50LC*B
Single Package Rooftop
Cooling Only with
Multi−Zone VAV (Variable Air Volume) Operation
with Puron® (R−410A) Refrigerant
Sizes: 14, 17, 20, 24, 26

Carrier
United Technologies
turn to the experts

Installation Instructions

NOTE: Read the entire instruction manual before starting the installation

TABLE OF CONTENTS

SAFETY CONSIDERATIONS

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloths for brazing operations and have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and appropriate national electrical codes (in USA, ANSI/NFPA70, National Electrical Code (NEC); in Canada, CSA C22.1) for special requirements.

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

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could cause personal injury or death.

Before performing service or maintenance operations on unit, always turn off main power switch to unit and install lock(s) and lockout tag(s). Unit may have more than one power switch.

⚠ WARNING

UNIT OPERATION AND SAFETY HAZARD

Failure to follow this warning could cause personal injury, death and/or equipment damage.

Puron® (R-410A) refrigerant systems operate at higher pressures than standard R-22 systems. Do not use R-22 service equipment or components on Puron refrigerant equipment.

⚠ WARNING

PERSONAL INJURY AND ENVIRONMENTAL HAZARD

Failure to follow this warning could cause personal injury or death.

Relieve pressure and recover all refrigerant before system repair or final unit disposal.

Wear safety glasses and gloves when handling refrigerants. Keep torches and other ignition sources away from refrigerants and oils.

⚠ CAUTION

CUT 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.

Rated Indoor Airflow (cfm)

This table lists the rated indoor airflow used for the AHRI efficiency rating for the units covered in this document.

Model Number	Full Load Airflow (cfm)
50LC*B14	4375
50LC*B17	4875
50LC*B20	5690
50LC*B24	6500
50LC*B26	7500

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	5	0	L	C	0	B	2	4	A	1	A	5	-	1	N	0	A	0

Unit Heat Type
50 - Electric Heat
Packaged Rooftop

Model Series - WeatherExpert®
LC - Ultra High Efficiency

Electric Heat Options
0 = Standard, No Electric Heat
D = Low Electric Heat
E = Medium Electric Heat
F = High Electric Heat

Refrigerant System
B = Three stage cooling capacity control with multi-zone VAV operation

Cooling Tons
14 - 12.5 ton
17 - 15 ton
20 - 17.5 ton
24 - 20 ton
26 - 23 ton

Sensor Options
A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO_2
F = RA Smoke Detector and CO_2
G = SA Smoke Detector and CO_2
H = RA + SA Smoke Detector and CO_2

Indoor Fan Motor Options
1 = Standard Static / Vertical Supply, Return Air Flow
2 = Medium Static / Vertical Supply, Return Air Flow
3 = High Static / Vertical Supply, Return Air Flow
4 = Ultra High Static / Vertical Supply, Return Air Flow
5 = Standard Static / Horizontal Supply, Return Air Flow
6 = Medium Static / Horizontal Supply, Return Air Flow
7 = High Static / Horizontal Supply, Return Air Flow
8 = Ultra High Static / Horizontal Supply, Return Air Flow

Coil Options: Fin/Tube (Condenser- Evaporator - Hail Guard)
A = Al/Cu - Al/Cu
B = Precoat Al/Cu - Al/Cu
C = E-coat Al/Cu - Al/Cu
D = E-coat Al/Cu - E-coat Al/Cu
E = Cu/Cu - Al/Cu
F = Cu/Cu - Cu/Cu
M = Al/Cu -Al/Cu — Louvered Hail Guard
N = Precoat Al/Cu - Al/Cu — Louvered Hail Guard
P = E-coat Al/Cu - Al/Cu — Louvered Hail Guard
Q = E-coat Al/Cu - E-coat Al/Cu — Louvered Hail Guard
R = Cu/Cu - Al/Cu — Louvered Hail Guard
S = Cu/Cu - Cu/Cu — Louvered Hail Guard

Voltage
1 = 575/3/60
5 = 208-230/3/60
6 = 460/3/60

Design Revision
- = Factory Design Revision

Base Unit Controls
1 = VAV-RTU Open Controller (required on each model)

Intake / Exhaust Options (required on each unit)
B = Temperature Standard Leak Economizer with Barometric Relief
C = Temperature Standard Leak Economizer with Centrifugal Power Exhaust - Vertical Only
E = Enthalpy Standard Leak Economizer with Barometric Relief
F = Enthalpy Standard Leak Economizer with Centrifugal Power Exhaust - Vertical Only
N = Temperature Ultra Low Leak Economizer with Barometric Relief
P = Temperature Ultra Low Leak Economizer with Centrifugal Power Exhaust - Vertical Only
R = Enthalpy Ultra Low Leak Economizer with Barometric Relief
S = Enthalpy Ultra Low Leak Economizer with Centrifugal Power Exhaust - Vertical Only

Service Options
0 = None
1 = Unpowered Convenience Outlet
2 = Powered Convenience Outlet
3 = Hinged Panels
4 = Hinged Panels and Unpowered Convenience Outlet
5 = Hinged Panels and Powered Convenience Outlet

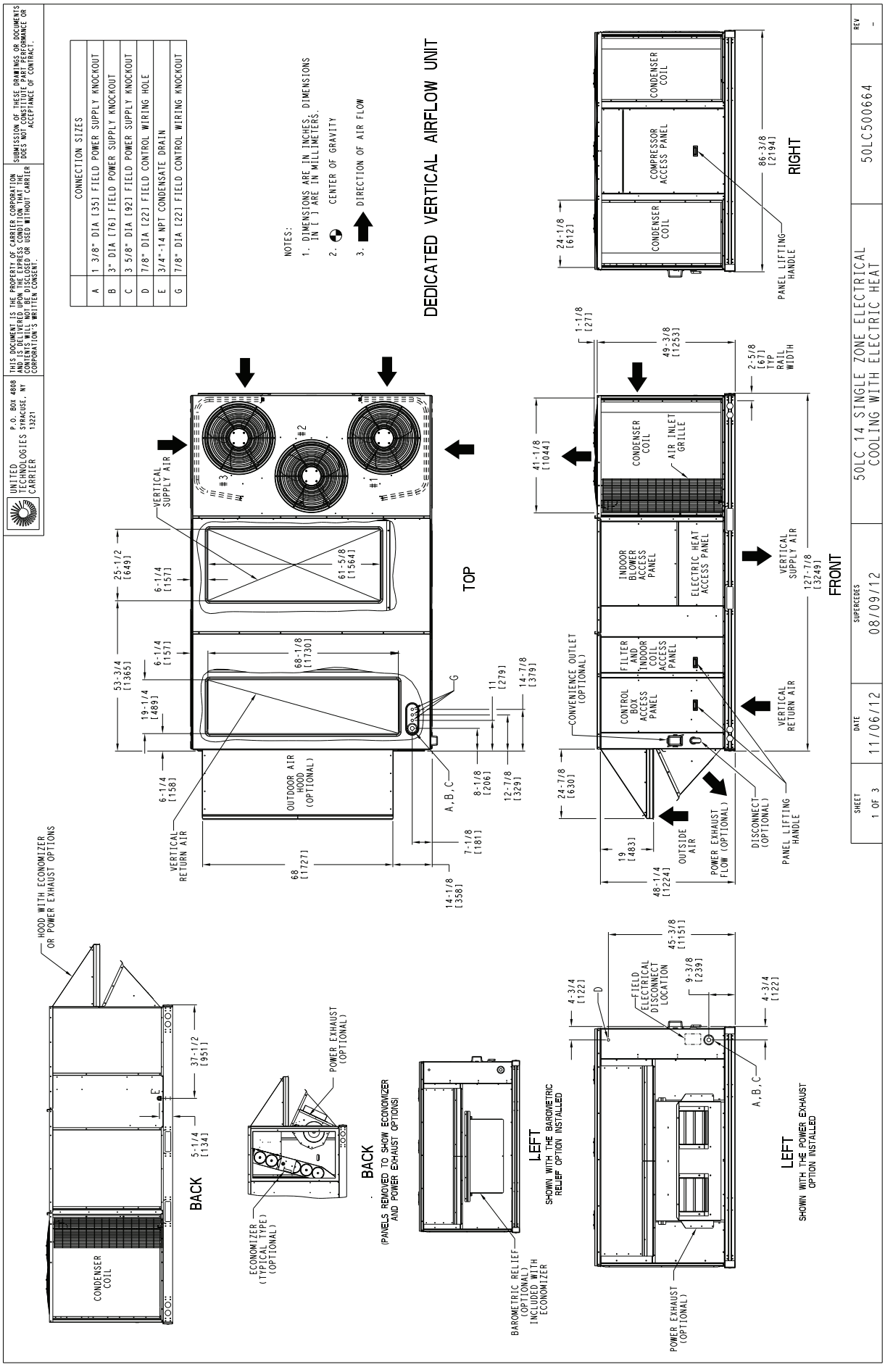
Electrical Options
A = None
B = HACR Circuit Breaker
C = Non-Fused Disconnect

Packaging
0 = Standard
1 = LTL

NOTE: Not all possible options can be displayed above. Refer to other support material or your local Carrier Expert

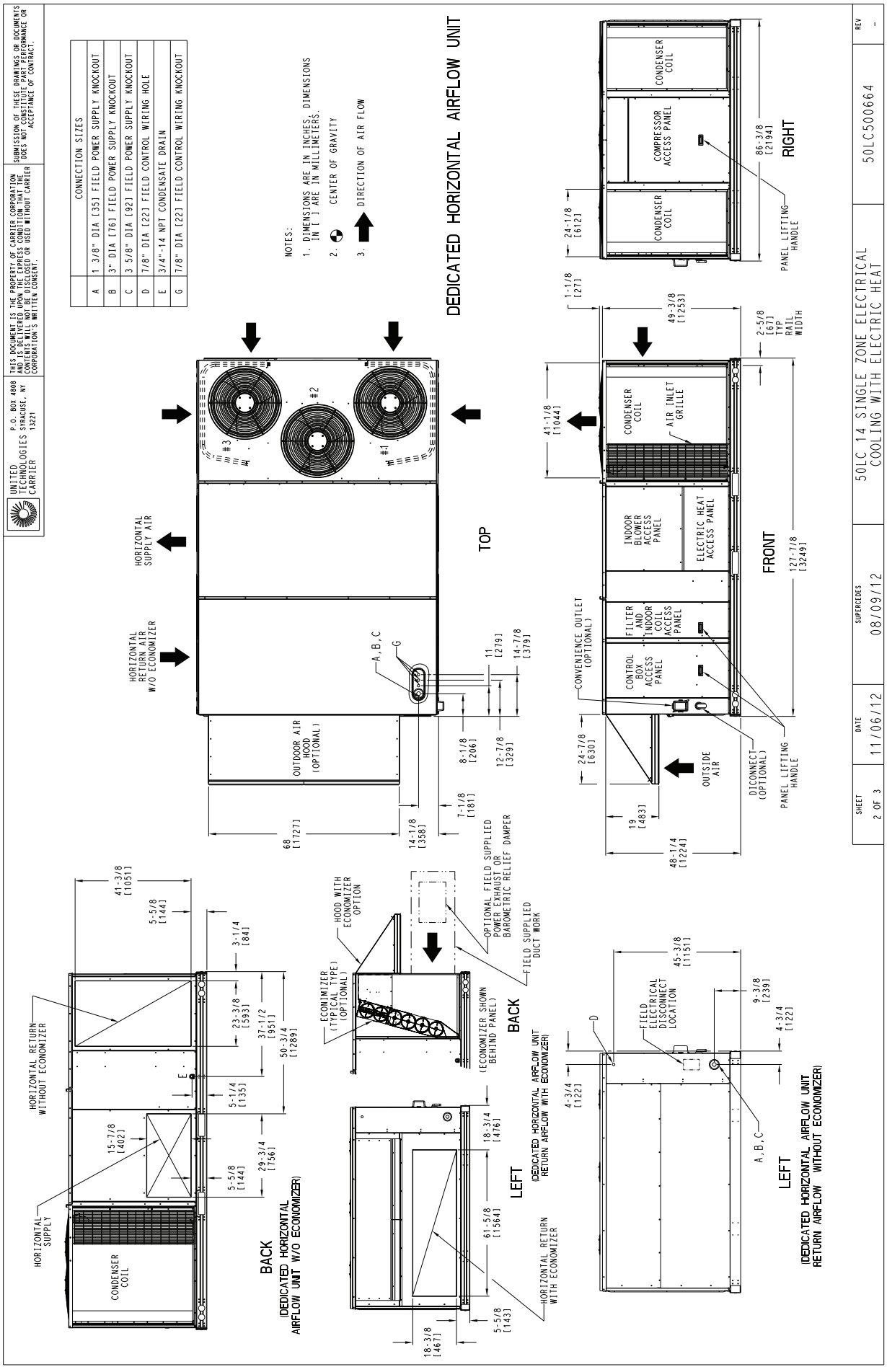
C150377

Fig. 1 - 50LC*B14-26 Model Number Nomenclature (Example)



C13060

Fig. 2 - Unit Dimensional Drawing – 14 Size Unit, Sheet 1 of 3

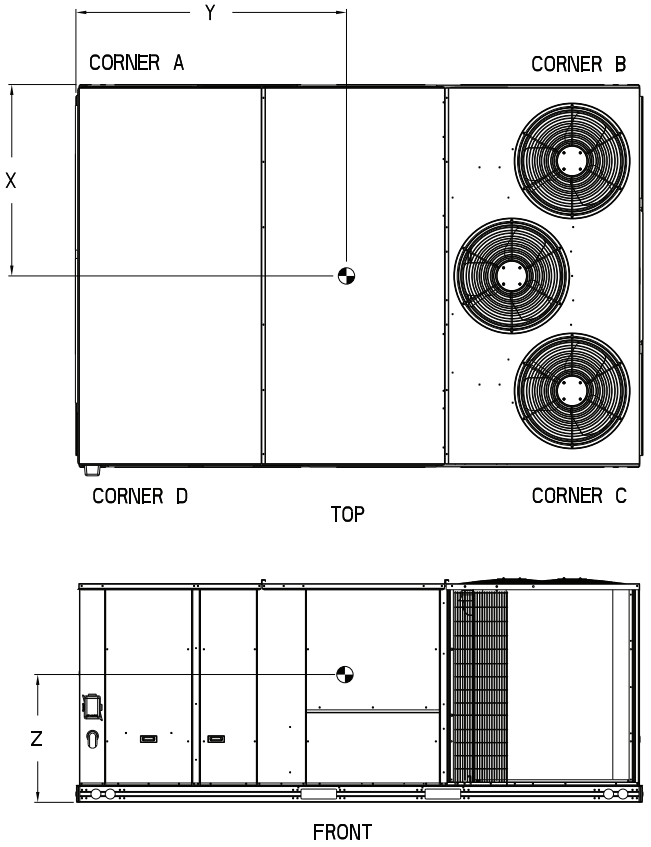


C13061

Fig. 2 (cont.) - Unit Dimensional Drawing – 14 Size Unit, Sheet 2 of 3

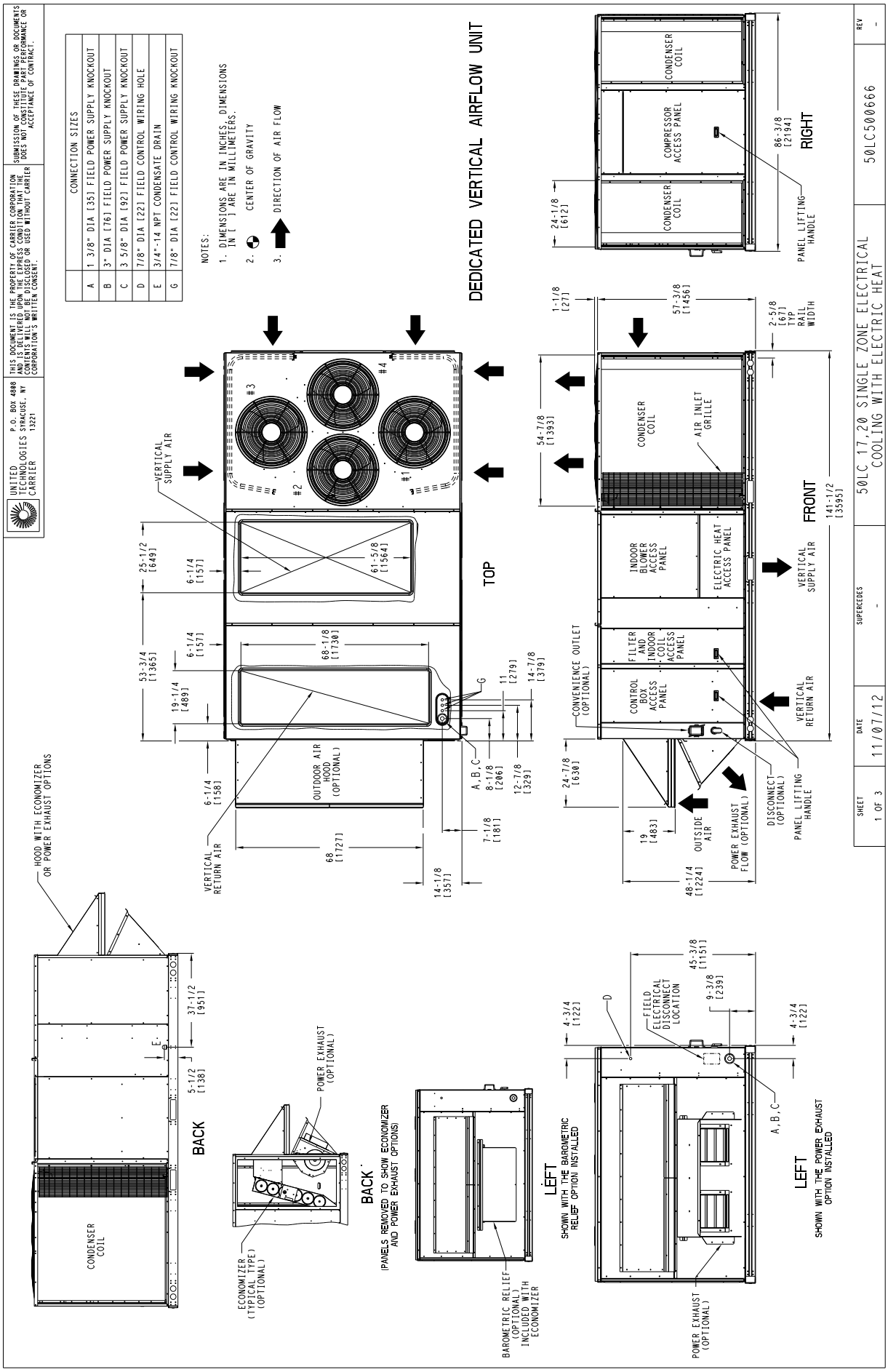
UNIT	STD UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50LC14	1754	797.3	425.8	193.5	495.5	225.2	447.9	203.6	384.9	175.0	40 29/32 [1039.02]	68 21/32 [1743.87]	16 1/2 [419.1]

* STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



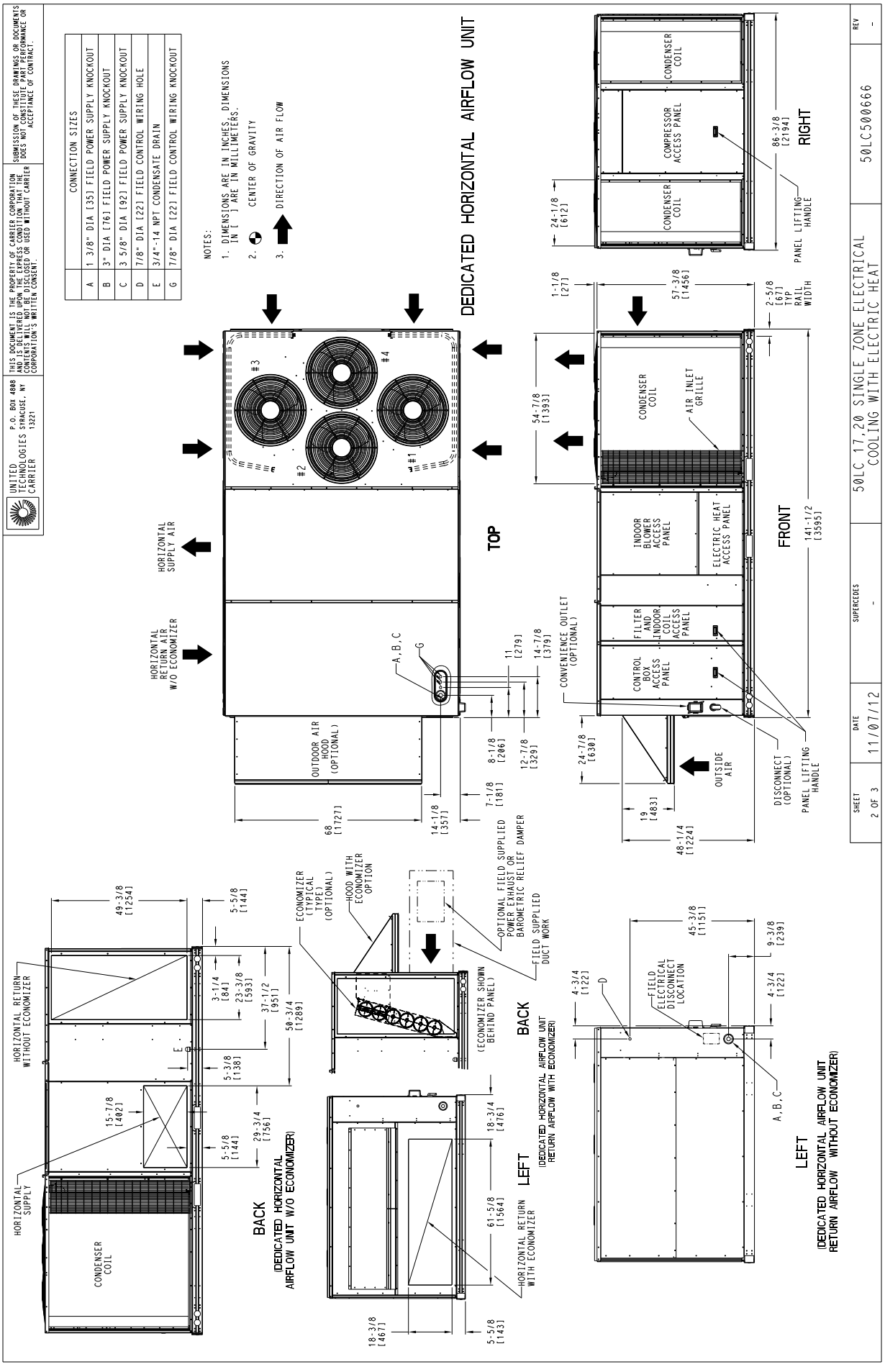
SHEET	DATE	SUPERCEDES			REV
3 OF 3	11/06/12	08/09/12	50LC 14 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50LC500664	-

Fig. 2 (cont.) - Unit Dimensional Drawing – 14 Size Unit, Sheet 3 of 3



C13035

Fig. 3 - Unit Dimensional Drawing – 17 and 20 Size Units, Sheet 1 of 3

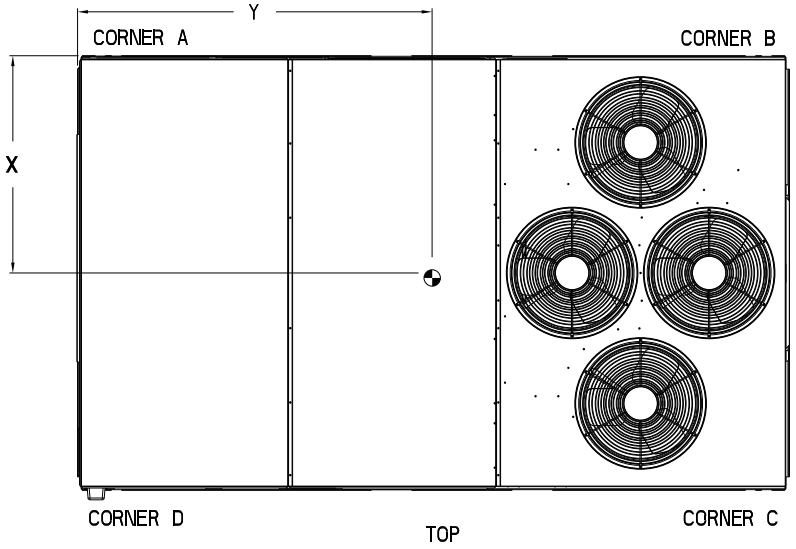


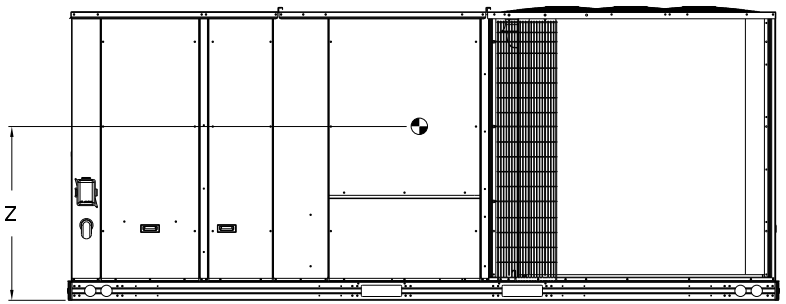
C13036

Fig. 3 (cont.) - Unit Dimensional Drawing – 17 and 20 Size Units, Sheet 2 of 3

UNIT	STD UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50LC17	1996	907.3	510.2	231.9	487.5	221.6	479.8	218.1	412.2	187.3	38 1/2 [977.90]	76 [1930.40]	19 [482.6]
50LC20	2102	955.7	537.4	244.3	625.6	284.4	505.4	229.7	434.1	197.3	38 1/2 [977.90]	76 [1930.40]	19 [482.6]

* STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



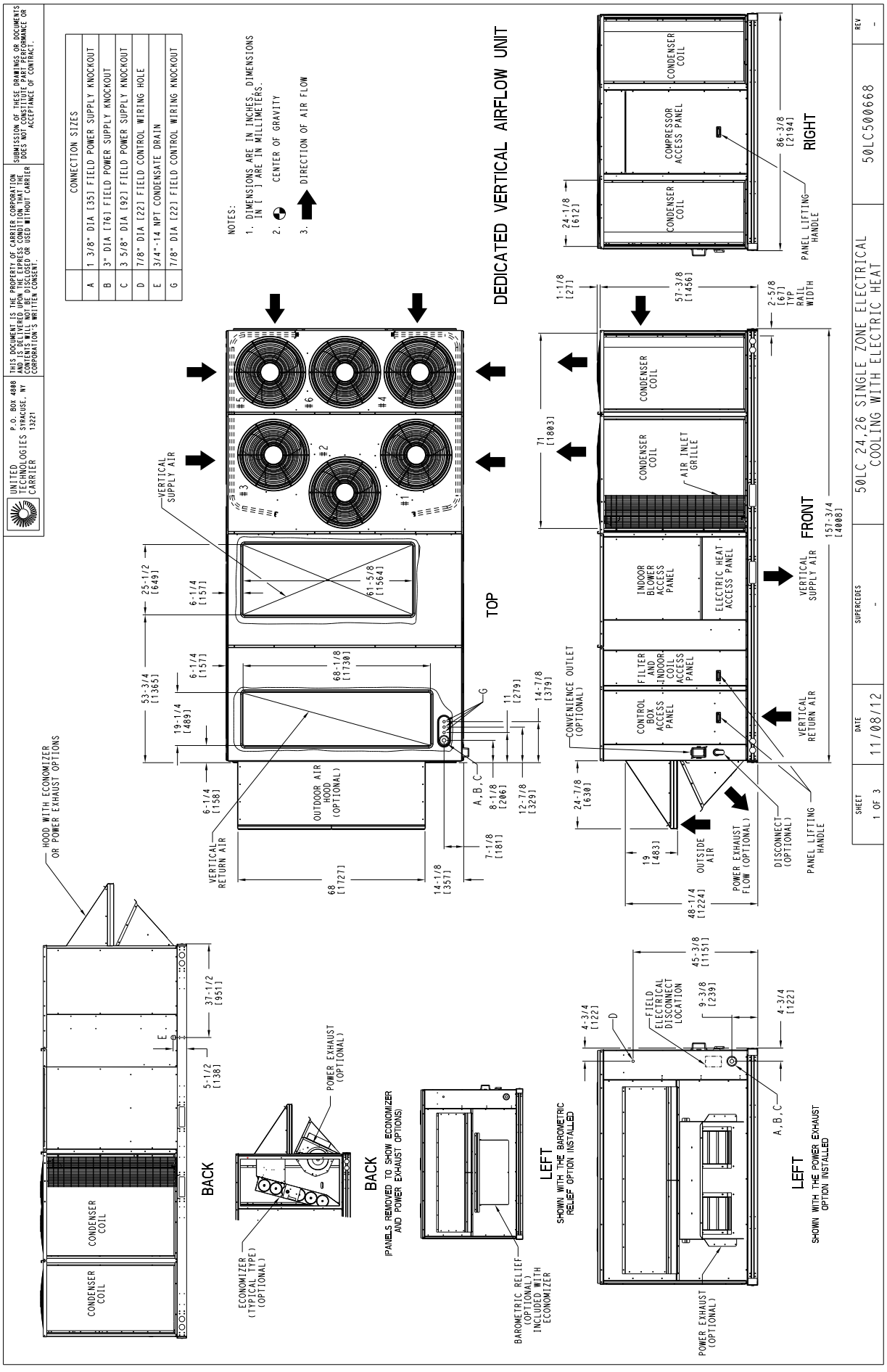


UNITED TECHNOLOGIES CARRIER P.O. BOX 4808 SYRACUSE, NY 13221

SHEET	DATE	SUPERCEDES			REV
3 OF 3	11/07/12	-	50LC 17,20 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50LC500666	-

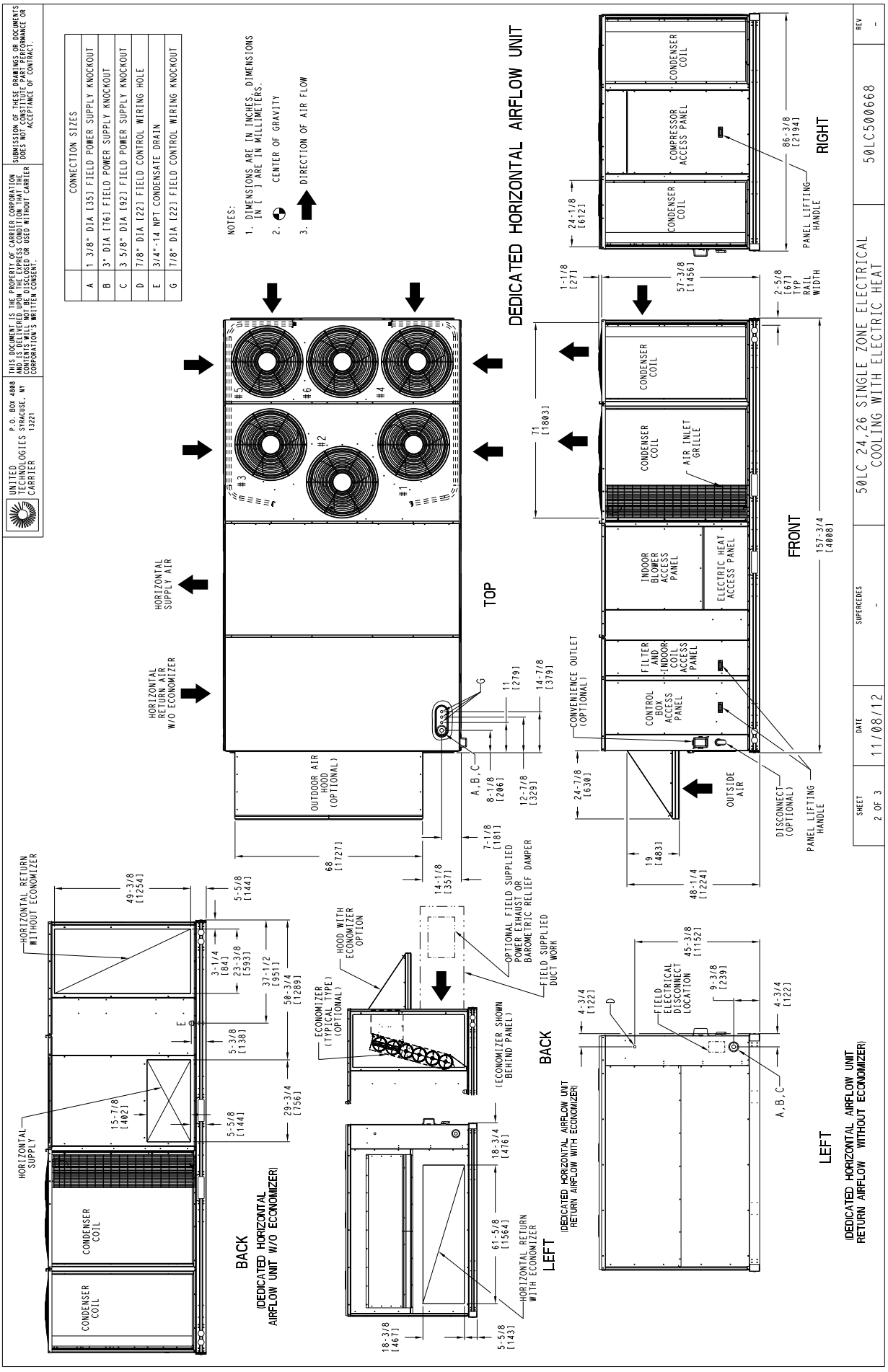
Fig. 3 (cont.) - Unit Dimensional Drawing – 17 and 20 Size Units, Sheet 3 of 3

