	AES010EHA	5.8	10.4	25.0	44.3	45	42	229	AXB006SPA
		1	AES016EHA		16.0	38.5	55.4	60	51		AXB006SPA
		1	AES024EHA		24.8	59.7	81.8	90 #	75		AXB007SPA
		1	AES032EHA		32.0	77.0	103.5	110 #	95		AXB007SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	134.8	150 #	124		AXB009SPA
PAE102	460-3-60	1	AES014ELA	2.6	13.9	16.7	24.1	25	25	108	AXB006SPA
		1	AES016ELA		16.5	19.8	28.1	30	26		AXB006SPA
		1	AES027ELA		27.8	33.4	45.0	50	41		AXB006SPA
		1	AES033ELA		33.0	39.7	52.9	60	49		AXB006SPA
		1 ea.	AES014ELA, AES027ELA		41.7	50.2	65.9	70 #	61		AXB008SPA
PAE102	575-3-60	1	AES018ESA	2.6	17.0	17.1	23.9	25	22	97	AXB006SPA
		1	AES036ESA		34.0	34.1	45.3	50	42		AXB006SPA
PAE120	208-3-60	1	AES010EHA	5.8	7.8	21.7	43.1	50	45	307	AXB011SPA
		1	AES016EHA		12.0	33.4	48.9	60	45		AXB011SPA
		1	AES032EHA		24.0	66.7	90.6	100	83		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	117.7	125	108		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		37.5	104.2	137.5	150	127		AXB015SPA
PAE120	230-3-60	1	AES010EHA	5.8	10.4	25.0	43.1	50	45	307	AXB011SPA
		1	AES016EHA		16.0	38.5	55.4	60	51		AXB011SPA
		1	AES032EHA		32.0	77.0	103.5	110	95		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	134.8	150	124		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		50.0	120.3	127.5	175	148		AXB015SPA
PAE120	460-3-60	1	AES016ELA	2.6	16.5	19.8	28.1	30	26	152	AXB011SPA
		1	AES027ELA		27.8	33.4	45.0	50	41		AXB011SPA
		1	AES033ELA		33.0	39.7	52.9	60	49		AXB011SPA
		1 ea.	AES033ELA, AES014ELA		41.7	50.2	65.9	70	61		AXB014SPA
		1 ea.	AES033ELA, AES016ELA		50.0	60.1	63.4	70	72		AXB014SPA
PAE120	575-3-60	1	AES018ESA	2.6	17.0	17.1	23.9	25	22	115	AXB011SPA
		1	AES036ESA		34.0	34.1	45.3	50	42		AXB011SPA
		1 ea.	AES036ESA, AES018ESA		51.0	51.2	53.8	60	61		AXB014SPA
PAE150	208-3-60	1	AES010EHA	15.0	7.8	21.7	60.6	70	64	426	AXB012SPA
		1	AES016EHA		12.0	33.4	60.6	90	64		AXB012SPA
		1	AES032EHA		24.0	66.7	102.1	110	94		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		31.9	88.4	129.2	150	119		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		37.5	104.2	149.0	150	137		AXB015SPA
PAE150	230-3-60	1	AES010EHA	15.0	10.4	25.0	60.6	70	64	426	AXB012SPA
		1	AES016EHA		16.0	38.5	66.9	90	64		AXB012SPA
		1	AES032EHA		32.0	77.0	115.0	125	106		AXB012SPA
		1 ea.	AES032EHA, AES010EHA		42.4	102.0	146.3	150	135		AXB015SPA
		1 ea.	AES032EHA, AES016EHA		50.0	120.3	139.0	150	156		AXB015SPA
PAE150	460-3-60	1	AES016ELA	7.4	16.5	19.8	34.1	40	31	197	AXB011SPA
		1	AES027ELA		27.8	33.4	51.0	60	47		AXB011SPA
		1	AES033ELA		33.0	39.7	58.9	60	54		AXB011SPA
		1 ea.	AES027ELA, AES014ELA		41.7	50.2	71.9	80	66		AXB014SPA
		1 ea.	AES033ELA, AES016ELA		50.0	60.1	69.4	80	78		AXB014SPA
PAE150	575-3-60	1	AES018ESA	7.4	17.0	17.1	28.7	35	26	154	AXB011SPA
		1	AES036ESA		34.0	34.1	50.1	60	46		AXB011SPA
		1 ea.	AES036ESA, AES018ESA		51.0	51.2	58.6	70	66		AXB014SPA