C13037



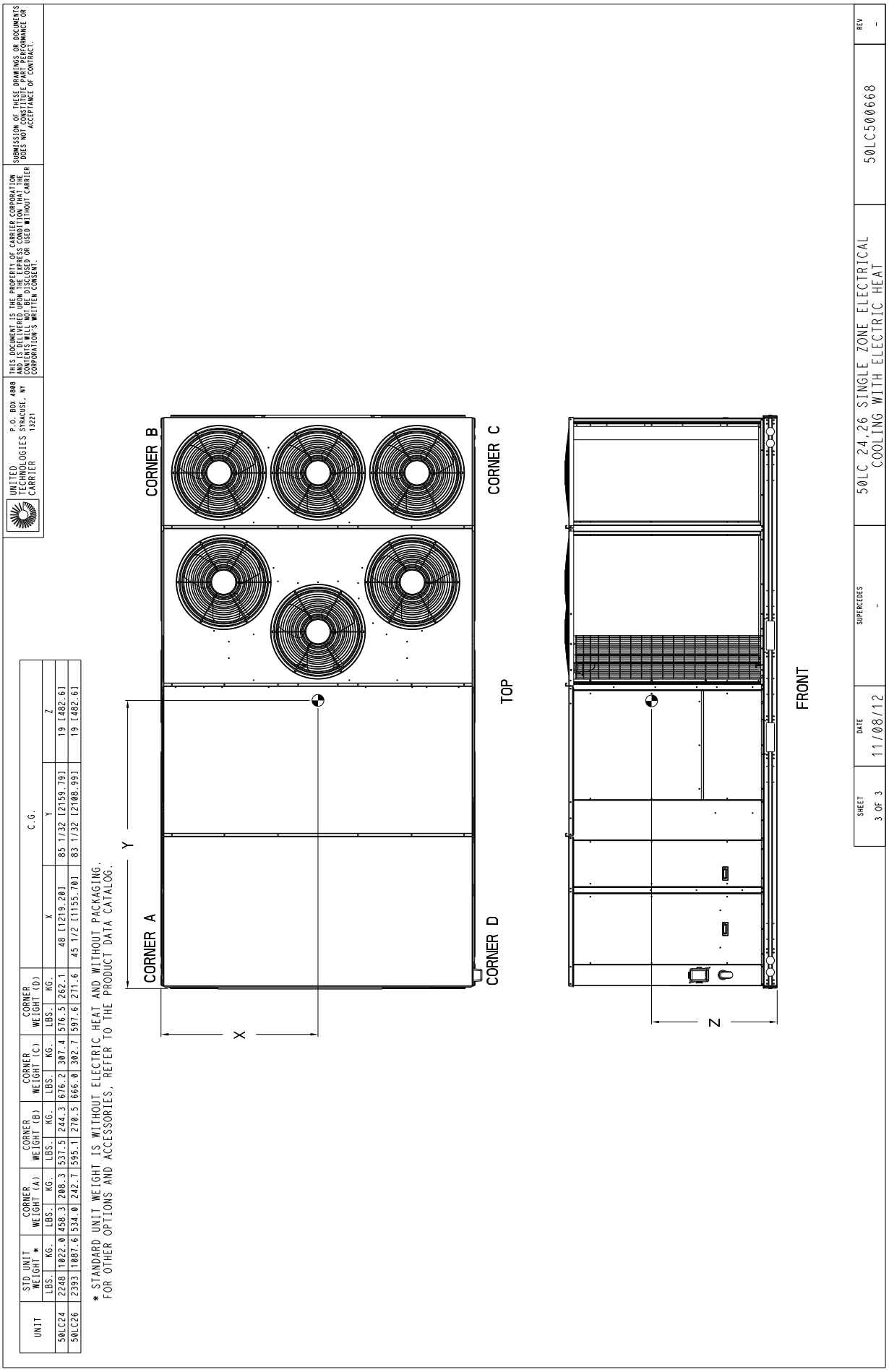
C13041

Fig. 4 - Unit Dimensional Drawing – 24 and 26 Size Units, Sheet 1 of 3



C13042

Fig. 4 (cont.) - Unit Dimensional Drawing – 24 and 26 Size Units, Sheet 2 of 3

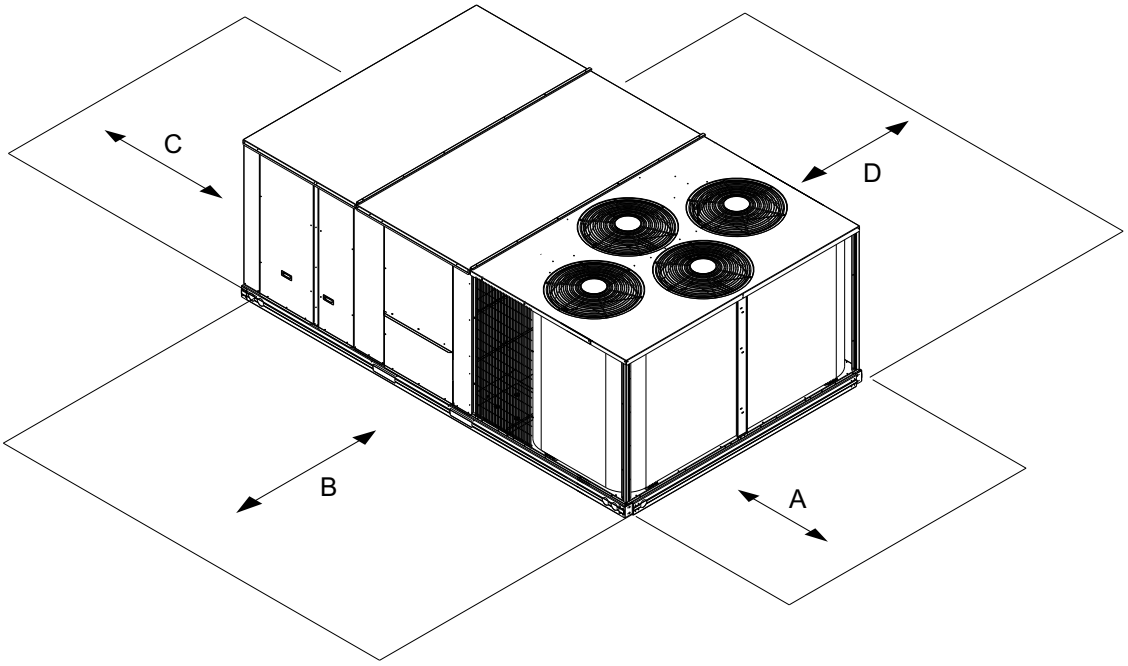


UNIT	STD UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50LC24	2248	1022.0	458.3	208.3	537.5	244.3	676.2	307.4	576.5	262.1	48 [1219.20]	85 1/32 [2159.79]	19 [482.6]
50LC26	2393	1087.6	534.0	242.7	595.1	270.5	666.0	302.7	597.6	271.6	45 1/2 [1155.70]	83 1/32 [2108.99]	19 [482.6]

* STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.

C13043

Fig. 4 (cont.) - Unit Dimensional Drawing – 24 and 26 Size Units, Sheet 3 of 3



C12392

LOCATION	DIMENSION	CONDITION
A	36–in (914 mm)	• Recommended clearance for air flow and service
B	42–in (1067 mm)	• Recommended clearance for air flow and service
C	18–in (457 mm)	• No Convenience Outlet • No field installed disconnect on economizer hood side (Factory–installed disconnect installed).
	36–in (914 mm)	• Convenience Outlet installed. • Vertical surface behind servicer is electrically non–conductive (e.g.: wood, fiberglass).
	42–in (1067 mm)	• Convenience Outlet installed. • Vertical surface behind servicer is electrically conductive (e.g.: metal, masonry).
	96–in (2438 mm)	• Economizer and/or Power Exhaust installed. • Check for sources of flue products with 10 feet (3 meters) of economizer fresh air intake.
D	42–in (1067 mm)	• Recommended clearance for service.

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

Fig. 5 - Service Clearance Dimensional Drawing

Table 1 – Operating Weights

50LC*B	UNIT LB (KG)				
	14	17	20	24	26
Base Unit	1754 (797.3)	1996 (907.3)	2102 (955.7)	2248 (1022.0)	2393 (1087.6)
Economizer	246 (112)	246 (112)	246 (112)	246 (112)	246 (112)
Powered Outlet	35 (16)	35 (16)	35 (16)	35 (16)	35 (16)
Curb					
14–in/356 mm	240 (109)	240 (109)	255 (116)	255 (116)	273 (124)
24–in/610 mm	340 (154)	340 (154)	355 (161)	355 (161)	355 (161)

INSTALLATION

Jobsite Survey

Complete the following checks before installation.

1. Consult local building codes and the NEC (National Electrical Code) ANSI/NFPA 70 for special installation requirements.
2. Determine unit location (from project plans) or select unit location.
3. Check for possible overhead obstructions which may interfere with unit lifting or rigging.

Step 1 — Plan for Unit Location

Select a location for the unit and its support system (curb or other) that provides for the minimum clearances required for safety. This includes the clearance to combustible surfaces, unit performance and service access below, around and above unit as specified in unit drawings. See Fig. 5.

NOTE: Consider also the effect of adjacent units.

Unit may be installed directly on wood flooring or on Class A, B, or C roof-covering material when roof curb is used.

Do not install unit in an indoor location. Do not locate air inlets near exhaust vents or other sources of contaminated air.

Although unit is weatherproof, avoid locations that permit water from higher level runoff and overhangs to fall onto the unit.

Select a unit mounting system that provides adequate height to allow installation of condensate trap per requirements. Refer to Step 11 — Install External Condensate Trap and Line – for required trap dimensions.

Roof Mount —

Check building codes for weight distribution requirements. Unit operating weight is shown in Table 1.

Step 2 — Plan for Sequence of Unit Installation

The support method used for this unit will dictate different sequences for the steps of unit installation. For example, on curb-mounted units, some accessories must be installed on the unit before the unit is placed on the curb. Review the following for recommended sequences for installation steps.

Curb-mounted installation —

Install curb
Install field-fabricated ductwork inside curb
Install thru-base service connection fittings (affects curb and unit)
Rig and place unit
Remove top skid
Install outside air hood
Install smoke detector tube
Install condensate line trap and piping
Make electrical connections
Install other accessories

Pad-mounted installation —

Prepare pad and unit supports
Rig and place unit
Remove duct covers and top skid
Install Return Air smoke detector sensor tube
Install field-fabricated ductwork at unit duct openings
Install outside air hood
Install condensate line trap and piping
Make electrical connections
Install other accessories

Frame-mounted installation —

Frame-mounted applications generally follow the sequence for a curb installation. Adapt as required to suit specific installation plan.

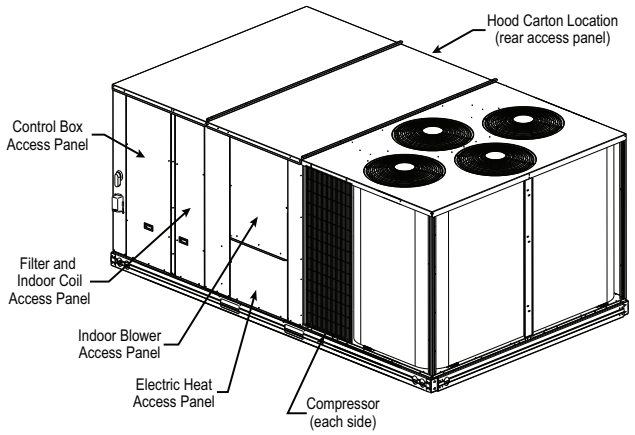
Step 3 — Inspect unit

Inspect unit for transportation damage. File any claim with transportation agency.

Confirm before installation of unit that voltage, amperage and circuit protection requirements listed on unit data plate agree with power supply provided.

On units with hinged panel option, check to be sure all latches are tight and in closed position.

Locate the carton containing the outside air hood parts; see Fig. 6 and 15. Do not remove carton until unit has been rigged and located in final position.



C11155

Fig. 6 - Typical Access Panel and Compressor Locations

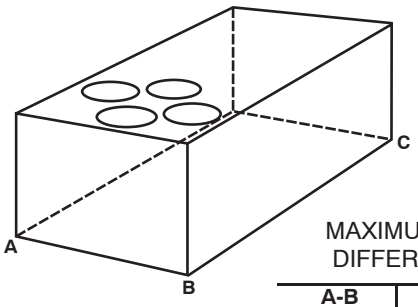
Step 4 — Provide Unit Support

Roof Curb Mount —

Accessory roof curb details and dimensions are shown in Figs. 8, 9 and 10. Assemble and install accessory roof curb in accordance with instructions shipped with the curb.

NOTE: The gasketing of the unit to the roof curb is critical for a watertight seal. Install gasket supplied with the roof curb as shown in Figs. 8, 9 and 10. Improperly applied gasket can also result in air leaks and poor unit performance.

Curb should be level. This is necessary for unit drain to function properly. Unit leveling tolerances are show in Fig. 7. Refer to Accessory Roof Curb Installation Instructions for additional information as required.



MAXIMUM ALLOWABLE DIFFERENCE IN. (MM)

A-B	B-C	A-C
0.25” (6)	0.5” (12)	0.5” (12)

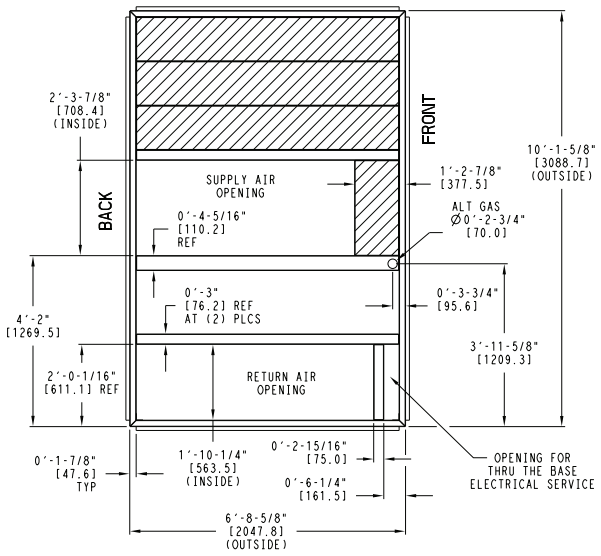
C10628

Fig. 7 - Unit Leveling Tolerances

Install insulation, cant strips, roofing felt, and counter flashing as shown. *Ductwork must be attached to curb and not to the unit. Thru-the-base power connection must be installed before the unit is set on the roof curb.*

If electric and control wiring is to be routed through the basepan, remove knockouts in basepan located in control box area of access panel; see Fig. 2, 3 or 4 for basepan knockout locations.. Attach the service connections to the basepans.

UNIT SIZE	"A"	ROOF CURB ACCESSORY
14	1′-2" [356.0] 2′-0" [610.0]	CRRFCURB045A00 CRRFCURB046A00



NOTES:

1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.

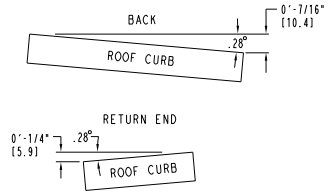
2 DIMENSIONS IN [ ] ARE IN MILLIMETERS.

3 ROOF CURB GALVANIZED STEEL.

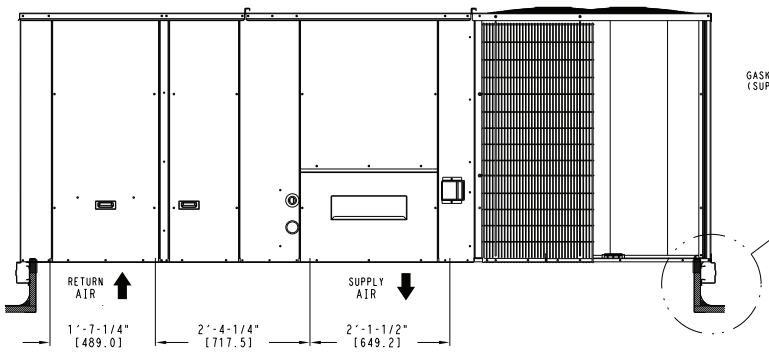
4 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)

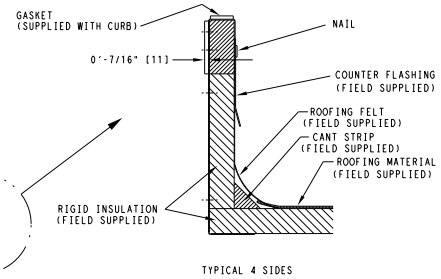
5 SERVICE CLEARANCE 4 ft ON EACH SIDE

DIRECTION OF AIR FLOW

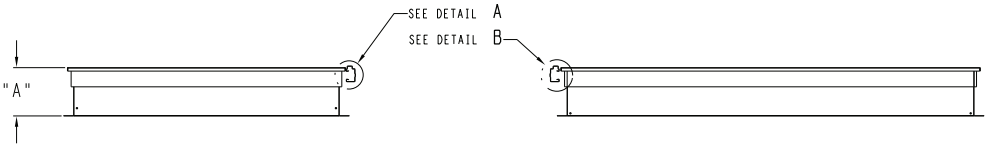


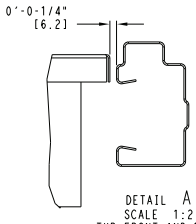
MAX CURB LEVELING TOLERANCES

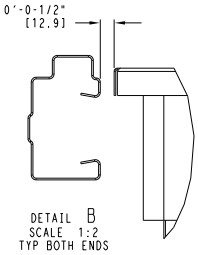


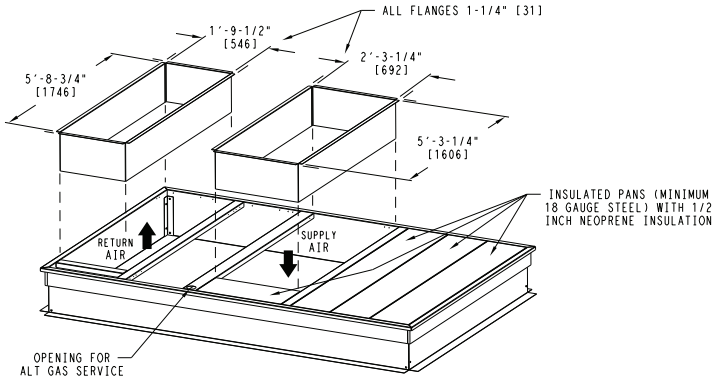


TYPICAL 4 SIDES





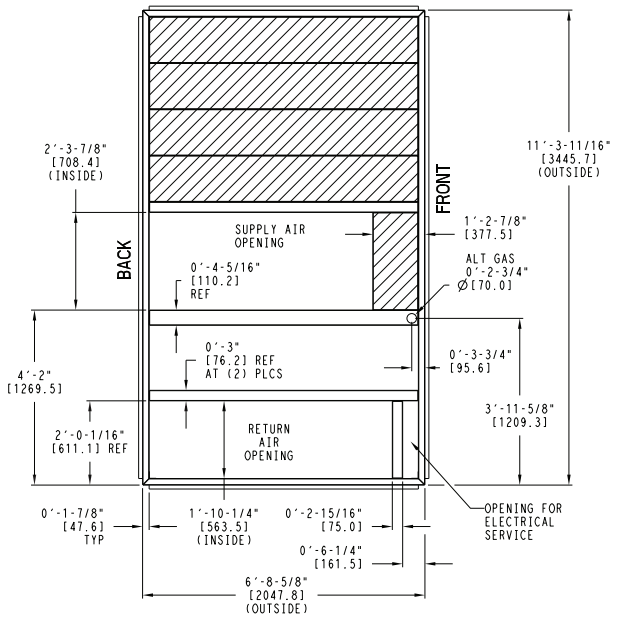




C13054

Fig. 8 - Roof Curb Details – 14 Size Unit

UNIT SIZE	"A"	ROOF CURB ACCESSORY
17, 20	1′-2" [356.0] 2′-0" [610.0]	CRRFCURB047A00 CRRFCURB048A00



NOTES:

1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.

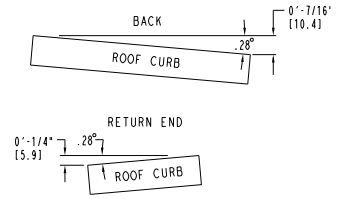
2 DIMENSIONS IN [ ] ARE IN MILLIMETERS.

3 ROOF CURB GALVANIZED STEEL.

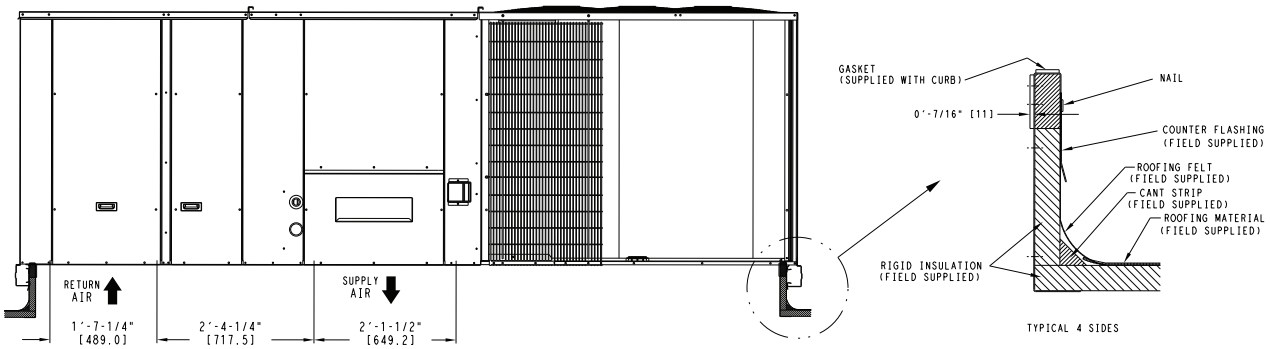
4 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)

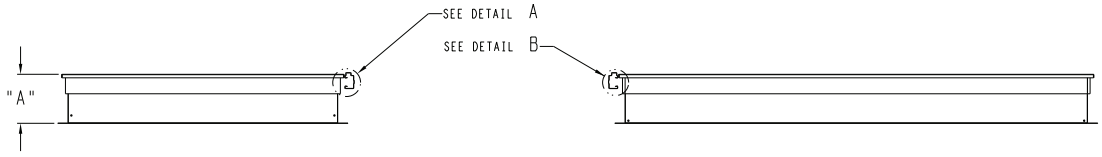
5 SERVICE CLEARANCE 4 ft ON EACH SIDE

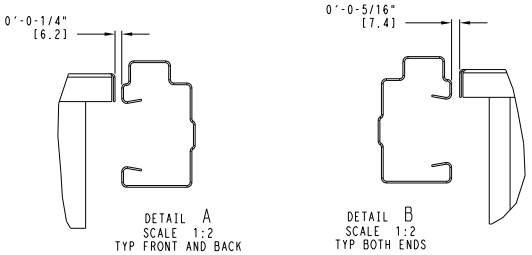
➡ DIRECTION OF AIR FLOW

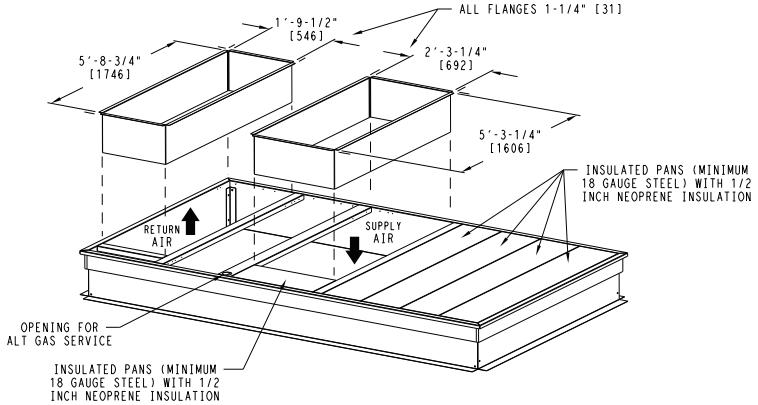


MAX CURB LEVELING TOLERANCES





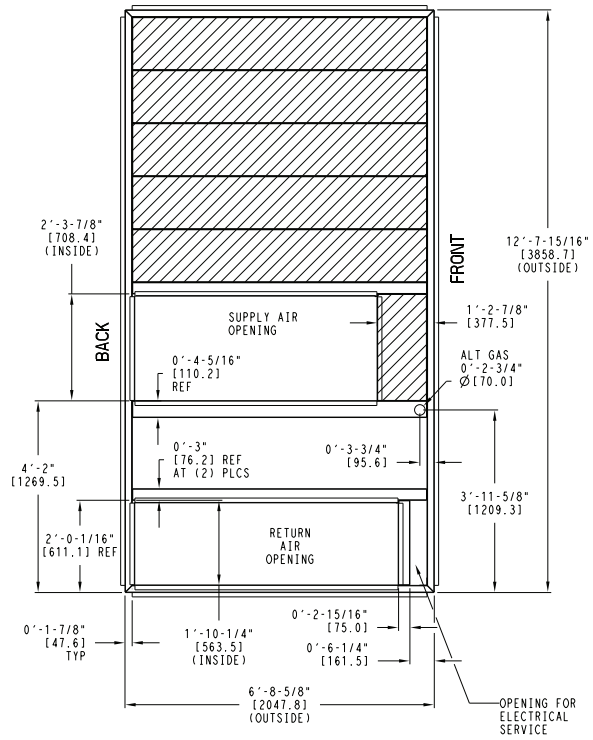




C13055

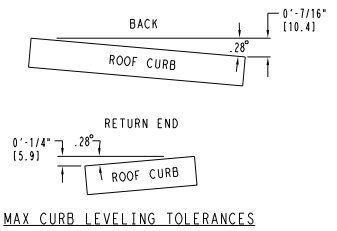
Fig. 9 - Roof Curb Details – 17 and 20 Size Units

UNIT SIZE	"A"	ROOF CURB ACCESSORY
24, 26	1′-2" [356.0] 2′-0" [610.0]	CRRFCURB049A00 CRRFCURB050A00

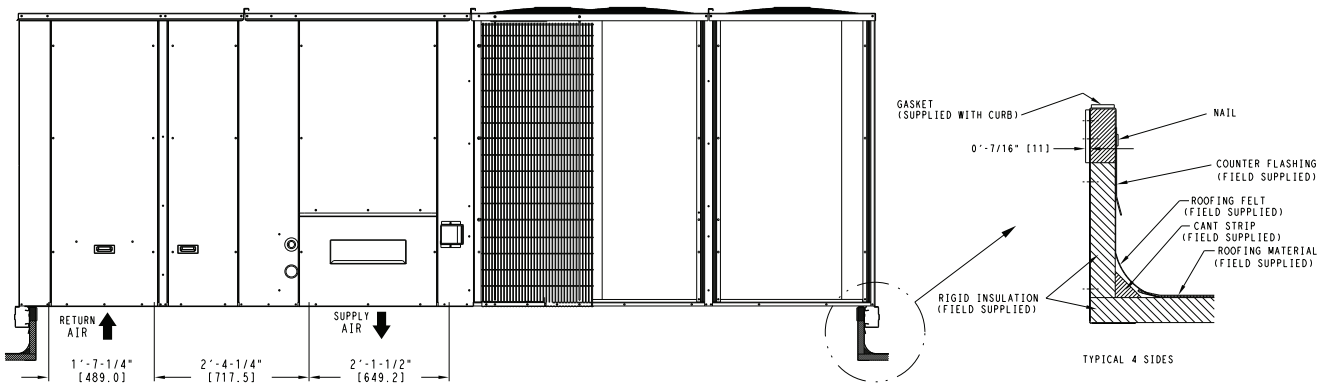


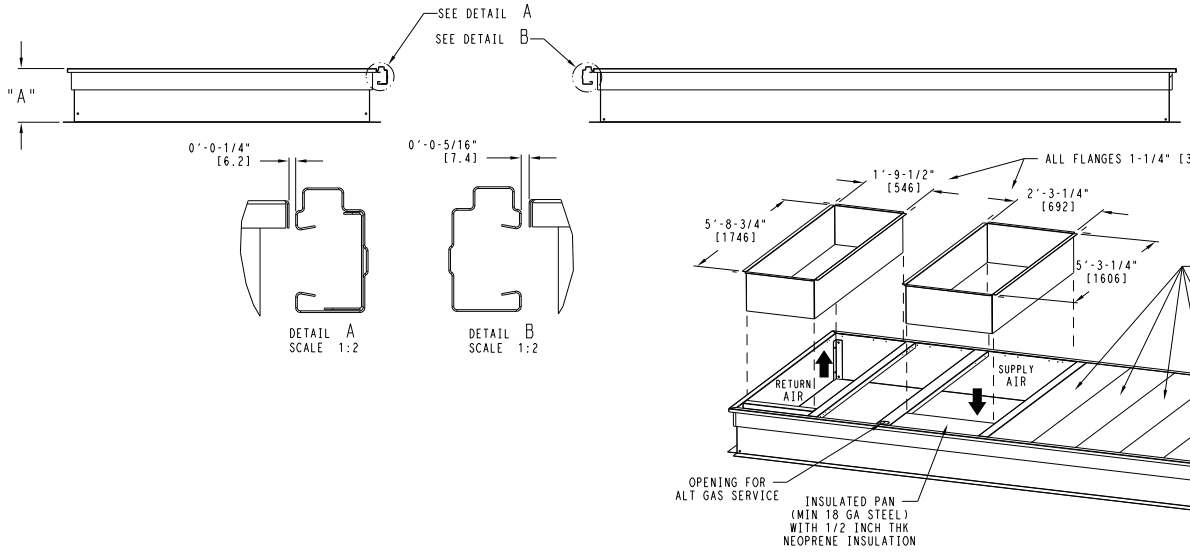
NOTES:
1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.
2 BOLT HEADS TO BE ON INSIDE OF FLANGE. CLEARANCE IS [11] 0-0-7/16" TYP ALL CORNERS.
3 DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4 ROOF CURB GALVANIZED STEEL.
5 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)
6 SERVICE CLEARANCE 4 ft ON EACH SIDE
7 GAS SERVICE PLATE IS PART OF A SEPERATELY SHIPPED ACCESSORY PACKAGE.
8 GAS SERVICE PLATE CAN BE USED WITH EITHER ACCESSORY ROOFCURB.

➡ DIRECTION OF AIR FLOW



MAX CURB LEVELING TOLERANCES





C13056

Fig. 10 - Roof Curb Details – 24 and 26 Size Units

Slab Mount (Horizontal Units Only) —

Provide a level concrete slab that extends a minimum of 6–in. (150 mm) beyond unit cabinet. Install a gravel apron in front of condenser coil air inlet to prevent grass and foliage from obstructing airflow.

NOTE: Horizontal units may be installed on a roof curb if required.

Alternate Unit Support (In Lieu of Curb or Slab Mount) —

A non-combustible sleeper rail can be used in the unit curb support area. If sleeper rails cannot be used, support the long sides of the unit with a minimum of 4 equally spaced 4-in. x 4-in. (102 mm x 102 mm) pads on each side. Locate pads so that they support the rails. Make sure to avoid the fork openings.

Step 5 — Field Fabricate Ductwork

Cabinet return-air static pressure (a negative condition) shall not exceed 0.5 in. wg (87 Pa).

For vertical ducted applications, secure all ducts to roof curb and building structure. *Do not connect ductwork to unit.*

Fabricate supply ductwork so that the cross sectional dimensions are equal to or greater than the unit supply duct opening dimensions for the first 18 in. (458 mm) of duct length from the unit basepan.

Insulate and weatherproof all external ductwork, joints, and roof openings with counter flashing and mastic in accordance with applicable codes.

Ducts passing through unconditioned spaces must be insulated and covered with a vapor barrier.

If a plenum return is used on a vertical unit, the return should be ducted through the roof deck to comply with applicable fire codes.

⚠ CAUTION

PROPERTY DAMAGE HAZARD

Failure to follow this caution may result in damage to roofing materials.

Membrane roofs can be cut by sharp sheet metal edges. Be careful when placing any sheet metal parts on such roof.

For units with optional or accessory electric heaters:

Minimum clearance is not required around ductwork.

⚠ WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could cause personal injury.