NOTE: See legend and notes for accessories.

PHS SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Cond. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
						Nominal kW	FLA	MCA	MOCP ***	FLA	LRA	
PHS072	208-3-60	1	AES007EHA	5.8	1.4 each	4.9	13.6	52.6	60	50	204	-
		1	AES009EHA			7.9	21.9	63	70	60	212	AXB002SPA
		1	AES015EHA			12	33.3	77.2	80	73	223	AXB002SPA
		1 ea.	AES009EHA, AES009EHA			15.8	43.9	90.5	100	85	234	AXB003SPA
		1 ea.	AES009EHA, AES015EHA			19.9	55.2	104.6	110	98	245	AXB003SPA
PHS072	230-3-60	1	AES007EHA	5.8	1.4 each	6.5	15.6	55.1	60	52	206	-
		1	AES009EHA			10.5	25.3	67.2	70	63	215	AXB002SPA
		1	AES015EHA			16	38.5	83.7	90	79	229	AXB002SPA
		1 ea.	AES009EHA, AES009EHA			21	50.5	98.7	100	92	241	AXB003SPA
		1 ea.	AES009EHA, AES015EHA			26.5	63.8	115.3	125	108	254	AXB003SPA
PHS072	460-3-60	1	AES006ELA	2.6	.7 each	6	7.2	26.6	30	25	102	-
		1	AES011ELA			11.5	13.8	34.8	35	33	109	-
		1	AES013ELA			14	16.8	38.6	40	36	112	-
		1 ea.	AES011ELA, AES011ELA			23	27.7	52.2	60	49	123	-
		1 ea.	AES014ELA, AES027ELA			25.5	30.7	55.9	60	52	126	-
PHS090	208-3-60	1	AES010EHA	5.8	1.4 each	7.8	21.7	65.9	70	66	251	AXB007SPA
		1	AES016EHA			12.0	33.4	80.4	90	79	262	AXB007SPA
		1	AES024EHA			18.6	51.7	103.3	110	100	281	AXB009SPA
		1	AES032EHA			24.0	66.7	122.0	125	117	296	AXB009SPA
		1 ea.	AES032EHA, AES010EHA			31.9	88.4	149.1	150	142	317	AXB013SPA
PHS090	230-3-60	1	AES010EHA	5.8	1.4 each	10.4	25.0	70.0	80	69	254	AXB007SPA
		1	AES016EHA			16.0	38.5	86.9	90	85	268	AXB007SPA
		1	AES024EHA			24.8	59.7	113.4	125 #	109	289	AXB009SPA
		1	AES032EHA			32.0	77.0	135.0	150 #	129	306	AXB009SPA
		1 ea.	AES032EHA, AES010EHA			42.4	102.0	166.3	175 #	158	331	AXB013SPA
PHS090	460-3-60	1	AES014ELA	2.6	.7 each	14.0	16.7	40	45	39	124	AXB006SPA
		1	AES016ELA			16.5	19.8	43.8	45	43	128	AXB006SPA
		1	AES027ELA			27.8	33.4	60.8	70	58	141	AXB008SPA
		1	AES033ELA			33.0	39.7	68.7	70	66	147	AXB008SPA
		1 ea.	AES014ELA, AES027ELA			41.7	50.2	81.8	90 #	78	158	AXB010SPA
PHS090	575-3-60	1	AES018ESA	2.6	.7 each	17.0	17.1	36.7	40	36	114	AXB006SPA
		1	AES036ESA			34.0	34.1	68.0	60	55	131	AXB006SPA
PHS120	208-3-60	1	AES010EHA	5.8	1.4 each	7.8	21.7	74.4	80	74	317	AXB012SPA
		1	AES016EHA			12.0	33.4	88.9	90	88	328	AXB012SPA
		1	AES032EHA			24.0	66.7	130.6	150	126	362	AXB015SPA
		1 ea.	AES032EHA, AES010EHA			31.9	88.4	157.7	175	151	383	AXB017SPA
		1 ea.	AES032EHA, AES016EHA			37.5	104.2	177.8	200	170	399	AXB017SPA
PHS120	230-3-60	1	AES010EHA	5.8	1.4 each	10.4	25.0	78.6	80	78	320	AXB012SPA
		1	AES016EHA			16.0	38.5	95.4	100	94	334	AXB012SPA
		1	AES032EHA			32.0	77.0	143.6	150	138	372	AXB015SPA
		1 ea.	AES032EHA, AES010EHA			42.4	102.0	174.8	175	167	397	AXB017SPA
		1 ea.	AES032EHA, AES016EHA			50.0	120.3	167.6	175	188	415	AXB017SPA
PHS120	460-3-60	1	AES016ELA	2.6	.7 each	16.5	19.8	48.1	50	47	163	AXB011SPA
		1	AES027ELA			27.8	33.4	65.1	70	63	176	AXB014SPA
		1	AES033ELA			33.0	39.7	73.0	80	70	183	AXB014SPA
		1 ea.	AES027ELA, AES014ELA			41.7	50.2	86.1	90	82	193	AXB016SPA
		1 ea.	AES033ELA, AES016ELA			50.0	60.1	83.5	90	93	203	AXB016SPA
PHS120	575-3-60	1	AES018ESA	2.6	.7 each	17.0	17.1	40.1	50	39	135	AXB011SPA
		1	AES036ESA			34.0	34.1	61.4	70	59	152	AXB014SPA
		1 ea.	AES036ESA, AES018ESA			51.0	51.2	69.9	70	78	169	AXB016SPA