For vertical supply and return units, tools or parts could drop into ductwork and cause an injury. Install a 90-degree turn in the return ductwork between the unit and the conditioned space. If a 90-degree elbow cannot be installed, then a grille of sufficient strength and density should be installed to prevent objects from falling into the conditioned space. Due to electric heater, supply duct will require 90-degree elbow.

Step 6 — Rig and Place Unit

Keep unit upright and do not drop. Spreader bars are not required if top crating is left on unit. Rollers may be used to move unit across a roof. Level by using unit frame as a reference. See Table 1 (on page 13) and Fig. 11 for additional information.

Lifting holes are provided in base rails as shown in Fig. 11. Refer to rigging instructions on unit.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage.

All panels must be in place when rigging. Unit is not designed for handling by fork truck when packaging is removed.

Before setting the unit onto the curb, recheck gasketing on curb.

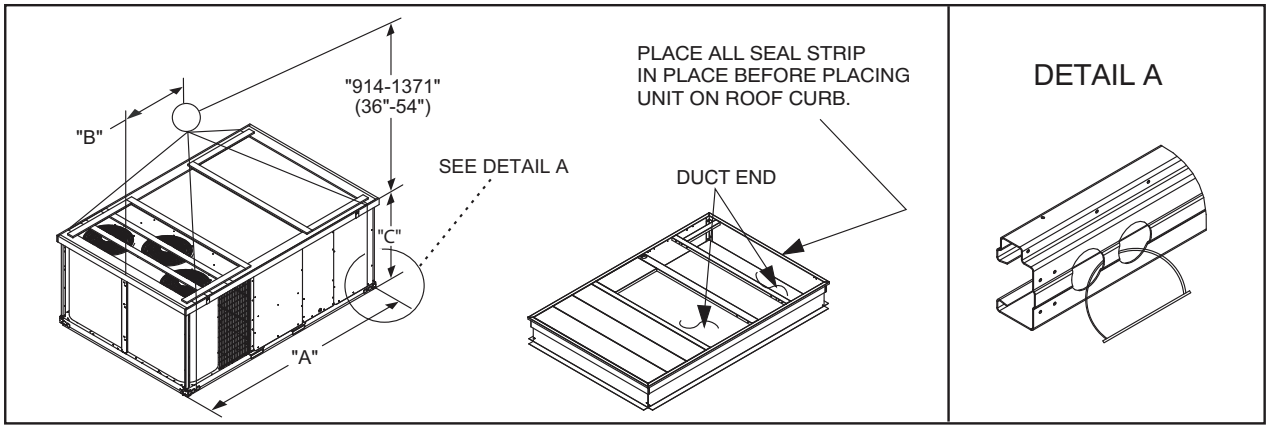
Positioning on Curb —

Position unit on roof curb so that the following clearances are maintained: $^1/_4$ in. (6 mm) clearance between the roof curb and the base rail inside the right and left, $^1/_2$ in. (12 mm) clearance between the roof curb and the base rail inside the front and back. This will result in the distance between the roof curb and the base rail being approximately equal to Detail A and Detail B in Figs. 8, 9 and 10.

Do not attempt to slide unit on curb after unit is set. Doing so will result in damage to the roof curb seal.

Although unit is weatherproof, guard against water from higher level runoff and overhangs.

After unit is in position, remove rigging skids and shipping materials.



C09107

UNIT	MAX WEIGHT		DIMENSIONS					
			A		B		C	
	LB	KG	IN	MM	IN	MM	IN	MM
50LC*B14	2004	911	127.8	3249	59.1	1501	52.3	1328
50LC*B17	2246	1021	141.5	3595	65.5	1664	60.3	1532
50LC*B20	2353	1069	141.5	3595	65.5	1664	60.3	1532
50LC*B24	2499	1136	157.8	4007	72.8	1849	60.3	1532
50LC*B26	2643	1201	157.8	4007	72.8	1849	60.3	1532

NOTES:

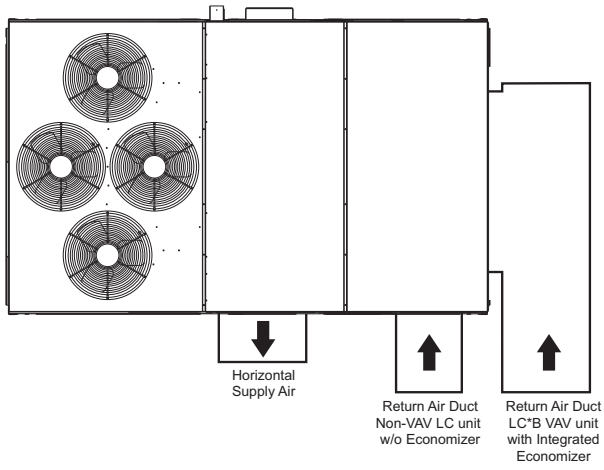
1. Dimensions in ( ) are in inches.
2. Hook rigging shackles through holes in base rail, as shown in detail "A." Holes in base rails are centered around the unit center of gravity. Use wooden top to prevent rigging straps from damaging unit.

Fig. 11 - Rigging Details

Step 7 — Horizontal Duct Connection

Refer to Figs. 1, 3 and 4 for locations and sizes of the horizontal duct connections. Note that there are two different return air duct connection locations – one for non-VAV units without an economizer (on back side of unit) and a different one for LC*B VAV units with the integrated economizer (on left end, under the economizer hood). The supply air duct connection is on the back side. See Fig. 12 for top view depicting typical horizontal duct arrangements.

Field-supplied ($^3/_4$-inch) flanges should be attached to horizontal duct openings (see Fig. 12) and all ductwork should be secured to the flanges. Insulate and weatherproof all external ductwork, joints, and roof or building openings with counter flashing and mastic in accordance with applicable codes.



C150385

	Supply	Non–VAV Unit Return	LC*B–VAV Unit Return
Location	Back	Back	Left end
Height – In. (mm)	$15^7/_8$ (402)	$49^3/_8$ (1253)	$18^3/_8$ (467)
Width – in. (mm)	$29^3/_4$ (756)	$23^3/_8$ (593)	$61^5/_8$ (1564)

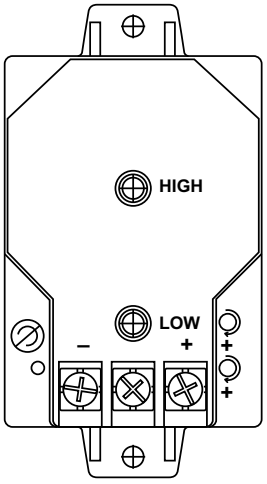
Fig. 12 - Horizontal Duct Opening Dimensions

Step 8 — VAV Duct Pressure Transducer and Field Tubing Installation

Before VAV rooftop unit can operate correctly, installation of the factory supplied duct pressure transducer (DPT) and plastic pneumatic tubing (field supplied) is required. The DPT is mounted in the unit control box for shipping purposes and is shown in Fig. 13. Remove the screw holding the DPT and disconnect quick connects from the transducer terminals. For correct pressure sensing, mount the DPT externally to the main trunk duct approximately $^2/_3$ of the way from the unit. Install factory supplied duct pressure tap (located in the installer's packet) at the DPT location by inserting tap perpendicular to duct airflow with the arrow on pressure tap flange matching airflow direction.

Connect $^1/_4$-in plastic pneumatic tubing (field supplied) to barbed fitting on pressure tap and connect the other end to "High" fitting of pressure transducer. Leave "Low" pressure connection open to the atmosphere. Connect 20 or 22 AWG insulated wire [35°C (95°F) minimum] to DPT "+" and "-" terminals. Route wiring back to rooftop unit along with the low voltage VAV terminal field control wiring. Connect wire from DPT "+" terminal to quick connect on red wire from VAV-RTU Open Board J4 – Terminal 4 and wire from DPT "-" terminal to quick connect on black wire from VAV RTU-Open Board J4-Terminal 5 with $^3/_{16}$-in quick connects. Wire nuts may also be used.

Proper installation of these components is required for accurate input to Analog Input 1 (static_press) on the VAV-RTU Open Control Board. For more information on this please refer to the 48/50LC*B07-26 Controls, Start-Up, Operation, and Troubleshooting document.

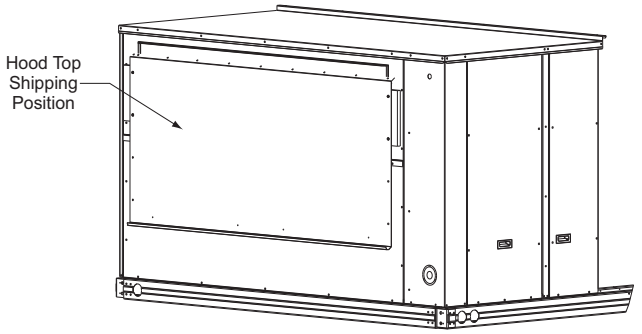


C150384

Fig. 13 - Duct Pressure Transducer

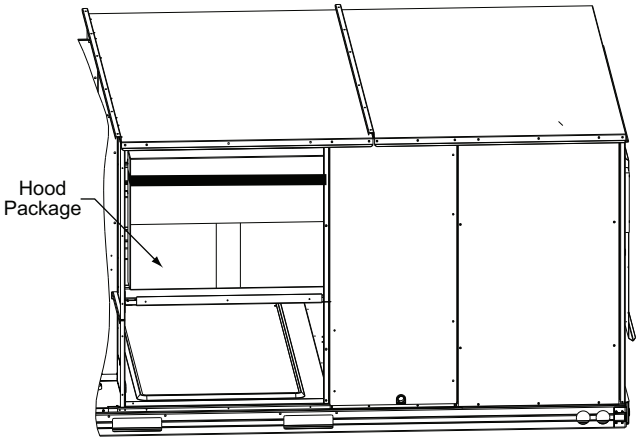
Step 9 — Install Outside Air Hood

The outside air hood for the economizer is shipped in knock-down form and requires field assembly. The panel for the hood top is shipped on the end of the unit (see Fig. 14). The remaining parts for the hood assembly (including side panels, filters and tracks) are shipped in a carton that is secured to the rear of the blower assembly. Access the carton location through rear panel (see Fig. 15).



C09134

Fig. 14 - Hood Top – Shipping Position



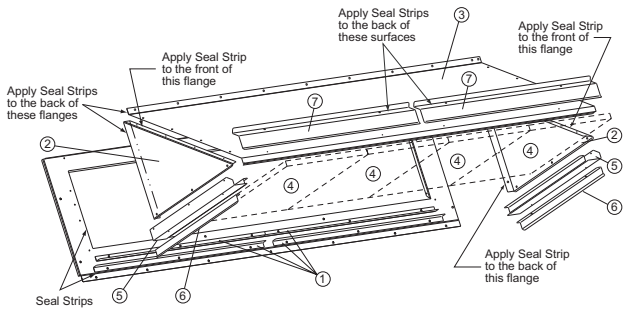
C13785

Fig. 15 - Hood Package – Shipping Location

To remove the hood parts package:

1. Remove the back blower access panel.
2. Locate and cut the strap, being careful to not damage any wiring.
3. Carefully lift the hood package carton through the back blower access opening.

See Fig. 16 for identification of the various parts of the hood assembly.



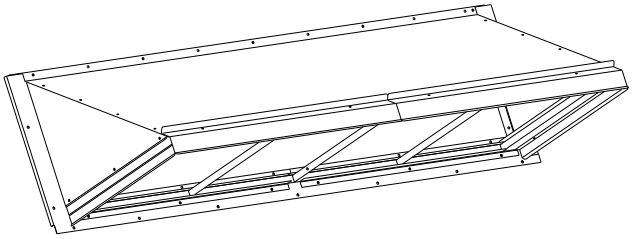
Item #	Description	Qty
1	Angles	4
2	Side Plates	2
3	Hood	1
4	Outdoor Air Screens	4
5	Side Filter Supports	2
6	Side Drip Angles	2
7	Top Diverters	2

C09079

Fig. 16 - Hood Part Identification and Seal Strip Application Areas

To assemble the outside air hood:

1. Remove hood top panel from shipping position on unit end.
2. Install four angles to the upper end panel using the screws provided
3. Apply seal strip to mating flanges on the side plates of the hood (see Fig. 16).
4. Secure side plates to panel using the screws provided.
5. Apply seal strip to mating flange of the hood (see Fig. 16).
6. Secure top flange using screws provided in kit.
7. Install outdoor air screens by sliding them into the channel formed by the four angles installed in step 2. Make sure that the screens extend across the entire length of the hood.
8. Install side filter supports using the screws provided
9. Install side drip angles using the screws provided.
10. Run a continuous length of seal strip across the hood covering the engagement holes in the lower hood.
11. Install top diverter using the screws provided.
12. On units with barometric relief, remove screws at bottom of relief damper. **Do not discard damper door**.

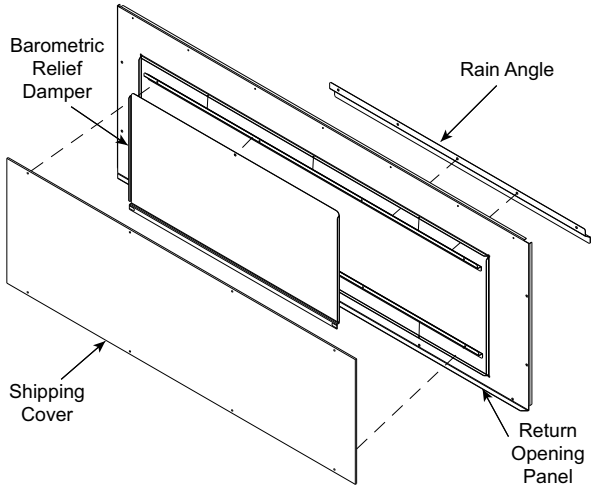


C09090

Fig. 17 - Hood Assembly – Completed

Step 10 — Economizer - Horizontal Airflow Units

The barometric relief damper ships attached to the exterior return opening panel on the unit. Remove shipping cover to access the barometric relief damper, rain angle, and parts bag. These items are to be repositioned on the side of the field supplied ductwork. In addition, the barometric relief hood should be used and can be ordered separately (PN: CRBARHOD001A00) or can be field supplied.

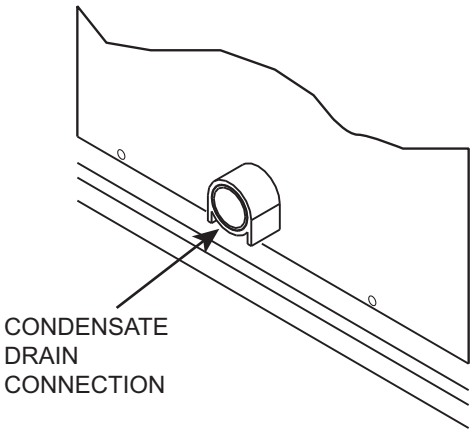


C150319

Fig. 18 - Barometric Relief Damper - Shipping Location

Step 11 — Install External Condensate Trap & Line

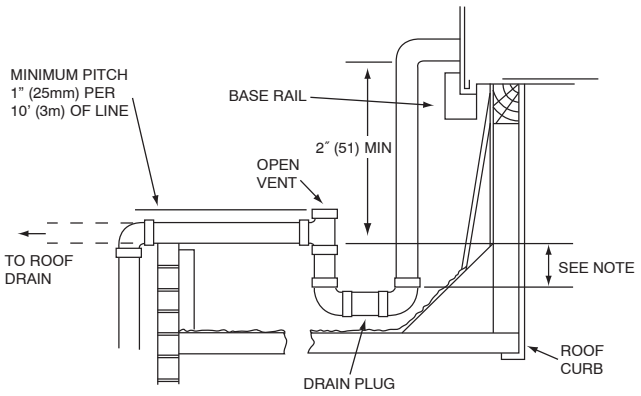
The unit has one $^3/_4$-in. condensate drain connection on the end of the condensate pan (see Fig. 19). See Figs. 1, 3 and 4, item "E", in the view labeled "BACK (HORIZONTAL DISCHARGE W/O ECON)" for the location of the condensate drain connection.



C10729

Fig. 19 - Condensate Drain Pan Connection

The piping for the condensate drain and external trap can be completed after the unit is in place. Hand tighten fittings to the drain pan fitting. Provide adequate support for the drain line. Failure to do so can result in damage to the drain pan. See Fig. 20.



NOTE: Trap should be deep enough to offset maximum unit static difference. A 4" (102) trap is recommended

C08022

Fig. 20 - Condensate Drain Piping Details

All units must have an external trap for condensate drainage. Install a trap at least 4-in. (102 mm) deep and protect against freeze-up. If drain line is installed downstream from the external trap, pitch the line away from the unit at 1-in. per 10 ft (25 mm in 3 m) of run. Do not use a pipe size smaller than the unit connection ($^3/_4$-in.).

Step 12 — Make Electrical Connections

⚠ WARNING

ELECTRICAL SHOCK HAZARD

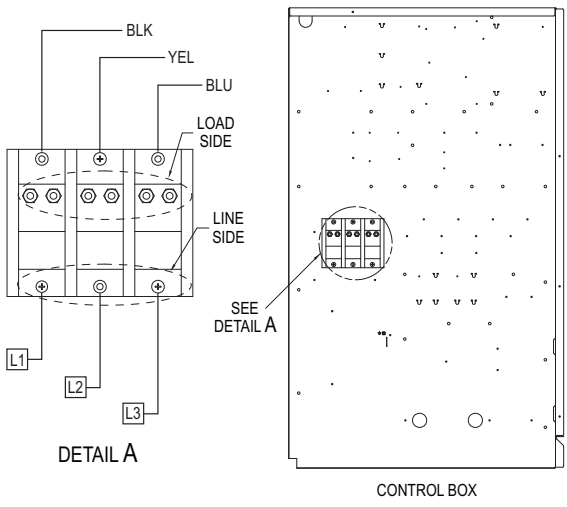
Failure to follow this warning could result in personal injury or death.

Do not use gas piping as an electrical ground. Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to unit ground lug in control compartment, or conduit approved for electrical ground when installed in accordance with NEC (National Electrical Code); ANSI/NFPA 70, latest edition (in Canada, Canadian Electrical Code CSA [Canadian Standards Association] C22.1), and local electrical codes.

NOTE: Field-supplied wiring shall conform with the limitations of minimum 63°F (33°C) rise.

Field Power Supply —

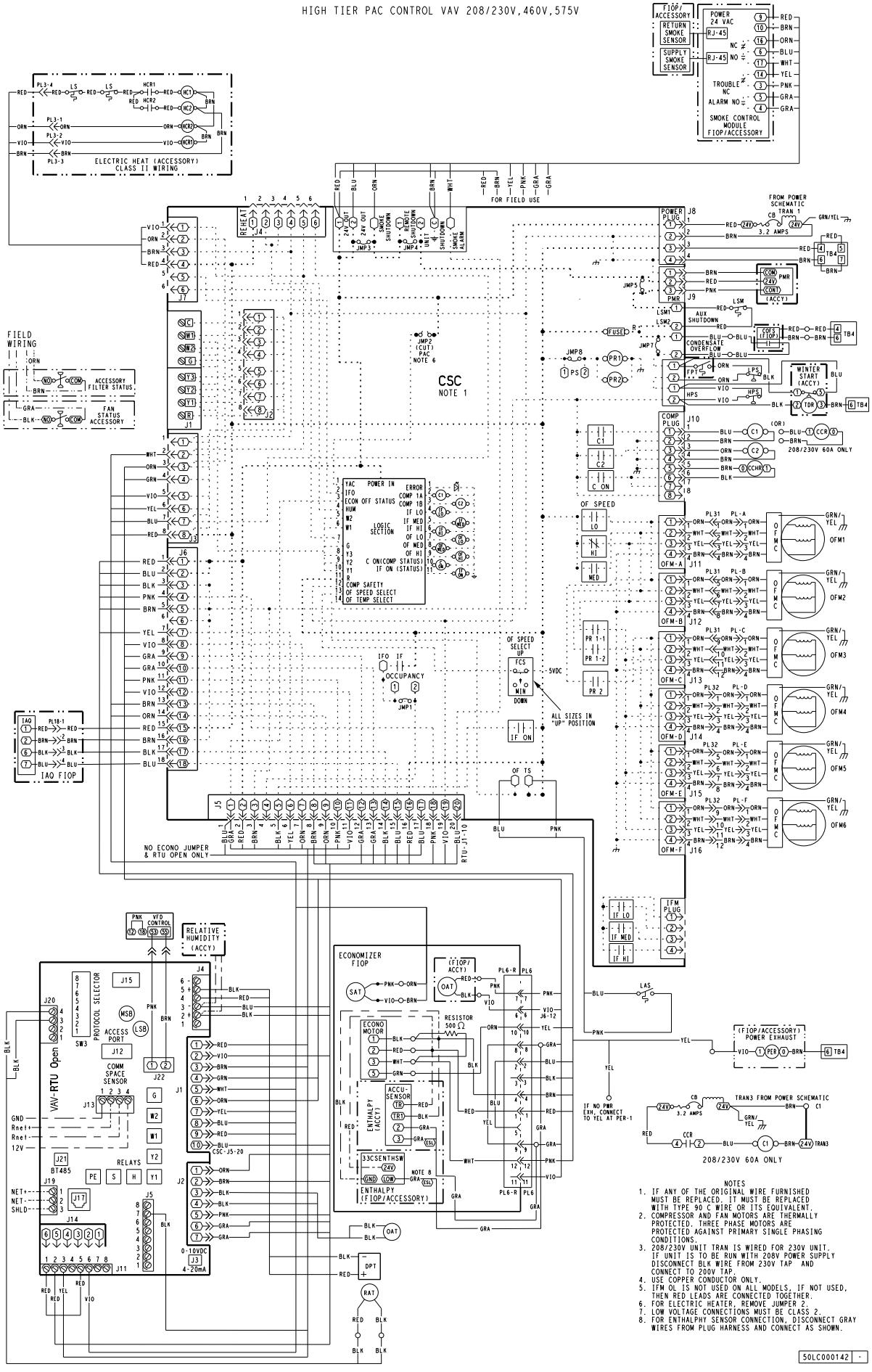
If equipped with optional Powered Convenience Outlet: The power source leads to the convenience outlet's transformer primary are not factory connected. Installer must connect these leads according to required operation of the convenience outlet. If an always-energized convenience outlet operation is desired, connect the source leads to the line side of the unit-mounted disconnect. (Check with local codes to ensure this method is acceptable in your area.) If a de-energize via unit disconnect switch operation of the convenience outlet is desired, connect the source leads to the load side of the unit disconnect. On a unit without a unit-mounted disconnect or HACR, connect the source leads to the terminal block with unit field power leads. See Fig. 21.



C11181

Fig. 21 - Location of TB1

Field power wires are connected to the unit at line-side pressure lugs on the terminal block (see wiring diagram label for control box component arrangement) or at factory-installed option non-fused disconnect switch or HACR breaker. Use copper conductors only.

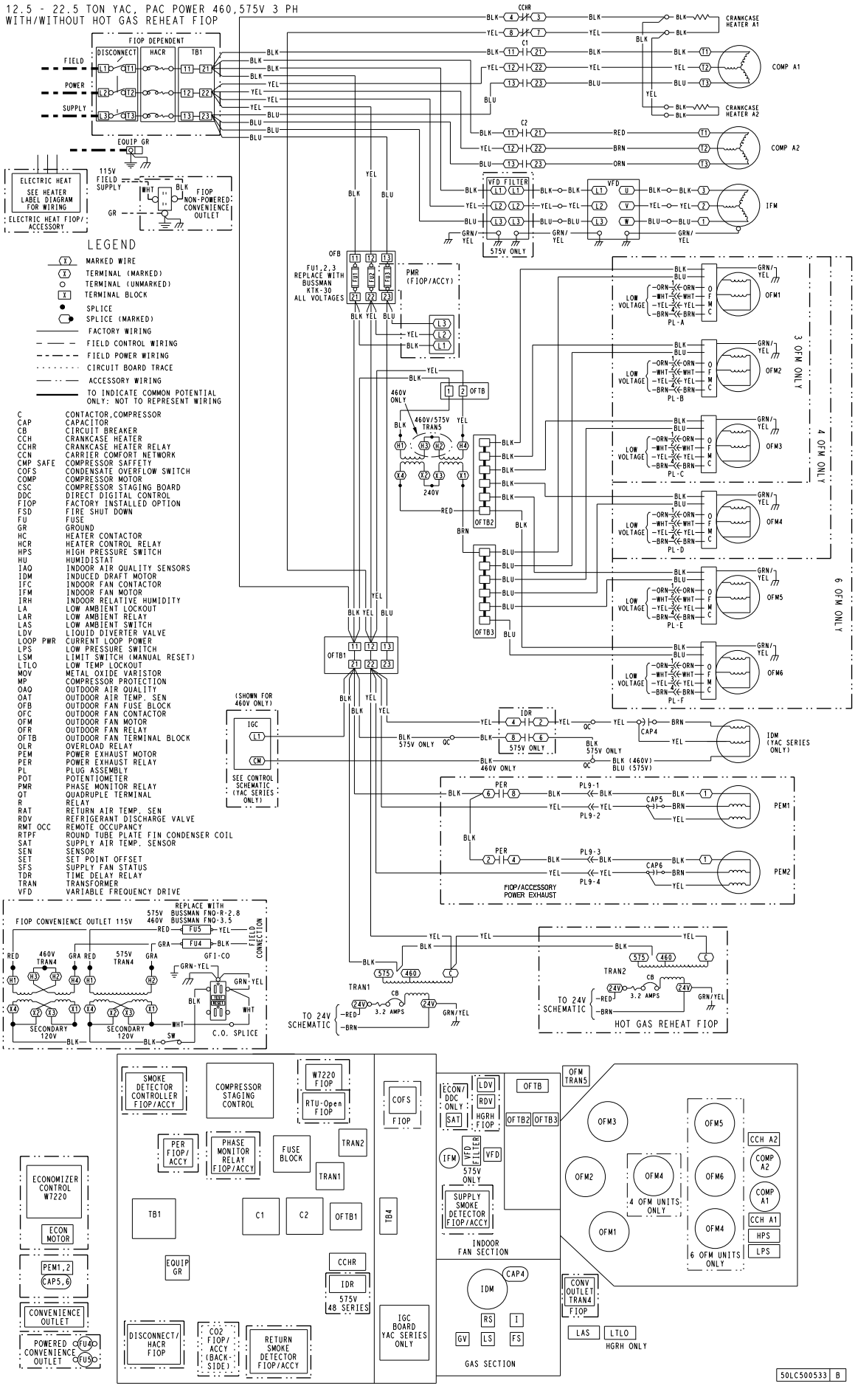


C150333

Fig. 22 - 50LC*B14-26 VAV-RTU Open Control Wiring Diagram

NOTES

1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
2. COMPRESSOR AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
3. 208/230V UNIT TRAN IS WIRED FOR 230V UNIT. IF UNIT IS TO BE RUN WITH 208V POWER SUPPLY DISCONNECT BLK WIRE FROM 230V TAP AND CONNECT TO 200V TAP.
4. USE COPPER CONDUCTOR ONLY.
5. IFM OL IS NOT USED ON ALL MODELS, IF NOT USED, THEN RED LEADS ARE CONNECTED TOGETHER.
6. FOR ELECTRIC HEATER, REMOVE JUMPER 2.
7. LOW VOLTAGE CONNECTIONS MUST BE CLASS 2.
8. FOR ENTHALPY SENSOR CONNECTION, DISCONNECT GRAY WIRES FROM PLUG HARNESS AND CONNECT AS SHOWN.



C150372

Fig. 23 - 50LC*B14-26 Power Wiring Diagram

NOTE: Make field power connections directly to line connection pressure lugs only.

⚠ WARNING

FIRE HAZARD

Failure to follow this warning could result in intermittent operation or performance satisfaction.

Do not connect aluminum wire between disconnect switch and air conditioning unit. Use only copper wire. (See Fig. 24.)

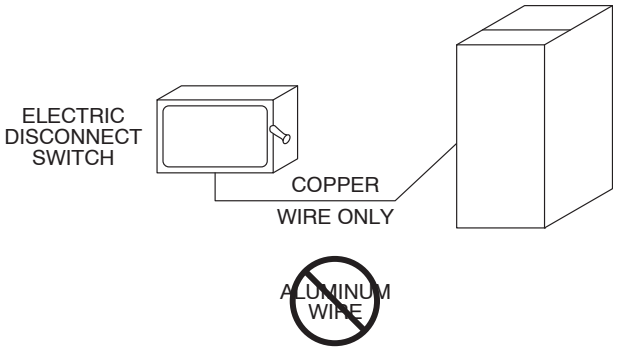


Fig. 24 - Disconnect Switch and Unit

Units Without Factory-Installed Non-Fused Disconnect or HACR —

When installing units, provide a disconnect switch per NEC (National Electrical Code) of adequate size. Disconnect sizing data is provided on the unit informative plate. Locate on unit cabinet or within sight of the unit per national or local codes. Do not cover unit informative plate if mounting the disconnect on the unit cabinet.

Units With Factory-Installed Non-Fused Disconnect or HACR—

The factory-installed option non-fused disconnect switch (NFD) or HACR is located in the main control box. The manual switch handle and shaft are shipped in the control box and must be mounted on the corner post adjacent to the control box (see Fig. 25 or 26). Note that the tape covering the hole for the shaft in the corner post must be removed prior to handle and shaft installation.

To field install the NFD shaft and handle:

1. Open the control box panel.
2. Make sure the NFD shipped from the factory is at OFF position (the arrow on the black handle knob or on the silver metal collar is at OFF).
3. Insert the shaft with the cross pin on the top of the shaft in the horizontal position.
4. Measure the tip of the shaft to the outside surface of the corner post to be 0.88”.
5. Tighten the locking screw to secure the shaft to the NFD.
6. Turn the handle to OFF position with red arrow pointing at OFF.
7. Install the handle on to the corner post vertically with the red arrow pointing up.
8. Secure the handle to the corner post with (2) screws and lock washers supplied.

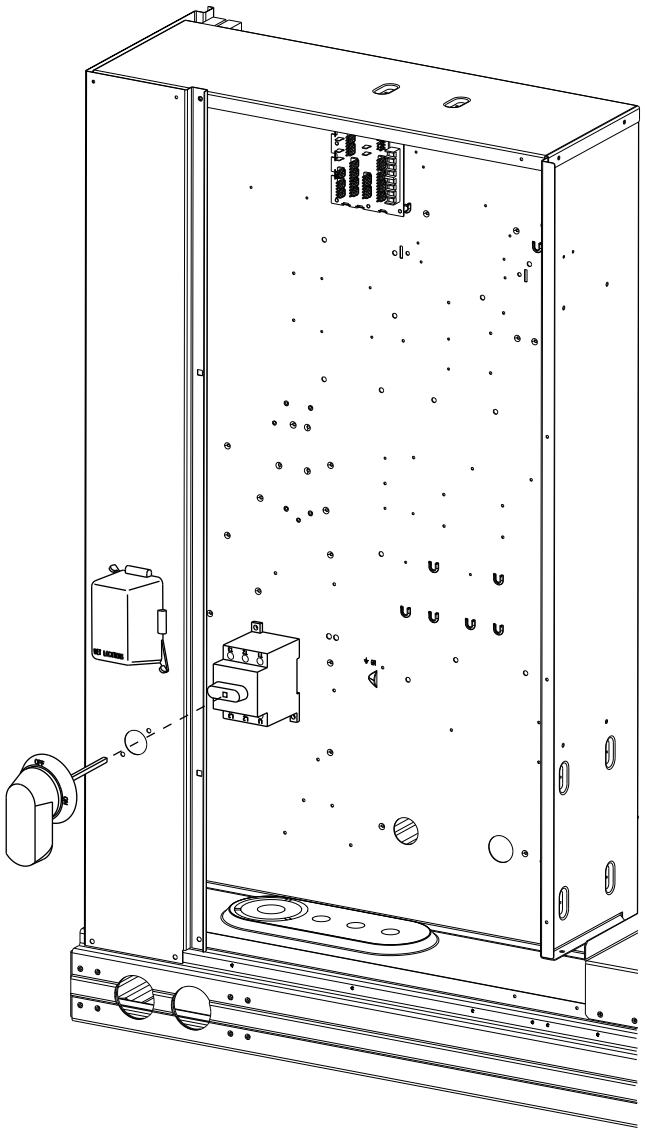
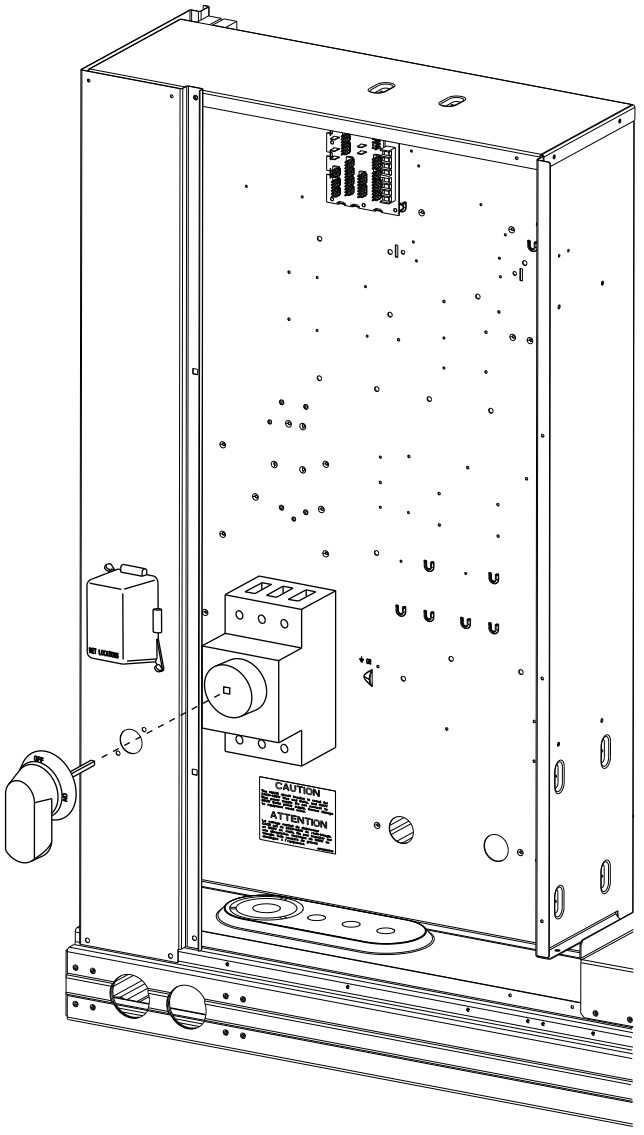


Fig. 25 - Handle and Shaft Assembly for NFD

To field install the HACR shaft and handle:

1. Open the control box panel.
2. Make sure the HACR shipped from the factory is at OFF position (the white arrow pointing at OFF).
3. Insert the shaft with the cross pin on the top of the shaft in the horizontal position.
4. Measure the tip of the shaft to the outside surface of the corner post to be 0.88”.
5. Tighten the locking screw to secure the shaft to the HACR.
6. Turn the handle to OFF position with red arrow pointing at OFF.
7. Install the handle on to the corner post vertically with the red arrow pointing up.
8. Secure the handle to the corner post with (2) screws and lock washers supplied.



C12386

Fig. 26 - Handle and Shaft Assembly for HACR

All Units -

All field wiring must comply with NEC and all local code requirements.

Size wire based on MCA (Minimum Circuit Amps) on the unit informative plate. See Fig. 27 for power wiring connections to the unit power terminal block and equipment ground. Maximum wire size is 2/0 AWG per pole.

Provide a ground-fault and short-circuit over-current protection device (fuse or breaker) per NEC Article 440 (or local codes). Refer to unit informative data plate for MOCP (Maximum Over-current Protection) device size.

NOTE: Units ordered with factory installed HACR do not need additional ground-fault and short circuit over current protection device unless required by local codes.

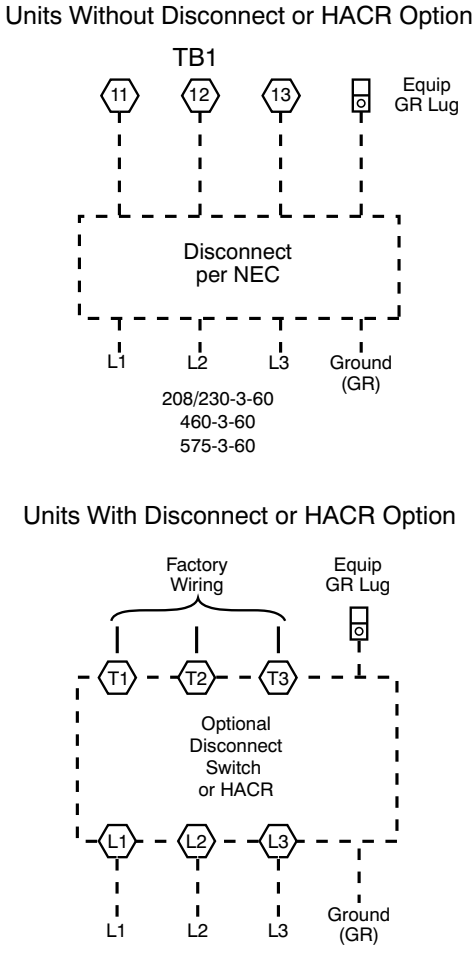
Voltage to compressor terminals during operation must be within voltage range indicated on unit nameplate. See Tables 9 and 10. On 3-phase units, voltages between phases must be balanced within 2% and the current within 10%. Use the formula shown in the legend for Tables 9 and 10 (see Note 2 on page 66) to determine the percent of voltage imbalance.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage.

Operation on improper line voltage or excessive phase imbalance constitutes abuse and may cause damage to electrical components. Such operation would invalidate any applicable Carrier warranty.



C12387

Fig. 27 - Power Wiring Connections

Convenience Outlets —

⚠ WARNING

ELECTRICAL OPERATION HAZARD

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

Units with convenience outlet circuits may use multiple disconnects. Check convenience outlet for power status before opening unit for service. Locate its disconnect switch, if appropriate, and open it. Lock-out and tag-out this switch, if necessary.

Two types of convenience outlets are offered on 50LC*B models: Non-unit powered and unit-powered. Both types provide a 125-volt GFCI (ground-fault circuit-interrupter) duplex receptacle rated at 15-A behind a hinged access cover, located on the corner panel of the unit. See Fig. 28.

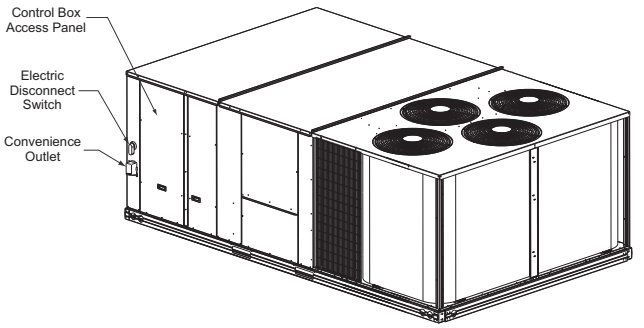


Fig. 28 - Convenience Outlet Location

Installing Weatherproof Cover: A weatherproof while-in-use cover for the factory-installed convenience outlets is now required by UL standards. This cover cannot be factory-mounted due to its depth; it must be installed at unit installation. For shipment, the convenience outlet is covered with a blank cover plate.

The weatherproof cover kit is shipped in the unit's control box. The kit includes the hinged cover, a backing plate and gasket.

DISCONNECT ALL POWER TO UNIT AND CONVENIENCE OUTLET. LOCK-OUT AND TAG-OUT ALL POWER.

Remove the blank cover plate at the convenience outlet; discard the blank cover.

Loosen the two screws at the GFCI duplex outlet, until approximately $^1/_2$-in (13 mm) under screw heads are exposed. Press the gasket over the screw heads. Slip the backing plate over the screw heads at the keyhole slots and align with the gasket; tighten the two screws until snug (do not over-tighten).

Mount the weatherproof cover to the backing plate as shown in Fig. 29. Remove two slot fillers in the bottom of the cover to permit service tool cords to exit the cover. Check for full closing and latching.

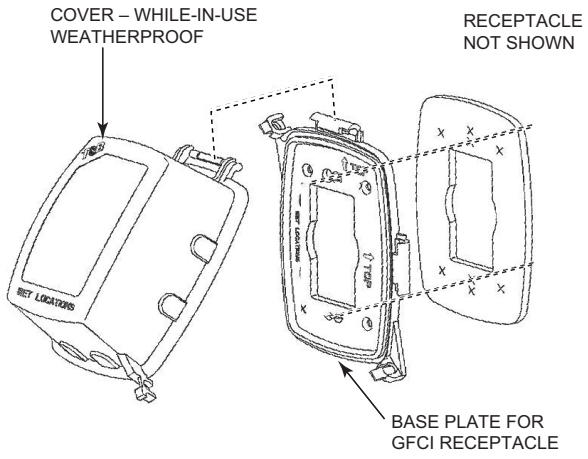
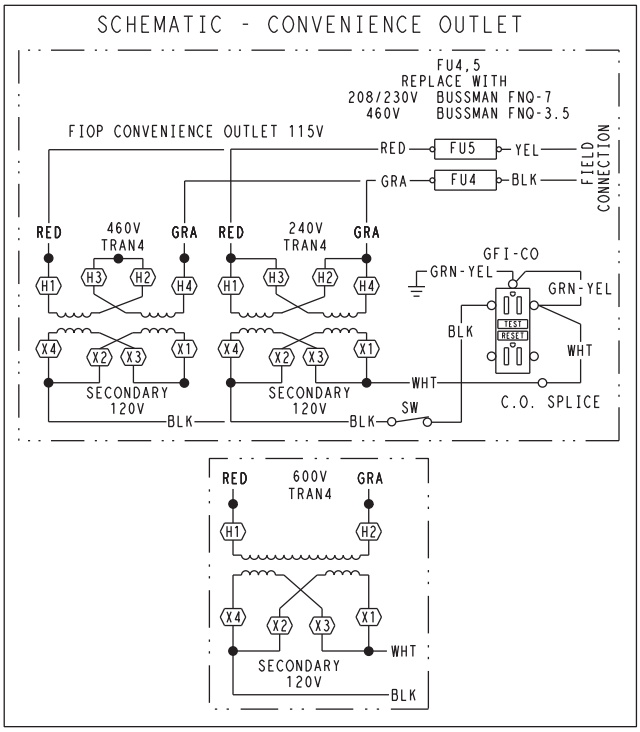


Fig. 29 - Weatherproof Cover Installation

Non-unit powered type: This type requires the field installation of a general-purpose 125-volt 15-A circuit powered from a source elsewhere in the building. Observe national and local codes when selecting wire size, fuse or breaker requirements and disconnect switch size and location. Route 125-v power supply conductors into the bottom of the utility box containing the duplex receptacle.

Unit-powered type: A unit-mounted transformer is factory-installed to stepdown the main power supply voltage to the unit to 115-v at the duplex receptacle. This option also includes a manual switch with fuse, located in a utility box and mounted on a bracket behind the convenience outlet; access is through the unit's control box access panel. See Fig. 28.

The primary leads to the convenience outlet transformer are not factory-connected. If local codes permit, the transformer primary leads can be connected at the line-side terminals on the unit-mounted non-fused disconnect switch; this will provide service power to the unit when the unit disconnect switch is open. See Fig. 30.



UNIT VOLTAGE	CONNECT AS	PRIMARY CONNECTIONS	TRANSFORMER TERMINALS
208, 230	240	L1: RED +YEL L2: BLU + GRA	H1 + H3 H2 + H4
460	480	L1: RED Splice BLU + YEL L2: GRA	H1 H2 + H3 H4
575	600	L1: RED L2: GRA	H1 H2

Fig. 30 - Powered Convenience Outlet Wiring

C10077

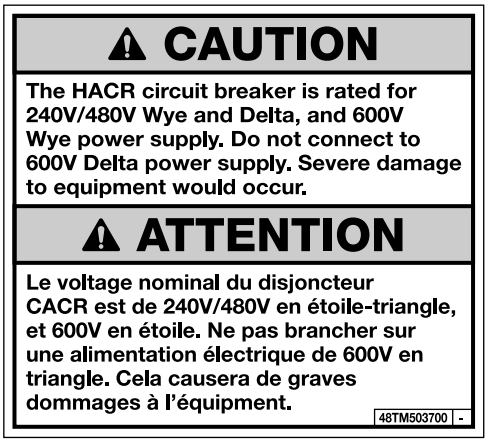
Fig. 31 - Convenience Outlet Utilization Notice

Test the GFCI receptacle by pressing the TEST button on the face of the receptacle to trip and open the receptacle. Check for proper grounding wires and power line phasing if the GFCI receptacle does not trip as required. Press the RESET button to clear the tripped condition.

Using unit-mounted convenience outlets: Units with unit-mounted convenience outlet circuits will often require that two disconnects be opened to de-energize all power to the unit. Treat all units as electrically energized until the convenience outlet power is also checked and de-energization is confirmed. Observe National Electrical Code Article 210, Branch Circuits, for use of convenience outlets.

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. If field installed accessories are added or changed in the field (i.e., electric heat, power exhaust), 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 accessories.



C12105

Fig. 32 - HACR Caution Label

Factory-Option Thru-Base Connections —

All units are equipped with the ability to bring utilities through the base.

The electrical entrance is located in the control box area can can be accessed through the control box access panel. An embossed area is provided with three knock outs. High voltage is brought through the multi knock out by removing the appropriate size for the size of the fitting required. A $^{7}/_{8}$-in. knock out is provided for low voltage. An additional $^{7}/_{8}$-in. knock out is provided for a 115 volt line which is used when the unit is equipped with the non-unit powered convenience outlet option.

All required fittings are field supplied. Install fittings when access to both top and bottom of the base pan is available.

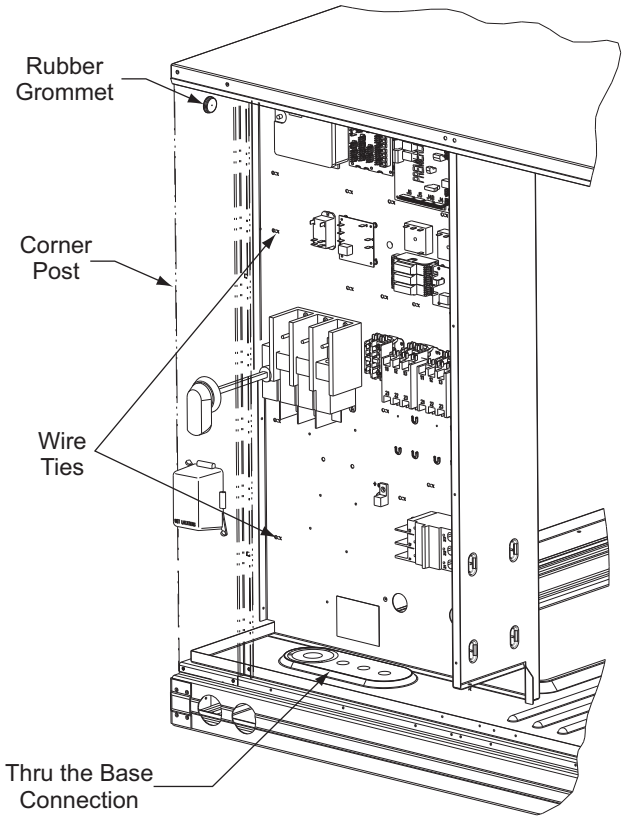
Units without Thru-Base Connections —

1. Install liquid tight conduit between disconnect and control box.
2. Pull correctly rated high voltage wires through the conduit.
3. Install power lines to terminal connections as shown in Fig. 27.

Unit Without Thru-Base Connection Kit —

Correctly rated low voltage wire can be routed through the rubber grommet located on the corner post adjacent to the control box access panel. Route wire through the grommet and then route the wire behind the corner post utilizing the factory provided wire ties secured to the control box. This will insure separation of the field low voltage wire and the high voltage circuit. Route the low voltage wire to the Integrated Staging Control (ISC) board. See Fig. 33.

NOTE: If utilizing the through the base connections, route the low voltage wire through the wire ties to the ISC board.



C10734

Fig. 33 - Field Control Wiring Raceway

Heat Anticipator Settings —

Set heat anticipator settings at 0.14 amp for the first stage and 0.14 amp for second-stage heating.

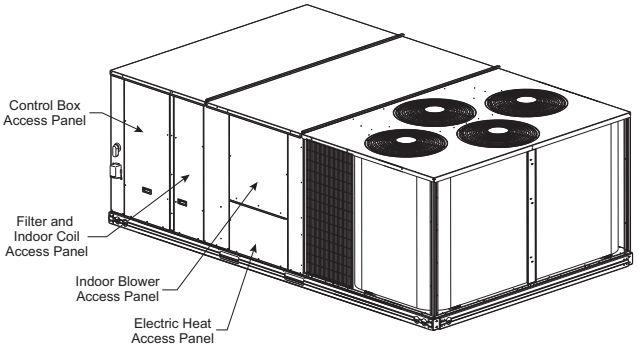
Transformer Connection for 208-v Power Supply —

All units except 208/230-v units are factory wired for the voltage shown on the nameplate. *If the 208/230-v unit is to be connected to a 208-v power supply, the control transformer must be rewired by moving the black wire with the $^1/_4$-in. female spade connector from the 230-v connection and moving it to the 208-v $^1/_4$-in. male terminal on the primary side of the transformer.* Refer to unit label diagram for additional information.

Electric Heaters

50LC*B units may be equipped with factory or field-installed electric heaters. The heaters are modular in design.

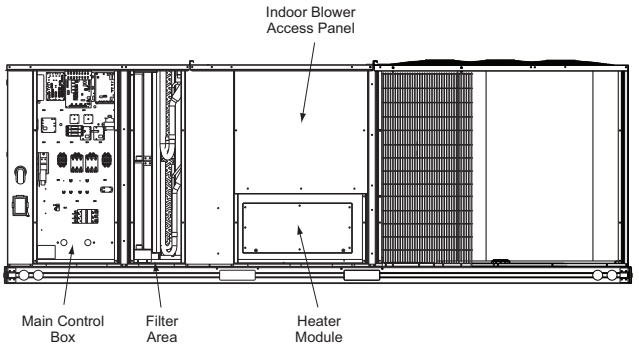
Heater modules are installed in the compartment below the indoor blower access panel. Access is through the electric heat access panel. Heater modules slide into the compartment on tracks along the bottom of the heater opening. See Fig. 34, Fig. 35 and Fig. 36. Refer to the Electric Heater Kit Installation Instructions for complete details on field installed electric heat accessory.



C10631

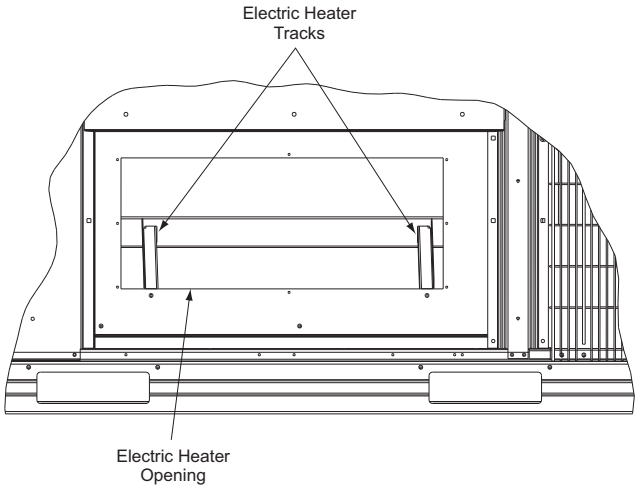
Fig. 34 - Typical Access Panel Location

Not all available heater modules may be used in every unit. Use only those heater modules that are ETL listed for use in a specific size unit. Refer to the label on the unit cabinet for the list of approved heaters.



C10632

Fig. 35 - Typical Component Location

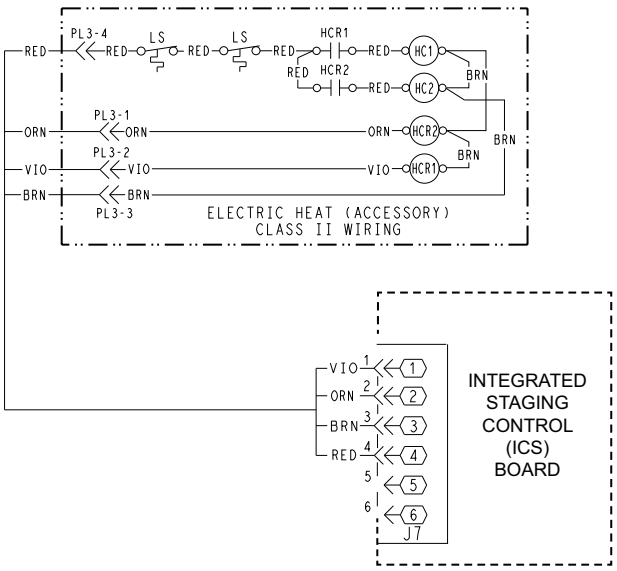


C09142

Fig. 36 - Electric Heater Compartment (Cover Removed)

Low-Voltage Control Connections —

Locate the plug assembly in the electric heater section of the main unit. Connect the plug with the mating low voltage plug located on the heater. Note that the plug will already be connected when there is factory installed electric heat (see Fig. 37).



C13238

Fig. 37 - Optional or Accessory Electric Heater Control Connections

VAV-RTU Open Controller

For details on VAV-RTU Open option refer to the *48/50LC*B 7-26 VAV-RTU Open Controller Controls, Start-up, Operation and Troubleshooting* manual.

Integrated Staging Control (ISC) Board

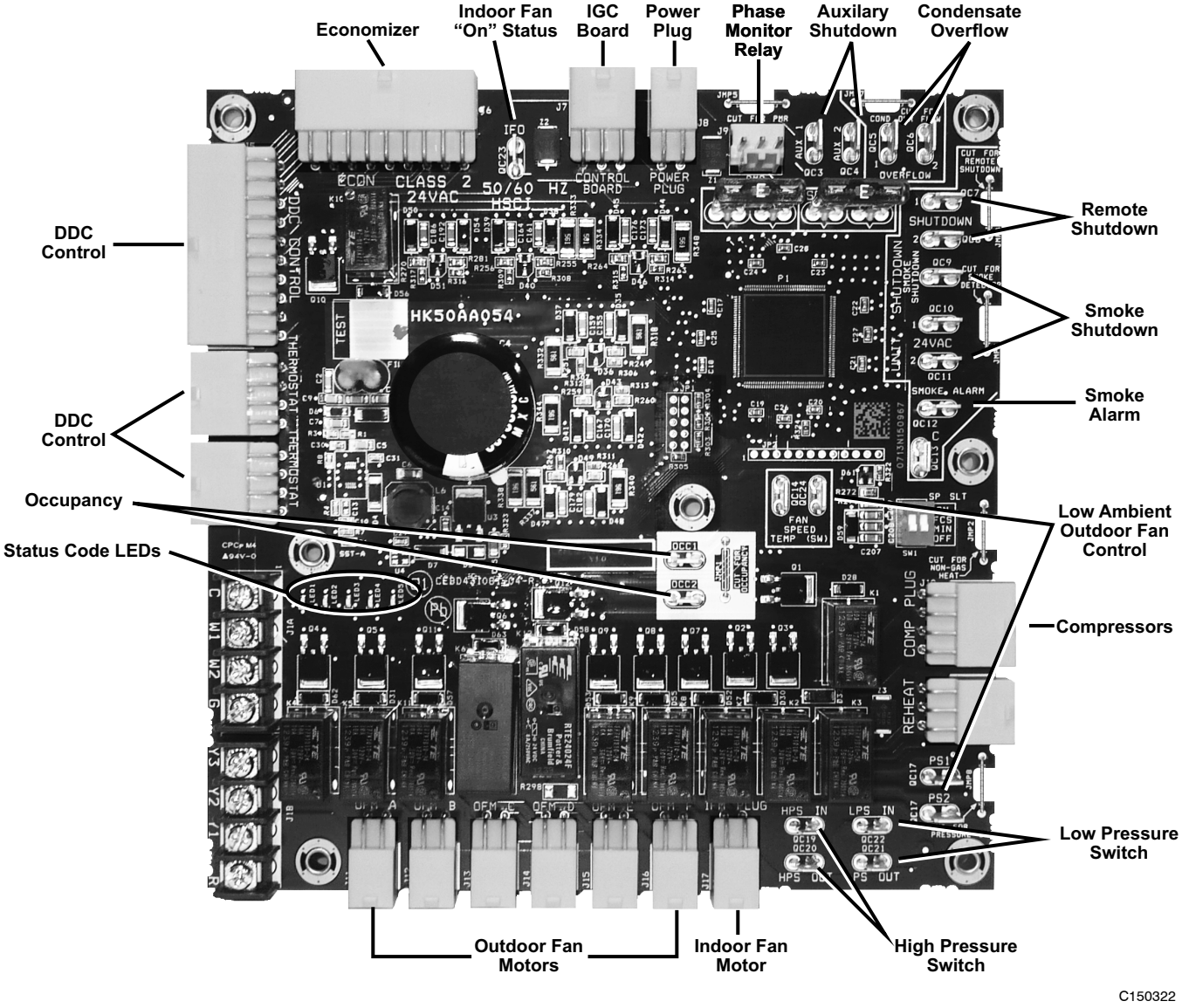


Fig. 38 - Integrated Staging Control (ISC) Board

Sequence of Operation

General —

The Carrier Integrated Staging Control (ISC) is intended for use with the VAV-RTU Open controller. After initial power to the board, a Green LED will blink with a 1 second duty cycle indicating the unit is running properly. In the event of the ISC board failing, the Green LED will be OFF or continuously ON. When the unit is not running properly, the Green LED will blink along with Red LED lights. The Red LED light configuration will indicate the type of error the board has identified. See Fig. 38 for LED locations and Table 2 for a list of status codes.

The ISC board can be remotely shutdown by removing Jumper 4 and wiring to the Remote Shutdown terminal. The Smoke Control Module can shutdown the unit by removing Jumper 3 and wiring to the Smoke Shutdown terminal. The Smoke Alarm terminal on the ISC Board provides a pass thru connection should a smoke alarm signal be connected. The VAV-RTU Open controller provides the signal which is passed thru the ISC board to the Smoke Alarm terminal.

The crankcase heater will run at all times except when the compressors are running. An auxiliary power supply (24Vac) available at TB-4 Terminal is provided to power auxiliary equipment. An optional Phase Monitor Relay can be wired to the PMR terminal by removing Jumper 5. An optional Condensate Flow Switch can be wired to the COFS Terminal by removing Jumper 7.

Static Pressure Control –

The supply fan VFD will be controlled using a PID and an analog input from a duct static pressure transducer. The supply fan will modulate its speed to maintain the desired duct static pressure setpoint.

Table 2 – Status Code Descriptions for ISC Board LEDs

ERROR#	ERROR NAME	LED INDICATION				
		LED01	LED02	LED03	LED04	LED05
1	Check Smoke Detector/PMR/AUX		RED	Blinking Green LED (Note 1)		
2	Check HPS/LPS/COFS	RED	RED			
3	Call for Y3 with no call for Y1. Check Y1 wiring.				RED	
4	Call for Y3 with no call for Y1/Y2. Check Y1 wiring.				RED	RED
5	Call for Y2 with no call for Y1. Check Y1 wiring.		RED		RED	
6	Call for W2 with no call for W1. Check W1 wiring.	RED				RED
7	Call for heat (W1/W2) and cooling (Y1/Y2/Y3). Check VAV–RTU Open wiring.	RED	RED		RED	RED
8	Call for heat (W1/W2) with no IFM. Check G wiring.		RED		RED	RED
9	Call for cooling (Y1/Y2/Y3) with no G. Check G wiring	RED	RED		RED	
10	Call for heat (W1/W2) and cooling (Y1/Y2/Y3) with no G. Check VAV–RTU Open and G wiring.	RED	RED			RED
11	Check ISC Board and the VAV–RTU Open wiring	RED			RED	RED
12	Call for Economizer Y1 Feedback (ECON) from economizer with no call for Y1. Check VAV–RTU Open and economizer wiring.	RED				
13	Check ISC Board and the VAV–RTU Open wiring	RED			RED	
14	Check ISC Board and the VAV–RTU Open wiring					RED
15	Check ISC Board and the VAV–RTU Open wiring		RED			RED

NOTES: 1. Green LED Blinking at 1HZ indicates normal operation.
2. Solid red LED indicates an error exists, see above LED configuration.

Field Test/Commissioning –

The control will provide BACnet test points to activate specific test modes that can be used to commission the rooftop and the system. Test modes will be available in the Service Test screen on the Property pages and shall also be available on the local Equipment Touch device for standalone commissioning. Tests include: Fan Test, Low Heat Test, High Heat Test, Cooling Test, Power Exhaust Test, and an Economizer Test. When any test is active, the appropriate Linkage mode will be sent to the system's terminals. This will ensure appropriate system operation and airflow during any test mode.

Ventilation —

In the Ventilation/Fan Mode (G), the indoor-fan will run at low speed and the damper will operate at minimum position.

Supply Air Temperature Control –

The control will maintain the desired supply air temperature setpoint whenever cooling is required. A user configurable setpoint will be provided (default 53°F). The control will use the appropriate method (economizer cooling, mechanical cooling, or a combination of both) to achieve this setpoint whenever the zone temperature is greater than the current cooling setpoint (occupied or unoccupied). If Supply Air Reset is enabled, the reset algorithm will calculate a proportional reset value between the Occupied Cooling setpoint and 1°F above the Occupied Heating setpoint. The amount of reset (reset ratio and maximum reset limit value) is user configurable.

Minimum Ventilation –

The economizer minimum position will be adjusted as required based on the supply fan speed. Two user configurable minimum economizer positions will be provided. The economizer will be positioned at the "Low Fan Econ Min Pos" when the fan is operating at its slowest speed. When the fan is operating at its maximum speed, the economizer will be positioned at the "Vent Dmpr Pos / DCV Min Pos". For any supply fan speed between these two points, the economizer minimum position will be calculated proportionally.

Demand Controlled Ventilation [DCV] –

Whenever the unit is in an occupied mode and "DCV Control" is set to enable, a unique economizer minimum position will be calculated based on the output of the DCV calculation. Two user configurable values are provided; the "DCV Max Ctrl Setpoint" is the differential CO_2 setpoint that is used as the control point and a "DCV Max Vent Damper Pos" provides the ability to limit the maximum amount of outdoor air being introduced into the unit through the economizer by the DCV control. The economizer will be positioned at the greater of any minimum economizer position. Demand Controlled Ventilation can be used in either a differential mode where both the indoor air and outdoor air CO_2 levels are provided to the control or it may be used in a single indoor air mode with only the indoor air CO_2 level. In the latter case, the outdoor air CO_2 level is assumed at 400 ppm.

Mechanical Cooling Cycle –

The control will operate three stages of mechanical cooling in order to maintain the desired supply air temperature whenever economizer cooling operation is unavailable but cooling is required. This condition will be determined if the OA has high enthalpy or at a temperature above the Economizer Lockout temperature. The two compressors will be staged in a binary fashion so that three stages of cooling are provided. Mechanical cooling stages will be added as required to meet the desired SA setpoint. The number of stages will depend on the return air conditions and the system load (airflow through the coil). Stages will be added

or dropped as required to maintain the setpoint while also maintaining the minimum on time and minimum off time for compressor operation. Anytime the SA falls below the desired SA setpoint, stages will be dropped until only stage 1 is operating. At that point, should the SA fall below 45°F (7°C), the economizer will modulate to increase the amount of outdoor air in order to maintain this minimum SA temperature. Should the economizer reach the maximum OA position and if the SA is still below the minimum SA temperature, the 1st cooling stage will be disabled and the economizer will return to the minimum position.

Integrated Cooling Cycle -

If economizer cooling operation is insufficient to maintain the desired SA setpoint, mechanical cooling will be activated to supplement the free economizer cooling. This condition will be determined if the OA has low enthalpy but is at a temperature at least 5 deg F above the desired SA setpoint and below the Economizer Lockout temperature. Mechanical cooling stages will be added as required to meet the desired SA setpoint. The number of stages will depend on the return air conditions and the system load (airflow through the coil). Stages will be added or dropped as required to maintain the setpoint while also maintaining the minimum on time and minimum off time for compressor operation. Anytime the SA falls below the desired SA setpoint, stages will be dropped until only stage 1 is operating. At that point, should the SA fall below the minimum SA temperature, the economizer will modulate to increase the amount of return air in order to maintain this minimum SA temperature. Should the economizer reach the minimum OA position and if the SA is still below the minimum SA temperature, the 1st cooling stage will be disabled.

Economizer Cooling Cycle –

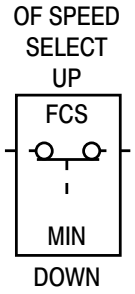
The control will provide the ability to utilize outdoor air for maintaining the supply air setpoint should the outdoor air be suitable. The economizer control will utilize an OAT temperature check, a RAT temperature check if RAT is available or a SPT temperature check comparison and optionally, an OA enthalpy check to determine if OA conditions are suitable for economizing. Economizer operation, if available, will begin whenever cooling is required. The economizer will modulate the position of the OA damper to maintain the desired calculated economizer setpoint. The economizer will be controlled to meet CEC Title 24 requirements so that it will remain open 100% during integrated cooling and only partially close if required.

Low Ambient Cooling Operation Down to 45°F (7°C) —

In Low Ambient RTU conditions when the temperature is between 55°F (13°C) and 45°F (7°C), the Low Ambient Switch (LAS) will be active and the outdoor-fans will run to the pre-set factory outdoor-fan speed. When the temperature is greater than 65°F (18°C), the Low Ambient Switch will deactivate and the outdoor-fans will run in the standard cooling mode. If the Outdoor Fan Select Switch (see Fig. 39) is in the up position, the outdoor fans will run in the Fan Cycle Speed Mode (FCS) set to 250 rpm. If the Outdoor Fan Select Switch is in the down position, the outdoor fans will run in the Minimum Fan Speed Mode (MIN) set to 160 rpm regardless of the cooling demand.