NOTE: See legend and notes for accessories.

PHE SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Cond. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
						Nominal kW	FLA	MCA	MOCP ***	FLA	LRA	
PHE072	208-3-60	1	AES007EHA	5.8	1.4 each	4.9	13.6	49.8	50	47	214	-
		1	AES009EHA			7.9	21.9	60.2	70	57	222	AXB002SPA
		1	AES015EHA			12	33.3	74.5	80	70	233	AXB002SPA
		1 ea.	AES009EHA, AES009EHA			15.8	43.9	87.7	90	82	244	AXB003SPA
		1 ea.	AES009EHA, AES015EHA			19.9	55.2	101.8	110	95	255	AXB003SPA
PHE072	230-3-60	1	AES007EHA	5.8	1.4 each	6.5	15.6	52.3	60	50	216	-
		1	AES009EHA			10.5	25.3	64.5	70	61	225	AXB002SPA
		1	AES015EHA			16	38.5	81	90	76	239	AXB002SPA
		1 ea.	AES009EHA, AES009EHA			21	50.5	96	100	90	251	AXB003SPA
		1 ea.	AES009EHA, AES015EHA			26.5	63.8	112.6	125	105	264	AXB003SPA
PHE072	460-3-60	1	AES006ELA	2.6	.7 each	6	7.2	24.2	25	23	99	-
		1	AES011ELA			11.5	13.8	32.5	35	31	106	-
		1	AES013ELA			14	16.8	36.2	40	34	109	-
		1 ea.	AES011ELA, AES011ELA			23	27.7	49.8	50	47	120	-
		1 ea.	AES014ELA, AES027ELA			25.5	30.7	53.6	60	50	123	-
PHE090	208-3-60	1	AES010EHA	7.5	1.4 each	7.8	21.7	65.3	70	65	264	AXB007SPA
		1	AES016EHA			12.0	33.4	79.8	80	79	275	AXB007SPA
		1	AES024EHA			18.6	51.7	102.7	110	100	294	AXB009SPA
		1	AES032EHA			24.0	66.7	121.5	125	117	309	AXB009SPA
		1 ea.	AES032EHA, AES010EHA			31.9	88.4	148.6	150	142	330	AXB013SPA
PHE090	230-3-60	1	AES010EHA	7.5	1.4 each	10.4	25.0	69.5	70	69	267	AXB007SPA
		1	AES016EHA			16.0	38.5	86.3	90	85	281	AXB007SPA
		1	AES024EHA			24.8	59.7	112.8	125 #	109	302	AXB009SPA
		1	AES032EHA			32.0	77.0	134.5	150 #	129	319	AXB009SPA
		1 ea.	AES032EHA, AES010EHA			42.4	102.0	165.7	175 #	158	344	AXB013SPA
PHE090	460-3-60	1	AES014ELA	3.4	.7 each	14.0	16.7	40.1	45	39	138	AXB006SPA
		1	AES016ELA			16.5	19.8	44.0	45	43	141	AXB006SPA
		1	AES027ELA			27.8	33.4	61.0	70	58	155	AXB008SPA
		1	AES033ELA			33.0	39.7	68.8	70	66	161	AXB008SPA
		1 ea.	AES014ELA, AES027ELA			41.7	50.2	82.0	90 #	78	171	AXB010SPA
PHE102	208-3-60	1	AES010EHA	7.5	1.4 each	7.8	21.7	68.4	70	68	298	AXB0012SPA
		1	AES016EHA			12.0	33.4	82.9	80	82	309	AXB012SPA
		1	AES024EHA			18.6	51.7	105.8	110	103	328	AXB015SPA
		1	AES032EHA			24.0	66.7	124.5	125	120	343	AXB015SPA
		1 ea.	AES032EHA, AES010EHA			31.9	88.4	151.7	150	145	364	AXB017SPA
PHE102	230-3-60	1	AES010EHA	7.5	1.4 each	10.4	25.0	72.5	70	72	301	AXB012SPA
		1	AES016EHA			16.0	38.5	89.4	90	88	315	AXB012SPA
		1	AES024EHA			24.8	59.7	115.9	125 #	112	336	AXB015SPA
		1	AES032EHA			32.0	77.0	137.5	150 #	132	353	AXB015SPA
		1 ea.	AES032EHA, AES010EHA			42.4	102.0	168.8	175 #	161	378	AXB017SPA
PHE102	460-3-60	1	AES014ELA	3.4	.7 each	14.0	16.7	43.2	45	43	160	AXB011SPA
		1	AES016ELA			16.5	19.8	47	45	46	163	AXB011SPA
		1	AES027ELA			27.8	33.4	64	70	62	177	AXB014SPA
		1	AES033ELA			33.0	39.7	71.9	70	69	183	AXB014SPA
		1 ea.	AES014ELA, AES027ELA			41.7	50.2	85	90 #	81	193	AXB016SPA

NOTE: See legend and notes for accessories.

PHE SERIES ELECTRICAL DATA - ELECTRIC HEAT ACCESSORY (CONT.)

Unit	Voltage	Qty	Model Number	Evap. Fan Motor FLA	Cond. Fan Motor FLA	Electric Heater *		Power Supply		Disconnect Size **		Single Point Kit Required
						Nominal kW	FLA	MCA	MOCP ***	FLA	LRA	
PHE120	208-3-60	1	AES010EHA	10.6	1.4 each	7.8	21.7	84.0	90	85	358	AXB012SPA
		1	AES016EHA			12.0	33.4	98.5	100	98	370	AXB012SPA
		1	AES032EHA			24.0	66.7	140.1	150	136	403	AXB015SPA
		1 ea.	AES032EHA, AES010EHA			31.9	88.4	167.2	175	161	425	AXB015SPA
		1 ea.	AES032EHA, AES016EHA			37.5	104.2	187.3	200	180	441	AXB017SPA
PHE120	230-3-60	1	AES010EHA	10.6	1.4 each	10.4	25.0	88.1	90	89	362	AXB012SPA
		1	AES016EHA			16.0	38.5	105.0	110	104	375	AXB012SPA
		1	AES032EHA			32.0	77.0	153.1	175	148	414	AXB015SPA
		1 ea.	AES032EHA, AES010EHA			42.4	102.0	184.3	200	177	439	AXB017SPA
		1 ea.	AES032EHA, AES016EHA			50.0	120.3	177.1	200	198	457	AXB017SPA
PHE120	460-3-60	1	AES016ELA	4.8	.7 each	16.5	19.8	53.3	60	53	189	AXB011SPA
		1	AES027ELA			27.8	33.4	70.5	80	69	203	AXB014SPA
		1	AES033ELA			33.0	39.7	78.3	80	76	209	AXB014SPA
		1 ea.	AES027ELA, AES014ELA			41.7	50.2	91.5	100	88	220	AXB016SPA
		1 ea.	AES033ELA, AES016ELA			50.0	60.1	88.8	100	99	230	AXB016SPA

NOTE: See legend and notes for accessories.

ACCESSORY STATIC PRESSURE (in. wg)

Component	CFM									
	2250	2500	3000	3500	4000	4500	5000	5500	6000	6250
1 Heater Module	0.02	0.03	0.05	0.07	0.08	0.10	0.12	0.14	0.16	0.17
2 Heater Modules	0.03	0.05	0.07	0.09	0.12	0.14	0.16	0.19	0.21	0.20

The static pressure must be added to external static pressure. The sum and the evaporator entering-air cfm should then be used in conjunction with the Fan Performance tables to determine blower rpm and watts.

MULTIPLICATION FACTORS

Heater Rating Voltage	ACTUAL HEATER VOLTAGE									
	208	230	240	380	440	460	480	550	575	600
240 Volt	0.751	0.918	1.000							
480 Volt				0.626	0.840	0.918	1.000			
600 Volt								0.840	0.918	1.000

NOTE: The following equation converts kW of heat energy to Btuh: kW x 3.412 = Btuh.

LEGEND

FLA - Full Load Amps

MCA - Minimum Circuit Amps

MOCP - Maximum Overcurrent Protection

LRA - Locked Rotor Amps

NEC - National Electrical Code

* Heater capacity (kW) is based on heater voltage of 208 v, 240 v, 480 v, and 600 v. Heaters are rated at 240 v, 480 v, or 600 v. If power distribution voltage to unit varies from rated heater voltage, heater kW will vary accordingly. To determine heater

** Used to determine minimum disconnect size per NEC.

*** Fuse or HACR circuit breaker.

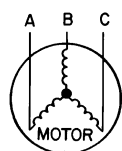
Fusing in the single point kit provides the required branch circuit protection.

NOTES

1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. Canadian units may be fuse or circuit breaker.

2. Unbalanced 3-Phase Supply Voltage - Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent of voltage imbalance.

EXAMPLE: Supply voltage is 460-3-60.



AB = 452 v
BC = 464 v
AC = 455 v

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3}$$

$$= \frac{1371}{3} = 457$$

Determine maximum deviation from average voltage.

$$(AB) 457 - 452 = 5 \text{ V}$$

$$(BC) 464 - 457 = 7 \text{ V}$$

$$(AB) 457 - 455 = 2 \text{ V}$$

Maximum deviation is 7 v.

Determine percent voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457}$$

$$= 1.53\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2 %, contact your local electric company immediately.