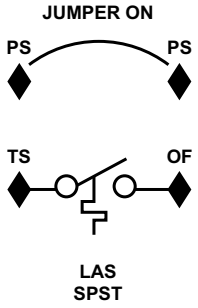
At temperatures below 45°F (7°C), unit will utilize economizer for SA temperature control.

LC Size 14 through 26 Units have a SPST normally open Low Ambient Switch wired across the TS and OF terminal and a jumper placed across the PS terminal (see Fig. 40). When the LAS is active, the switch will close making contact to the OF terminal. This is done for units that require all outdoor fans to run at the same pre-set factory Low Ambient Speed.



C13327

Fig. 39 - Outdoor Fan Speed Select Switch



C13328

Fig. 40 - Schematic of SPST Low Ambient Switch

The Low Ambient Temperature Outdoor Fan Control Table (below) shows the operation of the outdoor fan for each unit.

Table 3 – Low Ambient Temperature Outdoor Fan Control

LC Size	No. of Fans On	No. of Fans Off	Switch	Outdoor Fan Select Switch	RPM
14	3	0	SPST	Up	250
17	4	0	SPST	Up	250
20	4	0	SPST	Up	250
24	6	0	SPST	Up	250
26	6	0	SPST	Up	250

Heating —

In the Heating Mode power is applied to the G and W1 terminal at the ISC board and energizes the first state of electric heat. Upon more call for heat power is applied to the G and W2 terminal at the ISC board and energizes the second state of electric heat. The VFD controlled indoor fan will operate at high speed regardless of the heating demand.

Morning Warm-up –

The control will provide a Morning Warm-up cycle the first time if transition from unoccupied to occupied and if

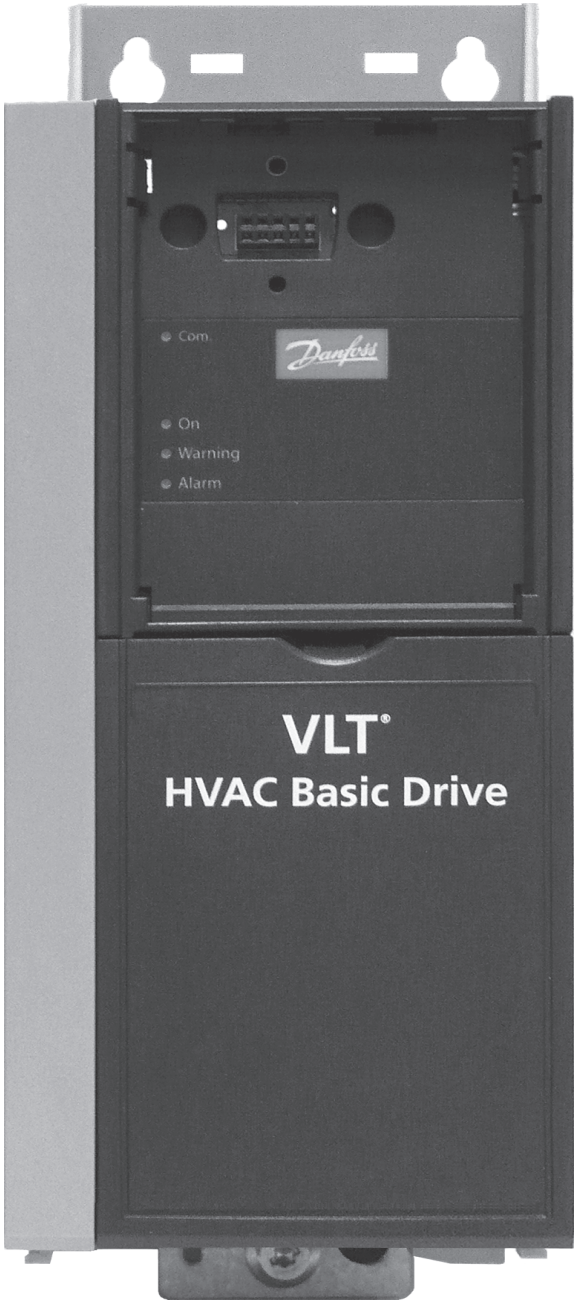
the heating is required and the unit goes into heating immediately. Whenever the unit enters the heating mode, before any heat stage is enabled, the control will provide a Linkage mode to the system that will cause the terminals to maintain sufficient airflow. The Linkage mode of Warm-up (2) will be sent to the terminal system to insure sufficient airflow while in the heating mode but also providing a controlled warm-up cycle to prevent overheating of some zones. As a safety measure, should the heating cycle continue and the SAT approach the "Maximum Heating SAT" limit, the Linkage mode sent will change to Pressurization (6) to insure all terminals open to their maximum airflow. The Linkage mode will remain Pressurization until that heating cycle ends. Once the heating demand is met and the heat cycle is completed or if cooling is required, heating will be locked out until the beginning of the next occupied period.

Occupied Heating –

Optionally, the user may enable occupied heating which will allow heating whenever heating is needed during the occupied period. The cycle will operate exactly the same as Morning Warm-up above, except it will not be limited by the transition into an occupied period.

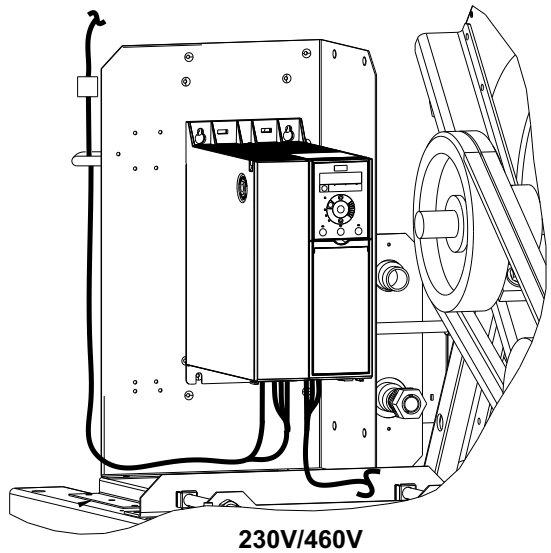
Variable Air Volume (VAV) with Variable Frequency Drive

The Variable Air Volume (VAV) system utilizes a Variable Frequency Drive (VFD) to modulate supply fan speed using a PID and an analog input from a duct static pressure sensor. The supply fan will adjust to meet the configured static set point regardless of cooling stage. In heating mode the latest VAV Open air terminals offer a minimum airflow setting. This shall be configured to maintain the required airflow (CFM) whenever the RTU is in a heating mode per the unit's specification. The Open VAV terminals will recognize the Heating or Warm-up modes as a heat mode and utilize the higher airflow minimum setpoint as configured. The system will further monitor the SAT of the RTU to determine if the SAT is approaching the configured maximum limit. As the limit is approached, the Linkage mode is changed to Linkage Pressurization to ensure all terminals open to their maximum supply airflow.

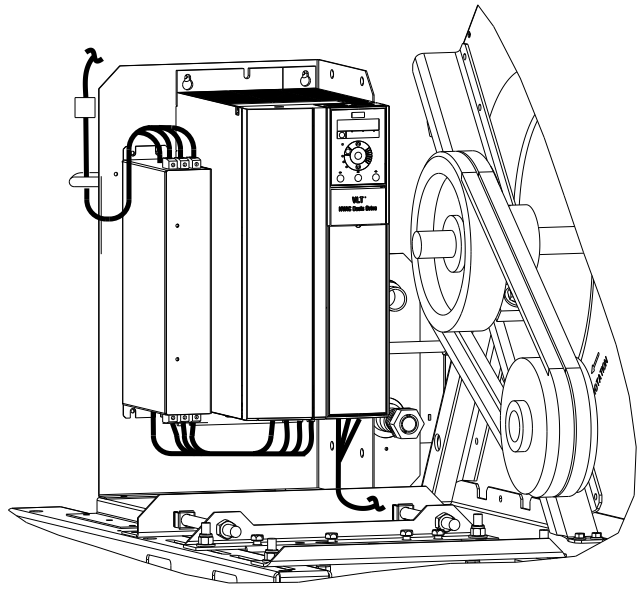


C13110

Fig. 41 - Variable Frequency Drive (VFD)



230V/460V



575V ONLY

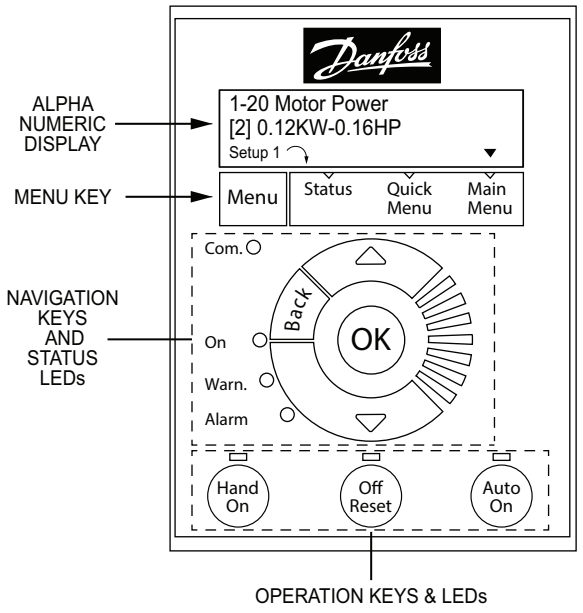
C13209

Fig. 42 - VFD Location

Multi-Speed VFD Display Kit (Field-Installed Option)

NOTE: The Remote VFD Keypad is part of the Multi-Speed VFD display kit (PN: CRDISKIT002A00) which is a field-installed option. It is not included with the 50LC*B14-26 base units.

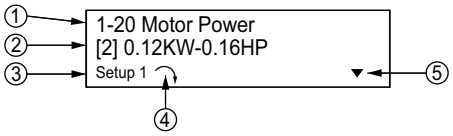
The VFD keypad as shown in Fig. 43 consists of the following sections:



C13112

Fig. 43 - VFD Keypad

Alpha Numeric Display: The LCD display is back lit with 2 alpha-numeric lines. All data is displayed on the LCD.

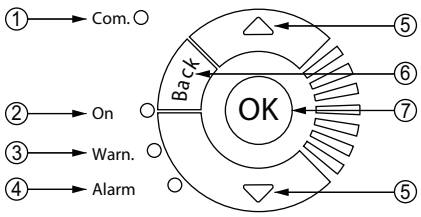


C13113

1	Parameter number and name.
2	Parameter value.
3	Setup number shows the active setup and the edit setup. If the same set-up acts as both the active and edit set-up, only that setup number is shown (factory setting). When the active and edit setup differ, both numbers are shown in the display (SETUP 12). The flashing number indicates the edit setup.
4	The symbol in the number 4 position in the figure above indicates motor direction. The arrow point either clockwise or counter-clockwise to show the motor's current direction.
5	The position of the triangle indicates the currently selected menu: Status, Quick Menu or Main Menu.

Menu Key: Use the Menu key to select between Status, Quick Menu or Main Menu. The triangle icon at the bottom of the LCD display indicates the currently selected mode. (See number 5 in the table above.)

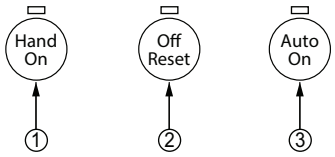
Navigation Keys and Status LEDs: The Navigation keys and Status LEDs are detailed in the following table.



C13114

1	**Com.** LED: Flashes when bus communications is communicating.
2	Green LED/**On**: Control selection is working.
3	Yellow LED/**Warn**.: Indicates a warning.
4	Flashing Red LED/**Alarm**: Indicates an alarm.
5	**Arrows ▲▼**: Use the Up and Down arrow keys to navigate between parameter groups, parameters and within parameters. Also used for setting local reference.
6	**Back** key: Press to move to the previous step or layer in the navigation structure.
7	**OK** key: Press to select the currently displayed parameter and for accepting changes to parameter settings.

Operation Keys and LEDs: The following table details the functions of the Operating keys. An illuminated yellow LED above the key indicates the active key.



C13115

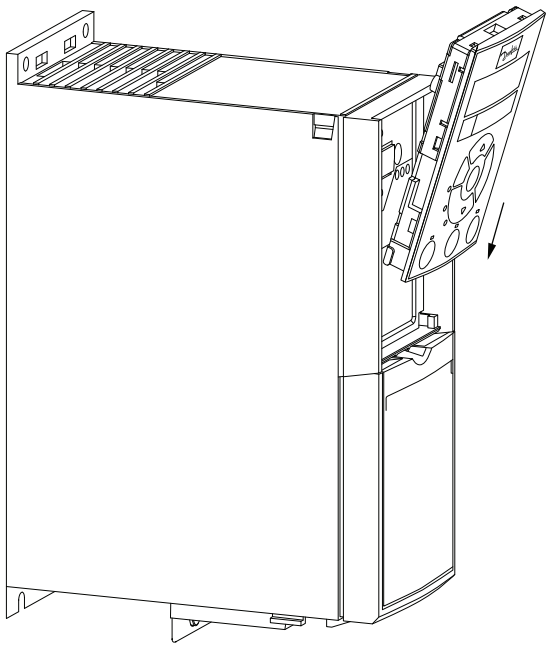
1	**Hand On** key: Starts the motor and enables control of the variable frequency drive (VFD) via the VFD Keypad option. **NOTE**: Please note that terminal 27 Digital Input *(5-12 Terminal 27 Digital Input)* has coast inverse as default setting. This means that the Hand On key will not start the motor if there is no 24V to terminal 27, so be sure to connect terminal 12 to terminal 27.
2	**Off/Reset** key: Stops the motor (off). If in alarm mode the alarm will be reset.
3	**Auto On** key: The variable frequency drive is controlled either via control terminals or serial communication.

Connecting the Keypad to the VFD

The VFD keypad can be mounted directly to the variable frequency drive, provided you can easily access the front panel of the VFD. If you don't have easy access to the VFD front panel, use the cable included with the kit to connect the keypad to the VFD.

Connecting the Keypad Directly to the VFD —

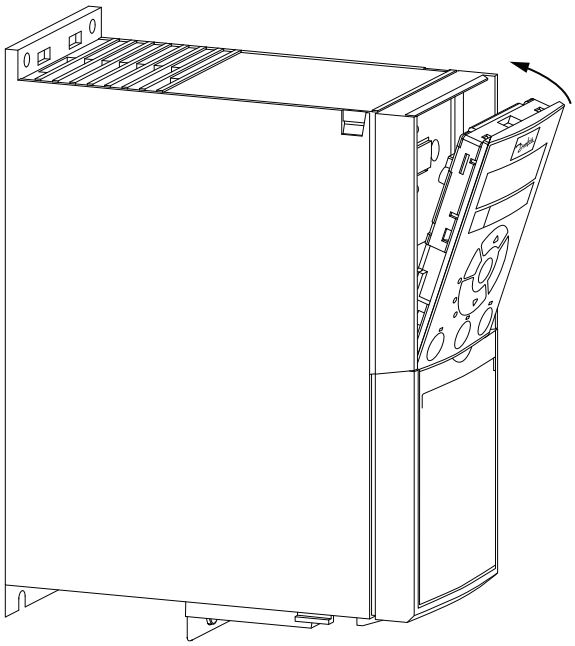
1. Place the bottom of the VFD keypad into the variable frequency drive as shown in Fig. 44.



C13116

Fig. 44 - Align Bottom of VFD Keypad with Opening in VFD Front Panel

2. Push the top of the VFD keypad into the variable frequency drive as shown in Fig. 45.



C13117

Fig. 45 - Secure Keypad in Place

Using the Cable to Connect the Keypad to the VFD —

The VFD keypad can be connected to the variable frequency drive via the cable included with the Multi-Speed VFD display kit (PN: CRDISKIT002A00).

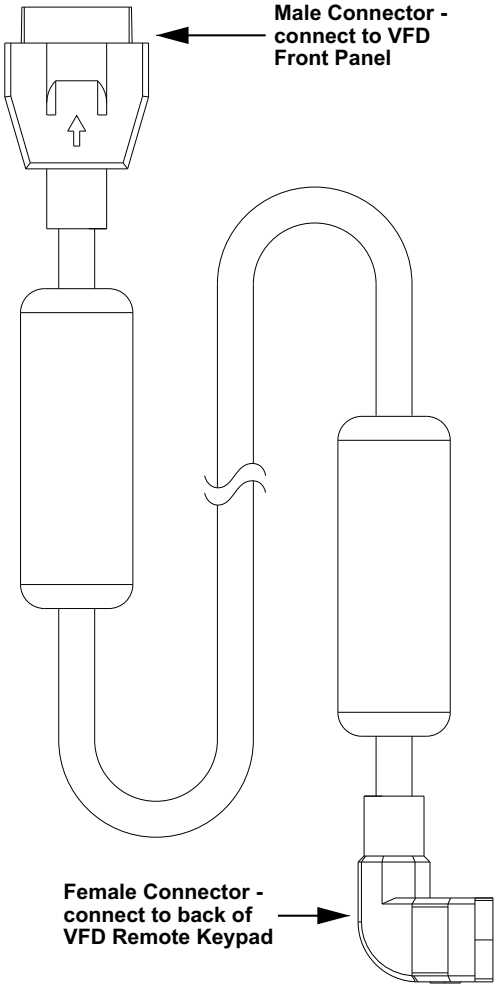


Fig. 46 - VFD Remote Keypad Cable

1. Connect the male end of the cable to the front panel of the variable frequency drive. Use 2 of the screws included with the kit to secure the cable to the VFD.
2. Connect the female end of the cable to the back panel of the VFD Remote keypad. Secure the cable to the remote keypad using the 2 remaining screws from the kit.

Program the VFD for Indoor Fan Control

IMPORTANT: 50LC*B14-26 units are programmed at the Factory for variable indoor fan speeds. The following procedure is only to be used to recover this function after an event such as a system crash.

NOTE: This procedure requires use of the VFD Keypad which is included as part of the field-installed Multi-Speed VFD display kit (PN: CRDISKIT002A00). If the VFD keypad is not already installed, install it. See "Connecting the Keypad to the VFD" for details.

To program the VFD for variable indoor fan motor speeds:

1. At Power-Up:

   At the first power up the LCD displays the Select Language screen. The default setting is English. To change the language, press the **OK** key and use the ▲ and ▼ keys to scroll to the desired language and then press **OK**.

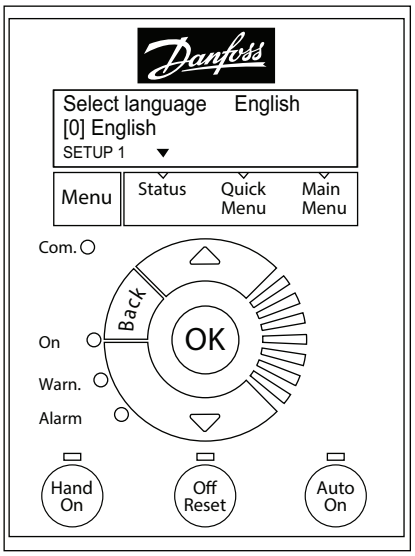


Fig. 47 - Keypad with Power Up Screen Displayed

2. Selecting Regional Settings:
   a. Press the **Off Reset** key.
   b. Press the **Menu** key to move the ▼(triangle icon) so it is positioned over Main Menu. The display show the following -

0-** Operation / Display
1-** Load and Motor

   c. Press the **OK** key, the display changes to -

0-0* Basic Settings
0-1* Set-up Operations

   d. With the top row highlighted, press OK. The display changes to -

0-01 Language
[0] English

NOTE: If English is not the desired language press **OK**, select the desired language and press **OK** again.

   e. Press ▼**(Down Arrow** key) once; the display changes to -

0-03 Regional Settings
[0] International

   f. Press **OK**; the [0] is now highlighted.
   g. Press ▼**(Down Arrow)** key once; the display changes to -

0-03 Regional Settings
[1] North America

   h. Press **OK**

NOTE: If the Alarm 060 appears, follow Step 3 to clear the alarm. Make sure to press **Off Reset** when done. If there is no alarm, continue at Step 4.

3. Clearing Alarm 060: External Interlock:
   a. Press the **Menu** key twice to position the ▼(triangle icon) over Main Menu; the display changes to -

0–** Operation / Display
1–** Load and Motor

   b. Press the ▼**(Down Arrow)** key until the following display appears -

4–** Limits / Warnings
5–** Digital In/Out

   c. Press **OK**. The display changes to -

5–0* Digital I/O mode
5–1* Digital Inputs

   d. Press ▼**(Down Arrow)** once to highlight the bottom row and press **OK**. The display changes to -

5–10 Terminal 18 Digital In...
[8] Start

   e. Press ▼**(Down Arrow)** twice; the following display appears-

5–12 Terminal 27 Digital In...
[7] External Interlock

   f. Press **OK** to highlight the number in the bracket.
   g. Press ▼**(Down Arrow)** until the following display appears -

5–12 Terminal 27 Digital In...
[0] No operation

   h. Press **OK**.
   i. Press **Off Reset.** The Alarm indicator disappears.

4. Entering Grid Type:
   a. Press the **Menu** key to move the ▼(triangle icon) so it is positioned over Main Menu. The display show the following -

0–0* Basic Settings
0–1* Set–up Operations

   b. Press **OK** twice: the display changes to -

0–01 Language
[0] English

   c. Press ▼**(Down Arrow)** three times, to reach the following display -

0–06 Grid Type
[102] 200–240V/60Hz

   d. Press **OK** to highlight the number in the bracket and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the desired voltage and Hertz for the unit.
   e. Press **OK** to accept the selection and continue.

5. Entering Motor Data:
   a. Press the **Menu** key to move the ▼(triangle icon) so it is positioned over Main Menu. The display show the following -

0–** Operation / Display
1–** Load and Motor

   b. Press ▼**(Down Arrow)** once to highlight the bottom row.
   c. Press **OK**, the display changes to -

1–0* General Settings
1–1* Motor Selection

   d. Press ▼**(Down Arrow)** twice to reach the following display -

1–1* Motor Selection
1–2* Motor Data

   e. Press **OK**, the following display appears -

1-20 Motor Power
[9] 1.5kW – 2 hp

NOTE: The number in the bracket may be different from what is shown above.

   f. Press **OK** and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to scroll to the proper motor horsepower. Press **OK** again to set the selected hp.
   g. Press ▼**(Down Arrow)** once, the following display appears -

1-22 Motor Voltage
230V

   h. Press **OK** to highlight the voltage value. Use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the nameplate voltage. Press **OK** again to set the selected voltage.
   i. Press ▼**(Down Arrow)** once to display the following -

1-23 Motor Frequency
60Hz

   j. Press **OK** to highlight the Frequency value and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the nameplate Hz. Press **OK** again to set the selected Hz.
   k. Press ▼**(Down Arrow)** once to display the following -

1-24 Motor Current
6.61A

   l. Press **OK** to highlight the Current value and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the Max Amps value provided. Press **OK** again to set the selected Max Amps.

NOTE: The Max Amps is greater than the nameplate value. Check the VFD Unit Parameters (see Tables 4 - 8 on pages 42 - 46) and use the value listed for the given unit in the column labeled “Motor Current Must-Hold Amps”.

m. Press ▼**(Down Arrow)** once to display the following -

1-25 Motor Nominal Speed
1740rpm

n. Press **OK** to highlight the rpm value and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the nameplate rpm. Press **OK** again to set the selected rpm.

6. Entering Parameters for 1-71, 1-73, 1-82, and 1-90:

a. Press the **Menu** key to move the ▼(triangle icon) so it is positioned over Main Menu. The display show the following -

0–** Operation / Display
1–** Load and Motor

b. Press ▼**(Down Arrow)** once to highlight the bottom row.

c. Press **OK**, the display changes to -

1–0* General Settings
1–1* Motor Selection

d. Press ▼**(Down Arrow)** until the following display appears -

1–6* Load Depen. Setting
1–7* Start Adjustments

e. Press **OK**, the following display appears -

1-71 Start Delay
2.0s

f. Press **OK** to highlight the number and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the number provided in Tables 4 - 8. Press **OK** again to set the selected value.

g. Press ▼**(Down Arrow)** twice, the following display appears -

1-73 Flying Start
[1] Enabled

h. Press **OK** to highlight the number in the bracket and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the number provided in Tables 4 - 8. Press **OK** again to set the selected value.

i. Press the **Back** key once, the following display appears -

1–6* Load Depen. Setting
1–7* Start Adjustments

j. Press ▼**(Down Arrow)** once, the following display appears -

1–7* Start Adjustments
1–8* Stop Adjustments

k. Press **OK**, the following display appears -

1-80 Function at Stop
[0] Coast

l. Press ▼**(Down Arrow)** once, the following display appears -

1-82 Min Speed for Functio...
1.0 Hz

m. Press **OK** to highlight the number and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the number provided in Tables 4 - 8. Press **OK** again to set the selected value.

n. Press the **Back** key once, the following display appears -

1–7* Start Adjustments
1–8* Stop Adjustments

o. Press ▼**(Down Arrow)** once, the following display appears -

1–8* Stop Adjustments
1–9* Motor Temperature

p. Press **OK**, the following display appears -

1-90 Motor Thermal Prote...
[4] ETR trip 1

q. Press **OK** to highlight the number in the bracket then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select the number provided in Tables 4 - 8. Press **OK** again to set the selected value.

7. Setting References:

a. Press the **Menu** key to move the ▼(triangle icon) so it is positioned over Main Menu. The display show the following -

0–** Operation / Display
1–** Load and Motor

b. Press ▼**(Down Arrow)** three times, the following display appears -

2–** Brakes
3–** Reference / Ramps

c. Press **OK**, the following display appears -

3–0* Reference Limits
3–1* References

d. Press **OK** again, the following display appears -

3-02 Minimum Reference
0.000

NOTE: If the bottom row displays a number other than 0.000, press **OK** and use the ▲ and ▼ (**Up** and **Down Arrow**) key to select 0.000.

e. Press ▼**(Down Arrow)** once, the following display appears -

3-03 Maximum Reference
60.000

NOTE: If the bottom row displays a number other than 60.000, press **OK** and use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select 60.000.

f. Press the **Back** key until the following display appears –

3–0* Reference Limits
3–1* References

g. Press ▼**(Down Arrow)** once to move the highlight to the bottom row and then press **OK**. The following display appears –

3-10 Preset Reference
[0]0.00%

h. Press **OK** once to highlight the number in the bracket. Press **OK** again; the highlight moves to the current percent value.

Use the ▲ and ▼ (**Up** and **Down Arrow**) keys and the following table to enter the required Preset Reference values.

[0]0.00%	Stop
[1]LL.LL%	Low Speed (see Tables 4 – 8, column labeled "Preset References 3–10[1]" for the proper % for each unit)
[2]MM.MM%	Medium Speed (see Tables 4 – 8, column labeled "Preset References 3–10[2]" for the proper % for each unit)
[3]100%	Override (High Speed)
[4]100%	High Speed (100% or close to 100% to achieve the required CFM at high speed)
[5]0.00%	Stop
[6]0.00%	Stop
[7]0.00%	Stop

8. Setting the Ramp Time:

a. Press the **Back** key until the following display appears –

3–0* Reference Limits
3–1* References

b. Press ▼**(Down Arrow)** twice, the following display appears –

3–1* References
3–4* Ramp 1

c. Press **OK**, the following display appears –

3-41 Ramp 1 Ramp up Time
3.00s

d. Press **OK** again to highlight the bottom row and use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select 10.00s. Press **OK** again to set the selected Ramp up Time.

e. Press ▼**(Down Arrow)** once, the following display appears –

3-42 Ramp 1 Ramp Down Time
3.00s

f. Press **OK** again to highlight the bottom row and use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select 10.00s. Press **OK** again to set the selected Ramp Down Time.

9. Setting Limits:

a. Press the **Back** key until the following display appears –

2–** Brakes
3–** Reference / Ramps

b. Press ▼**(Down Arrow)** once, the following display appears –

3–** Reference / Ramps
4–** Limits / Warnings

c. Press **OK**, the following display appears –

4–1* Motor Limits
4–4* Adj. Warning 2

d. Press **OK** again, the following display appears –

4-10 Motor Speed Direction
[2] Both Directions

e. Press ▼**(Down Arrow)** once, the following display appears –

4-12 Motor Speed Low Limi…
0.0Hz

f. Press ▼**(Down Arrow)** again, the following display appears –

4-14 Motor Speed High Limi…
65.0Hz

NOTE: Press **OK** to highlight the Hz value and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to enter the required values.

g. Press ▼**(Down Arrow)** once, the following display appears –

4-18 Current Limit
110%

NOTE: Press **OK** to highlight the % value and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to enter the required value. See Tables 4 - 8 for proper selection of the value for this parameter then press **OK** to set the selected value.

h. Press ▼**(Down Arrow)** once, the following display appears –

4-19 Max Output Frequency
65.0Hz

NOTE: Press **OK** to highlight the Hz value and then use the ▲ and ▼ (**Up** and **Down Arrow**) keys to enter the required values.

10. Setting Digital Inputs:
    a. Press the **Back** key until the following display appears –

3–** Reference / Ramps
4–** Limits / Warnings

    b. Press ▼**(Down Arrow)** once, the following display appears –

4–** Limits / Warnings
5–** Digital In/Out

    c. Press **OK**, the following display appears –

5–0* Digital I/O mode
5–1* Digital Inputs

    d. Press ▼**(Down Arrow)** once to move the highlight to the bottom row and then press **OK**. The following display appears –

5-10 Terminal 18 Digital In…
[8] Start

    e. Press ▼**(Down Arrow)** again. The following display appears –

5-11 Terminal 19 Digital In…
[16] Preset ref bit 0

    f. Press ▼**(Down Arrow)** again. The following display appears –

5-12 Terminal 27 Digital In…
[17] Preset ref bit 1

    g. Press ▼**(Down Arrow)** again. The following display appears –

5-13 Terminal 29 Digital In…
[18] Preset ref bit 2

NOTE: By pressing **OK** the number in the bracket can be changed until the desired number appears. Press **OK** again to set the selected value.

11. Setting Analog Inputs:
    a. Press the **Back** key until the following display appears –

4–** Limits / Warnings
5–** Digital In/Out

    b. Press ▼**(Down Arrow)** until the following display appears –

5–** Digital In/Out
6–** Analog In/Out

    c. Press **OK**, the following display appears –

6–** Analog In/Out
6–1* Analog Input 53

    d. Press ▼**(Down Arrow)** once to move the highlight to the bottom row and then press **OK**. The following display appears –

6-10 Terminal 53 Low Voltage
2V

    e. Press ▼**(Down Arrow)** once to move the highlight to the bottom row and then press **OK**. The following display appears –

6-11 Terminal 53 High Voltage
[10V]

    f. Press ▼**(Down Arrow)** once to move the highlight to the bottom row and then press **OK**. The following display appears –

6-14 Set Min Reference
[0 Hz]

    g. Press ▼**(Down Arrow)** once to move the highlight to the bottom row and then press **OK**. The following display appears –

6-15 Set Max Reference
[60 Hz]

12. Setting Reset Mode and RFI Filter:
    a. Press the **Back** key until the following display appears –

0–** Operation / Display
1–** Load and Motor

    b. Press ▼**(Down Arrow)** until the following display appears –

13–** Smart Logic
14–** Special Functions

    c. Press **OK**, the following display appears –

14–0* Inverter Switching
14–1* Mains On/Off

    d. Press ▼**(Down Arrow)** twice. The following display appears –

14–1* Mains On/Off
14–2* Reset Functions

    e. Press **OK**, the following display appears –

14-20 Reset Mode
[0] Manual reset

    f. Press **OK** to highlight the number in the bracket.
    g. Use the ▲ and ▼ (**Up** and **Down Arrow**) keys to change the number to 3 for 3 automatic resets and then press **OK**. The display changes to –

14-20 Reset Mode
[3] Automatic reset x 3

h. Press ▼**(Down Arrow)** once, the following display appears –

14-21 Automatic Restart T…
10s

i. Press OK to highlight the number of seconds and use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select 600 seconds. Press **OK** again to set the selected value.

j. Press the **Back** key once, the following display appears –

14–1* Mains On/Off
14–2* Reset Functions

k. Press ▼**(Down Arrow)** twice, the following display appears –

14–4* Energy Optimising
14–5* Environment

l. Press **OK**, the following display appears –

14-50 RFI Filter
[1] On

m. Press **OK** to highlight the number in the bracket and use the ▲ and ▼ (**Up** and **Down Arrow**) keys to select [0]. Press **OK** again to set the selected value.

13. To Complete Reprogramming:

a. Press the **Auto On** key before disconnecting the VFD Remote Keypad from the variable frequency drive.

Table 4 – VFD Unit Parameters - 50LC*B Size 14

						Regional Settings	Grid Type	Motor Power	Motor Voltage	Motor Frequency (Hz)	Motor Current (Must–Hold Amps)	Motor Nominal Speed (rpm)	Star Delay (Sec)	Flying Start	Min Speed for Function (Hz)	Motor Thermal Protection	Preset Reference		
Voltage	Unit Size	Motor Option	Motor P/N	VFD Carrier P/N	VFD Mfr P/N	0–03	0–06	1–20	1–22	1–23	1–24	1–25	1–71	1–73	1–82	1–90	3–10 [0]	3–10 [1]	3–10 [2]
208/230V	14	STD	HD58FE654	HK30WA371	131L9796	[1]	[102]	[10]	230	60	9.2	1735	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
460V	14	STD	HD58FE654	HK30WA377	131L9864	[1]	[122]	[10]	460	60	4.2	1735	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
575V	14	STD	HD58FE577	HK30WA383	131N0227	[1]	[132]	[11]	575	60	4.9	1710	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
208/230V	14	MID	HD60FK658	HK30WA372	131L9797	[1]	[102]	[13]	230	60	13.6	1745	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
460V	14	MID	HD60FK658	HK30WA379	131L9866	[1]	[122]	[13]	460	60	6.8	1745	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
575V	14	MID	HD60FE576	HK30WA387	134F0217	[1]	[132]	[13]	575	60	6.0	1745	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
208/230V	14	HIGH	HD60FK657	HK30WA373	131L9798	[1]	[102]	[14]	230	60	21.2	1760	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
460V	14	HIGH	HD60FK657	HK30WA380	131L9867	[1]	[122]	[14]	460	60	9.7	1760	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
575V	14	HIGH	HD60FL576	HK30WA384	131N0229	[1]	[132]	[14]	575	60	7.2	1745	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
208/230V	14	ULTRA	HD62FK654	HK30WA374	131L9799	[1]	[102]	[15]	230	60	28.0	1760	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
460V	14	ULTRA	HD62FK654	HK30WA381	131L9868	[1]	[122]	[15]	460	60	13.7	1760	2.0	[1]	1.0	[4]	0%	53.43%	79.57%
575V	14	ULTRA	HD62FL576	HK30WA384	131N0229	[1]	[132]	[15]	575	60	8.9	1750	2.0	[1]	1.0	[4]	0%	53.43%	79.57%

			Preset Reference (cont.)					Ramp Up Time (Sec)	Ramp Down Time (Sec)	Current Limit	Terminal 18 Digital Input	Terminal 19 Digital Input	Terminal 27 Digital Input	Terminal 29 Digital Input	Terminal 53 Low Voltage	Terminal 53 High Voltage	Terminal 53 Low Reference	Terminal 53 High Reference	Reset Mode	Auto. Restart Time (S)	RFI Filter
Voltage	Unit Size	Motor Option	3–10 [3]	3–10 [4]	3–10 [5]	3–10 [6]	3–10 [7]	3–41	3–42	4–18	5–10	5–11	5–12	5–13	6–10	6–11	6–14	6–15	14–20	14–21	14–50
208/230V	14	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	14	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	14	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	14	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	14	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	14	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	14	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	14	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	14	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	14	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	14	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	14	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]

Table 5 – VFD Unit Parameters - 50LC*B Size 17

						Regional Settings	Grid Type	Motor Power	Motor Voltage	Motor Frequency (Hz)	Motor Current (Must−Hold Amps)	Motor Nominal Speed (rpm)	Star Delay (Sec)	Flying Start	Min Speed for Function (Hz)	Motor Thermal Protection	Preset Reference		
Voltage	Unit Size	Motor Option	Motor P/N	VFD Carrier P/N	VFD Mfr P/N	0−03	0−06	1−20	1−22	1−23	1−24	1−25	1−71	1−73	1−82	1−90	3−10 [0]	3−10 [1]	3−10 [2]
208/230V	17	STD	HD58FE654	HK30WA371	131L9796	[1]	[102]	[10]	230	60	9.2	1735	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
460V	17	STD	HD58FE654	HK30WA377	131L9864	[1]	[122]	[10]	460	60	4.2	1735	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
575V	17	STD	HD58FE577	HK30WA383	131N0227	[1]	[132]	[11]	575	60	4.9	1710	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
208/230V	17	MID	HD60FK657	HK30WA373	131L9798	[1]	[102]	[14]	230	60	21.2	1760	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
460V	17	MID	HD60FK657	HK30WA380	131L9867	[1]	[122]	[14]	460	60	9.7	1760	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
575V	17	MID	HD60FL576	HK30WA384	131N0229	[1]	[132]	[14]	575	60	7.2	1745	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
208/230V	17	HIGH	HD62FK654	HK30WA374	131L9799	[1]	[102]	[15]	230	60	28.0	1760	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
460V	17	HIGH	HD62FK654	HK30WA381	131L9868	[1]	[122]	[15]	460	60	13.7	1760	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
575V	17	HIGH	HD62FL576	HK30WA384	131N0229	[1]	[132]	[15]	575	60	8.9	1750	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
208/230V	17	ULTRA	HD64FK654	HK30WA375	131L9800	[1]	[102]	[16]	230	60	37.3	1755	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
460V	17	ULTRA	HD64FK654	HK30WA386	131L9869	[1]	[122]	[16]	460	60	16.9	1755	2.0	[1]	1.0	[4]	0%	56.64%	82.40%
575V	17	ULTRA	HD64FL576	HK30WA388	131N0233	[1]	[132]	[16]	575	60	12.6	1755	2.0	[1]	1.0	[4]	0%	56.64%	82.40%

			Preset Reference (cont.)					Ramp Up Time (Sec)	Ramp Down Time (Sec)	Current Limit	Terminal 18 Digital Input	Terminal 19 Digital Input	Terminal 27 Digital Input	Terminal 29 Digital Input	Terminal 53 Low Voltage	Terminal 53 High Voltage	Terminal 53 Low Reference	Terminal 53 High Reference	Reset Mode	Auto. Restart Time (S)	RFI Filter
Voltage	Unit Size	Motor Option	3−10 [3]	3−10 [4]	3−10 [5]	3−10 [6]	3−10 [7]	3−41	3−42	4−18	5−10	5−11	5−12	5−13	6−10	6−11	6−14	6−15	14−20	14−21	14−50
208/230V	17	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	17	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	17	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	17	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	17	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	17	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	17	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	17	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	17	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	17	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	17	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	17	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]

Table 6 – VFD Unit Parameters - 50LC*B Size 20

						Regional Settings	Grid Type	Motor Power	Motor Voltage	Motor Frequency (Hz)	Motor Current (Must–Hold Amps)	Motor Nominal Speed (rpm)	Star Delay (Sec)	Flying Start	Min Speed for Function (Hz)	Motor Thermal Protection	Preset Reference		
Voltage	Unit Size	Motor Option	Motor P/N	VFD Carrier P/N	VFD Mfr P/N	0–03	0–06	1–20	1–22	1–23	1–24	1–25	1–71	1–73	1–82	1–90	3–10 [0]	3–10 [1]	3–10 [2]
208/230V	20	STD	HD60FE656	HK30WA372	131L9797	[1]	[102]	[11]	230	60	11.7	1750	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
460V	20	STD	HD60FE656	HK30WA378	131L9865	[1]	[122]	[11]	460	60	5.4	1750	2.0	[1]	1.0	[4]	0%	52.57%	.61.63%
575V	20	STD	HD58FE577	HK30WA383	131N0227	[1]	[132]	[11]	575	60	4.9	1710	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
208/230V	20	MID	HD60FK657	HK30WA373	131L9798	[1]	[102]	[14]	230	60	21.2	1760	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
460V	20	MID	HD60FK657	HK30WA380	131L9867	[1]	[122]	[14]	460	60	9.7	1760	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
575V	20	MID	HD60FL576	HK30WA384	131N0229	[1]	[132]	[14]	575	60	7.2	1745	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
208/230V	20	HIGH	HD62FK654	HK30WA374	131L9799	[1]	[102]	[15]	230	60	28.0	1760	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
460V	20	HIGH	HD62FK654	HK30WA381	131L9868	[1]	[122]	[15]	460	60	13.7	1760	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
575V	20	HIGH	HD62FL576	HK30WA384	131N0229	[1]	[132]	[15]	575	60	8.9	1750	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
208/230V	20	ULTRA	HD64FK654	HK30WA375	131L9800	[1]	[102]	[16]	230	60	37.3	1755	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
460V	20	ULTRA	HD64FK654	HK30WA386	131L9869	[1]	[122]	[16]	460	60	16.9	1755	2.0	[1]	1.0	[4]	0%	52.57%	61.63%
575V	20	ULTRA	HD64FL576	HK30WA388	131N0233	[1]	[132]	[16]	575	60	12.6	1755	2.0	[1]	1.0	[4]	0%	52.57%	61.63%

			Preset Reference (cont.)					Ramp Up Time (Sec)	Ramp Down Time (Sec)	Current Limit	Terminal 18 Digital Input	Terminal 19 Digital Input	Terminal 27 Digital Input	Terminal 29 Digital Input	Terminal 53 Low Voltage	Terminal 53 High Voltage	Terminal 53 Low Reference	Terminal 53 High Reference	Reset Mode	Auto. Restart Time (S)	RFI Filter
Voltage	Unit Size	Motor Option	3–10 [3]	3–10 [4]	3–10 [5]	3–10 [6]	3–10 [7]	3–41	3–42	4–18	5–10	5–11	5–12	5–13	6–10	6–11	6–14	6–15	14–20	14–21	14–50
208/230V	20	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	20	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	20	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	20	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	20	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	20	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	20	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	20	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	20	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	20	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	20	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	20	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]

Table 7 – VFD Unit Parameters - 50LC*B Size 24

						Regional Settings	Grid Type	Motor Power	Motor Voltage	Motor Frequency (Hz)	Motor Current (Must–Hold Amps)	Motor Nominal Speed (rpm)	Star Delay (Sec)	Flying Start	Min Speed for Function (Hz)	Motor Thermal Protection	Preset Reference		
Voltage	Unit Size	Motor Option	Motor P/N	VFD Carrier P/N	VFD Mfr P/N	0–03	0–06	1–20	1–22	1–23	1–24	1–25	1–71	1–73	1–82	1–90	3–10 [0]	3–10 [1]	3–10 [2]
208/230V	24	STD	HD60FK657	HK30WA373	131L9798	[1]	[102]	[14]	230	60	21.2	1760	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
460V	24	STD	HD60FK657	HK30WA380	131L9867	[1]	[122]	[14]	460	60	9.7	1760	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
575V	24	STD	HD60FL576	HK30WA384	131N0229	[1]	[132]	[14]	575	60	7.2	1745	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
208/230V	24	MID	HD60FK657	HK30WA373	131L9798	[1]	[102]	[14]	230	60	21.2	1760	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
460V	24	MID	HD60FK657	HK30WA380	131L9867	[1]	[122]	[14]	460	60	9.7	1760	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
575V	24	MID	HD60FL576	HK30WA384	131N0229	[1]	[132]	[14]	575	60	7.2	1745	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
208/230V	24	HIGH	HD62FK654	HK30WA374	131L9799	[1]	[102]	[15]	230	60	28.0	1760	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
460V	24	HIGH	HD62FK654	HK30WA381	131L9868	[1]	[122]	[15]	460	60	13.7	1760	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
575V	24	HIGH	HD62FL576	HK30WA384	131N0229	[1]	[132]	[15]	575	60	8.9	1750	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
208/230V	24	ULTRA	HD64FK654	HK30WA375	131L9800	[1]	[102]	[16]	230	60	37.3	1755	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
460V	24	ULTRA	HD64FK654	HK30WA386	131L9869	[1]	[122]	[16]	460	60	16.9	1755	2.0	[1]	1.0	[4]	0%	52.33%	64.48%
575V	24	ULTRA	HD64FL576	HK30WA388	131N0233	[1]	[132]	[16]	575	60	12.6	1755	2.0	[1]	1.0	[4]	0%	52.33%	64.48%

			Preset Reference (cont.)					Ramp Up Time (Sec)	Ramp Down Time (Sec)	Current Limit	Terminal 18 Digital Input	Terminal 19 Digital Input	Terminal 27 Digital Input	Terminal 29 Digital Input	Terminal 53 Low Voltage	Terminal 53 High Voltage	Terminal 53 Low Reference	Terminal 53 High Reference	Reset Mode	Auto. Restart Time (S)	RFI Filter
Voltage	Unit Size	Motor Option	3–10 [3]	3–10 [4]	3–10 [5]	3–10 [6]	3–10 [7]	3–41	3–42	4–18	5–10	5–11	5–12	5–13	6–10	6–11	6–14	6–15	14–20	14–21	14–50
208/230V	24	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	24	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	24	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	24	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	24	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V0	24	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	24	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	24	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	24	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	24	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	24	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	24	ULTRA	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]

Table 8 – VFD Unit Parameters - 50LC*B Size 26

						Regional Settings	Grid Type	Motor Power	Motor Voltage	Motor Frequency (Hz)	Motor Current (Must–Hold Amps)	Motor Nominal Speed (rpm)	Star Delay (Sec)	Flying Start	Min Speed for Function (Hz)	Motor Thermal Protection	Preset Reference		
Voltage	Unit Size	Motor Option	Motor P/N	VFD Carrier P/N	VFD Mfr P/N	0–03	0–06	1–20	1–22	1–23	1–24	1–25	1–71	1–73	1–82	1–90	3–10 [0]	3–10 [1]	3–10 [2]
208/230V	26	STD	HD60FK657	HK30WA373	131L9798	[1]	[102]	[14]	230	60	21.2	1760	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
460V	26	STD	HD60FK657	HK30WA380	131L9867	[1]	[122]	[14]	460	60	9.7	1760	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
575V	26	STD	HD60FL576	HK30WA384	131N0229	[1]	[132]	[14]	575	60	7.2	1745	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
208/230V	26	MID	HD62FK654	HK30WA374	131L9799	[1]	[102]	[15]	230	60	28.0	1760	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
460V	26	MID	HD62FK654	HK30WA381	131L9868	[1]	[122]	[15]	460	60	13.7	1760	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
575V	26	MID	HD62FL576	HK30WA384	131N0229	[1]	[132]	[15]	575	60	8.9	1750	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
208/230V	26	HIGH	HD64FK654	HK30WA375	131L9800	[1]	[102]	[16]	230	60	37.3	1755	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
460V	26	HIGH	HD64FK654	HK30WA386	131L9869	[1]	[122]	[16]	460	60	16.9	1755	2.0	[1]	1.0	[4]	0%	60.00%	72.00%
575V	26	HIGH	HD64FL576	HK30WA388	131N0233	[1]	[132]	[16]	575	60	12.6	1755	2.0	[1]	1.0	[4]	0%	60.00%	72.00%

			Preset Reference (cont.)					Ramp Up Time (Sec)	Ramp Down Time (Sec)	Current Limit	Terminal 18 Digital Input	Terminal 19 Digital Input	Terminal 27 Digital Input	Terminal 29 Digital Input	Terminal 53 Low Voltage	Terminal 53 High Voltage	Terminal 53 Low Reference	Terminal 53 High Reference	Reset Mode	Auto. Restart Time (S)	RFI Filter
Voltage	Unit Size	Motor Option	3–10 [3]	3–10 [4]	3–10 [5]	3–10 [6]	3–10 [7]	3–41	3–42	4–18	5–10	5–11	5–12	5–13	6–10	6–11	6–14	6–15	14–20	14–21	14–50
208/230V	26	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	26	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	26	STD	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	26	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	26	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	26	MID	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
208/230V	26	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
460V	26	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]
575V	26	HIGH	100%	100%	0%	0%	0%	10.00	10.00	100%	[8]	[16]	[17]	[18]	2	[10]	0	[60]	[3]	600	[0]

Table 9 – Unit Wire/Fuse or HACR Breaker Sizing Data

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B14	208/230–3–60	STD	NONE	-	-	59.1/58.3	80/80	61/60	343	70.9/70.1	90/90	75/74	363	63.9/63.1	80/80	67/66	348	75.7/74.9	90/90	80/79	368
			302/305A00	11.3/15.0	31.3/36.1	59.1/58.3	80/80	61/60	343/343	70.9/70.1	90/90	75/74	363/363	63.9/63.1	80/80	67/66	348/348	75.7/75.6	90/90	80/79	368/368
			279/270A00	18.8/25.0	52.1/60.1	75.9/84.9	80/90	70/78	343/343	90.6/99.6	100/100	83/92	363/363	81.9/90.9	90/100	75/84	348/348	96.6/105.6	100/110	89/97	368/368
			309/312A00	37.6/50.0	104.2/120.3	141.0/130.1	150/150	130/147	343/343	155.8/144.8	175/150	143/161	363/363	147.0/136.1	150/150	135/153	348/348	161.8/150.8	175/175	149/166	368/368
		MED	NONE	-	-	64.1/63.2	80/80	67/66	378	75.9/75.0	90/90	81/80	398	68.9/68.0	90/90	73/72	383	80.7/79.8	100/100	86/85	403
			302/305A00	11.3/15.0	31.3/36.1	64.1/63.2	80/80	67/66	378/378	75.9/75.8	90/90	81/80	398/398	68.9/68.0	90/90	73/72	383/383	80.7/81.8	100/100	86/85	403/403
			279/270A00	18.8/25.0	52.1/60.1	82.1/91.0	90/100	76/84	378/378	96.9/105.8	100/110	89/97	398/398	88.1/97.0	90/100	81/89	383/383	102.9/111.8	110/125	95/103	403/403
			309/312A00	37.6/50.0	104.2/120.3	147.3/136.2	150/150	135/153	378/378	162.0/150.9	175/175	149/167	398/398	153.3/142.2	175/175	141/158	383/383	168.0/156.9	175/175	155/172	403/403
		HIGH	NONE	-	-	71.7	90	76	382	83.5	100	89	402	76.5	90	81	387	88.3	100	95	407
			302/305A00	11.3/15.0	31.3/36.1	71.7/71.7	90/90	76/76	382/382	83.5/86.4	100/100	89/89	402/402	76.5/77.6	90/90	81/81	387/387	88.3/92.4	100/100	95/95	407/407
			279/270A00	18.8/25.0	52.1/60.1	91.6/101.6	100/110	84/93	382/382	106.4/116.4	110/125	98/107	402/402	97.6/107.6	100/110	90/99	387/387	112.4/122.4	125/125	103/113	407/407
			309/312A00	37.6/50.0	104.2/120.3	156.8/146.8	175/175	144/163	382/382	171.5/161.6	175/175	158/176	402/402	162.8/152.8	175/175	150/168	387/387	177.5/167.6	200/175	163/182	407/407
		ULTRA	NONE	-	-	79.7	100	84	456	91.5	100	97	476	84.5	100	89	461	96.3	110	103	481
			302/305A00	11.3/15.0	31.3/36.1	79.7/80.1	100/100	84/84	456/456	91.5/94.9	100/100	97/97	476/476	84.5/86.1	100/100	89/89	461/461	96.3/100.9	110/110	103/103	481/481
			279/270A00	18.8/25.0	52.1/60.1	100.1/110.1	110/125	92/101	456/456	114.9/124.9	125/125	106/115	476/476	106.1/116.1	110/125	98/107	461/461	120.9/130.9	125/150	111/120	481/481
			309/312A00	37.6/50.0	104.2/120.3	165.3/155.3	175/175	152/171	456/456	180.0/170.1	200/175	166/184	476/476	171.3/161.3	175/175	158/176	461/461	186.0/176.1	200/200	171/190	481/481
	460–3–60	STD	NONE	-	-	31.3	40	33	167	37.5	45	40	179	33.5	40	35	169	39.7	50	42	181
			303/306A00	15.0	18.0	31.3	40	33	167	37.5	45	40	179	33.5	40	35	169	39.7	50	42	181
			282/273A00	25.0	30.1	42.4	45	39	167	50.1	60	46	179	45.1	50	42	169	52.9	60	49	181
			310/313A00	50.0	60.1	64.9	70	73	167	72.6	80	81	179	67.6	80	76	169	75.4	80	83	181
		MED	NONE	-	-	33.9	45	36	184	40.1	50	43	196	36.1	45	38	186	42.3	50	45	198
			303/306A00	15.0	18.0	33.9	45	36	184	40.1	50	43	196	36.1	45	38	186	42.3	50	45	198
			282/273A00	25.0	30.1	45.6	50	42	184	53.4	60	49	196	48.4	50	45	186	56.1	60	52	198
			310/313A00	50.0	60.1	68.1	80	76	184	75.9	80	84	196	70.9	80	79	186	78.6	80	86	198
		HIGH	NONE	-	-	37.2	45	40	186	43.4	50	47	198	39.4	50	42	188	45.6	50	49	200
			303/306A00	15.0	18.0	37.2	45	40	186	43.4	50	47	198	39.4	50	42	188	45.6	50	49	200
			282/273A00	25.0	30.1	49.8	50	46	186	57.5	60	53	198	52.5	60	48	188	60.3	70	55	200
			310/313A00	50.0	60.1	72.2	80	80	186	80.0	90	87	198	75.0	80	83	188	82.7	90	90	200
		ULTRA	NONE	-	-	41.8	50	44	223	48.0	60	51	235	44.0	50	47	225	50.2	60	54	237
			303/306A00	15.0	18.0	41.8	50	44	223	48.0	60	51	235	44.0	50	47	225	50.2	60	54	237
			282/273A00	25.0	30.1	54.8	60	50	223	62.5	70	58	235	57.5	60	53	225	65.3	70	60	237
			310/313A00	50.0	60.1	77.2	90	85	223	85.0	90	92	235	80.0	90	87	225	87.7	90	95	237

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B14	575–3–60	STD	NONE	-	-	24.4	30	26	119	29.2	35	31	127	26.1	30	28	121	30.9	35	33	129
			304/307A00	15.0	14.4	24.4	30	26	119	29.6	35	31	127	26.1	30	28	121	31.8	35	33	129
			285/276/A00	24.8	23.9	35.5	40	33	119	41.5	45	38	127	37.6	40	35	121	43.6	45	40	129
			311/314A00	49.6	47.7	65.3	70	60	119	71.3	80	66	127	67.4	70	62	121	73.4	80	68	129
		MED	NONE	-	-	26.1	30	28	133	30.9	35	33	141	27.8	30	30	135	32.6	40	35	143
			304/307A00	15.0	14.4	26.1	30	28	133	31.8	35	33	141	27.9	30	30	135	33.9	40	35	143
			285/276/A00	24.8	23.9	37.6	40	35	133	43.6	45	40	141	39.8	40	37	135	45.8	50	42	143
			311/314A00	49.6	47.7	67.4	70	62	133	73.4	80	68	141	69.5	70	64	135	75.5	80	69	143
		HIGH	NONE	-	-	27.1	30	29	131	31.9	35	34	139	28.8	35	31	133	33.6	40	36	141
			304/307A00	15.0	14.4	27.1	30	29	131	33.0	35	34	139	29.1	35	31	133	35.1	40	36	141
			285/276/A00	24.8	23.9	38.9	40	36	131	44.9	45	41	139	41.0	45	38	133	47.0	50	43	141
			311/314A00	49.6	47.7	68.6	70	63	131	74.6	80	69	139	70.8	80	65	133	76.8	80	71	141
		ULTRA	NONE	-	-	29.0	35	31	158	33.8	40	36	166	30.7	35	33	160	35.5	40	38	168
			304/307A00	15.0	14.4	29.1	35	31	158	35.1	40	36	166	31.3	35	33	160	37.3	40	38	168
			285/276/A00	24.8	23.9	41.0	45	38	158	47.0	50	43	166	43.1	45	40	160	49.1	50	45	168
			311/314A00	49.6	47.7	70.8	80	65	158	76.8	80	71	166	72.9	80	67	160	78.9	80	73	168

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B17	208/230–3–60	STD	NONE	-	-	67.4/66.6	90/90	70/69	371	79.2/78.4	100/100	83/82	391	72.2/71.4	90/90	75/74	376	84.0/83.2	100/100	89/88	396
			279/270A00	18.8/25.0	52.1/60.1	75.9/84.9	90/90	70/78	371/371	90.6/99.6	100/100	83/92	391/391	81.9/90.9	90/100	75/84	376/376	96.6/105.6	100/110	89/97	396/396
			280/271A00	37.6/50.0	104.2/120.3	141.0/130.1	150/150	130/147	371/371	155.8/144.8	175/150	143/161	391/391	147.0/136.1	150/150	135/153	376/376	161.8/150.8	175/175	149/166	396/396
			281/272A00	56.3/75.0	156.4/180.4	167.2/190.2	200/200	190/216	371/371	181.9/204.9	200/225	203/230	391/391	173.2/196.2	200/225	195/222	376/376	187.9/210.9	200/225	209/236	396/396
		MED	NONE	-	-	80.0	100	84	410	91.8	100	98	430	84.8	100	90	415	96.6	110	103	435
			279/270A00	18.8/25.0	52.1/60.1	91.6/101.6	100/110	84/93	410/410	106.4/116.4	110/125	98/107	430/430	97.6/107.6	100/110	90/99	415/415	112.4/122.4	125/125	103/113	435/435
			280/271A00	37.6/50.0	104.2/120.3	156.8/146.8	175/175	144/163	410/410	171.5/161.6	175/175	158/176	430/430	162.8/152.8	175/175	150/168	415/415	177.5/167.6	200/175	163/182	435/435
			281/272A00	56.3/75.0	156.4/180.4	182.9/206.9	200/250	204/232	410/410	197.7/221.7	225/250	218/245	430/430	188.9/212.9	200/250	210/237	415/415	203.7/227.7	225/250	223/251	435/435
		HIGH	NONE	-	-	86.9	100	92	484	98.7	125	105	504	91.7	100	97	489	103.5	125	111	509
			279/270A00	18.8/25.0	52.1/60.1	100.1/110.1	110/125	92/101	484/484	114.9/124.9	125/125	106/115	504/504	106.1/116.1	110/125	98/107	489/489	120.9/130.9	125/150	111/120	509/509
			280/271A00	37.6/50.0	104.2/120.3	165.3/155.3	175/175	152/171	484/484	180.0/170.1	200/175	166/184	504/504	171.3/161.3	175/175	158/176	489/489	186.0/176.1	200/200	171/190	509/509
			281/272A00	56.3/75.0	156.4/180.4	191.4/215.4	200/250	212/240	484/484	206.2/230.2	225/250	226/253	504/504	197.4/221.4	225/250	218/245	489/489	212.2/236.2	225/250	231/259	509/509
		ULTRA	NONE	-	-	98.5	125	103	524	110.3	125	116	544	103.3	125	108	529	115.1	150	122	549
			279/270A00	18.8/25.0	52.1/60.1	111.8/121.8	125/125	103/112	524/524	126.5/136.5	150/150	116/126	544/544	117.8/127.8	125/150	108/118	529/529	132.5/142.5	150/150	122/131	549/549
			280/271A00	37.6/50.0	104.2/120.3	176.9/166.9	200/200	163/181	524/524	191.6/181.7	200/200	176/195	544/544	182.9/172.9	200/200	168/187	529/529	197.6/187.7	200/200	182/200	549/549
			281/272A00	56.3/75.0	156.4/180.4	203.0/227.0	225/250	223/250	524/524	217.8/241.8	250/250	236/264	544/544	209.0/233.0	225/250	228/256	529/529	223.8/247.8	250/300	242/269	549/549
	460–3–60	STD	NONE	-	-	34.8	45	36	193	41.0	50	43	205	37.0	45	39	195	43.2	50	46	207
			282/273A00	25.0	30.1	42.4	45	39	193	50.1	60	46	205	45.1	50	42	195	52.9	60	49	207
			283/274A00	50.0	60.1	64.9	70	73	193	72.6	80	81	205	67.6	80	76	195	75.4	80	83	207
			284/275A00	75.0	90.2	95.0	100	108	193	102.7	110	115	205	97.7	100	111	195	105.5	110	118	207
		MED	NONE	-	-	40.7	50	43	212	46.9	60	50	224	42.9	50	46	214	49.1	60	53	226
			282/273A00	25.0	30.1	49.8	50	46	212	57.5	60	53	224	52.5	60	48	214	60.3	70	55	226
			283/274A00	50.0	60.1	72.2	80	80	212	80.0	90	87	224	75.0	80	83	214	82.7	90	90	226
			284/275A00	75.0	90.2	102.3	125	115	212	110.1	125	122	224	105.1	125	117	214	112.8	125	125	226
		HIGH	NONE	-	-	44.9	50	48	249	51.1	60	55	261	47.1	60	50	251	53.3	60	57	263
			282/273A00	25.0	30.1	54.8	60	50	249	62.5	70	58	261	57.5	60	53	251	65.3	70	60	263
			283/274A00	50.0	60.1	77.2	90	85	249	85.0	90	92	261	80.0	90	87	251	87.7	90	95	263
			284/275A00	75.0	90.2	107.3	125	119	249	115.1	125	127	261	110.1	125	122	251	117.8	125	129	263
		ULTRA	NONE	-	-	48.9	60	51	269	55.1	60	59	281	51.1	60	54	271	57.3	70	61	283
			282/273A00	25.0	30.1	58.8	60	54	269	66.5	70	61	281	61.5	70	57	271	69.3	70	64	283
			283/274A00	50.0	60.1	81.2	90	89	269	89.0	100	96	281	84.0	100	91	271	91.7	100	98	283
			284/275A00	75.0	90.2	111.3	125	123	269	119.1	125	130	281	114.1	125	126	271	121.8	125	133	283

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B17	575–3–60	STD	NONE	-	-	30.0	40	32	154	34.8	40	37	162	31.7	40	33	156	36.5	45	39	164
			285/276A00	24.8	23.9	35.5	40	33	154	41.5	45	38	162	37.6	40	35	156	43.6	45	40	164
			286/277A00	49.6	47.7	65.3	70	60	154	71.3	80	66	162	67.4	70	62	156	73.4	80	68	164
			287/278A00	74.4	71.6	77.2	90	88	154	83.2	90	93	162	79.4	90	89	156	85.4	90	95	164
		MED	NONE	-	-	32.7	40	35	166	37.5	45	40	174	34.4	40	37	168	39.2	45	42	176
			285/276A00	24.8	23.9	38.9	40	36	166	44.9	45	41	174	41.0	45	38	168	47.0	50	43	176
			286/277A00	49.6	47.7	68.6	70	63	166	74.6	80	69	174	70.8	80	65	168	76.8	80	71	176
			287/278A00	74.4	71.6	80.6	90	91	166	86.6	90	96	174	82.7	90	93	168	88.7	90	98	176
		HIGH	NONE	-	-	34.4	40	37	193	39.2	45	42	201	36.1	45	39	195	40.9	50	44	203
			285/276A00	24.8	23.9	41.0	45	38	193	47.0	50	43	201	43.1	45	40	195	49.1	50	45	203
			286/277A00	49.6	47.7	70.8	80	65	193	76.8	80	71	201	72.9	80	67	195	78.9	80	73	203
			287/278A00	74.4	71.6	82.7	90	93	193	88.7	90	98	201	84.9	90	95	195	90.9	100	100	203
		ULTRA	NONE	-	-	38.7	50	41	204	43.5	50	46	212	40.4	50	43	206	45.2	50	48	214
			285/276A00	24.8	23.9	45.6	50	42	204	51.6	60	47	212	47.8	50	44	206	53.8	60	49	214
			286/277A00	49.6	47.7	75.4	80	69	204	81.4	90	75	212	77.5	80	71	206	83.5	90	77	214
			287/278A00	74.4	71.6	87.4	100	97	204	93.4	100	102	212	89.5	100	99	206	95.5	100	104	214

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B20	208/230–3–60	STD	NONE	-	-	73.3/72.5	100/100	76/75	412	85.1/84.3	100/100	90/89	432	78.1/77.3	100/100	82/81	417	89.9/89.1	100/100	95/95	437
			279/270A00	18.8/25.0	52.1/60.1	75.9/84.9	100/100	76/78	412/412	90.6/99.6	100/100	90/92	432/432	81.9/90.9	100/100	82/84	417/417	96.6/105.6	100/110	95/97	437/437
			280/271A00	37.6/50.0	104.2/120.3	141.0/130.1	150/150	130/147	412/412	155.8/144.8	175/150	143/161	432/432	147.0/136.1	150/150	135/153	417/417	161.8/150.8	175/175	149/166	437/437
			281/272A00	56.3/75.0	156.4/180.4	167.2/190.2	200/200	190/216	412/412	181.9/204.9	200/225	203/230	432/432	173.2/196.2	200/225	195/222	417/417	187.9/210.9	200/225	209/236	437/437
		MED	NONE	-	-	85.9	100	91	451	97.7	125	104	471	90.7	100	96	456	102.5	125	110	476
			279/270A00	18.8/25.0	52.1/60.1	91.6/101.6	100/110	91/93	451/451	106.4/116.4	125/125	104/107	471/471	97.6/107.6	100/110	96/99	456/456	112.4/122.4	125/125	110/113	476/476
			280/271A00	37.6/50.0	104.2/120.3	156.8/146.8	175/175	144/163	451/451	171.5/161.6	175/175	158/176	471/471	162.8/152.8	175/175	150/168	456/456	177.5/167.6	200/175	163/182	476/476
			281/272A00	56.3/75.0	156.4/180.4	182.9/206.9	200/250	204/232	451/451	197.7/221.7	225/250	218/245	471/471	188.9/212.9	200/250	210/237	456/456	203.7/227.7	225/250	223/251	476/476
		HIGH	NONE	-	-	92.8	100	99	525	104.6	125	112	545	97.6	125	104	530	109.4	125	118	550
			279/270A00	18.8/25.0	52.1/60.1	100.1/110.1	110/125	99/101	525/525	114.9/124.9	125/125	112/115	545/545	106.1/116.1	125/125	104/107	530/530	120.9/130.9	125/150	118/120	550/550
			280/271A00	37.6/50.0	104.2/120.3	165.3/155.3	175/175	152/171	525/525	180.0/170.1	200/175	166/184	545/545	171.3/161.3	175/175	158/176	530/530	186.0/176.1	200/200	171/190	550/550
			281/272A00	56.3/75.0	156.4/180.4	191.4/215.4	200/250	212/240	525/525	206.2/230.2	225/250	226/253	545/545	197.4/221.4	225/250	218/245	530/530	212.2/236.2	225/250	231/259	550/550
		ULTRA	NONE	-	-	104.4	125	109	565	116.2	150	123	585	109.2	125	115	570	121.0	150	128	590
			279/270A00	18.8/25.0	52.1/60.1	111.8/121.8	125/125	109/112	565/565	126.5/136.5	150/150	123/126	585/585	117.8/127.8	125/150	115/118	570/570	132.5/142.5	150/150	128/131	590/590
			280/271A00	37.6/50.0	104.2/120.3	176.9/166.9	200/200	163/181	565/565	191.6/181.7	200/200	176/195	585/585	182.9/172.9	200/200	168/187	570/570	197.6/187.7	200/200	182/200	590/590
			281/272A00	56.3/75.0	156.4/180.4	203.0/227.0	225/250	223/250	565/565	217.8/241.8	250/250	236/264	585/585	209.0/233.0	225/250	228/256	570/570	223.8/247.8	250/300	242/269	590/590
	460–3–60	STD	NONE	-	-	37.2	50	39	231	43.4	50	46	243	39.4	50	42	233	45.6	50	49	245
			282/273A00	25.0	30.1	42.4	50	39	231	50.1	60	46	243	45.1	50	42	233	52.9	60	49	245
			283/274A00	50.0	60.1	64.9	70	73	231	72.6	80	81	243	67.6	80	76	233	75.4	80	83	245
			284/275A00	75.0	90.2	95.0	100	108	231	102.7	110	115	243	97.7	100	111	233	105.5	110	118	245
		MED	NONE	-	-	43.1	50	46	250	49.3	60	53	262	45.3	50	48	252	51.5	60	56	264
			282/273A00	25.0	30.1	49.8	50	46	250	57.5	60	53	262	52.5	60	48	252	60.3	70	56	264
			283/274A00	50.0	60.1	72.2	80	80	250	80.0	90	87	262	75.0	80	83	252	82.7	90	90	264
			284/275A00	75.0	90.2	102.3	125	115	250	110.1	125	122	262	105.1	125	117	252	112.8	125	125	264
		HIGH	NONE	-	-	47.3	60	50	287	53.5	60	58	299	49.5	60	53	289	55.7	60	60	301
			282/273A00	25.0	30.1	54.8	60	50	287	62.5	70	58	299	57.5	60	53	289	65.3	70	60	301
			283/274A00	50.0	60.1	77.2	90	85	287	85.0	90	92	299	80.0	90	87	289	87.7	90	95	301
			284/275A00	75.0	90.2	107.3	125	119	287	115.1	125	127	299	110.1	125	122	289	117.8	125	129	301
		ULTRA	NONE	-	-	51.3	60	54	307	57.5	70	61	319	53.5	60	57	309	59.7	70	64	321
			282/273A00	25.0	30.1	58.8	60	54	307	66.5	70	61	319	61.5	70	57	309	69.3	70	64	321
			283/274A00	50.0	60.1	81.2	90	89	307	89.0	100	96	319	84.0	100	91	309	91.7	100	98	321
			284/275A00	75.0	90.2	111.3	125	123	307	119.1	125	130	319	114.1	125	126	309	121.8	125	133	321

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B20	575–3–60	STD	NONE	-	-	31.8	40	34	182	36.6	45	39	190	33.5	40	36	184	38.3	45	41	192
			285/276A00	24.8	23.9	35.5	40	34	182	41.5	45	39	190	37.6	40	36	184	43.6	45	41	192
			286/277A00	49.6	47.7	65.3	70	60	182	71.3	80	66	190	67.4	70	62	184	73.4	80	68	192
			287/278A00	74.4	71.6	77.2	90	88	182	83.2	90	93	190	79.4	90	89	184	85.4	90	95	192
		MED	NONE	-	-	34.5	40	37	194	39.3	45	42	202	36.2	45	39	196	41.0	50	44	204
			285/276A00	24.8	23.9	38.9	40	37	194	44.9	45	42	202	41.0	45	39	196	47.0	50	44	204
			286/277A00	49.6	47.7	68.6	70	63	194	74.6	80	69	202	70.8	80	65	196	76.8	80	71	204
			287/278A00	74.4	71.6	80.6	90	91	194	86.6	90	96	202	82.7	90	93	196	88.7	90	98	204
		HIGH	NONE	-	-	36.2	45	39	221	41.0	50	44	229	37.9	45	41	223	42.7	50	46	231
			285/276A00	24.8	23.9	41.0	45	39	221	47.0	50	44	229	43.1	45	41	223	49.1	50	46	231
			286/277A00	49.6	47.7	70.8	80	65	221	76.8	80	71	229	72.9	80	67	223	78.9	80	73	231
			287/278A00	74.4	71.6	82.7	90	93	221	88.7	90	98	229	84.9	90	95	223	90.9	100	100	231
		ULTRA	NONE	-	-	40.5	50	43	232	45.3	50	48	240	42.2	50	45	234	47.0	60	50	242
			285/276A00	24.8	23.9	45.6	50	43	232	51.6	60	48	240	47.8	50	45	234	53.8	60	50	242
			286/277A00	49.6	47.7	75.4	80	69	232	81.4	90	75	240	77.5	80	71	234	83.5	90	77	242
			287/278A00	74.4	71.6	87.4	100	97	232	93.4	100	102	240	89.5	100	99	234	95.5	100	104	242

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B24	208/230–3–60	STD	NONE	-	-	101.9	125	108	538	113.7	125	121	558	106.7	125	113	543	118.5	150	127	563
			279/270A00	18.8/25.0	52.1/60.1	101.9/101.9	125/125	108/108	538/538	113.7/116.4	125/125	121/121	558/558	106.7/107.6	125/125	113/113	543/543	118.5/122.4	150/150	127/127	563/563
			280/271A00	37.6/50.0	104.2/120.3	156.8/146.8	175/175	144/163	538/538	171.5/161.6	175/175	158/176	558/558	162.8/152.8	175/175	150/168	543/543	177.5/167.6	200/175	163/182	563/563
			281/272A00	56.3/75.0	156.4/180.4	182.9/206.9	200/250	204/232	538/538	197.7/221.7	225/250	218/245	558/558	188.9/212.9	200/250	210/237	543/543	203.7/227.7	225/250	223/251	563/563
		MED	NONE	-	-	101.9	125	108	538	113.7	125	121	558	106.7	125	113	543	118.5	150	127	563
			279/270A00	18.8/25.0	52.1/60.1	101.9/101.9	125/125	108/108	538/538	113.7/116.4	125/125	121/121	558/558	106.7/107.6	125/125	113/113	543/543	118.5/122.4	150/150	127/127	563/563
			280/271A00	37.6/50.0	104.2/120.3	156.8/146.8	175/175	144/163	538/538	171.5/161.6	175/175	158/176	558/558	162.8/152.8	175/175	150/168	543/543	177.5/167.6	200/175	163/182	563/563
			281/272A00	56.3/75.0	156.4/180.4	182.9/206.9	200/250	204/232	538/538	197.7/221.7	225/250	218/245	558/558	188.9/212.9	200/250	210/237	543/543	203.7/227.7	225/250	223/251	563/563
		HIGH	NONE	-	-	108.7	125	115	612	120.5	150	129	632	113.5	125	121	617	125.3	150	135	637
			279/270A00	18.8/25.0	52.1/60.1	108.7/110.1	125/125	115/115	612/612	120.5/124.9	150/150	129/129	632/632	113.5/116.1	125/125	121/121	617/617	125.3/130.9	150/150	135/135	637/637
			280/271A00	37.6/50.0	104.2/120.3	165.3/155.3	175/175	152/171	612/612	180.0/170.1	200/175	166/184	632/632	171.3/161.3	175/175	158/176	617/617	186.0/176.1	200/200	171/190	637/637
			281/272A00	56.3/75.0	156.4/180.4	191.4/215.4	200/250	212/240	612/612	206.2/230.2	225/250	226/253	632/632	197.4/221.4	225/250	218/245	617/617	212.2/236.2	225/250	231/259	637/637
		ULTRA	NONE	-	-	119.0	150	126	652	130.8	150	140	672	123.8	150	132	657	135.6	150	145	677
			279/270A00	18.8/25.0	52.1/60.1	119.0/121.8	150/150	126/126	652/652	130.8/136.5	150/150	140/140	672/672	123.8/127.8	150/150	132/132	657/657	135.6/142.5	150/150	145/145	677/677
			280/271A00	37.6/50.0	104.2/120.3	176.9/166.9	200/200	163/181	652/652	191.6/181.7	200/200	176/195	672/672	182.9/172.9	200/200	168/187	657/657	197.6/187.7	200/200	182/200	677/677
			281/272A00	56.3/75.0	156.4/180.4	203.0/227.0	225/250	223/250	652/652	217.8/241.8	250/250	236/264	672/672	209.0/233.0	225/250	228/256	657/657	223.8/247.8	250/300	242/269	677/677
	460–3–60	STD	NONE	-	-	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			282/273A00	25.0	30.1	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			283/274A00	50.0	60.1	72.2	80	80	278	80.0	90	87	290	75.0	80	83	280	82.7	90	90	292
			284/275A00	75.0	90.2	102.3	125	115	278	110.1	125	122	290	105.1	125	117	280	112.8	125	125	292
		MED	NONE	-	-	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			282/273A00	25.0	30.1	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			283/274A00	50.0	60.1	72.2	80	80	278	80.0	90	87	290	75.0	80	83	280	82.7	90	90	292
			284/275A00	75.0	90.2	102.3	125	115	278	110.1	125	122	290	105.1	125	117	280	112.8	125	125	292
		HIGH	NONE	-	-	60.6	70	65	315	66.8	80	72	327	62.8	80	67	317	69.0	80	74	329
			282/273A00	25.0	30.1	60.6	70	65	315	66.8	80	72	327	62.8	80	67	317	69.0	80	74	329
			283/274A00	50.0	60.1	77.2	90	85	315	85.0	90	92	327	80.0	90	87	317	87.7	90	95	329
			284/275A00	75.0	90.2	107.3	125	119	315	115.1	125	127	327	110.1	125	122	317	117.8	125	129	329
		ULTRA	NONE	-	-	63.8	80	68	335	70.0	80	75	347	66.0	80	71	337	72.2	90	78	349
			282/273A00	25.0	30.1	63.8	80	68	335	70.0	80	75	347	66.0	80	71	337	72.2	90	78	349
			283/274A00	50.0	60.1	81.2	90	89	335	89.0	100	96	347	84.0	100	91	337	91.7	100	98	349
			284/275A00	75.0	90.2	111.3	125	123	335	119.1	125	130	347	114.1	125	126	337	121.8	125	133	349

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B24	575–3–60	STD	NONE	-	-	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			285/276A00	24.8	23.9	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			286/277A00	49.6	47.7	68.6	70	63	206	74.6	80	69	214	70.8	80	65	208	76.8	80	71	216
			287/278A00	74.4	71.6	80.6	90	91	206	86.6	90	96	214	82.7	90	93	208	88.7	90	98	216
		MED	NONE	-	-	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			285/276A00	24.8	23.9	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			286/277A00	49.6	47.7	68.6	70	63	206	74.6	80	69	214	70.8	80	65	208	76.8	80	71	216
			287/278A00	74.4	71.6	80.6	90	91	206	86.6	90	96	214	82.7	90	93	208	88.7	90	98	216
		HIGH	NONE	-	-	46.7	50	50	233	51.5	60	56	241	48.4	60	52	235	53.2	60	58	243
			285/276A00	24.8	23.9	46.7	50	50	233	51.5	60	56	241	48.4	60	52	235	53.2	60	58	243
			286/277A00	49.6	47.7	70.8	80	65	233	76.8	80	71	241	72.9	80	67	235	78.9	80	73	243
			287/278A00	74.4	71.6	82.7	90	93	233	88.7	90	98	241	84.9	90	95	235	90.9	100	100	243
		ULTRA	NONE	-	-	50.4	60	54	244	55.2	60	60	252	52.1	60	56	246	56.9	70	62	254
			285/276A00	24.8	23.9	50.4	60	54	244	55.2	60	60	252	52.1	60	56	246	56.9	70	62	254
			286/277A00	49.6	47.7	75.4	80	69	244	81.4	90	75	252	77.5	80	71	246	83.5	90	77	254
			287/278A00	74.4	71.6	87.4	100	97	244	93.4	100	102	252	89.5	100	99	246	95.5	100	104	254

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B26	208/230–3–60	STD	NONE	-	-	124.9	175	129	629	136.7	175	142	649	129.7	175	134	634	141.5	175	148	654
			279/270A00	18.8/25.0	52.1/60.1	124.9/124.9	175/175	129/129	629/629	136.7/136.7	175/175	142/142	649/649	129.7/129.7	175/175	134/134	634/634	141.5/141.5	175/175	148/148	654/654
			280/271A00	37.6/50.0	104.2/120.3	156.8/146.8	175/175	144/163	629/629	171.5/161.6	175/175	158/176	649/649	162.8/152.8	175/175	150/168	634/634	177.5/167.6	200/175	163/182	654/654
			281/272A00	56.3/75.0	156.4/180.4	182.9/206.9	200/250	204/232	629/629	197.7/221.7	225/250	218/245	649/649	188.9/212.9	200/250	210/237	634/634	203.7/227.7	225/250	223/251	654/654
		MED	NONE	-	-	131.7	175	137	703	143.5	175	150	723	136.5	175	142	708	148.3	175	156	728
			279/270A00	18.8/25.0	52.1/60.1	131.7/131.7	175/175	137/137	703/703	143.5/143.5	175/175	150/150	723/723	136.5/136.5	175/175	142/142	708/708	148.3/148.3	175/175	156/156	728/728
			280/271A00	37.6/50.0	104.2/120.3	165.3/155.3	175/175	152/171	703/703	180.0/170.1	200/175	166/184	723/723	171.3/161.3	175/175	158/176	708/708	186.0/176.1	200/200	171/190	728/728
			281/272A00	56.3/75.0	156.4/180.4	191.4/215.4	200/250	212/240	703/703	206.2/230.2	225/250	226/253	723/723	197.4/221.4	225/250	218/245	708/708	212.2/236.2	225/250	231/259	728/728
		HIGH	NONE	-	-	141.0	175	147	743	152.8	200	161	763	145.8	175	153	748	157.6	200	167	768
			279/270A00	18.8/25.0	52.1/60.1	141.0/141.0	175/175	147/147	743/743	152.8/152.8	200/200	161/161	763/763	145.8/145.8	175/175	153/153	748/748	157.6/157.6	200/200	167/167	768/768
			280/271A00	37.6/50.0	104.2/120.3	176.9/166.9	200/200	163/181	743/743	191.6/181.7	200/200	176/195	763/763	182.9/172.9	200/200	168/187	748/748	197.6/187.7	200/200	182/200	768/768
			281/272A00	56.3/75.0	156.4/180.4	203.0/227.0	225/250	223/250	743/743	217.8/241.8	250/250	236/264	763/763	209.0/233.0	225/250	228/256	748/748	223.8/247.8	250/300	242/269	768/768
	460–3–60	STD	NONE	-	-	64.9	80	68	322	71.1	90	75	334	67.1	90	70	324	73.3	90	78	336
			282/273A00	25.0	30.1	64.9	80	68	322	71.1	90	75	334	67.1	90	70	324	73.3	90	78	336
			283/274A00	50.0	60.1	72.2	80	80	322	80.0	90	87	334	75.0	90	83	324	82.7	90	90	336
			284/275A00	75.0	90.2	102.3	125	115	322	110.1	125	122	334	105.1	125	117	324	112.8	125	125	336
		MED	NONE	-	-	68.9	90	73	359	75.1	90	80	371	71.1	90	75	361	77.3	100	82	373
			282/273A00	25.0	30.1	68.9	90	73	359	75.1	90	80	371	71.1	90	75	361	77.3	100	82	373
			283/274A00	50.0	60.1	77.2	90	85	359	85.0	90	92	371	80.0	90	87	361	87.7	100	95	373
			284/275A00	75.0	90.2	107.3	125	119	359	115.1	125	127	371	110.1	125	122	361	117.8	125	129	373
		HIGH	NONE	-	-	72.1	90	76	379	78.3	100	83	391	74.3	90	79	381	80.5	100	86	393
			282/273A00	25.0	30.1	72.1	90	76	379	78.3	100	83	391	74.3	90	79	381	80.5	100	86	393
			283/274A00	50.0	60.1	81.2	90	89	379	89.0	100	96	391	84.0	100	91	381	91.7	100	98	393
			284/275A00	75.0	90.2	111.3	125	123	379	119.1	125	130	391	114.1	125	126	381	121.8	125	133	393

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 9 - Unit Wire/Fuse or HACR Breaker Sizing Data (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE		MCA	MAX FUSE or HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B26	575–3–60	STD	NONE	-	-	53.9	60	56	235	58.7	70	62	243	55.6	70	58	237	60.4	80	64	245
			285/276A00	24.8	23.9	53.9	60	56	235	58.7	70	62	243	55.6	70	58	237	60.4	80	64	245
			286/277A00	49.6	47.7	68.6	70	63	235	74.6	80	69	243	70.8	80	65	237	76.8	80	71	245
			287/278A00	74.4	71.6	80.6	90	91	235	86.6	90	96	243	82.7	90	93	237	88.7	90	98	245
		MED	NONE	-	-	55.6	70	58	262	60.4	80	64	270	57.3	70	60	264	62.1	80	66	272
			285/276A00	24.8	23.9	55.6	70	58	262	60.4	80	64	270	57.3	70	60	264	62.1	80	66	272
			286/277A00	49.6	47.7	70.8	80	65	262	76.8	80	71	270	72.9	80	67	264	78.9	80	73	272
			287/278A00	74.4	71.6	82.7	90	93	262	88.7	90	98	270	84.9	90	95	264	90.9	100	100	272
		HIGH	NONE	-	-	59.3	70	62	273	64.1	80	68	281	61.0	80	64	275	65.8	80	70	283
			285/276A00	24.8	23.9	59.3	70	62	273	64.1	80	68	281	61.0	80	64	275	65.8	80	70	283
			286/277A00	49.6	47.7	75.4	80	69	273	81.4	90	75	281	77.5	80	71	275	83.5	90	77	283
			287/278A00	74.4	71.6	87.4	100	97	273	93.4	100	102	281	89.5	100	99	275	95.5	100	104	283

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 – Unit Wire Sizing Data with Factory Installed HACR Breaker

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B14	208/230–3–60	STD	NONE	-	-	59.1/59.1	80/80	61/60	343	70.9/70.9	90/90	75/74	363	63.9/63.9	80/80	67/66	348	75.7/75.7	90/90	80/79	368
			302/305A00	11.3/15.0	31.3/36.1	59.1/59.1	80/80	61/60	343/343	70.9/70.9	90/90	75/74	363/363	63.9/63.9	80/80	67/66	348/348	75.7/75.7	90/90	80/79	368/368
			279/270A00	18.8/25.0	52.1/60.1	84.9/84.9	90/90	70/78	343/343	99.6/99.6	100/100	83/92	363/363	90.9/90.9	100/100	75/84	348/348	105.6/105.6	110/110	89/97	368/368
			309/312A00	37.6/50.0	104.2/120.3	141.0/141.0	150/150	130/147	343/343	155.8/155.8	175/175	143/161	363/363	147.0/147.0	150/150	135/153	348/348	161.8/161.8	175/175	149/166	368/368
		MED	NONE	-	-	64.1/64.1	80/80	67/66	378	75.9/75.9	90/90	81/80	398	68.9/68.9	90/90	73/72	383	80.7/80.7	100/100	86/85	403
			302/305A00	11.3/15.0	31.3/36.1	64.1/64.1	80/80	67/66	378/378	75.9/75.9	90/90	81/80	398/398	68.9/68.9	90/90	73/72	383/383	81.8/81.8	100/100	86/85	403/403
			279/270A00	18.8/25.0	52.1/60.1	91.0/91.0	100/100	76/84	378/378	105.8/105.8	110/110	89/97	398/398	97.0/97.0	100/100	81/89	383/383	111.8/111.8	125/125	95/103	403/403
			309/312A00	37.6/50.0	104.2/120.3	147.3/147.3	150/150	135/153	378/378	162.0/162.0	175/175	149/167	398/398	153.3/153.3	175/175	141/158	383/383	168.0/168.0	175/175	155/172	403/403
		HIGH	NONE	-	-	71.7	90	76	382	83.5	100	89	402	76.5	90	81	387	88.3	100	95	407
			302/305A00	11.3/15.0	31.3/36.1	71.7/71.7	90/90	76/76	382/382	86.4/86.4	100/100	89/89	402/402	77.6/77.6	90/90	81/81	387/387	92.4/92.4	100/100	95/95	407/407
			279/270A00	18.8/25.0	52.1/60.1	101.6/101.6	110/110	84/93	382/382	116.4/116.4	125/125	98/107	402/402	107.6/107.6	110/110	90/99	387/387	122.4/122.4	125/125	103/113	407/407
			309/312A00	37.6/50.0	104.2/120.3	156.8/156.8	175/175	144/163	382/382	171.5/171.5	175/175	158/176	402/402	162.8/162.8	175/175	150/168	387/387	177.5/177.5	200/200	163/182	407/407
		ULTRA	NONE	-	-	79.7	100	84	456	91.5	100	97	476	84.5	100	89	461	96.3	110	103	481
			302/305A00	11.3/15.0	31.3/36.1	80.1/80.1	100/100	84/84	456/456	94.9/94.9	100/100	97/97	476/476	86.1/86.1	100/100	89/89	461/461	100.9/100.9	110/110	103/103	481/481
			279/270A00	18.8/25.0	52.1/60.1	110.1/110.1	125/125	92/101	456/456	124.9/124.9	125/125	106/115	476/476	116.1/116.1	125/125	98/107	461/461	130.9/130.9	150/150	111/120	481/481
			309/312A00	37.6/50.0	104.2/120.3	165.3/165.3	175/175	152/171	456/456	180.0/180.0	200/200	166/184	476/476	171.3/171.3	175/175	158/176	461/461	186.0/186.0	200/200	171/190	481/481
	460–3–60	STD	NONE	-	-	31.3	40	33	167	37.5	45	40	179	33.5	40	35	169	39.7	50	42	181
			303/306A00	15.0	18.0	31.3	40	33	167	37.5	45	40	179	33.5	40	35	169	39.7	50	42	181
			282/273A00	25.0	30.1	42.4	45	39	167	50.1	60	46	179	45.1	50	42	169	52.9	60	49	181
			310/313A00	50.0	60.1	64.9	70	73	167	72.6	80	81	179	67.6	80	76	169	75.4	80	83	181
		MED	NONE	-	-	33.9	45	36	184	40.1	50	43	196	36.1	45	38	186	42.3	50	45	198
			303/306A00	15.0	18.0	33.9	45	36	184	40.1	50	43	196	36.1	45	38	186	42.3	50	45	198
			282/273A00	25.0	30.1	45.6	50	42	184	53.4	60	49	196	48.4	50	45	186	56.1	60	52	198
			310/313A00	50.0	60.1	68.1	80	76	184	75.9	80	84	196	70.9	80	79	186	78.6	80	86	198
		HIGH	NONE	-	-	37.2	45	40	186	43.4	50	47	198	39.4	50	42	188	45.6	50	49	200
			303/306A00	15.0	18.0	37.2	45	40	186	43.4	50	47	198	39.4	50	42	188	45.6	50	49	200
			282/273A00	25.0	30.1	49.8	50	46	186	57.5	60	53	198	52.5	60	48	188	60.3	70	55	200
			310/313A00	50.0	60.1	72.2	80	80	186	80.0	90	87	198	75.0	80	83	188	82.7	90	90	200
		ULTRA	NONE	-	-	41.8	50	44	223	48.0	60	51	235	44.0	50	47	225	50.2	60	54	237
			303/306A00	15.0	18.0	41.8	50	44	223	48.0	60	51	235	44.0	50	47	225	50.2	60	54	237
			282/273A00	25.0	30.1	54.8	60	50	223	62.5	70	58	235	57.5	60	53	225	65.3	70	60	237
			310/313A00	50.0	60.1	77.2	90	85	223	85.0	90	92	235	80.0	90	87	225	87.7	90	95	237

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B14	575–3–60	STD	NONE	-	-	24.4	30	26	119	29.2	35	31	127	26.1	30	28	121	30.9	35	33	129
			304/307A00	15.0	14.4	24.4	30	26	119	29.6	35	31	127	26.1	30	28	121	31.8	35	33	129
			285/276A00	24.8	23.9	35.5	40	33	119	41.5	45	38	127	37.6	40	35	121	43.6	45	40	129
			311/314A00	49.6	47.7	65.3	70	60	119	71.3	80	66	127	67.4	70	62	121	73.4	80	68	129
		MED	NONE	-	-	26.1	30	28	133	30.9	35	33	141	27.8	30	30	135	32.6	40	35	143
			304/307A00	15.0	14.4	26.1	30	28	133	31.8	35	33	141	27.9	30	30	135	33.9	40	35	143
			285/276A00	24.8	23.9	37.6	40	35	133	43.6	45	40	141	39.8	40	37	135	45.8	50	42	143
			311/314A00	49.6	47.7	67.4	70	62	133	73.4	80	68	141	69.5	70	64	135	75.5	80	69	143
		HIGH	NONE	-	-	27.1	30	29	131	31.9	35	34	139	28.8	35	31	133	33.6	40	36	141
			304/307A00	15.0	14.4	27.1	30	29	131	33.0	35	34	139	29.1	35	31	133	35.1	40	36	141
			285/276A00	24.8	23.9	38.9	40	36	131	44.9	45	41	139	41.0	45	38	133	47.0	50	43	141
			311/314A00	49.6	47.7	68.6	70	63	131	74.6	80	69	139	70.8	80	65	133	76.8	80	71	141
		ULTRA	NONE	-	-	29.0	35	31	158	33.8	40	36	166	30.7	35	33	160	35.5	40	38	168
			304/307A00	15.0	14.4	29.1	35	31	158	35.1	40	36	166	31.3	35	33	160	37.3	40	38	168
			285/276A00	24.8	23.9	41.0	45	38	158	47.0	50	43	166	43.1	45	40	160	49.1	50	45	168
			311/314A00	49.6	47.7	70.8	80	65	158	76.8	80	71	166	72.9	80	67	160	78.9	80	73	168

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B17	208/230–3–60	STD	NONE	-	-	67.4/67.4	90/90	70/69	371	79.2/79.2	100/100	83/82	391	72.2/72.2	90/90	75/74	376	84.0/84.0	100/100	89/88	396
			279/270A00	18.8/25.0	52.1/60.1	84.9/84.9	90/90	70/78	371/371	99.6/99.6	100/100	83/92	391/391	90.9/90.9	100/100	75/84	376/376	105.6/105.6	110/110	89/97	396/396
			280/271A00	37.6/50.0	104.2/120.3	141.0/141.0	150/150	130/147	371/371	155.8/155.8	175/175	143/161	391/391	147.0/147.0	150/150	135/153	376/376	161.8/161.8	175/175	149/166	396/396
			281/272A00	56.3/75.0	156.4/180.4	190.2/190.2	200/200	190/216	371/371	204.9/204.9	225/225	203/230	391/391	196.2/196.2	200/225	195/222	376/376	210.9/210.9	225/225	209/236	396/396
		MED	NONE	-	-	80.0	100	84	410	91.8	100	98	430	84.8	100	90	415	96.6	110	103	435
			279/270A00	18.8/25.0	52.1/60.1	101.6/101.6	110/110	84/93	410/410	116.4/116.4	125/125	98/107	430/430	107.6/107.6	110/110	90/99	415/415	122.4/122.4	125/125	103/113	435/435
			280/271A00	37.6/50.0	104.2/120.3	156.8/156.8	175/175	144/163	410/410	171.5/171.5	175/175	158/176	430/430	162.8/162.8	175/175	150/168	415/415	177.5/177.5	200/200	163/182	435/435
			281/272A00	56.3/75.0	156.4/180.4	206.9/206.9	225/250	204/232	410/410	221.7/221.7	225/250	218/245	430/430	212.9/212.9	225/250	210/237	415/415	227.7/227.7	250/250	223/251	435/435
		HIGH	NONE	-	-	86.9	100	92	484	98.7	125	105	504	91.7	100	97	489	103.5	125	111	509
			279/270A00	18.8/25.0	52.1/60.1	110.1/110.1	125/125	92/101	484/484	124.9/124.9	125/125	106/115	504/504	116.1/116.1	125/125	98/107	489/489	130.9/130.9	150/150	111/120	509/509
			280/271A00	37.6/50.0	104.2/120.3	165.3/165.3	175/175	152/171	484/484	180.0/180.0	200/200	166/184	504/504	171.3/171.3	175/175	158/176	489/489	186.0/186.0	200/200	171/190	509/509
			281/272A00	56.3/75.0	156.4/180.4	215.4/215.4	225/250	212/240	484/484	230.2/230.2	250/250	226/253	504/504	221.4/221.4	225/250	218/245	489/489	236.2/236.2	250/250	231/259	509/509
		ULTRA	NONE	-	-	98.5	125	103	524	110.3	125	116	544	103.3	125	108	529	115.1	150	122	549
			279/270A00	18.8/25.0	52.1/60.1	121.8/121.8	125/125	103/112	524/524	136.5/136.5	150/150	116/126	544/544	127.8/127.8	150/150	108/118	529/529	142.5/142.5	150/150	122/131	549/549
			280/271A00	37.6/50.0	104.2/120.3	176.9/176.9	200/200	163/181	524/524	191.6/191.6	200/200	176/195	544/544	182.9/182.9	200/200	168/187	529/529	197.6/197.6	200/200	182/200	549/549
			281/272A00	56.3/75.0	156.4/180.4	227.0/227.0	250/250	223/250	524/524	241.8/241.8	250/250	236/264	544/544	233.0/233.0	250/250	228/256	529/529	247.8/247.8	250/300	242/269	549/549
	460–3–60	STD	NONE	-	-	34.8	45	36	193	41.0	50	43	205	37.0	45	39	195	43.2	50	46	207
			282/273A00	25.0	30.1	42.4	45	39	193	50.1	60	46	205	45.1	50	42	195	52.9	60	49	207
			283/274A00	50.0	60.1	64.9	70	73	193	72.6	80	81	205	67.6	80	76	195	75.4	80	83	207
			284/275A00	75.0	90.2	95.0	100	108	193	102.7	110	115	205	97.7	100	111	195	105.5	110	118	207
		MED	NONE	-	-	40.7	50	43	212	46.9	60	50	224	42.9	50	46	214	49.1	60	53	226
			282/273A00	25.0	30.1	49.8	50	46	212	57.5	60	53	224	52.5	60	48	214	60.3	70	55	226
			283/274A00	50.0	60.1	72.2	80	80	212	80.0	90	87	224	75.0	80	83	214	82.7	90	90	226
			284/275A00	75.0	90.2	102.3	125	115	212	110.1	125	122	224	105.1	125	117	214	112.8	125	125	226
		HIGH	NONE	-	-	44.9	50	48	249	51.1	60	55	261	47.1	60	50	251	53.3	60	57	263
			282/273A00	25.0	30.1	54.8	60	50	249	62.5	70	58	261	57.5	60	53	251	65.3	70	60	263
			283/274A00	50.0	60.1	77.2	90	85	249	85.0	90	92	261	80.0	90	87	251	87.7	90	95	263
			284/275A00	75.0	90.2	107.3	125	119	249	115.1	125	127	261	110.1	125	122	251	117.8	125	129	263
		ULTRA	NONE	-	-	48.9	60	51	269	55.1	60	59	281	51.1	60	54	271	57.3	70	61	283
			282/273A00	25.0	30.1	58.8	60	54	269	66.5	70	61	281	61.5	70	57	271	69.3	70	64	283
			283/274A00	50.0	60.1	81.2	90	89	269	89.0	100	96	281	84.0	100	91	271	91.7	100	98	283
			284/275A00	75.0	90.2	111.3	125	123	269	119.1	125	130	281	114.1	125	126	271	121.8	125	133	283

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B17	575–3–60	STD	NONE	-	-	30.0	40	32	154	34.8	40	37	162	31.7	40	33	156	36.5	45	39	164
			285/276A00	24.8	23.9	35.5	40	33	154	41.5	45	38	162	37.6	40	35	156	43.6	45	40	164
			286/277A00	49.6	47.7	65.3	70	60	154	71.3	80	66	162	67.4	70	62	156	73.4	80	68	164
			287/278A00	74.4	71.6	77.2	90	88	154	83.2	90	93	162	79.4	90	89	156	85.4	90	95	164
		MED	NONE	-	-	32.7	40	35	166	37.5	45	40	174	34.4	40	37	168	39.2	45	42	176
			285/276A00	24.8	23.9	38.9	40	36	166	44.9	45	41	174	41.0	45	38	168	47.0	50	43	176
			286/277A00	49.6	47.7	68.6	70	63	166	74.6	80	69	174	70.8	80	65	168	76.8	80	71	176
			287/278A00	74.4	71.6	80.6	90	91	166	86.6	90	96	174	82.7	90	93	168	88.7	90	98	176
		HIGH	NONE	-	-	34.4	40	37	193	39.2	45	42	201	36.1	45	39	195	40.9	50	44	203
			285/276A00	24.8	23.9	41.0	45	38	193	47.0	50	43	201	43.1	45	40	195	49.1	50	45	203
			286/277A00	49.6	47.7	70.8	80	65	193	76.8	80	71	201	72.9	80	67	195	78.9	80	73	203
			287/278A00	74.4	71.6	82.7	90	93	193	88.7	90	98	201	84.9	90	95	195	90.9	100	100	203
		ULTRA	NONE	-	-	38.7	50	41	204	43.5	50	46	212	40.4	50	43	206	45.2	50	48	214
			285/276A00	24.8	23.9	45.6	50	42	204	51.6	60	47	212	47.8	50	44	206	53.8	60	49	214
			286/277A00	49.6	47.7	75.4	80	69	204	81.4	90	75	212	77.5	80	71	206	83.5	90	77	214
			287/278A00	74.4	71.6	87.4	100	97	204	93.4	100	102	212	89.5	100	99	206	95.5	100	104	214

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B20	208/230–3–60	STD	NONE	-	-	73.3/73.3	100/100	76/75	412	85.1/85.1	100/100	90/89	432	78.1/78.1	100/100	82/81	417	89.9/89.9	100/100	95/95	437
			279/270A00	18.8/25.0	52.1/60.1	84.9/84.9	100/100	76/78	412/412	99.6/99.6	100/100	90/92	432/432	90.9/90.9	100/100	82/84	417/417	105.6/105.6	110/110	95/97	437/437
			280/271A00	37.6/50.0	104.2/120.3	141.0/141.0	150/150	130/147	412/412	155.8/155.8	175/175	143/161	432/432	147.0/147.0	150/150	135/153	417/417	161.8/161.8	175/175	149/166	437/437
			281/272A00	56.3/75.0	156.4/180.4	190.2/190.2	200/200	190/216	412/412	204.9/204.9	225/225	203/230	432/432	196.2/196.2	200/225	195/222	417/417	210.9/210.9	225/225	209/236	437/437
		MED	NONE	-	-	85.9	100	91	451	97.7	125	104	471	90.7	100	96	456	102.5	125	110	476
			279/270A00	18.8/25.0	52.1/60.1	101.6/101.6	110/110	91/93	451/451	116.4/116.4	125/125	104/107	471/471	107.6/107.6	110/110	96/99	456/456	122.4/122.4	125/125	110/113	476/476
			280/271A00	37.6/50.0	104.2/120.3	156.8/156.8	175/175	144/163	451/451	171.5/171.5	175/175	158/176	471/471	162.8/162.8	175/175	150/168	456/456	177.5/177.5	200/200	163/182	476/476
			281/272A00	56.3/75.0	156.4/180.4	206.9/206.9	225/250	204/232	451/451	221.7/221.7	225/250	218/245	471/471	212.9/212.9	225/250	210/237	456/456	227.7/227.7	250/250	223/251	476/476
		HIGH	NONE	-	-	92.8	100	99	525	104.6	125	112	545	97.6	125	104	530	109.4	125	118	550
			279/270A00	18.8/25.0	52.1/60.1	110.1/110.1	125/125	99/101	525/525	124.9/124.9	125/125	112/115	545/545	116.1/116.1	125/125	104/107	530/530	130.9/130.9	150/150	118/120	550/550
			280/271A00	37.6/50.0	104.2/120.3	165.3/165.3	175/175	152/171	525/525	180.0/180.0	200/200	166/184	545/545	171.3/171.3	175/175	158/176	530/530	186.0/186.0	200/200	171/190	550/550
			281/272A00	56.3/75.0	156.4/180.4	215.4/215.4	225/250	212/240	525/525	230.2/230.2	250/250	226/253	545/545	221.4/221.4	225/250	218/245	530/530	236.2/236.2	250/250	231/259	550/550
		ULTRA	NONE	-	-	104.4	125	109	565	116.2	150	123	585	109.2	125	115	570	121.0	150	128	590
			279/270A00	18.8/25.0	52.1/60.1	121.8/121.8	125/125	109/112	565/565	136.5/136.5	150/150	123/126	585/585	127.8/127.8	150/150	115/118	570/570	142.5/142.5	150/150	128/131	590/590
			280/271A00	37.6/50.0	104.2/120.3	176.9/176.9	200/200	163/181	565/565	191.6/191.6	200/200	176/195	585/585	182.9/182.9	200/200	168/187	570/570	197.6/197.6	200/200	182/200	590/590
			281/272A00	56.3/75.0	156.4/180.4	227.0/227.0	250/250	223/250	565/565	241.8/241.8	250/250	236/264	585/585	233.0/233.0	250/250	228/256	570/570	247.8/247.8	250/300	242/269	590/590
	460–3–60	STD	NONE	-	-	37.2	50	39	231	43.4	50	46	243	39.4	50	42	233	45.6	50	49	245
			282/273A00	25.0	30.1	42.4	50	39	231	50.1	60	46	243	45.1	50	42	233	52.9	60	49	245
			283/274A00	50.0	60.1	64.9	70	73	231	72.6	80	81	243	67.6	80	76	233	75.4	80	83	245
			284/275A00	75.0	90.2	95.0	100	108	231	102.7	110	115	243	97.7	100	111	233	105.5	110	118	245
		MED	NONE	-	-	43.1	50	46	250	49.3	60	53	262	45.3	50	48	252	51.5	60	56	264
			282/273A00	25.0	30.1	49.8	50	46	250	57.5	60	53	262	52.5	60	48	252	60.3	70	56	264
			283/274A00	50.0	60.1	72.2	80	80	250	80.0	90	87	262	75.0	80	83	252	82.7	90	90	264
			284/275A00	75.0	90.2	102.3	125	115	250	110.1	125	122	262	105.1	125	117	252	112.8	125	125	264
		HIGH	NONE	-	-	47.3	60	50	287	53.5	60	58	299	49.5	60	53	289	55.7	60	60	301
			282/273A00	25.0	30.1	54.8	60	50	287	62.5	70	58	299	57.5	60	53	289	65.3	70	60	301
			283/274A00	50.0	60.1	77.2	90	85	287	85.0	90	92	299	80.0	90	87	289	87.7	90	95	301
			284/275A00	75.0	90.2	107.3	125	119	287	115.1	125	127	299	110.1	125	122	289	117.8	125	129	301
		ULTRA	NONE	-	-	51.3	60	54	307	57.5	70	61	319	53.5	60	57	309	59.7	70	64	321
			282/273A00	25.0	30.1	58.8	60	54	307	66.5	70	61	319	61.5	70	57	309	69.3	70	64	321
			283/274A00	50.0	60.1	81.2	90	89	307	89.0	100	96	319	84.0	100	91	309	91.7	100	98	321
			284/275A00	75.0	90.2	111.3	125	123	307	119.1	125	130	319	114.1	125	126	309	121.8	125	133	321

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B20	575–3–60	STD	NONE	-	-	31.8	40	34	182	36.6	45	39	190	33.5	40	36	184	38.3	45	41	192
			285/276A00	24.8	23.9	35.5	40	34	182	41.5	45	39	190	37.6	40	36	184	43.6	45	41	192
			286/277A00	49.6	47.7	65.3	70	60	182	71.3	80	66	190	67.4	70	62	184	73.4	80	68	192
			287/278A00	74.4	71.6	77.2	90	88	182	83.2	90	93	190	79.4	90	89	184	85.4	90	95	192
		MED	NONE	-	-	34.5	40	37	194	39.3	45	42	202	36.2	45	39	196	41.0	50	44	204
			285/276A00	24.8	23.9	38.9	40	37	194	44.9	45	42	202	41.0	45	39	196	47.0	50	44	204
			286/277A00	49.6	47.7	68.6	70	63	194	74.6	80	69	202	70.8	80	65	196	76.8	80	71	204
			287/278A00	74.4	71.6	80.6	90	91	194	86.6	90	96	202	82.7	90	93	196	88.7	90	98	204
		HIGH	NONE	-	-	36.2	45	39	221	41.0	50	44	229	37.9	45	41	223	42.7	50	46	231
			285/276A00	24.8	23.9	41.0	45	39	221	47.0	50	44	229	43.1	45	41	223	49.1	50	46	231
			286/277A00	49.6	47.7	70.8	80	65	221	76.8	80	71	229	72.9	80	67	223	78.9	80	73	231
			287/278A00	74.4	71.6	82.7	90	93	221	88.7	90	98	229	84.9	90	95	223	90.9	100	100	231
		ULTRA	NONE	-	-	40.5	50	43	232	45.3	50	48	240	42.2	50	45	234	47.0	60	50	242
			285/276A00	24.8	23.9	45.6	50	43	232	51.6	60	48	240	47.8	50	45	234	53.8	60	50	242
			286/277A00	49.6	47.7	75.4	80	69	232	81.4	90	75	240	77.5	80	71	234	83.5	90	77	242
			287/278A00	74.4	71.6	87.4	100	97	232	93.4	100	102	240	89.5	100	99	234	95.5	100	104	242

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B24	208/230–3–60	STD	NONE	-	-	101.9	125	108	538	113.7	125	121	558	106.7	125	113	543	118.5	150	127	563
			279/270A00	18.8/25.0	52.1/60.1	101.9/101.9	125/125	108/108	538/538	116.4/116.4	125/125	121/121	558/558	107.6/107.6	125/125	113/113	543/543	122.4/122.4	150/150	127/127	563/563
			280/271A00	37.6/50.0	104.2/120.3	156.8/156.8	175/175	144/163	538/538	171.5/171.5	175/175	158/176	558/558	162.8/162.8	175/175	150/168	543/543	177.5/177.5	200/200	163/182	563/563
			281/272A00	56.3/75.0	156.4/180.4	206.9/206.9	225/250	204/232	538/538	221.7/221.7	225/250	218/245	558/558	212.9/212.9	225/250	210/237	543/543	227.7/227.7	250/250	223/251	563/563
		MED	NONE	-	-	101.9	125	108	538	113.7	125	121	558	106.7	125	113	543	118.5	150	127	563
			279/270A00	18.8/25.0	52.1/60.1	101.9/101.9	125/125	108/108	538/538	116.4/116.4	125/125	121/121	558/558	107.6/107.6	125/125	113/113	543/543	122.4/122.4	150/150	127/127	563/563
			280/271A00	37.6/50.0	104.2/120.3	156.8/156.8	175/175	144/163	538/538	171.5/171.5	175/175	158/176	558/558	162.8/162.8	175/175	150/168	543/543	177.5/177.5	200/200	163/182	563/563
			281/272A00	56.3/75.0	156.4/180.4	206.9/206.9	225/250	204/232	538/538	221.7/221.7	225/250	218/245	558/558	212.9/212.9	225/250	210/237	543/543	227.7/227.7	250/250	223/251	563/563
		HIGH	NONE	-	-	108.7	125	115	612	120.5	150	129	632	113.5	125	121	617	125.3	150	135	637
			279/270A00	18.8/25.0	52.1/60.1	110.1/110.1	125/125	115/115	612/612	124.9/124.9	150/150	129/129	632/632	116.1/116.1	125/125	121/121	617/617	130.9/130.9	150/150	135/135	637/637
			280/271A00	37.6/50.0	104.2/120.3	165.3/165.3	175/175	152/171	612/612	180.0/180.0	200/200	166/184	632/632	171.3/171.3	175/175	158/176	617/617	186.0/186.0	200/200	171/190	637/637
			281/272A00	56.3/75.0	156.4/180.4	215.4/215.4	225/250	212/240	612/612	230.2/230.2	250/250	226/253	632/632	221.4/221.4	225/250	218/245	617/617	236.2/236.2	250/250	231/259	637/637
		ULTRA	NONE	-	-	119.0	150	126	652	130.8	150	140	672	123.8	150	132	657	135.6	150	145	677
			279/270A00	18.8/25.0	52.1/60.1	121.8/121.8	150/150	126/126	652/652	136.5/136.5	150/150	140/140	672/672	127.8/127.8	150/150	132/132	657/657	142.5/142.5	150/150	145/145	677/677
			280/271A00	37.6/50.0	104.2/120.3	176.9/176.9	200/200	163/181	652/652	191.6/191.6	200/200	176/195	672/672	182.9/182.9	200/200	168/187	657/657	197.6/197.6	200/200	182/200	677/677
			281/272A00	56.3/75.0	156.4/180.4	227.0/227.0	250/250	223/250	652/652	241.8/241.8	250/250	236/264	672/672	233.0/233.0	250/250	228/256	657/657	247.8/247.8	250/300	242/269	677/677
	460–3–60	STD	NONE	-	-	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			282/273A00	25.0	30.1	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			283/274A00	50.0	60.1	72.2	80	80	278	80.0	90	87	290	75.0	80	83	280	82.7	90	90	292
			284/275A00	75.0	90.2	102.3	125	115	278	110.1	125	122	290	105.1	125	117	280	112.8	125	125	292
		MED	NONE	-	-	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			282/273A00	25.0	30.1	56.6	70	60	278	62.8	80	67	290	58.8	70	62	280	65.0	80	70	292
			283/274A00	50.0	60.1	72.2	80	80	278	80.0	90	87	290	75.0	80	83	280	82.7	90	90	292
			284/275A00	75.0	90.2	102.3	125	115	278	110.1	125	122	290	105.1	125	117	280	112.8	125	125	292
		HIGH	NONE	-	-	60.6	70	65	315	66.8	80	72	327	62.8	80	67	317	69.0	80	74	329
			282/273A00	25.0	30.1	60.6	70	65	315	66.8	80	72	327	62.8	80	67	317	69.0	80	74	329
			283/274A00	50.0	60.1	77.2	90	85	315	85.0	90	92	327	80.0	90	87	317	87.7	90	95	329
			284/275A00	75.0	90.2	107.3	125	119	315	115.1	125	127	327	110.1	125	122	317	117.8	125	129	329
		ULTRA	NONE	-	-	63.8	80	68	335	70.0	80	75	347	66.0	80	71	337	72.2	90	78	349
			282/273A00	25.0	30.1	63.8	80	68	335	70.0	80	75	347	66.0	80	71	337	72.2	90	78	349
			283/274A00	50.0	60.1	81.2	90	89	335	89.0	100	96	347	84.0	100	91	337	91.7	100	98	349
			284/275A00	75.0	90.2	111.3	125	123	335	119.1	125	130	347	114.1	125	126	337	121.8	125	133	349

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B24	575–3–60	STD	NONE	-	-	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			285/276A00	24.8	23.9	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			286/277A00	49.6	47.7	68.6	70	63	206	74.6	80	69	214	70.8	80	65	208	76.8	80	71	216
			287/278A00	74.4	71.6	80.6	90	91	206	86.6	90	96	214	82.7	90	93	208	88.7	90	98	216
		MED	NONE	-	-	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			285/276A00	24.8	23.9	45.0	50	48	206	49.8	60	54	214	46.7	50	50	208	51.5	60	56	216
			286/277A00	49.6	47.7	68.6	70	63	206	74.6	80	69	214	70.8	80	65	208	76.8	80	71	216
			287/278A00	74.4	71.6	80.6	90	91	206	86.6	90	96	214	82.7	90	93	208	88.7	90	98	216
		HIGH	NONE	-	-	46.7	50	50	233	51.5	60	56	241	48.4	60	52	235	53.2	60	58	243
			285/276A00	24.8	23.9	46.7	50	50	233	51.5	60	56	241	48.4	60	52	235	53.2	60	58	243
			286/277A00	49.6	47.7	70.8	80	65	233	76.8	80	71	241	72.9	80	67	235	78.9	80	73	243
			287/278A00	74.4	71.6	82.7	90	93	233	88.7	90	98	241	84.9	90	95	235	90.9	100	100	243
		ULTRA	NONE	-	-	50.4	60	54	244	55.2	60	60	252	52.1	60	56	246	56.9	70	62	254
			285/276A00	24.8	23.9	50.4	60	54	244	55.2	60	60	252	52.1	60	56	246	56.9	70	62	254
			286/277A00	49.6	47.7	75.4	80	69	244	81.4	90	75	252	77.5	80	71	246	83.5	90	77	254
			287/278A00	74.4	71.6	87.4	100	97	244	93.4	100	102	252	89.5	100	99	246	95.5	100	104	254

See “Legend and Notes for Tables 9 and 10” on page 66.

Table 10 - Unit Wire Sizing Data with Factory Installed HACR Breaker (cont.)

UNIT	NO M. V–Ph–HZ	IFM TYPE	ELEC. HTR			NO C.O. or UNPWR C.O.								w/ PWRD C.O.							
						NO P.E.				w/ P.E. (pwrd fr/unit)				NO P.E.				w/ P.E. (pwrd fr/unit)			
			CRHEATER***A00 VERT/HORZ	Nom (kW)	FLA	MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE		MCA	HACR BRKR	DISC. SIZE	
								FLA	LRA			FLA	LRA			FLA	LRA			FLA	LRA
50LC*B26	208/230–3–60	STD	NONE	-	-	124.9	175	129	629	136.7	175	142	649	129.7	175	134	634	141.5	175	148	654
			279/270A00	18.8/25.0	52.1/60.1	124.9/124.9	175/175	129/129	629/629	136.7/136.7	175/175	142/142	649/649	129.7/129.7	175/175	134/134	634/634	141.5/141.5	175/175	148/148	654/654
			280/271A00	37.6/50.0	104.2/120.3	156.8/156.8	175/175	144/163	629/629	171.5/171.5	175/175	158/176	649/649	162.8/162.8	175/175	150/168	634/634	177.5/177.5	200/200	163/182	654/654
			281/272A00	56.3/75.0	156.4/180.4	206.9/206.9	225/250	204/232	629/629	221.7/221.7	225/250	218/245	649/649	212.9/212.9	225/250	210/237	634/634	227.7/227.7	250/250	223/251	654/654
		MED	NONE	-	-	131.7	175	137	703	143.5	175	150	723	136.5	175	142	708	148.3	175	156	728
			279/270A00	18.8/25.0	52.1/60.1	131.7/131.7	175/175	137/137	703/703	143.5/143.5	175/175	150/150	723/723	136.5/136.5	175/175	142/142	708/708	148.3/148.3	175/175	156/156	728/728
			280/271A00	37.6/50.0	104.2/120.3	165.3/165.3	175/175	152/171	703/703	180.0/180.0	200/200	166/184	723/723	171.3/171.3	175/175	158/176	708/708	186.0/186.0	200/200	171/190	728/728
			281/272A00	56.3/75.0	156.4/180.4	215.4/215.4	225/250	212/240	703/703	230.2/230.2	250/250	226/253	723/723	221.4/221.4	225/250	218/245	708/708	236.2/236.2	250/250	231/259	728/728
		HIGH	NONE	-	-	141.0	175	147	743	152.8	200	161	763	145.8	175	153	748	157.6	200	167	768
			279/270A00	18.8/25.0	52.1/60.1	141.0/141.0	175/175	147/147	743/743	152.8/152.8	200/200	161/161	763/763	145.8/145.8	175/175	153/153	748/748	157.6/157.6	200/200	167/167	768/768
			280/271A00	37.6/50.0	104.2/120.3	176.9/176.9	200/200	163/181	743/743	191.6/191.6	200/200	176/195	763/763	182.9/182.9	200/200	168/187	748/748	197.6/197.6	200/200	182/200	768/768
			281/272A00	56.3/75.0	156.4/180.4	227.0/227.0	250/250	223/250	743/743	241.8/241.8	250/250	236/264	763/763	233.0/233.0	250/250	228/256	748/748	247.8/247.8	250/300	242/269	768/768
	460–3–60	STD	NONE	-	-	64.9	80	68	322	71.1	90	75	334	67.1	90	70	324	73.3	90	78	336
			282/273A00	25.0	30.1	64.9	80	68	322	71.1	90	75	334	67.1	90	70	324	73.3	90	78	336
			283/274A00	50.0	60.1	72.2	80	80	322	80.0	90	87	334	75.0	90	83	324	82.7	90	90	336
			284/275A00	75.0	90.2	102.3	125	115	322	110.1	125	122	334	105.1	125	117	324	112.8	125	125	336
		MED	NONE	-	-	68.9	90	73	359	75.1	90	80	371	71.1	90	75	361	77.3	100	82	373
			282/273A00	25.0	30.1	68.9	90	73	359	75.1	90	80	371	71.1	90	75	361	77.3	100	82	373
			283/274A00	50.0	60.1	77.2	90	85	359	85.0	90	92	371	80.0	90	87	361	87.7	100	95	373
			284/275A00	75.0	90.2	107.3	125	119	359	115.1	125	127	371	110.1	125	122	361	117.8	125	129	373
		HIGH	NONE	-	-	72.1	90	76	379	78.3	100	83	391	74.3	90	79	381	80.5	100	86	393
			282/273A00	25.0	30.1	72.1	90	76	379	78.3	100	83	391	74.3	90	79	381	80.5	100	86	393
			283/274A00	50.0	60.1	81.2	90	89	379	89.0	100	96	391	84.0	100	91	381	91.7	100	98	393
			284/275A00	75.0	90.2	111.3	125	123	379	119.1	125	130	391	114.1	125	126	381	121.8	125	133	393
	575–3–60	STD	NONE	-	-	53.9	60	56	235	58.7	70	62	243	55.6	70	58	237	60.4	80	64	245
			285/276A00	24.8	23.9	53.9	60	56	235	58.7	70	62	243	55.6	70	58	237	60.4	80	64	245
			286/277A00	49.6	47.7	68.6	70	63	235	74.6	80	69	243	70.8	80	65	237	76.8	80	71	245
			287/278A00	74.4	71.6	80.6	90	91	235	86.6	90	96	243	82.7	90	93	237	88.7	90	98	245
		MED	NONE	-	-	55.6	70	58	262	60.4	80	64	270	57.3	70	60	264	62.1	80	66	272
			285/276A00	24.8	23.9	55.6	70	58	262	60.4	80	64	270	57.3	70	60	264	62.1	80	66	272
			286/277A00	49.6	47.7	70.8	80	65	262	76.8	80	71	270	72.9	80	67	264	78.9	80	73	272
			287/278A00	74.4	71.6	82.7	90	93	262	88.7	90	98	270	84.9	90	95	264	90.9	100	100	272
		HIGH	NONE	-	-	59.3	70	62	273	64.1	80	68	281	61.0	80	64	275	65.8	80	70	283
			285/276A00	24.8	23.9	59.3	70	62	273	64.1	80	68	281	61.0	80	64	275	65.8	80	70	283
			286/277A00	49.6	47.7	75.4	80	69	273	81.4	90	75	281	77.5	80	71	275	83.5	90	77	283
			287/278A00	74.4	71.6	87.4	100	97	273	93.4	100	102	281	89.5	100	99	275	95.5	100	104	283

See “Legend and Notes for Tables 9 and 10” on page 66.

Legend and Notes for Tables 9 and 10

LEGEND:

BRKR	–	Circuit breaker
CO	–	Convenient outlet
DISC	–	Disconnect
FLA	–	Full load amps
IFM	–	Indoor fan motor
LRA	–	Locked rotor amps
MCA	–	Minimum circuit amps
PE	–	Power exhaust
PWRD CO	–	Powered convenient outlet
UNPWR CO	–	Unpowered convenient outlet

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 percentage of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60

AB = 224 v
BC = 231 v
AC = 226 v

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3}$$

$$= 227$$

Determine maximum deviation from average voltage.
(AB) 227 – 224 = 3 v
(BC) 231 – 227 = 4 v
(AC) 227 – 226 = 1 v
Maximum deviation is 4 v.
Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times \frac{227}{}$$

$$\% \text{ Voltage Imbalance} = 100 \times \frac{4}{}$$

$$= 1.76\%$$

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 utility company immediately.

Smoke Detectors

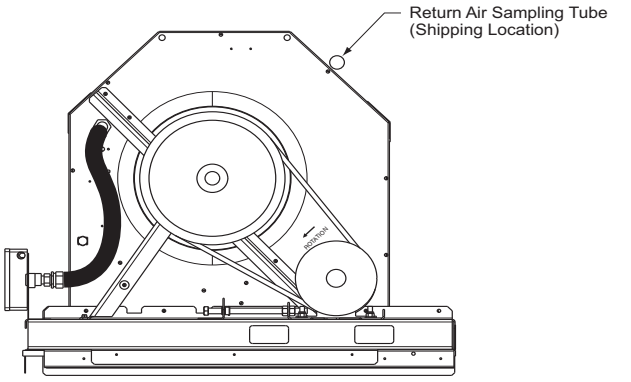
Smoke detectors are available as factory-installed options on 50LC*B models. Smoke detectors may be specified for Supply Air only or for Return Air without or with economizer or in combination of Supply Air and Return Air. The unit is factory-configured for immediate smoke detector shutdown operation; additional wiring or modifications to unit's Integrated Staging Control (ISC) board may be necessary to complete the unit and smoke detector configuration to meet project requirements.

Return Air Sensor Tube Installation –

The return air sampling tube is shipped in the unit's supply fan section, attached to the blower housing (see Fig. 48. Its operating location is in the return air section of the unit (see Fig. 49, unit without economizer, or Fig. 50, unit with economizer), inserted into the return air sensor module housing which protrudes through the back of the control box.

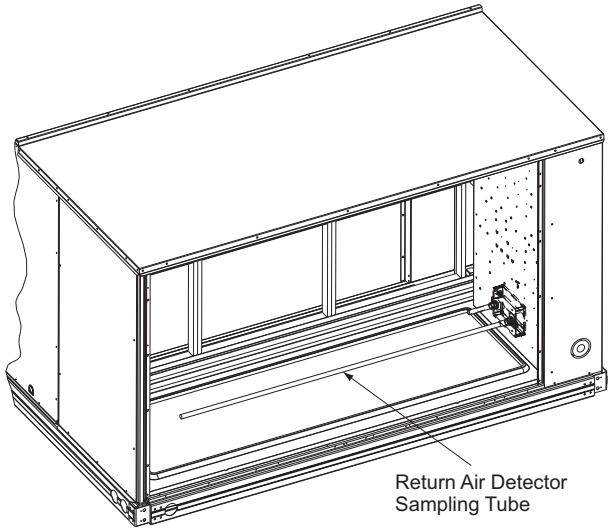
To install the return air sensor sampling tube:

1. Remove the tube from its shipping location.
2. Open the unit end to access the return air sensor (located on right-hand partition)
3. Orient the tube's sampling holes into the return air flow direction. For vertical application, position the sampling holes on the bottom of the tube, facing into the bottom return duct opening. For horizontal application, position the sampling holes on the side of the tube, facing the unit's end panel.
4. Insert the sampling tube into the return air sensor module until the tube snaps into position.
5. Replace end panel or outside air hood.



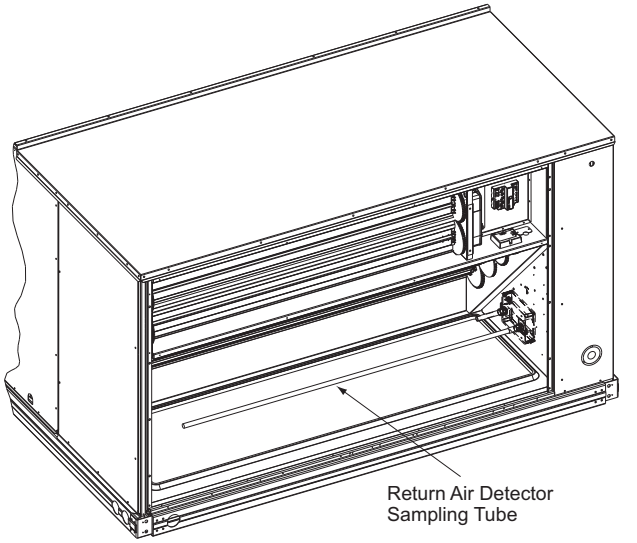
C09102

Fig. 48 - Typical Supply Air Smoke Detector Sensor Location



C09135

Fig. 49 - Return Air Sampling Tube Location in Unit without Economizer



C09136

Fig. 50 - Return Air Sampling Tube Location in Unit with Economizer

Smoke Detector Test Magnet —

Locate the magnet; it is shipped in the control box area.

Additional Application Data —

Refer to Catalog No. HKRNKA-1XA for discussions on additional control features of these smoke detectors including multiple unit coordination.

Step 13 — Install Accessories

Available accessories include:

Curb

Thru-base connection kit (must be installed before unit is set on curb)

Electric heaters and single-point connection kits

Power Exhaust

Outdoor enthalpy sensor

Differential enthalpy sensor

CO_2 sensor

Louvered hail guard

Refer to separate installation instructions for information on installing these accessories.

Pre-Start and Start-Up

This completes the mechanical installation of the unit. Refer to the unit's Service and Maintenance manual for detailed Pre-Start and Start-up instructions.

Edition Date: 11/15

Catalog No: 50LCB–14–26–01SI

Replaces: New

UNIT START-UP CHECKLIST
(Remove and Store in Job File)

MODEL NO.: _____ SERIAL NO.: _____

I. PRE-START-UP

☐ VERIFY THAT ALL PACKAGING MATERIALS HAVE BEEN REMOVED FROM UNIT

☐ VERIFY INSTALLATION OF OUTDOOR AIR HOOD

☐ VERIFY INSTALLATION OF DUCT PRESSURE TRANSDUCER

☐ VERIFY INSTALLATION OF FLUE EXHAUST AND INLET HOOD

☐ VERIFY THAT CONDENSATE CONNECTION IS INSTALLED PER INSTRUCTIONS

☐ VERIFY THAT ALL ELECTRICAL CONNECTIONS AND TERMINALS ARE TIGHT

☐ CHECK THAT INDOOR-AIR FILTERS ARE CLEAN AND IN PLACE

☐ CHECK THAT OUTDOOR AIR INLET SCREENS ARE IN PLACE

☐ VERIFY THAT UNIT IS LEVEL

☐ CHECK FAN WHEELS AND PROPELLER FOR LOCATION IN HOUSING/ORIFICE AND VERIFY SETSCREW IS TIGHT

☐ VERIFY THAT FAN SHEAVES ARE ALIGNED AND BELTS ARE PROPERLY TENSIONED

☐ VERIFY THAT SCROLL COMPRESSORS ARE ROTATING IN THE CORRRECT DIRECTION

II. START-UP

ELECTRICAL

SUPPLY VOLTAGE	L1-L2	_____	L2-L3	_____	L3-L1	_____
COMPRESSOR AMPS 1	L1	_____	L2	_____	L3	_____
COMPRESSOR AMPS 2	L1	_____	L2	_____	L3	_____
SUPPLY FAN AMPS	L1	_____	L2	_____	L3	_____

TEMPERATURES

OUTDOOR-AIR TEMPERATURE _____ °F DB (DRY BULB)

RETURN-AIR TEMPERATURE _____ °F DB _____ °F WB (WET BULB)

COOLING SUPPLY AIR TEMPERATURE _____ °F

PRESSURES

REFRIGERANT SUCTION	CIRCUIT A	_____	PSIG
	CIRCUIT B	_____	PSIG
REFRIGERANT DISCHARGE	CIRCUIT A	_____	PSIG
	CIRCUIT B	_____	PSIG

☐ VERIFY REFRIGERANT CHARGE USING CHARGING CHARTS

GENERAL

☐ ECONOMIZER MINIMUM VENT AND CHANGEOVER SETTINGS TO JOB REQUIREMENTS (IF EQUIPPED)

☐ VERIFY SMOKE DETECTOR UNIT SHUTDOWN BY UTILIZING MAGNET TEST

REPEAT PROCESS FOR 2 COMPRESSOR SYSTEMS

Edition Date: 11/15

Catalog No: 50LCB–14–26–01SI

Replaces: New